GETTLER-RYAN INC.

WELL INSTALLATION REPORT

for
Chevron Service Station #9-4800
1700 Castro Street
Oakland, California

Report No. 6383.02-2

Prepared for:

Mr. Phil Briggs
Chevron Products Company
P.O. Box 6004
San Ramon, California 94583

Prepared by:

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July 31, 1997

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Site # 3644

Chevron

ENVIRONMENTAL PROTECTION

97 AUG 11 PM 4:31

August 7, 1997

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Building L
San Ramon, CA 94583
P.O. Box 6004
San Ramon, CA 94583-0904

Marketing – Sales West
Phone 510 842-9500

Ms. Jennifer Eberle
Alameda County Health Care Services
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: Chevron Service Station #9-4800
1700 Castro Street
Oakland, California

Dear Ms. Eberle:

Enclosed is the Well Installation Report that was prepared by our consultant Gettler-Ryan, Inc. for the above noted facility. This report details the work performed to further evaluate the soil and groundwater conditions beneath this site.

Three groundwater monitoring wells were installed on-site and at the locations approved in the Work Plan dated 4/18/97. The wells were drilled to 31.5 feet and soil samples were collected every 5 feet. The soil samples collected at the 6, 11, 16 and 21 foot levels were submitted to Sequoia Analytical and analyzed for TPH-g, TPH-d, BTEX and MtBE constituents.

The TPH-g constituent was below method detection limits in all of the 12 samples analyzed. Unidentified hydrocarbons (from TPH-d analysis) was detected in two of the 12 samples with the highest concentration of 1.9 ppm in well MW-2 at 21 feet. Benzene constituent was below method detection limits for all the samples collected from well MW-2 and the 6 foot sample from well MW-3. Benzene was detected in the other samples with the highest concentration of 0.12 ppm from MW-1 at 11 feet. The MtBE constituent was below method detection limits for all the samples collected from well MW-1 and the 6 foot level from wells MW-2 and MW-3. The highest MtBE concentration detected was 0.58 ppm in MW-2 at 21 feet.

Groundwater samples were collected from each well and analyzed for TPH-g, TPH-d, BTEX and MtBE constituents. TPH-g was detected in all three wells with the highest concentration in well MW-2 at 13,000 ppb. Unidentified hydrocarbons (from TPH-d analysis) was only detected in wells MW-1 and MW-2 with the highest concentration in MW-2 at 4,000 ppb. The benzene constituent was detected in all wells with the highest concentration in well MW-2 at 790 ppb. MtBE constituent was below method detection limits in well MW-1, but was detected in the other two wells with the highest concentration in well MW-2 at 4,000 ppb.

Depth to groundwater varied from 24.87 feet to 26.05 feet below grade with a direction of flow westerly.

Note that these wells were installed as the results of detecting petroleum hydrocarbons at the time that Chevron was upgrading overspilll protection at this station. Prior to this work there was overspill protection on the fill risers of the tanks but not on the vapor risers. This upgrade also included adding overspill protection for the dispensers. The tank and lines were tested in March 1997 and the system passed. A copy of this test report is enclosed for your files.

Based on the above noted analyzes, it appears that there has been minimal impact to the soil from petroleum hydrocarbon, however the groundwater has been impacted from dissolved hydocarbons. With the recent upgrade at this station to prevent future overspills from occurring, it is expected that the existing concentrations in the groundwater will biodegrade over time. Therefore, Chevron proposes to monitor the site quarterly for at least a year to determine water gradient and flow direction and to validate that natural attenuation is occurring. At the end of a year, Chevron will evaluate the results and sampling frequency and determine if any changes need to be made to the sampling program.

If you have any questions or comments, call me at (510) 842-9136.

Sincerely,
CHEVRON PRODUCTS COMPANY

Philip R. Briggs
Site Assessment and Remediation Project Manager

Enclosure

cc: Mr. Bill Scudder, Chevron

Mr. Kevin Graves
RWQCB- San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, CA 94612

EXECUTIVE SUMMARY

Gettler-Ryan Inc. (GR) presents this report for a well installation at Chevron Service Station #9-4800 located at 1700 Castro Street in Oakland, California. Three on-site soil borings were drilled and groundwater monitoring wells MW-1 through MW-3 were installed in these borings. The purpose of this work was to assess whether soil and groundwater beneath the site have been impacted by petroleum hydrocarbons.

Soil encountered in borings MW-1 through MW-3 consisted of clayey to silty sand to approximately 12.5 feet below ground surface (bgs), overlying fine to medium sand to 29 feet bgs. A clay layer was encountered beneath the fine to medium sand layer and extended to the total depth explored of 31.5 feet. Groundwater was encountered in the borings at depths of approximately 24.0 to 25.0 feet bgs. Based on the groundwater monitoring data collected on June 4, 1997, shallow groundwater beneath the site appears to flow to the west at an approximate gradient of 0.006.

Based on analytical results from soil samples collected and analyzed during this investigation, it appears that soil in the vicinity of borings MW-1 through MW-3 has not been impacted by Total Petroleum Hydrocarbons as gasoline (TPHg). However, soil in the vicinity of borings MW-2 and MW-3 has been impacted by unidentified hydrocarbons in the C9-C24 range at concentrations of 1.9 parts per million (ppm) and 1.1 ppm , respectively, and Methyl t-Butyl Ether (MTBE) at concentrations up to 0.58 ppm and 0.11 ppm, respectively. Soil in the vicinity of boring MW-3 has been also impacted by benzene (up to 0.026 ppm). Soil in the vicinity of boring MW-1 has not been impacted by Total Petroleum Hydrocarbons as diesel (TPHd) or MTBE, but has been impacted by benzene (up to 0.12 ppm).

Shallow groundwater beneath the site has been impacted by TPHg (up to 13,000 parts per billion [ppb]), and benzene (up to 110 ppb). In addition, groundwater in the vicinity of wells MW-1 and MW-2 has been impacted by unidentified hydrocarbons in the C9-C24 range (up to 4,000 ppb), and groundwater in the vicinity of wells MW-2 and MW-3 has been impacted by MTBE (up to 4,000 ppb).

GETTLER-RYAN INC.

WELL INSTALLATION REPORT

for
Chevron Service Station #9-4800
1700 Castro Street
Oakland, California

Report No. 6383.02-2

1.0 INTRODUCTION

This report summarizes the results of a well installation performed at Chevron Station #9-4800, located at 1700 Castro Street in Oakland, California. The work was performed at the request of Chevron Products Company (Chevron) to further evaluate soil and groundwater conditions beneath the subject site. The scope of work included: obtaining the required well installation permits; installing three on-site groundwater monitoring wells (MW-1 through MW-3); collecting soil samples for chemical analysis; developing and sampling the wells; surveying wellhead elevations; arranging for Chevron's contractor to dispose of the waste materials; and preparing a report documenting the work. This work was proposed in GR's *Work Plan for Well Installation* dated April 18, 1997, approved by the Alameda County Health Care Services Agency.

2.0 SITE DESCRIPTION

2.1 General

The subject site is an active Chevron Service Station located on the parcel bordered by Castro Street to the northwest, 18th Street to the northeast and 17th Street to the southwest in Oakland, California (Figure 1). Aboveground facilities consists of a station building and five dispenser islands. Four underground storage tanks (USTs) share a common pit located near the northern corner of the site. Site features are shown on Figure 2.

2.2 Geology and Hydrogeology

The subject site is located on the western margin of the East Bay Plain, approximately 1 mile north and 2½ east of San Francisco Bay. The site is a relatively flat, asphalt and concrete covered lot at an elevation of approximately 30 feet above mean sea level. As mapped by Helley and others (1979), soil in the site vicinity consists of Pleistocene beach and dune sand deposits (Merrit Sand) consisting of loose well sorted fine to medium sand. The nearest surface water is Lake Merrit located approximately ⅔ mile southeast of the site. Based on the regional topography, groundwater flow in the vicinity of the site is inferred to be toward the west.

2.3 Previous Work

Five dispenser islands were upgraded in February 1997. On February 18, 1997, one soil sample was collected beneath each of the five dispenser islands at the depth of 4 feet below ground surface (bgs). These samples were analyzed for Total Petroleum Hydrocarbons as gasoline (TPHg), for Benzene, Toluene, Ethylbenzene, and total Xylenes (BTEX), and for Total Petroleum Hydrocarbons as diesel (TPHd). TPHg (5.9 to 550 parts per million [ppm]) were detected in four samples, TPHd (1.9 to 220 ppm) were detected in four samples, and benzene (0.016 to 15 ppm) were detected in four samples. Highest concentrations of hydrocarbons were detected in samples collected beneath the central and southern dispenser islands.

On February 21 and 22, 1997, GR hand-augered 12 soil borings to the maximum depth of 10 feet bgs to assess the extent of the hydrocarbon impact beneath the site. Groundwater was not encountered in the borings. TPHg were detected in five samples (1.9 to 890 ppm), TPHd were detected in six samples (1.0 to 640 ppm), and benzene was detected in 12 samples (0.011 to 3.0 ppm). Hydrocarbon impact was delineated vertically and laterally except to the southwest of the central dispenser island and vertically beneath the southern dispenser island.

3.0 FIELD WORK

Field work was conducted in accordance with GR's Field Methods and Procedures (Appendix A) and the Site Safety Plan dated May 21, 1997. A well installation permit (#97314) was obtained from the Zone 7 Water Agency, and Underground Service Alert was notified prior to drilling at the site. A copy of the permit is included in Appendix B.

3.1 Drilling Activities

On May 29, 1997, a GR geologist observed Bay Area Exploration Services, Inc. (C57 #522125) install three on-site groundwater monitoring wells (MW-1 through MW-3) at the locations shown on Figure 2. Well borings were drilled to 31.5 feet bgs using 8-inch hollow-stem augers driven by a truck-mounted CME-55 drill rig. Soil samples were collected every 5 feet. The GR geologist prepared logs of each boring and screened the soil samples in the field for the presence of volatile organic compounds. Screening data are presented on the boring logs (Appendix B).

A groundwater monitoring well was constructed in each boring using 20 feet of two-inch diameter, 0.010-inch machine-slotted Schedule 40 PVC screen. Lonestar #2/12 graded sand was placed in each well across the entire screen interval and extended approximately 1½ feet above the top of the screen. Each well was then sealed with 1 foot of hydrated bentonite chips followed by neat cement. Well construction details are presented on the boring logs in Appendix B.

Drill cuttings were placed on and covered with plastic sheeting and stored on-site pending disposal. After completion of drilling, four samples for disposal characterization were collected from the drill cuttings and submitted to the laboratory for compositing and analysis as sample SP-(A-D). On June 11, 1997, the drill cuttings were removed from the site and transported to the BFI Landfill in Livermore by Integrated Wastestream Management (IWM).

3.2 Well Development and Sampling

On June 4, 1997, groundwater monitoring wells MW-1 through MW-3 were developed by GR personnel using a vented surge block and hand-bailing. Depth to water was measured in the wells prior to well development. Upon completion of well development, groundwater samples were collected from the wells. Water purged during well development and sampling was transported to McKittrick Waste Management by IWM. Groundwater monitoring data are presented in Table 1, and copies of the GR Well Development and Sampling Field Data Sheets are included in Appendix C.

3.3 Wellhead Survey

On June 18, 1997, wells MW-1 through MW-3 were surveyed relative to mean sea level by Virgil Chavez, a California licensed land surveyor (#6323). A copy of the survey report is included in Appendix D, and the survey data is summarized in Table 1.

3.4 Laboratory Analysis

Soil and groundwater samples were analyzed by Sequoia Analytical in Redwood City, California (ELAP #1210). Soil samples from the borings and groundwater samples were analyzed for TPHg, BTEX, and MTBE by Environmental Protection Agency (EPA) Methods 8015/8020, and TPHd by EPA Method 8015 Mod. The composite sample from the drill cuttings was analyzed for TPHg, TPHd, and BTEX. Copies of the laboratory analytical reports and chain-of-custody records are included in Appendix E.

4.0 RESULTS

4.1 Subsurface Conditions

Soil encountered in borings MW-1 through MW-3 consisted of clayey to silty sand to approximately 12.5 feet bgs, overlying fine to medium sand to 29 feet bgs. A clay layer was encountered in the borings beneath the fine to medium sand layer in each boring and extended to the total depth explored of 31.5 feet. Groundwater was encountered in the borings at depths of approximately 24.0 to 25.0 feet bgs. Detailed descriptions of the subsurface

materials encountered during drilling are presented on the boring logs in Appendix B. Based on the groundwater monitoring data collected on June 4, 1997, shallow groundwater beneath the site appears to flow to the west at an approximate gradient of 0.006 (Figure 2).

4.2 Soil Analytical Results

TPHg were not detected in any soil sample collected and analyzed from borings MW-1 through MW-3. Unidentified hydrocarbons in the C9-C24 range (reported by the laboratory as TPHd) were detected only in the soil samples collected from boring MW-2 at 21 feet bgs (1.9 ppm) and MW-3 at 16 feet bgs (1.1 ppm). Benzene was present in all soil samples collected from boring MW-1 and in the samples collected from boring MW-3 at 11, 16 and 21 feet bgs at concentrations ranging from 0.0069 ppm to 0.12 ppm. Benzene was not detected in any soil sample collected from boring MW-2, or in the sample collected from boring MW-3 at 6 feet bgs. MTBE was present in the soil samples collected from borings MW-2 and MW-3 at 11, 16 and 21 feet bgs at concentrations ranging from 0.041 ppm to 0.58 ppm. MTBE was not detected in any soil sample collected from boring MW-1 and in the samples collected from borings MW-2 or MW-3 at 6 feet bgs.

The composite stockpile sample contained unidentified hydrocarbons in the C9-C24 range (8.3 ppm), but did not contain TPHg or BTEX. Soil chemical analytical data are summarized in Table 2.

4.3 Groundwater Analytical Results

Petroleum hydrocarbons were detected in the groundwater samples collected from wells MW-1 through MW-3. TPHg concentrations ranged from 190 ppb to 13,000 ppb, and benzene concentrations ranged from 26 ppb to 790 ppb, respectively. Unidentified hydrocarbons in the C9-C24 range were detected in the groundwater samples collected from wells MW-1 (71 ppb) and MW-2 (4,000 ppb), but were not detected in the sample collected from well MW-3. MTBE was detected in the groundwater samples collected from wells MW-2 (4,000 ppb) and MW-3 (8.2 ppb), but was not detected in the sample collected from well MW-1. Groundwater analytical data are summarized in Table 1,

5.0 CONCLUSIONS

Based on analytical results from soil samples collected and analyzed during this investigation, it appears that soil in the vicinity of borings MW-1 through MW-3 has not been impacted by TPHg. However, soil in the vicinity of borings MW-2 and MW-3 has been impacted by low concentrations of unidentified hydrocarbons in the C9-C24 range (1.9 ppm and 1.1 ppm , respectively), and MTBE (up to 0.58 ppm and 0.11 ppm, respectively). Soil in the vicinity of boring MW-3 has been impacted by benzene (up to 0.026 ppm). Soil in the vicinity of boring MW-1 has not been impacted by TPHd or MTBE, but has been impacted by benzene (up to 0.12 ppm).

Shallow groundwater beneath the site has been impacted by TPHg (up to 13,000 ppb), and benzene (up to 790 ppb). In addition, groundwater in the vicinity of wells MW-1 and MW-2 has been impacted by unidentified hydrocarbons in the C9-C24 range (up to 4,000 ppb), and groundwater in the vicinity of wells MW-2 and MW-3 has been impacted by MTBE (up to 4,000 ppb).

6.0 REFERENCES

E. J. Helley and others, 1979, Flatland Deposits of the San Francisco Bay Region, California: U.S. Geological Survey Professional Paper 943.

Gettler-Ryan Inc., May 21, 1997, Site Safety Plan for Chevron Service Station #9-4800, 1700 Castro Street, Oakland, California, Job No. 6383.02.

Gettler-Ryan Inc., April 18, 1997, Work Plan for Monitoring Well Installation for Chevron Service Station #9-4800, 1700 Castro Street, Oakland, California, Job No. 6383.02-1.

Table 1. Water Level Data and Groundwater Analytical Results - Chevron Service Station #9-4800, 1700 Castro Street, Oakland, California.

Well ID/ TOC (feet)	Date	DTW (feet)	GWE (msl)	Product Thickness (feet)	TPHg	TPHd	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
					<---			ppb			--->
MW-1/ 30.75	06/04/97	25.82	4.93	0	890	71[1]	100	110	29	150	<10
MW-2/ 30.00	06/04/97	24.87	5.13	0	13,000	4,000[1]	790	30	420	1,700	4,000
MW-3/ 31.32	06/04/97	26.05	5.27	0	190	<50	26	20	1.5	16	8.2
Trip Blank TB-LB	06/04/97	—	—	—	<50	—	<0.5	<0.50	<0.50	<0.50	<2.5

EXPLANATION:

DTW - Depth to water
TOC - Top of casing elevation
GWE - Groundwater elevation
TPHg - Total Petroleum Hydrocarbons as gasoline
TPHd - Total Petroleum Hydrocarbons as diesel
MTBE - Methyl t-Butyl Ether
msl - Measurements referenced relative to mean sea level
ppb - Parts per billion
— - Not analyzed/Not applicable
[1] - Unidentified hydrocarbons (C9-C24)

ANALYTICAL METHODS:

TPHg, benzene, toluene, ethylbenzene, xylenes, MTBE - EPA Methods 8015/8020
TPHd - EPA Method 3510

ANALYTICAL LABORATORY:

Sequoia Analytical (ELAP #1210)

NOTES:

Wells MW-1 through MW-3 were surveyed on June 18, 1997, by Virgil Chavez of Vallejo, California (PLS 6323).

Table 2. Soil Analytical Results - Chevron Service Station #9-4800, 1700 Castro Street, Oakland, California.

Sample ID	Depth (ft)	Date	TPHg	TPHd	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
			<----------ppm---------->						
MW1-6	6.0	05/29/97	<1.0	<1.0	0.034	<0.0050	<0.0050	0.0068	<0.025
MW1-11	11.0	05/29/97	<1.0	<1.0	0.12	<0.0050	<0.0050	0.022	<0.025
MW1-16	16.0	05/29/97	<1.0	<1.0	0.026	0.020	<0.0050	0.020	<0.025
MW1-21	21.0	05/29/97	<1.0	<1.0	0.023	0.039	0.010	0.065	<0.025
MW2-6	6.0	05/29/97	<1.0	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025
MW2-11	11.0	05/29/97	<1.0	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	0.10
MW2-16	16.0	05/29/97	<1.0	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	0.39
MW2-21	21.0	05/29/97	<1.0	1.9[1]	<0.0050	<0.0050	<0.0050	<0.0050	0.58
MW3-6	6.0	05/29/97	<1.0	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025
MW3-11	11.0	05/29/97	<1.0	<1.0	0.021	0.0063	<0.0050	0.0072	0.077
MW3-16	16.0	05/29/97	<1.0	1.1[1]	0.026	0.032	<0.0050	0.026	0.11
MW3-21	21.0	05/29/97	<1.0	<1.0	0.0069	0.012	<0.0050	0.011	0.041
SP-(A-D)	—	05/29/97	<1.0	8.3[1]	<0.0050	<0.0050	<0.0050	0.0070	—

EXPLANATION:

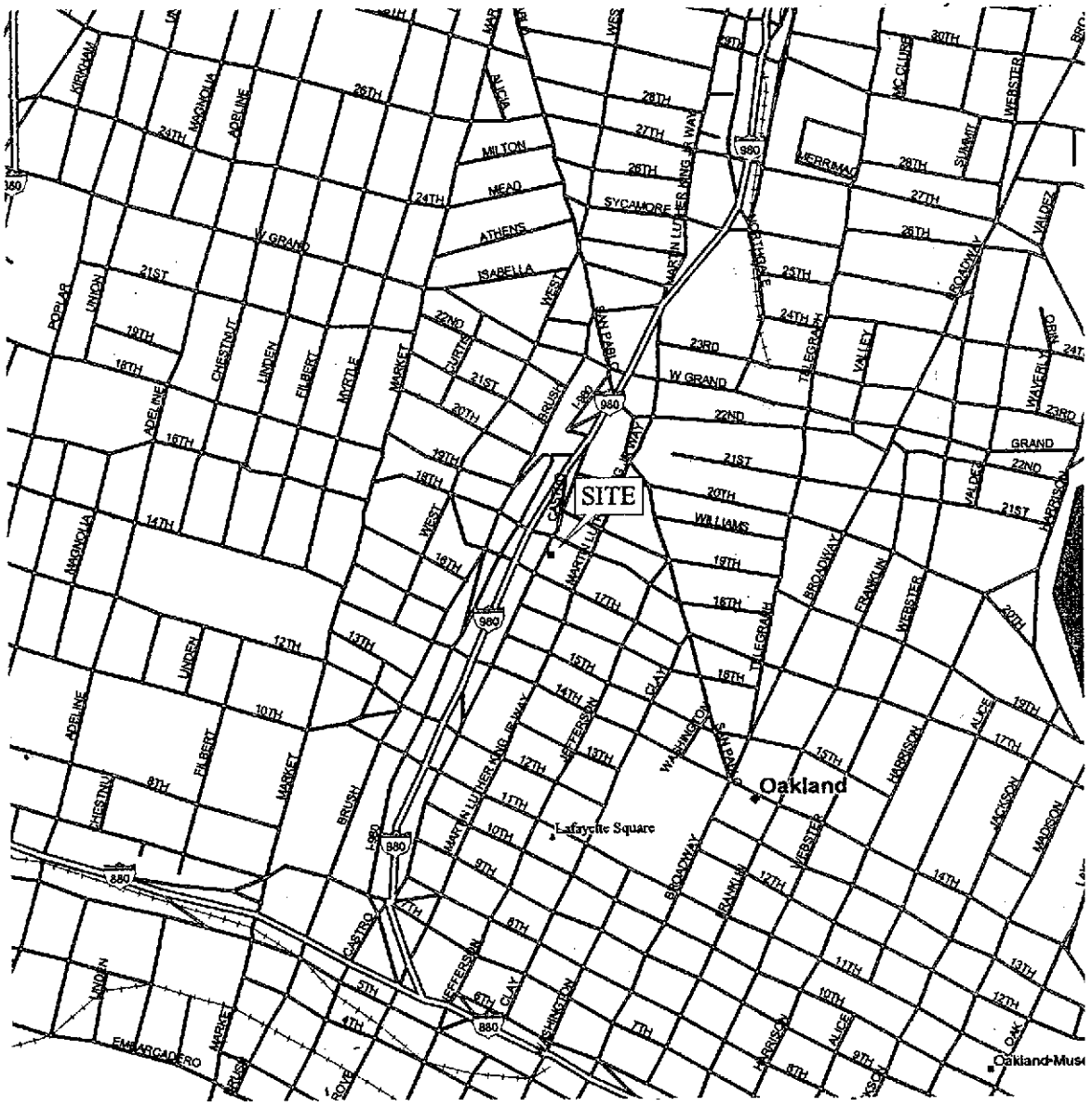
TPHg = Total Petroleum Hydrocarbons as gasoline
TPHd = Total Petroleum Hydrocarbons as diesel
MTBE = Methyl t-Butyl Ether
ft = Feet
ppm = Parts per million
— = Not analyzed/not applicable
[1] = Unidentified hydrocarbons (C9-C24)

ANALYTICAL METHODS:

TPHg and TPHd = EPA Method 8015Mod
Benzene, toluene, ethylbenzene, xylenes, MTBE = EPA Method 8020

ANALYTICAL LABORATORY:

Sequoia Analytical (ELAP #1210)



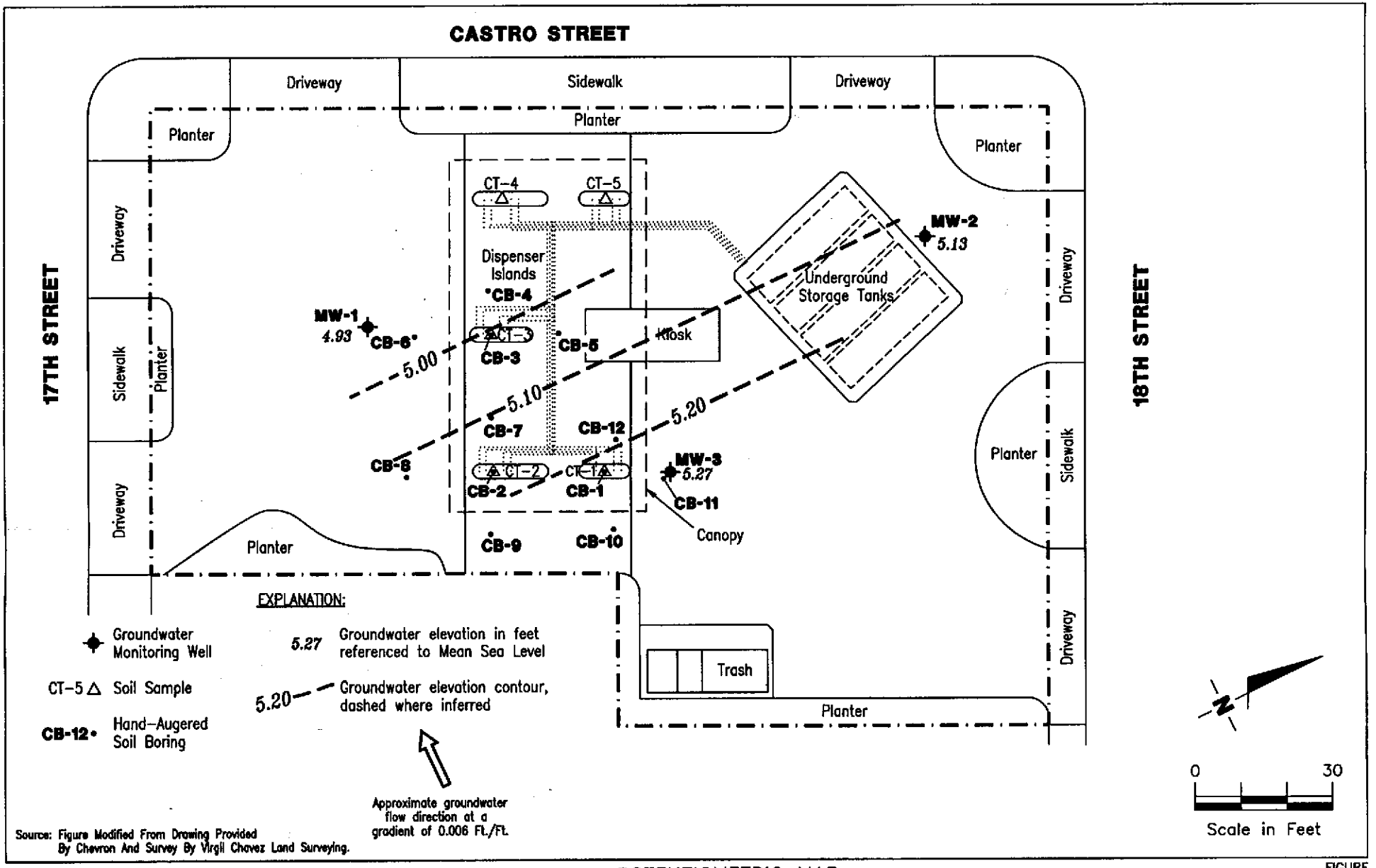
Source: Street Atlas USA, Delorme (1995).

FIGURE 1

VICINITY MAP
Chevron Service Station No. 9-4800
1700 Castro Street
Oakland, California

Gettler - Ryan Inc.
6747 Sierra Ct., Suite J (510) 551-7555
Dublin, CA 94568

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
6383		2/97	



Source: Figure Modified From Drawing Provided By Chevron And Survey By Virgil Chavez Land Surveying.

Gettler - Ryan Inc.
6747 Sierra Ct., Suite J (510) 551-7555
Dublin, CA 94568

POTENTIOMETRIC MAP
Chevron Service Station No. 9-4800
1700 Castro Street
Oakland, California

FIGURE
2

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
6383		07/97	

APPENDIX A

GR FIELD METHODS AND PROCEDURES

GETTLER - RYAN
FIELD METHODS AND PROCEDURES

Site Safety Plan

Field work performed by Gettler-Ryan, Inc. (GR) is conducted in accordance with GR's Health and Safety Plan and the Site Safety Plan. GR personnel and subcontractors who perform work at the site are briefed on the of these plans contents prior to initiating site work. The GR geologist or engineer at the site when the work is performed acts as the Site Safety Officer. GR utilizes a photoionization detector (PID) to monitor ambient conditions as part of the Health and Safety Plan.

Collection of Soil Samples

Exploratory soil borings are drilled by a California-licensed well driller. A GR geologist is present to observe the drilling, collect soil samples for description, physical testing, and chemical analysis, and prepare a log of the exploratory soil boring. Soil samples are collected from the exploratory soil boring with a split-barrel sampler or other appropriate sampling device fitted with clean brass or stainless steel liners. The sampling device is driven approximately 18 inches with a 140-pound hammer falling 30 inches. The number of blows required to advance the sampler each successive 6 inches is recorded on the boring log. The encountered soil is described using the Unified Soil Classification System (ASTM 2488-84) and the Munsell Soil Color Chart.

After removal from the sampling device, soil samples for chemical analysis are covered on both ends with teflon sheeting or aluminum foil, capped, labeled, and placed in a cooler with blue ice for preservation. A chain-of-custody form is initiated in the field and accompanies the selected soil samples to the analytical laboratory. Samples are selected for chemical analysis based on:

a. depth relative to underground storage tanks and existing ground surface
b. depth relative to known or suspected groundwater
c. presence or absence of contaminant migration pathways
d. presence or absence of discoloration or staining
e. presence or absence of obvious gasoline hydrocarbon odors
f. presence or absence of organic vapors detected by headspace analysis

Field Screening of Soil Samples

A PID is used to perform head-space analysis in the field for the presence of organic vapors from the soil sample. This test procedure involves removing some soil from one of the sample tubes not retained for chemical analysis and immediately covering the end of the tube with a plastic cap. The PID probe is inserted into the headspace inside the tube through a hole in the plastic cap. Head-space screening results are recorded on the boring log.

Head-space screening procedures are performed and results recorded as reconnaissance data. GR does not consider field screening techniques to be verification of the presence or absence of hydrocarbons.

Stockpile Sampling

Stockpile samples consist of four individual sample liners collected from each 100 cubic yards (yd^3) of stockpiled soil material. Four arbitrary points on the stockpiled material are chosen, and discrete soil sample is collected at each of these points. Each discrete stockpile sample is collected by removing the upper 3 to 6 inches of soil, and then driving the stainless steel or brass tube into the stockpiled material with a wooden mallet or hand driven soil sampling device. The sample tubes are then covered on both ends with teflon sheeting or aluminum foil, capped, labeled, placed in the cooler with blue ice for preservation. A chain-of-custody form is initiated in the field and accompanies the selected soil samples to the analytical laboratory. Stockpiled soils are covered with plastic sheeting after completion of sampling.

Construction of Monitoring Wells

Monitoring wells are constructed in the exploratory borings with Schedule 40 polyvinyl Chloride (PVC) casing. All joints are thread-joined; no glues, cements, or solvents are used in well construction. The screened interval is constructed of machine-slotted PVC well screen which generally extends from the total well depth to a point above the groundwater. An appropriately-sized sorted sand is placed in the annular space adjacent to the entire screened interval. A bentonite transition seal is placed in the annular space above the sand, and the remaining annular space is sealed with neat cement or cement grout.

Wellheads are protected with water-resistant traffic rated vault boxes placed flush with the ground surface. The top of the well casing is sealed with a locking cap. A lock is placed on the well cap to prevent vandalism and unintentional introduction of materials into the well.

Storing and Sampling of Drill Cuttings

Drill cuttings are stockpiled on plastic sheeting or stored in drums depending on site conditions and regulatory requirements. Stockpile samples are collected and analyzed on the basis of one composite sample per 50 cubic yards of soil. Stockpile samples are composed of four discrete soil samples, each collected from an arbitrary location on the stockpile. The four discrete samples are then composited in the laboratory prior to analysis.

Each discrete stockpile sample is collected by removing the upper 3 to 6 inches of soil, and then driving the stainless or brass sample tube into the stockpiled material with a hand, mallet, or drive sampler. The sample tubes are then covered on both ends with teflon sheeting or aluminum foil, capped, labeled, and placed in a cooler with blue ice

for preservation. A chain-of-custody form is initiated in the field and accompanies the selected soil samples to the analytical laboratory. Stockpiled soils are covered with plastic sheeting after completion of sampling.

Wellhead Survey

The top of the newly-installed well casing is surveyed by a California-licensed Land Surveyor to mean sea level (MSL).

Well Development

The purpose of well development is to improve hydraulic communication between the well and surrounding aquifer. Prior to development, each well is monitored for the presence of separate-phase hydrocarbons and the depth-to-water is recorded. Wells are then developed by alternately surging the well with the bailer, then purging the well with a pump to remove accumulated sediments and draw groundwater into the well. Development continues until the groundwater parameters (temperature, pH, and conductivity) have stabilized.

Groundwater Monitoring and Sampling

Decontamination Procedures

All physical parameter measuring and sampling equipment are decontaminated prior to sample collection using Alconox or equivalent detergent followed by steam cleaning with deionized water. During field sampling, equipment placed in a well are decontaminated before purging or sampling the next well by cleaning with Alconox or equivalent detergent followed by steam cleaning with deionized water.

Water-Level Measurements

Prior to sampling each well, the static water level is measured using an electric sounder and/or calibrated portable oil-water interface probe. Both static water-level and separate-phase product thickness are measured to the nearest ± 0.01 foot. The presence of separate-phase product is confirmed using a clean, acrylic or polyvinylchloride (PVC) bailer, measured to the nearest ± 0.01 foot with a decimal scale tape. The monofilament line used to lower the bailer is replaced between borings with new line to preclude the possibility of cross-contamination. Field observations (e.g. product color, turbidity, water color, odors, etc.) are noted. Water-levels are measured in wells with known or suspected lowest dissolved chemical concentrations to the highest dissolved concentrations.

Sample Collection and Labeling

A temporary PVC screen is installed in the boring to facilitate a grab groundwater sample collection. Samples of groundwater are collected from the surface of the water in each well or boring using the teflon bailer or a pump. The water samples are then gently poured into laboratory-cleaned containers and sealed with teflon-lined caps, and inspected for air bubbles to check for headspace. The samples are then labeled by an adhesive label, noted in permanent ink, and promptly placed in an ice storage. A Chain-of-Custody Record is initiated and updated throughout handling of the samples, and accompanies the samples to the laboratory certified by the State of California for analyses requested.

APPENDIX B

WELL INSTALLATION PERMIT AND BORING LOGS

ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588 VOICE (510) 484-2600
FAX (510) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT Chevron #9-4800
1700 Castro Street
Oakland, CA

CLIENT
Name Chevron Products Company
Address P.O. Box 6004 Voice (510) 842-9136
City San Ramon, CA Zip 94583

APPLICANT
Name Gettler-Ryan Inc.
Attn: Steve Carter Fax (916) 631-1817
Address 5164 Gold Camp Dr. #240 Voice (916) 631-1300
City Rancho Cordova, CA Zip 95670

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	___	General	___
Water Supply	___	Contamination	___
Monitoring	X	Well Destruction	___

PROPOSED WATER SUPPLY WELL USE
Domestic ___ Industrial ___ Other ___
Municipal ___ Irrigation ___

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

DRILLER'S LICENSE NO. C57 - 522125

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 30 ft.
Surface Seal Depth 9 ft. Number 3

GEOTECHNICAL PROJECTS
Number of Borings ___ Maximum
Hole Diameter ___ in. Depth ___ ft.

ESTIMATED STARTING DATE 5/23/97
ESTIMATED COMPLETION DATE 5/23/97

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE Stephen J. Carter, RG Date 5/13/97

FOR OFFICE USE

PERMIT NUMBER 97314
LOCATION NUMBER ___

PERMIT CONDITIONS

Circled Permit Requirements Apply

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

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

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

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

E. WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 14 May 97
Wyman Hong

91992

MAJOR DIVISIONS					TYPICAL NAMES
COARSE-GRAINED SOILS MORE THAN HALF IS COARSER THAN NO. 200 SIEVE	GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE SIZE	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW		WELL GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES
			GP		POORLY GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES
		GRAVELS WITH OVER 15% FINES	GM		SILTY GRAVELS, SILTY GRAVELS WITH SAND
			GC		CLAYEY GRAVELS, CLAYEY GRAVELS WITH SAND
	SANDS MORE THAN HALF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE SIZE	CLEAN SANDS WITH LITTLE OR NO FINES	SW		WELL GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES
			SP		POORLY GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES
		SANDS WITH OVER 15% FINES	SM		SILTY SANDS WITH OR WITHOUT GRAVEL
			SC		CLAYEY SANDS WITH OR WITHOUT GRAVEL
FINE-GRAINED SOILS MORE THAN HALF IS FINER THAN NO. 200 SIEVE	SILTS AND CLAYS LIQUID LIMIT 50% OR LESS		ML		INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTS WITH SANDS AND GRAVELS
			CL		INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY CLAYS WITH SANDS AND GRAVELS, LEAN CLAYS
			OL		ORGANIC SILTS OR CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50%		MH		INORGANIC SILTS, MICACEOUS OR DIATOMACIOUS, FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH		INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH		ORGANIC SILTS OR CLAYS OF MEDIUM TO HIGH PLASTICITY
HIGHLY ORGANIC SOILS			PT		PEAT AND OTHER HIGHLY ORGANIC SOILS

LL	- Liquid Limit (%)
PI	- Plastic Index (%)
PID	- Volatile Vapors in ppm
MA	- Particle Size Analysis
2.5 YR 6/2	- Soil Color according to Munsell Soil Color Charts (1975 Edition)
5 GY 5/2	- GSA Rock Color Chart

☒	- No Soil Sample Recovered
■	- "Undisturbed" Sample
⊠	- Bulk or Classification Sample
▽	- First Encountered Ground Water Level
▼	- Piezometric Ground Water Level
Penetration	- Sample drive hammer weight - 140 pounds falling 30 inches. Blows required to drive sampler 1 foot are indicated on the logs

Unified Soil Classification - ASTM D 2488-85 and Key to Test Data

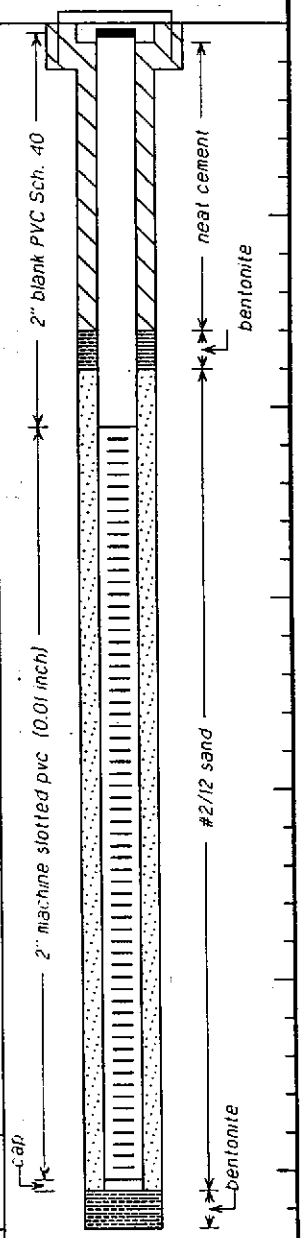
Gettler-Ryan, Inc.

Log of Boring MW-1

PROJECT: *Chevron SS# 9-4800*	LOCATION: *1700 Castro Street, Oakland, CA*
G-R PROJECT NO.: *6383.01*	SURFACE ELEVATION: *30.75 feet MSL*
DATE STARTED: *05/29/97*	WL (ft. bgs): *25.00* DATE: *05/29/97* TIME: *16:45*
DATE FINISHED: *05/29/97*	WL (ft. bgs): *25.00* DATE: *05/29/97* TIME: *18:30*
DRILLING METHOD: *8 in. Hollow Stem Auger*	TOTAL DEPTH: *31.5 Feet*
DRILLING COMPANY: *Bay Area Exploration, Inc.*	GEOLOGIST: *Barbara Sieminski*

DEPTH feet	PID (ppm)	BLOWS/FT. *	SAMPLE NUMBER	SOIL CLASS	GEOLOGIC DESCRIPTION
					PAVEMENT – asphalt over baserock.
				SM	SILTY SAND (SM) – very dark grayish brown (10YR 3/2), damp, medium dense; 70% fine sand, 30% silt; pieces of brick and wood; fill.
5	21	15	MW1-6	SC	CLAYEY SAND (SC) – dark yellowish brown (10YR 4/6) mottled grayish brown (10YR 5/2), moist, medium dense; 60% fine to medium sand, 40% clay.
				SM	SILTY SAND (SM) – yellowish brown (10YR 5/4) mottled grayish brown (10YR 5/2), moist, medium dense; 80% fine to medium sand, 15% silt, 5% clay.
10	12	16	MW1-11		
				SP	SAND (SP) – light olive brown (2.5Y 5/6), moist, dense; 100% fine sand
15	123	42	MW1-16		
20	104	40	MW1-21		
25	0	39	MW1-26		▼▼ Color changes to grayish brown (2.5Y 5/2); becomes saturated at 25 feet.
30	0	12	MW1-31	CL	CLAY (CL) – grayish brown (2.5Y 5/2), moist, stiff, low plasticity; 90% clay, 10% fine sand.
35					(* = converted to equivalent standard penetration blows/ft.)

WELL DIAGRAM



JOB NUMBER: *6383.01*

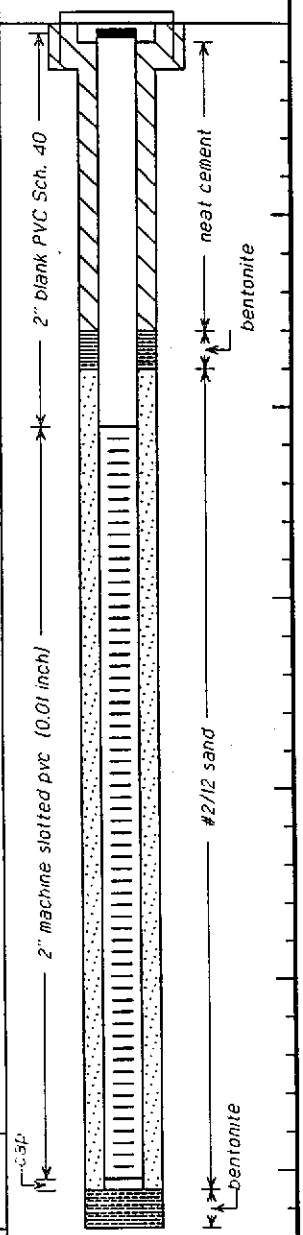
Gettler-Ryan, Inc.

Log of Boring MW-2

PROJECT: *Chevron SS# 9-4800*	LOCATION: *1700 Castro Street, Oakland, CA*
G-R PROJECT NO.: *6383.01*	SURFACE ELEVATION: *30.00 feet MSL*
DATE STARTED: *05/29/97*	WL (ft. bgs): *24.00* DATE: *05/29/97* TIME: *11:20*
DATE FINISHED: *05/29/97*	WL (ft. bgs): *24.00* DATE: *05/29/97* TIME: *13:00*
DRILLING METHOD: *8 in. Hollow Stem Auger*	TOTAL DEPTH: *31.5 Feet*
DRILLING COMPANY: *Bay Area Exploration, Inc.*	GEOLOGIST: *Barbara Sieminski*

DEPTH feet	PID (ppm)	BLOWS/FT. *	SAMPLE NUMBER	SOIL CLASS	GEOLOGIC DESCRIPTION
					PAVEMENT - asphalt over baserock.
				SM	SILTY SAND (SM) - very dark grayish brown (10YR 3/2), damp, medium dense; 60% fine sand, 40% silt; pieces of brick; fill.
5				SM	SILTY SAND (SM) - grayish brown (10YR 5/2), moist, medium dense; 70% fine sand, 30% silt.
	15	12	MW2-6	SC	Color changes to olive gray (5Y 5/2) at 5 feet. CLAYEY SAND (SC) - brown (10YR 5/4), damp, medium dense; 60% fine sand, 40% clay.
10				SM	SILTY SAND (SM) - yellowish brown (10YR 5/4), moist, medium dense; 85% fine to medium sand, 15% silt.
	26	22	MW2-11		
15				SP	SAND (SP) - yellowish brown (10YR 5/4), moist, dense; 95% fine to medium sand, 5% silt. Color changes to olive gray (5Y 4/2) at 15.5 feet.
	29	34	MW2-16		
20					
	32	44	MW2-21		
25					Becomes saturated at 24 feet. 100% fine to medium sand at 25 feet.
	1.3	43	MW2-25.5		
30				CL	CLAY (CL) - grayish brown (2.5Y 5/2), moist, stiff, low plasticity; 90% clay, 10% fine sand.
	0	13	MW2-31		
35					(* = converted to equivalent standard penetration blows/ft.)

WELL DIAGRAM

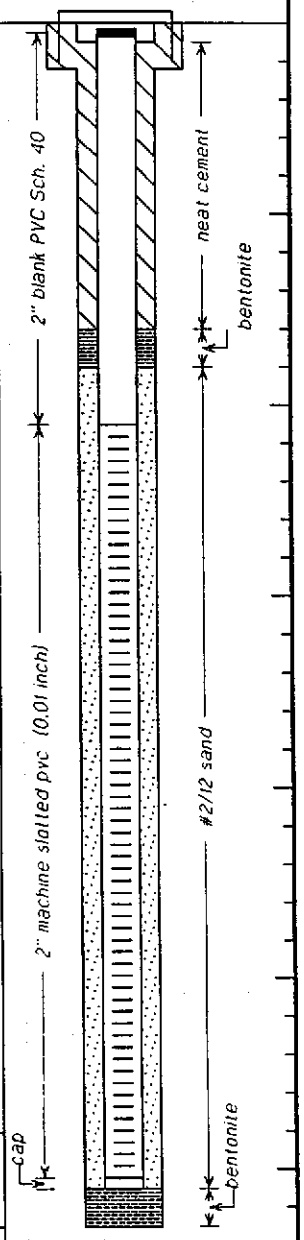


JOB NUMBER: *6383.01*

Gettler-Ryan, Inc.	Log of Boring MW-3
PROJECT: *Chevron SS# 9-4800*	LOCATION: *1700 Castro Street, Oakland, CA*
G-R PROJECT NO. : *6383.01*	SURFACE ELEVATION: *31.32 feet MSL*
DATE STARTED: *05/29/97*	WL (ft. bgs): *25.00* DATE: *05/29/97* TIME: *14:00*
DATE FINISHED: *05/29/97*	WL (ft. bgs): *25.00* DATE: *05/29/97* TIME: *15:30*
DRILLING METHOD: *8 in. Hollow Stem Auger*	TOTAL DEPTH: *31.5 Feet*
DRILLING COMPANY: *Bay Area Exploration, Inc.*	GEOLOGIST: *Barbara Sieminski*

DEPTH feet	PID (ppm)	BLOWS/FT. *	SAMPLE NUMBER	SOIL CLASS	GEOLOGIC DESCRIPTION
					PAVEMENT – asphalt over baserock.
				SM	SILTY SAND (SM) – very dark grayish brown (10YR 3/2), damp, medium dense; 70% fine sand, 30% silt; trace gravel; fill.
				SM	SILTY SAND (SM) – light olive brown (2.5Y 5/4), damp, medium dense; 70 % fine sand, 30% silt.
5	1.9	14	MW3-6	SC	CLAYEY SAND (SC) – brown (10YR 5/3), moist, medium dense; 55% fine sand, 45% clay.
				SM	SILTY SAND (SM) – yellowish brown (10YR 5/4), moist, medium dense; 80% fine to medium sand, 20% silt.
10	19	18	MW3-11		
				SP	SAND (SP) – light olive brown (2.5Y 5/4); moist, dense; 95% fine to medium sand, 5% silt.
15	91	26	MW3-16		
					Color changes to yellowish brown (10YR 5/8) mottled grayish olive (2.5 Y 5/2) at 20 feet.
20	98	47	MW3-21		
					Becomes very dense and saturated at 25 feet.
25	0	67	MW3-26		
				CL	CLAY (CL) – grayish brown (2.5Y 5/2), moist, stiff, low plasticity; 90% clay, 10% fine sand.
30	0	14	MW3-31		
					(* = converted to equivalent standard penetration blows/ft.)
35					

WELL DIAGRAM



JOB NUMBER: *6383.01*

APPENDIX C

WELL DEVELOPMENT AND SAMPLING FIELD DATA SHEETS

SAMPLER F. Cline DATE 6-4

ADDRESS 1700 Castro Street JOB # 6383.04

CITY Oakland CA SS# 9-4800

Well ID MW-2 Well Condition okay

Well Location Description

Well Diameter 2" in Hydrocarbon Thickness 0

Total Depth 30.5 ft

Depth to Liquid 24.87 ft

Volume Factor (VF)	2" = 0.17	3" = 0.38	4" = 0.66	6" = 1.50	12" = 5.80

# of casing Volume 5.63 x 0.17 x(VF) 0.95 #Estimated purge Volume 9 gal.

Purge Equipment Bailer / Stack Sampling Equipment D. Bailer

Did well dewater N/C If yes, Time ___ Volume

Starting Time 9:50 9:45 Purging Flow Rate gpm.

Sampling Time

Time	pH	Conductivity	Temperature	Volume
9:52	7.49	343	21.8	0
9:56	7.30	274	21.3	3
1000	6.91	266	21.1	6
1004	7.00	250	21.2	9
1008	6.99	249	21.2	12
Sampled 1012	7.01	251	21.1	13

Weather Conditions Sunny Warm Clear

Water Color: Clear to Brown to clear Odor: None

Sediment Description None

LABORATORY INFORMATION

Sample ID	Container	Refrig	Preservative Type	Lab	Analysis
MW-2	3x40ml VOA	Y	HCl	SEQ	8015 BTXE MTBE

Comments Well surged then Bailed. then pumped.

SAMPLER F. Cline DATE 6-4-97

ADDRESS 1700 Castro Street JOB # 6383.01

CITY Oakland SS# 9-4800

Well ID MW-3 Well Condition Okay

Well Location Description

Well Diameter 2" in Hydrocarbon Thickness 0

Total Depth 30.23 ft

Depth to Liquid 26.05 ft

Volume Factor (VF)	2" = 0.17	6" = 1.50	12" = 5.80
	3" = 0.38		
	4" = 0.66		

# of casing Volume 4.18 x 0.17 x(VF) 0.71 #Estimated purge Volume 7.1 gal.

Purge Equipment Bailer Sampling Equipment Bailer

Did well dewater NC If yes, Time ___ Volume

Starting Time 1033 Purging Flow Rate gpm.

Sampling Time 1055

Time	pH	Conductivity	Temperature	Color	Volume	Quality
1033	7.44	262	20.3	Brown	0	Cloudy
1036	7.38	243	19.9	Brown	2.1	Cloudy
1040	7.35	214	19.8	Brown	4.2	Muddy
1044	7.32	206	19.8	Brown	6.3	Muddy
1048	7.35	208	19.7	Brown	8.4	Cloudy
1055	7.34	210	19.8	Brown	10.0	Cloudy

Weather Conditions Sunny Warm Clear.

Water Color: Brown Clear Odor: None.

Sediment Description Heavy Silt — None

LABORATORY INFORMATION

Sample ID	Container	Refrig	Preservative Type	Lab	Analysis
MW-3	3x40ml VOA	Y	HCl	SBL	Low BTXE

Comments Surge Bailed, Sampled.

SAMPLER: F. C. Howe | DATE: 6-4-97

ADDRESS: 1700 Castro Street | JOB #: 0383.01

CITY: Oakland CA | SS#: 9-480C

Well ID: MW-1 | Well Condition: okay

Well Location Description:

Well Diameter: 2" in | Hydrocarbon Thickness: 0

Total Depth: 30.3 ft

Depth to Liquid: 25.82 ft

Volume Factor (VF)			
	2" = 0.17	6" = 1.50	12" = 5.80
	3" = 0.38		
	4" = 0.66		

# of casing Volume: 4.48 x 0.17 x (VF) 0.76 | #Estimated purge Volume: 7.6 gal.

Purge Equipment: Bailer | Sampling Equipment: Bailer

Did well dewater: No | If yes, Time: ___ | Volume:

Starting Time: 1102 | Purging Flow Rate: ___ gpm.

Sampling Time:

Time	pH	Conductivity	Temperature	Color	Volume	Clarity
1102	7.26	222	21.7	Brown	0	Cloudy
1109	7.32	286	21.7	↓	2.4	Muddy
1113	7.40	288	21.7		4.2	Muddy
1117	7.50	258	21.8		6.3	Cloudy
1121	7.53	257	21.7	clear	8.4	Clear
12	7.5	3				
1125	7.52	258	21.6	Clear	10.0	Clear

Weather Conditions: Clear Warm

Water Color: Brown - clear | Odor: None.

Sediment Description: Heavy silt - clear

LABORATORY INFORMATION

Sample ID	Container	Refrig	Preservative Type	Lab	Analysis
MW-1	3x40ml VOA	Y	HCl	SRC	8015 BTXE MTBE

Comments:

APPENDIX D

WELLHEAD SURVEY REPORT

Virgil Chavez Land Surveying
312 Georgia Street, Suite 200
Vallejo, California 94590
(707) 553-2476

June 20, 1997
Project No. 1104-67

Barbara Sieminski
Gettler-Ryan, Inc.
6747 Sierra Ct. Suite J
Dublin, Ca. 94568

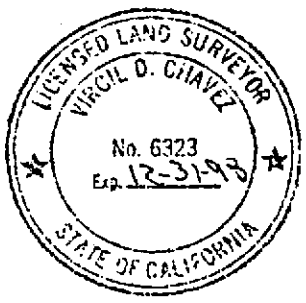
Subject: Monitoring Well Survey
Chevron SS # 9-4800
1700 Castro Street
Oakland, Ca.

Dear Barbara:

This is to confirm that we have proceeded at your request to survey the monitoring wells at the above referenced location. Our findings are shown in the tables below. The survey was performed on June 18, 1997. The benchmark for the survey was the top of curb at the south end of the return at the south-east corner of Castro Street and 18th Street. Measurement locations were marked at the approximate north side of top of box. The second table is for top of casing locations, using the back of sidewalk on 18th Street as reference line. Benchmark Elevation 29.65 feet, MSL.

Well No.	Rim Elevation	TOC Elevation
MW - 1	31.13'	30.75'
MW - 2	30.51'	30.00'
MW - 3	31.62'	31.32'

Well No.	Station	Offset
MW - 1	0+47.86	149.69(Rt.)
MW - 2	0+28.41	26.86(Rt.)
MW - 3	0+79.90	83.07(Rt.)
BSW Intx.	0+00.00	0.00
BSW-18th Street	---	0.00



Sincerely,

Virgil D. Chavez

Virgil D. Chavez, PLS 6323

APPENDIX E

LABORATORY ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY RECORDS

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Gettler Ryan/Geostrategies	Client Proj. ID: Chevron 9-4800, Oakland	Sampled: 05/29/97
6747 Sierra Court Suite G	Sample Descript: MW1-6	Received: 05/30/97
Dublin, CA 94568	Matrix: SOLID	Extracted: 06/03/97
	Analysis Method: 8015Mod/8020	Analyzed: 06/04/97
Attention: Barbara Sieminski	Lab Number: 9705F98-01	Reported: 06/09/97

QC Batch Number: GC060397BTEXEXA
Instrument ID: GCHP07

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Methyl t-Butyl Ether	0.025	N.D.
Benzene	**0.0050**	**0.034**
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	**0.0050**	**0.0068**
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	96
4-Bromofluorobenzene	60	140	92

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Gettler Ryan/Geostrategies
6747 Sierra Court Suite G
Dublin, CA 94568

Attention: Barbara Sieminski

Client Proj. ID: Chevron 9-4800, Oakland
Sample Descript: MW1-6
Matrix: SOLID
Analysis Method: EPA 8015 Mod
Lab Number: 9705F98-01

Sampled: 05/29/97
Received: 05/30/97
Extracted: 06/04/97
Analyzed: 06/05/97
Reported: 06/09/97

QC Batch Number: GC0604970HBPEXA
Instrument ID: GCHP4B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	1.0	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	84

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Settler Ryan/Geostrategies	Client Proj. ID: Chevron 9-4800, Oakland	Sampled: 05/29/97
1747 Sierra Court Suite G	Sample Descript: MW1-11	Received: 05/30/97
Dublin, CA 94568	Matrix: SOLID	Extracted: 06/03/97
	Analysis Method: 8015Mod/8020	Analyzed: 06/04/97
Attention: Barbara Sieminski	Lab Number: 9705F98-02	Reported: 06/09/97

QC Batch Number: GC060397BTEXEXA
Instrument ID: GCHP22

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Methyl t-Butyl Ether	0.025	N.D.
Benzene	**0.0050**	**0.12**
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	**0.0050**	**0.022**
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	91
4-Bromofluorobenzene	60	140	91

Analytes reported as N.D. were not present above the stated limit of detection.

EQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Gettler Ryan/Geostrategies	Client Proj. ID: Chevron 9-4800, Oakland	Sampled: 05/29/97
6747 Sierra Court Suite G	Sample Descript: MW1-11	Received: 05/30/97
Dublin, CA 94568	Matrix: SOLID	Extracted: 06/04/97
	Analysis Method: EPA 8015 Mod	Analyzed: 06/06/97
Attention: Barbara Sieminski	Lab Number: 9705F98-02	Reported: 06/09/97

QC Batch Number: GC0604970HBPEXA
Instrument ID: GCHP19A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	1.0	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	87

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Gettler Ryan/Geostrategies
6747 Sierra Court Suite G
Dublin, CA 94568

Attention: Barbara Sieminski

Client Proj. ID: Chevron 9-4800, Oakland
Sample Descript: MW1-16
Matrix: SOLID
Analysis Method: 8015Mod/8020
Lab Number: 9705F98-03

Sampled: 05/29/97
Received: 05/30/97
Extracted: 06/03/97
Analyzed: 06/04/97
Reported: 06/09/97

QC Batch Number: GC060397BTEXEXA
Instrument ID: GCHP22

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Methyl t-Butyl Ether	0.025	N.D.
Benzene	**0.0050**	**0.026**
Toluene	**0.0050**	**0.020**
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	**0.0050**	**0.020**
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	85
4-Bromofluorobenzene	60	140	102

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Gettler Ryan/Geostrategies	Client Proj. ID: Chevron 9-4800, Oakland	Sampled: 05/29/97
6747 Sierra Court Suite G	Sample Descript: MW1-16	Received: 05/30/97
Dublin, CA 94568	Matrix: SOLID	Extracted: 06/04/97
	Analysis Method: EPA 8015 Mod	Analyzed: 06/06/97
Attention: Barbara Sieminski	Lab Number: 9705F98-03	Reported: 06/09/97

QC Batch Number: GC0604970HBPEXA
Instrument ID: GCHP19A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	1.0	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	88

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

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Gettler Ryan/Geostrategies	Client Proj. ID: Chevron 9-4800, Oakland	Sampled: 05/29/97
6747 Sierra Court Suite G	Sample Descript: MW1-21	Received: 05/30/97
Dublin, CA 94568	Matrix: SOLID	Extracted: 06/03/97
	Analysis Method: 8015Mod/8020	Analyzed: 06/04/97
Attention: Barbara Sieminski	Lab Number: 9705F98-04	Reported: 06/09/97

QC Batch Number: GC060397BTEXEXA
Instrument ID: GCHP22

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Methyl t-Butyl Ether	0.025	N.D.
Benzene	**0.0050**	**0.023**
Toluene	**0.0050**	**0.039**
Ethyl Benzene	**0.0050**	**0.010**
Xylenes (Total)	**0.0050**	**0.065**
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	87
4-Bromofluorobenzene	60	140	95

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

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Gettler Ryan/Geostrategies	Client Proj. ID: Chevron 9-4800, Oakland	Sampled: 05/29/97
6747 Sierra Court Suite G	Sample Descript: MW1-21	Received: 05/30/97
Dublin, CA 94568	Matrix: SOLID	Extracted: 06/04/97
	Analysis Method: EPA 8015 Mod	Analyzed: 06/06/97
Attention: Barbara Sieminski	Lab Number: 9705F98-04	Reported: 06/09/97

QC Batch Number: GC0604970HBPEXA
Instrument ID: GCHP19A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	1.0	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	81

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

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Gettler Ryan/Geostrategies	Client Proj. ID: Chevron 9-4800, Oakland	Sampled: 05/29/97
6747 Sierra Court Suite G	Sample Descript: MW2-6	Received: 05/30/97
Dublin, CA 94568	Matrix: SOLID	Extracted: 06/03/97
	Analysis Method: 8015Mod/8020	Analyzed: 06/04/97
Attention: Barbara Sieminski	Lab Number: 9705F98-05	Reported: 06/09/97

QC Batch Number: GC060397BTEXEXA
Instrument ID: GCHP22

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Methyl t-Butyl Ether	0.025	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	88
4-Bromofluorobenzene	60	140	97

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

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Gettler Ryan/Geostrategies	Client Proj. ID: Chevron 9-4800, Oakland	Sampled: 05/29/97
6747 Sierra Court Suite G	Sample Descript: MW2-6	Received: 05/30/97
Dublin, CA 94568	Matrix: SOLID	Extracted: 06/04/97
	Analysis Method: EPA 8015 Mod	Analyzed: 06/06/97
Attention: Barbara Sieminski	Lab Number: 9705F98-05	Reported: 06/09/97

QC Batch Number: GC0604970HBPEXA
Instrument ID: GCHP19A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	1.0	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	80

Analytes reported as N.D. were not present above the stated limit of detection.

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Gettler Ryan/Geostrategies	Client Proj. ID: Chevron 9-4800, Oakland	Sampled: 05/29/97
6747 Sierra Court Suite G	Sample Descript: MW2-11	Received: 05/30/97
Dublin, CA 94568	Matrix: SOLID	Extracted: 06/03/97
	Analysis Method: 8015Mod/8020	Analyzed: 06/04/97
Attention: Barbara Sieminski	Lab Number: 9705F98-06	Reported: 06/09/97

QC Batch Number: GC060397BTEXEXA
Instrument ID: GCHP22

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Methyl t-Butyl Ether	**0.025**	**0.10**
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	86
4-Bromofluorobenzene	60	140	95

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

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Gettler Ryan/Geostrategies	Client Proj. ID: Chevron 9-4800, Oakland	Sampled: 05/29/97
6747 Sierra Court Suite G	Sample Descript: MW2-11	Received: 05/30/97
Dublin, CA 94568	Matrix: SOLID	Extracted: 06/04/97
	Analysis Method: EPA 8015 Mod	Analyzed: 06/06/97
Attention: Barbara Sieminski	Lab Number: 9705F98-06	Reported: 06/09/97

QC Batch Number: GC0604970HBPEXA
Instrument ID: GCHP19B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	1.0	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	92

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

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Gettler Ryan/Geostrategies	Client Proj. ID: Chevron 9-4800, Oakland	Sampled: 05/29/97
6747 Sierra Court Suite G	Sample Descript: MW2-16	Received: 05/30/97
Dublin, CA 94568	Matrix: SOLID	Extracted: 06/03/97
	Analysis Method: 8015Mod/8020	Analyzed: 06/04/97
Attention: Barbara Sieminski	Lab Number: 9705F98-07	Reported: 06/09/97

QC Batch Number: GC060397BTEXEXA
Instrument ID: GCHP22

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Methyl t-Butyl Ether	**0.025**	**0.39**
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	83
4-Bromofluorobenzene	60	140	93

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

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Gettler Ryan/Geostrategies	Client Proj. ID: Chevron 9-4800, Oakland	Sampled: 05/29/97
6747 Sierra Court Suite G	Sample Descript: MW2-16	Received: 05/30/97
Dublin, CA 94568	Matrix: SOLID	Extracted: 06/04/97
	Analysis Method: EPA 8015 Mod	Analyzed: 06/06/97
Attention: Barbara Sieminski	Lab Number: 9705F98-07	Reported: 06/09/97

QC Batch Number: GC0604970HBPEXA
Instrument ID: GCHP19B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	1.0	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	94

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

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Gettler Ryan/Geostrategies	Client Proj. ID: Chevron 9-4800, Oakland	Sampled: 05/29/97
6747 Sierra Court Suite G	Sample Descript: MW2-21	Received: 05/30/97
Dublin, CA 94568	Matrix: SOLID	Extracted: 06/03/97
	Analysis Method: 8015Mod/8020	Analyzed: 06/04/97
Attention: Barbara Sieminski	Lab Number: 9705F98-08	Reported: 06/09/97

QC Batch Number: GC060397BTEXEXA
Instrument ID: GCHP07

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Methyl t-Butyl Ether	**0.025**	**0.58**
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	87
4-Bromofluorobenzene	60	140	95

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

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Gettler Ryan/Geostrategies	Client Proj. ID: Chevron 9-4800, Oakland	Sampled: 05/29/97
6747 Sierra Court Suite G	Sample Descript: MW2-21	Received: 05/30/97
Dublin, CA 94568	Matrix: SOLID	Extracted: 06/04/97
	Analysis Method: EPA 8015 Mod	Analyzed: 06/06/97
Attention: Barbara Sieminski	Lab Number: 9705F98-08	Reported: 06/09/97

QC Batch Number: GC0604970HBPEXA
Instrument ID: GCHP19B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	1.0	1.9
Chromatogram Pattern:	C9-C24	Unid.-HC

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	99

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

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Gettler Ryan/Geostrategies	Client Proj. ID: Chevron 9-4800, Oakland	Sampled: 05/29/97
6747 Sierra Court Suite G	Sample Descript: MW3-6	Received: 05/30/97
Dublin, CA 94568	Matrix: SOLID	Extracted: 06/03/97
	Analysis Method: 8015Mod/8020	Analyzed: 06/03/97
Attention: Barbara Sieminski	Lab Number: 9705F98-09	Reported: 06/09/97

QC Batch Number: GC060397BTEXEXA
Instrument ID: GCHP07

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Methyl t-Butyl Ether	0.025	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	86
4-Bromofluorobenzene	60	140	93

Analytes reported as N.D. were not present above the stated limit of detection.

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Gettler Ryan/Geostrategies	Client Proj. ID: Chevron 9-4800, Oakland	Sampled: 05/29/97
6747 Sierra Court Suite G	Sample Descript: MW3-6	Received: 05/30/97
Dublin, CA 94568	Matrix: SOLID	Extracted: 06/04/97
	Analysis Method: EPA 8015 Mod	Analyzed: 06/06/97
Attention: Barbara Sieminski	Lab Number: 9705F98-09	Reported: 06/09/97

QC Batch Number: GC0604970HBPEXA
Instrument ID: GCHP19B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	1.0	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	90

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

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Gettler Ryan/Geostrategies	Client Proj. ID: Chevron 9-4800, Oakland	Sampled: 05/29/97
6747 Sierra Court Suite G	Sample Descript: MW3-11	Received: 05/30/97
Dublin, CA 94568	Matrix: SOLID	Extracted: 06/03/97
	Analysis Method: 8015Mod/8020	Analyzed: 06/04/97
Attention: Barbara Sieminski	Lab Number: 9705F98-10	Reported: 06/09/97

QC Batch Number: GC060397BTEXEXA
Instrument ID: GCHP22

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Methyl t-Butyl Ether	**0.025**	**0.077**
Benzene	**0.0050**	**0.021**
Toluene	**0.0050**	**0.0063**
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	**0.0050**	**0.0072**
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	88
4-Bromofluorobenzene	60	140	96

Analytes reported as N.D. were not present above the stated limit of detection.

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Gettler Ryan/Geostrategies	Client Proj. ID: Chevron 9-4800, Oakland	Sampled: 05/29/97
6747 Sierra Court Suite G	Sample Descript: MW3-11	Received: 05/30/97
Dublin, CA 94568	Matrix: SOLID	Extracted: 06/04/97
	Analysis Method: EPA 8015 Mod	Analyzed: 06/06/97
Attention: Barbara Sieminski	Lab Number: 9705F98-10	Reported: 06/09/97

QC Batch Number: GC0604970HBPEXA
Instrument ID: GCHP19B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	1.0	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	88

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

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Gettler Ryan/Geostrategies	Client Proj. ID: Chevron 9-4800, Oakland	Sampled: 05/29/97
5747 Sierra Court Suite G	Sample Descript: MW3-16	Received: 05/30/97
Dublin, CA 94568	Matrix: SOLID	Extracted: 06/03/97
	Analysis Method: 8015Mod/8020	Analyzed: 06/04/97
Attention: Barbara Sieminski	Lab Number: 9705F98-11	Reported: 06/09/97

QC Batch Number: GC060397BTEXEXA
Instrument ID: GCHP22

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Methyl t-Butyl Ether	**0.025**	**0.11**
Benzene	**0.0050**	**0.026**
Toluene	**0.0050**	**0.032**
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	**0.0050**	**0.026**
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	82
4-Bromofluorobenzene	60	140	91

Values reported as N.D. were not present above the stated limit of detection.

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Gettler Ryan/Geostrategies	Client Proj. ID: Chevron 9-4800, Oakland	Sampled: 05/29/97
6747 Sierra Court Suite G	Sample Descript: MW3-16	Received: 05/30/97
Dublin, CA 94568	Matrix: SOLID	Extracted: 06/04/97
	Analysis Method: EPA 8015 Mod	Analyzed: 06/06/97
Attention: Barbara Sieminski	Lab Number: 9705F98-11	Reported: 06/09/97

QC Batch Number: GC0604970HBPEXA
Instrument ID: GCHP19B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	**1.0**	**1.1**
Chromatogram Pattern:	**C9-C24**	**Unid.-HC**

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	99

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

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Gettler Ryan/Geostrategies	Client Proj. ID: Chevron 9-4800, Oakland	Sampled: 05/29/97
6747 Sierra Court Suite G	Sample Descript: MW3-21	Received: 05/30/97
Dublin, CA 94568	Matrix: SOLID	Extracted: 06/03/97
	Analysis Method: 8015Mod/8020	Analyzed: 06/04/97
Attention: Barbara Sieminski	Lab Number: 9705F98-12	Reported: 06/09/97

QC Batch Number: GC060397BTEXEXA
Instrument ID: GCHP22

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Methyl t-Butyl Ether	**0.025**	**0.041**
Benzene	**0.0050**	**0.0069**
Toluene	**0.0050**	**0.012**
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	**0.0050**	**0.011**
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	87
4-Bromofluorobenzene	60	140	90

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Gettler Ryan/Geostrategies	Client Proj. ID: Chevron 9-4800, Oakland	Sampled: 05/29/97
6747 Sierra Court Suite G	Sample Descript: MW3-21	Received: 05/30/97
Dublin, CA 94568	Matrix: SOLID	Extracted: 06/04/97
	Analysis Method: EPA 8015 Mod	Analyzed: 06/05/97
Attention: Barbara Sieminski	Lab Number: 9705F98-12	Reported: 06/09/97

QC Batch Number: GC0604970HBPEXA
Instrument ID: GCHP19B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	1.0	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	91

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Gettler Ryan/Geostrategies
6747 Sierra Court Suite G
Dublin, CA 94568
Attention: Barbara Sieminski

Client Proj. ID: Chevron 9-4800, Oakland

Lab Proj. ID: 9705F98

Received: 05/30/97

Reported: 06/09/97

LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 4 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

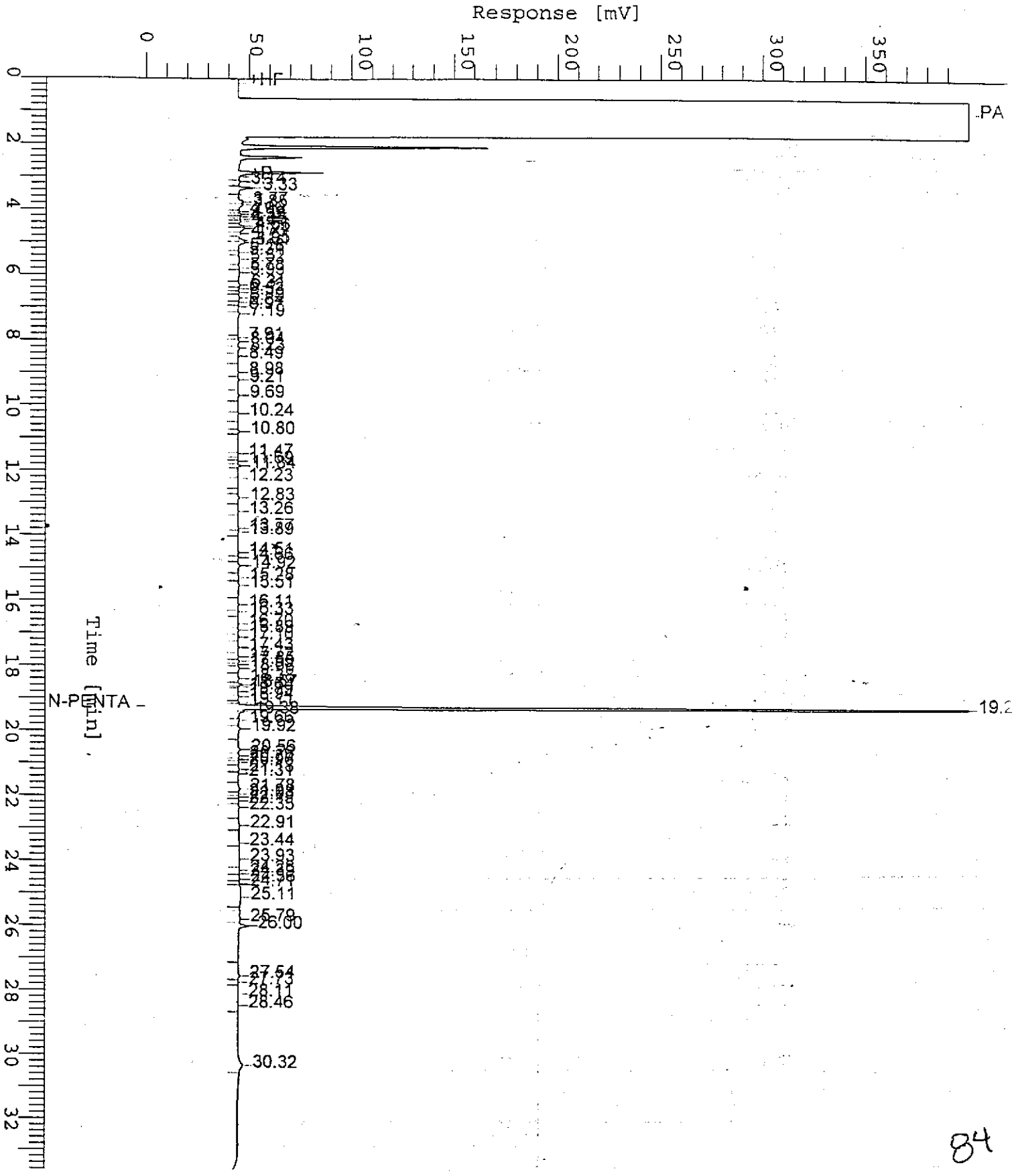
SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

Chromatogram

Sample Name : DS9705F98-1 (20:1)
FileName : S:\GHP_04\0608\604B026.raw
Method : TPH04A
Start Time : 0.00 min
End Time : 33.65 min
Scale Factor: 0.0
Plot Offset: 0 mV

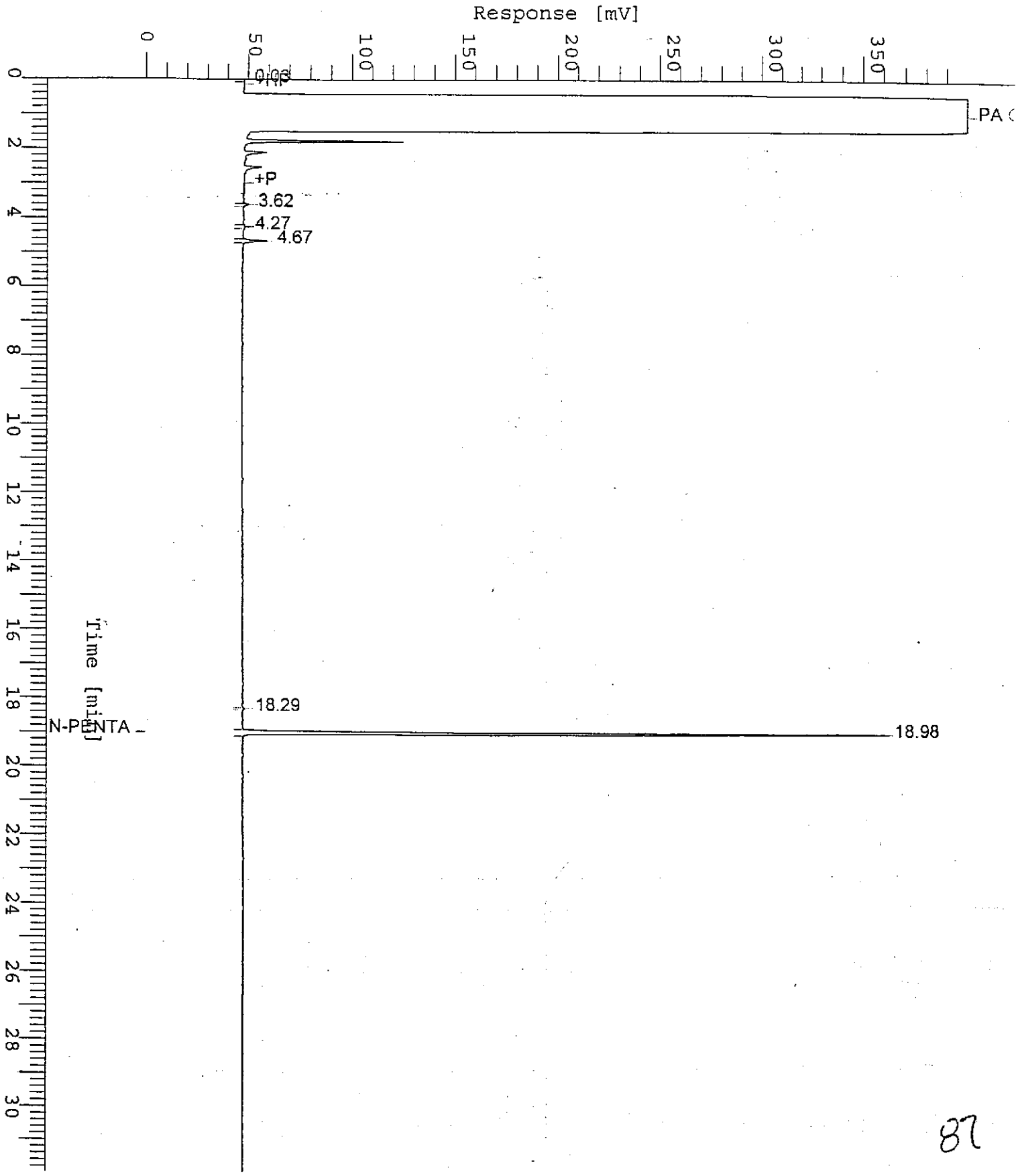
Sample #: MW1-6
Date : 6/5/97 06:24
Time of Injection: 6/5/97 05:50
Low Point : 0.00 mV
High Point : 400.00 mV
Plot Scale: 400.0 mV



Chromatogram

Sample Name : DS9705F98-2 (20:1)
FileName : S:\GHP_19\0608\605A022.raw
Method : TPH19A
Start Time : 0.00 min End Time : 31.99 min
Scale Factor: 0.0 Plot Offset: 0 mV

Sample #: MW1-11 Page 1 of 1
Date : 6/6/97 07:13
Time of Injection: 6/6/97 02:38
Low Point : 0.00 mV High Point : 400.00 mV
Plot Scale: 400.0 mV



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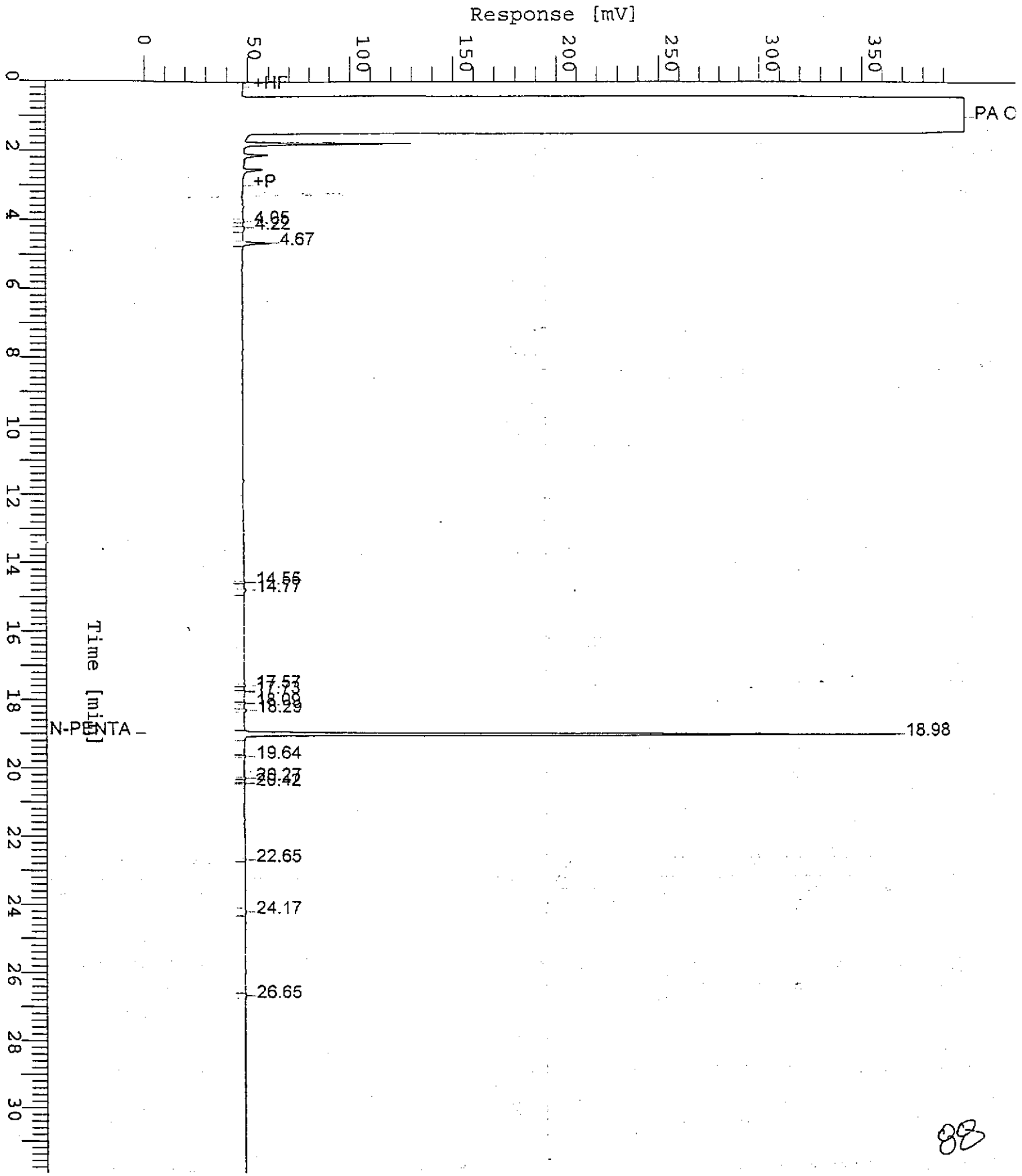
Chromatogram

Sample Name : DS9705F98-3 (20:1)
FileName : S:\GHP_19\0608\605A023.raw
Method : TPH19A
Start Time : 0.00 min
Scale Factor: 0.0

End Time : 31.99 min
Plot Offset: 0 mV

Sample #: MW1-16
Date : 6/6/97 07:13
Time of Injection: 6/6/97 03:19
Low Point : 0.00 mV
Plot Scale: 400.0 mV

High Point : 400.00 mV

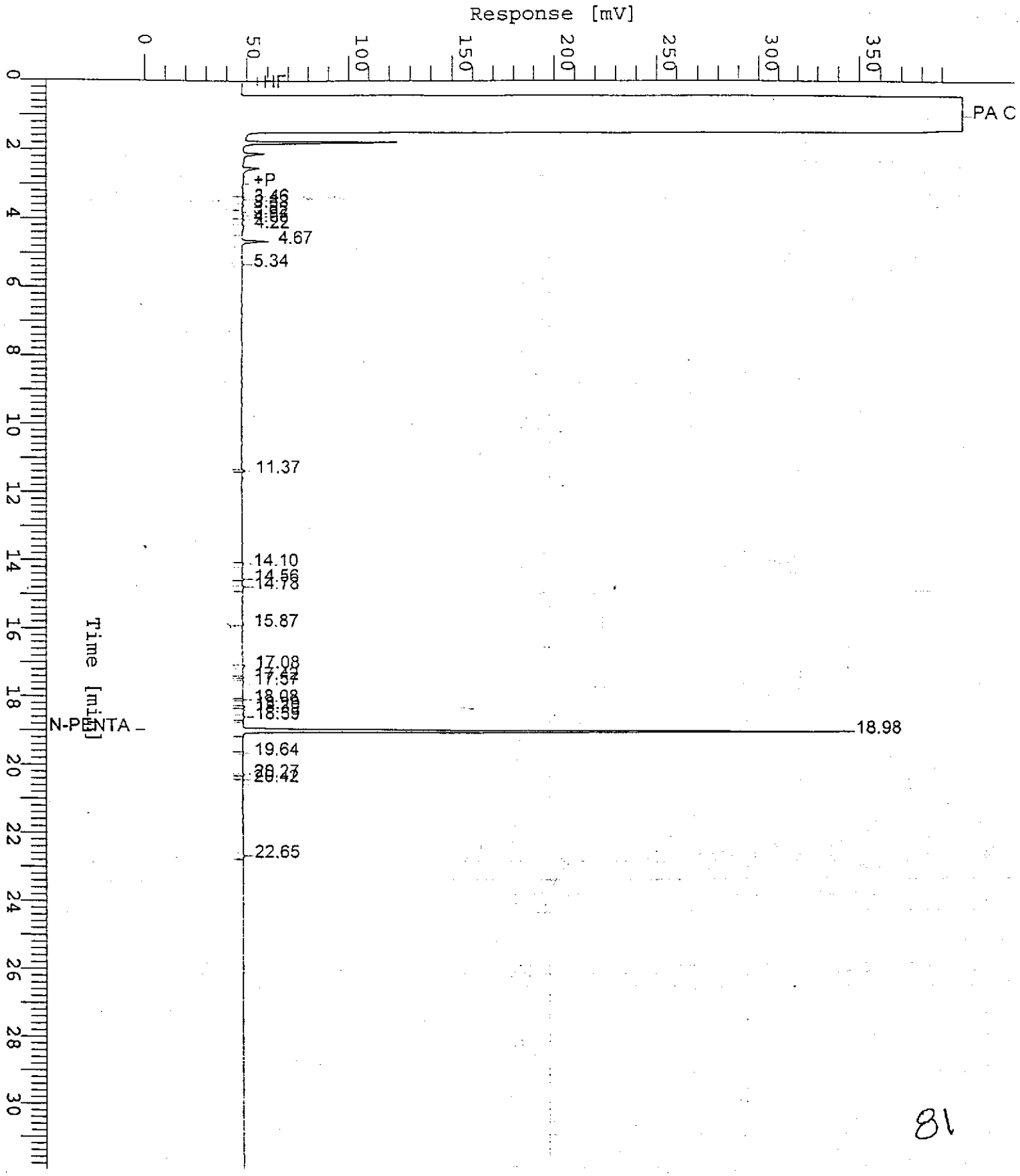


88

Chromatogram

Sample Name : DS9705F98-4 (20:1)
FileName : S:\GHP_19\0608\605A024.raw
Method : TPH19A
Start Time : 0.00 min
End Time : 31.99 min
Scale Factor: 0.0
Plot Offset: 0 mV

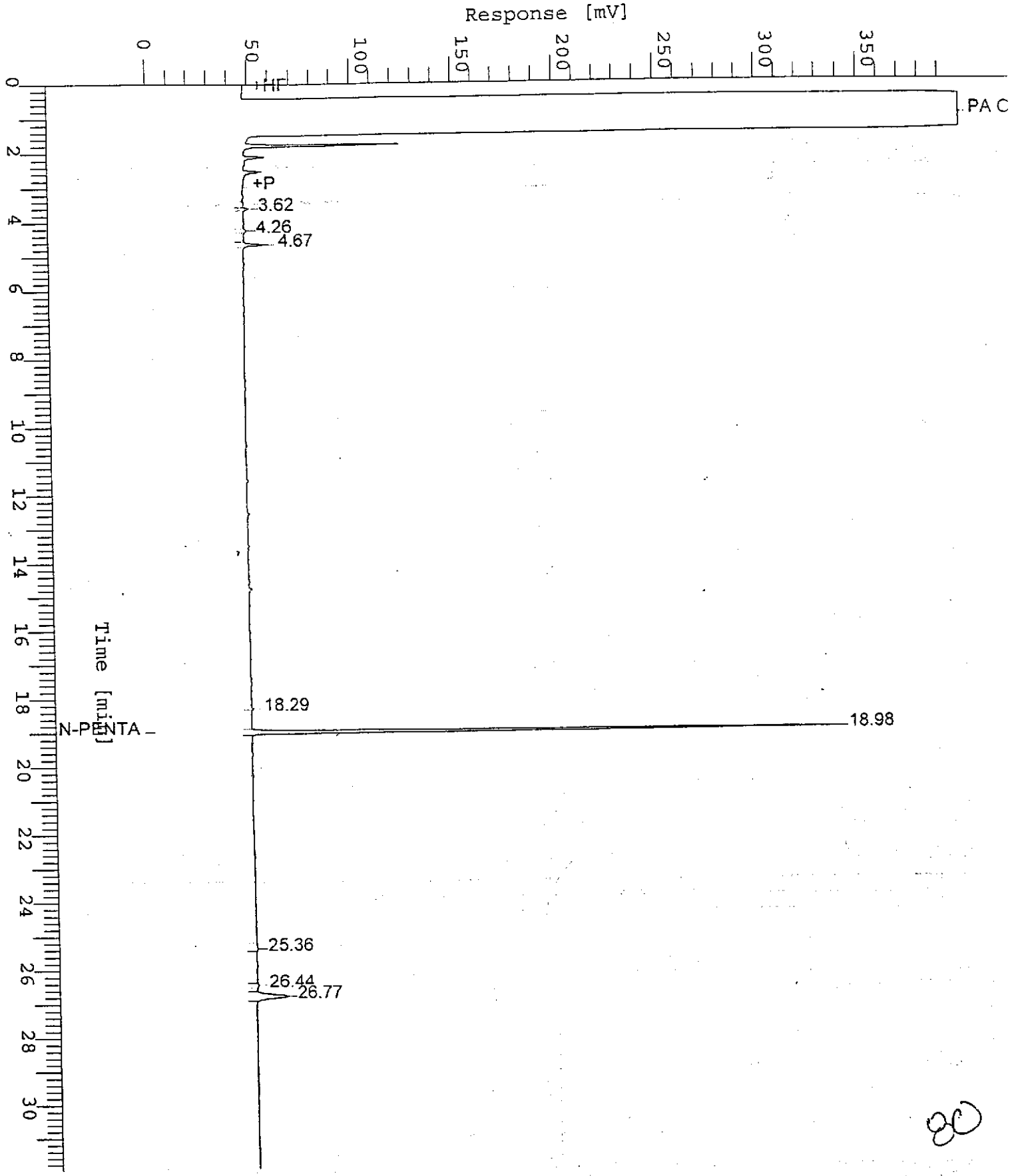
Sample #: MW1-21
Date : 6/6/97 07:13
Time of Injection: 6/6/97 03:58
Low Point : 0.00 mV
High Point : 400.00 mV
Plot Scale: 400.0 mV



Chromatogram

Sample Name : DS9705F98-5 (20:1)
FileName : S:\GHP_19\0608\605A025.raw
Method : TPH19A
Start Time : 0.00 min End Time : 31.99 min
Scale Factor: 0.0 Plot Offset: 0 mV

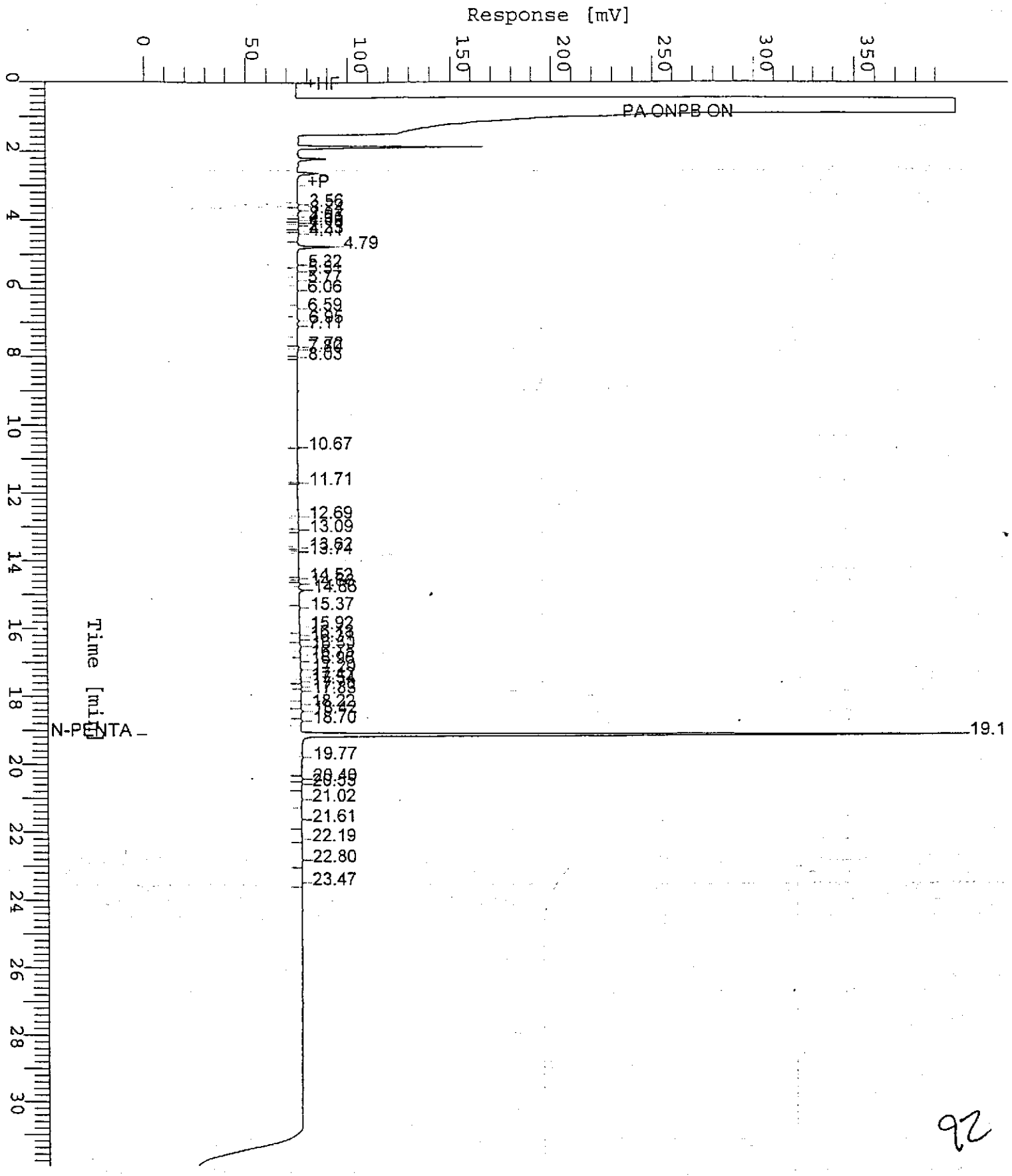
Sample #: MW2-6
Date : 6/6/97 07:13
Time of Injection: 6/6/97 04:39
Low Point : 0.00 mV High Point : 400.00 mV
Plot Scale: 400.0 mV



Chromatogram

Sample Name : DS9705F98-6 (20:1)
FileName : S:\GHP_19\0608\605B019.raw
Method : TPH19A
Start Time : 0.00 min End Time : 31.99 min
Scale Factor: 0.0 Plot Offset: 0 mV

Sample #: MW2-11 Page 1 of 1
Date : 6/6/97 07:13
Time of Injection: 6/6/97 00:38
Low Point : 0.00 mV High Point : 400.00 mV
Plot Scale: 400.0 mV



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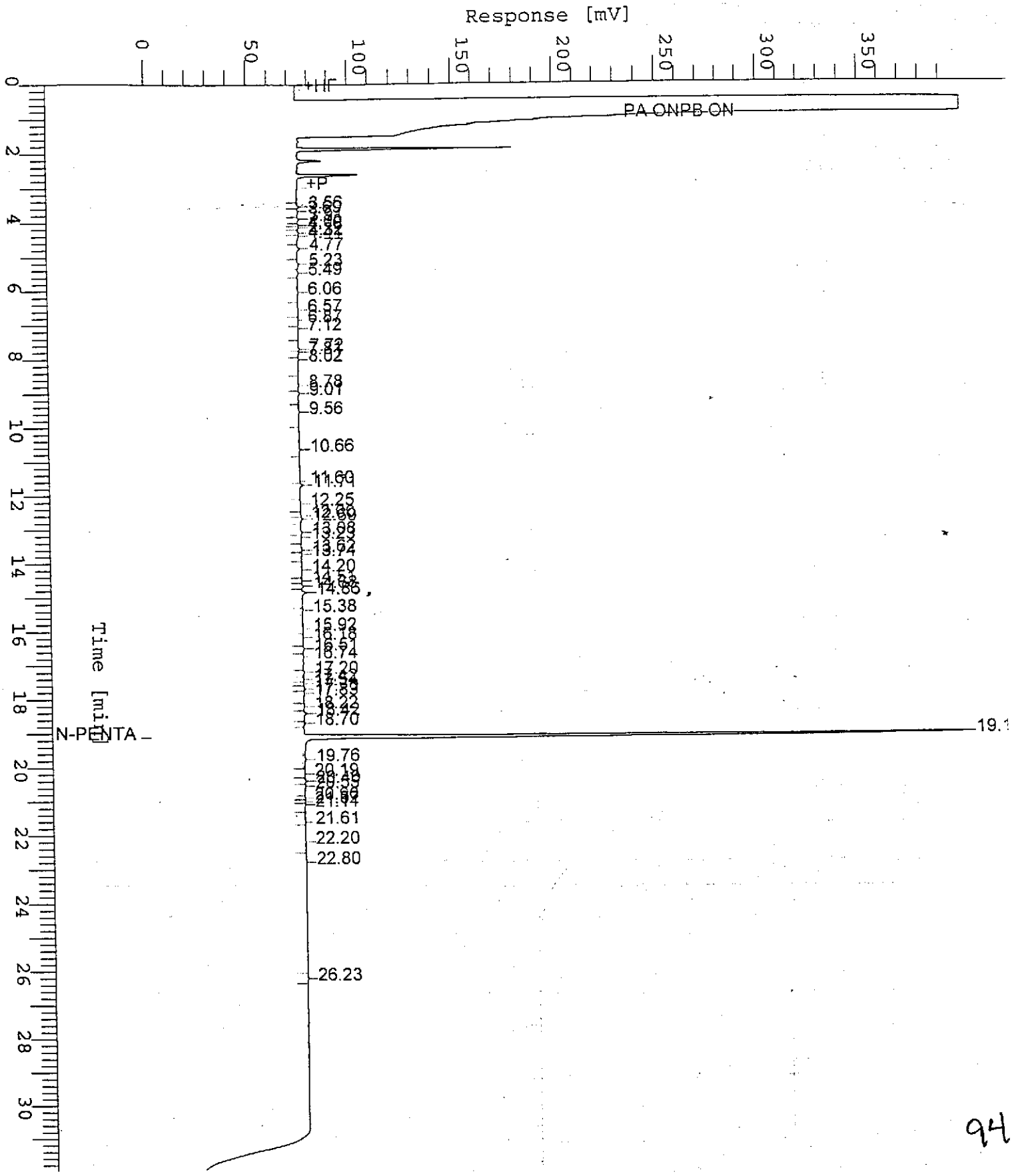
Chromatogram

Sample Name : DS9705F98-7 (20:1)
FileName : S:\GHP_19\0608\605B020.raw
Method : TPH19A
Start Time : 0.00 min
End Time : 31.99 min
Scale Factor: 0.0
Plot Offset: 0 mV

Sample #: MW2-16
Date : 6/6/97 07:13
Time of Injection: 6/6/97 01:18
Low Point : 0.00 mV
High Point : 400.00 mV
Plot Scale: 400.0 mV



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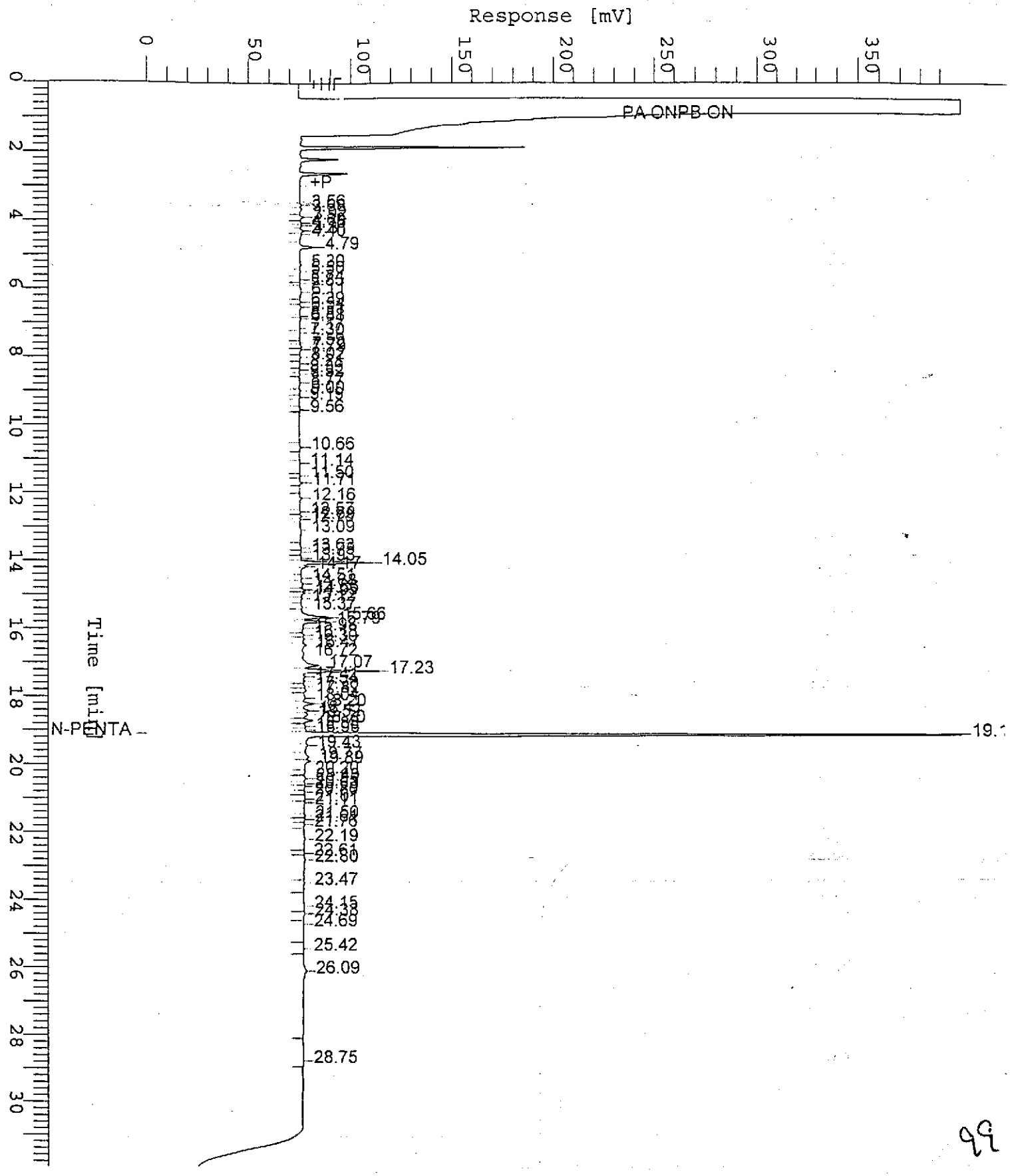
Chromatogram

Sample Name : DS9705F98-8 (20:1)
FileName : S:\GHP_19\0608\605B021.raw
Method : TPH19A
Start Time : 0.00 min
Scale Factor: 0.0

End Time : 31.99 min
Plot Offset: 0 mV

Sample #: MW2-21
Date : 6/6/97 07:13
Time of Injection: 6/6/97 01:58
Low Point : 0.00 mV
Plot Scale: 400.0 mV

High Point : 400.00 mV

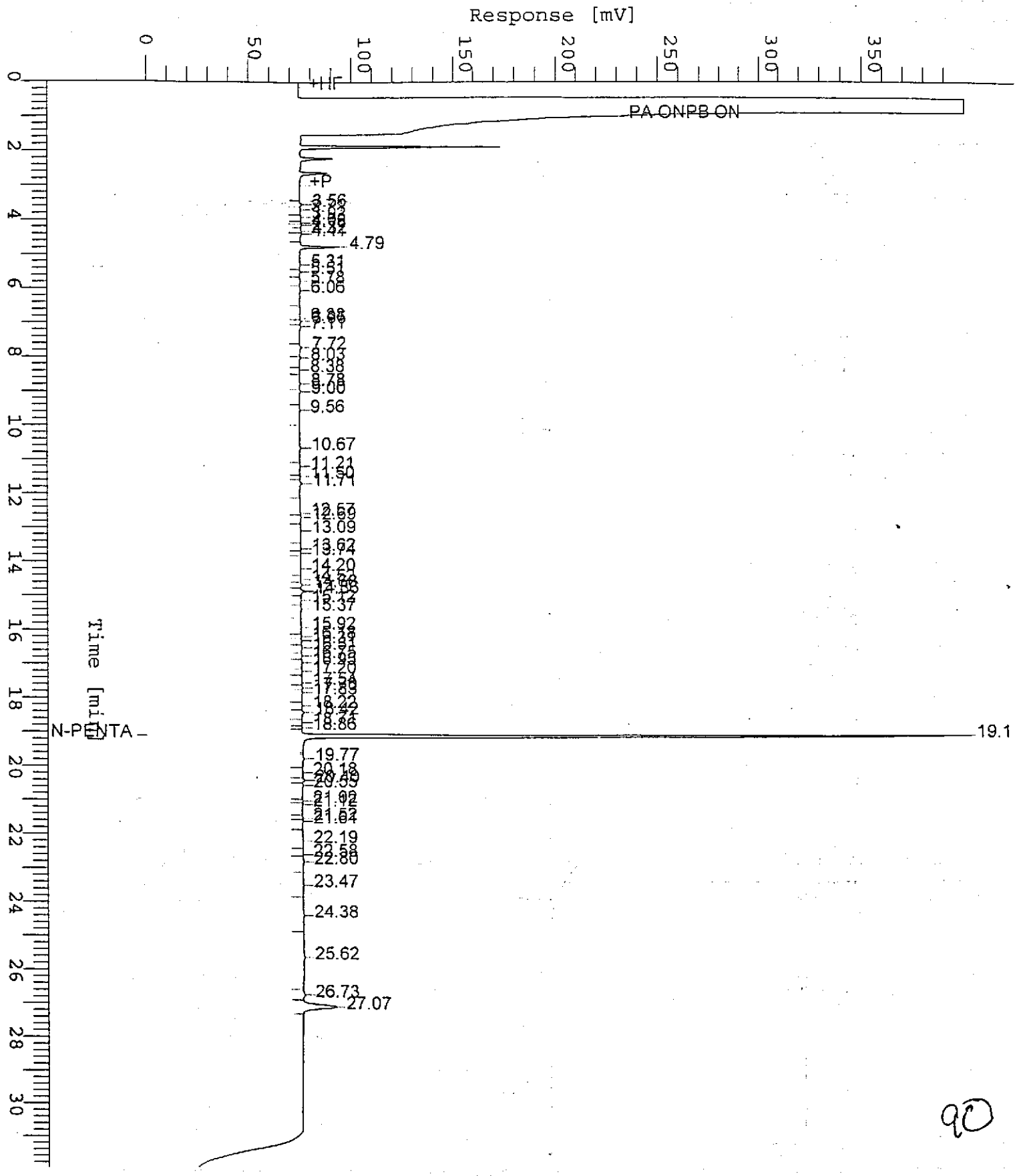


99

Chromatogram

Sample Name : DS9705F98-9 (20:1)
FileName : S:\GHP_19\0608\605B022.raw
Method : TPH19A
Start Time : 0.00 min
End Time : 31.99 min
Scale Factor: 0.0
Plot Offset: 0 mV

Sample #: MW3-6
Date : 6/6/97 07:13
Time of Injection: 6/6/97 02:38
Low Point : 0.00 mV
High Point : 400.00 mV
Plot Scale: 400.0 mV



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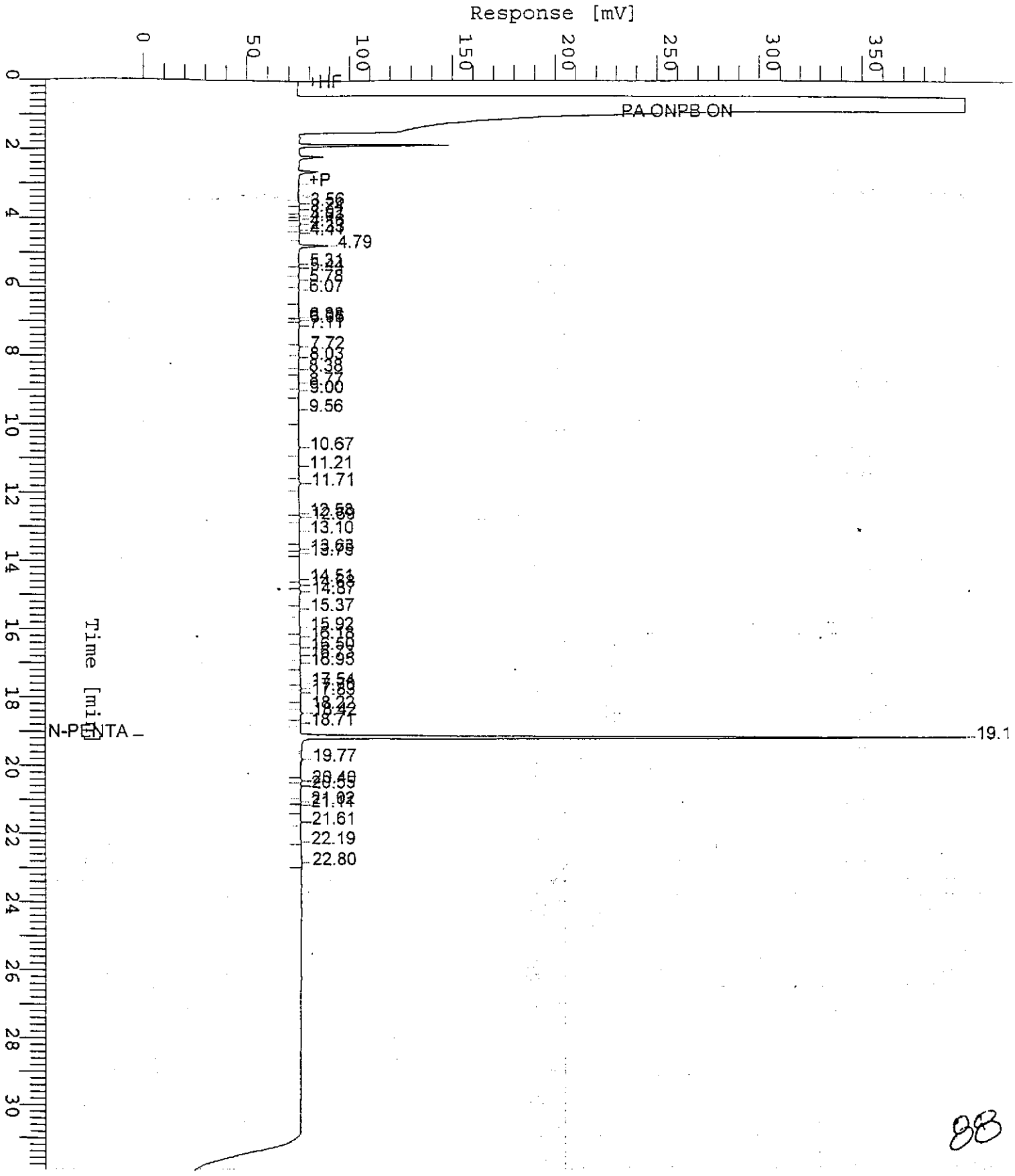
Chromatogram

Sample Name : DS9705F98-10 (20:1)
FileName : S:\GHP_19\0608\605B023.raw
Method : TPH19A
Start Time : 0.00 min End Time : 31.99 min
Scale Factor: 0.0 Plot Offset: 0 mV

Sample #: MW3-11 Page 1 of 1
Date : 6/6/97 07:13
Time of Injection: 6/6/97 03:19
Low Point : 0.00 mV High Point : 400.00 mV
Plot Scale: 400.0 mV



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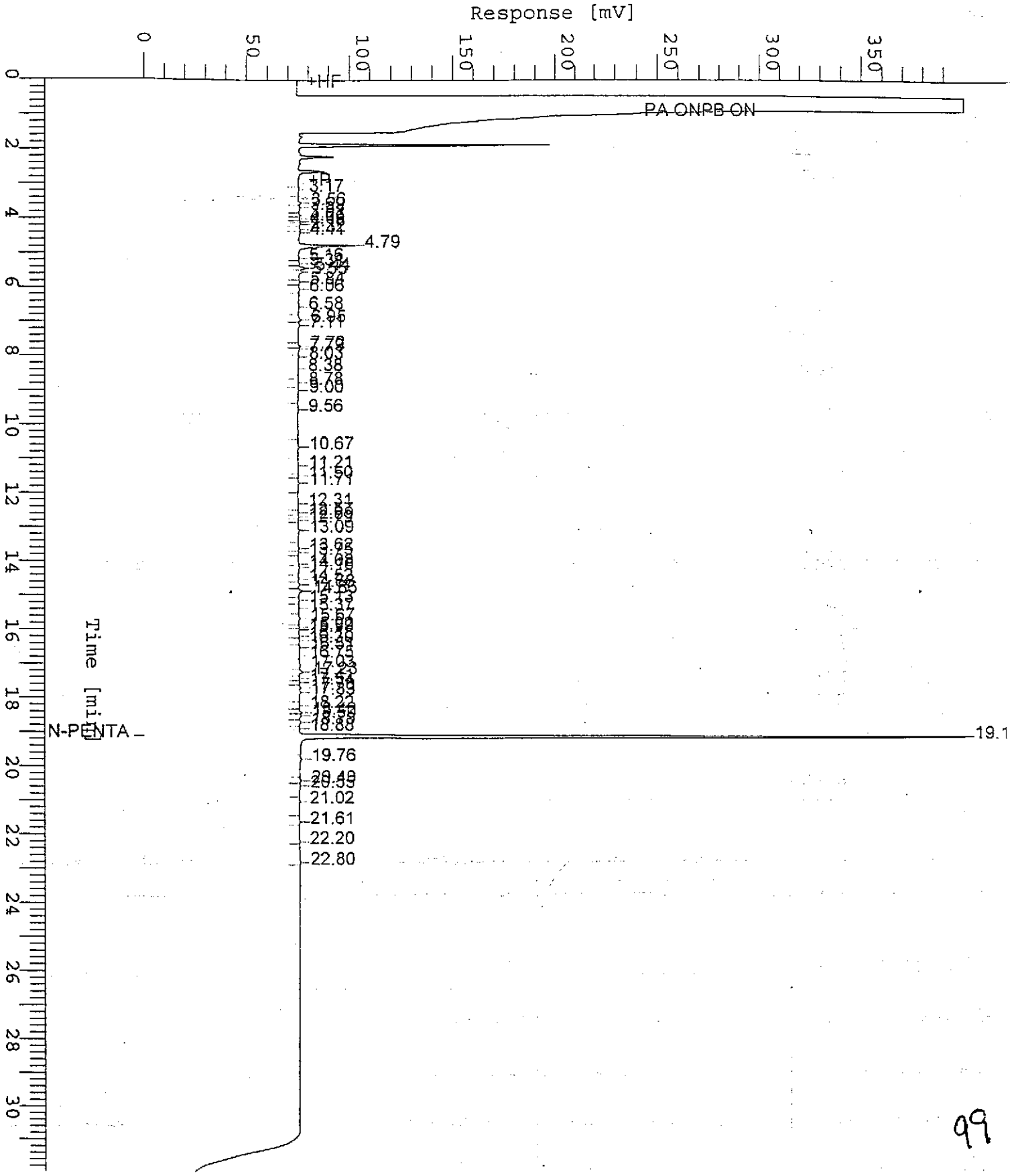
Chromatogram

Sample Name : DS9705F98-11 (20:1)
FileName : S:\GHP_19\0608\605B024.raw
Method : TPH19A
Start Time : 0.00 min
End Time : 31.99 min
Scale Factor: 0.0
Plot Offset: 0 mV

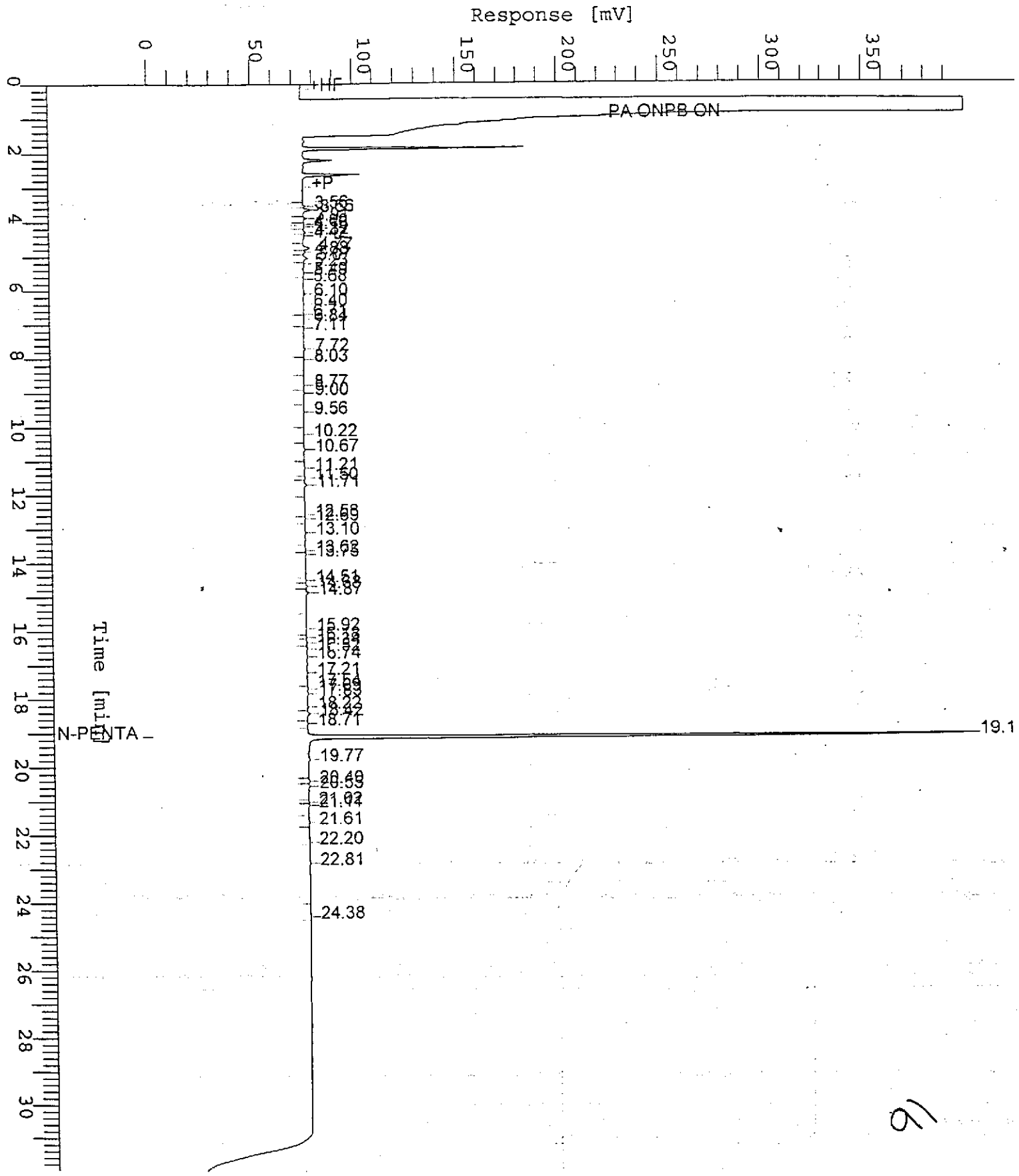
Sample #: MW3-16
Date : 6/6/97 07:13
Time of Injection: 6/6/97 03:58
Low Point : 0.00 mV
High Point : 400.00 mV
Plot Scale: 400.0 mV



Chromatogram

Sample Name : DS9705F98-12 (20:1)
FileName : S:\GHP_19\0608\605B008.raw
Method : TPH19A
Start Time : 0.00 min End Time : 31.99 min
Scale Factor: 0.0 Plot Offset: 0 mV

Sample #: MW-3-21 Page 1 of 1
Date : 6/5/97 17:49
Time of Injection: 6/5/97 17:17
Low Point : 0.00 mV High Point : 400.00 mV
Plot Scale: 400.0 mV



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Sequoia Analytical

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Gettler Ryan/Geostrategies	Client Project ID:	Chevron 9-4800, Oakland	
6747 Sierra Court, Ste J	Matrix:	Solid	
Dublin, CA 94568			
Attention: Barbara Sieminski	Work Order #:	9705F98 01-12	Reported: Jun 9, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Diesel
QC Batch#:	GC0604970HBPEXA
Analy. Method:	EPA 8015M
Prep. Method:	EPA 3550/DHS
Analyst:	B. Sullivan
MS/MSD #:	970605101
Sample Conc.:	1.0
Prepared Date:	6/4/97
Analyzed Date:	6/5/97
Instrument I.D.#:	GCHP4A
Conc. Spiked:	25 mg/Kg
Result:	19
MS % Recovery:	72
Dup. Result:	21
MSD % Recov.:	80
RPD:	10
RPD Limit:	0-50

LCS #:	BLK060497S
Prepared Date:	6/4/97
Analyzed Date:	6/5/97
Instrument I.D.#:	GCHP4A
Conc. Spiked:	25 mg/Kg
LCS Result:	22
LCS % Recov.:	88

MS/MSD	50-150
LCS	60-140
Control Limits	

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

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Gettler Ryan/Geostrategies
6747 Sierra Court, Ste J
Dublin, CA 94568
Attention: Barbara Sieminski

Client Project ID: Chevron 9-4800, Oakland
Matrix: Solid
Work Order #: 9705F98 01-12
Reported: Jun 9, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC060397BTEXEXA	GC060397BTEXEXA	GC060397BTEXEXA	GC060397BTEXEXA	GC060397BTEXEXA
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	A. Porter	A. Porter	A. Porter	A. Porter	A. Porter
MS/MSD #:	9705F9809	9705F9809	9705F9809	9705F9809	9705F9809
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	6/3/97	6/3/97	6/3/97	6/3/97	6/3/97
Analyzed Date:	6/3/97	6/3/97	6/3/97	6/3/97	6/3/97
Instrument I.D.#:	GCHP7	GCHP7	GCHP7	GCHP7	GCHP7
Conc. Spiked:	0.20 mg/Kg	0.20 mg/Kg	0.20 mg/Kg	0.60 mg/Kg	1.2 mg/Kg
Result:	0.19	0.19	0.19	0.56	1.2
MS % Recovery:	95	95	95	93	100
Dup. Result:	0.19	0.19	0.19	0.58	1.2
MSD % Recov.:	95	95	95	97	100
RPD:	0.0	0.0	0.0	3.5	0.0
RPD Limit:	0-25	0-25	0-25	0-25	0-25

LCS #:	BLK060397BSA	BLK060397BSA	BLK060397BSA	BLK060397BSA	BLK060397BSA
Prepared Date:	6/3/97	6/3/97	6/3/97	6/3/97	6/3/97
Analyzed Date:	6/3/97	6/3/97	6/3/97	6/3/97	6/3/97
Instrument I.D.#:	GCHP7	GCHP7	GCHP7	GCHP7	GCHP7
Conc. Spiked:	0.20 mg/Kg	0.20 mg/Kg	0.20 mg/Kg	0.60 mg/Kg	1.2 mg/Kg
LCS Result:	0.20	0.20	0.20	0.59	1.3
LCS % Recov.:	100	100	100	98	108
MS/MSD Control Limits	60-140	60-140	60-140	60-140	60-140
LCS Control Limits	70-130	70-130	70-130	70-130	70-130

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

Chevron U.S.A. Inc. P.O. BOX 5004 San Ramon, CA 94583 FAX (415)842-9591	Chevron Facility Number 9-4800 Facility Address 1700 Castro Street, Oakland Consultant Project Number 6383.01 Consultant Name Gettler-Ryan Address 6747 Sierra Ct, Ste J, Dublin 94568 Project Contact (Name) Barbara Sieminski (Phone) 510 551-7555 (Fax Number) 510 551-7888	Chevron Contact (Name) Phil Briggs (Phone) (510) 842-9136 Laboratory Name Sequoia Laboratory Release Number 9051783 ; ZZ02760 Samples Collected by (Name) Barbara Sieminski Collection Date 05/29/97 Signature

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil A = Air W = Water C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (Yes or No)	TPH Gas + BTEX w/MTBE (8015) (8020)	TPH Diesel (8015)	Oil and Grease (5520)	Purgeable Halocarbons (8010)	Purgeable Aromatics (8020)	Purgeable Organics (8240)	Extractable Organics (8270)	Metals Cd,Cr,Pb,Zn,Ni (ICAP or AA)					Remarks
MW1-6	–	1	S	D	16:10		Yes	X	X											
MW1-11	–	1			16:15			X	X											
MW1-16	–	1			16:25			X	X											
MW1-21	–	1			16:35			X	X											
MW1-26	–	1			16:45															hold
MW1-31	–	1	↓	↓	16:55		↓													hold

Analyses To Be Performed

DO NOT BILL TB-LB ANALY

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
Barbara Sieminski	G-R	05/30/97		SEQ	5/30/97
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
	SEQ.	5/30/97			
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature) Mara Gusli		Date/Time 5/30/97 1808

Turn Around Time (Circle Choice)
24 Hrs.
48 Hrs.
5 Days
10 Days (circled)
As Contracted

00 0 68

COC-3.DWG/03 91/HCH

Chevron U.S.A. Inc.
P.O. BOX 5004
San Ramon, CA 94583
FAX (415)842-9591

Chevron Facility Number: 9-4800
Facility Address: 1700 Castro Street, Oakland
Consultant Project Number: 6383.01
Consultant Name: Gettler-Ryan
Address: 6747 Sierra Ct, Ste J, Dublin 94568
Project Contact (Name): Barbara Sieminski
(Phone): 551-7555 (Fax Number): 510 551-7888

Chevron Contact (Name): Phil Briggs
(Phone): (510) 842-9136
Laboratory Name: Sequoia
Laboratory Release Number: 9051783; ZZ02760
Samples Collected by (Name): Barbara Sieminski
Collection Date: 05/29/97
Signature: Sieminski

9705F98

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil A = Air W = Water C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (Yes or No)	TPH Gas + BTEX w/MTBE (8015)	TPH Diesel (8015)	Oil and Grease (5520)	Purgeable Halocarbons (8010)	Purgeable Aromatics (8020)	Purgeable Organics (8240)	Extractable Organics (8270)	Metals Cd,Cr,Pb,Zn,Ni (ICAP or AA)					Remarks
								Analyses To Be Performed												DO NOT BILL TB-LB ANALYS
MW2-6		1	S	D	10:40		Yes	X	X											
MW2-11		1			10:50			X	X											
MW2-16		1			11:00			X	X											
MW2-21		1			11:10			X	X											
MW2-25.5		1			11:20															hold
MW2-31		1			11:30															hold
MW3-6		1			13:25			X	X											
MW3-11		1			13:30			X	X											
MW3-16		1			13:35			X	X											
MW3-21		1			13:45			X	X											
MW3-26		1			14:00															hold
MW3-31		1	↓	↓	14:10		↓													hold

COC-3.DWG/03 91/HCH

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
D. Harding	G-R	5/30/97 3:05	D. Harding	G-R	5/30/97 2:30
D. Harding	G-R	5/30/97 2:30			
Steve Tr	SEQ	5/30/97	Received For Laboratory By (Signature): Mara Gusis		5/30/97 1508

Turn Around Time (Circle Choice)
24 Hrs.
48 Hrs.
5 Days
10 Days
As Contracted

Sequoia Analytical

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Gettler Ryan/Geostrategies	Client Proj. ID: Chevron 9-4800, Oakland	Sampled: 05/29/97
6747 Sierra Court Suite G	Sample Descript: SP-(A-D)	Received: 05/30/97
Dublin, CA 94568	Matrix: SOLID	Extracted: 06/03/97
	Analysis Method: 8015Mod/8020	Analyzed: 06/03/97
Attention: Barbara Sieminski	Lab Number: 9705F91-01	Reported: 06/04/97

QC Batch Number: GC060397BTEXEXA
Instrument ID: GCHP22

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	**0.0050**	**0.0070**
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	77
4-Bromofluorobenzene	60	140	83

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Gettler Ryan/Geostrategies	Client Proj. ID: Chevron 9-4800, Oakland	Sampled: 05/29/97
6747 Sierra Court Suite G	Sample Descript: SP-(A-D)	Received: 05/30/97
Dublin, CA 94568	Matrix: SOLID	Extracted: 06/02/97
	Analysis Method: EPA 8015 Mod	Analyzed: 06/03/97
Attention: Barbara Sieminski	Lab Number: 9705F91-01	Reported: 06/04/97

QC Batch Number: GC0602970HBPEXA
Instrument ID: GCHP4B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	1.0	8.3
Chromatogram Pattern:	C9-C24	Unid.-HC

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	119

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

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Gettler Ryan/Geostrategies
6747 Sierra Court Suite G
Dublin, CA 94568
Attention: Barbara Sieminski

Client Proj. ID: Chevron 9-4800, Oakland
Lab Proj. ID: 9705F91

Received: 05/30/97
Reported: 06/04/97

LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 6 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
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Gettler Ryan/Geostrategies
6747 Sierra Court, Ste J
Dublin, CA 94568
Attention: Barbara Sieminski

Client Project ID: Chevron 9-4800, Oakland
Matrix: Solid
Work Order #: 9705F91 -01

Reported: Jun 4, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC060397BTEXEXA	GC060397BTEXEXA	GC060397BTEXEXA	GC060397BTEXEXA	GC060397BTEXEXA
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	A. Porter	A. Porter	A. Porter	A. Porter	A. Porter
MS/MSD #:	9705F98-09	9705F98-09	9705F98-09	9705F98-09	9705F98-09
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	6/3/97	6/3/97	6/3/97	6/3/97	6/3/97
Analyzed Date:	6/3/97	6/3/97	6/3/97	6/3/97	6/3/97
Instrument I.D.#:	GCHP-07	GCHP-07	GCHP-07	GCHP-07	GCHP-07
Conc. Spiked:	0.20 mg/Kg	0.20 mg/Kg	0.20 mg/Kg	0.60 mg/Kg	1.2 mg/Kg
Result:	0.19	0.19	0.19	0.56	1.2
MS % Recovery:	95	95	95	93	100
Dup. Result:	0.19	0.19	0.19	0.58	1.2
MSD % Recov.:	95	95	95	97	100
RPD:	0.0	0.0	0.0	3.5	0.0
RPD Limit:	0-25	0-25	0-25	0-25	0-25
LCS #:	BLK060397	BLK060397	BLK060397	BLK060397	BLK060397
Prepared Date:	6/3/97	6/3/97	6/3/97	6/3/97	6/3/97
Analyzed Date:	6/3/97	6/3/97	6/3/97	6/3/97	6/3/97
Instrument I.D.#:	GCHP-07	GCHP-07	GCHP-07	GCHP-07	GCHP-07
Conc. Spiked:	0.20 mg/Kg	0.20 mg/Kg	0.20 mg/Kg	0.60 mg/Kg	1.2 mg/Kg
LCS Result:	0.20	0.20	0.20	0.59	1.3
LCS % Recov.:	100	100	100	98	108
MS/MSD Control Limits	60-140	60-140	60-140	60-140	60-140
LCS Control Limits	70-130	70-130	70-130	70-130	70-130

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

Sequoia Analytical

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Gettler Ryan/Geostrategies	Client Project ID:	Chevron 9-4800, Oakland	
6747 Sierra Court, Ste J	Matrix:	Solid	
Dublin, CA 94568			
Attention: Barbara Sieminski	Work Order #:	9705F91-01	Reported: Jun 4, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Diesel
QC Batch#:	GC060297OHBPEXA
Analy. Method:	EPA 8015M
Prep. Method:	EPA 3550/DHS

Analyst:	B. Sullivan
MS/MSD #:	9705E07-01
Sample Conc.:	2.3 mg/Kg
Prepared Date:	6/2/97
Analyzed Date:	6/3/97
Instrument I.D.#:	GCHP4A
Conc. Spiked:	25 mg/Kg
Result:	22
MS % Recovery:	79
Dup. Result:	23
MSD % Recov.:	83
RPD:	4.4
RPD Limit:	0-50

LCS #:	BLK060297s
Prepared Date:	6/2/97
Analyzed Date:	6/3/97
Instrument I.D.#:	GCHP4A
Conc. Spiked:	25 mg/Kg
LCS Result:	20
LCS % Recov.:	80

MS/MSD	50-150
LCS	60-140
Control Limits	

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

Please Note:
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** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

Chevron U.S.A. Inc.
P.O. BOX 5004
San Ramon, CA 94583
FAX (415)842-9591

Chevron Facility Number 9-4800
Facility Address 1700 Castro Street, Oakland
Consultant Project Number 6383.01
Consultant Name Gettler-Ryan
Address 6747 Sierra Ct, Ste J, Dublin 94568
Project Contact (Name) Barbara Sieminski
(Phone) 510 551-7555 (Fax Number) 510 551-7888

Chevron Contact (Name) Phil Briggs
(Phone) (510) 842-9136
Laboratory Name Sequoia
Laboratory Release Number 9051783 ; ZZ02760
Samples Collected by (Name) Barbara Sieminski
Collection Date 05/29/97
Signature

Analyses To Be Performed 9705F91

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil A = Air W = Water C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (Yes or No)	TPH Gas + BTEX (8015) (8020)	TPH Diesel (8015)	Oil and Grease (5520)	Purgeable Halocarbons (8010)	Purgeable Aromatics (8020)	Purgeable Organics (8240)	Extractable Organics (8270)	Metals Cd,Cr,Pb,Zn,Ni (ICAP or AA)					Remarks
SP-A	1	1	S	G	17:30		Yes	X	X											
SP-B	2	1			17:32			X	X											
SP-C	3	1			17:34			X	X											
SP-D	4	1			17:36			X	X											Fax results to IWM ('108) 942

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
Barbara Sieminski	G-R	05/30/97	Steve Te	SEQ.	5/30/97
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
Steve Te	SEQ	5/30/97			
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature)		Date/Time
					5/30/97 1808

Turn Around Time (Circle Choice)
24 Hrs.
48 Hrs.
5 Days
10 Days
As Contracted

COC-3.DWG/03 91/HCH

Sequoia Analytical

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Gettler Ryan/Geostrategies	Client Proj. ID: Chevron 9-4800, Oakland	Sampled: 06/04/97
6747 Sierra Court Suite G	Sample Descript: TB-LB	Received: 06/06/97
Dublin, CA 94568	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 06/11/97
Attention: Barbara Sieminski	Lab Number: 9706345-01	Reported: 06/16/97

QC Batch Number: GC061197BTEX17A
Instrument ID: GCHP17

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	89

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

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Gettler Ryan/Geostrategies	Client Proj. ID: Chevron 9-4800, Oakland	Sampled: 06/04/97
6747 Sierra Court Suite G	Sample Descript: MW-2	Received: 06/06/97
Dublin, CA 94568	Matrix: LIQUID	Extracted: 06/10/97
	Analysis Method: EPA 8015 Mod	Analyzed: 06/12/97
Attention: Barbara Sieminski	Lab Number: 9706345-02	Reported: 06/16/97

QC Batch Number: GC0610970HBPEXZ
Instrument ID: GCHP5B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	**100**	**4000**
Chromatogram Pattern:	**C9-C24**	**Unid.-HC**

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	98

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Gettler Ryan/Geostrategies	Client Proj. ID: Chevron 9-4800, Oakland	Sampled: 06/04/97
6747 Sierra Court Suite G	Sample Descript: MW-2	Received: 06/06/97
Dublin, CA 94568	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 06/11/97
Attention: Barbara Sieminski	Lab Number: 9706345-02	Reported: 06/16/97

QC Batch Number: GC061197BTEX17A
Instrument ID: GCHP17

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	2500	13000
Methyl t-Butyl Ether	120	4000
Benzene	25	790
Toluene	25	30
Ethyl Benzene	25	420
Xylenes (Total)	25	1700
Chromatogram Pattern:		GaS

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	77

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Grégory
Project Manager

Sequoia Analytical

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Gettler Ryan/Geostrategies	Client Proj. ID: Chevron 9-4800, Oakland	Sampled: 06/04/97
6747 Sierra Court Suite G	Sample Descript: MW-3	Received: 06/06/97
Dublin, CA 94568	Matrix: LIQUID	Extracted: 06/10/97
	Analysis Method: EPA 8015 Mod	Analyzed: 06/12/97
Attention: Barbara Sieminski	Lab Number: 9706345-03	Reported: 06/16/97

QC Batch Number: GC0610970HBPEXZ
Instrument ID: GCHP5B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	89

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

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Gettler Ryan/Geostrategies	Client Proj. ID: Chevron 9-4800, Oakland	Sampled: 06/04/97
6747 Sierra Court Suite G	Sample Descript: MW-3	Received: 06/06/97
Dublin, CA 94568	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 06/11/97
Attention: Barbara Sieminski	Lab Number: 9706345-03	Reported: 06/16/97

QC Batch Number: GC061197BTEX17A
Instrument ID: GCHP17

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	190
Methyl t-Butyl Ether	2.5	8.2
Benzene	0.50	26
Toluene	0.50	20
Ethyl Benzene	0.50	1.5
Xylenes (Total)	0.50	16
Chromatogram Pattern:		Gas

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	79

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

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Gettler Ryan/Geostrategies	Client Proj. ID: Chevron 9-4800, Oakland	Sampled: 06/04/97
6747 Sierra Court Suite G	Sample Descript: MW-1	Received: 06/06/97
Dublin, CA 94568	Matrix: LIQUID	Extracted: 06/10/97
	Analysis Method: EPA 8015 Mod	Analyzed: 06/12/97
Attention: Barbara Sieminski	Lab Number: 9706345-04	Reported: 06/16/97

QC Batch Number: GC0610970HBPEXZ
Instrument ID: GCHP5A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	**50**	**71**
Chromatogram Pattern:	**C9-C24**	**Unid.-HC**

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	90

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

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Gettler Ryan/Geostrategies	Client Proj. ID: Chevron 9-4800, Oakland	Sampled: 06/04/97
6747 Sierra Court Suite G	Sample Descript: MW-1	Received: 06/06/97
Dublin, CA 94568	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 06/12/97
Attention: Barbara Sieminski	Lab Number: 9706345-04	Reported: 06/16/97

QC Batch Number: GC061297BTEX02A
Instrument ID: GCHP02

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	**200**	**890**
Methyl t-Butyl Ether	10	N.D.
Benzene	**2.0**	**100**
Toluene	**2.0**	**110**
Ethyl Benzene	**2.0**	**29**
Xylenes (Total)	**2.0**	**150**
Chromatogram Pattern:		**Gas**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	104

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

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Gettler Ryan/Geostrategies
6747 Sierra Court Suite G
Dublin, CA 94568
Attention: Barbara Sieminski

Client Proj. ID: Chevron 9-4800, Oakland
Lab Proj. ID: 9706345

Received: 06/06/97
Reported: 06/16/97

LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 15 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

TPGBMW: Sample 9706345-02 was diluted 50-fold.
Sample 9706345-04 was diluted 4-fold.

TPHD: Sample 9706345-02 was diluted 2-fold.

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

Sequoia Analytical

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Gettler Ryan/Geostrategies
6747 Sierra Court, Ste J
Dublin, CA 94568
Attention: Barbara Sieminski

Client Project ID: Chevron 9-4800, Oakland
Matrix: Liquid
Work Order #: 9706345 -01-03

Reported: Jun 23, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC061197BTEX17A	GC061197BTEX17A	GC061197BTEX17A	GC061197BTEX17A	GC061197BTEX17A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	A. Miraftab	A. Miraftab	A. Miraftab	A. Miraftab	A. Miraftab
MS/MSD #:	970613909	970613909	970613909	970613909	970613909
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	6/11/97	6/11/97	6/11/97	6/11/97	6/11/97
Analyzed Date:	6/11/97	6/11/97	6/11/97	6/11/97	6/11/97
Instrument I.D.#:	GCHP17	GCHP17	GCHP17	GCHP17	GCHP17
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
Result:	10	10	9.9	30	64
MS % Recovery:	100	100	99	100	107
Dup. Result:	9.9	10	9.8	29	63
MSD % Recov.:	99	100	98	97	105
RPD:	1.0	0.0	1.0	3.4	1.6
RPD Limit:	0-25	0-25	0-25	0-25	0-25
LCS #:	BLK061197	BLK061197	BLK061197	BLK061197	BLK061197
Prepared Date:	6/11/97	6/11/97	6/11/97	6/11/97	6/11/97
Analyzed Date:	6/11/97	6/11/97	6/11/97	6/11/97	6/11/97
Instrument I.D.#:	GCHP17	GCHP17	GCHP17	GCHP17	GCHP17
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
LCS Result:	9.7	9.8	9.6	29	61
LCS % Recov.:	97	98	96	97	102
MS/MSD Control Limits	60-140	60-140	60-140	60-140	60-140
LCS Control Limits	70-130	70-130	70-130	70-130	70-130

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

Sequoia Analytical

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Gettler Ryan/Geostrategies	Client Project ID:	Chevron 9-4800, Oakland	
6747 Sierra Court, Ste J	Matrix:	Liquid	
Dublin, CA 94568			
Attention: Barbara Sieminski	Work Order #:	9706345-04	Reported: Jun 23, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC061297BTEX02A	GC061297BTEX02A	GC061297BTEX02A	GC061297BTEX02A	GC061297BTEX02A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	A. Miraftab	A. Miraftab	A. Miraftab	A. Miraftab	A. Miraftab
MS/MSD #:	970613910	970613910	970613910	970613910	970613910
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	6/12/97	6/12/97	6/12/97	6/12/97	6/12/97
Analyzed Date:	6/12/97	6/12/97	6/12/97	6/12/97	6/12/97
Instrument I.D.#:	GCHP2	GCHP2	GCHP2	GCHP2	GCHP2
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
Result:	9.2	9.2	9.6	27	62
MS % Recovery:	92	92	96	90	103
Dup. Result:	11	11	11	32	71
MSD % Recov.:	110	110	110	107	118
RPD:	18	18	14	17	14
RPD Limit:	0-25	0-25	0-25	0-25	0-25
LCS #:	BLK061297	BLK061297	BLK061297	BLK061297	BLK061297
Prepared Date:	6/12/97	6/12/97	6/12/97	6/12/97	6/12/97
Analyzed Date:	6/12/97	6/12/97	6/12/97	6/12/97	6/12/97
Instrument I.D.#:	GCHP2	GCHP2	GCHP2	GCHP2	GCHP2
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
LCS Result:	11	11	11	33	73
LCS % Recov.:	110	110	110	110	122
MS/MSD Control Limits	60-140	60-140	60-140	60-140	60-140
LCS Control Limits	70-130	70-130	70-130	70-130	70-130

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Gettler Ryan/Geostrategies	Client Project ID:	Chevron 9-4800, Oakland	
6747 Sierra Court, Ste J	Matrix:	Liquid	
Dublin, CA 94568			
Attention: Barbara Sieminski	Work Order #:	9706345-02-04	Reported: Jun 23, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Diesel
QC Batch#:	GC0610970HBPEXZ
Analy. Method:	EPA 8015M
Prep. Method:	EPA 3520
Analyst:	G. Fish
MS/MSD #:	970637406
Sample Conc.:	74
Prepared Date:	6/10/97
Analyzed Date:	6/12/97
Instrument I.D.#:	GCHP4
Conc. Spiked:	1000 µg/L
Result:	850
MS % Recovery:	78
Dup. Result:	740
MSD % Recov.:	67
RPD:	14
RPD Limit:	0-50

LCS #:	BLK061097
Prepared Date:	6/10/97
Analyzed Date:	6/12/97
Instrument I.D.#:	GCHP4
Conc. Spiked:	1000 µg/L
LCS Result:	800
LCS % Recov.:	80

MS/MSD	50-150
LCS	60-140
Control Limits	

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

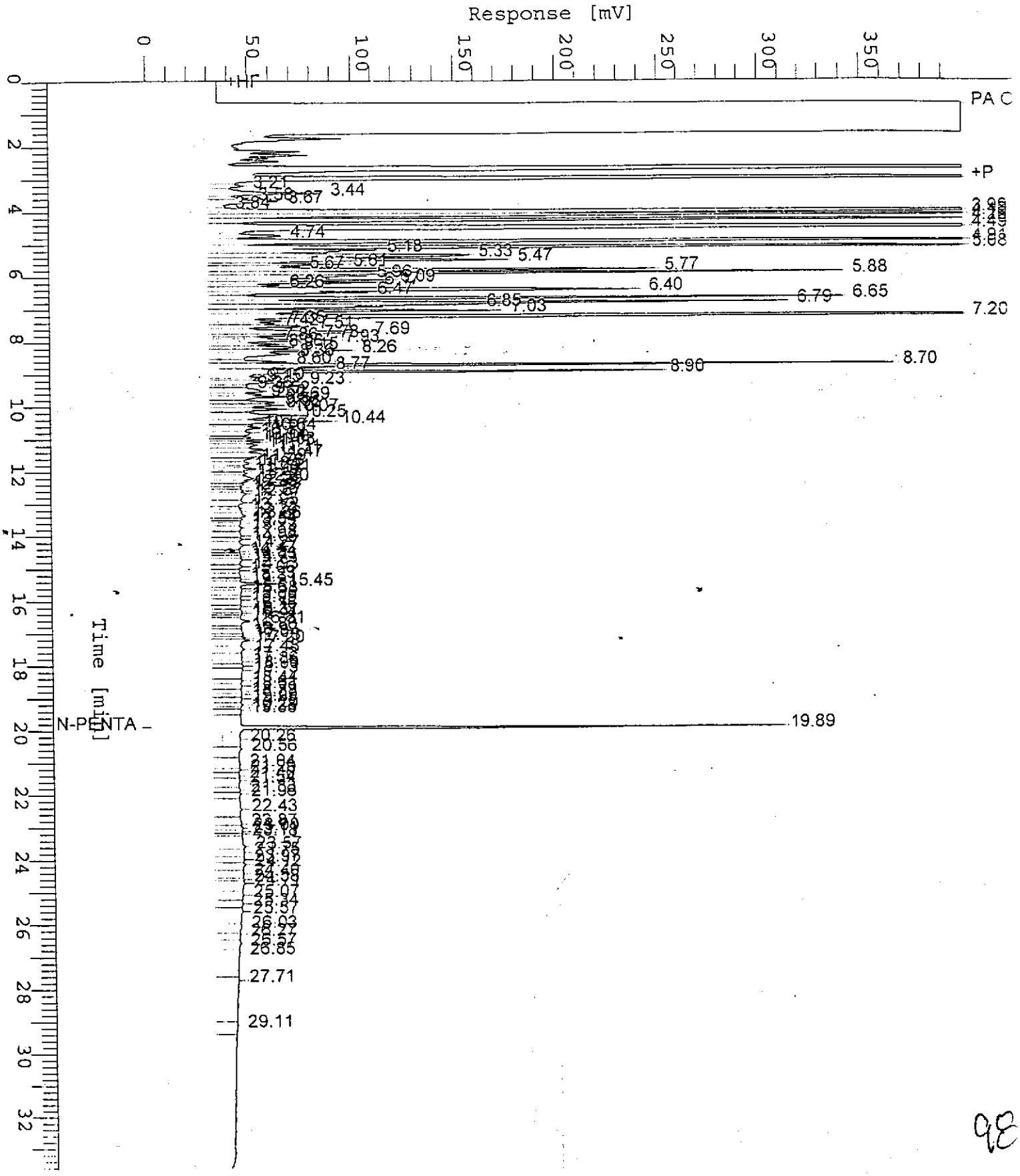
Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

Chromatogram

Sample Name : DW9706345-2 (500:1*2) RS1
FileName : S:\GHP_05\0615\611B045.raw
Method : TPH05A
Start Time : 0.00 min End Time : 33.65 min
Scale Factor: 0.0 Plot Offset: 0 mV

Sample #: MW-2
Date : 6/12/97 23:56
Time of Injection: 6/12/97 23:23
Low Point : 0.00 mV High Point : 400.00 mV
Plot Scale: 400.0 mV



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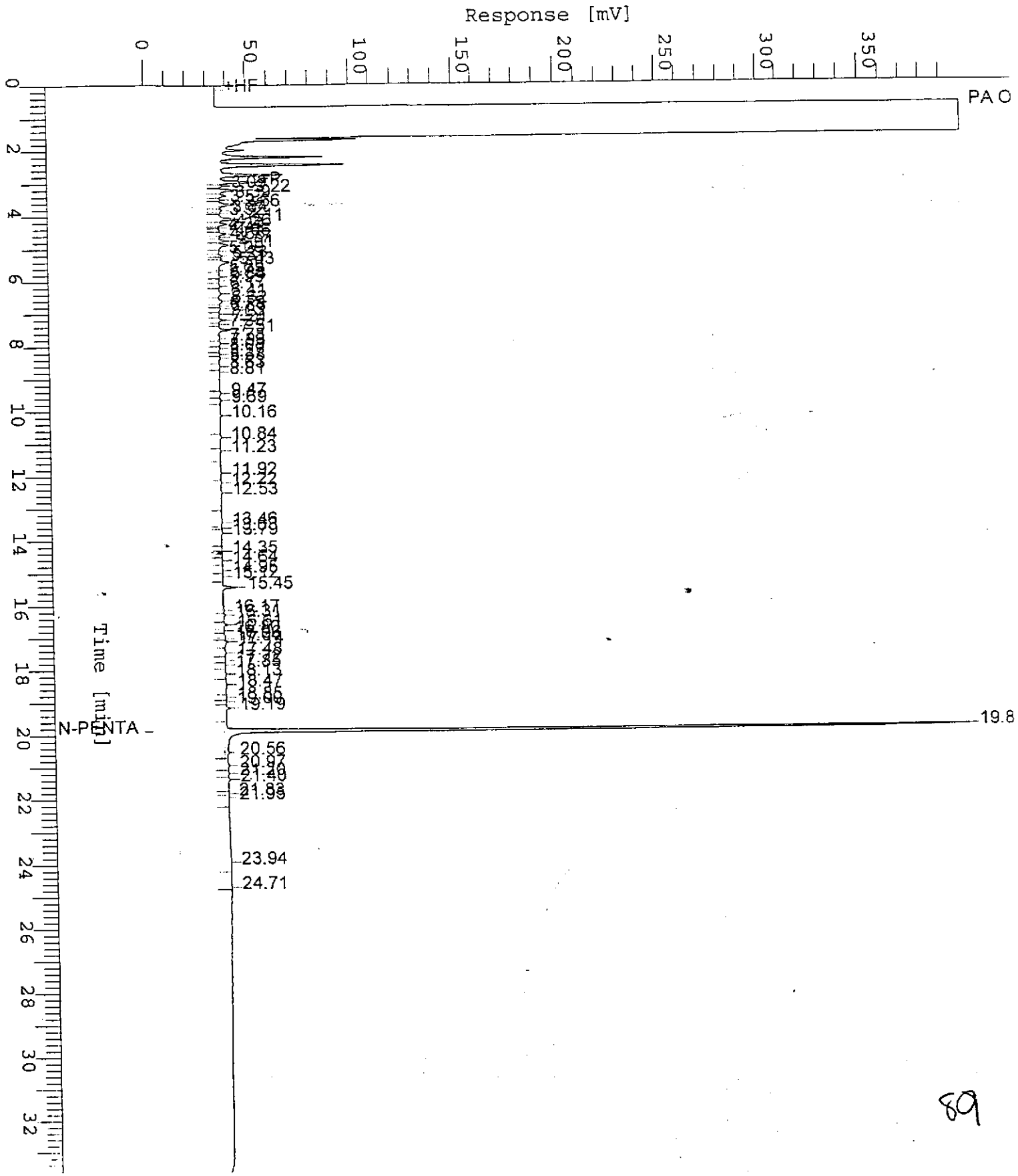
Chromatogram

Sample Name : DW9706345-3 (500:1)
FileName : S:\GHP_05\0615\611B039.raw
Method : TPH05A
Start Time : 0.00 min End Time : 33.65 min
Scale Factor: 0.0 Plot Offset: 0 mV

Sample #: MW-3
Date : 6/12/97 19:39
Time of Injection: 6/12/97 19:05
Low Point : 0.00 mV High Point : 400.00 mV
Plot Scale: 400.0 mV



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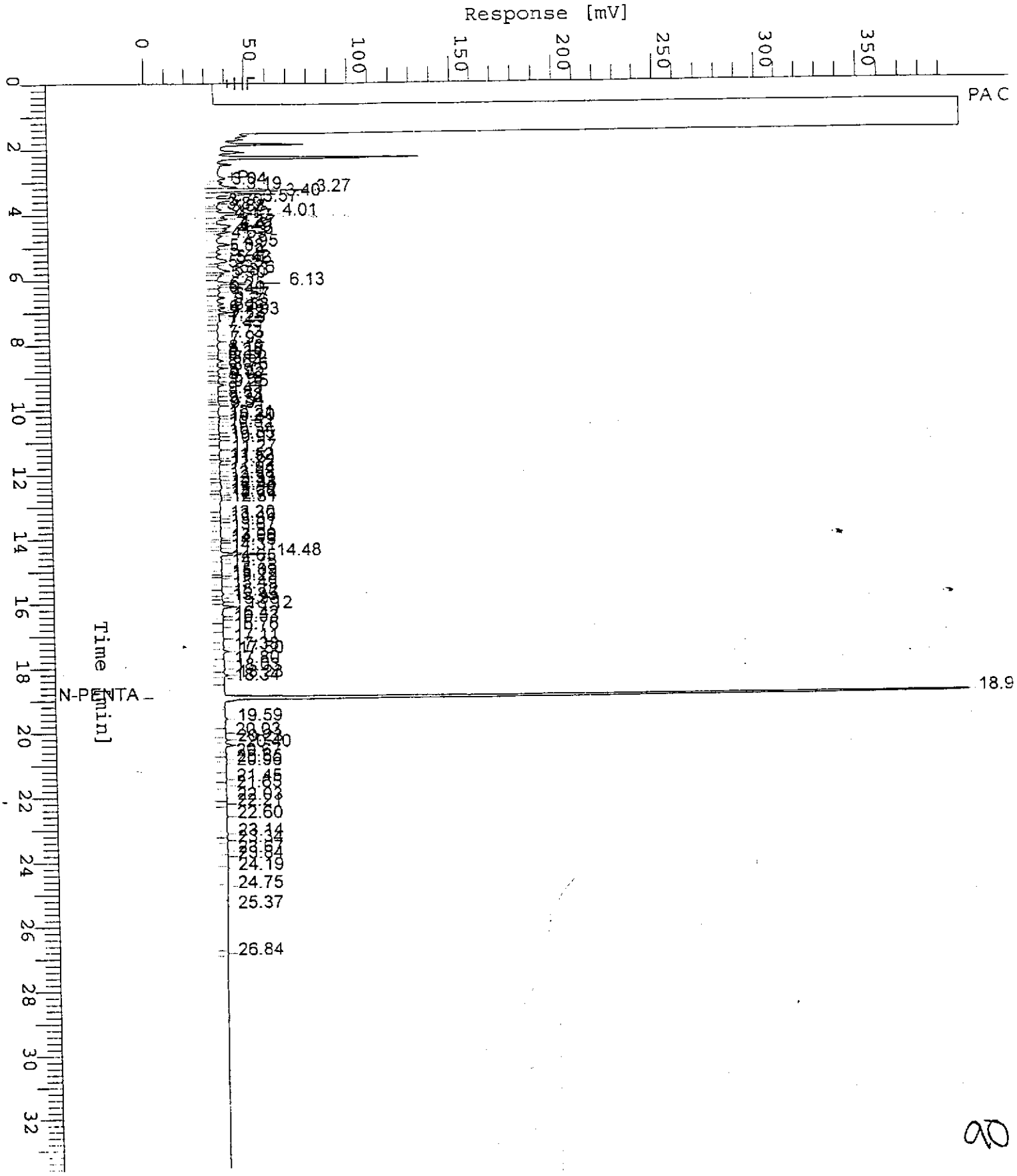
Sample Name : DW9706345-4 (500:1)
FileName : S:\GHP_05\0615\611A032.raw
Method : TPH05A
Start Time : 0.00 min End Time : 33.65 min
Scale Factor: 0.0 Plot Offset: 0 mV

Sample #: MW-1
Date : 6/12/97 14:42
Time of Injection: 6/12/97 14:08
Low Point : 0.00 mV High Point : 400.00 mV
Plot Scale: 400.0 mV



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Fax copy of Lab Report and COC to Chevron Contact: ☐ No

Chain-of-Custody-Record

Chevron U.S.A. Inc.
P.O. BOX 5004
San Ramon, CA 94583
FAX (415)842-9591

Chevron Facility Number: 9-4800
Facility Address: 1700 Castro Street Oakland CA
Consultant Project Number: 6383.01
Consultant Name: Gettler-Ryan
Address: 6747 Sierra Ct, Ste J, Dublin 94568
Project Contact (Name): ~~Deanna Harding~~ Barbara Sieminski
(Phone): 551-7555 (Fax Number): 551-7888

Chevron Contact (Name): Phil Briggs
(Phone): 510-842-9136
Laboratory Name: SEQ Service Code: ZZ02700
Laboratory Service Order #: 9051783
Samples Collected by (Name): F. Cline
Collection Date: 6-4-97
Signature:

Analyses To Be Performed 9706345

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil A = Air W = Water C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (Yes or No)	TPH Gas + BTEX w/MTBE (8020)	TPH Diesel (8015)	Oil and Grease (5520)	Purgeable Halocarbons (8010)	Purgeable Aromatics (8020)	Purgeable Organics (8240)	Extractable Organics (8270)	Metals Cd,Cr,Pb,Zn,Ni (ICAP or AA)						DO NOT BILL TB-LB ANALYSIS Remarks
TB-LB	1	2	W	TB	—	HCl	Y	X													
MW-2	2	5	"	G		HCl, None	"	X	X												
MW-3	3	5	"	"		"	"	X	X												
MW-1	4	5	"	"		"	"	X	X												

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
	G-R Inc.	6-5-97/08a	D. Harding	G-R Inc.	6/6/97 8:00
D. Harding	G-R	6/6/97 1136		SEQ	6/6/97 1136
	SEQ	6/6/97 1232	Received For Laboratory By (Signature) Mara Gusis		6/6/97 1232

Turn Around Time (Circle Choice)
24 Hrs.
48 Hrs.
5 Days
10 Days
As Contracted