Delta
Environmental
Consultants, Inc.

3164 Gold Camp Drive
Suite 200
Rancho Cordova, CA 95670
916/638-2085
FAX: 916/638-8385

September 30, 1996

Mr. Thomas Sanborn
Architect & Planning Consultant
2680 Bishop Drive Suite 129
San Ramon, California 94583

Subject: *Ground Water Sampling Results*
29945 Mission Boulevard
Hayward, California
Delta Project No. D096-088

Dear Mr. Sanborn:

Delta Environmental Consultants, Inc. (Delta), has been authorized by Varni, Fraser, Hartman, and Rodgers on behalf of Marion Fry Zimmerman (Zimmerman) to sample ground water on the property located at 29945 Mission Boulevard, Hayward, Alameda County, California (Figure 1). A copy of the approved drilling permit issued by Zone 7 Water Agency is included in Enclosure A.

**Scope of Work**

On September 24, 1996, a geologist from Delta collected eight ground water samples from the locations shown on Figure 2. The soil borings each were advanced to a total depth of 28 feet below surface grade (bsg) using Vironex Environmental Field Services of Hayward, California. Ground water was first encounter at a depth of approximately 26 feet bsg and static ground water level was approximately nine feet bsg, indicating confined ground water conditions. All work conducted at the site was in accordance to field methods and procedures outline in Enclosure B.

**Ground Water Sampling**

A ground water sample was collected from each soil boring using a dedicated disposable bailer. Ground water samples collected were submitted to a laboratory for analysis and a copy of the laboratory analytical report with chain of custody documentation is included in Enclosure C.

**Remarks/Signatures**

The interpretations contained in this document represent our professional opinions, and are based in part, on information supplied by the client. These opinions are based on currently available information and are arrived at in the accordance with currently accepted hydrogeological and engineering practices at this time and location. Other than this, no warranty is implied or intended.

If you have any questions regarding this document, please contact Owen Kittredge at (916) 638-2085.

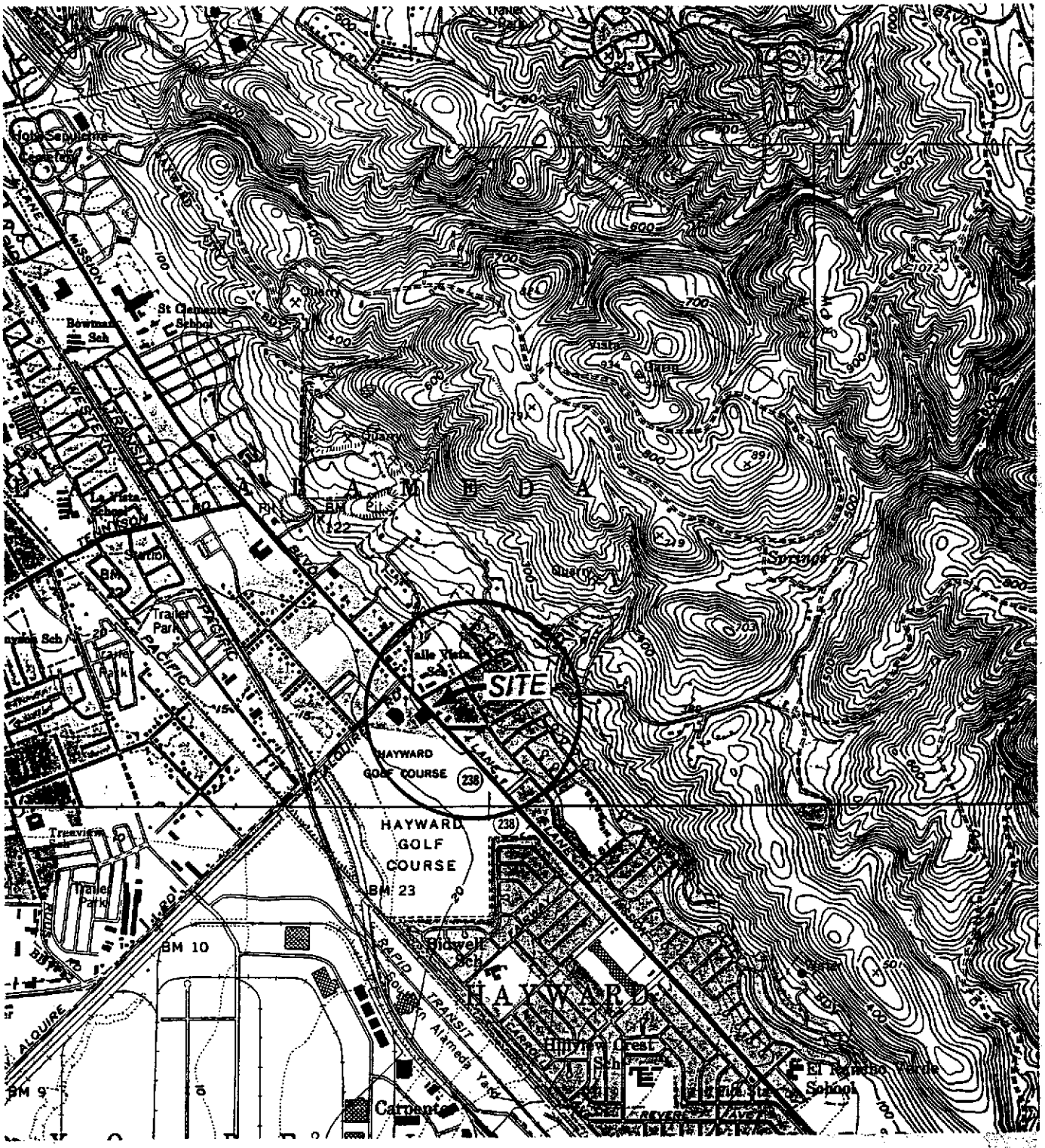
Sincerely,

**DELTA ENVIRONMENTAL CONSULTANTS, INC.**

J. William Speth
Staff Geologist

Owen M. Kittredge, R.G.
Project Manager
California Registered Geologist No. 5853

JWS (CL001.088)
Enclosures




GENERAL NOTES:
BASE MAP FROM U.S.G.S.
HAYWARD AND NEWARK, CA.
7.5 MINUTE TOPOGRAPHIC
PHOTOREVISED 1980

North

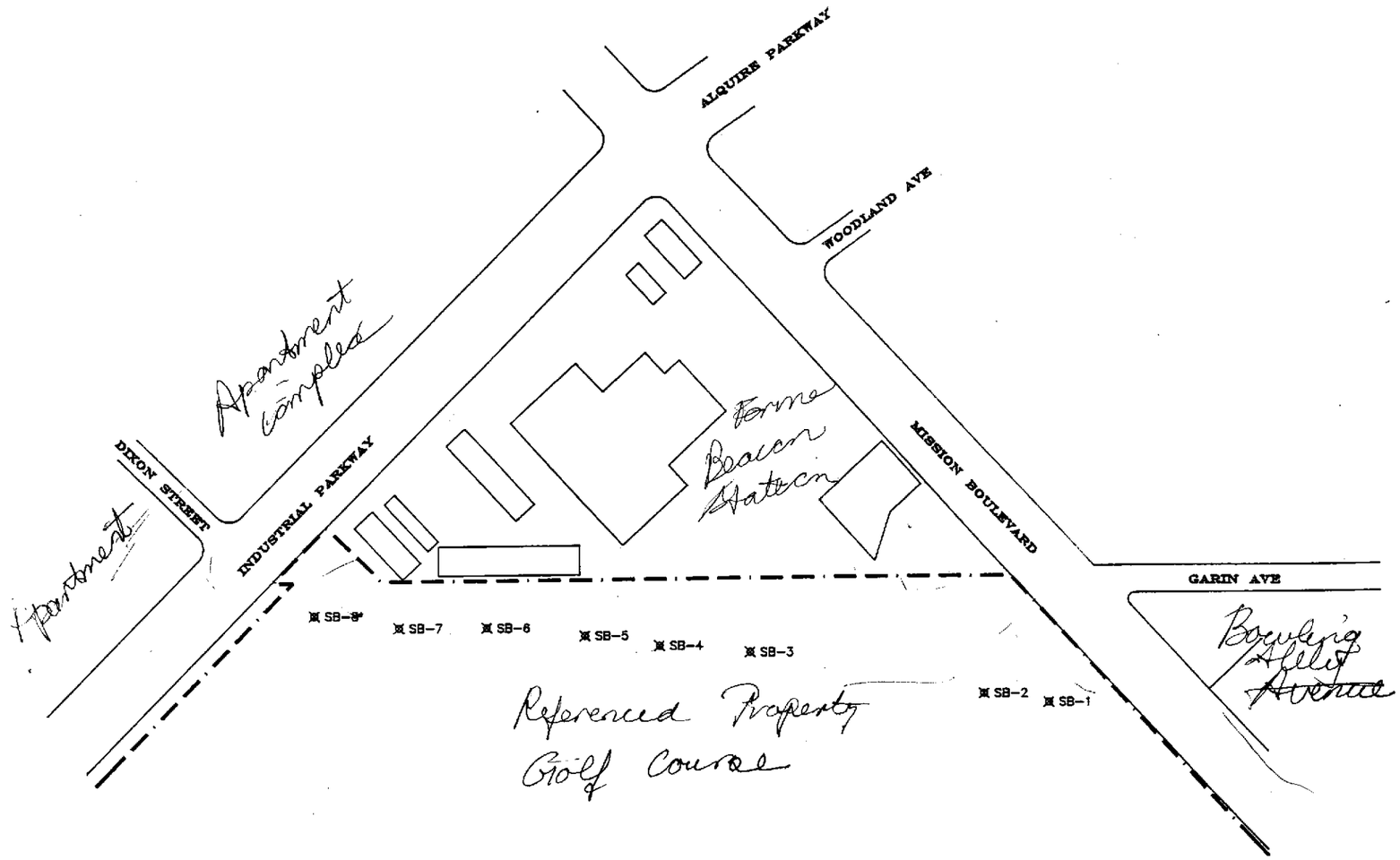
0 2000 FT

SCALE 1 : 24,000

FIGURE 1
SITE LOCATION MAP
STONEY BROOK PLACE
29945 MISSION BOULEVARD
HAYWARD, CA.

| | |
|---|---|
| PROJECT NO. 0096-088 | DRAWN BY M.L. 9/27/96 |
| FILE NO. 96-088-2 | PREPARED BY WJS |
| REVISION NO. 1 | REVIEWED BY |

Delta Environmental Consultants, Inc.




LEGEND:

SB-1 SOIL BORING LOCATION

PROPERTY LINE

FIGURE 2

SITE MAP

STONEY BROOK PLACE

29945 MISSION BOULEVARD

HAYWARD, CA

| | |
|---|---|
| PROJECT NO. D096-088 | DRAWN BY M.L. 9/27/96 |
| FILE NO. 96-088-1 | PREPARED BY WJS |
| REVISION NO. 1 | REVIEWED BY |

Delta Environmental Consultants, Inc.

ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
5997 PARKSIDE DRIVE ♦ PLEASANTON, CALIFORNIA 94588 ♦ (510) 484-2600

**TELEFAX TRANSMITTAL**

DATE: 23 Sep 96

DELIVER TO: Owen Kittredge

NAME OF FIRM: Delta

FAX PHONE #: (916) 638-8385

FROM: Wyman Hong

NUMBER OF PAGES: 2
(Including transmittal)

**FOR VOICE CONTACT CALL: (510) 484-2600**

**FOR RETURN FAX: (510) 462-3914**

REMARKS: Drilling permit 96676 for a contamination investigation at 29345 Mission Blvd in Hayward

# ENCLOSURE B

Field Methods and Procedures

## PRE-FIELD WORK ACTIVITIES

### Health and Safety Plan

Field work performed by Delta and subcontractors at the site is conducted according to guidelines established in a Site Health and Safety Plan (SHSP). The SHSP is a document which describes the hazards that may be encountered in the field and specifies protective equipment, work procedures, and emergency information. A copy of the SHSP is at the site and available for reference by appropriate parties during work at the site.

## FIELD METHODS AND PROCEDURES

### Direct Push Technology, Water Sampling

A well known example of direct push technology for water sampling is the Hydropunch®. For the purpose of this Field Method the term hydropunch will be used instead of direct push technology for water sampling.

The hydropunch is typically used with a drill rig. A boring is drilled with a hollow stem-augers to just above the sampling zone. In some soil conditions the drill rig can push directly from the surface to the sampling interval. The hydropunch is conveyed to the bottom of the boring using drill rods. Once on bottom the hydropunch is driven a maximum of five feet. The tool is then opened by lifting up the drill rod no more than four feet. Once the tool is opened, water enters and a sample can be collected with a bailer. Soil particles larger than silt are prevented from entering the tool by a screen within the tool. The water sample is collected, labeled, and handled according to the Quality Assurance Plan.

### Direct Push Technology, Soil Sampling

A well known example of direct push technology for soil sampling is the Geoprobe®. For the purpose of this field method the term geoprobe will be used instead of direct push technology for water sampling. The geoprobe is typically used without a drill rig. The geoprobe typically consists of a sample barrel and drive casing. The sample barrel and drive casing are simultaneously pushed, pounded or vibrated three to five feet into the soil. The sample barrel containing the soil is removed via wireline and the drive casing is left in the ground to prevent sloughing and cross-contamination of soil samples. A new or cleaned sample barrel is then lowered to the bottom of the boring via wireline. The process is repeated

until the desired depth is reached. The soil samples are labeled and handled according to the Quality Assurance Plan. If ground water is encountered, a water sample can be collected with a bailer or pump. The water sample is collected, labeled, and handled according to the Quality Assurance Plan. A portion of the sample may be screened in the field, when required according to the Soil Sample Screening method section.

**Soil Classification**

As the samples are obtained in the field, they are classified by the field geologist in accordance with the Unified Soil Classification System. Representative portions of the samples are then retained for further examination and for verification of the field classification. Logs of the borings indicating the depth and identification of the various strata, the N value, and pertinent information regarding the method of maintaining and advancing the borehole are prepared.

**Soil Sample Screening**

After the soil samples in Ziploc® type bags have been brought to ambient temperature, the headspace vapors in the bag are screened with a photoionization detector (PID) equipped with a 10.2 eV lamp. The corner of the bag is opened and the detector probe immediately placed within the headspace. The highest observed reading is recorded.

**Soil Cuttings From Drilling Operations**

Soil generated during drilling operations will be stockpiled on-site. The stockpile is typically set on asphalt and covered by plastic sheeting in a manner to prevent rain water from coming in contact with the soil. If no asphalt is available the soil is placed on plastic sheeting and covered in the above method. The soil will remain on-site until the proper method for disposal is assessed.

**Stockpile Soil Sampling**

Stockpile soil sampling is performed under the direction of a registered geologist or civil engineer. Prior to collecting soil samples Delta personnel will measure and calculate the volume of soil in the stockpile(s). The stockpile(s) is then divided into sections containing the predetermined volume sampling

interval (50, 100, 200, 500 $yd^3$, etc.). Soil samples are typically collected from 0.5 to 2 feet below the surface of the stockpile. In some instances two to four soil samples may be collected from each sampling interval and composited into one prior to laboratory analysis. The soil samples are collected in cleaned, brass or stainless tubes of varying diameter and lengths (typically 2 x 6 inches) or other appropriately cleaned sample containers. A hand-driven sampler holding the sample container may be used.

To reduce the potential for cross-contamination between samples, the sampler is cleaned between each sampling event. Upon recovery, the sample container is sealed to minimize the potential of volatilization and cross-contamination prior to chemical analysis. Soil sampling tubes are typically closed at each end a Teflon® sheet and with plastic caps. The sample is then placed in a Ziploc® type bag and sealed. The sample is labeled and refrigerated at approximately 4° Celsius for delivery, under strict chain-of-custody, to the analytical laboratory.

## QUALITY ASSURANCE PLAN

This section describes the field and analytical procedures to be followed throughout the investigation.

### General Sample Collection and Handling Procedures

Proper collection and handling are essential to ensure the quality of a sample. Each sample is collected in a suitable container, preserved correctly for the intended analysis, and stored prior to analysis for no longer than the maximum allowable holding time. Details on the procedures for collection and handling of samples used on this project can be found in this section.

### Water Sample Collection for Volatile Organic Analyses

For volatile organic analyses, the water sample is decanted into each VOA vial in such a manner that there is no meniscus at the top of the vial. A cap is quickly secured to the top of the vial. The vial is inverted and gently tapped to see if air bubbles are present. If none are present, the vial is labeled and refrigerated according to soil and water sample labeling and preservation.

**Soil and Water Sample Labeling and Preservation**

Label information includes a unique sample identification number, job identification number, date, and time. After labeling all soil and water samples are placed in a Ziploc® type bag and placed in a ice chest cooled to 4° Celsius. Upon arriving at Delta's office the samples are transferred to a locked refrigerator cooled to 4° Celsius. Chemical preservation is controlled by the required analysis and is noted on the chain of custody form.

**Sample Identification and Chain-of-Custody Procedures**

Sample identification and chain-of-custody procedures document sample possession from the time of collection to ultimate disposal. Each sample container submitted for analysis has a label affixed to identify the job number, sampler, date and time of sample collection, and a sample number unique to that sample. This information, in addition to a description of the sample, field measurements made, sampling methodology, names of on-site personnel, and any other pertinent field observations, is recorded on the borehole log or in the field records. Samples are analyzed by a California-certified laboratory.

A chain-of-custody form is used to record possession of the sample from time of collection to its arrival at the laboratory. When the samples are shipped, the person in custody of them relinquishes the samples by signing the chain-of-custody form and noting the time. The sample-control officer at the laboratory verifies sample integrity and confirms that the samples are collected in the proper containers, preserved correctly, and contain adequate volumes for analysis.

If these conditions are met, each sample is assigned a unique log number for identification throughout analysis and reporting. The log number is recorded on the chain-of-custody form and in the legally-required log book maintained by the laboratory in the laboratory. The sample description, date received, client's name, and other relevant information is also recorded.

**ENCLOSURE C**

Laboratory Analytical Results

LABORATORY

September 25, 1996
Sample Log 15622

Owen Kittredge
Delta Environmental Consultants
3164 Gold Camp Drive, Suite 200
Rancho Cordova, CA 95670

Subject: Analytical Results for 8 Water Samples
Identified as: Zimmerman (Proj. # DO96-088)
Received: 09/24/96

Dear Mr. Kittredge:

Analysis of the sample(s) referenced above has been completed. This report is written to confirm results communicated on September 25, 1996 and describes procedures used to analyze the samples.

Sample(s) were analyzed using the following method(s):

"BTEX" (EPA Method 602/Purge-and-Trap)
"TPH as Gasoline" (Modified EPA Method 8015/Purge-and-Trap)

Please refer to the following table(s) for summarized analytical results and contact us at 916-753-9500 if you have questions regarding procedures or results. The chain-of-custody document is enclosed.

Approved by:

Joel Kiff
Senior Chemist

WEST LABORATORY

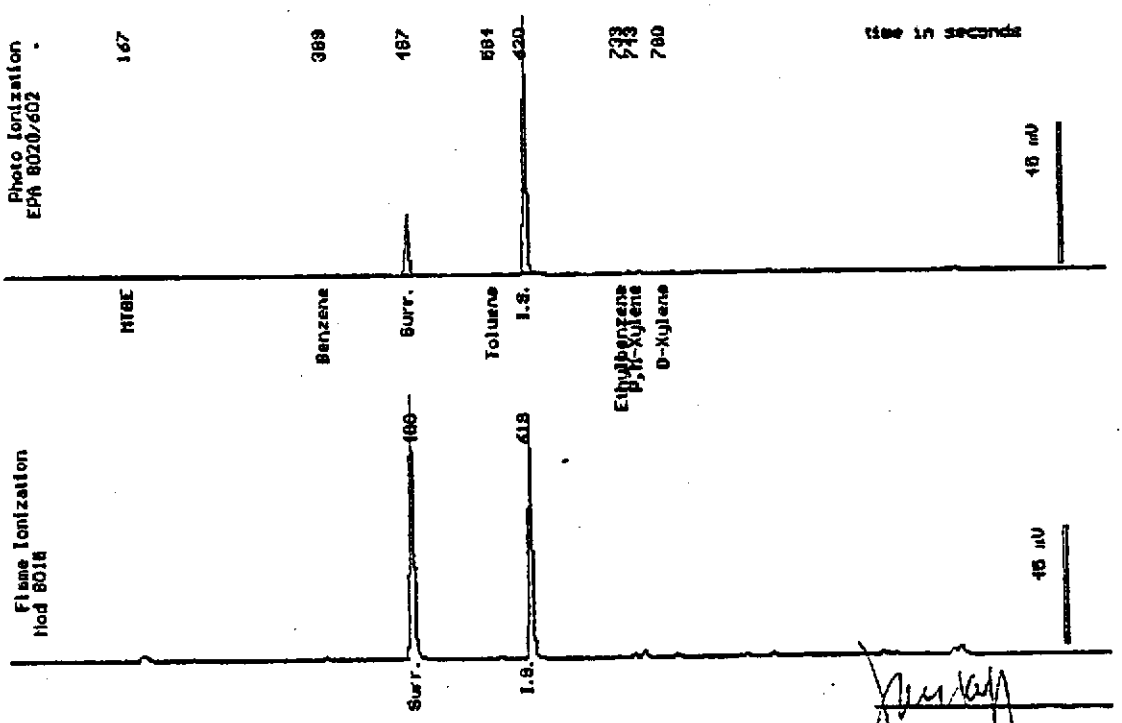
Sample Log 15622

15622-01

Sample: SB-1-W

From : Zimmerman (Proj. # DO96-088)
Sampled : 09/24/96
Dilution : 1:1 QC Batch : 4153D
Matrix : Water

| Parameter | (MRL) ug/L | Measured Value ug/L |
|---|---|---|
| Benzene | (.50) | <.50 |
| Toluene | (.50) | <.50 |
| Ethylbenzene | (.50) | <.50 |
| Total Xylenes | (.50) | <.50 |
| TPH as Gasoline | (50) | <50 |
| Surrogate Recovery | | 100 % |




Date Analyzed: 09-24-96
Column : 0.53mm ID X 60m Restek Rtx-1701

Joel Kiff
Senior Chemist

WEST LABORATORY

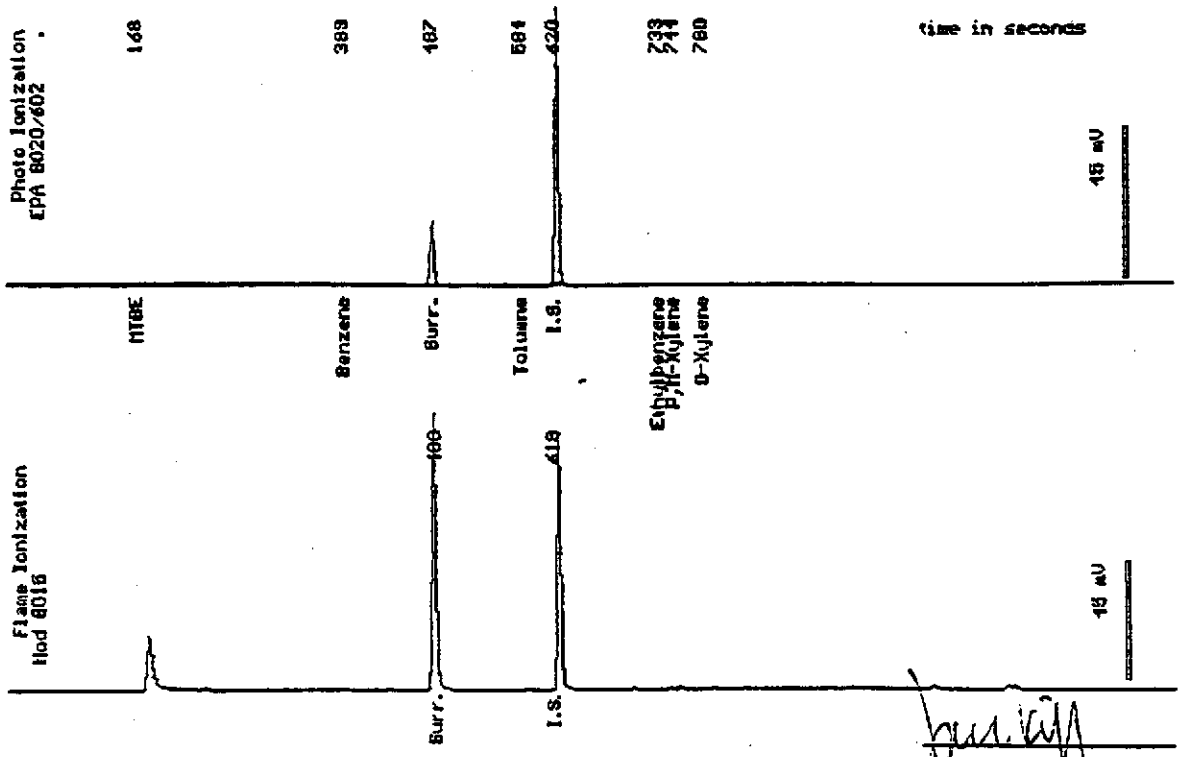
Sample Log 15622

15622-02

Sample: SB-2-W

From : Zimmerman (Proj. # DO96-088)
Sampled : 09/24/96
Dilution : 1:1 QC Batch : 4153D
Matrix : Water

| Parameter | (MRL) ug/L | Measured Value ug/L |
|---|---|---|
| Benzene | (.50) | <.50 |
| Toluene | (.50) | <.50 |
| Ethylbenzene | (.50) | <.50 |
| Total Xylenes | (.50) | <.50 |
| TPH as Gasoline | (50) | <50 |
| Surrogate Recovery | | 100 % |




Date Analyzed: 09-24-96
Column : 0.53mm ID X 60m Restek Rtx-1701

Joel Kiff
Senior Chemist

IEG LABORATORY

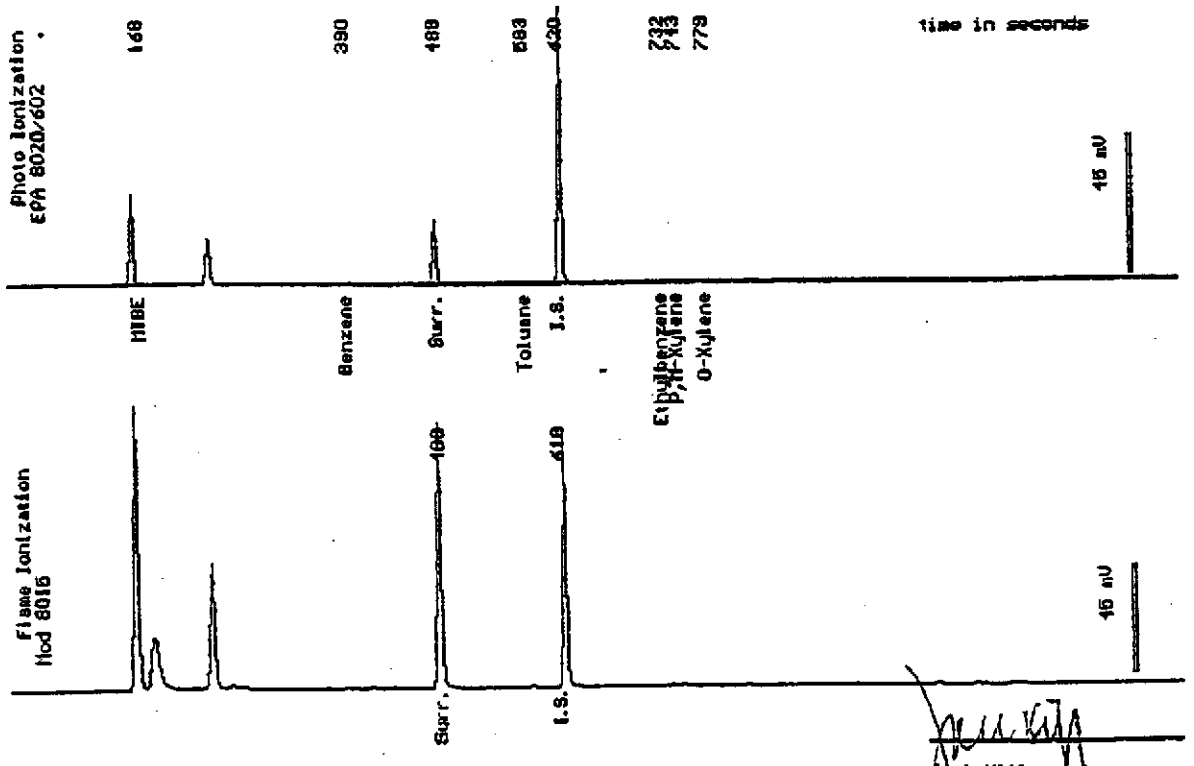
Sample Log 15622

15622-03

Sample: SB-3-W

From : Zimmerman (Proj. # DO96-088)
Sampled : 09/24/96
Dilution : 1:1 QC Batch : 4153D
Matrix : Water

| Parameter | (MRL) ug/L | Measured Value ug/L |
|---|---|---|
| Benzene | (.50) | <.50 |
| Toluene | (.50) | <.50 |
| Ethylbenzene | (.50) | <.50 |
| Total Xylenes | (.50) | <.50 |
| TPH as Gasoline | (50) | <50 |
| Surrogate Recovery | | 100 % |




Date Analyzed: 09-24-96
Column : 0.53mm ID X 60m Restek Rtx-1701

Joel Kiff
Senior Chemist

WEST LABORATORY

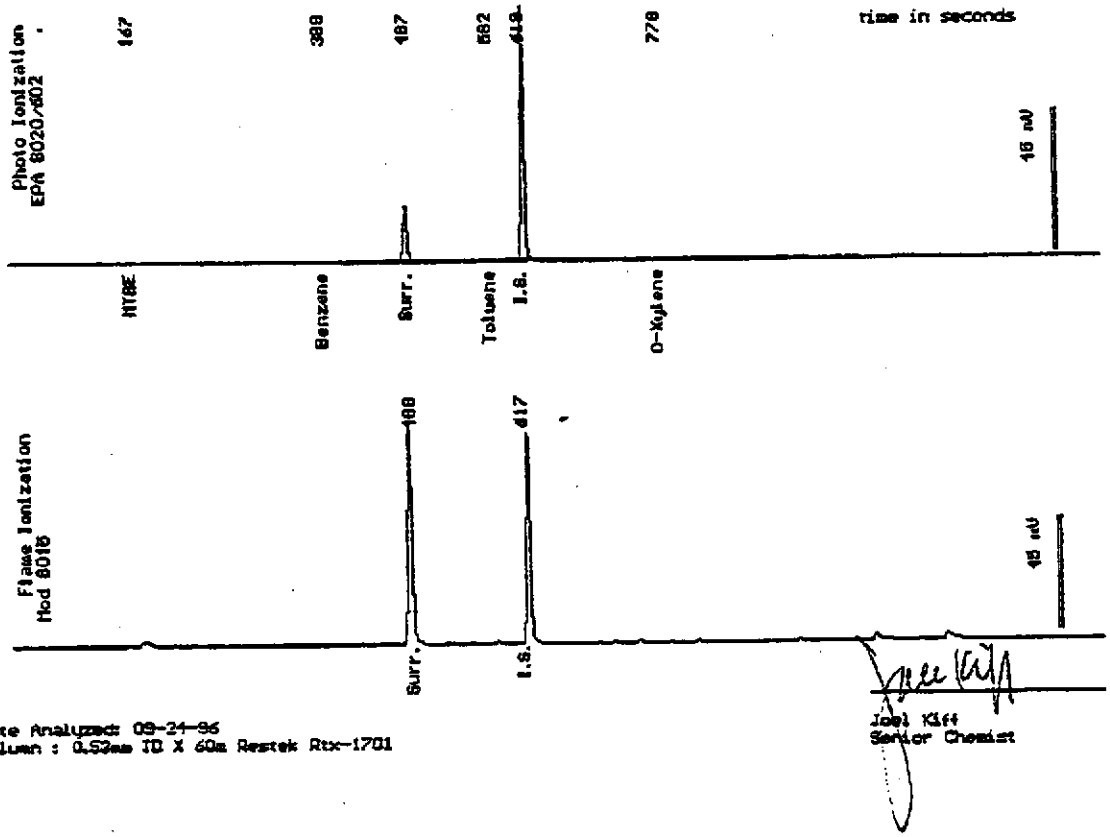
Sample Log 15622

15622-04

Sample: SB-4-W

From : Zimmerman (Proj. # D096-088)
Sampled : 09/24/96
Dilution : 1:1 QC Batch : 4153D
Matrix : Water

| Parameter | (MRL) ug/L | Measured Value ug/L |
|---|---|---|
| Benzene | (.50) | <.50 |
| Toluene | (.50) | <.50 |
| Ethylbenzene | (.50) | <.50 |
| Total Xylenes | (.50) | <.50 |
| TPH as Gasoline | (50) | <50 |
| Surrogate Recovery | | 99 % |




Date Analyzed: 09-24-96
Column : 0.53mm ID X 60m Restek Rtx-1701

Joel Kiff
Senior Chemist

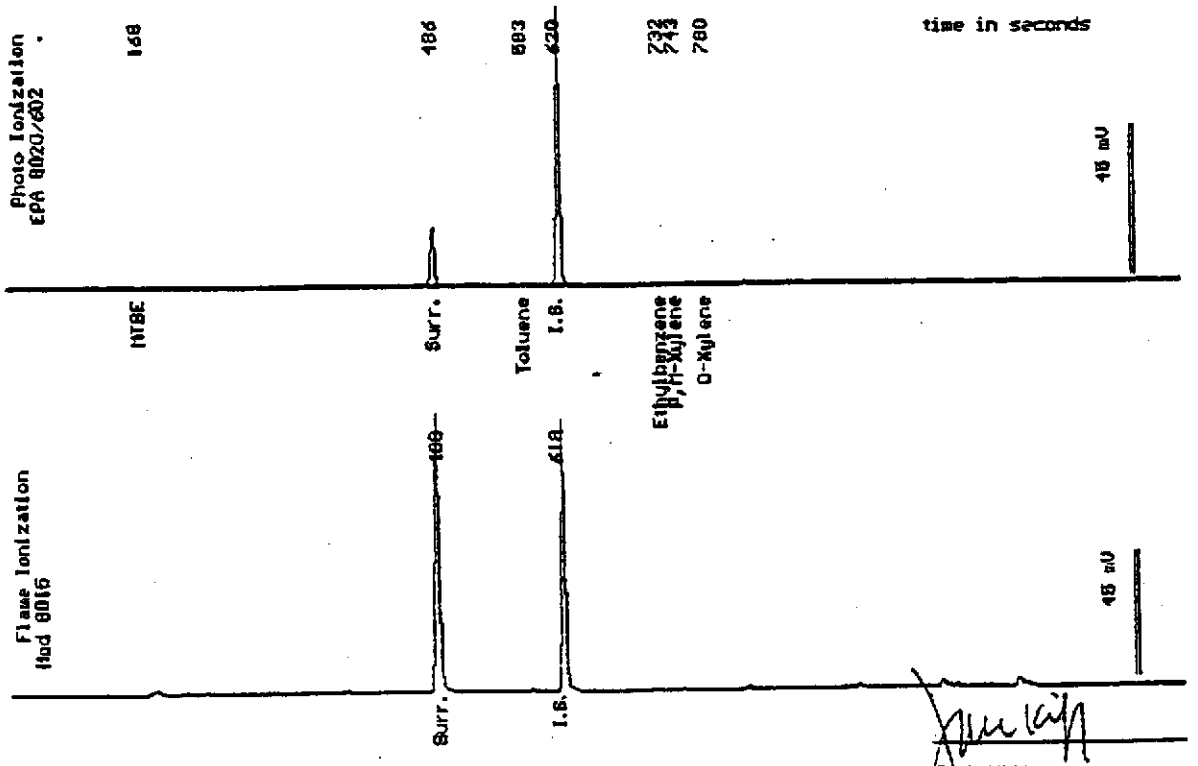
WEST LABORATORY

Sample Log 15622
15622-05

Sample: SB-5-W

From : Zimmerman (Proj. # DO96-088)
Sampled : 09/24/96
Dilution : 1:1 QC Batch : 4153D
Matrix : Water

| Parameter | (MRL) ug/L | Measured Value ug/L |
|---|---|---|
| Benzene | (.50) | <.50 |
| Toluene | (.50) | <.50 |
| Ethylbenzene | (.50) | <.50 |
| Total Xylenes | (.50) | <.50 |
| TPH as Gasoline | (50) | <50 |
| Surrogate Recovery | | 99 % |




Date Analyzed: 09-24-96
Column : 0.53mm ID X 60m Restek Rtx-1701

Joel Kiff
Senior Chemist

WEST LABORATORY

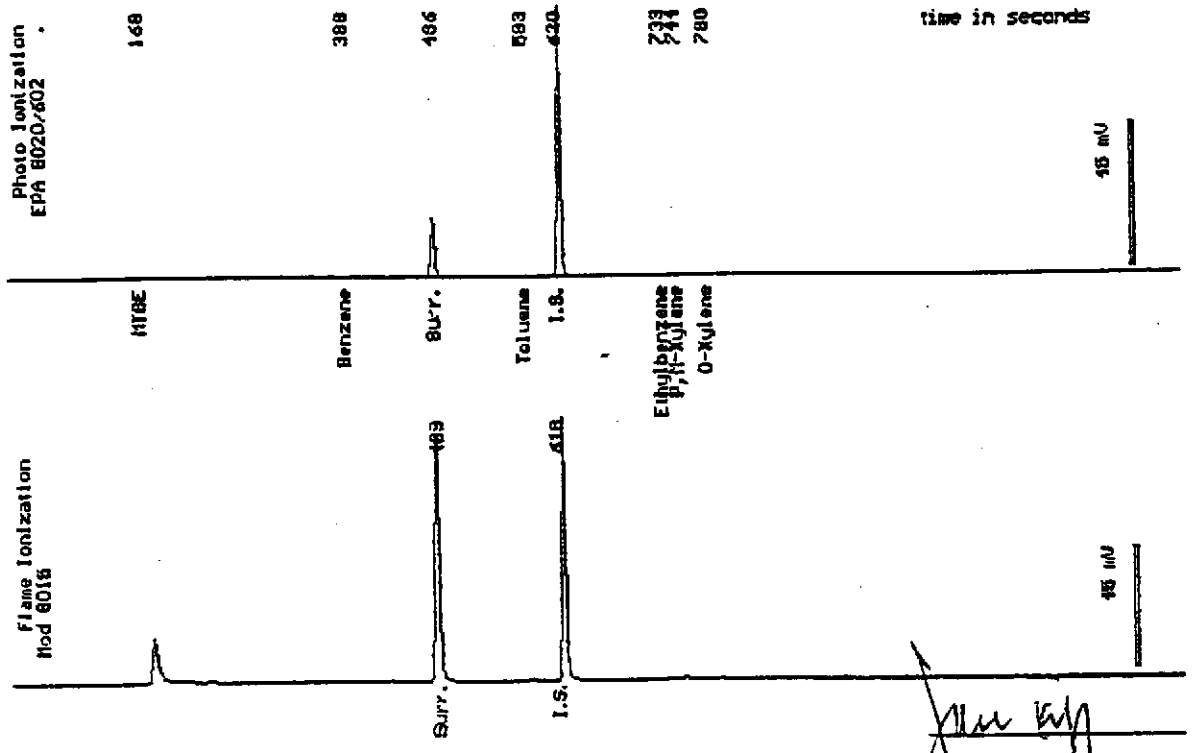
Sample Log 15622

15622-06

Sample: SB-6-W

From : Zimmerman (Proj. # DO96-088)
Sampled : 09/24/96
Dilution : 1:1 QC Batch : 4153D
Matrix : Water

| Parameter | (MRL) ug/L | Measured Value ug/L |
|---|---|---|
| Benzene | (.50) | <.50 |
| Toluene | (.50) | <.50 |
| Ethylbenzene | (.50) | <.50 |
| Total Xylenes | (.50) | <.50 |
| TPH as Gasoline | (50) | <50 |
| Surrogate Recovery | | 99 % |




Date Analyzed: 09-25-96
Column : 0.53mm ID X 60m Restek Rtx-1701

Joel Kiff
Senior Chemist

WEST LABORATORY

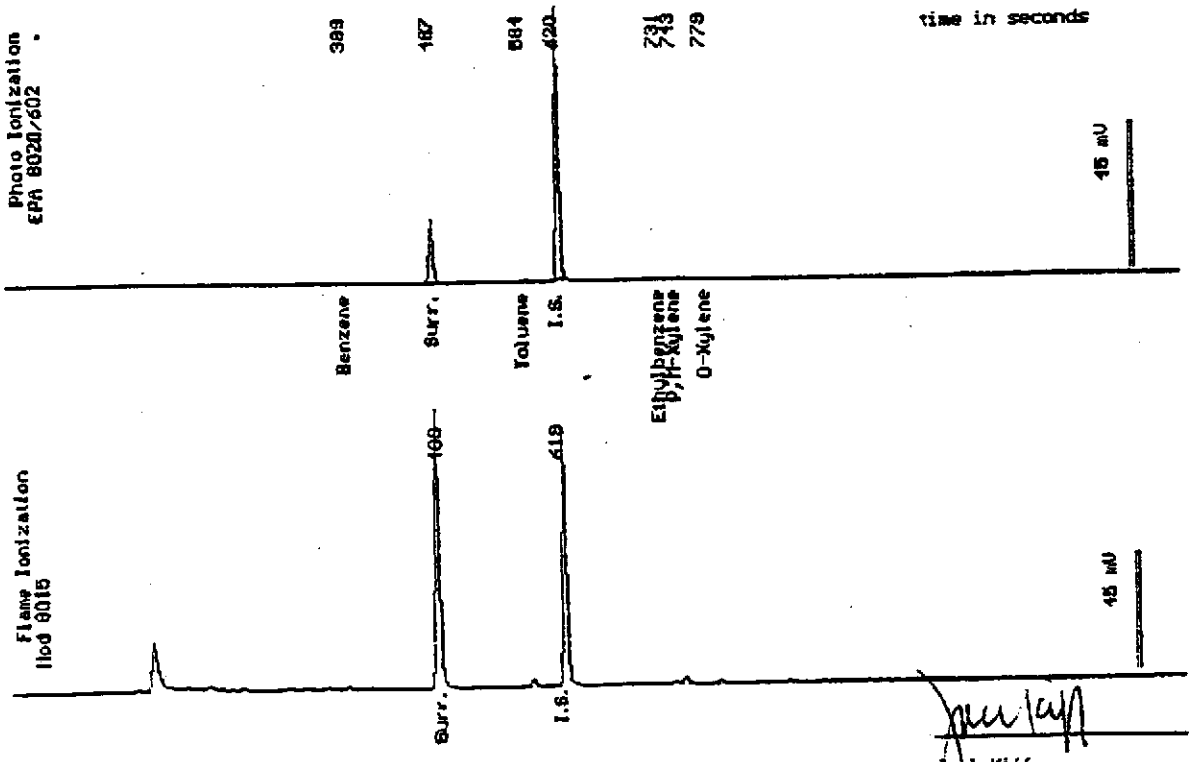
Sample Log 15622

15422-07

Sample: SB-7-W

From : Zimmerman (Proj. # DO96-088)
Sampled : 09/24/96
Dilution : 1:1 QC Batch : 4153D
Matrix : Water

| Parameter | (MRL) ug/L | Measured Value ug/L |
|---|---|---|
| Benzene | (.50) | <.50 |
| Toluene | (.50) | <.50 |
| Ethylbenzene | (.50) | <.50 |
| Total Xylenes | (.50) | <.50 |
| TPH as Gasoline | (50) | <50 |
| Surrogate Recovery | | 101 % |




Date Analyzed: 09-28-96
Column : 0.53mm ID X 60m Restek Rtx-1701

Joel Kiff
Senior Chemist

IES LABORATORY

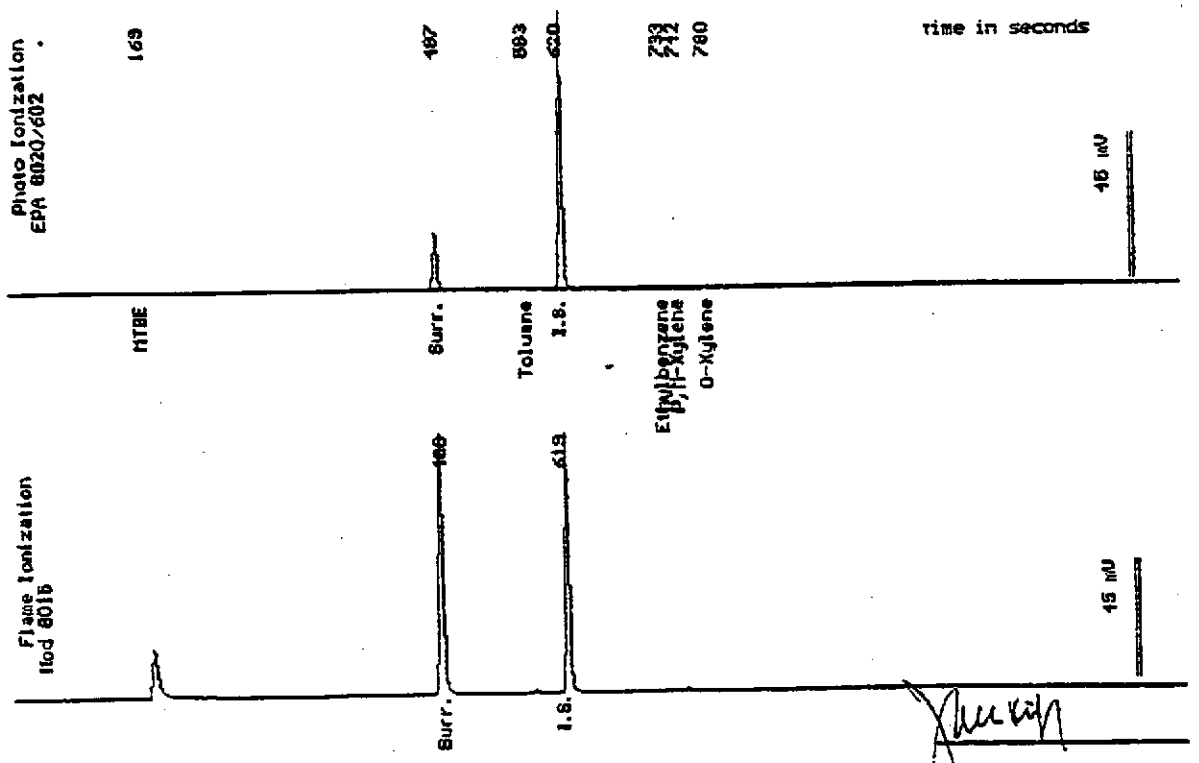
Sample Log 15622

15622-08

Sample: SB-8-W

From : Zimmerman (Proj. # DO96-088)
Sampled : 09/24/96
Dilution : 1:1 QC Batch : 4153D
Matrix : Water

| Parameter | (MRL) ug/L | Measured Value ug/L |
|---|---|---|
| Benzene | (.50) | <.50 |
| Toluene | (.50) | <.50 |
| Ethylbenzene | (.50) | <.50 |
| Total Xylenes | (.50) | <.50 |
| TPH as Gasoline | (50) | <50 |
| Surrogate Recovery | | 99 % |




Date Analyzed: 09-26-96
Column : 0.53mm ID X 60m Restek Rtx-1701

Joel Kiff
Senior Chemist