reviewed 11/3/92 SDS

# FOURTH QUARTER 1991
# GROUNDWATER MONITORING REPORT

## FOR

## FORMER TEXACO SERVICE STATION
## 3940 CASTRO VALLEY BOULEVARD
## CASTRO VALLEY, CALIFORNIA

Feb. 1992

**Project No. 3-30091-32**
**February 1992**

RESNA
42501 Albrae Street
Fremont, California 94538
(510) 440-3300

RESNA
Working to Restore Nature

42501 Albrae Street
Fremont, California 94538
Phone: (510) 440-3300
FAX: (510) 651-2233

February 12, 1992
Project No. 3-30091-32

Texaco Environmental Services
108 Cutting Boulevard
Richmond, CA 94804

Attention: Mr. Ron Zielinski

Subject: Fourth Quarter 1991 Groundwater Monitoring
Former Texaco Service Station
3940 Castro Valley Boulevard, Castro Valley, California

Dear Mr. Zielinski:

This quarterly monitoring report summarizes the groundwater sampling and analyses performed during December 1991 for the subject site in Castro Valley, Alameda County, California (Figure 1). Current groundwater monitoring and sampling analytical data acquired during this investigation are included.

## Site Description and Background

The site is located on the northeast corner of Castro Valley Boulevard and Marshall Street in Castro Valley, California. It is situated near the crest of a hill on the north side of Interstate 580 in an area of commercial and multi-unit residential development. Formerly a Texaco Service Station, the site is currently a Speedee Oil Change and Tune-up Facility.

Underground fuel storage tanks were removed from the site in June 1984, and one groundwater monitoring well was installed in the tank excavation area by Groundwater Technology, Inc. (GTI). Three additional wells were installed at the site by GTI in 1987 with the intent of defining the areal extent of dissolved hydrocarbon constituents in the groundwater. Two of the monitoring wells were destroyed in 1989 as part of the construction of the current business. Groundwater monitoring wells MW-4 and MW-5 were installed in 1990, and quarterly monitoring and sampling at the site was conducted by GTI.

RESNA began quarterly groundwater monitoring at the site in October 1991.

## Groundwater Sampling

RESNA collected groundwater samples from four groundwater monitoring wells on the site (Figure 2) in accordance with RESNA's groundwater sampling protocol (Appendix A) on December 11, 1991. In addition, groundwater monitoring well MW-4 was sampled monthly during this quarter. The groundwater purged from the wells and equipment rinse water was placed in drums approved by the Department of Transportation. The drums were left on-site pending receipt of the analytical data.

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## Laboratory Analyses

The groundwater samples were transported to Applied Analytical Laboratory (Applied), located in Fremont, California. Applied, which is a state-certified laboratory, analyzed the samples for the presence of total petroleum hydrocarbons as gasoline (TPHG) and benzene, toluene, ethyl benzene, and total xylenes (BTEX).

## Summary of Laboratory Results

The results of the groundwater sampling and analyses are summarized in Table 1. The analytical report from Applied and chain-of-custody documents are attached in Appendix B. Laboratory analyses did not detect petroleum hydrocarbons in wells MW-1, MW-3, or MW-5. Benzene and ethyl benzene only were detected in MW-4. The levels of these two constituents in MW-4 remained fairly constant over the quarter with average concentrations of 1.1 and 1.2 parts per billion, respectively.

A groundwater elevation contour map generated from measurements obtained during the December 1991 sampling is shown as Figure 2. The apparent groundwater flow direction underlying the site is generally to the south-southeast at a gradient of approximately 0.0008. ? SEE GRADIENT MAP.

RESNA installed three off-site groundwater wells in the site vicinity in January 1992. The next quarterly sampling will be conducted in March 1992 and will include the new wells.

## Reporting Requirements

A copy of this report should be forwarded by Texaco to the following agency:

Alameda County Health Care Services Agency
Hazardous Materials Program
80 Swan Way, Room 200
Oakland, California 94621
Attention: Mr. Scott Seery

California Regional Water Quality Control Board
2101 Webster Street, Room 500
Oakland, California 94612

## Disclaimer

This report has been prepared soley for the use of Texaco and any reliance on this report by third parties shall be at such party's sole risk.

## Limitations

The discussion and recommendations presented in this report are based on the following:

1. Observations by field personnel.
2. The results of laboratory analyses performed by a state-certified laboratory.

RESNA

3. Our understanding of the regulations of the State of California and Alameda County.

It is possible that variations in the soil or groundwater conditions could exist beyond the points explored in this investigation. Also, changes in the groundwater conditions could occur at some time in the future due to variations in rainfall, temperature, regional water usage, or other factors.

The service performed by RESNA has been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in the Castro Valley area. Please note that contamination of soil and groundwater must be reported to the appropriate agencies in a timely manner. No other warranty, expressed or implied, is made.

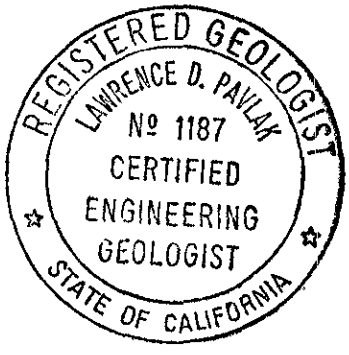
RESNA includes in this report chemical analytical data from a state-certified laboratory. The analytical results are performed according to procedures suggested by the U.S. EPA and State of California. RESNA is not responsible for laboratory errors in procedure or result reporting.

Sincerely,
RESNA Industries Inc.

Nissa L. Nack
Staff Geologist

Lawrence D. Pavlak, C.E.G. 1187
Senior Program Geologist

NLN/LDP/sw
Enclosures



# TABLE 1

## SUMMARY OF GROUNDWATER SAMPLING DATA

| Well Number | Sampling Date | Top of Casing Elevation* (ft.) | Depth to Water (ft.) | Groundwater Elevation (ft.) | Change in Groundwater Elevation | Well Depth (ft.) | Purge Volume (gal.) | Temp. (°C) | Cond. (µmhos/cm) | pH | Observations |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-1 | 12/11/91 | 192.46 | 24.68 | 167.78 | — | 39.30 | 38 | 15/15/14 | 1760/1750/1740 | 6.82/6.80/6.67 | Cloudy |
| MW-3 | 12/11/91 | 190.48 | 22.67 | 167.81 | — | 34.41 | 31 | 15/16/15 | 1630/1820/1790 | 6.74/6.81/6.54 | Cloudy |
| MW-4 | 10/11/91 | 191.63 | 23.75 | 167.88 | — | 42.20 | 40 | 22/22/22 | 1320/320/1360 | 6.59/6.64/6.55 | Clear to cloudy |
| | 11/12/91 | | 23.87 | 167.76 | -0.12 | 42.50 | 36 | 5/5/5 | 2250/2280/2260 | 6.75/6.65/6.63 | Clear to cloudy |
| | 12/11/91 | | 23.80 | 167.83 | 0.07 | 42.20 | 50 | 15/15/14 | 1820/1850/1770 | 6.84/6.75/6.55 | Cloudy |
| MW-5 | 12/11/91 | 191.55 | 23.70 | 167.85 | — | 41.05 | 44 | 14/15/14 | 1770/1750/1710 | 6.76/6.70/6.46 | Cloudy to clear |

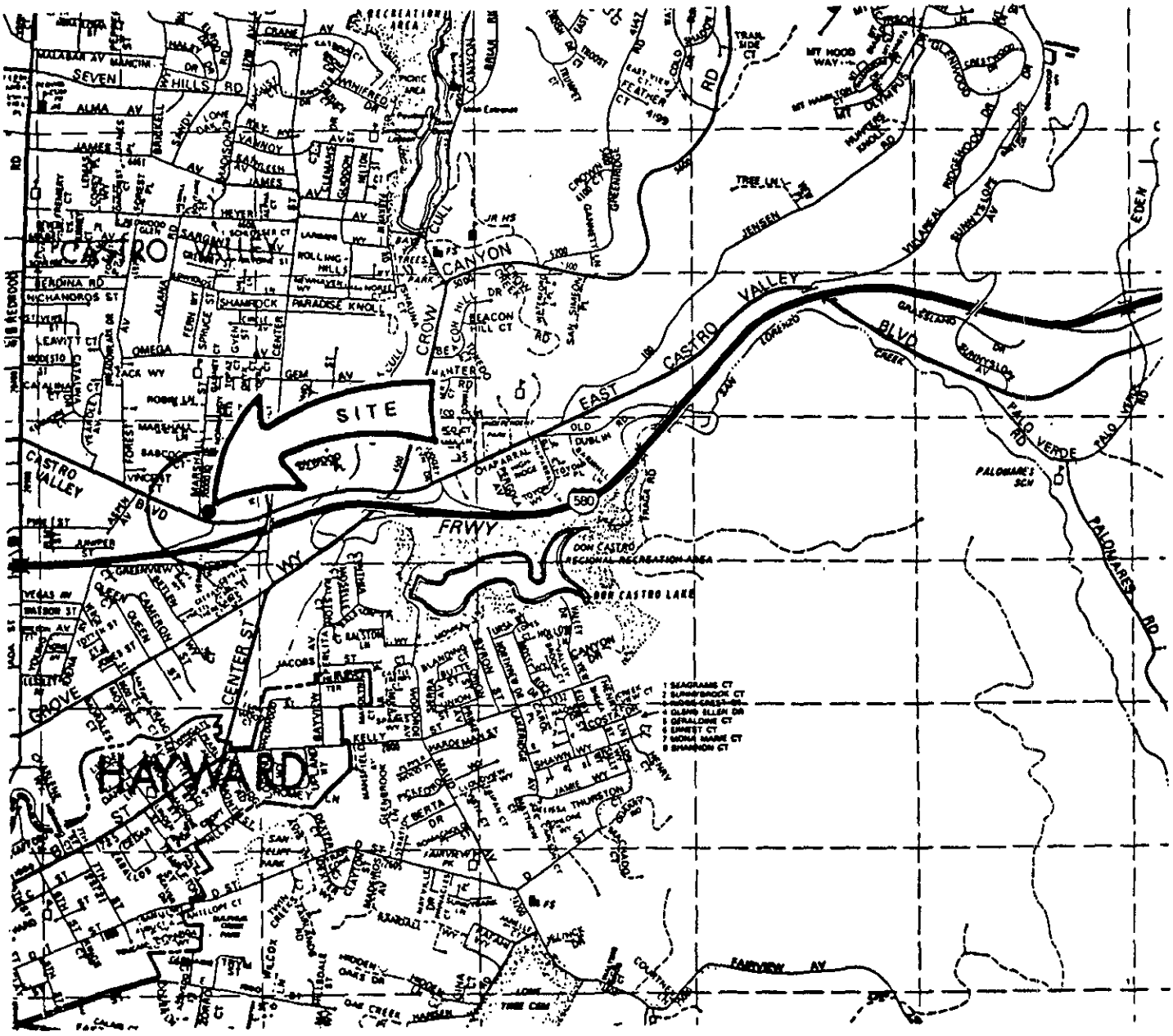
* Elevation data provided by Groundwater Technology, Inc.
ft. Feet (feet below top of PVC casing for depth to water and well depth)
gal. Gallons
Temp. Temperature
°C Degrees Celcius
Cond. Conductivity
µmhos/cm Micromhos per centimeter

# TABLE 2

## SUMMARY OF GROUNDWATER ANALYSES DATA

| Sample Number | Date Collected | Benzene (µg/l) | Toluene (µg/l) | Ethyl Benzene (µg/l) | Total Xylenes (µg/l) | TPHG (µg/l) |
|---|---|---|---|---|---|---|
| MW-1 | 12/11/91 | <0.5 | <0.5 | <0.5 | <0.5 | <50 |
| MW-3 | 12/11/91 | <0.5 | <0.5 | <0.5 | <0.5 | <50 |
| MW-4 | 10/11/91 | 1.0 | <0.5 | 1.5 | <0.5 | <50 |
| | 11/12/91 | 1.6 | <0.5 | 1.3 | <0.5 | <50 |
| | 12/11/91 | 0.8 | <0.5 | 0.9 | <0.5 | <50 |
| MW-5 | 12/11/91 | <0.5 | <0.5 | <0.5 | <0.5 | <50 |

TPHD Total petroleum hydrocarbons as diesel
TPHG Total petroleum hydrocarbons as gasoline
<0.5 Not detected at or above the indicated method detection limit
µg/l Micrograms per liter (parts per billion)




BASE MAP: THOMAS BROS. GUIDE, ALAMEDA COUNTY, CA. 1991

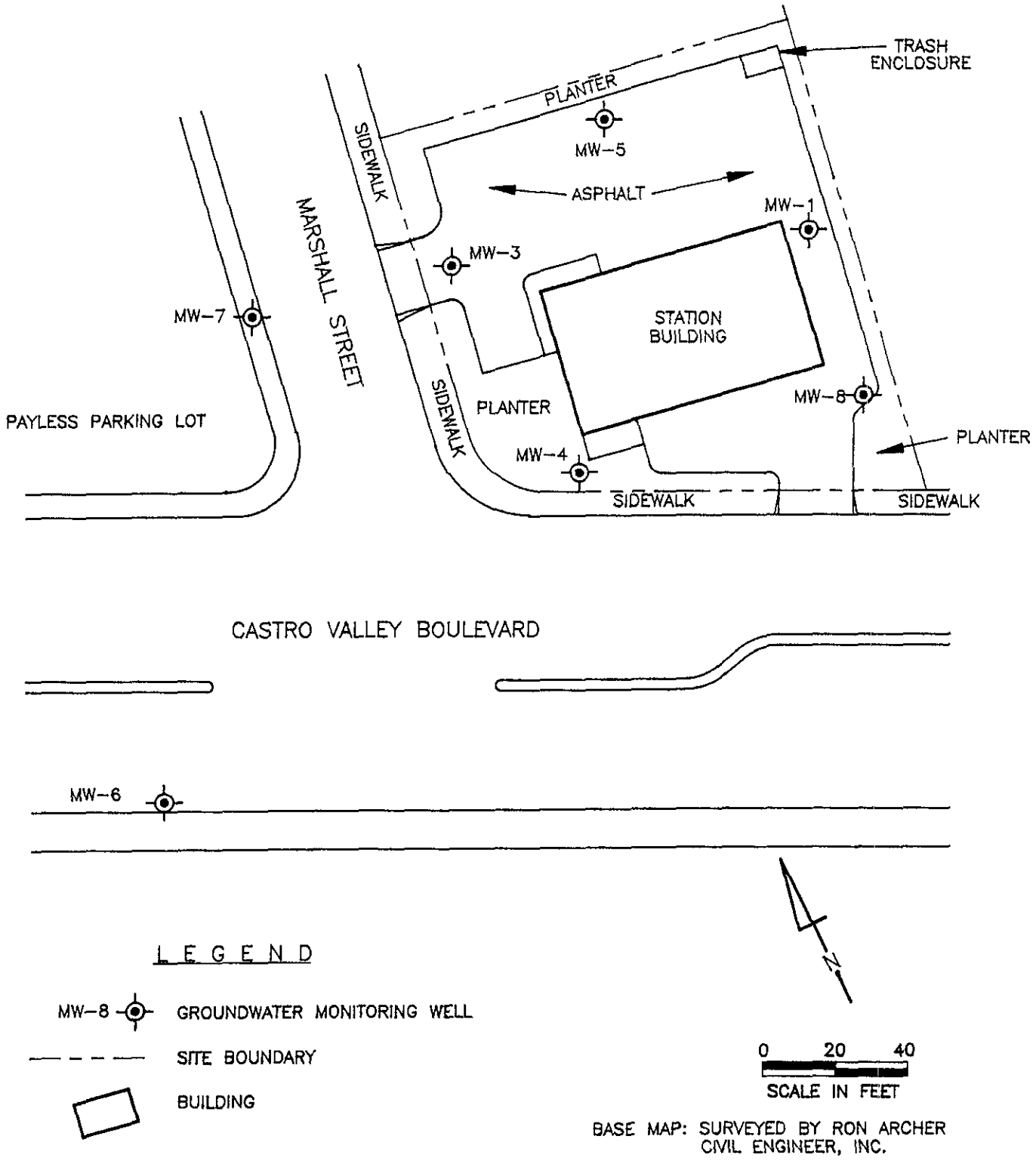
LEGEND

SITE LOCATION

0 1100 2200

SCALE IN FEET

| | | | |
|---|---|---|---|
| REVIEWED BY: KLN | **SITE LOCATION MAP** | RESNA | |
| | FORMER TEXACO SERVICE STATION | | |
| APPROVED BY: | 3940 CASTRO VALLEY BLVD. | JOB #: 3-30091-32 | DRAWN BY: J.D.S. |
| | CASTRO VALLEY, CALIFORNIA | DATE: 2/28/92 | DRAWING #: FIG. 1 |

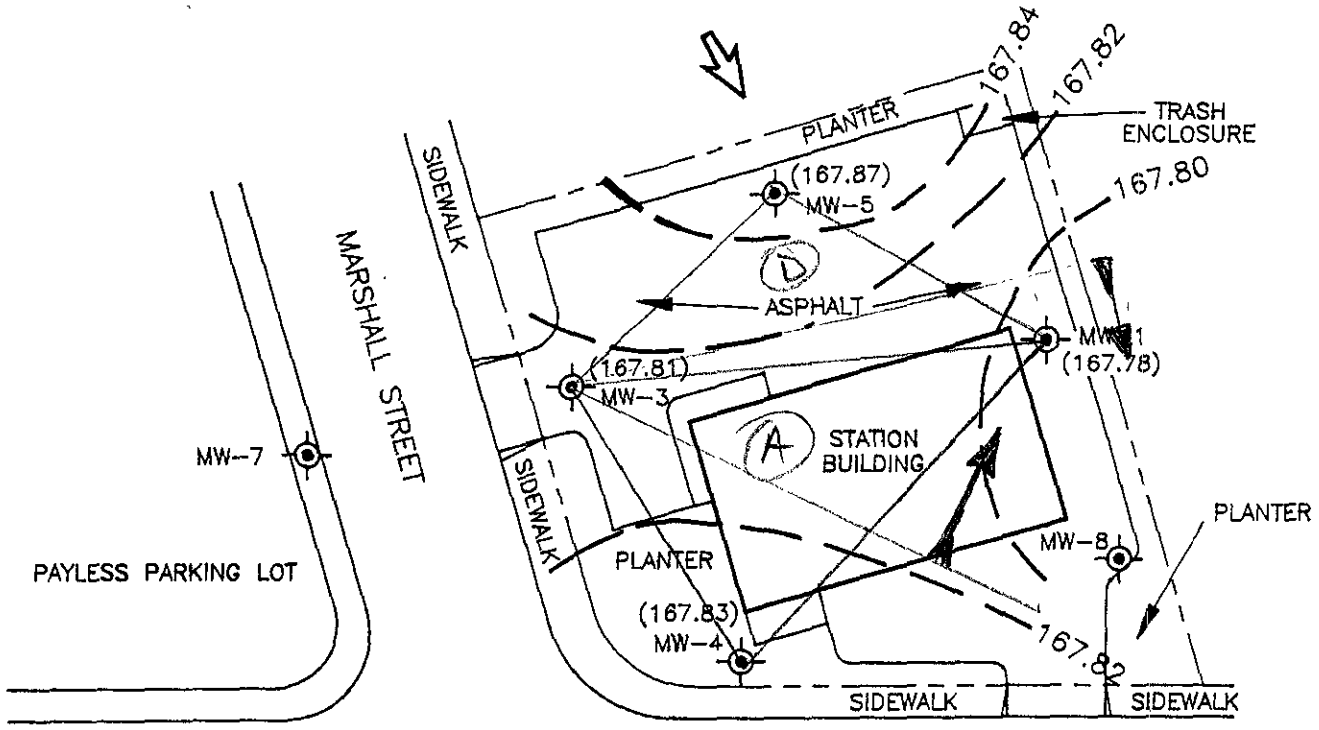



BASE MAP: SURVEYED BY RON ARCHER CIVIL ENGINEER, INC.

| | | |
|---|---|---|
| REVIEWED BY: | **SITE PLAN** | RESNA |
| APPROVED BY: | FORMER TEXACO SERVICE STATION | |
| | 3940 CASTRO VALLEY BOULEVARD | JOB #: 3-30091-32 / DRAWN BY: E.C. |
| | CASTRO VALLEY, CALIFORNIA | DATE: 2/12/92 / DRAWING #: FIG. 2 |

(A) $(93')\left[\frac{0.02}{0.05}\right] = 37'$ 1, 3, 4 NE

(B) $(64')\left[\frac{0.06}{0.09}\right] = 43'$ 1, 3, 5 SSE




CASTRO VALLEY BOULEVARD

MW-6

L E G E N D

MW-8 GROUNDWATER MONITORING WELL

SITE BOUNDARY

BUILDING

(167.85) GROUNDWATER ELEVATION (FEET)

167.84 GROUNDWATER ELEVATION CONTOUR LINE

GENERAL GROUNDWATER FLOW DIRECTION

0 20 40

SCALE IN FEET

BASE MAP: SURVEYED BY RON ARCHER CIVIL ENGINEER, INC.

REVIEWED BY:

APPROVED BY:

# GROUNDWATER CONTOUR ELEVATION MAP (12/11/91)

FORMER TEXACO SERVICE STATION

3940 CASTRO VALLEY BOULEVARD

CASTRO VALLEY, CALIFORNIA

RESNA

JOB #: 3-30091-32

DRAWN BY: E.C.

DATE: 2/12/92

DRAWING #: FIG. 3

# APPENDIX A

# GROUNDWATER SAMPLING PROTOCAL

RESNA

# Groundwater Sampling Protocol

# GROUNDWATER SAMPLING PROTOCOL

Sampling of groundwater is performed by RESNA Industries, Inc. sampling technicians. Summarized field sampling procedures are as follows:

1. Proceed to first well with clean and decontaminated equipment.

2. Measurements of liquid surface(s) in the well, and total depth of monitoring well. Note presence of silt accumulation.

3. Field check for presence of floating product; measure apparent thickness.

4. Purge well prior to collecting samples; purge volume (casing volumes) calculated prior to removal.

5. Monitor groundwater for temperature, pH, and specific conductance during purging. Allow well to recover.

6. Collect samples using Environmental Protection Agency (EPA) approved sample collection devices, i.e., teflon or stainless steel bailers or pumps.

7. Transfer samples into laboratory-supplied EPA-approved containers.

8. Label samples and log onto chain-of-custody form.

9. Store samples in a chilled ice chest for shipment to a state-certified analytical laboratory.

10. Decontaminate equipment prior to sampling next well.

## Sample Storage

Groundwater samples collected in the field are stored in an ice chest cooled to 4 °C while in transit to the office or analytical laboratory. Samples are stored in a refrigerator overnight and during weekends and holidays. The refrigerator is set to 4 °C and is locked with access controlled by a designated sample custodian.

## Quality Assurance/Quality Control Objectives

The sampling and analysis procedures employed by RESNA for groundwater sampling and monitoring follow quality assurance/quality control (QA/QC) guidelines. Quality assurance objectives have been established to develop and implement procedures for obtaining and evaluating water quality and field data in an accurate, precise, and complete manner. In this way, sampling procedures and field measurements provide information that is comparable and representative of actual field conditions. Quality control (QC) is maintained by site-specific field protocols and requiring the analytical laboratory to perform internal and external QC checks. The goal is to provide data that are accurate, precise, complete, comparable, and representative. The definitions as developed by overseeing federal, state, and local agency guidance documents for accuracy, precision, completeness, comparability, and representativeness are:

- **Accuracy** — the degree of agreement of a measurement with an accepted reference or true value.
- **Precision** — a measure of agreement among individual measurements under similar conditions. Usually expressed in terms of the standard deviation.
- **Completeness** — the amount of valid data obtained from a measurement system compared to the amount that was expected to meet the project data goals.
- **Comparability** — express the confidence with which one data set can be compared to another.
- **Representativeness** — a sample or group of samples that reflect the characteristics of the media at the sampling point. It also includes how well the sampling point represents the actual parameter variations which are under study.

## Equipment Cleaning and Decontamination

All water samples are placed in precleaned laboratory-supplied bottles. Sample bottles and caps remain sealed until actual usage at the site. All equipment which comes in contact with the well or groundwater is thoroughly cleaned with a trisodium phosphate (TSP) solution and rinsed with deionized or distilled water before use at the site. This cleaning procedure is followed between each well sampled. Wells are sampled in approximate order of increasing contamination. If a teflon cord is used, the cord is cleaned. If a nylon or cotton cord is used, a new cord is used in each well. All equipment blanks are collected prior to sampling. The blanks are analyzed periodically to ensure proper cleaning procedures are used.

## Water Level Measurements

Depth to groundwater is measured in each well using a sealed sampling tape or scaled electric sounder prior to purging or sampling. If the well is known or suspected of containing free-phase petroleum hydrocarbons, an optical interface probe is used to measure the hydrocarbon thickness and groundwater level. Measurements are collected and recorded to the nearest 0.01 foot. Each monitoring well's total depth will be measured; this will allow a relative judgement of well siltation to be made and need for redevelopment.

## Bailer Sheen Check

If no measurable free-phase petroleum hydrocarbons are detected, a clear acrylic bailer is used to determine the presence of a sheen. Any observed film as well as odor and color of the water is recorded.

## Groundwater Sampling

Prior to groundwater sampling, each well is purged of "standing" groundwater. Either a bailer, hand pump, or submersible pump is used to purge the well. The amount of purging is dependent on the well yield. In a high yield formation, samples will be collected when normal field measurement, including temperature, pH, and specific conductance stabilize, provided a minimum of three well-casing volumes of water have been removed. Field measurements will be taken after purging each well volume. Physical parameter measurements (temperature, pH, and specific conductance) are closely monitored throughout the well purging process and are used as indicators for

assessing sufficient purging. The purging parameters are measured to observe stabilization to a range of values typical for that aquifer and well. Stable field parameters are recognized as indicative of groundwater aquifer chemistry entering the well. Specific conductance (conductivity) meters are read to the nearest ±10 umhos/cm and are calibrated daily. pH meters are read to the nearest ±0.1 pH units and are calibrated daily. Temperature is read to the nearest 0.1 °F. Calibration of physical parameter meters will follow manufacturer's specifications. Collected field data during purging activities will be entered on the Well Sampling Field Data Sheet.

In low yield formations, the well is purged such that the "standing" water is removed and the well is allowed to recharge. (Normal field measurements will be periodically recorded during the purging process.) In situations where recovery to 80% of static water level is estimated, or observed to exceed a two hour duration, a sample will be collected when sufficient volume is available for a sample for each parameter. Attempts will be made so the well is not purged dry such that the recharge rate causes the formation water to cascade into the well.

In wells where free-phase hydrocarbons are detected, the free-phase portion will be bailed from the well and the estimated volume removed recorded. A groundwater sample will be collected if bailing reduces the amount of free-phase hydrocarbons to the point where they are not present in the well. Well sampling will be conducted using one of the aforementioned methods depending on the formation yield. However, if free-phase hydrocarbons persist throughout bailing, then a groundwater sample will not be collected.

Volatile organic groundwater samples are collected so that air passage through the sample does not occur or is minimal (to prevent volatiles from being stripped from the samples): sample bottles are filled by slowly running the sample down the side of the bottle until there is a positive convex meniscus over the neck of the bottle; the teflon side of the septum (in cap) is positioned against the meniscus, and the cap screwed on tightly; the sample is inverted and the bottle lightly tapped. The absence of an air bubble indicates a successful seal; if a bubble is evident, the cap is removed, more sample is added, and the bottle is resealed.

### Chain-of-Custody

Groundwater sample containers are labeled with a unique sample number, location, and date of collection. All samples are logged into a chain-of-custody form and placed in a chilled ice chest for shipment to a laboratory certified by the State of California Department of Health Services.

Laboratory and field handling procedures of samples are monitored by including QC samples for analysis with every submitted sample lot from a project site. QC samples may include any combination of the following:

- **Trip Blanks:** Used for purgeable organic compounds only; QC samples are collected in 40 milliliter (ml) sample vials filled in the analytical laboratory with organic-free water. Trip blanks are sent to the project site, and travel with project site samples. Trip blanks are not opened, and are returned from a project site with the project site samples for analysis.
- **Field Blank:** Prepared in the field using organic-free water. These QC samples accompany project site samples to the laboratory and are analyzed for specific chemical parameters unique to the project site where they were prepared.
- **Duplicates:** Duplicated samples are collected "second samples" from a selected well and project site. They are collected as either split samples or second-run samples collected from the same well.
- **Equipment Blank:** Periodic QC samples collected from field equipment rinseate to verify decontamination procedures.

The number and types of QC samples are determined and analyzed on a project-specific basis.

## Shallow Groundwater Survey

A shallow groundwater survey employs reconnaissance field sampling and chemical analysis for rapid plume mapping. Occasionally, a state-certified laboratory subcontractor may be used. The subcontractor would sample for analysis at locations marked by the RESNA field geologist. The thin-diameter probes from which groundwater is collected are advanced to the water bearing stratum, sample is withdrawn to the surface, and analyzed immediately thereafter. Probe holes are backfilled with a grout slurry or as the local permitting agency requires. The shallow survey contractor will supply sampling, purging, and field chemical analysis to RESNA in their report. RESNA considers this type of shallow probe mapping (together with shallow groundwater sampling) to be a reconnaissance technique only.

Texaco Refining
and Marketing Inc

108 Cutting Boulevard
Richmond CA 94804

April 20, 1992

Mr. Scott Seery
Alameda County Health Care Services Agency
Hazardous Materials Program
80 Swan Way, Room 200
Oakland, CA 94621

Dear Mr. Seery:

Enclosed, please find copies of the following reports:

1. Groundwater Monitoring Report - Fourth Quarter 1991, dated February 12, 1992
2. Soil and Groundwater Investigation, dated March 30, 1992

for our former Texaco Service Station located at 3940 Castro Valley Boulevard in Castro Valley, California.

Please call me at (510) 236-3611 if you have any questions.

Sincerely,

Karel Detterman

Karel Detterman
Project Coordinator

Enclosure:

cc: California Regional Water Quality Control Board
2101 Webster Street, Room 500
Oakland, CA 94612

pr: GRS

HR/P

3940CV4.20

# APPENDIX B

# LABORATORY REPORT AND CHAIN-OF-CUSTODY

# APPLIED ANALYTICAL

***Environmental Laboratories***

42501 Albrae St., Suite 100
Fremont, CA 94538
Bus: (510) 623-0775
Fax: (510) 651-2233


## ANALYSIS REPORT

1020lab.frm

| | | | |
|---|---|---|---|
| Attention: | Mr. Nissa Nack | Date Sampled: | 12-11-91 |
| | RESNA/Exceltech Inc. | Date Received: | 12-12-91 |
| | 41674 Christy Street | BTEX Analyzed: | 12-16-91 |
| | Fremont, CA 94538 | TPHg Analyzed: | 12-16-91 |
| Project: | AGS 19521-L,Project #3-30091-32 | TPHd Analyzed: | NR |
| | Texaco, Castro Valley | Matrix: | Water |

| | Benzene | Toluene | Ethyl-benzene | Total Xylenes | TPHg | TPHd |
|---|---|---|---|---|---|---|
| | ppb | ppb | ppb | ppb | ppb | ppb |
| Detection Limit: | 0.5 | 0.5 | 0.5 | 0.5 | 50 | 100 |
| SAMPLE Laboratory Identification | | | | | | |
| BB1 W1112252 | ND | ND | ND | ND | ND | NR |
| MW-1 W1112253 | ND | ND | ND | ND | ND | NR |
| MW-3 W1112254 | ND | ND | ND | ND | ND | NR |
| MW-5 W1112255 | ND | ND | ND | ND | ND | NR |
| MW-4 W1112256 | 0.8 | ND | 0.9 | ND | ND | NR |

ppb = parts per billion = µg/L = micrograms per liter.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not requested.

**ANALYTICAL PROCEDURES**

**BTEX**-- Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020/602, which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID) and a flame-ionization detector (FID) in series.

**TPHg**--Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are measured by extraction using EPA Method 5030, followed by analysis using modified EPA Method 8015, which utilizes a GC equipped with an FID.

**TPHd**--Total petroleum hydrocarbons as diesel (high boiling points) are measured by extraction using EPA Method 3550 for soils and EPA Method 3510 for water, followed by modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Laboratory Representative

December 17, 1991
Date Reported

19521

# CHAIN OF CUSTODY RECORD

094380

| PROJECT NO. | PROJECT NAME |
|---|---|
| 3-20091-32 | Texaco Castro Valley |

SAMPLERS (Signature): Kelli Sutliff

| NO. | DATE | TIME | SAMPLE DESCRIPTION | TPH/G/BTEX |
|---|---|---|---|---|
| BB-1 | 12/11/91 | 10:30 | 3 Pres voas | X |
| MW-1 | | 11:30 | | X |
| MW-3 | | 12:30 | | X |
| MW-5 | | 13:30 | | X |
| MW-4 | | 14:30 | | X |

TEST REQUESTED

P.O. # Direct Bill to Texaco

LAB Applied

TURN AROUND TIME Normal

REMARKS

Billing
c/o Karl Detterman
Texaco Environmental Services
108 Cutting Blvd
Richmond, CA 94804

| RELINQUISHED BY: | DATE: | TIME: | RECEIVED BY: |
|---|---|---|---|
| Kelli Sutliff | 12/12/91 | 07:40 | Crista |
| Kelli Sutliff | 12/12/91 | 8:35 | Anthony Emens |

| RELINQUISHED BY: | DATE: | TIME: | RECEIVED BY: |
|---|---|---|---|
| | | | |
| | | | |

REMARKS:

REPORT TO: Nissa Nack

EXCELTECH
41674 Christy Street
Fremont, C.A. 94538-3114
(415) 659-0404
Fax (415) 651-4677
Contr. Lic. No. 550205

FORM DATED 3-27-90

# APPLIED ANALYTICAL

***Environmental Laboratories***

42501 Albrae St., Suite 100
Fremont, CA 94538
Bus: (510) 623-0775
Fax: (510) 651-2233


## ANALYSIS REPORT

1020lab.frm

| | | | |
|---|---|---|---|
| Attention: | Ms. Nissa Nack | Date Sampled: | 11-12-91 |
| | Exceltech Inc. | Date Received: | 11-13-91 |
| | 41674 Christy Street | BTEX Analyzed: | 11-13-91 |
| | Fremont, CA 94538 | TPHg Analyzed: | 11-13-91 |
| Project: | AGS 19521-L,Project #3-30091-32 | TPHd Analyzed: | NR |
| | Texaco | Matrix: | Water |

| | Benzene | Toluene | Ethyl-benzene | Total Xylenes | TPHg | TPHd |
|---|---|---|---|---|---|---|
| | ppb | ppb | ppb | ppb | ppb | ppb |
| Detection Limit: | 0.5 | 0.5 | 0.5 | 0.5 | 50 | 100 |
| SAMPLE Laboratory Identification | | | | | | |
| MW-4 W1111338 | 1.6 | ND | 1.3 | ND | 62 | NR |

ppb = parts per billion = µg/L = micrograms per liter.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not requested.

ANALYTICAL PROCEDURES

BTEX-- Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020/602, which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID) and a flame-ionization detector (FID) in series.

TPHg--Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are measured by extraction using EPA Method 5030, followed by analysis using modified EPA Method 8015, which utilizes a GC equipped with an FID.

TPHd--Total petroleum hydrocarbons as diesel (high boiling points) are measured by extraction using EPA Method 3550 for soils and EPA Method 3510 for water, followed by modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Laboratory Representative

November 14, 1991
Date Reported

APPLIED ANALYTICAL LABORATORY IS CERTIFIED BY THE STATE OF CALIFORNIA DEPARTMENT OF HEALTH SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY (Certification No. 1211)

# CHAIN OF CUSTODY RECORD

94220

| PROJECT NO. | PROJECT NAME |
|---|---|
| 3-30091-32 | Texaco |

SAMPLERS (Signature): Joe Nixa Jnixa

| NO. | DATE | TIME | SAMPLE DESCRIPTION | TPHG BTEX | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MW4 | 11-12-91 | 10:30 | 3 peres VOA's | X | | | | | | | |
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TEST REQUESTED

P.O. #

LAB: Applied

TURN AROUND TIME: Normal

REMARKS

Bill Texaco directly

| RELINQUISHED BY: | DATE: | TIME: | RECEIVED BY: | RELINQUISHED BY: | DATE: | TIME: | RECEIVED BY: |
|---|---|---|---|---|---|---|---|
| Jnixa | 11-13-91 | 9:55 | Matthew Meres 11/13/91 | | | | |
| RELINQUISHED BY: | DATE: | TIME: | RECEIVED BY: | RELINQUISHED BY: | DATE: | TIME: | RECEIVED BY: |
| | | | | | | | |

REMARKS:

REPORT TO: Nissa Nack

EXCELTECH
41674 Christy Street
Fremont, C.A. 94538-3114
(415) 659-0404
Fax (415) 651-4677
Contr. Lic. No. 550205

FORM DATED 3-27-90

# APPLIED ANALYTICAL

***Environmental Laboratories***

42501 Albrae St., Suite 100
Fremont, CA 94538
Bus: (510) 623-0775
Fax: (510) 651-2233


## ANALYSIS REPORT

1020lab.frm

| | | | |
|---|---|---|---|
| Attention: | Ms. Nissa Nack | Date Sampled: | 10-11-91 |
| | Exceltech Inc. | Date Received: | 10-14-91 |
| | 41674 Christy Street | BTEX Analyzed: | 10-25-91 |
| | Fremont, CA 94538 | TPHg Analyzed: | 10-25-91 |
| Project: | AGS 19513-L, Project #3-30091-32 | TPHd Analyzed: | NR |
| | Qwik Lube Texaco | Matrix: | Water |

| | Benzene | Toluene | Ethyl-benzene | Total Xylenes | TPHg | TPHd |
|---|---|---|---|---|---|---|
| | ppb | ppb | ppb | ppb | ppb | ppb |
| Detection Limit: | 0.5 | 0.5 | 0.5 | 0.5 | 50 | 100 |
| SAMPLE Laboratory Identification | | | | | | |
| MW4 W1110427 | 1.0 | ND | 1.5 | ND | ND | NR |

ppb = parts per billion = µg/L = micrograms per liter.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not requested.

ANALYTICAL PROCEDURES

BTEX-- Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020/602, which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID) and a flame-ionization detector (FID) in series.

TPHg--Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are measured by extraction using EPA Method 5030, followed by analysis using modified EPA Method 8015, which utilizes a GC equipped with an FID.

TPHd--Total petroleum hydrocarbons as diesel (high boiling points) are measured by extraction using EPA Method 3550 for soils and EPA Method 3510 for water, followed by modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Laboratory Representative

November 1, 1991
Date Reported

APPLIED ANALYTICAL LABORATORY IS CERTIFIED BY THE STATE OF CALIFORNIA DEPARTMENT OF HEALTH SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY
(Certification No. 1211)

# CHAIN OF CUSTODY RECORD

094170

| PROJECT NO. | PROJECT NAME |
|---|---|
| 3-30091-32 | (QuikLube) TEXACO Castro Valley |
| SAMPLERS (Signature) | Gurja |

| NO. | DATE | TIME | SAMPLE DESCRIPTION | TPH/BTEX |
|---|---|---|---|---|
| MW4 | 10/11/91 | 1220 | 3 pres VOA's | X |

TEST REQUESTED

P.O. #

LAB Applied Analytical

TURN AROUND TIME Normal

REMARKS

Bill Direct to Texaco

1088 Cutting Blvd
Richmond CA 94804

ATTN: Carol Reha
TEXACO.

| RELINQUISHED BY: | DATE: TIME: | RECEIVED BY: |
|---|---|---|
| Gurja | 10/11/91 1810 | Britt Van Thad |
| RELINQUISHED BY: Gurja | DATE: TIME: 10/14/91 11:05 | RECEIVED BY: 10/14/91 11:05 |

| RELINQUISHED BY: | DATE: TIME: | RECEIVED BY: |
|---|---|---|
| | | |
| RELINQUISHED BY: | DATE: TIME: | RECEIVED BY: |
| | | |

REMARKS:

REPORT TO: NISSA NACK

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