R0189

Wickham, Jerry, Env. Health

To: Evans, Charlotte

Cc: Sinha, Satya P; kesters@chevron.com

Subject: RE: RO# 0189, 930 Springtown Blvd., Livermore, CA

Charlotte,

Based upon your request, the schedule for submittal of Subsurface Investigation Report for the above referenced site is extended 90 days to December 19, 2007. Please let me know if we can assist with access issues.

Regards,
Jerry Wickham
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502-6577
510-567-6791 phone
510-337-9335 fax
jerry.wickham@acgov.org

From: Evans, Charlotte [mailto:Cevans@craworld.com]
Sent: Wednesday, August 29, 2007 3:20 PM
To: Wickham, Jerry, Env. Health
Cc: Sinha, Satya P; kesters@chevron.com
Subject: RO# 0189, 930 Springtown Blvd., Livermore, CA

Dear Mr. Wickham,

I am sending this as a request to extend the deadline for a Subsurface Investigation Report, due to your office on September 19, 2007. We would like to extend that date out due to difficulties we have in gaining access to the sites. The proposed locations are on properties owned by three different entities. Although we have been trying to contact all the owners since June, the access agreements are either still in the draft stages or Chevron is still discussing access issues with the owners. As of now, we do not know when we will be able to perform the planned work. I will keep you appraised of our work dates and our expected submittal dates to you office. Please let me know if this is acceptable.

Thank you for your time on this matter.

Charlotte Evans
Conestoga-Rovers & Associates (CRA)
5900 Hollis Street, Suite A
Emeryville, CA 94608
Tel: 510-420-3351
Cel: 510-385-0387
Fax: 510-420-9170
cevans@craworld.com

Please note new email address
Conestoga-Rovers & Associates has acquired the former Cambria Environmental Technology.
Visit us at www.craworld.com

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

F

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

May 3, 2007

Mr. Satya Sinha
Chevron Environmental Management Company
6001 Bollinger Canyon Rd., K2256
San Ramon, CA 94583-2324

Environmental Manager
Southland Corporation
P.O. Box 711
Dallas, TX 75211

Subject: Fuel Leak Case No. RO0000189 and Geotracker Global ID T0600101353, Chevron #21-1253/Texaco, 930 Springtown Boulevard, Livermore, CA 94550 – Work Plan Comments

Dear Mr. Sinha:

Alameda County Environmental Health (ACEH) staff has reviewed the fuel leak case file for the above-referenced site, including the recently submitted document entitled, "Site Investigation Work Plan," dated April 18, 2007. The Work Plan proposes soil and groundwater sampling from cone penetration test (CPT) soil borings. We request that CPT soil borings be advanced at six locations and that the sampling methods be revised as discussed in the technical comments below. The proposed scope of work may be implemented provided that the technical comments below are addressed and incorporated during the proposed field investigation. Submittal of a revised Work Plan is not required unless an alternate scope of work outside that described in the Work Plan and technical comments below is proposed.

We request that you address the following technical comments, perform the proposed work, and send us the reports described below.

TECHNICAL COMMENTS

1. **Proposed Soil Boring Locations.** The Work Plan contains a discrepancy in the number of CPT soil borings proposed. The text in the first paragraph of the Proposed Scope of Work on page 3 and Figure 2 proposes five CPT borings; however, the text at the bottom of page 3 proposes six CPT borings (CPT-1 to CPT-6). In order to meet the objectives of defining plume extent laterally and vertically, we request that six CPT borings be advanced at the locations shown on the attached Revised Figure 2. Please present the results in the Subsurface Investigation Report requested below.

2. **Proposed Soil Sampling.** The Work Plan currently proposes the collection of soil samples every five feet starting from five feet bgs to total depth of the CPT borings. We concur with the proposed soil sampling at five-foot intervals for the two CPT borings requested on-site

(CP-1 and CP-2 on Revised Figure 2). For the four downgradient borings (CP-3 through CP-6) that are outside the potential source area, we are not requiring the collection of soil samples at five foot intervals for chemical analyses. We request that one soil sample be collected from the zone of water table fluctuation in borings CP-3 through CP-6. Please present the results in the Subsurface Investigation Report requested below.

3. **Grab Groundwater Sampling.** The Work Plan currently proposes the collection of three grab groundwater samples from each boring. We concur with the collection of one grab groundwater sample from first-encountered groundwater in each boring and request that the total number of grab groundwater samples collected from each boring be based upon the CPT log. A minimum of three grab groundwater samples is to be collected from each boring but that number is to be increased as necessary in order to sample each significant coarse-grained layer observed on the CPT logs. Please present the results in the Subsurface Investigation Report requested below.

4. **Proposed Laboratory Analyses.** The proposed analyses for soil and groundwater samples are acceptable.

TECHNICAL REPORT REQUEST

Please submit technical reports to Alameda County Environmental Health (Attention: Jerry Wickham), according to the following schedule:

- **September 19, 2007 –** Subsurface Investigation Report

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

ELECTRONIC SUBMITTAL OF REPORTS

The Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of all reports in electronic form to the county's ftp site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program ftp site are provided on the attached "Electronic Report Upload (ftp) Instructions." Please do not submit reports as attachments to electronic mail.

Submission of reports to the Alameda County ftp site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) Geotracker website. Submission of reports to the Geotracker website does not fulfill the requirement to submit documents to the Alameda County ftp site. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed

locations of monitor wells, and other data to the Geotracker database over the Internet. Beginning July 1, 2005, electronic submittal of a complete copy of all necessary reports was required in Geotracker (in PDF format). Please visit the SWRCB website for more information on these requirements (http://www.swrcb.ca.gov/ust/cleanup/electronic_reporting).

PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 6835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that delays in investigation, later reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to $10,000 per day for each day of violation.

If you have any questions, please call me at (510) 567-6791.

Sincerely,

Jerry Wickham
Hazardous Materials Specialist

Attachment: Revised Figure 2

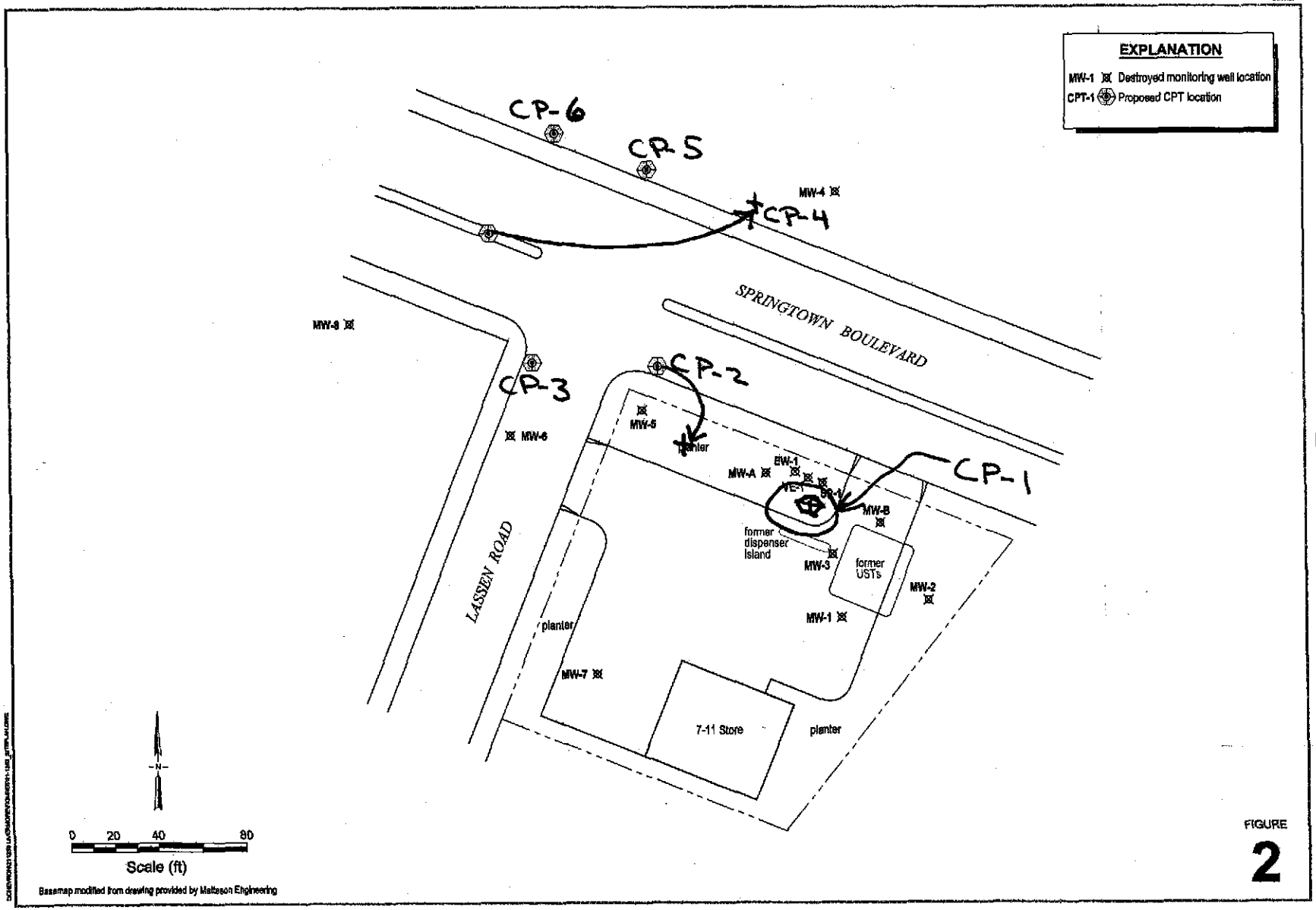
Enclosure: ACEH Electronic Report Upload (ftp) Instructions

cc: Colleen Winey, QIC 80201
Zone 7 Water Agency
100 North Canyons Parkway
Livermore, CA 94551

Danielle Stefani
Livermore-Pleasanton Fire Department
3560 Nevada Street
Pleasanton, CA 94566

Charlotte Evans
Conestoga-Rovers & Associates
5900 Hollis Street, Suite A
Emeryville, CA 94608

Donna Drogos, ACEH
Jerry Wickham, ACEH
File



Site Plan with Proposed CPT Locations

Former Texaco Service Station #21-1253
930 Springtown Boulevard
Livermore, California

CONESTOGA-ROVERS & ASSOCIATES

FIGURE
2

Revised Figure 2

RO 189

STATE OF CALIFORNIA - THE RESOURCES AGENCY ARNOLD SCHWARZENEGGER, Governor
DEPARTMENT OF WATER RESOURCES

CENTRAL DISTRICT
901 P Street
Sacramento, CA 95814
(916) 651-0753
(916) 651-0726 (Fax)

NORTHERN DISTRICT
2440 Main Street
Red Bluff, CA 96080
(530) 529-7300
(530) 529-7322 (Fax)

SAN JOAQUIN DISTRICT
3374 E. Shields Ave Ste A7
Fresno, CA 93726
(559) 230-3300
(559) 230-3301 (Fax)

SOUTHERN DISTRICT
770 Fairmont Avenue
Glendale, CA 91203
(818) 500-1645 ext. 233
(818) 543-4604 (Fax)

WELL COMPLETION REPORT RELEASE AGREEMENT—AGENCY STUDY

(Government Agencies and their Authorized Agents)

Under California Water Code Section 13752, the a gency named below requests permission from Department of Water Resources to inspect or copy, or for our authorized agent named below to inspect or copy, Well Completion Reports filed pursuant to Section 13751 to make a study.

In accordance with Section 13752, information obtained from these reports shall be kept confidential and shall not be disseminated, published, or made available for inspection by the public. The information shall be used only for the purpose of conducting the study. Copies obtained shall be stamped **CONFIDENTIAL** and shall be kept in a restricted file accessible only to agency staff or the authorized agent for this study.

Project Name: CHEVRON SITE #21-1253 County: Alameda

Street Address: 930 SPRINGTOWN BLVD. City: LIVERMORE

Township, Range, and Section: [redacted], T3S., R2E., S15 Radius: 200-ft

(Include entire study area and a map that shows the area of interest.)

CONESTOGA-ROVERS & ASSOCIATES Authorized Agent Company Name	ALAMEDA COUNTY HEALTH CARE SERVICES Government Agency Name
5900 HOLLIS ST., SUITE A Address	9131 HARBOR BAY PARKWAY, SUITE 250 Address
EMERYVILLE, CA 94608 City, State, and Zip Code	ALAMEDA, CA 94502-6570O City, State, and Zip Code
CHARLOTTE EVANS Authorized Agent Name (**please print**)	JERRY WICKHAM Agency Contact Name (**please print**)
Signature: [signature]	Signature: [signature]
Title: Project Manager	Title: Hazardous Materials Specialist
Telephone: (510) 420-3351	Telephone: (510) 567-6791
FAX: (510) 420-9170	FAX: (510) 337-9335
Date: 04/18/07	Date: 04/18/07
E-mail: cevans@craworld.com	E-mail: jerry.wickham@acgov.org

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

F

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

January 31, 2007

Mr. Satya Sinha
Chevron Environmental Management Company
6001 Bollinger Canyon Rd., K2256
San Ramon, CA 94583-2324

Environmental Manager
Southland Corporation
P.O. Box 711
Dallas, TX 75211

Subject: Fuel Leak Case No. RO0000189 and Geotracker Global ID T0600101353, Chevron #21-1253/Texaco, 930 Springtown Boulevard, Livermore, CA 94550

Dear Mr. Sinha:

I have been assigned as the caseworker for the above referenced case, which remains an open fuel leak case. Please send any future correspondence for this case to my attention. In correspondence dated March 8, 2002, Alameda County Environmental Health (ACEH) staff indicated that ACEH and the San Francisco Regional Water Quality Board had reviewed the case closure summary for this case and concurred that no further action related to the underground storage tank release is required at this time. The March 8, 2002 correspondence went on to request that the nine monitoring wells at the site be decommissioned, if they will no longer be monitored. The most recent correspondence in the case file is a March 11, 2003 letter from Ms. Karen Streich of ChevronTexaco, which indicates that monitoring wells at the site were destroyed and requests a remedial action completion certificate. No remedial action completion certificate appears to have been issued and a signed case closure summary is not in the files.

ACEH staff recently reviewed the case file for the above referenced site and find that the existing data do not support case closure. We have identified several data gaps in the technical comments below that are to be addressed prior to re-evaluating the site for case closure. Therefore, we request that you address the data gaps identified in the technical comments below and submit a Work Plan **by April 19, 2007**.

TECHNICAL COMMENTS

1. **Plume Extent and Preferential Pathways.** Previous reports appear to assume that the plume is limited in size to 0.1 acre along the northern property boundary. Based on our review of the contaminant distribution and site hydrogeology, it appears that the plume may extend northwest of the site. No monitoring wells were located northwest of the site to monitor the downgradient extent of the plume in that direction. Well MW-4 was located directly north of the site. However, an approximately 15-foot thick gravel zone encountered in the wells along the northern property boundary was not encountered in the boring for well

MW-4. It is also possible that the plume may have migrated preferentially through channel deposits. The possible presence of coarse-grained preferential pathways is supported by the results of an aquifer test conducted in well EW-1 in 1993. The largest drawdowns during the aquifer test were observed in wells MW-1 and MW-3, suggesting that the wells were in better hydraulic communication with extraction well EW-1 than other monitoring wells ("Extraction Well Installation and Feasibility Testing Report," by Weiss Associates dated January 5, 1993). The January 5, 1993 report interpreted the better hydraulic communication as an indication that," EW-1 may preferentially withdraw groundwater from a possible channel deposit." The potential for the plume to have migrated off-site to the northwest, possibly along a preferential pathway represents a data gap for the site. Therefore, we request that you propose a scope of work to evaluate potential plume migration to the northwest and along a preferential pathway such as channel deposits. The proposed scope of work is to include continuously logged soil borings or cone penetrometer borings. Depth-discrete grab groundwater sampling will be required.

2. **Vertical Extent of Contamination.** The deepest soil boring (SB-1) at the site extends to a maximum depth of 32 feet bgs. A moderate product odor was observed in the lowermost soil encountered in boring B-1. Based on the potential for downward migration of contamination at the site due to long-term water level fluctuations and the observation of fuel hydrocarbons at the lowest depths investigated, the vertical extent of contamination has not been defined. We request that you propose a scope of work in the Work Plan requested below to define the vertical extent of soil and groundwater contamination.

3. **Well Decommissioning.** The March 11, 2003 correspondence from ChevronTexaco references a letter from, "KHM Environmental Management, Inc. to Mr. Wyman Hong at Zone 7 Water Agency documenting destruction of the wells." Please submit to ACEH the documentation prepared by KHM Environmental Management, Inc. that documents the well decommissioning.

TECHNICAL REPORT REQUEST

Please submit technical reports to Alameda County Environmental Health (Attention: Jerry Wickham), *according to the following schedule:*

- **April 19, 2007** – Work Plan

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

ELECTRONIC SUBMITTAL OF REPORTS

The Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of all reports in electronic form to the county's ftp site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public

information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program ftp site are provided on the attached "Electronic Report Upload (ftp) Instructions." Please do not submit reports as attachments to electronic mail.

Submission of reports to the Alameda County ftp site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) Geotracker website. Submission of reports to the Geotracker website does not fulfill the requirement to submit documents to the Alameda County ftp site. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitor wells, and other data to the Geotracker database over the Internet. Beginning July 1, 2005, electronic submittal of a complete copy of all necessary reports was required in Geotracker (in PDF format). Please visit the SWRCB website for more information on these requirements (http://www.swrcb.ca.gov/ust/cleanup/electronic_reporting).

PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 6835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that delays in investigation, later reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to $10,000 per day for each day of violation.

If you have any questions, please call me at (510) 567-6791.

Sincerely,

Jerry Wickham
Hazardous Materials Specialist

Enclosure: ACEH Electronic Report Upload (ftp) Instructions

cc: Colleen Winey, QIC 80201
Zone 7 Water Agency
100 North Canyons Parkway
Livermore, CA 94551

Danielle Stefani
Livermore-Pleasanton Fire Department
3560 Nevada Street
Pleasanton, CA 94566

Sunil Ramdass
SWRCB Cleanup Fund
1001 I Street, 17th floor
Sacramento, CA 95814-2828

Donna Drogos, ACEH
Jerry Wickham, ACEH
File

RO-189

Environmental Management Company
6001 Bollinger Canyon Rd, L4050
P.O. Box 6012
San Ramon, CA 94583-2324
Tel 925-842-1589
Fax 925-842-8370

Karen Streich
Project Manager

ChevronTexaco

March 11, 2003

Ms. Eva Chu
Alameda County Health Care Services
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502

Re: Remediation Action Completion Letter
Former Texaco Station
930 Springtown Blvd, Livermore, CA

Dear Eva,

In a March 8, 2002 letter to Ms. Karen Petryna at Equiva Services (copy attached), you indicated that you would issue remediation action completion letter for the referenced site after monitoring wells were destroyed. Also attached is a letter from KHM Environmental Management, Inc. to Mr. Wyman Hong at Zone 7 Water Agency documenting destruction of the wells.

I would appreciate it if you would issue the remediation action completion letter for this site to my attention, since I am responsible for managing environmental issues at this site after the Chevron and Texaco merger.

Thank you for your assistance with this. If you have any questions, please do not hesitate to call me at 925-842-1589.

Sincerely,

Karen Streich

Karen Streich
Project Manager

Copy to: R. Lee Dooley, KHM, 6284 San Ignacio Ave, Suite E, San Jose, CA 95119

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

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

RO0000189

March 8, 2002

Ms. Karen Petryna
Equiva Services
P.O. Box 7869
Burbank, CA 91500-7869

RE: Well Decommission at 930 Springtown Blvd, Livermore, CA

Dear Ms. Petryna:

This office and the San Francisco RWQCB have reviewed the case closure summary for the above referenced site and concur that no further action related to the underground tank release is required at this time. Before a remedial action completion letter is sent, the on-site and off-site monitoring wells (9 total) should be decommissioned, if they will no longer be monitored. Please notify this office upon completion of well destruction so a closure letter can be issued.

Well destruction permits may be obtained from Alameda County Flood Control and Water Conservation, Zone 7. They can be reached at (925) 484-2600.

If you have any questions, I can be reached at (510) 567-6762.

Sincerely,

eva chu
Hazardous Materials Specialist

texaco-11

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

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

RO0000189

November 28, 2001

Ms. Karen Petryna
Equiva Services
P.O. Box 7869
Burbank, CA 91510-7869

SUBJECT: INTENT TO MAKE A DETERMINATION THAT NO FURTHER ACTION IS REQUIRED *OR* ISSUE A CLOSURE LETTER FOR 930 SPRINGTOWN BLVD., LIVERMORE, CA

Dear Ms. Petryna:

This letter is to inform you that Alameda County Environmental Protection (LOP) intends to make a determination that no further action is required at the above site or to issue a closure letter. Please notify this agency of any input and recommendations you may have on these proposed actions within 20 days of the date of this letter.

In accordance with section 25297.15 of Ch. 6.7 of the Health & Safety Code, you must provide certification to the local agency that all of the current record fee title owners have been informed of the proposed action. Please provide this certification to this office within 20 days of the date of this letter.

If you have any questions about these proposed actions, please contact me at (510) 567-6762.

Sincerely,

eva chu
Hazardous Materials Specialist

c: Chuck Headlee, RWQCB
Danielle Stefani, Livermore-Pleasanton Fire Dept
Southland Corporation, Environmental Mgr, P.O. Box 711, Dallas, TX 75211

texaco-10

IT Corporation
1921 Ringwood Avenue
San Jose, CA 95131-1721
Tel. 408.453.7300
Fax. 408.437.9526

A Member of The IT Group

February 8, 2000
Project 340-083.9A

Ms. Eva Chu
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502-6577

Re: **Certified List of Record Fee Title Owners for:**
Former Texaco Service Station
930 Springtown Boulevard at Lassen Road
Livermore, California
Incident No. 91995053

Dear Ms. Chu:

In accordance with section 25297.15(a) of Chapter 6.7 of the Health Safety Code and on behalf of Equiva Services LLC, we certify that the following is a complete list of current record fee title owners and their mailing addresses for the above site.

Southland Corporation, P. O. Box 711, Dallas, TX 75221

Sincerely,

IT Corporation

Kristen Flesoras
Project Scientist

cc: Ms. Karen Petryna, P.E., Equiva Services LLC, P.O. Box 7869, Burbank, CA 91501-7869
Southland Corporation, P. O. Box 711, Dallas, TX 75221

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

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway
Alameda, CA 94502-6577
(510) 567-6700
(510) 337-9432

StID 3614

January 21, 2000

Ms. Karen Petryna
Equiva Services
P.O.Box 7869
Burbank, CA 91501-7869

RE: Work Plan Approval for 930 Springtown Blvd., Livermore, CA

Dear Ms. Petryna:

I have completed review of the IT Group's January 2000 report entitled *Addendum to Work Plan for Soil Vapor Sampling* prepared for the above referenced site. The proposal to advance on-site soil borings to collected soil and soil vapor samples from the vadose zone is acceptable with the following changes/additions:

1. The sampling probe should be advanced using Geoprobe direct push method to ensure a tight seal where ambient air will not mix with soil vapor samples
2. Summa canisters or Tedlar bags obtained from Air Toxics [(916) 985-1020)] should be used for the collection of soil vapor samples.
3. Soil vapor samples should be analyzed for VOCs using Method TO-14/TO-15
4. Soil samples to be collected for physical parameters should be collected from a "clean" or background borehole.

A revised Tier 2 RBCA analysis will be submitted using the soil and soil vapor analytical data collected from the above investigation.

Please provide 72 hours notice to this office prior to the start of field activities. If you have any questions, I can be reached at (510) 567-6762.

eva chu
Hazardous Materials Specialist

email: Debra Moser (dmoser@theitgroup.com)

texaco9

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

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

StID 3614

June 11, 1999

Ms. Karen Petryna
Equiva Services
P.O. Box 6249
Carson, CA 90749-6249

RE: Workplan Approval for 930 Springtown Blvd, Livermore, CA

Dear Ms. Petryna:

I have completed review of Pacific Environmental Group, Inc.'s December 1998 *Work Plan for Soil Vapor Sampling* prepared for the above referenced site. The proposal to collected soil vapor samples from three borings is acceptable with the following changes/additions:

- provide SOP for soil vapor borings,
- soil vapor samples should also be analyzed for MTBE,
- soil sample for physical soil analyses (total organic carbon content, bulk density, porosity, water content) should be collected from "clean" soil,
- collect soil vapors with summa canisters, not Tedlar bags, and
- only one or two volumes of air should be evacuated from the tubing before a vapor sample is collected.

It is my understanding that data collected from the proposed investigation will be incorporated into a RBCA Tier 2 risk assessment. Be reminded that there is insufficient soil concentration data collected to date from the vadose zone at this site. Most of the soil concentrations are from below groundwater elevation. Therefore, it is recommended that the soil vapor borings be advanced to groundwater depth for the collection of soil samples. The boring should be continuously logged, soil screened with an OVM, and the soil (within the vadose zone) with the highest OVM reading be submitted for laboratory analysis for TPHg, BTEX, and MTBE.

If you have any questions, I can be reached at (510) 567-6762.

eva chu
Hazardous Materials Specialist

c: Krissy Flesoras, PEG, 2025 Gateway, Suite 440, San Jose, CA 95110

texaco8

3614
EC

Cal/EPA

Pete Wilson
Governor

State Water Resources Control Board

Division of Clean Water Programs

Mailing Address:
P.O. Box 944212
Sacramento, CA
94244-2120

2014 T Street,
Suite 130
Sacramento, CA
95814
(916) 227-4307
FAX (916) 227-4530

World Wide Web
http://www.swrcb.ca.gov/~cwphome/fundhome.htm

DEC 3 1 1997

Ms. Feryal Sarrafian
Texaco R & M, L.A. Div.
10 Universal City Plz 7th Fl
Universal City, CA 91608-7812

UNDERGROUND STORAGE TANK CLEANUP FUND, CLAIM NO. 6200, FOR SITE ADDRESS: 930 SPRINGTOWN BLVD, LIVERMORE 94550

The State Water Resources Control Board (State Board) is able to issue, pursuant to applicable regulations, the enclosed Letter of Commitment (LOC) in an amount not to exceed $300,000. This LOC is based upon our review of the corrective action costs you reported to have incurred to date. The LOC may be modified by the State Board.

It is very important that you read the terms and conditions listed in the enclosed LOC. Claims filed with the Underground Storage Tank Cleanup Fund far exceed the funding available and it is very important that you make use of the funding that has been committed to your cleanup in a timely manner.

Consequently, if you do not submit your first reimbursement request for corrective action costs which you have incurred within ninety (90) calendar days from the date of this letter, your funds will automatically be deobligated. Once deobligated, any future funds for this site will be obligated subject to availability of funds at such time when we receive your reimbursement request.

You are reminded that you must comply with all regulatory agency time schedules and requirements and you must obtain three bids for any required corrective action. Only corrective action costs *required* by the regulatory agency to protect human health, safety and the environment can be claimed for reimbursement. **Unless waived in writing, you are required to obtain *preapproval of costs* for all future corrective action work (form enclosed).** If you have any questions on obtaining preapproval of your costs or the three bid requirement, please call Steve Marquez, our Technical Reviewer assigned to claims in your Region, at (916) 227-0746. Failure to obtain preapproval of your future costs may result in the costs not being reimbursed.

The following documents needed to submit your reimbursement request are enclosed:

- "Reimbursement Request Instructions" package. **Retain this package for future reimbursement requests.** These instructions must be followed when seeking reimbursement for corrective action costs incurred after January 1, 1988. Included in the instruction package are samples of completed reimbursement request forms and spreadsheets.

DEC 3 1 1997

- "Bid Summary Sheet" to list information on bids received which **must be completed and returned**.
- "Reimbursement Request" forms which you **must use to request reimbursement of costs incurred**.
- "Spreadsheet" forms which you **must use in conjunction with your reimbursement request**.
- "Claimant Data Record" (Std. Form 204) which **must be completed and returned with your first reimbursement request.**

We continuously review the status of all active claims. If you do not submit a reimbursement request or fail to proceed with due diligence with the cleanup, we will take steps to withdraw your LOC.

If you have any questions regarding the enclosed documents, please contact Anna Torres at (916) 227-4388.

Sincerely,

Dave Deaner, Manager
UST Cleanup Fund Program

Enclosures

cc: √ Mr. Thomas Peacock
Alameda County EHD
1131 Harbor Bay Pkway, 2nd Fl.
Alameda, CA 94502-6577

98 JAN -6 AM 9:10

KAPREALIAN ENGINEERING
INCORPORATED

December 11, 1997

GW input could come only be last 4 qtrs - OK
S.S. should be from above avg d tw

Ms. Eva Chu
Alameda County Health Care Services
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502

RE: RBCA Tier 2 Analysis Input Parameters
Former Texaco Service Station
930 Springtown Road
Livermore, California

Dear Ms. Chu:

On behalf of Texaco, Kaprealian Engineering, Inc. (KEI) conducted a Tier 2 RBCA analysis for the subject site. The results of the analysis were presented in KEI's report (KEI-P95-0711.R2) dated October 31, 1997. At your request, attached is a summary of both the subsurface soil (>3 feet below grade) and ground water sample analytical results used as input parameters for the analysis.

If you have further questions, please contact Ms. Karen E. Petryna, Texaco Project Manager, at (510) 236-9139.

Sincerely,

Kaprealian Engineering, Inc.

Sarkis A. Soghomonian
Project Engineer

cc: Ms. Karen E. Petryna, Texaco

98 JAN 14 PM 3:02

2401 Stanwell Drive, Suite 400
Concord, California 94520
Tel: 510.602.5100 Fax: 510.687.0602

Former Texaco Service Station
930 Springtown Boulevard
Livermore, California

RBCA Tier 2 Analysis
Ground Water Input Parameters

Use these conc. only

Sample Number	MW-A 2/14/97	MW-A 11/22/96	MW-A 8/14/96	MW-A 4/30/96	MW-B 2/14/97	MW-B 11/22/96	MW-B 8/14/96	MW-B 4/30/96	MW1 2/14/97	MW1 11/22/96
Benzene-CA	0.14	0.1	0.065	0.0012	0.0052	0.056	0.0025	0.017	0	0
Ethylbenzene	0.18	0.17	0.075	0.00067	0.11	2.4	0.26	0.46	0	0
Methyl t-Butyl Ether	0	0.064	0.057	0	0	0	0	0	0	0
Toluene	0.7	0.31	0.17	0.0012	0.072	1.6	0.12	0.12	0	0
Xylene (mixed isomers)	1.6	0.71	0.46	0.0015	0.21	5.5	0.32	0.4	0	0
DTW		10:00 - 13.61'				7.75 - 11.64				

Sample Number	MW1 8/14/96	MW1 4/30/96	MW2 2/14/97	MW2 11/22/96	MW2 8/14/96	MW2 4/30/96	MW3 2/14/97	MW3 11/22/96	MW3 8/14/96	MW3 4/30/96
Benzene-CA	0	0	0	0	0	0	0	0	0	0
Ethylbenzene	0	0	0	0	0	0	0	0.0006	0	0
Methyl t-Butyl Ether	0	0	0	0	0	0	0	0	0	0
Toluene	0	0	0	0	0	0	0	0	0	0
Xylene (mixed isomers)	0	0	0	0	0	0	0	0	0	0
	10.25 - 14.11		7.92 - 11.94						9.38 - 12.87	

Sample Number	MW4 2/14/97	MW4 11/22/96	MW4 8/14/96	MW4 4/30/96	MW5 2/14/97	MW5 11/22/96	MW5 8/14/96	MW5 4/30/96	MW6 2/20/95	MW6 8/31/94
Benzene-CA	0	0	0	0	0.15	0.16	0.13	0.035	0	0
Ethylbenzene	0	0	0	0	0.054	0.015	0.022	0.0081	0	0
Methyl t-Butyl Ether	0	0	0	0	0	0	0.071	0	0	0
Toluene	0	0	0	0	0.33	0.19	0.17	0.037	0	0
Xylene (mixed isomers)	0	0	0	0	0.068	0.028	0.047	0.2	0	0
		8.85 - 12.40				11.20 - 14.56				

Sample Number	MW6 1/24/94	MW6 8/9/93	MW7 4/1/92	MW8 2/14/97	MW8 11/22/96	MW8 8/14/96	MW8 4/30/96
Benzene-CA	0	0	0	0	0.0059	0.00073	0.0096
Ethylbenzene	0	0	0	0	0.0022	0	0
Methyl t-Butyl Ether	0	0	0	0	0	0	0
Toluene	0	0	0	0	0.0024	0	0
Xylene (mixed isomers)	0	0	0	0	0.0083	0	0
					14.32 - 19.65		

Results are in milligrams per liter.

Former Texaco Service Station
930 Springtown Boulevard
Livermore, California

RBCA Tier 2 Analysis
Subsurface Soil Input Parameters

Sample Number	MWA (15')	MWB (15')	bottom?	north?	south?	east?	west?	MW5c (14')	MW6b (10.5')	SB-1D (12.5')
Benzene-CA	27	0.15	0.58	0	0	0.02	0	0.03	0.002	0
Ethylbenzene	190	0.97	0.24	0	0	0.02	0	0.025	0.005	0
Methyl t-Butyl Ether	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Toluene	86	0.83	0.4	0	0	0.01	0	0.07	0.003	0
Xylene (mixed isomers)	310	3.1	0.0009	0	0	0.01	0			0

Sample Number	SB-1E (16')	SB-1F (21')	SB-1G (27')	SB-1H (32')	SB-2A (9.5')	SB-2C (14.5')	SB-2D (19.5')	MW7C (10.5')	MW7D (14.5')	MW7F (19.5')
Benzene-CA	4	0	0	0	0	0	0	0	0	0
Ethylbenzene	0	0	0	5	0	0	0	0	0	0
Methyl t-Butyl Ether	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Toluene	19	0	0	0	0	0	0	0	0	0
Xylene (mixed isomers)	24	0	0	15	0	0	0	0	0	0

Sample Number	MW8C (10')	MW8D (17.5')	MW8E (20.5')	EW1 (9.7')	EW1 (14.5')	EW1 (24.7')	EW1 (29.5')	VE1 (14.5')	VE1 (16.7')	VE1 (18.5')
Benzene-CA	0	0	0	0	6.6	0.017	0	7.1	2.9	0.007
Ethylbenzene	0	0	0	0	15	0.05	0	13	14	0
Methyl t-Butyl Ether	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Toluene	0	0	0	0	21	0.051	0	22	15	0.029
Xylene (mixed isomers)	0	0	0	0	50	0.21	0	56	53	0

Any SS from MW-3, MW-1, MW-2

Sample results are in mg/kg.

2/8/96

Texaco Refining and Marketing Inc
108 Cutting Boulevard
Richmond CA 94804

February 6, 1996

ENV - STUDIES, SURVEYS, & REPORTS
930 Springtown Blvd., Livermore, California
Monitoring Well Destruction Report

Ms. Eva Chu
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway, Fl. 2
Alameda, CA 94502-6577

Dear Ms. Chu:

Enclosed is the *Report of Destruction of Monitoring Wells*, dated January 22, 1996. It documents the destruction of Monitoring Wells MW6 and MW7 at the subject site.

If you have any questions or comments regarding this site, please call me at (510) 236-9139.

Best Regards,

Karen E. Petryna
Project Coordinator
Texaco Environmental Services

KEP:hs
U:\..\930\MWDEST.EC

Enclosure

cc: Timothy Ross (w/o enclosure)
Kaprealian Engineering, Inc.
2401 Stanwell Dr., Suite 400
Concord, CA 94520

Mr. Robert Vasquez (w/ enclosure)
The Southland Corporation
3146 Gold Drive, Suite 300
Rancho Cordova, CA 95670

RRZielinski (w/o enclosure)
RAOFile-UCPFile (w/enclosure)

pf

KAPREALIAN ENGINEERING
INCORPORATED

KEI-P95-0711.R1
January 22, 1996

Texaco Environmental Services
108 Cutting Boulevard
Richmond, CA 94804

Attention: Ms. Karen Petryna

RE: Report of Destruction of Monitoring Wells
Former Texaco Service Station
930 Springtown Blvd.
Livermore, California

Dear Ms. Petryna:

This report documents the destruction of monitoring wells MW6 and MW7 at the subject site, in accordance with Kaprealian Engineering, Inc's. (KEI) work plan/proposal (KEI-P95-0711.P1) dated December 5, 1995. The wells, shown on the attached Figure 1, extended to a total depth of 25 feet below grade, and were destroyed with the approval of the Alameda County Health Care Services (ACHCS) Agency (letter to Texaco dated November 8, 1995).

On December 29, 1995, and January 19, 1996, monitoring wells MW7 and MW6, respectively, were destroyed by fully drilling out the existing well seals, well casings, and filter pack sand materials. The boreholes were then sealed from total depth to the surface with neat cement, by the use of a 1.5 inch diameter PVC tremie pipe plumbed with flexible hose to a grout pump.

All drill cuttings and ground water generated during the well destruction activities were stored on-site in properly labeled 55-gallon drums, pending analysis and proper disposal.

DISTRIBUTION

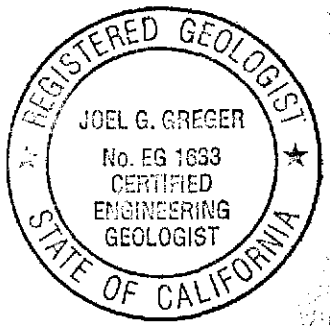
A copy of this report should be submitted to the ACHCS, and to the Regional Water Quality Control Board, San Francisco Bay Region.

If you have any questions regarding this report, please do not hesitate to call me at (510) 602-5100.

2401 Stanwell Drive, Suite 400
Concord, California 94520
Tel: 510.602.5100 Fax: 510.687.0602

Sincerely,

Kaprealian Engineering, Inc.



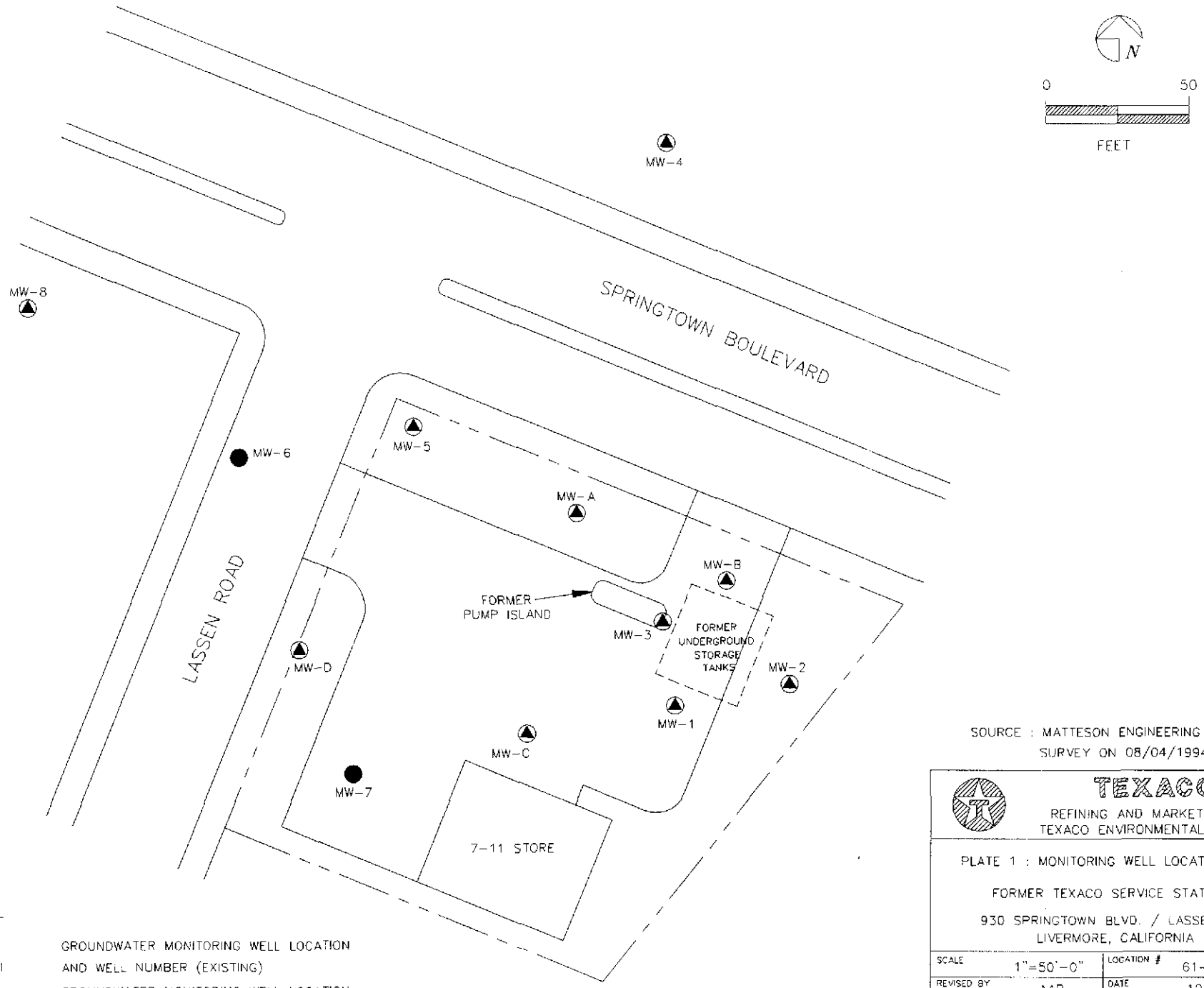
Joel G. Greger, C.E.G.
Senior Engineering Geologist

License No. EG 1633
Exp. Date 8/31/96

Timothy R. Ross
General Manager

/jad

Attachment: Figure 1



LEGEND :

MW-1 — GROUNDWATER MONITORING WELL LOCATION AND WELL NUMBER (EXISTING)

MW-7 — GROUNDWATER MONITORING WELL LOCATION AND WELL NUMBER (DESTROYED)

SOURCE : MATTESON ENGINEERING CONDUCTED SURVEY ON 08/04/1994

TEXACO
REFINING AND MARKETING INC.
TEXACO ENVIRONMENTAL SERVICES

PLATE 1 : MONITORING WELL LOCATION MAP

FORMER TEXACO SERVICE STATION

930 SPRINGTOWN BLVD. / LASSEN RD.,
LIVERMORE, CALIFORNIA

SCALE	1"=50'-0"	LOCATION #	61-857-1050
REVISED BY	AAB	DATE	12/5/95
CHECKED BY		DATE	
DRAWING NO.	FIGURE 1		

KAPREALIAN ENGINEERING INCORPORATED

Approved to decommission MWs 6+7 -

December 5, 1995

Alameda County Health Care Services
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502

Attention: Ms. Eva Chu

RE: Former Texaco Service Station
930 Springtown Blvd.
Livermore, California

Dear Ms. Chu:

Per the request of Ms. Karen Petryna of Texaco Environmental Services, enclosed please find our work plan/proposal dated December 5, 1995, for the above referenced site.

If you should have any questions, please feel free to call our office at (510) 602-5100.

Sincerely,

Kaprealian Engineering, Inc.

Judy A. Dewey
Executive Secretary

\jad

Enclosure

cc: Ms. Karen Petryna, Texaco Environmental Services

2401 Stanwell Drive, Suite 400
Concord, California 94520
Tel: 510.602.5100 Fax: 510.687.0602

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

RAFAT A. SHAHID, DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
State Water Resources Control Board
Division of Clean Water Programs
UST Local Oversight Program
1131 Harbor Bay Parkway
Alameda, CA 94502-6577
(510) 567-6700

StID 3614

November 8, 1995

Ms. Karen Petryna
Texaco
108 Cutting Blvd
Richmond, CA 94804

Re: Revision of Sampling Program at 930 Springtown Blvd, Livermore, CA 94550

Dear Ms. Petryna:

As a result of our meeting of October 13, 1995 regarding the above referenced site, Texaco is proposing to: 1) shut down the existing vapor extraction system; 2) revise the current monitoring/sampling program; and 3) destroy monitoring wells MW-6 and MW-7. That proposal is acceptable with the following exception. Wells MW-A, MW-B, and MW-5 should be sampled on a quarterly basis. With the shut down of the vapor extraction system, these wells would detect any sudden increase in dissolved hydrocarbon contaminant concentrations. The sampling frequency for wells MW-1, MW-2, MW-3, and MW-4 may be reduced to a semi-annual basis.

If you have any questions or comments, please contact me at (510) 567-6762.

eva chu
Hazardous Materials Specialist

cc: Tim Ross, KEI, 2401 Stanwell Dr, #400, Concord 94520
files

texaco.7

Texaco Refining
and Marketing Inc.

November 2, 1995

ENV - STUDIES, SURVEYS & REPORTS
Application for Containment Zone Status,
Discontinuation of Vapor Extraction System,
and Revision to Ground Water Monitoring and Sampling Program
930 Springtown Boulevard
Livermore, California

Ms. Eva Chu
Alameda County Health Care Services
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502

Dear Ms. Chu:

Pursuant to your request during our meeting on October 13, 1995, this proposal has been developed for the subject site. This plan proposes shutdown of the existing remedial system (already implemented), revisions to the existing ground water monitoring and sampling program, the destruction of two monitoring wells, and contingency measures.

SITE BACKGROUND

The subject site formerly contained a Texaco service station facility, and now is occupied by an operating 7-Eleven convenience store. The underground storage tanks were removed from the site in June of 1985. The ongoing environmental investigation was initiated in September of 1984. The following is a summary of site conditions and work performed to date:

- Ten monitoring wells, two exploratory soil borings, one extraction well, one vapor extraction well, and one sparge point have been installed at and in the vicinity of the site.

- The depth to ground water has historically varied from between approximately 6.5 and 19.5 feet below grade at the site and vicinity, although the typical depth in the area

that has been impacted by petroleum hydrocarbons has ranged from about 10 to 14 feet below grade.

- A relatively consistent northerly ground water flow direction has been documented at and in the vicinity of the site.

- The extent of the dissolved hydrocarbon plume is predominantly limited to the northern portion of the site (wells MWA, MWB, MW3, and MW5). The extent of the plume is well defined and does not appear to be migrating. Perimeter wells MW1, MW2, MW4, MW6, MW7, and MW8 have consistently shown low to non-detectable concentrations of dissolved hydrocarbons.

- According to the Boring Logs prepared during the installation of wells in the northern portion of the site, a strong product odor was noted in the gravelly layer that underlies the site at about 16 to 20 feet below grade. This gravel layer has consistently been saturated since the initiation of the ground water monitoring program. The dissolved hydrocarbons detected in the ground water samples collected from this area appear to be a function of the residual soil contamination that exists in this area.

- An evaluation has been performed as to whether underground utility trenches in the site vicinity have acted as migration pathways for hydrocarbons. Based on the depth of the utility trenches and the historical depth to ground water (which is deeper than utility depths), migration along utilities does not appear to have occurred.

- An aquifer test, a pilot vapor extraction test, and a sparge test were performed at the site in the fourth quarter of 1992. Subsequently, a vapor extraction/sparge system utilizing wells EW1, VE1, SP1, MWA, MWB, MW3, and MW5 as extraction wells, and a King Buck CATOX vapor abatement system, began operation in September of 1994. The system was operated until October of 1995, when no significant hydrocarbon concentrations were entering the system. Based on a conversation between yourself and Mr. Tim Ross of

Kaprealian Engineering, Inc. (KEI), the existing system was shut down.

DISCUSSION AND PROPOSAL

Termination of System Operation and Application for Containment Zone Status

As previously stated, the extent of the dissolved hydrocarbon ground water plume appears to be well defined and not migrating, and does not appear to threaten to any potential beneficial ground water use. The vapor extraction system was initially effective in removing dissolved hydrocarbons from the ground water and the unsaturated soil, but after the first few months of operation was not removing enough hydrocarbons to justify its continued operation. Therefore, operation of the system has ceased. Based on present site conditions, it appears that the **most appropriate course of action is to apply for Containment Zone status for** the site while continuing a **limited ground water monitoring program.**

Proposed Revisions to Ground Water Monitoring and Sampling Program

Cross-gradient monitoring well MW6, which has shown non-detectable concentrations of total petroleum hydrocarbons (TPH) as gasoline and benzene, toluene, ethylbenzene, and xylenes (BTEX) since April of 1992, is redundant because well MW8 is located in the same cross-gradient direction. Monitoring well **MW7** is located near the upgradient perimeter of the site, and provides no relevant information. Therefore, we recommend the **destruction of these two** wells.

Monitoring wells MWA, MWB, MW1, MW3, and MW5 are currently monitored and sampled quarterly, and wells MW2, MW4, and MW8 semi-annually. Based on the relatively consistent ground water flow direction and contaminant concentrations shown to date, we recommend reducing the frequency of monitoring and sampling of all of these wells to semi-annual for a period of two years.

Since VES just turned off, continue sampling MWA, B, MW-5 on Qtr.

Contingency Planning

Assuming that the concentrations of dissolved hydrocarbons detected in the ground water samples collected during the upcoming two-year period are reasonably consistent with previous results and do not show a significant increasing trend, TES will apply for case closure from the ACHCS.

If the analytical results of the future ground water samples indicate a significant increase in the dissolved hydrocarbon contaminant concentrations, TES will evaluate re-implementing vapor extraction via the use of a blower/carbon system. TES plans on leaving the existing underground piping network and equipment enclosure in place in the event that this course of action is deemed appropriate.

Thank you again for meeting with me and Texaco's site consultant. A concurrence letter to this plan would be appreciated. Unless we receive further direction from your office, we will implement the steps outlined above. If you have any questions or comments regarding this site, please feel free to contact me at (510) 236-9139.

Best regards,

Karen E. Petryna
Engineer
Texaco Environmental Services

KEP:kei
U:\SITES\930\CLOSEDOC.EC

cc: Tim Ross, Kaprealian Engineering

RRZielinski
RichFile-UCPFile

PR:

Texaco Refining and Marketing Inc
108 Cutting Boulevard
Richmond CA 94804

October 12, 1995

VIA FACSIMILE

ENV -STUDIES, SURVEYS & REPORTS
Discussion of Potential Nest Action Phases
930 Springtown Boulevard, Livermore, California

Ms. Eva Chu
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502

Dear Ms. Chu:

Pursuant to your request, this letter has been developed in order to discuss the potential next phase of work at the subject site. We will further discuss the options outlined in this letter during our meeting on October 13, 1995.

SITE BACKGROUND

The subject site formerly contained a Texaco service station facility, and now is occupied by an operating 7-11 convenience store. The former underground storage tanks were removed from the site in June of 1985. The ongoing environmental investigation was initiated in September of 1984, and the following work has been performed to date:

- Ten monitoring wells, two exploratory soil borings, one extraction well, one vapor extraction well, and one sparge point have been installed at and in the vicinity of the site to date.

- The depth to ground water has varied from between 6.5 and 19.5 feet below grade at the site and vicinity, although the typical depth in the area that has been impacted by petroleum hydrocarbons has ranged from about 10 to 14 feet below grade.

- Based on a review of the ground water data collected to date, a relatively consistent northerly ground water flow direction has been established.

- The extent of the dissolved hydrocarbon plume is predominantly limited to the northern portion of the site (wells MW-A, MW-B, MW-3, and MW-5).

- The extent of the dissolved hydrocarbon plume is well defined and does not appear to be migrating. Wells MW-1, MW-2, MW-4, MW-6, MW-7, and MW-8 have consistently shown low to predominantly non-detectable concentrations of dissolved hydrocarbons.

- According to the Boring Logs prepared during the installation of wells in the northern portion of the former Texaco site, there was a strong product odor in the gravelly layer that underlies this site at about 16 to 20 feet below grade. This layer has consistently been saturated since the initiation of the ground water monitoring program. It is therefore believed that the dissolved hydrocarbons found in ground water samples collected from this area are a function of the residual soil contamination that exists at the site.

- An evaluation has been performed as to the possibility of underground utility trenches acting as migration pathways for the hydrocarbon plume. Based on the depth of the utility trenches and the historical depth to ground water, the migration pathway potential appears to be minimal to non-existent.

- An aquifer test, a pilot vapor extraction test, and a sparge test were performed at the site in the fourth quarter of 1992. Based on the results of these tests, it was decided to install a vapor extraction and air sparge system.

- A vapor extraction/sparge system utilizing wells EW-1, VE-1, SP-1, MW-A, MW-B, MW-3, and MW-5 was operational in September of 1994. A King Buck CATOX was chosen as the vapor abatement device. The system is still currently operating; however, there are currently virtually no influent concentrations entering the system. Based on a conversation between yourself and Mr. Tim Ross of Kaprealian Engineering, Inc. (KEI), Texaco plans on shutting down the existing system.

DISCUSSION OF POTENTIAL NEXT ACTION PHASES

Based on our experience at sites with conditions similar to those at 930 Springtown, the following courses of actions are potentially feasible at the site:

A. Continue operating the existing CATOX remedial system: During the initial operation of this system in the fourth quarter of 1994, adequate system influence concentrations were present to justify the continued operation of this system. However, the currently low to non-detectable concentrations do not justify the continued operation of the system. In addition, the daily energy cost for this system is approximately $130. Texaco has already received authorization for shut-down of this system. Therefore, this does not appear to be a cost-effective or technically viable option.

B. Continue operation of a vapor extraction system with a more cost-effective abatement device (i.e. carbon): As stated above, the currently-operating vapor extraction system is extracting virtually no hydrocarbons. Changing the system to blower/carbon will not increase flow or influent concentrations (it will tend to decrease them). Therefore, this does not appear to be a technically appropriate option.

C. Enhance the existing vapor extraction/air sparge system with water table depression (i.e. pump and treat) in order to expose more screened interval to the vapor extraction system:

The only apparent modification that could increase the influent concentrations into the vapor extraction system would be to depress the water table in order to increase the exposed well screen area. Theoretically, this enhancement would expose the gravelly area noted above to the vapor extraction system. However, this would require that the water table be depressed by over 5 feet over the northern area of the site. Based upon the permeable nature of the gravel in this zone and also the apparent quick recharge rate of ground water, it is doubtful if this enhancement is even possible on a practical basis. In addition, as stated earlier, the hydrocarbon plume consists of only dissolved constituents and does not appear to be migrating (based on the extensive ground water monitoring data collected to date). Also, a preliminary review of the nearby area did not reveal the presence of any potential ground water receptor areas in the vicinity of the site. Lastly, the installation of the underground piping required for the operation of the enhancement would cause significant disruption to the operating 7-11 convenience store facility. Therefore, since the dissolved plume at the site does not appear to be migrating and does not (preliminarily) appear to pose a threat to any potential ground water use, and since the cost of this enhancement (if even technically possible) would be significantly greater than any potential benefit that it would provide, it does not appear that this would be a viable option.

D. Apply for a Non-Attainment Zone status for the site while continuing a limited ground water monitoring program: Based on the factors present at this site at the present time, it appears that this is the most appropriate course of action at the site. As stated before, the extent of the ground water plume appears to be well defined at the site, is not migrating, and does not appear to pose a threat to any potential beneficial ground water use. The existing vapor extraction system was initially effective in removing dissolved hydrocarbons from the ground water and the unsaturated soil, but now is not removing enough hydrocarbons to justify its

continued operation. It appears that best available technology was used in the attempted remediation of this site. Based upon all of the discussion previously presented, this site appears to be an ideal candidate for Non-Attainment Zone status. It may also be advisable to evaluate the addition of an oxygen-releasing compound (ORC) into the monitoring wells showing dissolved hydrocarbons. The purpose of the ORC would be to increase the oxygen availability in the vicinity of these wells in order to stimulate the bioremediation process of the residual hydrocarbons.

Based on the discussion and rationale presented above, Texaco Environmental Services is currently planning on implementing Option D. We look forward to discussing the merits/disadvantages of these possible options during our October 13, 1995, meeting.

If you have any questions or comments regarding this site, please feel free to contact me at (510) 236-9139.

Best regards,

Karen E. Petryna
Environmental Project Manager
Texaco Environmental Services

KEP/KEI
...\SITES\930\FEASPLAN.EC

cc: Mr. Tim Ross, Kaprealian Engineering

RRZielinski
RAOFile-UCPFile

PR

Texaco Refining and Marketing Inc
109 Castro Boulevard
Livermore, CA 94550

October 12, 1995 **VIA FACSIMILE**

ENV -STUDIES, SURVEYS & REPORTS
Discussion of Potential Nest Action Phases
930 Springtown Boulevard, Livermore, California

Ms. Eva Chu
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502

Dear Ms. Chu:

Pursuant to your request, this letter has been developed in order to discuss the potential next phase of work at the subject site. We will further discuss the options outlined in this letter during our meeting on October 13, 1995.

SITE BACKGROUND

The subject site formerly contained a Texaco service station facility, and now is occupied by an operating 7-11 convenience store. The former underground storage tanks were removed from the site in June of 1985. The ongoing environmental investigation was initiated in September of 1984, and the following work has been performed to date:

- Ten monitoring wells, two exploratory soil borings, one extraction well, one vapor extraction well, and one sparge point have been installed at and in the vicinity of the site to date.

- The depth to ground water has varied from between 6.5 and 19.5 feet below grade at the site and vicinity, although the typical depth in the area that has been impacted by petroleum hydrocarbons has ranged from about 10 to 14 feet below grade.

- Based on a review of the ground water data collected to date, a relatively consistent northerly ground water flow direction has been established.

- The extent of the dissolved hydrocarbon plume is predominantly limited to the northern portion of the site (wells MW-A, MW-B, MW-3, and MW-5).

- The extent of the dissolved hydrocarbon plume is well defined and does not appear to be migrating. Wells MW-1, MW-2, MW-4, MW-6, MW-7, and MW-8 have consistently shown low to predominantly non-detectable concentrations of dissolved hydrocarbons.

- According to the Boring Logs prepared during the installation of wells in the northern portion of the former Texaco site, there was a strong product odor in the gravelly layer that underlies this site at about 16 to 20 feet below grade. This layer has consistently been saturated since the initiation of the ground water monitoring program. It is therefore believed that the dissolved hydrocarbons found in ground water samples collected from this area are a function of the residual soil contamination that exists at the site.

- An evaluation has been performed as to the possibility of underground utility trenches acting as migration pathways for the hydrocarbon plume. Based on the depth of the utility trenches and the historical depth to ground water, the migration pathway potential appears to be minimal to non-existent.

- An aquifer test, a pilot vapor extraction test, and a sparge test were performed at the site in the fourth quarter of 1992. Based on the results of these tests, it was decided to install a vapor extraction and air sparge system.

- A vapor extraction/sparge system utilizing wells EW-1, VE-1, SP-1, MW-A, MW-B, MW-3, and MW-5 was operational in September of 1994. A King Buck CATOX was chosen as the vapor abatement device. The system is still currently operating; however, there are currently virtually no influent concentrations entering the system. Based on a conversation between yourself and Mr. Tim Ross of Kaprealian Engineering, Inc. (KEI), Texaco plans on shutting down the existing system.

DISCUSSION OF POTENTIAL NEXT ACTION PHASES

Based on our experience at sites with conditions similar to those at 930 Springtown, the following courses of actions are potentially feasible at the site:

A. Continue operating the existing CATOX remedial system: During the initial operation of this system in the fourth quarter of 1994, adequate system influence concentrations were present to justify the continued operation of this system. However, the currently low to non-detectable concentrations do not justify the continued operation of the system. In addition, the daily energy cost for this system is approximately $130. Texaco has already received authorization for shut-down of this system. Therefore, this does not appear to be a cost-effective or technically viable option.

B. Continue operation of a vapor extraction system with a more cost-effective abatement device (i.e. carbon): As stated above, the currently-operating vapor extraction system is extracting virtually no hydrocarbons. Changing the system to blower/carbon will not increase flow or influent concentrations (it will tend to decrease them). Therefore, this does not appear to be a technically appropriate option.

C. Enhance the existing vapor extraction/air sparge system with water table depression (i.e. pump and treat) in order to expose more screened interval to the vapor extraction system:

The only apparent modification that could increase the influent concentrations into the vapor extraction system would be to depress the water table in order to increase the exposed well screen area. Theoretically, this enhancement would expose the gravelly area noted above to the vapor extraction system. However, this would require that the water table be depressed by over 5 feet over the northern area of the site. Based upon the permeable nature of the gravel in this zone and also the apparent quick recharge rate of ground water, it is doubtful if this enhancement is even possible on a practical basis. In addition, as stated earlier, the hydrocarbon plume consists of only dissolved constituents and does not appear to be migrating (based on the extensive ground water monitoring data collected to date). Also, a preliminary review of the nearby area did not reveal the presence of any potential ground water receptor areas in the vicinity of the site. Lastly, the installation of the underground piping required for the operation of the enhancement would cause significant disruption to the operating 7-11 convenience store facility. Therefore, since the dissolved plume at the site does not appear to be migrating and does not (preliminarily) appear to pose a threat to any potential ground water use, and since the cost of this enhancement (if even technically possible) would be significantly greater than any potential benefit that it would provide, it does not appear that this would be a viable option.

SBoard Resolution 92-49

D. <u>Apply for a Non-Attainment Zone status for the site while continuing a limited ground water monitoring program</u>: Based on the factors present at this site at the present time, it appears that this is the most appropriate course of action at the site. As stated before, the extent of the ground water plume appears to be well defined at the site, is not migrating, and does not appear to pose a threat to any potential beneficial ground water use. The existing vapor extraction system was initially effective in removing dissolved hydrocarbons from the ground water and the unsaturated soil, but now is not removing enough hydrocarbons to justify its

continued operation. It appears that best available technology was used in the attempted remediation of this site. Based upon all of the discussion previously presented, this site appears to be an ideal candidate for Non-Attainment Zone status. It may also be advisable to evaluate the addition of an oxygen-releasing compound (ORC) into the monitoring wells showing dissolved hydrocarbons. The purpose of the ORC would be to increase the oxygen availability in the vicinity of these wells in order to stimulate the bioremediation process of the residual hydrocarbons.

Based on the discussion and rationale presented above, Texaco Environmental Services is currently planning on implementing Option D. We look forward to discussing the merits/disadvantages of these possible options during our October 13, 1995, meeting.

If you have any questions or comments regarding this site, please feel free to contact me at (510) 236-9139.

Best regards,

Karen E. Petryna
Environmental Project Manager
Texaco Environmental Services

KEP/KEI
...\SITES\930\FEASPLAN.EC

cc: Mr. Tim Ross, Kaprealian Engineering

RRZielinski
RAOFile-UCPFile

PR

KAPREALIAN ENGINEERING
INCORPORATED

19/4 R-1189

August 29, 1995

Alameda County Health Care Services Agency
Department of Environmental Health
Environmental Protection Division
1131 Harbor Bay Parkway, #250
Alameda, CA 94502-6577

Attention: Ms. Eva Chu

RE: Utility Trench Investigation
Former Texaco Service Station
930 Springtown Blvd.
Livermore, California

Dear Ms. Chu:

On behalf of Texaco Environmental Services (TES), and in response to your request for an investigation of utility trenches along Springtown Boulevard as a possible conduit for off-site migration of contaminants (your letters dated December 20, 1994, and June 30, 1995) from the subject site.

Kaprealian Engineering, Inc. (KEI) has obtained maps and information on utilities beneath Springtown Boulevard adjacent to the subject site. The information was obtained from the City of Livermore Department of Public Works (LDPW) and includes water lines, sewer lines, and the storm drains.

Ground water at the subject site historically has varied from approximately 11 to 15 feet below grade, with a direction of flow to the north. On May 9, 1995, the depth to ground water varied from approximately 10.6 feet (MW-B) to 16.5 feet (MW8) along the south side of Springtown Boulevard.

According to the LDPW, water lines beneath both Springtown Boulevard and Lassen Road near the site are about 4 feet below grade, and therefore do not appear deep enough to have acted as conduits for migration of contaminants.

Based on utility maps and cross-sections of the intersection, the sewer adjacent to the site flows eastward near the centerline of Springtown Boulevard at a depth of approximately 7 feet below grade (flowline) at Lassen Road, grading to a depth of about 5 feet below grade adjacent to the eastern boundary of the Texaco site.

2401 Stanwell Drive, Suite 400
Concord, California 94520
Tel: 510.602.5100 Fax: 510.687.0602

Therefore, it also does not appear that the sewer line trench is deep enough to have acted as a conduit for the migration of contaminants.

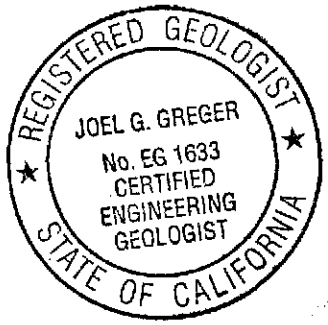
Finally, a 24-inch storm drain adjacent to the site flows westward beneath the southern side of Springtown Boulevard. The storm drain pipe is 9 to 11 feet below grade at the intersection with (centerline) Lassen Road near Texaco wells MW5 and MW6, and 3 to 5 feet below grade adjacent to the eastern boundary of the Texaco site. The shallowest depth to ground water in MW5 and MW6 since the inception of monitoring has been 11.90 and 14.67 feet below grade, respectively. Since May 1993, the shallowest depth to water in MW5 was 12.75 fbg; therefore, it appears that the storm drain lies above ground water and has not likely influenced the migration of contaminants.

In summary, it does not appear that any of the utility trenches in the vicinity of the former Texaco site have influenced the migration of contaminants.

If you have any questions, contact the TES Project Manager, Karen Petryna, at (510) 236-9139.

Sincerely,

Kaprealian Engineering, Inc.



Joel G. Greger, C.E.G.
Senior Engineering Geologist

License No. EG 1633
Exp. Date 8/31/96

JGG:jad\EC0829

cc: Karen Petryna, TES

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

RAFAT A. SHAHID, ASST. AGENCY DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
State Water Resources Control Board
Division of Clean Water Programs
UST Local Oversight Program
80 Swan Way, Rm 200
Oakland, CA 94621
(510) 271-4530

StID 3614

June 30, 1995

Ms. Karen Petryna
Texaco
108 Cutting Blvd
Richmond, CA 94804

RE: Utility Trench Investigation at 930 Springtown Blvd, Livermore, CA 94550

Dear Ms. Petryna:

Thank you for the submittal of Blaine Tech Services, Inc's Groundwater Monitoring and Sampling, Second Quarter, 1995 report for the above referenced site. Future reports should include, on a semi-annual basis, a summary of the effectiveness of the vapor extraction system operating onsite.

Also, on December 20, 1994, I requested Texaco to conduct additional investigations to determine if utility trenches along Springtown Blvd act as a conduit for the offsite migration of contaminants. To date, I have not received communication from you that this work has been done. Please provide your findings to this office within 30 days of the date of this letter, or **by September 5, 1995.**

If you have any questions, please contact me at (510) 567-6762.

eva chu
Hazardous Materials Specialist

cc: **files**

texaco.6

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

RAFAT A. SHAHID, Assistant Agency Director

ALAMEDA COUNTY CC4580
DEPT. OF ENVIRONMENTAL HEALTH
ENVIRONMENTAL PROTECTION DIVISION
1131 HARBOR BAY PKWY., #250
ALAMEDA CA 94502-6577

StID 3614

December 20, 1994

Ms. Karen Petryna
Texaco
108 Cutting Blvd
Richmond, CA 94804

RE: Additional Investigations at 930 Springtown Blvd, Livermore

Dear Ms. Petryna:

Thank you for the submittal of results of the August 1994 monitoring/sampling event for the above referenced site. In our conversation of August 17, 1994 you believed the vapor extraction system was installed and undergoing a three day pilot test. To date, I have not received a report documenting this aspect of the investigation. If this report is available, please submit a copy **within 30 days of the date of this letter.**

Also, additional investigations should be conducted to determine if utility trenches along Springtown Blvd may act as a conduit for offsite migration of contaminants. If this is the case, additional wells and/or soil borings may be required to delineate the extent of the contaminant plume. Please advise me of your findings as soon as possible. Note our address change on above letterhead.

If you have any questions, I can be reached at (510) 567-6762.

eva chu
Hazardous Materials Specialist

cc: [redacted]

texaco.5

INVOICE FOR OVERSIGHT COSTS

fin510a

Send Payment to: State Water Resources Control Board
Underground Storage Tank Local Oversight Program
PO Box 944212
Sacramento, CA 94244-2120

Bill Date: 05/26/94

Local Agency: COUNTY OF ALAMEDA

Per phone call from RP on 6/15/94 — L.C.

Site Location:

SITE # 3614

TEXACO REFINING & MARKETING
ROSE COUGHLIN
~~10 UNIVERSAL CITY PLAZA~~
~~UNIVERSAL CITY, CA 91608~~
108 Cutting Blvd,
Richmond, CA 94804

FORMER TEXACO STATION
930 SPRINGTOWN BLVD
LIVERMORE, CA
94550

Total previously billed	$	1,037.67
Payment(s) received as of 10/21/93	$	1,037.67
**New Charges - Billing Period:07/01/93 through 12/31/93	$	54.73
Total amount due:	$	54.73

FUND: F

State Health and Safety Code Sections 25297.1 and 25360 and Title 42 of the United States Code Section 6991b(h)(6) require recovery of costs associated with the local oversight program. When your site was put in the local oversight program, you received a letter explaining that the State Water Resources Control Board (State Board) would bill you for public costs of cleanup oversight.

This bill includes site specific and program management charges. Site specific charges directly relate to your site. Examples are sampling for soil and ground water contamination, site inspections, and reviewing reports and workplans. A description of activity codes follows the itemized charges. Program management includes other costs associated with program operation. Such costs may include: space rental, office services and supplies, purchase of sampling equipment, training and the salary and benefits of support personnel (i.e., clerical staff, accountant, program supervisor). Program management charges are calculated at not more than 50 percent of site specific charges. The exact rate is shown on the last page of your bill.

If you received an invoice for a previous billing period, those charges are shown as "Total Previously Billed". Any payments you made on the previous billing are shown as "Payment Received". The total of any unpaid previous balance plus new charges is shown as "Total Amount Due".

** See itemized list of new charges on next page(s).

FOR INFORMATION CALL: LORI CASIAS (916) 227-4325

----------cut on this line----------

Return this part with your check made payable to SWRCB. Use the enclosed envelope and send to the address above.

Local Agency: COUNTY OF ALAMEDA

Site #: 3614
Site Location:

FORMER TEXACO STATION
930 SPRINGTOWN BLVD
LIVERMORE, CA
94550

6-15-94

Post-it™ brand fax transmittal memo 7671 | # of pages ▸ 1

To Eva Chu	From Lori Casias
Co. Alameda Co.	Co.
Dept. Haz Mat.	Phone #
Fax # 510-569-4757	Fax #

Total amount due: $ 54.73

Enter amount paid: $ _____

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

RAFAT A. SHAHID, ASST. AGENCY DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
State Water Resources Control Board
Division of Clean Water Programs
UST Local Oversight Program
80 Swan Way, Rm 200
Oakland, CA 94621
(510) 271-4530

StID 3614

May 24, 1994

Ms. Karen Petryna
Texaco
108 Cutting Blvd
Richmond, CA 94804

SECOND NOTICE OF VIOLATION

Dear Ms. Petryna:

On November 27, 1991 the Regional Water Quality Control Board had approved a workplan for soil and groundwater remediation at the former Texaco Service Station at **930 Springtown Blvd, Livermore.** In June 1992 and again in January 1994, the Alameda County Department of Environmental Health, Hazardous Materials Division, sent you a letter requesting that the installation and operation of the remediation system commence. As of the date of this letter, however, the proposed work has not been done. Therefore, this letter constitutes a **Second Notice** that you are in violation of specific laws and that additional investigations are required.

According to Section 25298 of the California Health and Safety Code, underground storage tank closure is incomplete until the responsible party characterizes and remediates the contamination resulting from product discharge. Therefore, Texaco, as the responsible party is in violation of this section of the Code, for which Section 25299 specifies civil penalties of up to $5,000, for each day of violation, upon conviction.

You are required to commence with additional investigations for the site **within 30 days** from the date of this letter or **by June 27, 1994. Failure to respond will result in referral of this case to the RWQCB or Alameda County District Attorney to consider for enforcement action. Modification of required tasks or extensions of stated deadlines must be confirmed in writing by either this agency or the RWQCB.**

If you have any questions, I can be reached at (510) 271-4530.

eva chu
Hazardous Materials Specialist

cc: Gil Jensen, Alameda County District Attorney's Office
files (texaco.4)

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

RAFAT A. SHAHID, ASST. AGENCY DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
State Water Resources Control Board
Division of Clean Water Programs
UST Local Oversight Program
80 Swan Way, Rm 200
Oakland, CA 94621
(510) 271-4530

StID 3614

January 26, 1994

Karen Petryna
Texaco
108 Cutting Blvd.
Richmond, CA 94804

Subject: Groundwater Monitoring at 930 Springtown Blvd., Livermore 94550

Dear Ms. Petryna:

I have completed review of RESNA's Fourth Quarter 1993 Quarterly Groundwater Monitoring and Sampling Report for the above referenced site. At this time, a sampling schedule should be implemented as follows:

1. Monitoring wells MW-2, MW-4, MW-6, and MW-8 should be sampled on a semi-annual basis, in February and August, until further notice.

2. Monitoring wells MW-1, MW-3, MW-5, MW-A, and MW-B should be sampled on a quarterly basis.

3. Sampling of monitoring well MW-7 can be eliminated at this time.

4. Groundwater flow direction has not been consistent. Continue to measure groundwater elevation from all wells.

Please provide a project schedule for the implementation of the approved remedial action plan for this site. Field work should commence by February 22, 1994. If you have any questions, I can be reached at (510) 271-4530.

Sincerely,

eva chu
Hazardous Materials Specialist

cc: files

texaco.3

3/14/94 System still scheduled to go in. Having problem w/ contractor as well as w/ 711 store. Hope by end of March to install. New contractor is Golden West - Fred Karby - getting building/elec. permits Thermal oxidizer, VE,

Texaco Refining
and Marketing Inc

ALCO
HAZMAT

94 JAN 18 PM 2:49

January 14, 1994

ENV - STUDIES, SURVEYS & REPORTS
Former Texaco Service Station
930 Springtown, Livermore, CA

Ms. Eva Chu
Alameda County Department of Environmental Health
80 Swan Way, Room 200
Oakland, CA 94621

Dear Ms. Chu:

Enclosed is a copy of the Quarterly Groundwater Monitoring Letter Report, dated January 4,1994, for the subject site.

Questions regarding this matter may be directed to me at (510) 236-9139.

Best Regards,

Karen E. Petryna
Environmental Project Coordinator
Texaco Environmental Services

KEP:eg
930 A:\QTRCVR.EC

Enclosure

cc: Case Worker - California Regional Water Quality Control Board
Mr. Bob Vasquez - Southland Corporation

RRZielinski

PR:

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

RAFAT A. SHAHID, ASST. AGENCY DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
State Water Resources Control Board
Division of Clean Water Programs
UST Local Oversight Program
80 Swan Way, Rm 200
Oakland, CA 94621
(510) 271-4530

StID 3614

January 5, 1994

Karen Petryna
Texaco
108 Cutting Blvd
Richmond, CA 94804

Subject: RAP for 930 Springtown Blvd., Livermore 94550

Dear Ms. Petryna:

In a recent review of the file for the above referenced site, the latest report this office has is a quarterly monitoring report dated November 2, 1993. We are not in receipt of correspondence that the remedial action plan (RAP) proposed by Weiss Associciates (WA) has been implemented. The remediation system was to have been put into operation by August 1993.

WA staff informed me that they have not been awarded the contract to implement the RAP. If you have selected another consulting firm to perform this work, please keep this office informed of all changes.

Texaco is responsible for diligent actions to protect the waters of the State. Hence, work must begin **within 45 days** of the date of this letter. **Failure to comply <u>will</u> result in referral of this case to the RWQCB or Alameda County District Attorney to consider for enforcement action. Modification of required tasks or extensions of stated deadlines must be confirmed in writing by this Agency.**

If you have any questions, I can be reached at (510) 271-4530.

eva chu
Hazardous Materials Specialist

cc: Gil Jensen, Alameda County District Attorney's Office
files

texaco.2

Weiss Associates
Environmental and Geologic Services
5500 Shellmound Street, Emeryville, CA 94608-2411 Fax: 510-547-5043 Phone: 510-547-5420

May 10, 1993

Karel Detterman Karen 286-9139
Texaco Environmental Services
108 Cutting Boulevard
Richmond, CA 94804

Re: Remediation Plans and Schedule
Former Texaco Service Station
930 Springtown Boulevard
Livermore, CA

Dear Ms. Detterman:

As you requested on April 30, 1993, Weiss Associates (WA) prepared this letter outlining the planned remediation and project schedule for the site referenced above. The planned remediation incorporates the remediation approach presented in our March 15, 1993 letter to you which was based on the results of the site feasibility testing and Texaco's remediation objectives. Stated again, we understand Texaco's remediation objectives are to:

- Remediate both soil and ground water, and
- Minimize the risk of accelerated cross and down-gradient migration of hydrocarbons.

Since the planned remediation consists of the new, innovative technique known as in-situ air sparging (ISAS) combined with the proven technique, soil vapor extraction (SVE), we briefly describe combined SVE and ISAS below before presenting our remediation plans and project schedule.

COMBINED SVE AND LOW-INTENSITY ISAS

Combined SVE and low-intensity ISAS involves injecting low volumes of air below the water table while extracting the hydrocarbon-laden vapors with an SVE system. Low-intensity ISAS differs from traditional ISAS in that it is designed primarily to oxygenate ground water to stimulate in-situ biodegradation of hydrocarbons rather than to "air strip" the hydrocarbons from ground water and saturated soil. This "enhanced oxygenation" approach is often effective since oxygen is usually the limiting factor for in-situ biodegradation. Results for recent low-intensity ISAS conducted by WA at sites with similar soils and well construction demonstrated that low-intensity ISAS effectively removes hydrocarbons from ground water. Since low-intensity ISAS forces far less air into the formation compared to typical ISAS, the risk of lateral hydrocarbon migration is significantly lower. In addition to extracting the

hydrocarbon-laden vapor created by the low-intensity ISAS, the SVE system should also effectively remove hydrocarbons from subsurface soil, as demonstrated during the feasibility testing.

Furthermore, since we installed a typical ISAS well on October 19, 1993 for the site feasibility testing, we plan to perform typical ISAS in this well identified as dual air sparge well SP-1 and vapor extraction well VE-1. Since well SP-1 is located near the former hydrocarbon source area, typical ISAS in well SP-1 should enhance remediation of subsurface hydrocarbons near the former source area, thereby enhancing the combined SVE and low-intensity ISAS remediation planned for other site wells.

REMEDIATION PLANS

As introduced above, the planned remediation involves combined SVE and low-intensity ISAS in some existing wells, typical ISAS in well SP-1, and SVE in well VE-1. Thorough monitoring will be performed to evaluate the system effectiveness. If this monitoring suggests suboptimal system performance or spreading of dissolved hydrocarbons in ground water, then we would institute contingency plans to improve system performance or to arrest plume migration. We organized the initial SVE/ISAS phase into the following consultant tasks:

Consultant Tasks for Combined SVE and Low-Intensity ISAS

Task 1) Design and permit system for combined SVE/ISAS in wells MW-A, MW-B, MW-3, and MW-5, typical ISAS in well SP-1, and SVE in well VE-1. We will also prepare a bid specification package for submittal to Texaco-approved subcontractors.

Task 2) Oversee subcontractor installation of appropriate underground piping and electrical conduits, and assembly of all equipment inside a secure enclosure.

Task 3) Install two additional wells to monitor hydrocarbon concentrations immediately downgradient of the site.

Task 4) Operate and maintain the combined SVE and low-intensity ISAS system, injecting air into selected existing wells, including sparge well SP-1.

Task 5) Monitor the ground water for decreasing hydrocarbon concentrations and for lateral migration of dissolved hydrocarbons, and to establish the operational parameters of the system.

Contingency Plans

1) If the hydrocarbon concentration in ground water does not decrease significantly after three (3) to six (6) months, we would recommend enhancing the ISAS system by installing and sparging in additional sparge wells. These wells would be located based on the monitoring data generated during the initial ISAS operation.

2) If necessary to achieve hydraulic control, enhance ground water remediation, or mitigate lateral migration of hydrocarbons, we would recommend ground water extraction from well EW-1. Based on modeling of aquifer test results, ground water extraction from EW-1 would capture ground water from the entire region east of Lassen Road and south of Springtown Boulevard. Therefore, the system design will include additional conduit in trenches to facilitate future ISAS from new wells or future ground water extraction from EW-1 if implemented.

PROJECT SCHEDULE

- May 1993: WA will perform *Task 1: System Design and Permitting* by submitting the air permit application to the Bay Area Air Quality Management District (BAAQMD) and by preparing the system construction drawings and specifications. However, Task 1 will not be fully completed until BAAQMD issues the authority to construct permit. BAAQMD typically requires three (3) months to issue these permits.

- July 1993: Complete *Task 2: System Installation* and *Task 3: Monitoring Well Installation.* Task 2 may be delayed if the Texaco-owned equipment is not available by late July as scheduled.

- August 1993: Perform *Task 4: System Operation* assuming receipt of the BAAQMD air permit. Begin *Task 5: System Monitoring.*

We are pleased to continue providing environmental services to Texaco. We trust this letter satisfies your stated needs. Please call if you have any questions or comments.

Weiss Associates,
Sincerely,

Bob Riddell / Mike Cooke

Bob Riddell, P.E.
Project Engineer

BGR:bgr

H:\BGR\TEXACO\677PLAN.SVE

ALAMEDA COUNTY, DEPARTMENT OF ENVIRONMENTAL HEALTH

80 Swan Way, #200
Oakland, CA 94621
(415) 271-4320

Hazardous Materials Division Inspection Form

Site ID# 3614 Site Name Former Texaco Station Today's Date 10/20/92

Site Address 930 Springtown Blvd EPA ID# _____

City Livermore Zip 94550 Phone _____

MAX Amt. Stored > 500lbs/55g/200cf? Y N
Hazardous Waste generated per month? _____

Inspection Categories:
___ I. Haz. Mat/Waste GENERATOR/TRANSPORTER
___ II. Business Plans, Acute Hazardous Materials
___ III. Underground Tanks

The marked items represent violations of the Calif. Administration Code (CAC) or the Health & Safety Code (HS&C)

I.A GENERATOR (Title 22)

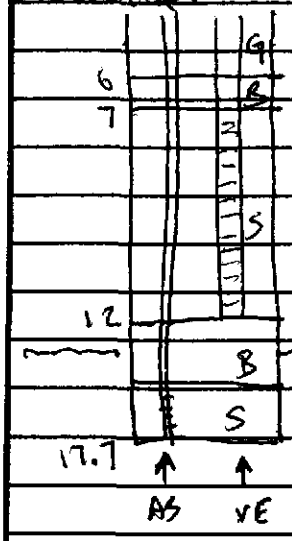
	1. Waste ID	* 66471
	2. EPA ID	66472
	3. > 90 days	66508
	4. Label dates	66508
	5. Biennial	66493
Manifest	6. Records	66492
Manifest	7. Correct	66484
Manifest	8. Copy sent	66492
Manifest	9. Exception	66484
Manifest	10. Copies Rec'd	66492
Misc.	11. Treatment	66371
Misc.	12. On-site Disp. (H.S.&C.)	26189.5
Misc.	13. Ex Haz. Waste	66570
Prevention	14. Communications	67121
Prevention	15. Aisle Space	67124
Prevention	16. Local Authority	67126
Prevention	17. Maintenance	67120
Prevention	18. Training	67105
Contin. gency	19. Prepared	67140
Contin. gency	20. Name List	67141
Contin. gency	21. Copies	67141
Contin. gency	22. Emg. Coord. Trng.	67144
Containers, Tanks	23. Condition	67241
Containers, Tanks	24. Compatibility	67242
Containers, Tanks	25. Maintenance	67243
Containers, Tanks	26. Inspection	67244
Containers, Tanks	27. Buffer Zone	67246
Containers, Tanks	28. Tank Inspection	67259
Containers, Tanks	29. Containment	67245
Containers, Tanks	30. Safe Storage	67261
Containers, Tanks	31. Freeboard	67257

I.B TRANSPORTER (Title 22)

	32. Applic./Insurance	66428
	33. Comp. Cert./CHP Insp.	66448
	34. Containers	66465
Manifest	35. Vehicles	66465
Manifest	36. EPA ID #s	66531
Manifest	37. Correct	66541
Manifest	38. HW Delivery	66543
Manifest	39. Records	66544
Cont'ls	40. Name/ Covers	66545
Cont'ls	41. Recyclables	66800

Comments:

On site visit to observe installation of Recovery well and Air sparge/vapor extraction wells.



AS= Air Sparge
VE = Vapor extraction
s = Sand
b = Bentonite
G = Grout

Analyze bore cuttings for TPH-G and BTEX. Disposal facility may require add'l analyses.

Plan varies from approved W.P. of Sep 1991. No trench system planned - Send modified work plan, schematics, etc. Report to be submitted w/in 45 days of completion of pump test and modification to system. Questions - call 271-4530

Rev 6/88

Contact: Eric Anderson

Title: Geologist Inspector: Eva Chu

Signature: Eric Anderson Signature: Eva Chu

11 45 12 0.7

TEXACO ENVIRONMENTAL SERVICES
108 CUTTING BOULEVARD
RICHMOND, CA 94804

GENERAL OFFICE PHONE NUMBER: (510) 236-3541

FAX PHONE NUMBER: (510) 237-7821

TELECOPY COVER LETTER

DATE: 10-12-95

TIME: _____

DELIVER TO: Eva Chu

NUMBER DIALED: _____

NUMBER OF PAGES: 6
(Includes Cover Letter)

NAME OF PERSON SENDING: Karen Petryna

NOTE: IF YOU DO NOT RECEIVE ALL OF THE PAGES INDICATED ABOVE, PLEASE CALL THE FOLLOWING NUMBER AND ASK FOR THE PERSON LISTED ABOVE (NAME OF PERSON SENDING).

(510) 236-3541

For our meting tomorrow

P:\KEP\FAXFORMS

03216211255-8 10-20-92
Former Texaco / Now 7-11
930 Springtown Bl Livermore

03216211255-8 10/20/92
RW and Air Sparge/Vapor Extraction wells
930 Springtown Bl Livermore

03216211255-8 10/20/92
Air Sparge / Vapor Extraction Well
930 Springtown Blvd - Livermore

Jcc
7/29

Texaco Refining
and Marketing Inc

108 Cutting Boulevard
Richmond CA 94804

July 28, 1992

ENV - REMEDIATION

RE: Soil and Groundwater Remediation at the
Former Texaco Service Station
930 Springtown Boulevard, Livermore, CA

Mr. Scott Seery
Alameda County Department
of Environmental Health
80 Swan Way, Room 200
Oakland, CA 94612

Dear Mr. Seery:

We have received your letter dated June 19, 1992. A Request for Proposal (RFP) has been sent out and the bids are due in our office August 19, 1992. I have requested that a project time line be included with the bids.

Prior to any site work, Texaco must first secure a License Agreement with the property owner, the Southland Corporation. At this writing, Texaco is communication with the Southland Corporation and working towards this end. Upon acquisition of the License Agreement, Texaco will be able to send the ACDEH of a project time schedule.

If you have any questions, I may be reached at (510) 236-3611.

Sincerely,
Texaco Environmental Services

Karel Detterman

Karel Detterman, REA
Project Coordinator

KLD:kld

a:\930S-7.28

cc: Mr. Eddy So
RWQCB
2101 Webster Street, Suite 500
Oakland, CA 94612

Mr. Howard Hatayama
Dept. of Health Services
2151 Berkeley Way, Annex 7
Berkeley, CA 94704

Mr. Gil Jensen
Alameda Co.
District Attorney's Office
7677 Oakport Street, Suite 400
Oakland, CA 94621

Ms. Danielle Stephani
Livermore Fire Dept.
4550 East Avenue
Livermore, CA 94550

pr: 8/3

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

RAFAT A. SHAHID, Assistant Agency Director

DEPARTMENT OF ENVIRONMENTAL HEALTH
Hazardous Materials Division
80 Swan Way, Rm. 200
Oakland, CA 94621
(510) 271-4320

StID 3614

June 19, 1992

Karel Detterman
Texaco Refining and Marketing Inc
108 Cutting Blvd
Richmond, CA 94804

Subject: Soil and Groundwater Remediation at Former Texaco Service Station, 930 Springtown Blvd, Livermore, CA

Dear Ms. Detterman:

This office has reviewed the past quarterly status reports (June 1991 - May 1992), received on May 10, 1992, for the above referenced site. The reports confirm that the site continues to have elevated levels of contamination in groundwater, with up to 27,000 parts per billion (ppb) of total petroleum hydrocarbons and 1,200 ppb of benzene in well MW-A.

A workplan for soil and groundwater remediation, dated September 12, 1991, prepared by Groundwater Technology, has been reviewed and approved by Mr. Eddy So of the Regional Water Quality Control Board in his letter dated November 27, 1991.

Please be advised that Texaco is responsible for diligent actions to protect the waters of the State. **Hence, work must begin within 45 days of the date of this letter.** Please submit a project time schedule for when each aspect of the soil remediation system installation and operation will occur. Also, continue to submit all groundwater and water elevation monitoring and sampling reports to this office on a quarterly basis.

If you have any questions or comments please contact Ms. Eva Chu at (510) 271-4530.

Sincerely,

Scott O. Seery, CHMM
Senior Hazardous Materials Specialist

cc: Eddy So, RWQCB
Gil Jensen, Alameda County District Attorney's Office
Howard Hatayama, DHS
Danielle Stephani, Livermore Fire Dept
file

Texaco

TEXACO ENVIRONMENTAL SERVICES
108 CUTTING BOULEVARD
RICHMOND, CA 94804

TELECOPY COVER LETTER

DATE: 5/28/92

TIME: 315 pm

DELIVER TO: Eva Chu

NUMBER DIALED: 569-4757

NUMBER OF PAGES: 4
(Includes Cover Letter)

TRANSMITTED FROM: (415) 237-7821
108 CUTTING BLVD.
RICHMOND, CA 94804

NAME OF PERSON SENDING: Karel Detterman

NOTE: IF YOU DO NOT RECEIVE ALL OF THE PAGES INDICATED ABOVE, PLEASE CALL THE FOLLOWING NUMBER AND ASK FOR THE PERSON LISTED ABOVE (NAME OF PERSON SENDING).

(415) 236-3541

Hi Eva -
Here are the two pieces of correspondence you requested last week on 5/20/92.

Karel Detter

Texaco Refining and Marketing Inc
108 Cutting Boulevard
Richmond CA 94804

92 MAY 19 AM 8:08

May 15, 1992

Mr. Edy So
Water Resource Control Engineer
California Regional Water Quality Control Board
2101 Webster Street, Suite 500
Oakland, Ca 94612

RE: Former Texaco Station
930 Springtown Boulevard
Livermore, CA

Dear Mr. So:

Texaco submitted the Workplan for Soil and Groundwater Remediation, dated September 12, 1991 for the above referenced site, on November 18, 1991. The Workplan was requested by the Regional Water Quality Control Board (RWQCB) in a letter dated July 5, 1991. We received your letter dated November 27, 1991, in which the RWQCB accepted the Workplan if three issues of concern, as described in the letter, were clarified. The on-site consultant, Groundwater Technology, Inc., on behalf of Texaco, responded to the issues of concern in their clarification letter dated December 12, 1991. Texaco did not receive a formal written approval of the Workplan from the RWQCB.

During our telephone conversation on May 13, 1992, you verbally approved the aforementioned Workplan because the clarification letter satisfied the RWQCB's issues of concern.

If you have any questions, I may be contacted at (510) 236-3611.

Sincerely,

Karel Detterman

Karel Detterman
Project Coordinator

cc: Ms. Eva Chu
Alameda County Environmental Health Department
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, CA 94612

930S/RWQCB-5.15

pr:03

Texaco Refining
and Marketing Inc

108 Cutting Boulevard
Richmond CA 94804

May 8, 1992

Ms. Eva Chu
Alameda County Department
of Environmental Health
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, CA 94612

RE: Former Texaco Service Station located at 930 Springtown Boulevard in Livermore, California.

Dear Ms. Chu:

As per your request during our telephone conversation today, enclosed are copies of previously submitted Quarterly Status Reports for the above referenced site dating back to the second quarter of 1991. It appears that the Quarterly Status Report dated May 3, 1991 contains a typographical error. The period covered by that report should end March, 1991.

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

Sincerely,

Karel Detterman

Karel Detterman
Project Coordinator

Enclosures

pr: 3

930S-5.8

Texaco Refining
and Marketing Inc

108 Cutting Boulevard
Richmond CA 94804

May 8, 1992

Ms. Eva Chu
Alameda County Department
of Environmental Health
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, CA 94612

Dear Ms. Chu:

Enclosed is a copy of our Quarterly Status Report dated April 24, 1992 for our former Texaco Service Station located at 930 Springtown Boulevard in Livermore, California. This report covers the second quarter of 1992, from February through April.

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

Sincerely,

Karel Detterman
Project Coordinator

Enclosure

cc: Mr. Lester Feldman
California Regional Water Quality Control Board
San Francisco Bay Area Region
2101 Webster Street, Suite 500
Oakland, CA 94612

pr: GRT

HR/P

930S-5.8

STATE OF CALIFORNIA

PETE WILSON, Governor

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION
2101 WEBSTER STREET, SUITE 500
OAKLAND, CA 94612
([redacted]) 464-1255
[redacted]

November 27, 1991
UST (ES)

Mr. Karel Detterman
Texaco Refining & Marketing Inc.
108 Cutting Boulevard
Richmond CA 94804

RE: Former Texaco Station at 930 Springtown Boulevard, Livermore CA

Dear Mr. Detterman:

This office is in receipt of your Workplan for Soil and Groundwater Remediation dated September 12, 1991 with a covering letter of November 18, 1991. The workplan has been reviewed and is acceptable in principle with the following exceptions that you are required to clarify:

1. The above-referenced workplan documents the results of the soil vapor extraction test which was conducted on July 24, 1991. During the test, the flow rate was varied between 12 and 31 cfm. The maximum vacuum induced in the extraction well is 62" water column as shown in Table 4 of Appendix B. (a) Please explain why, in your proposed design of soil vapor extraction system, a flow rate of 100 cfm is used. (b) What will be the anticipated influent concentrations of the soil vapor components at the flow rate of 100 cfm? (c) What will be the anticipated radius of influence at this flow rate?

2. The proposed vapor extraction trench configuration shall be evaluated at 100 cfm gas flow rate. The evaluation shall provide a result to indicate the anticipated radii of influence and the soil contamination profiles after 90 and 180 days of operation. (Note that the 180-day is assumed in your report to be a complete operation period). Besides, the concentrations of soil vapor components at the extraction wells shall be tabulated in your report.

3. Due to the imminent offsite migration of the contaminants at the above property, the trench system shall be engineered to minimize any potential of breakdown due to design deficiencies. Provisions shall be made to mitigate the possibility of having the subsurface water and/or non-aqueous phase liquids entered into the blower system.

Should you have any questions, please call the undersigned at 510-464-4366.

Sincerely yours,

Eddy P. So, PE
Water Resource Control Engineer

cc: Ravi Arulananpham, ACHD
File

Texaco Refining
and Marketing Inc

108 Cutting Boulevard
Richmond CA 94804

November 18, 1991

Mr. Lester Feldman
California Regional Water
Quality Control Board
2101 Webster Street, Suite 500
Oakland, Ca 94612

RE: Former Texaco Station
930 Springtown Boulevard
Livermore, CA

Dear Mr. Feldman:

Enclosed, please find the Workplan for Soil and Groundwater Remediation, dated September 12, 1991 for the above referenced site. The Workplan was requested by the Regional Water Quality Control Board in a letter dated July 5, 1991 and contains the results of the Soil Vent Feasibility Test conducted by the on-site consultants, Groundwater Technology, Inc.

Upon approval by the RWQCB and the Alameda County Department of Environmental Health (ACDEH), the Workplan will be sent out to bid.

If you have any questions, I may be contacted at (510) 236-3541.

Sincerely,

Karel Detterman

Karel Detterman
Project Environmental Geologist

Enclosure

cc: Mr. Robi Arulananpham
Alameda County Environmental Health Department
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, CA 94612

930S.COV

pr:

Texaco Refining
and Marketing Inc
108 Cutting Boulevard
Richmond CA 94804

August 21, 1991

Mr. Lester Feldman
California Regional Water
Quality Control Board
San Francisco Bay Region
2101 Webster Street. Suite 500
Oakland, CA 94612

Dear Mr. Feldman:

Enclosed is a copy of our Quarterly Status Report (R-3 of 91) dated August 7, 1991 for our former Texaco Service Station located at 930 Springtown Boulevard in Livermore, California. This report covers the quarter ending July, 1991.

Our on-site consultants, Groundwater Technology, Inc., have completed the field work for the Soil Vent Feasibility Test and are currently preparing the results along with a Soil and Groundwater Remediation Workplan. Upon our review, we will submit the test results and workplan to the RWQCB.

If you have any questions I can be contacted at (415) 236-3541.

Best Regards,

Karel Detterman

K. Detterman
Environmental Geologist

KD:pap

Larry's unit.

Enclosure

cc: Mr. Robi Arulananpham
Alameda County Environmental Health Dept.
Hazardous Materials Division
80 Swan Way - Room 200
Oakland, CA 94612

pr 23.

KEG

91 AUG 26 PM 12: 04

930STB.LF

GROUNDWATER TECHNOLOGY, INC.
1401 Halyard Drive, Suite 140, West Sacramento, CA 95691, (916) 372-4700
FAX (916) 372-8781

December 12, 1991 Project No. 02320 1383

Std 3614

Mr. Eddy P. So, P.E.
California Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, CA 94612

RE: FORMER TEXACO SERVICE STATION
800 SPRINGTOWN BOULEVARD, LIVERMORE, CALIFORNIA

Dear Mr. So:

Groundwater Technology, Inc., on behalf of our client Texaco Environmental Services, provides this correspondence in response to your comments dated November 27, 1991 regarding the site referenced above. The responses are numbered to correspond to the comments.

1. The vacuum blower used during the July 24, 1991 extraction test was one horsepower, and the test was conducted using monitoring wells as extraction points. For reasons described in section 3.2.2 (Soil Vapor Extraction Pilot Test Results) and section 3.2.3.2 (Vapor Extraction System) of Groundwater Technology's Work Plan dated September 12, 1991, use of vertical vapor extraction points is not recommended for the site. Rather, a trench system was recommended. This trench system will have a different applied vacuum - radius of influence response than a vertical system will. Groundwater Technology recommended in Section 3.2.3.1 (Emission Control System Evaluation) and Section 3.2.3.2 to conduct a pilot test on the trench system in order to verify the design parameters extrapolated from the pilot test data using vertical wells. Groundwater Technology's approach in the Work Plan was to use the pilot test data for a vertical extraction system to predict the performance of a horizontal extraction system for design purposes, and then test the horizontal system and recheck the design parameters. In retrospect this approach should have been made more explicit.

   In direct response to the comments: (a) A flow rate of 100 cfm is used for two reasons. First, a 1.5 or 5 horsepower is recommended for vapor extraction. These blowers can apply a higher pressure to the formation than the 1 horsepower blower used for the pilot test, and will correspondingly induce a higher flow rate. Second, the trench system will require a lower applied pressure than a vertical system to induce the same flow rate. The 100 cfm value used for design will be checked once the horizontal system is installed and tested. (b) The actual influent concentration will be determined from the test on the horizontal extraction system, as stated in section 3.2.3.1. For initial design purposes, the concentration from MW-5 was used. (c) Same response as for (b).

STATE OF CALIFORNIA PETE WILSON, Governor

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION
2101 WEBSTER STREET, SUITE 500
OAKLAND, CA 94612
(510) 464-1255

November 27, 1991
UST (ES)

Mr. Karel Detterman
Texaco Refining & Marketing Inc.
108 Cutting Boulevard
Richmond CA 94804

RE: Former Texaco Station at 930 Springtown Boulevard, Livermore CA

Dear Mr. Detterman:

This office is in receipt of your Workplan for Soil and Groundwater Remediation dated September 12, 1991 with a covering letter of November 18, 1991. The workplan has been reviewed and is acceptable in principle with the following exceptions that you are required to clarify:

1. The above-referenced workplan documents the results of the soil vapor extraction test which was conducted on July 24, 1991. During the test, the flow rate was varied between 12 and 31 cfm. The maximum vacuum induced in the extraction well is 62" water column as shown in Table 4 of Appendix B. (a) Please explain why, in your proposed design of soil vapor extraction system, a flow rate of 100 cfm is used. (b) What will be the anticipated influent concentrations of the soil vapor components at the flow rate of 100 cfm? (c) What will be the anticipated radius of influence at this flow rate?

2. The proposed vapor extraction trench configuration shall be evaluated at 100 cfm gas flow rate. The evaluation shall provide a result to indicate the anticipated radii of influence and the soil contamination profiles after 90 and 180 days of operation. (Note that the 180-day is assumed in your report to be a complete operation period). Besides, the concentrations of soil vapor components at the extraction wells shall be tabulated in your report.

3. Due to the imminent offsite migration of the contaminants at the above property, the trench system shall be engineered to minimize any potential of breakdown due to design deficiencies. Provisions shall be made to mitigate the possibility of having the subsurface water and/or non-aqueous phase liquids entered into the blower system.

Should you have any questions, please call the undersigned at 510-464-4366.

Sincerely yours,

Eddy P. So, PE
Water Resource Control Engineer

cc: Ravi Arulananpham, ACHD
File

GROUNDWATER TECHNOLOGY, INC.
1401 Halyard Drive, Suite 140, West Sacramento, CA 95691, (916) 372-4700
FAX (916) 372-9781

December 12, 1991 Project No. 02320 1383

Mr. Eddy P. So, P.E.
California Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, CA 94612

RE: FORMER TEXACO SERVICE STATION
930 SPRINGTOWN BOULEVARD, LIVERMORE, CALIFORNIA

Dear Mr. So:

Groundwater Technology, Inc., on behalf of our client Texaco Environmental Services, provides this correspondence in response to your comments dated November 27, 1991 regarding the site referenced above. The responses are numbered to correspond to the comments.

1. The vacuum blower used during the July 24, 1991 extraction test was one horsepower, and the test was conducted using monitoring wells as extraction points. For reasons described in section 3.2.2 (Soil Vapor Extraction Pilot Test Results) and section 3.2.3.2 (Vapor Extraction System) of Groundwater Technology's Work Plan dated September 12, 1991, use of vertical vapor extraction points is not recommended for the site. Rather, a trench system was recommended. This trench system will have a different applied vacuum - radius of influence response than a vertical system will. Groundwater Technology recommended in Section 3.2.3.1 (Emission Control System Evaluation) and Section 3.2.3.2 to conduct a pilot test on the trench system in order to verify the design parameters extrapolated from the pilot test data using vertical wells. Groundwater Technology's approach in the Work Plan was to use the pilot test data for a vertical extraction system to predict the performance of a horizontal extraction system for design purposes, and then test the horizontal system and refine the design parameters. In retrospect this approach should have been made more explicit.

   In direct response to the comments: (a) A flow rate of 100 cfm is used for two reasons. First, a 1.5 or 5 horsepower is recommended for vapor extraction. These blowers can apply a higher pressure to the formation than the 1 horsepower blower used for the pilot test, and will correspondingly induce a higher flow rate. Second, the trench system will require a lower applied pressure than a vertical system to induce the same flow rate. The 100 cfm value used for design will be checked once the horizontal system is installed and tested. (b) The actual influent concentration will be determined from the test on the horizontal extraction system, as stated in section 3.2.3.1. For initial design purposes, the concentration from MW-5 was used. (c) Same response as for (b).

2. We concur, with the additional clarification that the initial testing will be done prior to final emission control system design.

3. We concur. The documentation for final system design will be more detailed than the description presented in the Work Plan, but will certainly include provisions for a liquid knockout unit installed upstream of the blower system. Such provisions are a standard feature of Groundwater Technology's vapor extraction systems.

If you have any questions or comments, please call our West Sacramento office at 372-4700.

Sincerely,

GROUNDWATER TECHNOLOGY, INC.

DANIEL R. TORMEY, Ph.D.
Senior Project Geologist
Project Civil Engineer

JOHN E. BOWER, R.E.A.
Environmental Geologist
Project Manager

DRT/JEB:rc

cc: Ms. Karel Detterman, Texaco Environmental Services
Mr. Ravi Arulanantham, Alameda Co. Environmental Health Dept.

1918REGLTR

Table 2
Groundwater Analytical Data
930 Springtown Boulevard, Livermore, CA

Well Number	Date Sampled	TPHg (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)	MTBE (ppb)
MW-A	01/02/92	NS	NS	NS	NS	NS	NS
MW-A	04/02/92	27000	1200	570	1700	2300	NS
MW-A	07/21/92	57000	1500	1800	2700	7100	NS
MW-A	10/09/92	56000	2900	2600	4600	12000	NS
MW-A	01/24/94	1400000	6900	2100	15000	38000	NS
MW-A	05/31/94	48000	1200	900	1900	4200	NS
MW-A	08/31/94	24000	140	120	830	1500	NS
MW-A	11/02/94	15000	230	360	1100	1800	NS
MW-A	02/20/95	12000	290	330	570	1300	NS
MW-A	05/09/95	1200	6.1	5.9	12	15	NS
MW-A	08/21/95	9600	85	140	250	860	160
MW-A	10/20/95	360	5.2	7.9	15	43	NS
MW-A	02/07/96	6100	130	180	320	840	NS
MW-A	04/30/96	410	1.2	0.67	1.2	1.5	NS
MW-A	08/14/96	3000	65	75	170	460	57
MW-A	11/22/96	6300	100	170	310	710	64
MW-A	02/14/97	8100	140	180	700	1600	<300
MW-A	05/23/97	24000	340	520	1600	3800	<2000
MW-A	07/25/97	440	<0.5	<0.5	<0.5	<0.5	<30
MW-A	10/31/97	3700	21	48	200	430	35
MW-A	02/06/98	1500	2.1	4.4	55	77	<30
MW-A	05/19/98	32000	310	380	1800	3700	1300
MW-A	07/31/98	<50	<0.5	<0.5	<0.5	<0.5	<2.5
MW-B	01/02/92	NS	NS	NS	NS	NS	NS
MW-B	04/02/92	1900	ND	39	24	35	NS
MW-B	07/21/92	16000	180	1600	270	1100	NS
MW-B	10/09/92	38000	490	8300	1400	5100	NS
MW-B	01/24/94	23000	110	1700	600	1900	NS
MW-B	05/31/94	13000	780	310	370	1400	NS
MW-B	08/31/94	35000	160	2800	1000	4500	NS
MW-B	11/02/94	2500	170	3200	1100	4700	NS
MW-B	02/20/95	10000	46	1400	330	1200	NS
MW-B	05/09/95	4100	9.1	47	26	30	NS
MW-B	08/21/95	4000	9.6	110	120	270	98
MW-B	10/20/95	9300	35	1300	370	1300	NS
MW-B	02/07/96	8900	33	700	110	360	NS
MW-B	04/30/96	5500	17	460	120	400	NS
MW-B	08/14/96	9000	<5	260	120	320	<300
MW-B	11/22/96	560000	56	2400	1600	5500	<3000
MW-B	02/14/97	4600	5.2	110	72	210	<300
MW-B	05/23/97	34000	75	1700	590	2100	1800
MW-B	07/25/97	39000	250	5200	1600	5900	<800
MW-B	10/31/97	36000	130	2600	1200	4800	<800
MW-B	02/06/98	4800	10	120	72	200	<80
MW-B	05/19/98	25000	200	900	410	1600	570
MW-B	07/31/98	580	<0.5	<0.5	<0.5	<0.5	14

Table 2
Groundwater Analytical Data
930 Springtown Boulevard, Livermore, CA

Well Number	Date Sampled	TPHg (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)	MTBE (ppb)
MW-1	01/02/92	16	6	ND	ND	ND	NS
MW-1	04/02/92	ND	ND	ND	ND	ND	NS
MW-1	07/21/92	<50	3.2	<0.5	<0.5	<0.5	NS
MW-1	10/09/92	<50	8.5	<0.5	<0.5	<0.5	NS
MW-1	01/11/93	<50	<0.5	<0.5	<0.5	<0.5	NS
MW-1	05/05/93	<50	<0.5	<0.5	<0.5	<0.5	NS
MW-1	08/09/93	<50	<0.5	<0.5	<0.5	<0.5	NS
MW-1	10/14/93	440	16	2.9	2.9	11	NS
MW-1	05/31/94	<50	<0.5	<0.5	<0.5	<0.5	NS
MW-1	08/31/94	<50	<0.5	<0.5	<0.5	<0.5	NS
MW-1	11/02/94	<50	<0.5	<0.5	<0.5	<0.5	NS
MW-1	02/20/95	<50	<0.5	<0.5	<0.5	<0.5	NS
MW-1	05/09/95	450	22	25	23	100	NS
MW-1	08/21/95	58	<0.5	1.5	1.8	4.5	<10
MW-1	10/20/95	<50	<0.5	<0.5	<0.5	<0.5	NS
MW-1	02/07/96	<50	<0.5	<0.5	<0.5	<0.5	NS
MW-1	04/30/96	NS	NS	NS	NS	NS	NS
MW-1	08/14/96	<50	<0.5	<0.5	<0.5	<0.5	<30
MW-1	11/22/96	NS	NS	NS	NS	NS	NS
MW-1	02/14/97	<50	<0.5	<0.5	<0.5	<0.5	<30
MW-1	05/23/97	NS	NS	NS	NS	NS	NS
MW-1	07/25/97	<50	<0.5	<0.5	<0.5	<0.5	<30
MW-1	10/31/97	NS	NS	NS	NS	NS	NS
MW-1	02/06/98	<50	<0.5	<0.5	<0.5	<0.5	<30
MW-1	05/19/98	NS	NS	NS	NS	NS	NS
MW-1	07/31/98	<50	<0.5	<0.5	<0.5	<0.5	<2.5

Table 2
Groundwater Analytical Data
930 Springtown Boulevard, Livermore, CA

Well Number	Date Sampled	TPHg (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)	MTBE (ppb)
MW-2	01/02/92	ND	ND	ND	ND	ND	NS
MW-2	04/02/91	ND	ND	ND	ND	ND	NS
MW-2	07/21/92	NS	NS	NS	NS	NS	NS
MW-2	10/09/92	NS	NS	NS	NS	NS	NS
MW-2	01/11/93	NS	NS	NS	NS	NS	NS
MW-2	05/05/93	NS	NS	NS	NS	NS	NS
MW-2	08/09/93	NS	NS	NS	NS	NS	NS
MW-2	10/14/93	NS	NS	NS	NS	NS	NS
MW-2	01/24/94	NS	NS	NS	NS	NS	NS
MW-2	05/31/94	NS	NS	NS	NS	NS	NS
MW-2	08/31/94	<50	<0.5	<0.5	<0.5	<0.5	NS
MW-2	11/02/94	NS	NS	NS	NS	NS	NS
MW-2	02/20/95	<50	<0.5	<0.5	<0.5	<0.5	NS
MW-2	05/09/95	NS	NS	NS	NS	NS	NS
MW-2	08/21/95	<50	<0.5	<0.5	<0.5	<0.5	<10
MW-2	10/20/95	NS	NS	NS	NS	NS	NS
MW-2	02/07/96	<50	<0.5	<0.5	<0.5	<0.5	NS
MW-2	04/30/96	NS	NS	NS	NS	NS	NS
MW-2	08/14/96	<50	<0.5	<0.5	<0.5	<0.5	<30
MW-2	11/22/96	NS	NS	NS	NS	NS	NS
MW-2	02/14/97	<50	<0.5	<0.5	<0.5	<0.5	<30
MW-2	05/23/97	NS	NS	NS	NS	NS	NS
MW-2	07/25/97	<50	<0.5	<0.5	<0.5	<0.5	<30
MW-2	10/31/97	NS	NS	NS	NS	NS	NS
MW-2	02/06/98	<50	<0.5	<0.5	<0.5	1.4	<30
MW-2	05/19/98	NS	NS	NS	NS	NS	NS
MW-2	07/31/98	<50	<0.5	<0.5	<0.5	<0.5	<2.5

Table 2
Groundwater Analytical Data
930 Springtown Boulevard, Livermore, CA

Well Number	Date Sampled	TPHg (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)	MTBE (ppb)
MW-3	01/02/92	340	0.4	ND	ND	ND	NS
MW-3	04/02/92	160	5	ND	0.3	0.5	NS
MW-3	07/21/92	260	1.7	<0.5	<0.5	<0.5	NS
MW-3	10/09/92	88	<0.5	<0.5	<0.5	<0.5	NS
MW-3	01/11/93	130	<0.5	<0.5	<0.5	<0.5	NS
MW-3	05/05/93	340	1.8	<0.5	1.3	<0.5	NS
MW-3	08/09/93	610	18	<0.5	2.4	0.9	NS
MW-3	10/14/93	<50	<0.5	<0.5	<0.5	<0.5	NS
MW-3	01/24/94	320	3.5	<0.5	<0.5	<0.5	NS
MW-3	05/31/94	830	11	12	5.0	1.2	NS
MW-3	08/31/94	660	2	<0.5	1	<0.5	NS
MW-3	11/02/94	1500	260	36	34	76	NS
MW-3	02/20/95	410	1.2	1.9	1.4	2.2	NS
MW-3	05/09/95	730	23	43	21	95	NS
MW-3	08/21/95	<50	<0.5	<0.5	<0.5	<0.5	<10
MW-3	10/20/95	<50	<0.5	<0.5	<0.5	<0.5	NS
MW-3	02/07/96	<50	<0.5	<0.5	<0.5	<0.5	NS
MW-3	04/30/96	NS	NS	NS	NS	NS	NS
MW-3	08/14/96	<50	<0.5	0.60	<0.5	<0.5	<30
MW-3	11/22/96	NS	NS	NS	NS	NS	NS
MW-3	02/14/97	<50	<0.5	<0.5	<0.5	<0.5	<30
MW-3	05/23/97	NS	NS	NS	NS	NS	NS
MW-3	07/25/97	<50	<0.5	<0.5	<0.5	<0.5	<30
MW-3	10/31/97	NS	NS	NS	NS	NS	NS
MW-3	02/06/98	63	1.5	2.8	0.77	8.6	<30
MW-3	05/19/98	NS	NS	NS	NS	NS	NS
MW-3	07/31/98	<50	<0.5	<0.5	<0.5	<0.5	<2.5

Table 2
Groundwater Analytical Data
930 Springtown Boulevard, Livermore, CA

Well Number	Date Sampled	TPHg (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)	MTBE (ppb)
MW-4	01/02/92	ND	ND	ND	ND	ND	NS
MW-4	04/02/92	ND	ND	ND	ND	ND	NS
MW-4	07/21/92	<50	<0.5	<0.5	<0.5	<0.5	NS
MW-4	10/09/92	<50	<0.5	<0.5	<0.5	<0.5	NS
MW-4	01/11/93	<50	<0.5	<0.5	<0.5	<0.5	NS
MW-4	05/05/93	<50	<0.5	<0.5	<0.5	<0.5	NS
MW-4	08/09/93	<50	<0.5	<0.5	<0.5	<0.5	NS
MW-4	10/14/93	<50	<0.5	<0.5	<0.5	<0.5	NS
MW-4	01/24/94	<50	<0.5	<0.5	<0.5	<0.5	NS
MW-4	05/31/94	NS	NS	NS	NS	NS	NS
MW-4	08/31/94	<50	<0.5	<0.5	<0.5	<0.5	NS
MW-4	11/02/94	NS	NS	NS	NS	NS	NS
MW-4	02/20/95	<50	<0.5	<0.5	<0.5	<0.5	NS
MW-4	05/09/95	NS	NS	NS	NS	NS	NS
MW-4	08/21/95	<50	<0.5	<0.5	<0.5	<0.5	<10
MW-4	10/20/95	<50	<0.5	<0.5	<0.5	<0.5	NS
MW-4	02/07/96	<50	<0.5	<0.5	<0.5	<0.5	NS
MW-4	04/30/96	NS	NS	NS	NS	NS	NS
MW-4	08/14/96	<50	<0.5	<0.5	<0.5	<0.5	<30
MW-4	11/22/96	NS	NS	NS	NS	NS	NS
MW-4	02/14/97	<50	<0.5	<0.5	<0.5	<0.5	<30
MW-4	05/23/97	NS	NS	NS	NS	NS	NS
MW-4	07/25/97	<50	<0.5	<0.5	<0.5	<0.5	<30
MW-4	10/31/97	NS	NS	NS	NS	NS	NS
MW-4	02/06/98	<50	<0.5	<0.5	<0.5	<0.5	<30
MW-4	05/19/98	NS	NS	NS	NS	NS	NS
MW-4	07/31/98	<50	<0.5	<0.5	<0.5	<0.5	<2.5

Table 2
Groundwater Analytical Data
930 Springtown Boulevard, Livermore, CA

Well Number	Date Sampled	TPHg (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)	MTBE (ppb)
MW-5	01/02/92	1800	74	41	84	94	NS
MW-5	04/02/92	ND	ND	ND	ND	ND	NS
MW-5	07/21/92	1000	69	16	40	31	NS
MW-5	10/09/92	3400	890	51	110	110	NS
MW-5	01/11/93	15000	460	110	900	370	NS
MW-5	05/05/93	4500	160	19	280	110	NS
MW-5	08/09/93	2300	180	19	130	80	NS
MW-5	10/14/93	2200	160	27	90	64	NS
MW-5	01/24/94	2600	69	11	65	25	NS
MW-5	05/31/94	3100	130	64	140	120	NS
MW-5	08/31/94	600	20	2.9	14	7.1	NS
MW-5	11/02/94	2300	68	18	52	54	NS
MW-5	02/20/95	12000	130	<30	240	138	NS
MW-5	05/09/95	2500	57	60	54	37	NS
MW-5	08/21/95	11000	91	28	140	120	<100
MW-5	10/20/95	2300	38	3.8	28	19	NS
MW-5	02/07/96	1800	35	8.1	37	20	NS
MW-5	04/30/96	NS	NS	NS	NS	NS	NS
MW-5	08/14/96	3500	130	22	170	47	71
MW-5	11/22/96	3500	160	15	190	28	<200
MW-5	02/14/97	2900	150	54	330	68	<300
MW-5	05/23/97	10000	170	98	380	68	<200
MW-5	07/25/97	2700	110	<0.5	33	<0.5	<30
MW-5	10/31/97	NS	NS	NS	NS	NS	NS
MW-5	02/06/98	67	<0.5	<0.5	<0.5	<0.5	<30
MW-5	05/19/98	4200	120	25	360	76	510
MW-5	07/31/98	270	<0.5	<0.5	<0.5	<0.5	<2.5
MW-6	01/02/92	23	ND	0.3	0.6	3	NS
MW-6	04/02/92	ND	ND	ND	ND	ND	NS
MW-6	07/21/92	<50	<0.5	<0.5	<0.5	<0.5	NS
MW-6	10/09/92	<50	<0.5	<0.5	<0.5	<0.5	NS
MW-6	01/11/93	NS	NS	NS	NS	NS	NS
MW-6	05/05/93	NS	NS	NS	NS	NS	NS
MW-6	08/09/93	<50	<0.5	<0.5	<0.5	<0.5	NS
MW-6	10/14/93	NS	NS	NS	NS	NS	NS
MW-6	01/24/94	<50	<0.5	<0.5	<0.5	<0.5	NS
MW-6	05/31/94	NS	NS	NS	NS	NS	NS
MW-6	08/31/94	<50	<0.5	<0.5	<0.5	<0.5	NS
MW-6	11/02/94	NS	NS	NS	NS	NS	NS
MW-6	02/20/95	<50	<0.5	<0.5	<0.5	<0.5	NS
MW-6	07/25/97	NS	NS	NS	NS	NS	NS
MW-6	10/31/97	NS	NS	NS	NS	NS	NS
MW-6	02/06/98	No Longer Sampled					

Table 2
Groundwater Analytical Data
930 Springtown Boulevard, Livermore, CA

Well Number	Date Sampled	TPHg (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)	MTBE (ppb)
MW-7	01/02/92	NS	NS	NS	NS	NS	NS
MW-7	04/02/92	ND	ND	ND	ND	ND	NS
MW-7	07/25/97	NS	NS	NS	NS	NS	NS
MW-7	10/31/97	NS	NS	NS	NS	NS	NS
MW-7	02/06/98	No Longer Sampled					
MW-8	01/02/92	12000	32	980	200	760	NS
MW-8	04/02/92	ND	ND	ND	ND	ND	NS
MW-8	07/21/92	NS	NS	NS	NS	NS	NS
MW-8	10/09/93	NS	NS	NS	NS	NS	NS
MW-8	01/11/93	NS	NS	NS	NS	NS	NS
MW-8	05/05/93	NS	NS	NS	NS	NS	NS
MW-8	08/09/93	NS	NS	NS	NS	NS	NS
MW-8	10/14/93	NS	NS	NS	NS	NS	NS
MW-8	01/24/94	NS	NS	NS	NS	NS	NS
MW-8	05/31/94	NS	NS	NS	NS	NS	NS
MW-8	08/31/94	<50	<0.5	<0.5	<0.5	<0.5	NS
MW-8	11/02/94	NS	NS	NS	NS	NS	NS
MW-8	02/20/95	<50	<0.5	<0.5	<0.5	<0.5	NS
MW-8	05/09/95	NS	NS	NS	NS	NS	NS
MW-8	08/21/95	<50	<0.5	<0.5	0.67	0.62	<10
MW-8	10/20/95	NS	NS	NS	NS	NS	NS
MW-8	02/07/96	<50	7.0	<0.5	<0.5	<0.5	NS
MW-8	04/30/96	61	9.6	<0.5	<0.5	<0.5	NS
MW-8	08/14/96	<50	0.73	<0.5	<0.5	<0.5	<30
MW-8	11/22/96	120	5.9	2.2	2.4	8.3	<30
MW-8	02/14/97	<50	<0.5	<0.5	<0.5	<0.5	<30
MW-8	05/23/97	<50	<0.5	<0.5	<0.5	<0.5	<30
MW-8	07/25/97	<50	<0.5	<0.5	<0.5	<0.5	<30
MW-8	10/31/97	<50	<0.5	<0.5	<0.5	<0.5	<30
MW-8	02/06/98	180	17	<0.5	<0.5	6.0	<30
MW-8	05/19/98	<50	4.9	<0.5	<0.5	<0.5	<2.5
MW-8	07/31/98	140	<0.5	<0.5	<0.5	<0.5	<2.5

MTBE = Methyl-tert-butylether
TPHg = Total Petroleum Hydrocarbons as gasoline
ppb = parts per billion
NS = Not Sampled

Texaco Refining
and Marketing Inc

108 Cutting Boulevard
Richmond CA 94804

June 20, 1991

Mr. Gil Wistar
Alameda County Environmental Health Dept.
Hazardous Materials Division
80 Swan Way - Room 200
Oakland, CA 94612

Dear Mr. Wistar:

Enclosed is a copy of our Quarterly Status Report (R-2 of 91) dated May 3, 1991 for our former Texaco Service Station located at 930 Springtown Boulevard in Livermore, California. This report covers the quarter ending March, 1990.

If you have any questions I can be contacted at (415) 236-3541.

Very truly yours,

Karel Detterman

K. Detterman
Environmental Geologist

KD:pap

Enclosure

cc: Mr. Rico Duazo
California Regional Water
Quality Control Board
San Francisco Bay Region
2101 Webster Street. Suite 500
Oakland, CA 94612

pr:

KEG

930STB.GW