

ALAMEDA COUNTY  
HEALTH CARE SERVICES

AGENCY  
DAVID J. KEARS, Agency Director



04-16-01

00204

April 13, 2001  
StID # 3854

Mr. Paul Supple  
ARCO Products Company  
P.O. Box 6549  
Moraga, CA 94570

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

**Re: ARCO Service Station No. 4494, 566 Hegenberger Rd., Oakland, CA 94621**

Dear Mr. Supple:

Our office has received and reviewed the March 22, 2001 Fourth Quarter 2000 monitoring report for the above site as prepared by Delta Environmental Consultants, Inc. (Delta). The results continue to show elevated MTBE concentrations in monitoring well MW-1 only. Although there may be indication that an up-gradient source of MTBE exists (Shell station at 540 Hegenberger Rd.), this is not a forgone conclusion. In fact, Shell has performed additional subsurface investigation and utilities survey. Based upon their results, there is a possibility that utilities may be acting as preferential pathways. An off-site well installed by Shell, MW-4, did not exhibit elevated MTBE even though the up-gradient well did.

Therefore, you are requested to proceed with your own investigation of the elevated MTBE found in MW-1. The following are recommended:

- Please confirm MTBE concentrations using EPA 8260 in MW-1.
- Please consider generating cross sectional diagrams using Shell and ARCO boring logs.
- You are encouraged to review utility maps to offer your own interpretation of the potential for preferential pathway migration.
- Please consider remediation of groundwater from MW-1, such as oxygen releasing socks, over-purging, chemical treatment, etc.
- Please review the tightness test results for the tanks and piping at the site. Have there been any reported releases noted in the past?

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

Sincerely,

Barney M. Chan  
Hazardous Materials Specialist

C: B. Chan, files

Mr. S. Meeks, Delta Environmental, 3164 Gold Camp Dr., Suite 200, Rancho Cordova,  
CA 95670-6021

ALAMEDA COUNTY  
HEALTH CARE SERVICES

AGENCY  
DAVID J. KEARS, Agency Director



Per 7/24/00

2024

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

July 17, 2000  
StID #3854

Mr. Paul Supple  
ARCO Products Co.  
P.O. Box 6549  
Moraga, CA 94570

**Re: Groundwater Monitoring at ARCO Station # 4494, 566 Hegenberger Rd.,  
Oakland CA 94621**

Dear Mr. Supple:

Our office has received a copy of the preliminary results of the July 2000 sampling of the wells at the above referenced site. As you may recall, this monitoring was done in response to our office's request to analyze these wells for MTBE. These preliminary results identified one well, MW-1, which exhibited high MTBE concentration up to 15, 000 ppb. Because the adjacent Shell service station is also investigating a significant MTBE release, it is uncertain whether this result indicates an ARCO release or an off-site release impacting ARCO.

Shell's consultant has recommended future concurrent monitoring of wells. Shell is also in the midst of performing an off-site investigation, with the intent of clarifying the extent of their MTBE plume. Our office encourages the co-operation and sharing of technical information between these sites. At this time, please continue quarterly groundwater monitoring.

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

Sincerely,

Barney M. Chan  
Hazardous Materials Specialist

C: B. Chan, files  
Mr. S. Meeks, Delta Environmental Consultants, Inc., 3164 Gold Camp Drive, Suite 200,  
Rancho Cordova, CA 95670

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ALAMEDA COUNTY  
HEALTH CARE SERVICES

AGENCY  
DAVID J. KEARS, Agency Director



SENT 4-25-2000  
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20204

ENVIRONMENTAL HEALTH  
ENVIRONMENTAL PROTECTION  
1131 Harbor Bay Parkway, Suite 2E  
Alameda, CA 94502-6577  
(510) 567-6700  
FAX (510) 337-9335

April 21, 2000  
StID # 3854

Mr. Paul Supple  
ARCO Products Co.  
P.O. Box 6549  
Moraga, CA 94570

**Re: Monitoring for MTBE at 566 Hegenberger Rd., Oakland CA 954621**

Dear Mr. Supple:

The referenced site has been "on hold" since later 1995 as our office determined that the petroleum release from the former underground tanks. ARCO decided that they would not immediately close the monitoring wells and our office suspended monitoring requirements.

In 1997, the Legislature added a provision to chapter 6.75 of division 20 of the Health and Safety Code requiring the testing for MTBE before the Regional Board or local agency can issue a closure letter. On March 26, 1999 Governor Gray Davis signed Executive Order D-5-99 requiring the SWRCB to prioritize MTBE impacted sites to maximize the effort toward resource protection and cleanup. Our office has been requested to classify all MTBE sites and insure that all sites be monitored for MTBE.

Therefore, our office requests that the existing wells at the above site be monitored for MTBE and any detectable concentrations be verified by EPA Method 8260 or an equivalent GC/MS method. You should also be aware that the Shell Service station at 540 Hegenberger Road, is currently investigating a significant MTBE release at their site which could possibly have some impact to this ARCO site. Although, not strictly required, you may also wish to analyze the wells for TPHg and BTEX.

**Please provide your monitoring report to our office within 45 days or no later than June 5, 2000.**

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

Sincerely,

Barney M. Chan  
Hazardous Materials Specialist

C: B. Chan, files

Mr. G. VanderVeen, Pinnacle Environmental Solutions, 2201 Broadway, Suite 101, Oakland  
CA 94612

MTBE566Heg

ALAMEDA COUNTY  
HEALTH CARE SERVICES



AGENCY  
DAVID J. KEARS, Agency Director

RO# 204

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

March 24, 1997  
StID # 3854

Mr. Paul Supple  
ARCO Products Company  
P.O. Box 6549  
Moraga, CA 94570

**Re: Closure of Monitoring Wells at 566 Hegenberger Rd., Oakland  
CA 94621, Arco Service Station 4494**

Dear Mr. Supple:

This letter is to inform you that our office has received concurrence on the recommendation for site closure from the RWQCB for the above referenced site. Prior to issuance of the Remedial Action Completion Certificate (RACC) we must receive documentation of the proper closure of the seven (7) wells; six monitoring and one recovery, at this site. You should contact your consultant to arrange monitoring well closure. Alternatively, you may also provide a written statement indicating what type of regular inspection and safety precautions will be taken to insure the integrity of the existing wells.

Please notify me of your intentions in regards to these wells so I may facilitate site closure.

You may reach me at (510) 567-6765 should you have any questions.

Sincerely,

Barney M. Chan  
Hazardous Materials Specialist

cc: B. Chan, files  
Mr. K. Brown, Pacific Environmental Group, 2025 Gateway  
Place, Suite 440, San Jose, CA 95110

MWCL566

ALAMEDA COUNTY  
HEALTH CARE SERVICES  
AGENCY

DAVID J. KEARS, Agency Director



R0204

RAFAT A. SHAHID, ASST. AGENCY DIRECTOR

May 24, 1993  
StID # 3854

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

Mr. Michael Whelan  
ARCO Products Company  
P.O. Box 5811  
San Mateo, CA 94402

**Re: Comment on May 17, 1993 Report of Findings Underground  
Gasoline Tank Removal and Replacement at 566 Hegenberger  
Rd., Oakland CA 94621**

Dear Mr. Whelan:

Our office has received and reviewed the above referenced report as prepared by Resna for ARCO. We would like to comment on the conclusions and recommendations which follow the text of the report.

1. The last point of the Conclusion section states that the black hydrocarbon product does not resemble any of ARCO's finished products. Please provide the "hydrocarbon fingerprinting analyses data" which documents this conclusion. Please also inform our office how any release from the former tanks( TPHg and BTEX) will be distinguished from that of the black hydrocarbon product.
2. The first point of the Recommendations states that MW-2, the decommissioned well, will be replaced with a 4-inch well in the area of this former well. Please insure that this well is installed into native soils as oppose to backfilled materials.
3. The second point of the Recommendations refers to RW-1, the recovery well installed between the slurry wall and the storm drain. Please verify that in addition to monitoring for the presence of the black hydrocarbon on a monthly basis, you will also take steps to remove all free product at the same time.
4. The third point of the Recommendations states that this site may qualify for alternate points of compliance. Please verify that the conditions necessary for this remedial approach exist at this site ie low yielding soils exist, alternate or best available technologies are inappropriate or not cost-effective and that an acceptable plan for containing and managing the remaining contamination exists. (It is acknowledged that adequate source removal has already been done). Given the previous groundwater gradient determined for this site, additional well(s) may be appropriate at compliance points on-site to monitor any groundwater impact from the former dispenser islands.

Mr. Michael Whelan  
StID #3854  
566 Hegenberger Rd.  
May 24, 1993  
Page 2.

Please provide written comment to the above items to our office. This may be included in separate letter or included as a signed letter attached to your next quarterly monitoring report for this site.

You may contact me at (510) 271-4530 if you have any questions.

Sincerely,



Barney M. Chan  
Hazardous Materials Specialist

cc: G. Jensen, Alameda County District Attorney Office  
R. Hiatt, RWQCB  
J. Young, RESNA, 3315 Almaden Expressway, Suite 34, San  
Jose, CA 95118  
E. Howell, files

3-566Heg

ALAMEDA COUNTY  
HEALTH CARE SERVICES  
AGENCY

DAVID J. KEARS, Agency Director



R0204

RAFAT A. SHAHID, ASST. AGENCY DIRECTOR

December 29, 1992  
STID # 3854

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

Mr. Micheal Whelan  
ARCO Products Company  
P.O. Box 5811  
San Mateo, CA 94402

Re: Work Plan Addendum to Construct a Slurry Wall at ARCO Station  
4494, 566 Hegenberger Rd., Oakland CA 94621

Dear Mr. Whelan:

Our office has received and reviewed the December 28, 1992 work plan addendum calling for the installation of a slurry wall at the above site. We concur with this approach to prevent the migration of the black hydrocarbon product which had apparently migrated through the backfill of the the storm drain.

The proposed recovery well, RW-1, located between the storm drain and the slurry wall will be used to remove any accumulation of floating product. It will also help to evaluate the severity of this black hydrocarbon contamination. I understand that an additional onsite monitoring well will be installed to replace MW-2, which was destroyed during the excavation of the tank pit.

You may contact me at (510) 271-4530 if you have any questions.

Sincerely,

Barney M. Chan  
Hazardous Materials Specialist

cc: R. Hiett, RWQCB  
R. Campbell and J. Coffman, RESNA, 3315 Almaden Expressway,  
Suite 34, San Jose, CA 95118  
E. Howell, files

Add-566Heg

ALAMEDA COUNTY  
HEALTH CARE SERVICES

AGENCY

DAVID J. KEARS, Agency Director



RD004

November 5, 1991

DEPARTMENT OF ENVIRONMENTAL HEALTH  
Hazardous Materials Program  
80 Swan Way, Rm. 290  
Oakland, CA 94621  
(415)

Mr. Joel Coffman  
Applied Geo Systems, Inc.  
3315 Almaden Expressway, Suite 34  
San Jose, CA 95118

Re: Arco Station #4494, 566 Hegenberger Rd., Oakland, CA 94621

Dear Mr. Coffman:

In your October 23, 1991 letter you explain the delay in obtaining offsite access as follows: " Mr. Sharifi did not feel he could legally give out the name and address of the property owners." However, in your September 10, 1991 letter to Mr. Hussein Sharifi you included a license agreement between Thomas McManus and ARCO. As you know, property ownership information is available at the County Assessor's Office. Because you apparently knew the identity of the property owner in early September, we wonder why you did not deal directly with Mr. McManus?

I have discussed your request for access letter with Susan Hugo of our office. We agree site site access would be expedited if the request were more forthcoming in detailing what is known about existing contamination and the legal obligations of responsible parties to remediate. Please advise me as to whether there are any other Alameda County sites where site access to adjacent property is currently being refused and what measures beyond the standard form letter have been taken at those sites to gain access. We find it difficult to imagine a circumstance where an informed adjacent property owner would deny access. Please update me with the status of your progress to gain access.

Your prompt attention to these inquiries is appreciated. For any contact me at (510) 271-4320 if you have any questions regarding this letter.

Sincerely,

A handwritten signature in cursive script that reads "Barney Chan".

Barney Chan  
Hazardous Materials Specialist

cc: M. Thomson, Alameda County District Attorney Office  
J. Meck, ARCO Legal Dept.  
C. Carmel, ARCO  
R. Hiett, RWQCB  
566Heg3



ALAMEDA COUNTY  
HEALTH CARE SERVICES

AGENCY

DAVID J. KEARS, Director



R0204

October 21, 1991

Telephone Number (415)

Ms. Sharon Douglas  
Arco Environmental Compliance Section  
17315 Studebaker Rd.  
Cerritos, CA 90701-1488

Re: Review of Removal and Installation Plans for Underground Tanks at  
Arco Station #4494 at 566 Hegenberger Rd., Oakland CA 94601

Dear Ms. Douglas:

This letter recounts my conversation with Mr. William Mariluch of Barghausen Consulting Engineers today regarding the adequacy of the removal and installation plans for the above referenced Arco station. The following items were requested prior to County approval of the removal and installation plans:

Removal-

1. Arco and all other workers at the removal site must provide in writing, evidence that they have received OSHA approved health and safety training per CFR 1910.120.
2. The site safety plan must identify the nearest hospital and give directions to it.

Installation-

1. Arco must state in writing that the as-built plans will be provided to the County within 30 days after the installation is complete.
2. Arco must provide the hold-down calculations for the tanks as determined by a California registered engineer.
3. Arco must complete and submit Form C's for each tank installed.
4. Arco will provide the manufacture's cut sheets for the overflow protection device being installed. It will have a minimum fifteen (15) gallon capacity.
5. Arco will designate, on a site map, the location of the emergency shut-off switch for the pumps.

As soon as Mr. Mariluch provides this information, the removal and installation plans will be approved. Please contact me at (510) 271-4320 should you have any questions regarding this letter.

Sincerely,

Handwritten signature of Barney M. Chan in cursive.

Barney M. Chan, Hazardous Materials Specialist

cc: M. Thomson, Alameda County District Attorney Office  
W. Mariluch, Barghausen Consulting Engineers  
566Heg2

ALAMEDA COUNTY  
HEALTH CARE SERVICES

AGENCY

DAVID J. KEARS, Agency Director



R0204

August 6, 1991

DEPARTMENT OF ENVIRONMENTAL HEALTH  
Hazardous Materials Program  
80 Swan Way, Rm. 200  
Oakland, CA 94621  
(415)

Mr. Joel Coffman  
Applied GeoSystems  
3315 Almaden Expressway, Suite 34  
San Jose CA 95118

Subject: Site Mitigation at Arco Station 4494, 566 Begenberger Rd.,  
Oakland CA 94621

Dear Mr. Coffman:

There appears to have been some questions regarding the County's response to several workplans which Applied GeoSystems has recently submitted to our agency. This letter serves to clarify the County's understanding and position regarding these workplans. First of all, a number of events have occurred which may have direct influence on the remediation plans initially proposed in your workplan and addendum dated 5/15/91. A site meeting with representatives from Arco, Applied GeoSystems and our agency occurred on 5/6/91. Chuck Carmel, Greg Barclay, Ken Mateik and Barney Chan were at this meeting. In this meeting, it was noted that the underground tanks at this location were scheduled for removal and that specific further investigation was dependent on the findings of the underground tank removals. Also, onsite in-situ soil venting and/or air stripping was being looked into as a way to minimize land disposal of contaminated soils. From our July 23rd conversation, this may not be your plan for these soils after all and that landfilling is now being considered. At the meeting, it was noted that the only area of immediate concern was that area near MW-2, that well which initially had floating product in its initial sampling. Since this time you noted, in our July 23rd conversation, that subsequent samplings of MW-2 have not revealed any free floating product and the proposed groundwater remediation of MW-2 is now on hold. With these items noted, the County would like to address the proposed tasks of your May 15, 1991 workplan.

Task 1 states that additional soil borings will be drilled and sampled as necessary to evaluate the lateral and vertical extent of gasoline and waste-oil hydrocarbons. The County understands that a number of these type borings have already been done as an attempt to facilitate any potential remediation resulting from the excavation of the current underground tanks and the rebuilding of the mini-market. No other specific locations were proposed for further borings in your workplan.

Task 2 proposes further step-out borings as necessary. These borings are dependent partially on the removal of the tanks.

Mr. Joel Coffman  
Arco Station 4494  
August 6, 1991  
Page 2.

Task 3 states that a Feasibility Study and addendum to the workplan will be provided if remediation of the soil is necessary.

Task 4 states that upon approval of the recommended remediation alternative and addendum, treatment facilities or soil remediation, as needed, will commence.

Task 5 states that onsite groundwater monitoring wells will be installed, developed and sampled to delineate lateral and vertical extent of petroleum hydrocarbons in the groundwater. We discussed the potential of additional onsite monitoring wells. At this time, it appears that the area near B-17, which had considerable oil and grease contamination, is a potential site for an additional monitoring well. No specific locations were noted in the workplan. Other potential locations may be reasonable dependent on results of the planned underground tank removals.

Task 6 states that hydrogeologic tests and research will be performed as necessary to evaluate potential migration of petroleum hydrocarbons.

Task 7 states that offsite groundwater well(s) will be installed, developed and sampled. At the site meeting and in our phone conversation it was agreed that minimally one additional monitoring well would be necessary to determine if offsite migration of contamination was occurring downgradient to MW-2. It was also noted that another monitoring well on the other side of the existing storm drain and sanitary sewer may be necessary due to the unknown effects of these subsurface conduits. In fact, the installation of such a monitoring well is included in Steps 4-9 of Addendum One to the May 15, 1991 workplan.

Tasks 8,9 and 10 are to prepare a groundwater remediation feasibility study and addendum to the workplan if necessary, design and construct groundwater remediation facility if necessary and to prepare and implement a site closure plan, respectively.

The Addendum to the workplan contains 11 steps. Steps 1-3 relate to soil and water samplings subsequent to proposed tank replacements. Steps 4-9 relate to the installation of MW-5, the offsite monitoring well downgradient to MW-2. Step 10 describes the installation of a product recovery system to pump floating product from MW-2 and Step 11 is the preparation of a report to include results of the investigation and your conclusions.

To respond to the workplan and addendum appropriately we must determine which items can be performed immediately and which ones are dependent on further work and site characterization. Looking at the workplan, it appears that the following work can take place without further investigation and work:

Mr. Joel Coffman  
Arco Station 4494  
August 6, 1991  
Page 3.

Task 5: Install, develop and sample onsite groundwater monitoring wells. The exact location(s) have not been determined for our agency's concurrence. Please provide a site map for all proposed onsite well locations.

Task 6: Conduct hydrogeologic tests and research, this has not been clarified as to what this will include. Please clarify what is meant by these general terms.

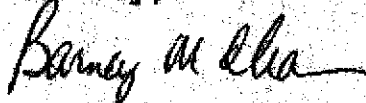
Task 7: Install and develop offsite well(s). This is further stated in the Addendum Steps 4-9. Upon exact location(s) as depicted on a site map and our division's concurrence, you may proceed without further notice.

In regards to the Addendum, Steps 1-3 merely state the normal procedures which are to be taken following an underground tank removal and replacement. These items can be done once the underground tank removal and replacement plans have been reviewed and approved by our agency. Since a number of tasks are dependant on the removal of the current tanks, please provide our office with removal and installation plans within 30 days of this letter, as well as the previously requested items. Once exact well location(s) have been determined you may proceed with Steps 4-9 of the Addendum. Step 10, the installation of a floating product recovery system for HW-2 is on hold pending further well sampling and analysis.

Because of the general nature of your workplan, these appear to be the only specific tasks which you may proceed with without further County approval or without further investigation.

I hope this letter has served to clarify the County's position in regards to the submitted workplan and addendum. Please contact me at (415) 271-4320 should you have any questions.

Sincerely,



Barney M. Chan  
Hazardous Materials Specialist

cc: G. Jensen, M. Thomson, Alameda County District Attorney,  
Consumer and Environmental Protection Division  
R. Hiatt, RWQCB  
H. Hatayama, DOHS  
C. Carmel, ARCO  
566Hegl



ALAMEDA COUNTY  
HEALTH CARE SERVICES

AGENCY

DAVID J. KEARS, Agency Director



R0204

March 26, 1991

Ms. Elaine Lavine  
Arco Petroleum Products Co.  
2000 Alameda de las Pulgas, Suite 218  
PO Box 5811  
San Mateo, CA 94402

DEPARTMENT OF ENVIRONMENTAL HEALTH  
Hazardous Materials Program  
80 Swan Way, Rm. 200  
Oakland, CA 94621  
(415)

Re: Arco Station #4494, 5 year permit to operate  
Mr. Kahlil Rooshan  
566 Hegenberger  
Oakland, CA 94621

Dear Ms. Lavine:

Per our telephone conversation, enclosed is a copy of the permit issued to Mr. Rooshan at the Hegenberger facility. Alameda County Environmental Health Department, Hazardous Materials Division has conducted site inspections at the above facility and has determined that, at this time, all conditions necessary for the issuance for a 5 year permit are being met. The original permit was sent to Mr. Rooshan.

Also as requested are copies of the inspection reports which I have performed on ARCO facilities in the recent past. If you have any questions about them please feel free to contact me.

Enclosed is a quarterly monitoring report form which this office has developed in order to meet the quarterly reporting requirements according to Title 23. You may find it useful for other Arco facilities which are operating with single walled underground storage tanks.

Please contact me at 415/271-4320 if you have any questions.

Sincerely,

*Paul M. Smith*

Paul M. Smith  
Hazardous Materials Specialist

Enclosures (6)

ALAMEDA COUNTY  
HEALTH CARE SERVICES

AGENCY

DAVID J. KEARS, Agency Director



R0204

February 4, 1991

Ms. Elaine Lavine  
Arco Petroleum Products  
PO Box 5811  
Oakland, CA 94402

DEPARTMENT OF ENVIRONMENTAL HEALTH  
Hazardous Materials Program  
80 Swan Way, Rm. 200  
Oakland, CA 94621  
(415)

Re: Arco Station #4494, 5 year permit to operate  
Mr. Kahlil Rooshan  
566 Hegenberger  
Oakland, CA 94621

Dear Ms. Lavine:

Alameda County Environmental Health Department, Hazardous Materials Division has conducted site inspections at the above facility and has determined that, at this time, all conditions necessary for the issuance for a 5 year permit are being met. Enclosed is a 5 year permit for the facility to operate. As per our telephone conversation please send a copy of the permit to Mr. Rooshan.

Enclosed is a quarterly monitoring report form which this office has developed in order to meet the quarterly reporting requirements according to Title 23. You may find it useful for other Arco facilities which are operating with single walled underground storage tanks.

Please contact me at 415/271-4320 if you have any questions.

Sincerely,

A handwritten signature in cursive script that reads "Paul M. Smith".

Paul M. Smith  
Hazardous Materials Specialist

Enclosures (2)

ALAMEDA COUNTY  
HEALTH CARE SERVICE

AGENCY  
DAVID J. KEARS, Agency Director



R0204

DEPARTMENT OF ENVIRONMENTAL HEALTH  
Hazardous Materials Program  
80 Swan Way, Rm. 200  
Oakland, CA 94621  
(415)

Certified Mailer #:

October 30, 1989

Mr. Kyle Christie  
ARCO Petroleum Products Company  
P.O. Box 5811  
San Mateo, California 94402

Subject: Review of Workplan for Initial Subsurface Investigation of  
the Underground Storage Tank Leak at ARCO Station No.  
4494, 566 Hegenberger Road, Oakland, California

Dear Mr. Christie:

We have reviewed the Workplan for Initial Subsurface Investigation for 566 Hegenberger Road in Oakland dated September 29, 1989 and prepared by Applied GeoSystems. This workplan is acceptable to us and may be carried out provided the following items are incorporated:

- 1) Wells must be checked for free product before sampling commencement. Free product must be measured by optical probe or other method having equivalent accuracy. Gas and water finding paste may be used to measure free product thicknesses;
- 2) Ground water levels must be investigated for potential tidal influence; and
- 3) Site history information per item 1A of our letter dated August 10, 1989 must be submitted.

Should you have any questions concerning this letter, please contact us at (415) 271-4320.

Sincerely,

Katherine Chesick,  
Hazardous Materials Specialist

cc: William Dugan, Applied GeoSystems  
Lester Feldman, S.F. Bay Regional Water Quality Control Board  
Howard Hatayama, State Department of Health Services  
Gil Jensen, Alameda County District Attorney, Consumer and  
Environmental Protection Division  
Rafat A. Shahid, Alameda County Department of Environmental  
Health  
Files

ALAMEDA COUNTY  
HEALTH CARE SERVICES

AGENCY

DAVID J. KEARS, Agency Director



R0204

Certified Mailer #: P 062 128 045

DEPARTMENT OF ENVIRONMENTAL HEALTH  
Hazardous Materials Program  
80 Swan Way, Rm. 200  
Oakland, CA 94621  
(415) 271-4320

August 10, 1989

Mr. Kyle Christie  
ARCO Petroleum Products Company  
P.O. Box 5811  
San Mateo, California 94402

Subject: Initial Subsurface Investigation of the Underground  
Storage Tank Leak at ARCO Station No. 4494, 566  
Hegenberger Road, Oakland, California

Dear Mr. Christie:

On December 16, 1988, Ms. Katherine Chesick, Hazardous Materials Specialist, witnessed the removal of a 280-gallon waste oil underground storage tank from 566 Hegenberger Road in Oakland and the collection of two soil samples from the excavation bottom. Per the Pacific Environmental Group (PEG) Inc.'s March 7 1989 submittal, the soil sample collected beneath the tank at 7 feet below ground surface contained 4800 ppm of oil. Soil remediation was conducted by PEG and entailed the excavation and disposal of approximately 30 tons of contaminated soil. The remaining soil, sampled 10 feet below ground surface, contained less than 200 ppm oil and grease.

The degree of soil contamination documented on site requires an investigation to assess ground water quality. We therefore require that you submit a work plan which, at a minimum, addresses the items listed below and presents a timetable for their completion. Please submit this work plan within 45 days of the date of this letter.

Our office will be the lead agency overseeing the investigation of this site. The San Francisco Bay Regional Water Quality Control Board (SFRWQCB) is currently unable to oversee the large number of underground tank cases within Alameda County and has delegated the handling of this case to our Division. We will be in contact with the SFRWQCB in order to provide you with guidance concerning the SFRWQCB's investigation requirements.



Page 2 of 6  
Mr. Kyle Christie  
ARCO Petroleum Products Company  
August 10, 1989

All work must be performed according to the following SFRWQCB documents:

- \* Regional Board Staff Recommendations for Initial Evaluation and Investigation of Underground Tanks, 2 June 1988 (2 June 1988 SFRWQCB document); and
- \* Guidelines for Addressing Fuel Leaks, September 1985 (September 1985 SFRWQCB document).

Copies of these documents can be obtained by calling the SFRWQCB data management group at 464-1269. Please note the 2 June 1988 SFRWQCB document supercedes the September 1985 SFRWQCB document where the two documents differ.

Items to Address:

**1. Site history.**

- A. This shall include historic site use and ownership information, a description of the types and locations of any hazardous materials used on site, a description of any known hazardous materials spills, leaks or accidents
- B. For each existing and former underground tank on site, include the following information:
  - a) the date of tank installation
  - b) the dates the tank was used
  - c) the types of materials stored in the tank
  - d) notation of any failed tank tests
  - e) observations made at the time of tank removal (e.g. the tank depth, a log of the stratigraphic units encountered within the excavation, ground water depth, descriptions and locations of stained or odor-bearing soil, descriptions of any free product or sheen observed on ground water, etc.).
  - f) any other observations

**2. Site Description.**

This shall incorporate the following information:

- A. A map which shows streets, site buildings, underground tank locations, tank islands and pipings, subsurface conduits and utilities, on-site and nearby wells, and nearby streams or water bodies.

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- B. A description of the hydrogeologic setting of the site and surrounding area. Include a description of any subsurface work previously done at the site or on adjacent sites.

**3. Assessment of Ground Water Quality.**

Due to the potential that waste oil may have contaminated the ground water, water quality must be characterized.

- A. A minimum of three monitoring wells must be installed to determine the ground water gradient. One monitoring well must be installed within 10 feet of the tank in the down-gradient direction. If the verified down-gradient location has been established, then complete gradient data must be submitted and only one monitoring well must be installed; this well must be within 10 feet of the tank in the down-gradient direction.

Soil samples must be collected according to the protocols set forth in the September 1985 SFRWQCB document and the LUFT manual. During drilling of all boreholes and monitoring wells, undisturbed soil samples are to be collected at a minimum of every five feet in the unsaturated zone and at any changes in lithology for logging and analytical purposes. Borings and wells are to be permitted through Alameda County Flood Control and Water Conservation District, Zone 7. Borings and wells shall be logged from undisturbed soil samples. Logs shall include observed soil odors.

- B. Monitoring wells shall be designed and constructed to be consistent with the September 1985 SFRWQCB document and to permit entrance of any free product into the wells. Filter pack and slot sizes for all wells should be based on particle analysis (ASTM D-422) from each stratigraphic unit in at least one boring on the site and on the types of ground water contaminant present. Wells shall be surveyed to mean sea level (MSL) to an established benchmark to 0.01 foot.
- C. Water level and free product thickness must be measured and wells must be sampled. Measure free product thicknesses and water levels weekly for the first month following well installation. For the first three months following well installation, monitoring wells shall be sampled monthly for free product and dissolved constituents. After three consecutive months of sampling, sampling may be conducted as needed for remediation purposes but must be done at least quarterly for all

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monitoring wells. Before each sampling event is begun, free product thicknesses and water levels shall be measured in all wells. A ground water gradient map shall be developed for every water level data set. If the gradient fluctuates, water level measurements must continue to be made monthly until a gradient pattern is established. Free product measurements shall be performed using an optical probe or other device which has been shown to be of equivalent accuracy.

D. Soil and ground water samples must be analyzed by a California State Certified Laboratory for the appropriate constituents (see Attachment 1, Table 2, 2 June 1988 SFRWQCB document).

E. Ground water levels and quality must be monitored for a minimum of one year, even if no contamination is identified.

#### 4. Interpretation of hydrogeologic data.

A. Water level contour maps, ground water gradient determinations, and free and dissolved product plume definition maps of each contaminant constituent should be prepared routinely and submitted with other sampling results. Fluctuations in ground water levels due to tidal action should also be documented.

#### 5. Reporting.

A. Monthly reports must be submitted for the next three months with the first report due November 10, 1989. These reports should include, at a minimum, results of water level and water quality sampling, gradient determination and gradient maps, and contamination plume maps.

B. Quarterly reports must be submitted beginning January 10, 1989. These reports should describe the status of the investigation and should include the following:

\* Details and results of all work performed during the quarter (e.g. records of field observations and data, boring and well construction logs, water level data, chain-of-custody forms, laboratory-originated analytical results for all samples collected, tabulations of soil and ground water contaminant concentrations, tabulations of free product thicknesses, etc.)

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- \* Status of ground water contamination characterization
- \* Interpretation of the results (e.g. water level contour maps showing ground water gradient direction, free and dissolved product plume definition maps of each constituent, tidal effects, etc.)
- \* Any recommendations or plans for additional investigative work or remediation
- \* Copies of TSDF to Generator manifests for any hazardous wastes hauled off site

C. All reports and proposals must be signed by a California-Certified Engineering Geologist, California-Registered Geologist or a California-Registered Civil Engineer (see page 2, 2 June 1988 SFRWQCB document). A statement of qualifications for each lead professional should be included in all workplans and reports.

D. Each technical report should be submitted with a cover letter from ARCO and received in this office by the established due date. The letter must be signed by a principal executive officer or by an authorized representative of that person.

#### 6. Site Safety Plan.

All proposals, reports and analytical results pertaining to this investigation and remediation must be sent to our office and to:

Lester Feldman  
Regional Water Quality Control Board, San Francisco Bay Region  
1111 Jackson Street  
Oakland, California 94607  
(415) 464-1255

You should be aware that this Division is working in conjunction with the SFRWQCB and that this is a formal request for technical reports pursuant to California Water Code Section 13267 (b). Failure to respond or a late response will result in referral of this case to the SFRWQCB for enforcement and may subject ARCO to civil liabilities imposed by the SFRWQCB to a maximum amount of \$1,000 per day. Any extensions of agreed-upon time deadlines must be confirmed in writing by either this Division or the SFRWQCB.

To cover our costs for remediation review, please submit a check, payable to Alameda County, for \$500.

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Should you have any questions concerning this letter, please contact Katherine Chesick, at (415) 271-4320.

Sincerely,

*Edgar B. Howell*

*for* Rafat A. Shahid, Chief,  
Hazardous Materials Division

RAS:kac

attachments

cc: Owen Ratchye, Pacific Environmental Group, Inc.  
Lester Feldman, Regional Water Quality Control Board,  
San Francisco Bay Region  
Howard Hatayama, State Department of Health Services  
Gil Jensen, Alameda County District Attorney, Consumer and  
Environmental Protection Division  
Katherine Chesick, Alameda County Hazardous Materials Division  
Files

TABLE #2  
REVISED 6 OCTOBER 1988

RECOMMENDED MINIMUM VERIFICATION ANALYSES FOR  
UNDERGROUND TANK LEAKS

<u>HYDROCARBON LEAK</u>	<u>SOIL ANALYSIS</u>		<u>WATER ANALYSIS</u>	
<u>Unknown Fuel</u>	TPH G TPH D BTX&E	GCFID(5030) GCFID(3550) 8020 or 8240	TPH G TPH D BTX&E	GCFID(5030) GCFID(3510) 602 or 624
<u>Leaded Gas</u>	TPH G BTX&E ---Optional--- TEL EDB	GCFID(5030) 8020 or 8240  DHS-LUFT DHS-AB1803	TPH G BTX&E TEL EDB	GCFID(5030) 602 or 624 DHS-LUFT DHS-AB1803
<u>Unleaded Gas</u>	TPH G BTX&E	GCFID(5030) 8020 or 8240	TPH G BTX&E	GCFID(5030) 602 or 624
<u>Diesel</u>	TPH D BTX&E	GCFID(3550) 8020 or 8240	TPH D BTX&E	GCFID(3510) 602 or 624
<u>Jet Fuel</u>	TPH D BTX&E	GCFID(3550) 8020 or 8240	TPH D BTX&E	GCFID(3510) 602 or 624
<u>Kerosene</u>	TPH D BTX&E	GCFID(3550) 8020 or 8240	TPH D BTX&E	GCFID(3510) 602 or 624
<u>Fuel Oil</u>	TPH D BTX&E	GCFID (3550) 8020 or 8240	TPH D BTX&E	GCFID(3510) 602 or 624
<u>Chlorinated Solvents</u>	CL HC BTX&E	8010 or 8240 8020 or 8240	CL HC BTX&E	601 or 624 602 or 624
<u>Non Chlorinated Solvents</u>	TPH D BTX&E	GCFID(3550) 8020 or 8240	TPH D BTX&E	GCFID(3510) 602 or 624
<u>Waste Oil or Unknown</u>	TPH G TPH D O & G BTX&E CL HC	GCFID(5030) GCFID(3550) 503D&E 8020 or 8240 8010 or 8240	TPH G TPH D O & G BTX&E CL HC	GCFID(5030) GCFID(3510) 503A&E 602 or 624 601 or 624

---If any of the above detected, include:---

ICAP or AA TO DETECT METALS: Cd, Cr, Pb, Zn  
METHOD 8270 FOR SOIL OR WATER TO DETECT:  
PCB  
PCP  
PNA  
CREOSOTE  
PCB  
PCP  
PNA  
CREOSOTE

Reference: Regional Board Staff Recommendations for Initial Evaluation and Investigation of Underground Tanks, 2 June 1988, SF Bay RWQCB

**EXPLANATION FOR TABLE #2: MINIMUM VERIFICATION ANALYSIS**

**TOTAL PETROLEUM HYDROCARBONS (TPH)** as gasoline (G) and diesel (D) ranges (volatile and extractible, respectively) are to be analyzed and characterized by GC FID with a fused capillary column and prepared by EPA method 5030 for volatile hydrocarbons, or extracted by sonication using 3550 methodology for extractible hydrocarbons.

**TETRAETHYLLEAD (TEL)** may be analyzed as total lead. However, a confirming analysis must be completed using a soil sample at the same soil depth in another borehole, or for water, from an upgradient well that is not contaminated with hydrocarbons.

**CHLORINATED HYDROCARBONS (CL HC)** and **BENZENE, TOLUENE, XYLENE AND ETHYLBENZENE (BTX&E)** are analyzed in soil by EPA methods 8010 and 8020, respectively, (or 8240) and for water 601 and 602, respectively, (or 624).

**OIL AND GREASE (O & G)** may be used when heavy, straight chain hydrocarbons may be present. Infrared analysis by method 418.1 may also be acceptable for O & G if proper standards are used.

**Notes:**

- To avoid false positive detection of benzene, benzene-free solvents are to be used. Fused capillary columns are preferred to packed columns; a packed column may be used as a "first cut" with "dirty" samples or once the hydrocarbons have been characterized and proper QA/QC is followed.
- For DRINKING WATER SOURCES, EPA recommends that the 500 series for volatile organics be used in preference to the 600 series because the detection limits are lower and the QA/QC is better.
- For all analyses on Table #2, appropriate standards are to be used for the material stored in the tank. For instance, seasonally, there may be five different jet fuel mixtures to be considered.
- Other methodologies are continually being developed (such as cryogenic focusing), and as they are accepted by EPA or DHS, they also can be used.