1099

Chan, Barney, Env. Health

To: Robert Schultz

Cc: Drogos, Donna, Env. Health; r4sw@pge.com

Subject: PG&E, 4930 Coliseum Way, Oakland, RO0000099

Messrs Schultz and Saur:

As a recap of our 3/14/07 meeting, we understand that Geomatrix will attempt to hasten the groundwater sampling of all wells at this site to expedite site closure. Please sample all wells for TPHg, TPHextractables (diesel and motor oil), and VOCs by EPA 8260 and soluble lead. Please submit your report to the County website and Geotracker. You were also going to determine if a deed restriction had been filed for the site. If not, a deed restriction using the current model and enclosures of maps, must be filed. We understand that you are still reviewing offsite data and cannot comment on the closure and impact of offsite properties to the PG&E site.

Sincerely,

Barney M. Chan
Hazardous Materials Specialist
Alameda County Environmental Health
510-567-6765

Alameda County Department of Environmental Health
Hazardous Materials Division

Ro 99

Meeting Attendees

Subject: 4930 Coliseum Way, Oakland RO99 etal

Date: 3-14-07

Location: ACEH

	Name	Affiliation	Phone # / FAX # / email
1	Barney Chan	ACEH	510-567-6765 / 510-337-9335 / barney.chan@acgov.org
2	Donna Drogos	ACEH	567-6721 / donna.drogos@acgov.org
3	Bob Schultz	Geomatrix (PG+E)	663-4117 / rschultz@geomatrix.com
4	Jonathan Skaggs	Geomatrix (PG+E)	663-4104 / jskaggs@geomatrix.com
5	Rob Saur	PG+E	925-866-5888 / r4sw@pge.com
6	Marcella Harrison	QVA Kidder Mathews (New)	415 229 8888 / marcellah@qvakm.com
7	Jack Krause	Westside Alta Bldg Mat	510 532-2582 / jkrause@westsidebmc.com
8			/
9			/
10			/
11			/
12			/
13			/
14			/
15			/
16			/
17			/

HMMtgAttendees 1/94 mk

GVA Kidder Mathews
Worldwide Real Estate Solutions

Marcella Harrison
Vice President

Two Transamerica Center
505 Sansome Street, Suite 300
San Francisco, CA 94111
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WESTSIDE ALTA BUILDING MATERIAL COMPANY

JACK KRAUSE
Vice President
&
General Manager

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(510) 532-2582 • Fax (510) 532-2602 • jkrause@westsidebmc.com

Geomatrix

Jonathan M. Skaggs, PG
Project Geologist

Geomatrix Consultants
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12th Floor
Oakland, CA 94612
jskaggs@geomatrix.com

Main 510.663.4100
Direct 510.663.4104
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PG&E Pacific Gas and Electric Company®

3400 Crow Canyon Road
San Ramon, CA 94583

Robert A. Saur
Environmental Geologist
Technical and Ecological Services

925.866.5888
Internal: 251.5888
Fax: 925.866.5681
Cellular: 925.324.9101

Chan, Barney, Env. Health

305E over TOKYO

From: Winsor, Terry R [TRWc@pge.com]
Sent: Wednesday, August 31, 2005 2:54 PM
To: Chan, Barney, Env. Health
Cc: Gray, Robert
Subject: Former Oakland Gasholder, 4930 Coliseum Way, Oakland, California
Attachments: Oakland Gas Remediation timeline.xls

ADJACENT JUNKYARD
w/PPS FLOWING INTO PG&E

Mr. Barney Chan

Hazardous Materials Specialist

Alameda County Health Care Services Agency

Environmental Health Services

1131 Harbor Bay Parkway, Suite 250

Alameda, CA 94502-6577

Under the oversight of Alameda County Health Service Agency, Environmental Health Services (ACHCSA), Pacific Gas and Electric Company (PG&E) has been monitoring groundwater quality and elevations at our former Gasholder property at 4930 Coliseum Way in Oakland for more than 17 years. PG&E analyzed samples collected from six groundwater monitoring wells during the first four or five years for petroleum hydrocarbons to monitor the effects of remedial efforts for underground storage tanks (USTs) that PG&E removed in 1988. Beginning in 1992 after PG&E constructed a containment cap over a large area where lead derived from lead-based paints had been found, PG&E has analyzed samples collected from three monitoring wells for total lead (Pb). PG&E and its consultants have reported the results of this monitoring regularly to your offices. Attached is a timeline that summarizes PG&E's efforts at the former Gasholder site.

<<Oakland Gas Remediation timeline.xls>>

In addition to the monitoring, PG&E has also undertaken four deliberate remedial actions:

- PG&E removed five USTs – PG&E removed a cluster of four USTs from the northern-most corner of the property. Two of the USTs stored mineral spirits, and two stored heavy oils. PG&E removed the fifth UST from the western corner of the property closest to Coliseum Way; this UST stored diesel fuel. No petroleum hydrocarbons were found in closure samples collected from native soils when the diesel UST was removed.
- PG&E excavated 2,000 cubic yards of soil from the northern corner of the property where the cluster of four USTs had formerly been located.
- PG&E constructed an asphaltic concrete containment cap and paved the entire surface area of the property on which the gasholder had been located.
- PG&E sealed cracks in the asphaltic concrete containment cap.

Several important observations can be extracted from the monitoring and remedial actions:

- PG&E has complied fully with ACHCSA requirements by analyzing groundwater samples collected from the monitoring wells for Total Petroleum Hydrocarbons quantified as gasoline (TPH-g) and as diesel (TPH-d), for benzene, toluene, ethylbenzene, and total xylenes (BTEX), chlorinated volatile organic compounds (solvents), and lead. PG&E has complied even though none of the four tanks removed from the cluster in the northern-most corner stored fuels, in particular gasoline, or solvents.
- PG&E also has complied with ACHCSA requirements to analyze groundwater samples for TPHd (diesel fuel) even though no TPH-d was found in the closure samples collected when the diesel UST was closed/removed.
- TPH-g, TPH-d, BTEX, and solvents persist in the groundwater samples collected over the past 17 years and appear to disperse from a source off the property to the north.

Robert Gray and I would like to meet with you to discuss alternatives for overcoming the apparent inertia on this project. Continued groundwater monitoring will not remediate the off-site source and will not improve the quality of water beneath the containment cap, but continued monitoring will divert funds from other projects where PG&E might use those funds more constructively to remediate a problem of our own making. Either Bob or I will call you early next week to schedule an appointment to meet with you. In the meantime if you have any other questions or would like to offer us times when we can meet, please call either Robert (Bob) Gray at (415) 973-3773 or me at (415) 973 1284.

Terry R Winsor, P.G.
Pacific Gas and Electric Company
Environmental Affairs, Site Remediation
direct: (415) 973-1284
email: trwc@pge.com

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

September 7, 2000
StID # 67

Mr. John Robinson
PG&E Co.
4930 Coliseum Way
Oakland CA 94601

Re: Groundwater Monitoring at 4930 Coliseum Way, Oakland CA 94601

Dear Mr. Robinson:

Our office has received and reviewed the August 18, 2000 Semi-annual Groundwater Monitoring Report for the above referenced site as prepared by CSS Environmental Services, Inc. As you are aware, this monitoring is part of the long term requirement for this site to monitor the potential impact to groundwater from the residual elevated lead contamination allowed to be left in-place by our office and the Regional Water Quality Control Board. Also required is an annual inspection of the asphalt cap at this site.

The results of this sampling indicate that lead continues not to be present in shallow groundwater beneath the impacted area, however, total petroleum hydrocarbons in the gasoline and diesel range and specifics chlorinated solvents continue to impact the site.

As a point of clarification, the state maximum contaminant level (MCL) for lead provided in the report, 50 ppb, is incorrect. The current MCL set by US EPA is 0, while the MCL observed by state water treatment systems is 15 ppb. This is the level at which water treatment systems may have to take treatment steps should 10% of the tested samples exceed this level.

In regards to the TPH and chlorinated solvents being detected at this site, our office agrees that this appears to be the result of release(s) from up-gradient sites. Unfortunately, the County does not have the jurisdiction to require investigation, remediation or inspection of these nearby properties. We advise that you contact the City of Oakland Hazardous Materials Program, the Regional Water Quality Control Board and/or the Department of Toxic Substances Control to voice your concern and request their assistance.

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

Sincerely,

Barney M Chan

Barney M. Chan
Hazardous Materials Specialist

C: B. Chan, files
Mr. A. Stessman, CSS Environmental Services, 95 Belvedere St., Ste 2, San Rafael, CA 94901
Ms. B. Graham, RWQCB
Mr. L. Griffin, City of Oakland OES, 1605 Martin L. King Jr. Dr., Oakland CA 94612

4930ColiseumWay

6/26/00

Tom:
In regards to 4930 Coliseum Way, Oakland CA 94601, Former PG&E Gas Holder Site

This site had underground fuel tanks on the north section and the former gas holder on the south section. The UST area was over-excavated and is being monitored. The south section, where the former gas holder was located was allowed to leave elevated lead in soils from paint sloughed and blasted off the gas holder. Our office, Ravi and Paul Smith, along with the Water Board, Lester Feldman and Rich Hiett, and DTSC, Barbara Cook agreed on the remedial action plan for the site. The site was allowed to be asphalt capped, groundwater monitoring for lead and TPH was required, an annual inspection of the cap was required and a deed restriction requested.

A May 7, 1992 letter from Paul Smith of our office required that the deed restriction must be approved by a legal representative of Alameda County.

A September 21, 1992 letter from the Water Board required a deed restriction be placed on the property.

An undated Covenant of Deed Restriction was in the files calling for the signature of a Senior Hazardous Materials Specialist form ACHCS (Paul).

Recently I received a June 20, 2000 request to comment on and requesting the signature of someone from ACHCSA and notarizing. What should I do?

Barney

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

May 10, 2000
StID # 67

Mr. John Robinson
PG&E
4930 Coliseum Way
Oakland CA 94601

Re: Testing for MTBE at 4930 Coliseum Way, Oakland CA 94601

Dear Mr. Robinson:

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 on your next semi-annual monitoring of wells OW-1, and OW-4 through OW-7, that these wells be monitored for MTBE and any detectable concentrations be verified by EPA Method 8260 or an equivalent GC/MS method. Please include these results with the normal semi-annual monitoring results. If MTBE is not detected above normal detection limits, it can be eliminated from your monitoring schedule.

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. A. Stessman, CET Environmental Services, 3033 Richmond CA 94806

Mtbe4930

11/15/94 -

"Site walk w/ D. Harlan, Ron Posey & J. Robinson to inspect asphalt cap. One storm drain plugged + water accumulating in parking lot. The backup in the concrete trough concealed certain area. Generally, no obvious deep spots or holes. On the west perimeter beyond the yellow line, a utility trench was observed and a crack in the asphalt followed the line ~ 20-30' This area should be resealed

David A. Harlan
P.E., R.E.A.

Senior Civil Engineer
Project Manager

2030 Addison Street
Suite 500
Berkeley, California
94704

Telephone
510.540.6954
Facsimile
510.540.7496

EARTH TECH

Pacific Gas and Electric Company

Ron Posey
Compliance Specialist
Distribution Construction

One California Street, Room 222-F2H
San Francisco, CA 94111
Mailing Address Mail Code F2H
P.O. Box 770000
San Francisco, CA 94177
415/973-5349 Fax 415/973-5424
Cellular 415/999-7477

Pacific Gas and Electric Company
East Bay Region

John Robinson
Field Engineer
Gas Transmission and Distribution
ENCON

4930 Coliseum Way
Oakland, CA 94601
510/~~535-0600~~ 534-3265

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

July 14, 1994
StID # 67

Mr. Wally Pierce
PG & E
One California St., Room F235
San Francisco, CA 94111

RE: Groundwater Monitoring Schedule for 4930 Coliseum Way, PG&E Construction and Distribution Yard, Oakland CA 94601

Dear Mr. Pierce:

As you may be aware, Mr. Britt Johnson has left our offices and has transferred the oversight of this site to me. I am familiar with this site, as I originally was overseeing the petroleum hydrocarbon release at this site until I relinquished the entire site to Mr. Johnson. Prior to his departure, he discussed your proposed change from quarterly to semi-annual groundwater monitoring for the wells downgradient to the former above ground tank. Given the prior low soluble lead levels, I concurr with this monitoring change. At this time all wells may be monitored on a semi-annual basis.

Please be aware our office has recently moved to:
1131 Harbor Bay Parkway, Room 200
Alameda CA 94502.

Until our phone system is on-line, you may leave a voice message for me at (510) 337-2864.

Sincerely,

Barney M. Chan
Hazardous Materials Specialist

cc: Ms. Melissa Cooney, The Earth Technology Corp., 2030 Addison St., Suite 500, Berkeley, CA 94704
K. Graves, RWQCB
E. Howell, files

mon-4930

Pacific Gas and Electric Company

One California Street, Room 234
Mail Code F2B
P.O. Box 770000
San Francisco, CA 94177
415/973-5615

CERTIFIED MAIL

October 25, 1993

Alameda County Health Agency Care Services
Division of Hazardous Materials
Department of Environmental Health
80 Swan Way, Room 200
Oakland, CA 94621
Attention: Britt Johnson

Subject: Annual Inspection of Asphalt Overlayment of 4930 Coliseum Way in Oakland

Dear Mr. Johnson:

On October 4, 1993, Pacific Gas and Electric, Distribution Construction, with the assistance of yourself and other members of your organization, completed the first annual evaluation of the engineered (cap) surface, overlaying the contaminated soil at the PG&E's facility located at 4930 Coliseum Way in Oakland. This inspection was confirmed by a California registered civil engineer as required. In general the condition of the "cap" was found to be in good form with no need to complete a seal coat at this time. Minor spot repairs were noted and have been corrected to Caltrans specifications for hot or cold applications of asphalt emulsion. The attached technical report outlines the inspection process and confirms same. Should you have any questions concerning this inspection, please call me at the above number.

Sincerely,

Wally A. Pearce

WAP:amt

Attachment

The Earth Technology Corporation®

2030 Addison Street, Suite 500
Berkeley, California 94704
Telephone: (510) 540-8954 / Fax: (510) 540-7496

93 OCT 27 PM 3:24

October 7, 1993

Mr. Wally Pearce
Safety Engineer
Distribution and Construction
Pacific Gas and Electric Company
One California Street, Room F235
San Francisco, CA 94111

Subject: First Annual Pavement Inspection for PG&E Site at 4930 Coliseum Way, Oakland, CA

Dear Mr. Pearce:

This letter report summarizes the pavement inspection Earth Technology conducted on October 4, 1993 for the subject site. The inspection was primarily limited to the pavement overlying the soils with elevated lead concentrations. This area is generally delineated at the site with a 6-inch wide yellow stripe.

The purpose of the inspection is to evaluate the condition of the pavement surface and to identify any required repairs to maintain its integrity and to limit any infiltration of surface water into the underlying soil.

In general, the condition of the pavement was found to be very good, and there is no need for a complete seal coat at this time. Numerous spot repairs have previously been completed, and these all seem to be satisfactory. The necessity for spot repairs will probably continue, given the presence of heavy equipment at the site. In general, repairs should conform to Caltrans specifications for either hot or cold applied asphaltic emulsion, with screenings as necessary. I have noticed where heavy-point loads have been bridged with pieces of plywood and this practice should continue. Alternatively, heavier pieces of timber (i.e., 2" x 12" x 24", etc.) may be used.

The attached Field Report lists areas of interest noted during the inspection. A photographic record was also taken during the inspection. Only two areas were noted which require immediate attention. The first area (location number 1 on Figure 1) exhibits some minor cracking. This area (15-20 square feet) should receive asphaltic emulsion with a screening of fine sand to fill the voids. Mechanical sweeping and cleaning should precede this seal coat repair. The second area (location number 10 on Figure 1) is just outside the pavement cap, however, should be repaired. The concrete plug should be removed and replaced with asphaltic concrete.

In summary, the pavement surface appears to be wearing well, and with continued maintenance, it should serve its intended purpose for many years.

Thank you for allowing Earth Technology the opportunity to provide these engineering services. Please do not hesitate to call either me or Voytek Bajsarowicz if we can be of any further assistance.

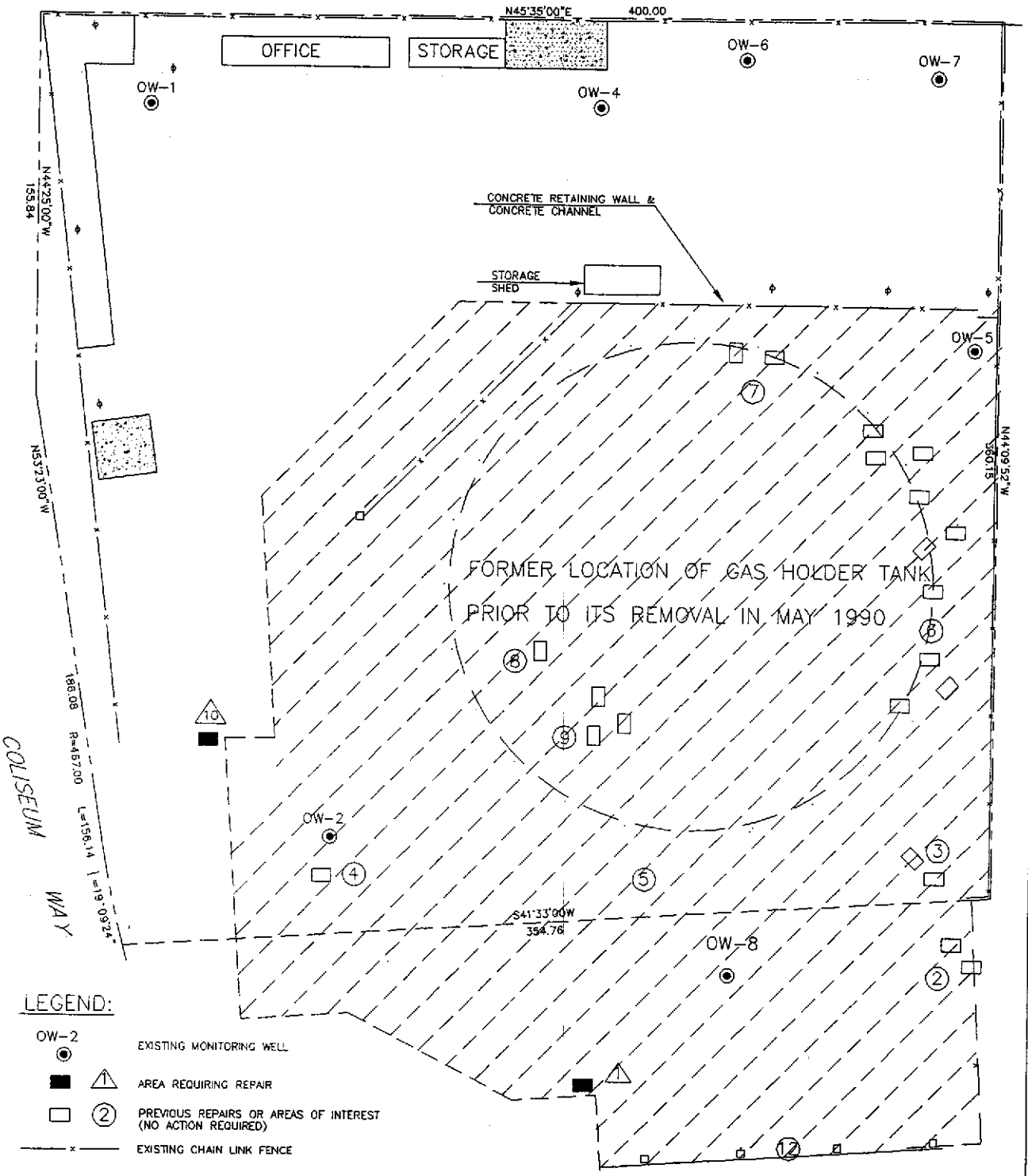
Very truly yours,
THE EARTH TECHNOLOGY CORPORATION

David A. Harlan

David A. Harlan, P.E.
Senior Project Engineer

DAH:blw

Enclosures



LEGEND:

- OW-2 — EXISTING MONITORING WELL
- AREA REQUIRING REPAIR
- (2) — PREVIOUS REPAIRS OR AREAS OF INTEREST (NO ACTION REQUIRED)
- EXISTING CHAIN LINK FENCE
- PROPERTY LINE
- EXISTING UTILITY POLE
- EXTENT OF CAPPED SOIL WITH AN ELEVATED LEAD CONCENTRATION

GRAPHIC SCALE

0 30 60 120

1" = 60 FEET

The Earth Technology Corporation

PROJECT NO: 690262.03

FIGURE 1

PAVEMENT INSPECTION
OCTOBER 4, 1993

PG&E CONSTRUCTION & DISTRIBUTION: OAKLAND CONSTRUCTION YARD

ASPHALT PAVEMENT INSPECTION FIELD REPORT

Project Name: PG&E Oakland Project No.: 690262.03
Location: PG&E Oakland, CA
Recorded By: D. Harlan Date: 10-4-93
Facility Reference: 4930 Coliseum Way Description:

ID/LOCATION	PAVEMENT CONDITION	REQUIRED REPAIRS
(1) South End of Site	Slight Low Spot with numerous small crack < 1/32" (10-20 ft²)	Seal Coat w/ Screenings.
(2) East	Note previous patching near utility pole (2'x6') & (3'x3')	None
(3)	Low Spot in pavement with previous patch.	Check Next Year
(4)	Possible low spots. No evidence of cracks	None
(5) Center of Yard.	Example photo showing use of plywood under point loads	None
(6) East Edge of Site	Numerous previous repairs oil with sand screenings.	None
(7) North	Several Low Spots w/ standing water from rains. No Cracking	None
(8) Center.	Example of recent small patch repair. Condition OK	None
(9)	Three recent patchs. condition is OK.	None
(10) West End.	Concrete Plug in Pavement just outside of striping.	Remove Concrete & replace with AC patch.
(11)	Photo of Building. Pavement. OK.	None
(12) South & East.	Oil Coating applied recently to South & S.E. perimeter.	None
Note: FOR LOCATION OF ABOVE	AREAS SEE	
SITE	PLAN (FIGURE 1)	

Pacific Gas and Electric Company

One California Street, Room 234
Mail Code F2B
P.O. Box 770000
San Francisco, CA 94177
415/973-5615

April 12, 1993

Mr. Britt Johnson
Hazardous Material Specialist
Alameda County Health Care Services Agency
Division of Hazardous Materials
80 Swan Way, Room 200
Oakland, CA 94621

Subject: 4930 Coliseum Way, Oakland, CA 94601
Completion of Lead Contamination Cap

Dear Mr. Johnson:

This letter is to confirm that the construction of the asphalt cap at the above site has been completed according to the submitted plans and specifications as outlined in Alameda County's letter to us dated May 7, 1992. These requirements include:

(1) County approval of the Human Health Risk Assessment and Site Safety Plan, obtained per Alameda County's letter dated September 17, 1992. This approval was subject to confirmation that the lead contamination in the soil outside the capped area be less than 250 mg/kg. This fact was confirmed and reported in the plans and specs for cap construction, subsequently approved.

(2) The deed restriction was prepared and submitted to Alameda County prior to construction of the cap.

(3) County approval was obtained on cap design plans prior to commencement of construction.

(4) Inspection of the cap will be performed annually in September or October, and the County will be notified by myself so that a representative may accompany the inspection.

(5) A monitoring well was installed in the location agreed upon by Alameda County (see attached location map). Installation was completed in February 1993. Sampling of the new well for lead will be included in the next quarterly sampling effort.

Summary of Construction

The Earth Technology Corporation (formerly Aqua Resources Inc.) supervised the cap construction daily. All persons present at the site were in Level C personal protective equipment until a layer of aggregate was placed on the lead contaminated area to minimize airborne lead particles. Once the aggregate layer was in place, Level D personal protective equipment was worn. During placement of the aggregate, air monitors were used to ensure permissible exposure levels (PEL) for lead were not exceeded. Analyses of filters taken from the air monitors demonstrated that the maximum recorded concentration of lead in the air was 0.003 mg/m^3, substantially less than the OSHA PEL of 0.050 mg/m^3.

During construction of the cap, our contractor performed quality assurance checks such as asphalt temperature monitoring, gradation, checks, aggregate base compaction tests, and asphalt compaction tests. Aggregate base and asphalt compaction tests were performed by our contractors field technician using a nuclear gauge. Fourteen (14) locations of aggregate base were tested to ensure that the minimum compaction specification of 95 percent had been reached or exceeded. One of the 14 tests failed with a compaction of 94.1 percent. The subcontractor was directed to rework the area that failed the compaction test to obtain the desired density.

Once the aggregate base was satisfactorily installed, the asphalt was laid. Asphalt relative compaction tests were performed to ensure that Alameda County's minimum compaction specification of 95 percent was achieved or exceeded.

The finished cap extends over areas of lead contamination exceeding 250 mg/kg, based on the recommendation found in the "Addendum to the Pre-Remediation Human Health Risk Assessment" submitted to the County on September 9, 1992.

Data from the new groundwater monitoring well that has been installed at this site will be included in the next sampling report. In the previous sampling report, modifications to future monitoring requirements were proposed. These modifications are summarized in the attached table. We are hereby requesting written confirmation that the requirements outlined in the County's letter dated May 7, 1992, have been satisfied and that the modified groundwater monitoring schedule can be implemented.

Should you have any questions or comments, please contact me at (415) 973-5615.

Your assistance with this process is greatly appreciated.

Sincerely,

Wally A. Pearce

WAP:rjd

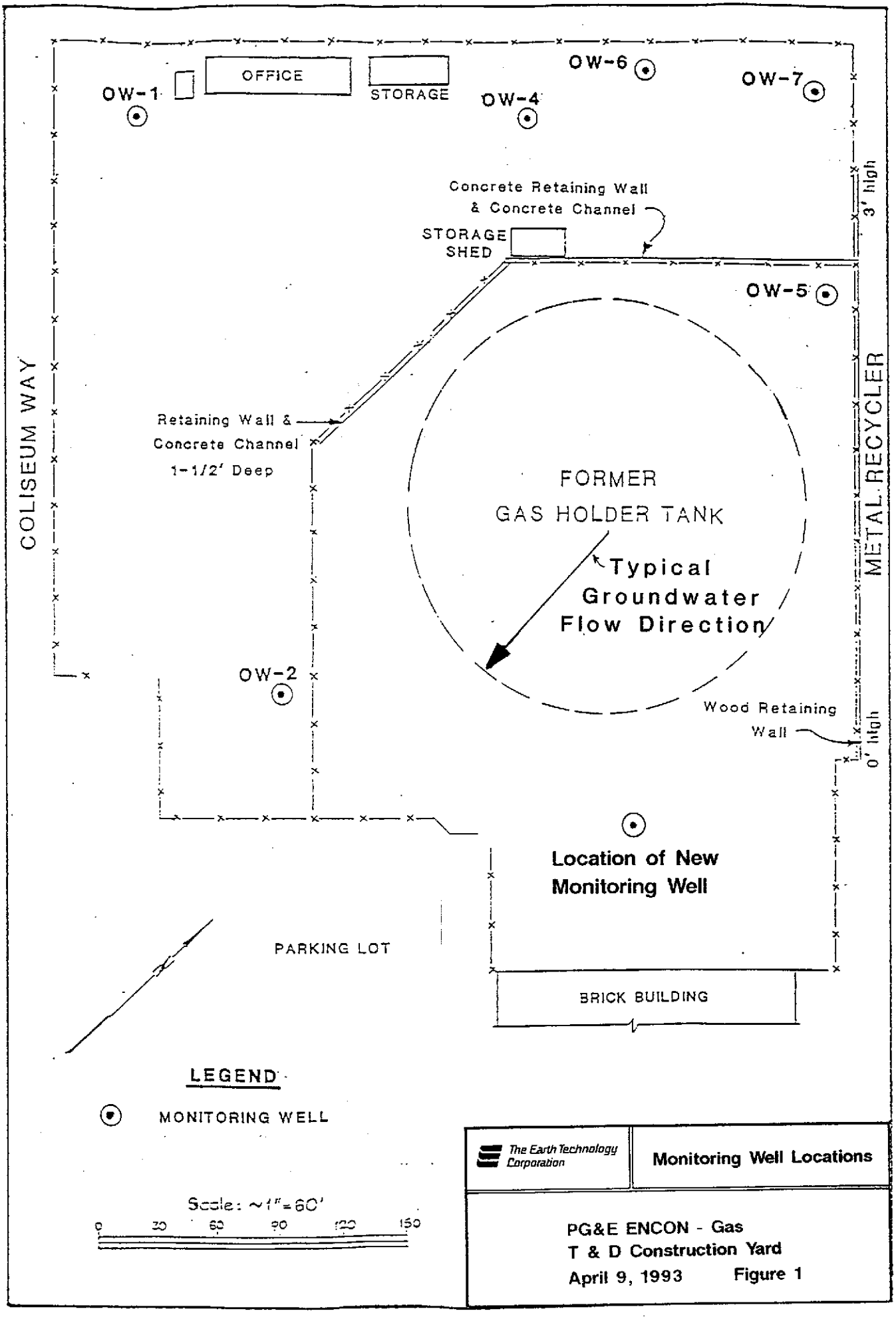
Attachment

cc: Richard Hiett - State of California Regional Quality Control Board

Table 5.1 Recommended Well Monitoring Matrix

	TPHg	TVHg/BTXE	EPA 8010 (VOC)	Lead	Groundwater Elev.
OW-1	S	S			Q
OW-2				Q	Q
OW-4	S				Q
OW-5	S	S	S	Q	Q
OW-6	S	S	S		Q
OW-7	S	S	S		Q
OW-8				Q	Q

S = Semi-annual monitoring starting with January 1993
Q = Quarterly monitoring



The Earth Technology Corporation

Monitoring Well Locations

PG&E ENCON - Gas
T & D Construction Yard
April 9, 1993 Figure 1

Pacific Gas and Electric Company

One California Street, Room 234
Mail Code F2B
P.O. Box 770000
San Francisco, CA 94177
415/973-5615

April 12, 1993

Mr. Britt Johnson
Hazardous Material Specialist
Alameda County Health Care Services Agency
Division of Hazardous Materials
80 Swan Way, Room 200
Oakland, CA 94621

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Sincerely,

Wally A. Pearce

WAP:rjd

Attachment

cc: Richard Hiett - State of California Regional Quality Control Board

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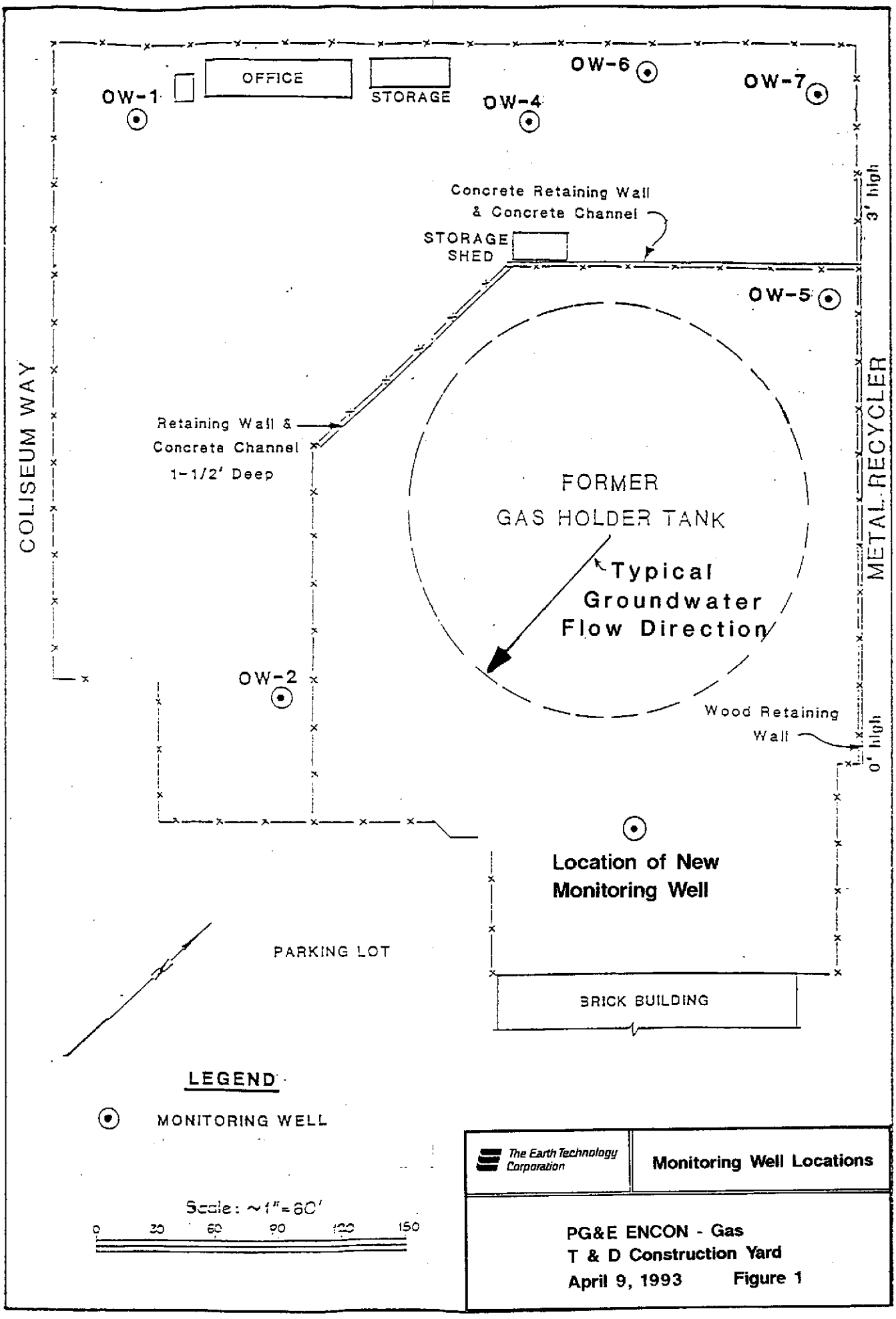
OW-1	S	S			Q
OW-2				Q	Q
OW-4	S				Q
OW-5	S	S	S	Q	Q
OW-6	S	S	S		Q
OW-7	S	S	S		Q
OW-8				Q	Q

S = Semi-annual monitoring starting with January 1993
Q = Quarterly monitoring



The Earth Technology Corporation

Monitoring Well Locations

PG&E ENCON - Gas
T & D Construction Yard
April 9, 1993 **Figure 1**

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

9 February 1993

Earth Technology Coporation
2030 Addison Street, Suite 500
Berkeley, CA 94704

Gentlemen:

Enclosed is drilling permit 93058 for a monitoring well construction project at 4930 Coliseum Way in Oakland for Pacific Gas and Electric Company.

Please note that permit condition A-2 requires that a well construction report be submitted after completion of the work. The report should include drilling and completion logs, location sketch, and permit number.

If you have any questions, please contact Wyman Hong or me at 484-2600.

Very truly yours,

Craig A. Mayfield

Craig A. Mayfield
Water Resources Engineer III

WH:mm
Enc.

ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
5997 PARKSIDE DRIVE • PLEASANTON, CALIFORNIA 94588 • (415) 484-2600

GROUNDWATER PROTECTION ORDINANCE PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

OCATION OF PROJECT 4930 Coliseum Way
Oakland, CA 94601

LIENT
ame Pacific Gas and Electric Company
ddress 4930 Coliseum Way Phone (510) 535-0600
ity Oakland, CA Zip 94601

PPLICANT
ame The Earth Technology Corporation
2030 Addison Street
ddress Suite 500 Phone (510) 540-6954
ity Berkeley, CA Zip 94704

YPE OF PROJECT

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

ROPOSED WATER SUPPLY WELL USE
omestic ___ Industrial ___ Other ___
unicipal ___ Irrigation ___

RILLING METHOD:
d Rotary ___ Air Rotary ___ Auger X
ble ___ Other ___

RILLER'S LICENSE NO. 604987

LL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 18 ft.
Surface Seal Depth 6 ft. Number 1

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

TIMATED STARTING DATE 2/10/93
TIMATED COMPLETION DATE 2/10/93

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

PLICANT'S GNATURE [signature] Date 2/5/93
Aaron N. Stessman, TETC for PG&E

FOR OFFICE USE

PERMIT NUMBER 93058
LOCATION NUMBER ___

PERMIT CONDITIONS

Circled Permit Requirements Apply

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

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

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

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

E. WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 5 Feb 93
Wyman Hong

121989

The Earth Technology Corporation

Borehole Log

Project Name: PG&E Oakland			Project Number: 690262.03
Borehole Location: 100 ft west of east Prop. line 75' north or south Prop. line		Borehole No. OW-8	Sheet 1 of 1
Drilling Agency: HEW		Driller: Jasper Booker/Mike Campy (helper)	
Drilling Equipment: CME 55		Date Started: 0900 2/10/93	Total Depth (feet): 18'4"
Drilling Method: Hollow Stem Auger		Date Finished: 0925 2/10/93	Depth to Bedrock (feet):
Drilling Fluid: NA		Number of Samples: grab only for logging	Depth to Water (feet): 11:30 7.71'
Completion Information: 2" PVC set bottom @ 18.2' screen (0.020): 8'-18' bentonite: 6'-7' sand (2/12): 7'-18' cement grout: 0.5'-6'		Borehole Diameter (in): 8"	Elevation and Datum:
		Logged By: MP	
		Checked by:	Date:

Depth (feet)	Sample: Number	Sample: Interval	Sample: Blow Count	Sample: Recovery	Sample: Time	Field Analysis: FID (ppm) S/B*	Field Analysis: PID (ppm) S/B*	LOG: Graphic	LOG: USCS or Rock Type	Lithologic Description	Remarks
										4" Asphalt over approx 10" lt gray base rock overlying about 10" brown base rock	
									ML	w/ sand, moist	
5									CL	SANDY SILT, dk yellowish brown (10YR3/4), moist, some gravel to 1"	
										SANDY CLAY (CL), very dk gray (10YR2/1) to black (2.5YN2/), wet to saturated at 7', medium stiff to soft, fine grained sand, trace gravel	
10									CL		
									SC	SANDY CLAY, dk brown (10YR 2/3), wet, stiff, coarse grained sand, some subangular gravel to ½"	
15									CH		
										CLAYEY SAND, dk yellowish brown (10YR4/4), saturated, medium dense, uncemented	
20										SILTY CLAY (CH), olive gray (5Y5/2), moist to wet, stiff, high plasticity	
										Bottom at 18'4"	
25											
30											

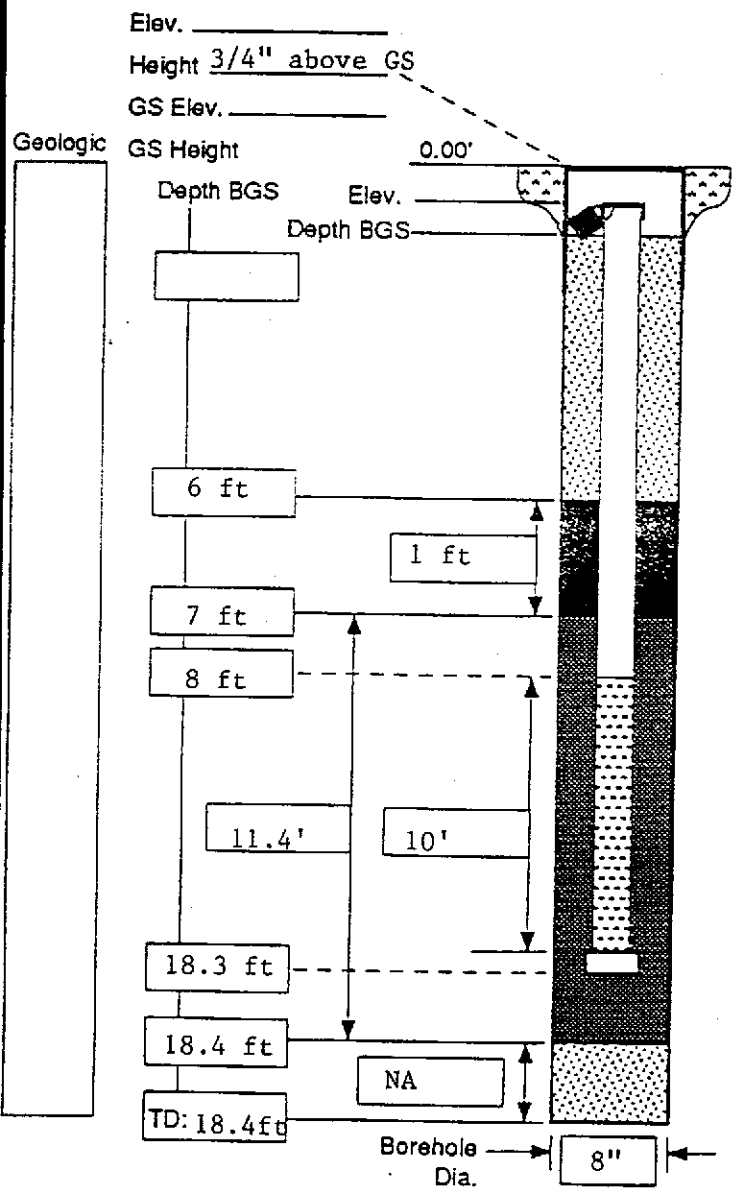
Key * S/B = Sample reading / background reading; NA = not analyzed

Form F-1009

The Earth Technology Corporation

Monitoring Well Construction Log - Flush Mount

Project Name: PG&E Oakland	Project Number: 690262.03	Date: 2/10/93
Well: Observation/monitoring	Well ID: OW-8	Sheet 1 of 1
Driller: Jasper Booker	Borehole Diameter (in): 8"	Total Depth (ft): 18'4"
Drilling Agency: HEW	Date Started: 2/10/93	Depth to Water (ft):
Drilling Equipment: CME-55	Date Finished: 2/10/93	Elevation and Datum:
Drilling Method: Hollow Stem Auger	Logged by: M. Peterson	Checked by:
Drilling Fluid: NA	Number of Samples: 0	Date:



PROTECTIVE CSG Diversified Well Products
Material / Type: Cast Iron cover w/ PVC Sleeve
Diameter: 8" ID/8 3/4" OD
Depth BGS: 9" Weep Hole (Y (N)

GUARD POSTS (Y (N)
No.: Type:

SURFACE PAD
Composition and Size: Concrete - 16" Diameter

RISER PIPE
Type: SCH 40 PVC
Diameter: 2"
Total Length (TOC to TOS): 8'
Ventilated Cap (Y (N)

GROUT
Composition and Proportions: 2-94 lb sacks/13 gal H_2O
Tremied (Y (N)
Interval BGS: 0.5' to 6'

CENTRALIZERS
Depth(s) NA

SEAL 3/8" Bentonite pellets
Type:
Source:
Setup / Hydration Time: 25 min 10:05 - 10:30 Vol. Fluid Added 3 gallons
Tremied (Y (N)

FILTER PACK
Type: Lapis Lustre 2/12
Amt. Used: 3-100 lb. sacks
Tremied (Y (N) 7' to 18'4"
Source: RMC Lone star
Gr. Size Dist.:

SCREEN
Type: SCH 40 PVC
Diameter: 2"
Slot Size and Type: 0.020 slot
Interval BGS: 8' to 18'

WELL FOOT (Y / N)
Interval BGS: 18' to 18.3' Length 3½"
Bottom Cap (Y) N)

BACKFILL PLUG
Material: NA
Setup / Hydration Time:
Tremied (Y (N)

Form F-1025
2/15/91

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

SHD 67

February 3, 1993

Wally A. Pearce
Staff Safety Engineer
Pacific Gas and Electric
One California Street, Room F-235
San Francisco, CA 94601

Re: **Monitoring Well Installation, 4930 Coliseum Way, Oakland, CA 94601**

Dear Mr. Pearce:

Barney Chan and I have reviewed your letter of January 13, 1993 outlining PG&E's proposal for installing a new monitoring well at the above location. The proposed well location as shown in Figure 1 is approved. This approval is subject to the following conditions:

1) Obtain a Well Drilling Permit from the Alameda County Floor Control and Conservation District, Zone 7, Parkside Drive, Pleasanton, (510) 484-2600.

2) Submit a report within 45 days of completion of the well installation documenting the work done. This report must be submitted under the seal of a California Registered Geologist, Certified Engineering Geologist or Registered Civil Engineer.

3) The Well Construction and sampling shall done according to the August 10, 1990 Tri-Regional Recommendations of the California Regional Water Quality Control Board, San Francisco Bay Region.

Please call me at (510) 271-4320 if you have any questions.

Sincerely,

Britt Johnson

Britt Johnson
Hazardous Materials Specialist

cc: Ed Howell - files
Rich Hiett, RWQCB
Barney Chan, Hazardous Materials Specialist
Barbara Cook, Cal-EPA, DTSC
Voytek Bajsarowicz, Aqua Resources, 2030 Addison St. Berkeley, CA 94704

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

February 3, 1993

Wally A. Pearce
Staff Safety Engineer
Pacific Gas and Electric
One California Street, Room F-235
San Francisco, CA 94601

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Sincerely,

Britt Johnson

Britt Johnson
Hazardous Materials Specialist

cc: Ed Howell - files
Rich Hiett, RWQCB
Barney Chan, Hazardous Materials Specialist
Barbara Cook, Cal-EPA, DTSC
Voytek Bajsarowicz, Aqua Resources, 2030 Addison St. Berkeley, CA 94704

Sent by certified mail

Pacific Gas and Electric Company

One California Street, Room F-235
San Francisco, CA 94106
415/973-5615

December 2, 1992

Mr. Britt Johnson
Alameda County Health Care Services Agency
Department of Environmental Health
80 Swan Way, Room 200
Oakland, CA 94621

Dear Mr. Johnson,

Re: Quarterly Groundwater Monitoring Report
ENCON Gas T&D Construction Yard
4930 Coliseum Way, Oakland

For your review, attached are two copies of the October 1992 Groundwater Monitoring report for our yard located in Oakland. This report represents results of the quarterly monitoring performed after removal of underground tanks in January 1988, in accordance with the directive by your agency

The analytical data is found within Section 3.0 of the report and concludes in Section 5.0. With this data there continues to be clear indication of offsite contamination filtering into the cleanup area that is consistent with the groundwater flow direction as identified on the map (Figure 2.1) from an upgradient noted source. The concentrations in both Wells OW-5 and OW-7 are at the end of the upgradient location and continue to contain the highest concentrations of TVH-g and VOCs which support our opinion.

The next quarterly report will be submitted to you in January 1993. If you have any questions concerning this report, please contact me (415) 973-5615.

Wally A. Pearce
Safety Engineer

Attachment

Pacific Gas and Electric Company

One California Street, Room F-235
San Francisco, CA 94106
415/973-5615

September 28, 1992

Mr. Britt Johnson
Alameda County Health Care Services Agency
Department of Environmental Health
80 Swan Way, Room #200
Oakland, CA 94621

Subject: Summary of Extent Verification Samples and Submittal of Cap Construction Plan for 4930 Coliseum Way, Oakland, CA 94601

Dear Mr. Johnson:

Pacific Gas and Electric Company (PG&E), has recently completed the collection, and analysis for total lead, of 14 soil samples along the northwestern, western and southwestern perimeter of the lead pain chip impacted area at the subject site. These samples were collected at randomly selected locations within 40 feet of the designed cap boundary at depths less than one foot below the ground surface as was recommended in project's "Preliminary Site Assessment and Workplan for Additional Investigation". The location of soil samples collected on September 9, 1992 is shown on the attached drawing. Total lead concentration detected in each sample is shown in Table 1. Of the 14 samples, one was found to have a lead concentration 870 ppm, significantly above the target mitigation level of 250 ppm recommended in the "Addendum to the Pre-Remediation Human Health Risk Assessment". As a result, the cap extent was revised to incorporate the location of this sample.

Copies of the revised cap design plan stamped by a Registered Engineer are enclosed. Lead concentration data from the remaining 13 samples was used with data from three previous samples which lie beyond the cap perimeter, to perform statistical calculations according to guidance from EPA document SW 846 "Test Methods for Evaluating Solid Wastes" in order to evaluate the concentration of lead in soils which lie within 40 feet of the perimeter. The results give a mean lead concentration of 92.6 ppm and demonstrate that the lead concentration soils within 40 feet beyond the perimeter is below 139.0 ppm with a 95% confidence interval, assuming a student "t" distribution. In fact, using a 99% confidence interval these soils have a total lead concentration below 161.4.

On the basis of these results as compared to the mitigation target of 250 ppm, PG&E plants to proceed with the cap construction. The cap extent is shown in the enclosed drawing. Construction is scheduled to begin September 25 and will be performed in

accordance with the Site "Health and Safety Plan for Additional Investigation and Remediation" dated May 18, 1992.

Please do not hesitate to call if you have any questions.

Sincerely yours,

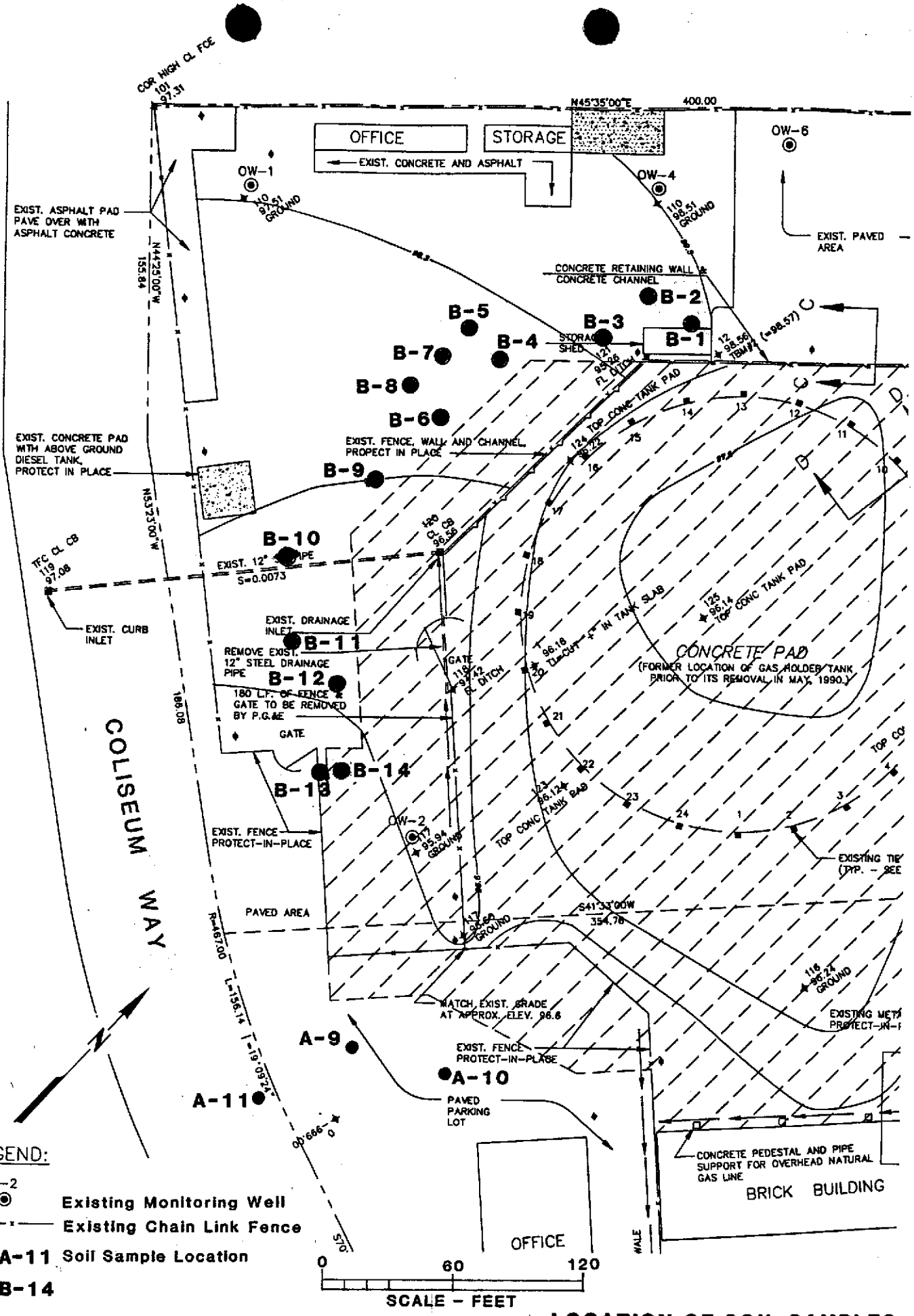
Wally A. Pearce
PG&E Safety Engineer

WAP(415-973-5615):rjd

Attachment

TABLE 1

LEAD CONCENTRATION IN SAMPLES OUTSIDE CONTAMINATED ZONE	
SAMPLE ID	CONCENTRATION in MG/KG
A-9	7.9
A-10	13.0
A-11	53.0
B-1	360.0
B-2	10.0
B-3	20.0
B-4	8.1
B-5	100.0
B-6	20.0
B-7	30.0
B-8	50.0
B-9	150.0
B-10	110.0
B-11	70.0
B-12	280.0
B-13	200.0
B-14	870.0



LOCATION OF SOIL SAMPLES

Figure 1

Certified

Pacific Gas and Electric Company

One California Street, Room 234
Mail Code F2B
P.O. Box 770000
San Francisco, CA 94177
415/973-5615

January 13, 1993

Mr. Britt Johnson
Hazardous Materials Specialist
Alameda County Health Agency
Division of Hazardous Materials
Department of Environmental Health
80 Swan Way, Room 350
Oakland, CA 94621

Dear Mr. Johnson:

Re: ENCON Gas T&D Site, 4930 Coliseum Way, Oakland, CA 94610; Proposed Location for Additional Monitoring Well

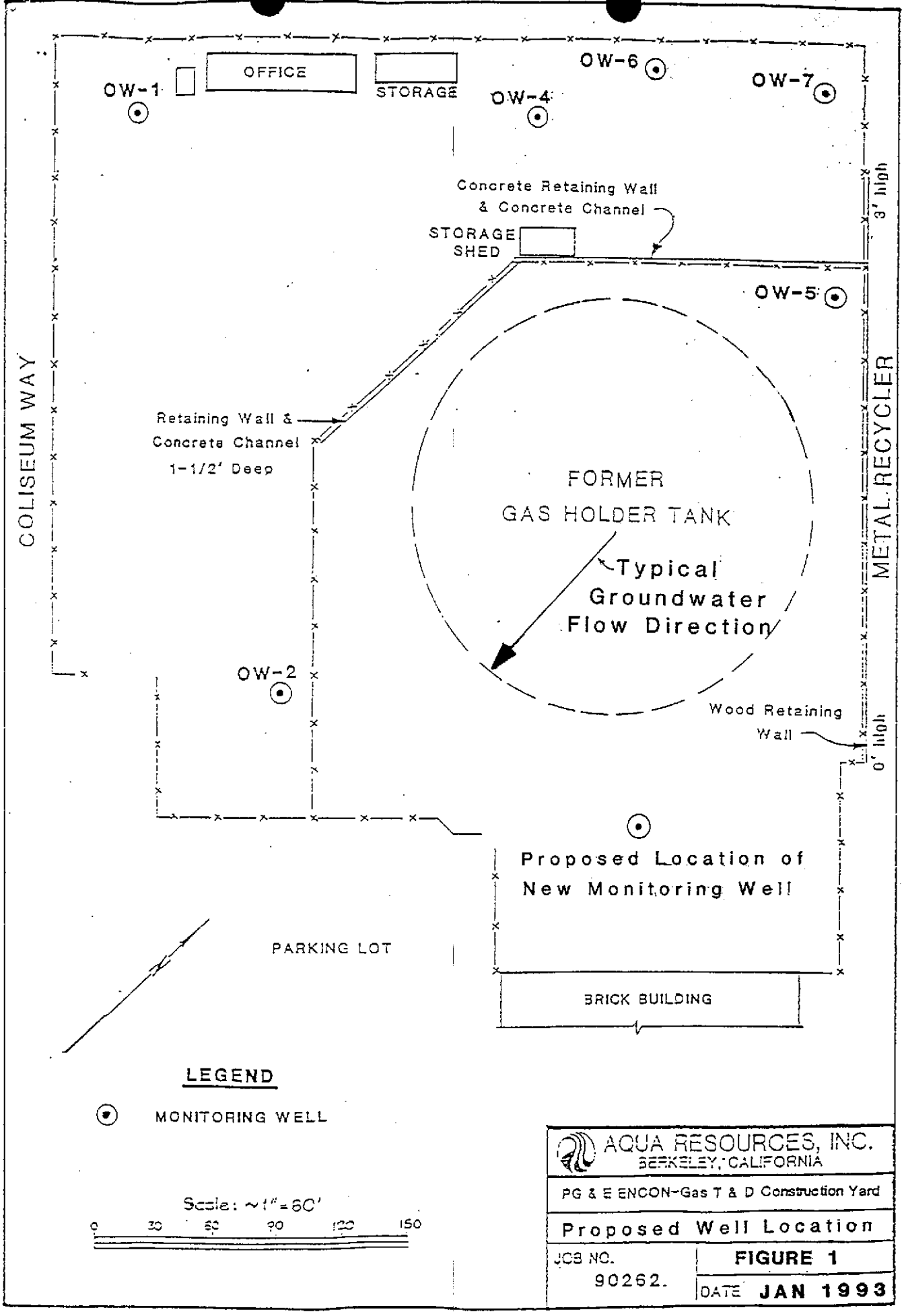
Pacific Gas and Electric Company is hereby submitting for your approval a site plan showing the proposed location of an additional monitoring well within the recently completed lead mitigation project area. The installation and subsequent sampling of this well were agreed upon in our April 2, 1992, letter to the Alameda County Health Department as a step that would be taken following construction of the lead mitigation cap.

The proposed monitoring well location is downgradient of the previous location of the suspected lead source. It will provide good triangulation with Wells OW-2 and OW-5 for future calculations of groundwater gradient.

Your confirmation of the approval of this location will be appreciated. If you would like to discuss this further, please call me at (415) 973-5615.

Wally A. Pearce
Safety Engineer

Attachment



AQUA RESOURCES, INC.
BERKELEY, CALIFORNIA

PG & E ENCON-Gas T & D Construction Yard

Proposed Well Location

JOB NO. 90262.

FIGURE 1

DATE JAN 1993

STATE OF CALIFORNIA PETE WILSON, Governor

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION
2101 WEBSTER STREET, SUITE 500
OAKLAND, CA 94612

Phone: (510) 464-1255
FAX: (510) 464-1380

92 SEP 22 PM 1:21

PG&E
Attn: Mr Wally Pearce
One California Street, Room F-235
San Francisco, CA 94111

September 21, 1992
File 2223.09 (NBT)

SUBJECT: **LEAD MITIGATION OF FORMER GAS TANK HOLDER AREA, 4930 COLISEUM WAY, OAKLAND, ALAMEDA COUNTY**

Dear Mr. Pearce:

Staff of the Regional Board have reviewed the document entitled " Site Assessment and Workplan for Additional Investigation" dated March 6, 1992 for the subject site. The plan reviews lead mitigation alternatives, outlines a planned human health risk assessment (HRA) for the lead remaining in soil, and outlines additional investigations to be conducted to determine the lateral extent of lead contamination. The report recommends construction of an asphalt concrete cap to mitigate the vertical and horizontal spread of lead contamination and recommends quarterly groundwater monitoring of soluble lead in one upgradient and one down gradient well.

It is the opinion of staff from the Alameda County Health Department (ACHD) that the soil on your site does not pose an undue risk to human health or the environment.

Staff from the Regional Board have no objection to the construction of the cap and the implementation of quarterly groundwater monitoring for soluble lead provided that you complied with all of the requirements as outlined in your April 2, 1992 letter to ACHD, specifically:

1. Quarterly groundwater monitoring of all wells for soluble lead. PG&E may petition to bi-annual monitoring pending quarterly results. If lead is found during any groundwater sampling event, the Regional Board may require soil and groundwater remediation.

2. A deed restriction is placed on the subject property.

3. An additional monitoring well will be installed on site.

4. A HRA for soils has been approved by ACHD.

If you have any questions with the contents of this letter please do not hesitate to contact Richard Hiett from my staff at (510) 464-4359.

Sincerely,

Lester Feldman
Section Leader
North Bay Toxics

cc: Britt Johnson, ACHD, 80 Swan Way Suite 200, Oakland, CA 94612
Voytek Basjsarowicz, ARI, 2030 Addison St., Berkeley, CA 94704

The Earth Technology Corporation®

2030 Addison Street, Suite 500
Berkeley, California 94704
Telephone: (510) 540-6954 / Fax: (510) 540-7496

FAX TRANSMITTAL MEMO

TO: Britt Johnson DATE: 9/16/92

COMPANY: ACHCS

FAX #: 569 4757

FROM: Voytek Bajsarowicz JOB #: 692262.04

THE EARTH TECHNOLOGY CORPORATION

FAX #: 510-540-7496

SUBJECT: 4930 Coliseum Way

NUMBER OF PAGES INCLUDING THIS ONE: 2

REMARKS:

SENT:

Cost of Waste Water Sampling

ANALYSIS COSTS

Analysis (PACE Inc.)	Unit Cost ($)	Number	Cost ($)
pH	12	8	96
TDS	15	8	120
Sulfite	30	8	240
Chloride	35	8	280
Hardness	15	8	120
Oil & Grease	50	8	400
Phenols	35	8	280
Metals (CAM 17)	240	8	1920
Sample Transportation	90	4	360
Analyses Total			3816

EQUIPMENT COSTS

Item	Unit Cost ($/day)	Number (days)	Cost ($)
Dissolved O2 Meter	50	5	250
pH, temp. Meter	30	5	150
Conductivity Meter	25	5	125
Samplers (monthly lease)	2 x 2000		4000
Equipment Total			4525

GRAND TOTAL 8341

Possible approval letter language

Post-it™ brand fax transmittal memo 7671	# of pages ▸
To Britt Johnson	From V. Bajsarowicz
Co. Alameda Co.	Co. Aqua Resources
Dept. H.C.S.A	Phone # 540-6954
Fax # 569-1757	Fax # 540-7496

*** DRAFT ***

September 11, 1992

Mr. Wally A. Pearce
Pacific Gas and Electric Company
One California Street, Room F-235
San Francisco, CA 94111

690262.04

Subject: Approval to Proceed with Lead Mitigation Capping of Former Gas Holder Tank Area at 4930 Coliseum Way, Oakland, California

Dear Mr. Pearce:

We have reviewed your recently submitted documents: "Addendum to the Pre-Remediation Human Health Risk Assessment", dated September 1992, and the check prints for the lead mitigation cap design, dated June, 1992. The Alameda County Health Care Services Agency hereby gives its approval for the construction of the containment cap provided that the remaining activities outlined in the "Preliminary Site Assessment and Workplan for Additional Investigation" are completed, namely the collection of verification of extent samples along the western perimeter of the lead impacted area be performed and the gas holder tank tie-down boxes be steam cleaned and inspected. Once these activities have been completed and sampling confirms that the lead concentration outside the cap is statistically below 250 ppm then the cap may be constructed within the area shown on the drawing. Construction should be performed using the safe working procedures listed in the previously approved "Health and Safety Plan for Additional Investigation and Remediation" dated May 18, 1992. Once the cap is completed provisions must be made for annual inspections of the cap by a registered Engineer. The County should be invited to attend these inspections.

We thank you for your cooperation in mitigating the lead problem at the site in a timely manner. You may contact me at (510) 271-4320 should you have any questions regarding this letter.

Sincerely,

Britt Johnson

cc: Voytek Bajsarowicz, Aqua Resources Inc.

ooapprvl.ltr

Pacific Gas and Electric Company

One California Street, Room F-235
San Francisco, CA 94106
415/973-5615

August 10, 1992

Mr. Britt Johnson
Alameda County Health Care Services Agency
Department of Environmental Health
80 Swan Way
Room 200
Oakland, CA 94621

RE: Lead Mitigation Cap Design for Former Gas Holder Tank Area
4930 Coliseum Way, Oakland, California 94621

Dear Mr. Johnson:

Thank you for taking time to meet with us and our consultant, Aqua Resources Inc. (ARI), on July 24, 1992. As we discussed at that meeting, I am enclosing for County review a copy of the preliminary design for the site cap, selected as the preferred mitigation measure for the elevated lead concentrations found in soil at the ENCON-Gas facility in Oakland. This cap, once installed, should obstruct precipitative percolation of lead to groundwater and windblown transport of lead-impacted soil to the air. The cap will also prevent potential human exposure through direct contact with soil containing high concentrations of lead.

Following your review, a final design plan, stamped by a licensed engineer, will be prepared and re-submitted to your office. These plans, along with approval by a legal representative of Alameda County of the proposed deed restrictions submitted to you at our meeting, should satisfy the last of your agency's requirements for capping approval. These requirements were outlined in the County's letter to PG&E dated May 7, 1992.

The Health and Safety Plan and the Health Risk Assessment were previously submitted to the County. Based on our discussion at this meeting, we understand that the County does not have any comments to these documents, and we consider them as approved by the County.

The capping will be implemented as soon as possible. We would reasonably expect construction to begin in September, before the rainy season. Your prompt review of this design would, therefore, be greatly appreciated.

Please call me if you have any questions.

Very truly yours,

Wally Pearce
Staff Safety Engineer

WAP:no

Enclosures

COVENANT OF DEED RESTRICTION

Recording Requested By:

Pacific Gas and Electric Company

When Recorded, Mail to:

Paul Smith,
Senior Hazardous Materials Specialist
Department of Environmental Health
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, California 94621

COVENANT AND AGREEMENT
TO RESTRICT USE OF PROPERTY

Pacific Gas and Electric
Oakland, California

6/14/92

This Covenant and Agreement ("Covenant") is made as of the fourteenth day of June, 1992, by Pacific Gas and Electric (PG&E) Company, ("Covenantor"), a California Corporation which is the owner of record of certain property situated in the City of Oakland, County of Alameda, state of California, described in Exhibit A attached hereto and incorporated herein by this reference ("the Property") and Alameda County Health Care Services, with reference to the following facts:

A. This property contains hazardous substances.
B. Restrictions on development and use.

B.1. The property was the site of a former above ground low pressure Gas Holder size 190 feet in diameter and 200 feet in height which operated from 1926 until its dismantling in 1990. Hazardous substances (lead paint chips) were found in soil at a depth not to exceed three feet at the ambient area of the structure base and were the result of the dismantling process and prior maintenance work on said tank some forty years ago. All collected groundwater samples are free of lead contamination.

B.2. Restriction on Development and Use. Covenantor promises to restrict the use of the portion of the property as described in Exhibit A as follows:

a. No residence for human habitation shall be permitted on the Property.
b. No hospitals shall be permitted on the Property.
c. No schools shall be permitted on the Property.
d. No day care centers for children or day care centers for senior citizens shall be permitted on the Property.
e. The entire area, as identified within Exhibit B, shall be covered with engineered asphalt (hereinafter collectively referred to as "Cap") designed to prevent the lateral and vertical spread of contamination to ground and surface water. The Cap will require annual inspection.
f. The Covenantor shall notify the agency each year prior to said inspection.

g. The Covenantor may upon notification to the Agency disturb the cap in order to perform essential utility services.

B.3. The Covenantor may request the Agency to approve a modification or a termination of this convenant upon a showing of changed circumstances with respect to hazardous substances or risk presented by hazardous substances present at the site.

ARTICLE 1

Definitions

C. Agency. "Agency" shall mean Alameda County Health Care Services, Department of Environmental Health, Hazardous Material Division.

C.1. Covnenantor. "Covenantor" shall mean the "owner" or "owners."

C.2, Occupants. "Occupants" shall mean Owners and those persons entitled by ownership the exclusive right to occupy any portion of the Property.

C.3. Recordation. This instrument shall be executed by the Covenantor and by the Senior Hazardous Materials Specialist of Alameda County Health Care Services, Department of Environmental Health. This instrument shall be recorded by the Covenantor in the County of Alameda within ten (10) days of the date of execution.

IN WITNESS WHEREOF, the parties execute this Covenant as of the date set forth above.

Covenantor: Pacific Gas and Electric Company

By: _____
Richard A. Draeger

Title: Vice President--General Services

Date: _____

Agency: Alameda County Health Care Services
Department of Environmental Health
Hazardous Materials Division

By: _____

Title: Senior Hazardous Materials Specialist

Date: _____

Exhibit A

This is a legal description of the property known to be 50 Coliseum Way, Oakland, California. This property represents two parcels: Parcel One and Parcel Two. This legal description as identified in Exhibit A represents a parcel known as Parcel One and Two.

Parcel One: COMMENCING at a point on the Northwesterly line of Bay Avenue said point being the most Southerly corner of that certain piece or parcel of land conveyed from Joan K. Clark to J. Cooling by deed dated January 2, 1907, and recorded in the office of the County Recorder of Alameda County, California, in Volume 1292 of Deeds, at page 210; and running thence along the said line of Bay Avenue South 41° 33' West Fifty-seven and 16/100 feet and South 23° 32' West Two Hundred Eighty-seven and 75/100 feet to the Northeasterly line of Clark Street; thence along the said line of Clark Street, North 53° 20' West Two Hundred Ninety and 11/100 feet; thence leaving said Clark Street line North 41° 33' East Three Hundred Fifty-four and 76/100 feet to the Western corner of the aforesaid tract of land conveyed from Clark to Dooling and thence along the Southwesterly boundary line of the last mentioned tract South 48° 27' East Two Hundred feet to the point of beginning.

CONTAINING ONE and 88/100 acres, and
BEING a portion of the A. M. Peralta portion of the Rancho San Antonio.

Parcel Two: COMMENCING at a point on the Northeastern line of Clement Street, formerly Clark Street, as said Street is shown on the Map entitled, "Clement's Addition to Melrose," filed March 22, 1873, in the office of the County Recorder of said County of Alameda; distant thereon Northwesterly Two Hundred Ninety and 11/100 feet from the intersection thereof with the Western line of 50th Avenue, formerly called Bay Street; running thence along said line of Clement Avenue North 53° 23' West Two hundred Thirty-two and 96/100 feet; thence North 44° 25' West Five Hundred Thirty and 94/100 feet to a point distant on said line of Clement Avenue One Hundred Eight and 9/10 feet Southeasterly from the intersection thereof with the Southeastern line of 46th Avenue, formerly "B" Street, as said "B" Street is shown on said Map of "Clement's Addition to Melrose," herein before referred to; thence North 45° 35' East Four Hundred feet to the Southwesterly line of the land of the Southern Pacific Railroad Company; thence South 44° 25' East along said last named line Seven Hundred Thirty-five and 40/100 feet to a point in the Northwesterly line of the land or formerly of M. A. Curry; thence South 41° 33' West along said last named line Nine and 84/100 feet to the most Northern corner of the land formerly belonging to Seth Walker; thence South 41° 33' West along the Northwestern line of said land belonging to Seth Walker, Three Hundred Fifty-four and 76/100 feet to the point of beginning.

CONTAINING Six and 786/1000 acres, more or less.

STATE OF CALIFORNIA)
CITY AND)
COUNTY OF SAN FRANCISCO)

On _____, 1992, before me, the undersigned, a Notary Public in and for said state, personally appeared Richard A. Draeger, personally known to me or proved to me on the basis of satisfactory evidence to be the person who executed the within instrument as Covenantor of the corporation that executed the within instrument, and acknowledged to me that such corporation executed the same pursuant to its bylaws or a resolution of its board of directors.

WITNESS my hand and official seal.

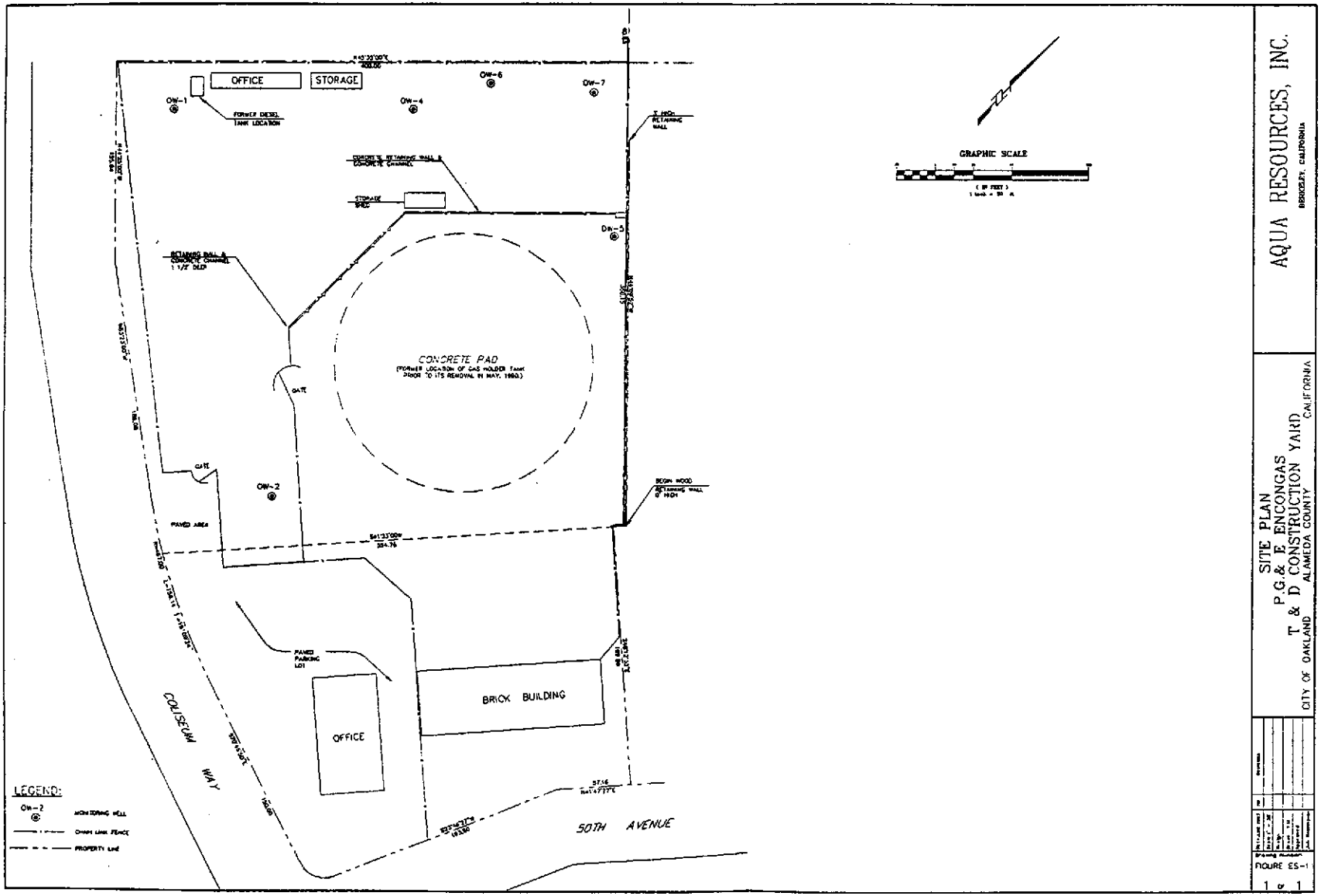
_____
Notary Public in and for said County and State

STATE OF CALIFORNIA)
)
COUNTY OF ALAMEDA)

On _____, 1992, before me, the undersigned, a Notary Public in and for said state, personally appeared _____, personally known to me or proved to me on the basis of satisfactory evidence to be the person who executed the within instrument as Chief of the Region 2, Toxic Substances Control Division of the Department of Health Services, the Agency that executed the within instrument, and acknowledged to me that such agency executed the same.

WITNESS my hand and official seal.

_____
Notary Public in and for said County and State

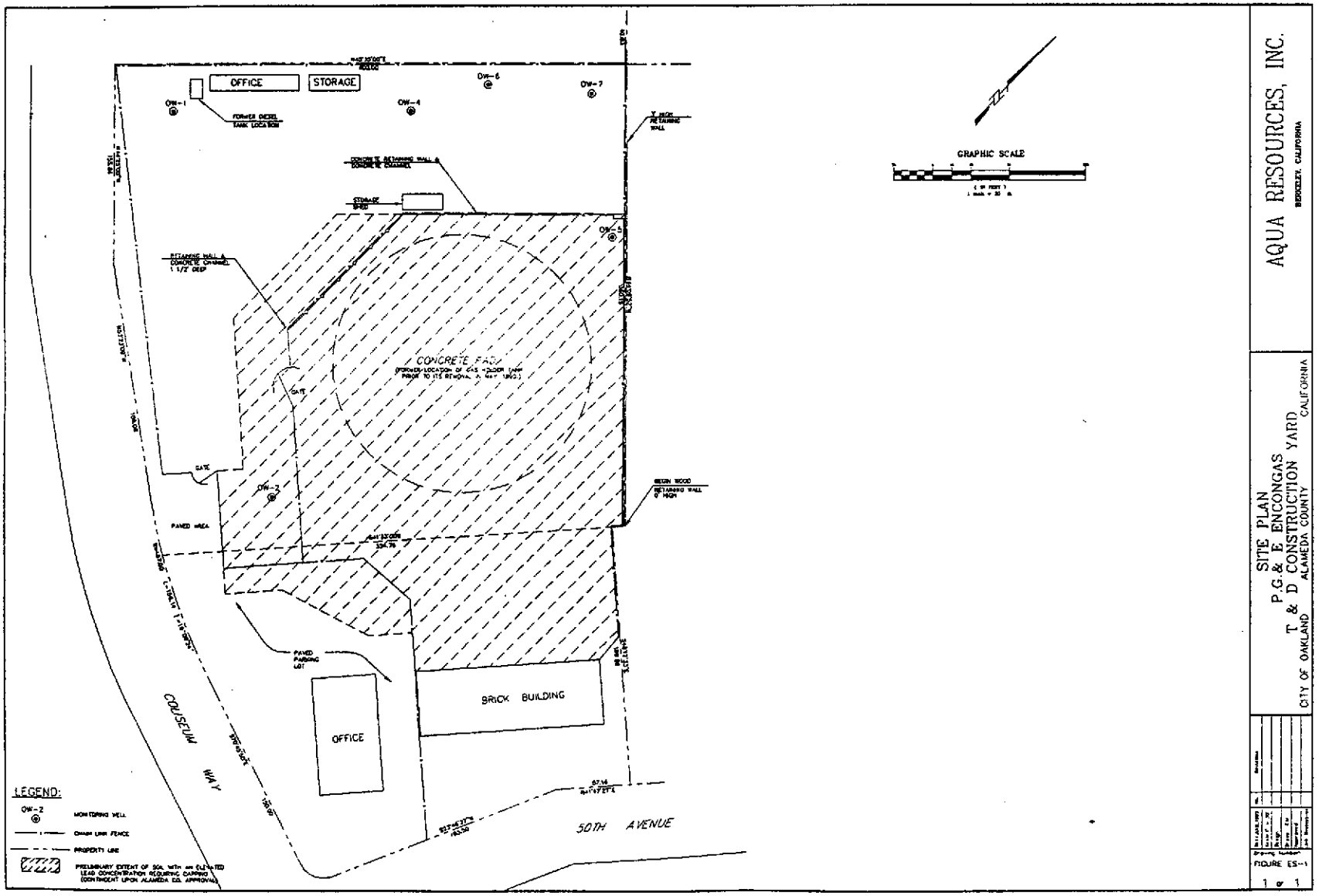


AQUA RESOURCES, INC.
BERKELEY, CALIFORNIA

SITE PLAN
P.G.& E ENCONGAS
T & D CONSTRUCTION YARD
CITY OF OAKLAND ALAMEDA COUNTY CALIFORNIA

FIGURE ES-1

1 of 1



AQUA RESOURCES, INC.
BERKELEY, CALIFORNIA

SITE PLAN
P.G.& E ENCONGAS
T & D CONSTRUCTION YARD
CITY OF OAKLAND ALAMEDA COUNTY CALIFORNIA

FIGURE ES-1

1 of 1

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

May 29, 1992

Wally A. Pearce
Staff Safety Engineer
Pacific Gas and Electric
One California Street, Room F-235
San Francisco, CA 94601

Re: **Soil Remediation, 4930 Coliseum Way, Oakland, CA 94601**

Dear Mr. Pearce:

Our records indicate that the "deposit/refund" account for this site has been depleted. We estimate that the review of the Health Risk Assessment and other work will take at least 20 additional hours. Therefore we request an additional deposit of $1,420.00. Please make your check payable to Alameda County and remit to the address listed above.

The Alameda County Department of Environmental Health, Division of Hazardous Materials charges for the review and oversite of site remediation work on a "deposit/refund" basis. The "deposit/refund" arrangement is authorized by Section 3-140.5 of the Alameda County Code.

We collect a deposit in advance based upon the anticipated hours our work will take. Our current hourly rate is $71.00. Any unused deposit will be refunded at the completion of our work and we keep a detailed accounting of all our charges.

The "deposit/refund" method of charging for our services is for site remediation work not eligible for inclusion in the Local Oversite Program, (LOP). The LOP is a federal and state petroleum underground storage tank cleanup program and the billing is done by the State Water Quality Control Board.

Please contact Britt Johnson, Hazardous Materials Specialist at (510) 271-4320 if you have any questions.

Sincerely,

Paul M. Smith

Paul Smith
Senior Hazardous Materials Specialist

Pacific Gas and Electric Company

One California Street Room F-235
San Francisco CA 94106
415/973-5615

PRIVILEGED/
CONFIDENTIAL

May 26, 1992

Mr. Rich Hiett
Regional Water Quality Control Board
2101 Webster Street
Oakland, CA 94612

Dear Mr. Hiett:

This letter is in response to the telephone conversation you had with our consultant, Aqua Resources Inc. (ARI), on May 19, 1992. It recounts recent activities related to PG&E ENCON Gas Transmission and Distribution construction yard located at 4930 Coliseum Way in Oakland, and serves to inform you of the steps we wish to take in order to immobilize chemical constituents found in soil at the site. Additionally, we are hereby requesting written approval from the Regional Water Quality Control Board of the proposed mitigation method at the site.

The proposed site mitigation is consistent with the requirements established by the Alameda County Department of Environmental Health in their letter to PG&E dated May 7, 1992. At this site, near-surface soils have been impacted by lead thought to have originated from maintenance over 50 years ago which included sandblasting and painting with lead-based paint on a former above-ground natural gas holder tank (GHT). The GHT was dismantled in May 1990, which may also have contributed to elevated lead levels in the soil.

Groundwater monitoring at the site indicates that the groundwater is unaffected by the lead found in the soil. Containment capping has been identified as the most effective and least risky to implement alternative for the protection of human health and the environment by effectively eliminating exposure to air-born lead and reducing exposure. Petroleum hydrocarbons, found in small quantities in the tie-down boxes of the former GHT, might be a secondary contaminant at the site.

Recent activities which were related to the site included our submittal to Alameda County of a Preliminary Site Assessment and Work Plan for Additional Investigation prepared by our consultant, ARI, dated March 6, 1992. In the Work Plan the following steps were proposed for contaminant mitigation at the site:

1. Disposal of a lead contaminated soil stockpile and a number of oil soaked concrete cylinders generated during GHT demolition.

2. Collection of additional soil samples to determine the extent of impacted soils.

3. Steam cleaning and inspection of the oil containing tie-down boxes with excavation of those lacking structural integrity.

PRIVILEGED/
CONFIDENTIAL

4. Collection of quarterly groundwater samples for soluble lead monitoring.

5. Preparation of Health Risk Assessment (HRA)

6. Proposed asphalt concrete capping of lead impacted soils to prevent the lateral and vertical spread of contamination.

The Work Plan also established a timeline for completion of these activities. Item 1 has been completed, and Item 5 is proceeding regularly. Alameda County offered the guidance that the purpose of the HRA would be to establish the need for mitigation and possible deed restrictions on the property. As a result, performance of Items 2 and 3 is deemed to be most appropriate once the HRA has been initiated.

In their letter of May 7, 1992, Alameda County approved the use of asphalt capping as the mitigation method subject to a number of conditions, including:

- Submittal of a scope of work for the HRA and submittal of a Health and Safety Plan for the performance of future site activities.

- Placement of a deed restriction limiting use of the site to its present use.

- Contacting Cal-EPA, Department of Toxic Substances Control (DTSC), for any permit requirements which they may have regarding this matter.

We have completed the submittals required in Item 1 and initiated the HRA which is being performed by oru consultant, ARI.

A new schedule for activities has been prepared in light of the fact that the HRA will now precede any additional lead-extent investigation. Following the HRA, the field investigation and remediation of the GHT tie-down boxes will be conducted, and a summary report will be provided. The asphalt concrete cap will then be designed to prevent the lateral and vertical spread of lead contamination to ground- and surface-water and air-born contaminants. Its design will be completed by a California registered civil engineer and will be submitted for County review and approval. Once these activities are complete, the cap will be constructed and provisions will be made for annual inspections of the cap as requested by Alameda County. Representatives of the County will be invited to accompany us on these inspections. It is expected that construction of the cap may take place this year.

PG&E is committed to mitigating the lead problem at the site and intends to continue to move toward completion of this project in a timely manner.

Your assistance in working with us to achieve a combined goal of protecting human health and the environment is greatly appreciated, while meeting this objective both efficiently and economically.

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CONFIDENTIAL

Should you have any questions or comments regarding the schedule of activities, please contact me at 415/973-5615.

Sincerely,

Wally A. Pearce

cc: **Britt Johnson, Alameda County**
Voytek Bajsarowicz, ARI
Brian Hoefer
Mike Kunz
Joan Peterkin
Ernie Wong

Mailed via Federal Express

Pacific Gas and Electric Company

One California Street, Room F-235
San Francisco, CA 94106
415/973-5615

May 22, 1992

Mr. Britt Johnson
Hazardous Materials Specialist
Alameda County Health Care Services Agency
Division of Hazardous Materials
80 Swan Way, Room 200
Oakland, CA 94621

RE: Lead Contamination, 4930 Colisem Way, Oakland, California 94601

Dear Mr. Johnson:

In accordance with your letter of May 7, 1992, PG&E is pleased to provide you with the enclosed scope of work for the Pre-Human Health Risk Assessment and the Health and Safety Plan for the additional remediation investigation and soil capping at the above site.

As requested in your letter, Dr. Ravi Arulananthanam has been contacted by our consultant, Aqua Resources Inc., prior to preparing this scope of work.

Please review both documents. Should you have any questions or comments, please contact me at 415/973-5615. Your assistance is greatly appreciated.

Sincerely,

Wally A. Pearce

Wally A. Pearce
Staff Safety Engineer

Attachments

Scope of Work

for

Pre-Remediation Human Health Exposure Assessment

for

PG&E ENCON Gas Transmission & Distribution Construction Yard
Former Gas Holder Tank Area
4930 Coliseum Way
Oakland, CA 94601

I. Introduction

The subject site is located at 4930 Coliseum Way in Oakland, CA. An above-ground low-pressure gas holding tank (GHT) was located at the site for over 50 years before it was finally dismantled in May of 1990. It is believed that elevated concentrations of lead in nearby soils were caused by periodic maintenance of the GHT (sandblasting and painting) over the years and possibly from the tank dismantling process. The entire tank was originally painted with red lead or lead-based primer.

II. Summary of previous investigations

Soil samples taken from the immediate vicinity of the former gas holding tank were found to contain elevated levels of lead. Samples were taken at a total of 37 locations, including 16 in the immediate vicinity of the former GHT and 24 locations in a neighboring parking lot and other nearby areas of the property. Forty-five samples were taken at depths ranging from surface to 4 feet. Additional samples were collected at a greater depth. All samples were analyzed at a certified laboratory for total lead. Sixteen samples were additionally extracted by California Waste Extraction Test (WET) and analyzed for soluble lead. One sample was analyzed for lead in leachate solution derived from the Federal Toxicity Characteristic Leaching Procedure (TCLP). The highest detectable total lead concentration was 31,000 mg/kg. This sample was collected from near the ground surface. The CCR Title 26 Soluble Threshold Limit Concentration (STLC) of 5 mg/L was exceeded in each of the WET lead analyses, with the highest concentration of lead in WET leachate being 1,400 mg/L. The one sample which was analyzed for TCLP leachate concentration exhibited a concentration of 32 mg/L which exceeds the Federal regulatory hazardous waste level of 5 mg/L.

0-4'
31000ppm
1400ppm

The arithmetic average soil concentration calculated from all positive results of samples from a depth less than 4 feet is 3,287 mg/Kg of total lead and 328 mg/L of WET soluble lead.

III. Purpose and Methodology

The purpose of the Pre-Remediation Human Health Risk Assessment (PRHHRA) will be to assess potential adverse health effects that might result from human exposure to the lead contaminated soils. This information will help to determine the need for site remediation and/or placement of use restrictions. Basic guidance for the preparation of the PRHHRA will be the Risk Assessment Guidelines for Superfund, Volume 1, Human Health Evaluation Manual, Part A, 540/1-89/002, December 1989.

Two paths of exposures shall be evaluated: inhalation and ingestion of lead contaminated soils, either singly or in combination. Another potential pathway, dermal absorption, is considered to be insignificant at this site. Samples of groundwater collected at the site indicate that the water has not been impacted by lead. As a result, this source of exposure will not be considered. Ingestion of lead from vegetation at the site shall not be considered.

Why ? give reasons

O.K.

An estimate of particulate emissions and an estimate of the emission rate for lead shall be calculated using a method developed by C. Cowherd. This method has been verified by the State of California and is presented in the California Site Mitigation Decision Tree Manual. Exposure will be calculated for the following two scenarios:

- The site is developed for residential purposes ✓ good
- The site remains industrial. ✓

The assumptions made are as follows:

- For a conservative estimate, it will be assumed that all residents spend 24 hours a day for a lifetime within the contaminated zone and will be exposed to ingestion and inhalation of dust in air. ✓
- Worker will be exposed to dust for 8 hours per day, 5 days a week. ✓

The amount of ingested soil for adults will be calculated using the assumption that 100 mg of soil is consumed per day. The assumed degree of absorption of ingested lead will be 15 percent. ✓

The amount of lead that is absorbed by children will be calculated using the UBK model (version 4). The maximum allowable concentration of lead in blood will be 10 µg/decaliter. ✓

5.27 µg/d.L

The arithmetic average lead concentration and 95% interval of confidence will be used in analyses.

Estimated exposures or lead concentration in blood resulting from inhalation and ingestion of lead contaminated soil and dust will be compared to existing or recommended standards.

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

May 7, 1992

Wally A. Pearce
Staff Safety Engineer
Pacific Gas and Electric
One California Street, Room F-235
San Francisco, CA 94601

Re: **Soil Remediation, 4930 Coliseum Way, Oakland, CA 94601**

Dear Mr. Pearce:

This Department has reviewed your letter of April 2, 1992 outlining PG&E's proposal for capping this site to mitigate the lead contamination. We are pleased to approve this proposal subject to the following conditions:

1) A scope of work for the Human Health Risk Assessment and Site Safety Plan must be submitted for our review and approval prior to conducting this assessment. Ravi Arulananthanam, Ph. D., Senior Hazardous Materials Specialist will be reviewing the assessment and he requests that you contact him at (510) 271-4320 prior to preparing the scope of work.

   The Assessment must include a plan for preventing the spread of any air borne lead during the capping work. Any concerns which result from our review of this assessment must be addressed prior to the start of work.

2) The deed restriction must be approved by a legal representative of Alameda County. The deed restriction must include provisions restricting any use of this site to its current use as a vehicle storage and staging area. Sale of the property and any residential, retail, or office use will be prohibited until the lead contamination has been removed.

3) The cap must be designed to prevent the lateral and vertical spread of contamination to ground and surface water. The design plan must be approved and stamped by a licensed Engineer and submitted to us for our review and approval.

4) Notification must be given of the yearly inspection of the cap, so a representative from this Department can accompany your Engineer if we desire.

5) Contact Cal-EPA, Department of Toxic Substances Control, Berkeley Regional Office for any permit

requirements they may have regarding this matter.

5) The County must be reimbursed for all oversight costs including the legal review and the yearly inspection of the cap. The current hourly rate for the Hazardous Materials Division is $71.00 and is subject to adjustment by the Board of Supervisors.

Please direct any questions and correspondence to Britt Johnson, Hazardous Materials Specialist, at (510) 271-4320.

Sincerely,

Paul M. Smith

Paul Smith
Senior Hazardous Materials Specialist

cc: Rich Hiett, RWQCB
Ravi Arulananthanam, Senior Hazardous Materials Specialist
Barbara Cook, Cal-EPA, DTSC
Janusz Bajsarowicz, PE, Aqua Resources, 2030 Addison St.
Berkeley, CA 94704

Pacific Gas and Electric Company

One California Street, Room F-235
San Francisco, CA 94106
415/973-5615

92 APR -3 PM 1:50

April 2, 1992

Mr. Britt Johnson
Hazardous Materials Specialist
Alameda County Health Care Services Agency
Department of Environmental Health
80 Swan Way, Room 200
Oakland, CA 94621

RE: Soil Lead Remediation in Former Gas Holder Tank Area
4930 Coliseum Way, Oakland, California 94621

Dear Mr. Johnson:

Thank you for taking time to meet with us and our consultant, Aqua Resources, Inc., on March 27, 1992, at the office of the Regional Water Quality Control Board in Oakland. This letter is consistent with the issues and verbal agreements reached at that meeting.

We would like to present you our proposed scope of work which needs to be completed in order to implement remediation of the site. This letter also addresses the requirements represented to us by the letter from the Alameda County Health Care Agency dated February 5, 1992. Additional site investigation will be consistent with the scope of work presented in the report, "Preliminary Site Assessment and Workplan for Additional Investigation," submitted to ACHCA on March 6, 1992.

It was agreed during the meeting that the Regional Water Quality Control Board will not require PG&E to obtain a waste discharge permit. The following conditions were set by ACHCA to proceed with the asphalt capping permit:

- PG&E to prepare and submit to ACHCA for review a Health Risk Assessment.
- A deed restriction for said property will be implemented. (There will be a legal draft presented and agreed to with ACHCA.)
- An additional monitoring well will be installed at the site. This well and the two existing wells will be monitored for lead concentration quarterly. One of the existing wells is located up-gradient of the former gas holder tank location.
- Proposed soil lead remediation method will consist of an asphalt capping. The capping will be designed to ensure proper drainage of the site and designed to ensure structural integrity and resilience to cracking. Asphalt will be sealed every year with a water-resistant sealer. Asphalt will be inspected once a year for cracks by a registered engineer. Inspection will take place in the fall before the rainy season begins. All cracks identified during inspection will be repaired.

MONITORING WELLS

- PG&E will conduct quarterly groundwater monitoring program for lead. Depending on the results of monitoring, its frequency may be decreased to twice a year. If lead is found to be present in the ground water down-gradient of the former tank, Alameda County and RWQCB will re-evaluate its permit for asphalt capping and may require soil and groundwater remediation.

Capping will be implemented as soon as possible. PG&E has proposed the following approximate schedule:

• Administration before obtaining permit	5 weeks
• Preparation of bids	4 weeks
• Contract award	3 weeks
• Construction	4 weeks

ANY WORD ABOUT RED. DET. LIMITS FORANCE VIA ATOMIC AB.

Should you have any questions, please phone me at 415/973-5615.

Very truly yours,

Wally A. Pearce
Staff Safety Engineer

WAP:nm

cc: R. Hiatt, RWQCB
Brian Hoefer
Robert Karfiol
Mike Kunz
Joan Peterkin
Ernie Wong

Pacific Gas and Electric Company

One California Street, Room F-235
San Francisco, CA 94106
415/973-5615

April 2, 1992

Mr. Britt Johnson
Hazardous Materials Specialist
Alameda County Health Care Services Agency
Department of Environmental Health
80 Swan Way, Room 200
Oakland, CA 94621

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• Construction	4 weeks

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Very truly yours,

Wally A. Pearce
Staff Safety Engineer

WAP:nm

cc: R. Hiatt, RWQCB
Brian Hoefer
Robert Karfiol
Mike Kunz
Joan Peterkin
Ernie Wong

DATE: 3/16/92

TO : Local Oversight Program

FROM: Barney

SUBJ: Transfer of Elligible Oversight Case

Site name: PG+E – Former Tank Cluster Area

Address: 4930 Coliseum Way city Oak Zip 94621

Closure plan attached? Y (N) DepRef remaining $ – Retained w/ dep ref for gasholder area

DepRef Project # 25 A STID #(if any) 67

Number of Tanks: ~~4~~ 5 removed? (Y) N Date of removal 1988

Samples received? Y (N) Contamination: Kerosene, oil & grease, TPHd, Chlorinated solvents DCA.

Petroleum (Y) N Types: Avgas Jet leaded unleaded (Diesel) oil + grease
fuel oil waste oil (Kerosene) solvents

Monitoring wells on site 5 Monitoring schedule? (Y) N

LUFT category 1 (2) (3) *(H) (S) C A R W (G) O

Briefly describe the following:

Preliminary Assessment

Remedial Action

Post Remedial Action Monitoring

Enforcement Action

This site is being divided into 2 sections, the former tank Cluster (TC) section & the former gas (FGH) holder tank. The TC site is LOP eligible & is being transferred while the FGH section is a SCIC site & will be retained as a dep/ref case by the district specialist MW's down gradient to the diesel tank + tank cluster & min spirits tanks show TPHd., oil + grease + chlorinated solvents during sampling events. Over excavation in the former holders Slop area (NE of tank cluster) has been done + removed most of Hydrocarbon contaminated soils: Need to review Feb-92 report detailing excavation & MW destruction & installation

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

February 5, 1992

Mr. Wally Pearce
PG&E
One California St., Room F-235
San Francisco, CA 94111

Re: Requirements for Remediation in Former Gas Holder Tank Area
4930 Coliseum Way, Oakland CA 94621

Dear Mr. Pearce:

This letter recounts the January 1992 meeting with representatives from Aqua Resources Inc., PG&E and those of our Division regarding the proposal for site remediation in the area of the former gas holder tank at the above referenced site. As you will recall, the site was to be assessed and remediated as two sites, the former tank cluster area and this the former gas holder area. The remediation of the tank cluster area has been performed and a report is pending. The main contamination in the latter area is total and soluble lead from the deposition of leaded paint which was scraped and sloughed off over the years. In addition, small quantities of of petroleum products were found in the gas holder tie-down boxes and the concrete slabs near the former tank. In regards to the petroleum contamination, the same action limits as used in the tank cluster location should be minimally achieved. Excavation and confirmatory sampling is acceptable. Ground water monitoring should incorporate both petroleum and soluble lead analysis.

In regards to the lead contamination problem, it was suggested that all alternatives be evalulated besides excavation and landfilling and capping the site.

The County does not have any objection to the capping of the site as long as all other regulatory agencies submit their written approval. The minimum requirements were mentioned in this meeting. They include:

1. A Waste Discharge Permit must be applied for and approved by the Regional Water Quality Control Board through their land disposal department.

2. You must seek written approval from the Department of Health Services as the capping of the site may require a variance or permit.

3. A Risk Assessment must be performed to show the potential human and environmental impact of the hazardous material left in place.

4. A deed restriction must occur as a notice to any future buyer(s).

5. All requirements concerning the impact to ground water must be addressed. Appropriate monitoring wells must be installed and any migration of dissolved contaminants, inorganic or organic, must be mitigated and minimally confined to the property.

As a first approach, the vertical and lateral extent of lead and petroleum hydrocarbon contamination must be defined. Monitoring wells must be installed to define the zero concentration line for these contaminants. These items, regardless as to whether the capping procedure is approved, should be done. Please provide a work plan to accomplish this first step. In addition, on a quarterly basis you should sample these perimeter wells in addition to the wells on the former tank cluster area. You should also provide a timeframe for obtaining regulatory approval for the capping of the site. In the event that these approvals are not obtained, excavation and proper disposal or another preapproved method must be performed.

You may contact me at (510) 271-4320 should you have any questions regarding this letter.

Sincerely,

Barney M. Chan
Hazardous Materials Specialist

cc: G. Jensen, Alameda County District Attorney Office
R. Karfiol, PG&E, Env. Services Department
J. Bajsarowicz, Aqua Resources Inc.
R. Hiett, RWQCB

4930Coliseum-Pb

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
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February 5, 1992

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One California St., Room F-235
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Dear Mr. Pearce:

This letter recounts the January 1992 meeting with representatives from Aqua Resources Inc., PG&E and those of our Division regarding the proposal for site remediation in the area of the former gas holder tank at the above referenced site. As you will recall, the site was to be assessed and remediated as two sites, the former tank cluster area and this the former gas holder area. The remediation of the tank cluster area has been performed and a report is pending. The main contamination in the latter area is total and soluble lead from the deposition of leaded paint which was scraped and sloughed off over the years. In addition, small quantities of of petroleum products were found in the gas holder tie-down boxes and the concrete slabs near the former tank. In regards to the petroleum contamination, the same action limits as used in the tank cluster location should be minimally achieved. Excavation and confirmatory sampling is acceptable. Ground water monitoring should incorporate both petroleum and soluble lead analysis.

In regards to the lead contamination problem, it was suggested that all alternatives be evalulated besides excavation and landfilling and capping the site.

The County does not have any objection to the capping of the site as long as all other regulatory agencies submit their written approval. The minimum requirements were mentioned in this meeting. They include:

1. A Waste Discharge Permit must be applied for and approved by the Regional Water Quality Control Board through their land disposal department.

2. You must seek written approval from the Department of Health Services as the capping of the site may require a variance or permit.

3. A Risk Assessment must be performed to show the potential human and environmental impact of the hazardous material left in place.

4. A deed restriction must occur as a notice to any future buyer(s).

5. All requirements concerning the impact to ground water must be addressed. Appropriate monitoring wells must be installed and any migration of dissolved contaminants, inorganic or organic, must be mitigated and minimally confined to the property.

As a first approach, the vertical and lateral extent of lead and petroleum hydrocarbon contamination must be defined. Monitoring wells must be installed to define the zero concentration line for these contaminants. These items, regardless as to whether the capping procedure is approved, should be done. Please provide a work plan to accomplish this first step. In addition, on a quarterly basis you should sample these perimeter wells in addition to the wells on the former tank cluster area. You should also provide a timeframe for obtaining regulatory approval for the capping of the site. In the event that these approvals are not obtained, excavation and proper disposal or another preapproved method must be performed.

You may contact me at (510) 271-4320 should you have any questions regarding this letter.

Sincerely,

Barney M. Chan
Hazardous Materials Specialist

cc: G. Jensen, Alameda County District Attorney Office
R. Karfiol, PG&E, Env. Services Department
J. Bajsarowicz, Aqua Resources Inc.
R. Hiett, RWQCB

4930Coliseum-Pb

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

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

December 17, 1991

Mr. Wally Pierce
PG&E
One California Street, Room F-235
San Francisco, CA 94111

Re: The Installation of Monitoring Wells at 4930 Coliseum Way, PG&E Site.

Dear Mr. Pierce:

Our office has received the faxxed proposal for the installation of two monitoring wells at the above subject site. This information was sent to us by Mr. Fred Tornatore of Aqua Resources Inc. The locations of these wells is acceptable and the installation of the wells may proceed immediately. As mentioned in this communication, Well #1 will replace the former Well OW-3 which was removed during the ongoing excavation activities. Well #2 is located near the location of the two pipes extending from the metal recyler, toward the northeast corner of the property. This well will give information regarding the likelihood of upgradient contamination affecting PG&E property.

Please be advised that there was a request for the chemical analysis of the asphaltic material which was found exuding from the two pipes, and the analysis of the asphaltic material which is apparent in the soils around the base of the excavation. Additional soil and/or ground water analysis or remeditation will be based on the chemical nature of this material.

Please contact me at (510)271-4320 should you have any questions regarding this letter.

Sincerely,

Barney M. Chan

Barney M. Chan
Hazardous Materials Specialist

cc: G. Jensen, Alameda County District Attorney Office
R. Karfiol, PG&E, Env. Services Department
F. Tornatore, Aqua Resources Inc.
E. So, RWQCB
WP-4930ColiseumWay

aqua resources inc.

91 DEC 13 PM 12:32

2030 Addison Street, Suite 500 • Berkeley, California 94704 • 415 540-6954

December 11, 1991

Mr. Barney M. Chan
Hazardous Materials Specialist
Hazardous Materials Program
Alameda County Department of
Environmental Health
80 Swan Way, Rm. 200
Oakland, CA 94621

90262.2

SUBJECT: PLACEMENT OF MONITORING WELLS

Dear Mr. Chan:

As we discussed on the telephone this afternoon, we would like to install two monitoring well at the PG&E Coliseum site as indicated on the attached map. These wells are scheduled to be installed the week of December 16th, once the backfilling of the excavation is completed.

The rationale for the locations of these monitoring wells is as follows:

Well #1 - This well replaces the former Well OW-3, which was removed during the excavation activities.

Well #2 - This well is located in the northeast corner of the remediated area. It is located here and is intended to acquire:

- upgradient concentration data,
- indication of potential contamination from the neighboring property to the east (metal recycler),
- indication of potential contamination from the neighboring property to the north (runoff from back of adjacent building flows onto corner of PG&E property).

We would appreciate your verbal permission to place these wells as indicated on the attached map. For the record, we would also appreciate written approval for these wells as well.

Thank you for your prompt attention to this matter. If you have any questions, please contact me or Aaron Stessman at 540-6954.

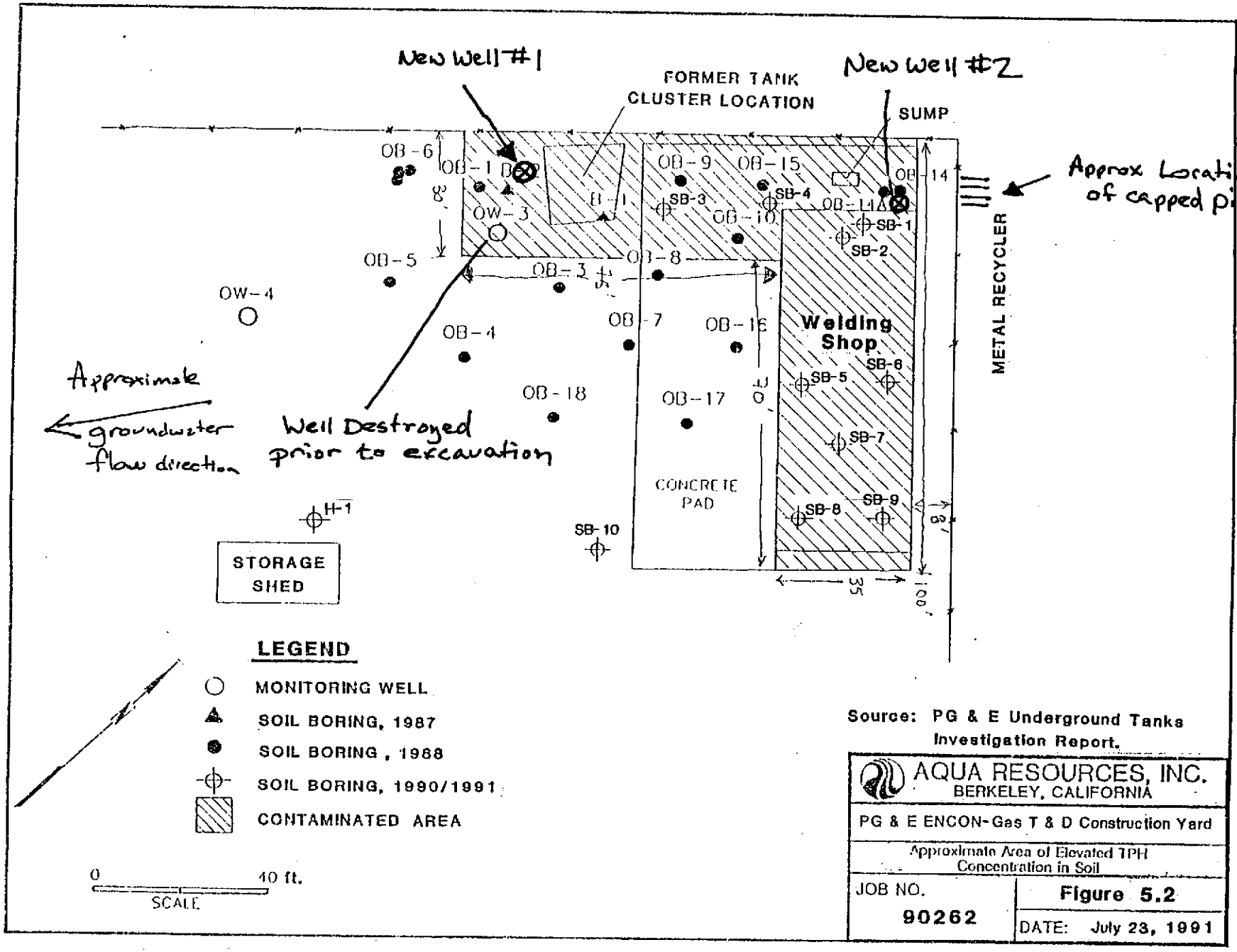
Sincerely,

AQUA RESOURCES INC.

Frederick A. Tornatore
Senior Environmental Scientist

Attachment

cc: W. Pearce, PG&E
T. Finger, PG&E



Source: PG & E Underground Tanks Investigation Report.

AQUA RESOURCES, INC.
BERKELEY, CALIFORNIA

PG & E ENCON-Gas T & D Construction Yard

Approximate Area of Elevated TPH Concentration in Soil

JOB NO. 90262

Figure 5.2

DATE: July 23, 1991

ALAMEDA COUNTY, DEPARTMENT OF
ENVIRONMENTAL HEALTH

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

Hazardous Materials Division Inspection Form

Site ID# ______ Site Name 4930 Coliseum Way Today's Date 11/26/91

Site Address PG+E EPA ID# ______

City ______ Zip 94 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)

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

I.B TRANSPORTER (Title 22)

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

Comments: Aaron Stessman: present 0.5hr

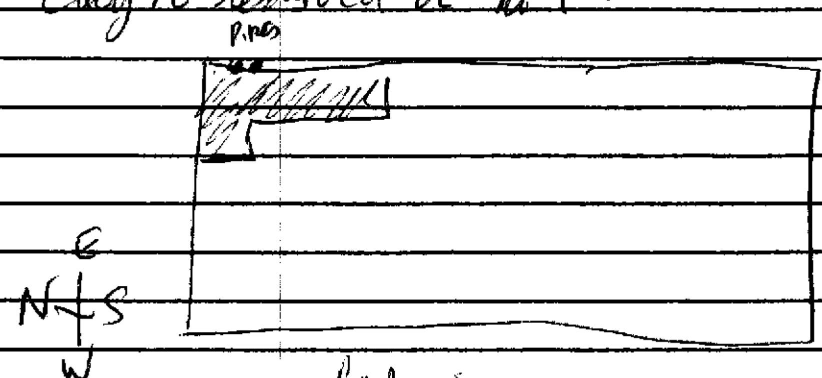
2 large pipes extending ~3' into East side of PGE property - 1-12" + 1-8" containing an asphalt material

Appears that the entire NE corner of lot is full of asphaltic fill as evidenced by East + North wall asphalt

Wall samples being taken - 1/20 linear ft & 1/25x25 base

Need to determine constituents of asphalt material to see if any low boiling volatiles present.

Will build a concrete containment around the 2 pipes regardless of whether they're removed or not.



Rev 6/88

Contact: ______

Title: ______ Inspector: BChan

Signature: ______ Signature: ______

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

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

October 22, 1991

Mr. Wally Pearce
PG&E
One California Street, Room F-235
San Francisco, CA 94111

Re: Work Plan for PG&E ENCON-GAS Transmission and Distribution Construction Yard, Former Tank Cluster Area, 4930 Coliseum Way Oakland 94621

Dear Mr. Pearce:

This letter recounts the meeting between representatives of PG&E, Aqua Resources Inc. and the Alameda County Hazardous Materials Division. The subject of the meeting was the adequacy of the Feasibility Study and Site Closure Plan for the above site. The County is in agreement that the proposed cleanup levels for TPH as gasoline, TPH as diesel, TPH as kerosine, Oil and Grease and BTEX are acceptable. Work may proceed at once as long as the following additional County concerns are addressed:

1. The frequency of the confirmation sampling was not specified. Please be aware that your sampling schedule should be consistent with the sampling protocol as stated in SW846, EPA's method manual for the analysis of solid wastes. 1/20 linear ft per side walls per 10/24/91 conversation w/ Wojtek Bajsarowicz Stockpile - by Statistical 846 method

2. It was noted that in two separate soil borings, SB-6 and SB-8, chlorinated solvents were found. Therefore, in the confirmation sampling in these areas, chlorinated solvents should be run.

3. It was also noted that in the meeting that in the event that any monitoring well(s) are destroyed through soil excavation, additional well(s) will be necessary for groundwater monitoring. Also, any claims for offsite sources of groundwater contamination will need documentation which must include offsite subsurface investigation.

With these items in mind, you can proceed with your proposal. You may contact me at (510) 271-4320 should you have any questions regarding this letter.

Sincerely,

Barney M Chan

Barney M. Chan, Hazardous Materials Specialist

cc: G. Jensen, Alameda County District Attorney Office
R. Karfiol, PG&E, Env. Services Department
J. Bajsarowicz, Aqua Resources Inc.
E. So, RWQCB
4930ColWP

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

DEPARTMENT OF ENVIRONMENTAL HEALTH
Hazardous Materials Program
80 Swan Way, Rm. 200
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Sincerely,

Barney M Chan

Barney M. Chan, Hazardous Materials Specialist

cc: G. Jensen, Alameda County District Attorney Office
R. Karfiol, PG&E, Env. Services Department
J. Bajsarowicz, Aqua Resources Inc.
E. So, RWQCB
4930ColWP

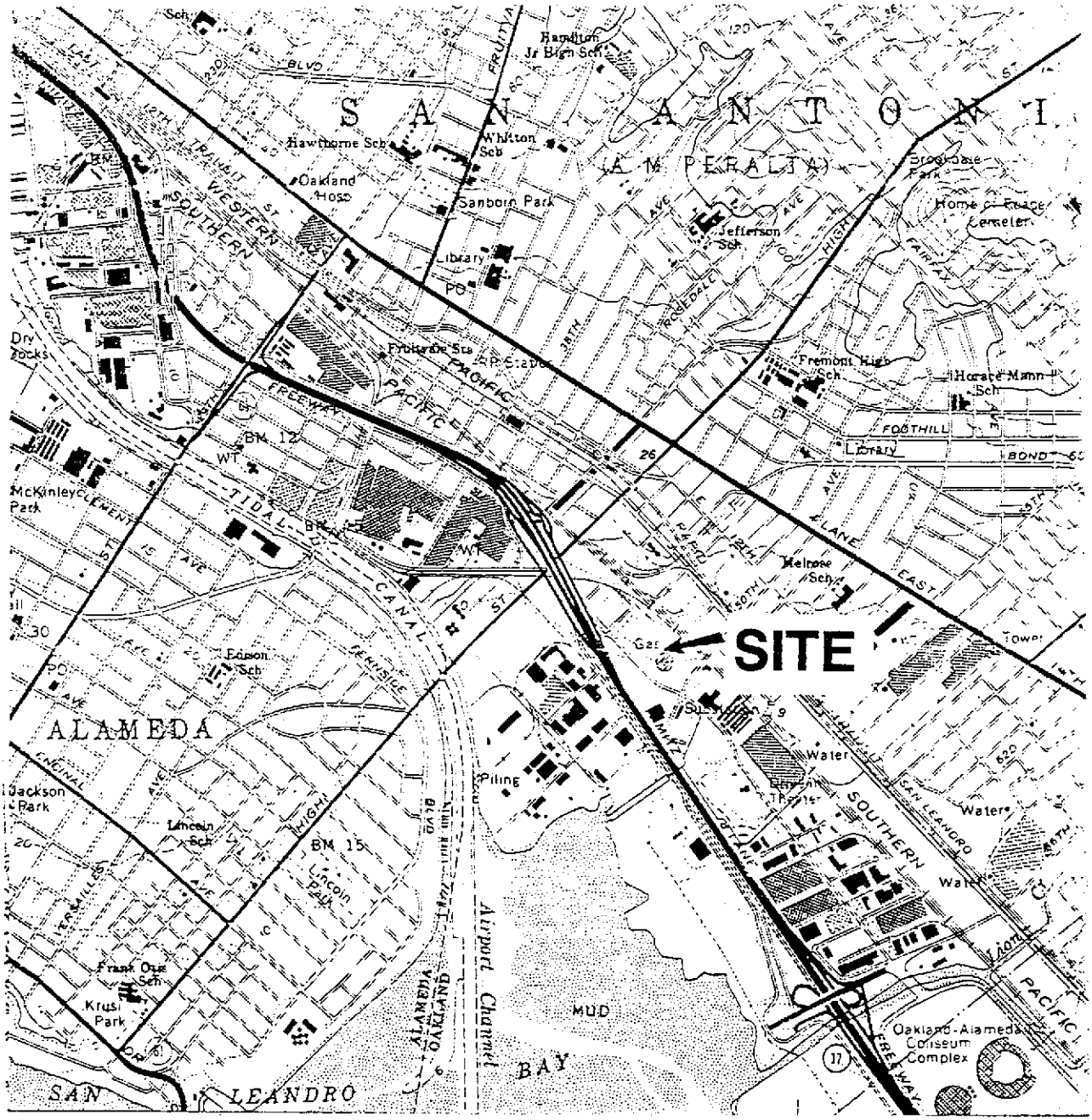
AGENDA

OCTOBER 18, 1991

MEETING WITH ALAMEDA COUNTY HEALTH CARE SERVICES

PG&E ENCON-GAS TRANSMISSION AND DISTRIBUTION CONSTRUCTION YARD

- INTRODUCTION AND PURPOSE OF MEETING
- HISTORY OF THE SITE AND PROJECT
- SITE/REMEDIAL INVESTIGATIONS
  - PG&E Investigations - Feb. 1987 to July 1988
  - ARI Investigations - November 1990 to Summer 1991
- FEASIBILITY STUDY AND CLOSURE PLAN
  - Proposed Cleanup Levels for Soil
  - Volume of Soil to be Remediated
  - Remediation Alternatives
  - Recommended Remediation Program
- NEXT STEPS AND CONCLUDING REMARKS



Scale

0 1/2 1

MILE

Source: United States Geological Survey, 1959, photorevised 1980, Oakland East 7.5 minute topographic quadrangle.

AQUA RESOURCES, INC.
BERKELEY, CALIFORNIA

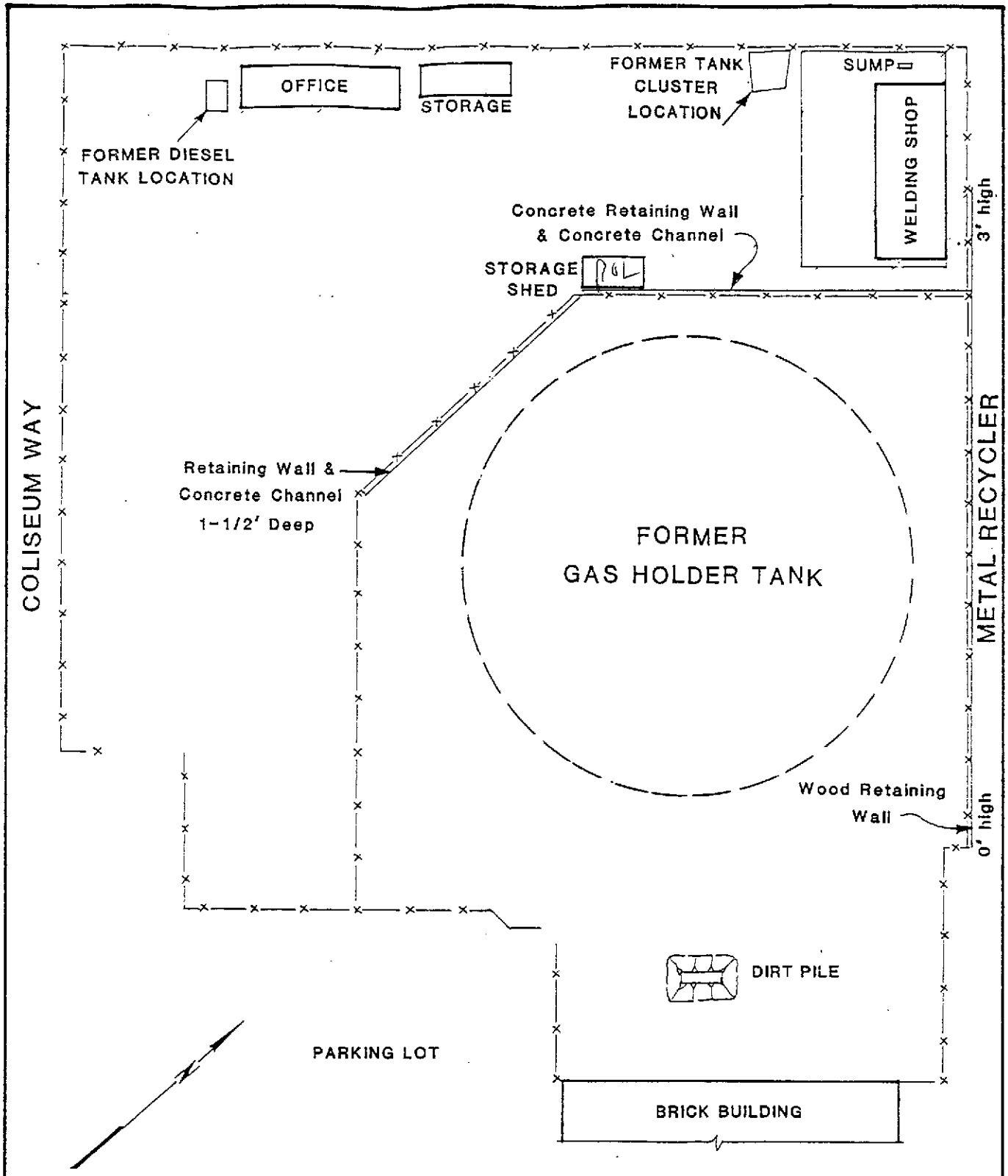
PG & E ENCON-Gas T & D Construction Yard

Site Location Map

JOB NO. 90262.

Figure 1.1

DATE: July 23, 1991



Scale: 1"=60'

0 30 60 90 120 150

AQUA RESOURCES, INC.
BERKELEY, CALIFORNIA

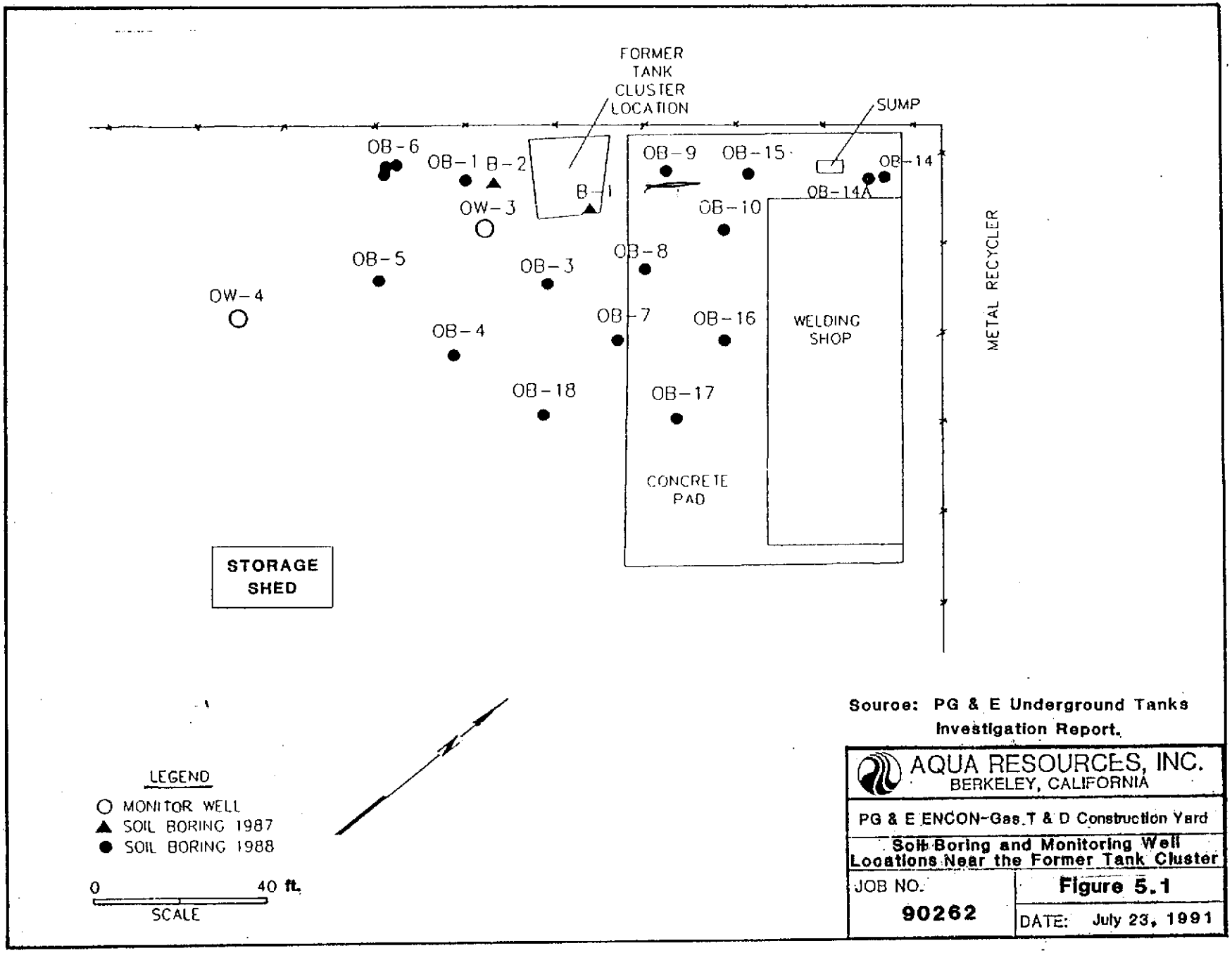
PG & E ENCON-Gas T & D Construction Yard

Site Plan

JOB NO. 90262

Figure 2.1

DATE: July 23, 1991



Source: PG & E Underground Tanks Investigation Report.

AQUA RESOURCES, INC.
BERKELEY, CALIFORNIA

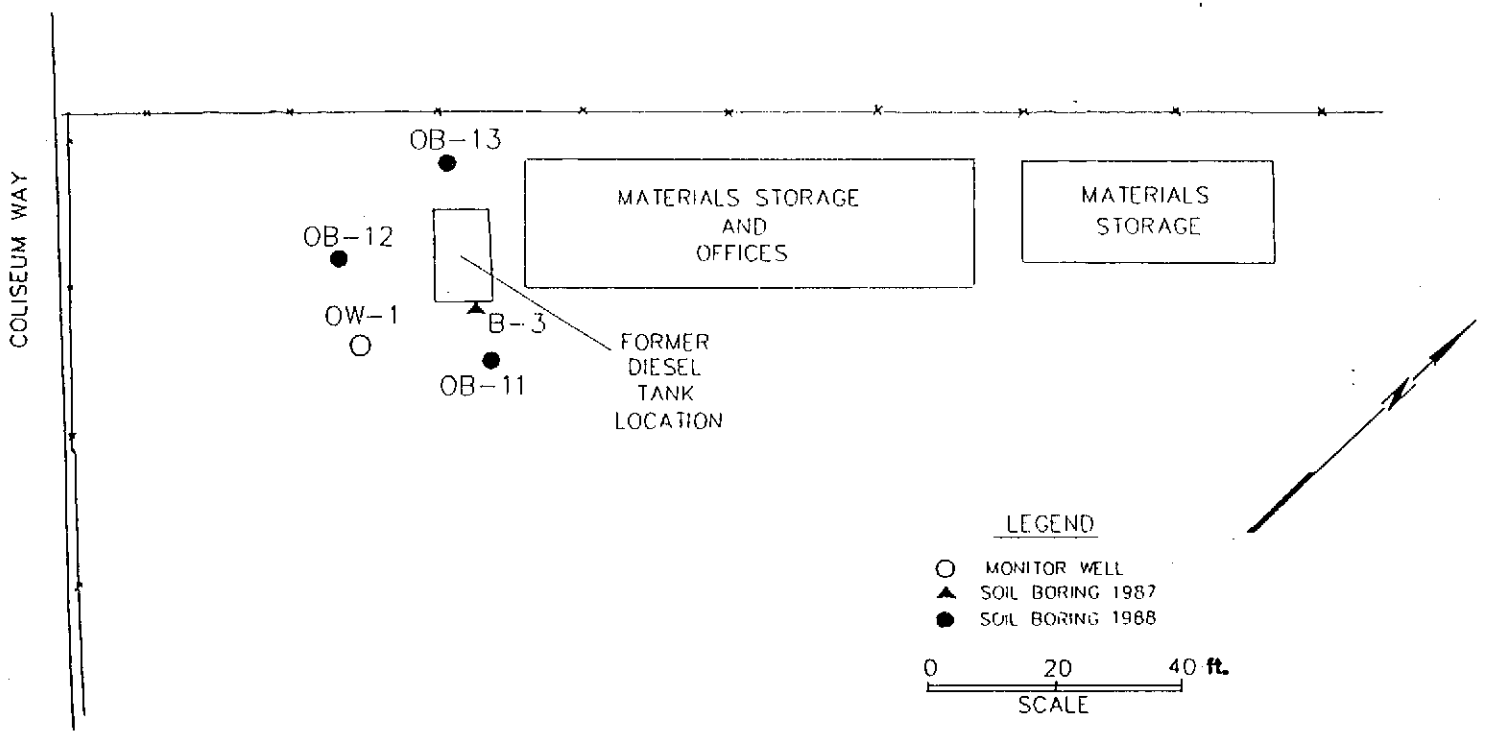
PG & E ENCON-Gas T & D Construction Yard

Soil Boring and Monitoring Well Locations Near the Former Tank Cluster

JOB NO. 90262

Figure 5.1

DATE: July 23, 1991



Source: PG&E UndergroundTanks Investigation Report

AQUA RESOURCES, INC.
BERKELEY, CALIFORNIA

PG & E ENCON-Gas T & D Construction Yard

Soil Boring and Monitor Well Locations Near the Former Diesel Tank

JOB NO. 90262

Figure 5.2

DATE: July 23, 1991

Table 5.1 Petroleum Hydrocarbons, Volatile Aromatics, and PCBs in Soil (February 1987 Investigation), in mg/kg

Sample No	Depth (feet)	Gasoline	Kerosene	Diesel	Oil	Benzene	Toluene	Ethyl-benzene	Xylenes	PCBs
B1-1-1	3	ND	ND	ND	2000	ND	ND	ND	ND	0.02
B1-2-1	5.5	ND	ND	ND	180	ND	ND	0.056	0.15	ND
B2-1-1	5	0.73	ND	ND	3500	ND	ND	1.2	1.9	0.06
B2-2-1	8.5	ND	ND	ND	1200	ND	ND	0.12	0.09	0.03
B3-1-1	5.5	ND	ND	ND	ND	--	--	--	--	--
EPA Method		8015	8100	8100	8100	8020	8020	8020	8020	8080
Method Detection Limit		0.1	10	20	100	0.04	0.03	0.02	0.04	0.01

Source: PG&E - Underground Tanks Investigation Report, July 1988.

Table 5.2 Petroleum Hydrocarbons and Volatile Aromatics in Soil (January 1988 Investigation), in mg/kg

Sample Location	Sample ID	TPH	Oil and Grease	Volatile Organics
Tank Cluster	West Sand	320	29,600	ND
Tank Cluster	West Wall	30	2,650	ND
Tank Cluster	North Sand	63	14,200	ND
Tank Cluster	North Soil	12	2,300	ND
Tank Cluster	North Wall	ND	26	ND
Tank Cluster	South Sand	88	55,400	ND
Tank Cluster	South Soil	310	7,000	ND
Tank Cluster	South Wall	19	3,850	ND
Tank Cluster	East Wall	1100	10,500	ND
Tank Cluster	East Liquid (below tank)	30	8,000	ND
Diesel Tank	Soil	ND	--	--
Diesel Tank	Liquid (below tank)	95	--	--
Diesel Tank	Liquid (below tank)	150	--	--
EPA Method		mod 8015	(SM) 503E	8240
Method Detection Limit		10	10	0.2

TPH - High boiling point petroleum hydrocarbons
ND - Not detected at or above method detection limit
-- - Not analyzed

Source: PG&E - Underground Tanks Investigation Report, July 1988.

Table 5.3 Petroleum Hydrocarbons and Volatile Organic Compounds in Selected Soil Samples Collected from Borings near the Former Tank Cluster Location (March and May 1988 Investigation), in mg/kg

Soil boring	TIP Sample Depth (feet)	TIP reading	Analytical Sample Depth (feet)	TPH (diesel)	TPH (mineral spirits)	TPH (kerosene)	Oil and Grease	Volatile Organics	Benzene	Toluene	Ethylbenzene	Xylenes	Misc. C4 - C12
OB-1	6-6.5	105	6.5-7	ND	54	ND	630	ND					
OB-1	8-8.5	115	9-9.5	ND	ND	ND	ND	ND					
OB-3	3.5-4	33	4-4.5	ND	ND	ND	27	ND					
OB-3	5.5-6	99	6.5-7	ND	30	ND	250	ND					
OB-3	7.5-8	128	8.5-9	ND	ND	ND	13	ND					
OB-4	7.5-8	2	8-8.5	ND	ND	ND	29	ND					
OB-5	7-7.5	2	7.5-8	ND	ND	ND	ND	ND					
OB-6	9.5-10	3	10-10.5	ND	ND	ND	21	ND					
OB-7	7.5-8	10	8-8.5	ND	59	ND	34	ND					
OB-8	8.5-9	2	9-9.5	ND	ND	ND	ND	33 (methylene chloride)					
OB-9	4-4.5	92	5-5.5	3900	ND	ND	52000	1.1 (ethylbenzene)					
OB-9	6-6.5	22	7-7.5	400	ND	ND	1000	ND					
OB-9	12-12.5	15	12.5-13	ND	ND	ND	ND	ND					
OB-10	11-11.5	2	11.5-12	ND	ND	ND	ND	ND					
OB-14A	7-7.5	55	7.5-8	ND	ND	260	1200	--	ND	ND	ND	ND	80
OB-14A	10.5-11	0	11-11.5	ND	ND	ND	ND	--	ND	ND	ND	ND	ND
OB-15	6-6.5	40	6.5-7	ND	ND	340	4800	--	ND	ND	ND	1	130
OB-15	9.5-10	3	10-10.5	ND	ND	ND	5	--	ND	ND	ND	ND	ND
OB-16	6.5-7	5	7-7.5	ND	ND	ND	100	--	ND	ND	ND	ND	ND
OB-16	8.5-9	4	9-9.5	ND	ND	ND	ND	--	ND	ND	ND	ND	ND
OB-17	6-6.5	3	6.5-7	ND	ND	ND	9	--	ND	ND	ND	ND	ND
OB-17	8.5-9	3	9-9.5	ND	ND	ND	ND	--	ND	ND	ND	ND	ND
OB-18	6.5-7	3	7-7.5	ND	ND	ND	ND	--	ND	ND	ND	ND	ND
OB-18	8.5-9	3	9-9.5	ND	ND	ND	ND	--	ND	ND	ND	ND	ND
OW-3	4-4.5	16	4.5-5	210	ND	ND	220	ND					
OW-3	6-6.5	96	6.5-7	ND	ND	ND	1100	ND					
OW-3	7.5-8	292	8.5-9	ND	ND	ND	ND	ND					
OW-4	7-7.5	2	7.5-8	ND	ND	ND	ND	--	ND	ND	ND	ND	ND
OW-4	10.5-11	3	11-11.5	ND	ND	ND	ND	--	ND	ND	ND	ND	ND
EPA Method				<------- modified 8015 ------->			413.2	8010/8020	<---------- 8015/8020 ---------->				
Method Detection Limit				10	10	10	5	various	0.5	0.5	0.5	0.5	1.0

Source: PG&E - Underground Tanks Investigation Report, July 1988.

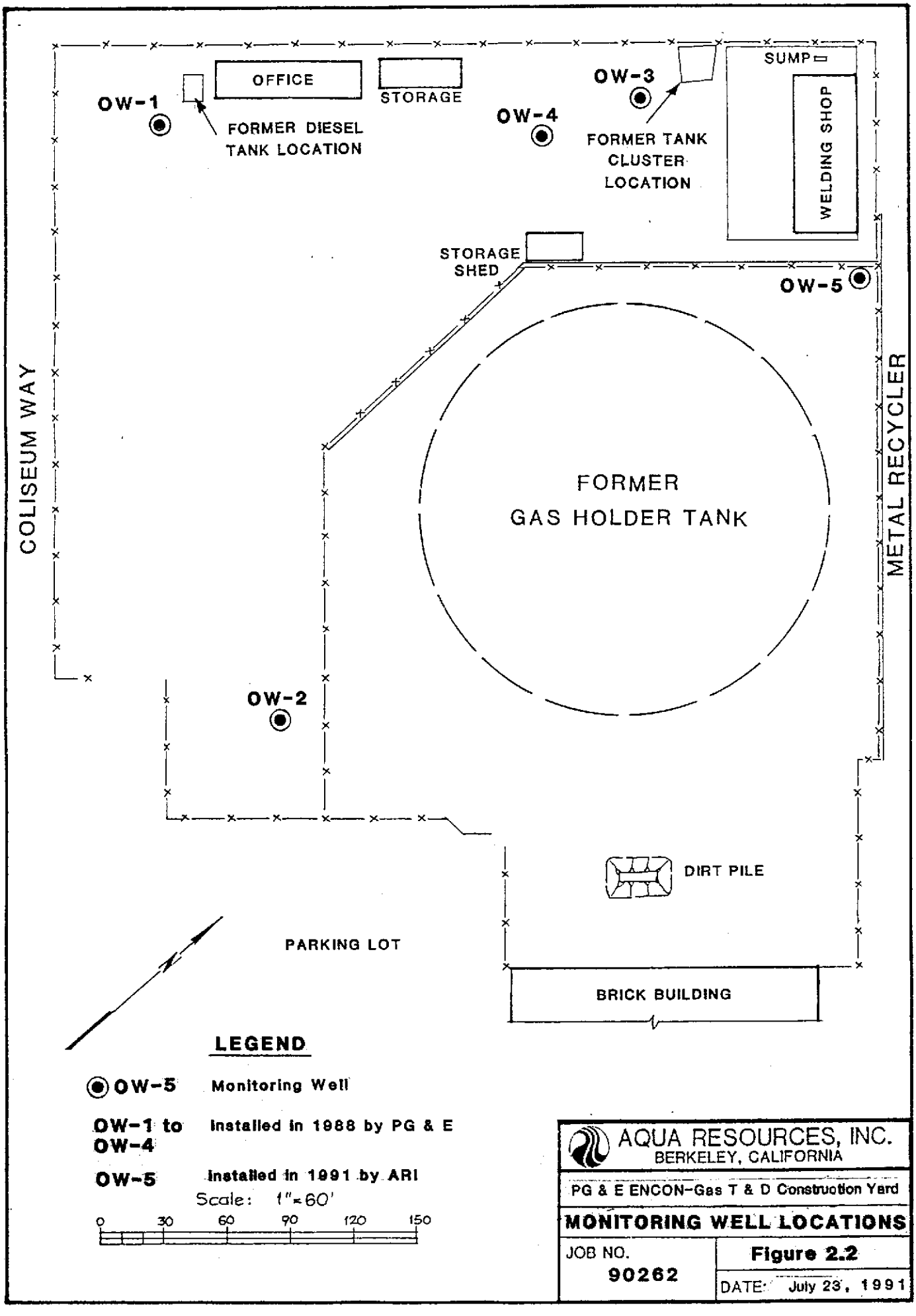
Table 5.4 Petroleum Hydrocarbons and Volatile Organic Compounds in Selected Soil Samples Collected from Borings Near the Former Diesel Tank Location (March 1988 Investigation), in mg/kg

Soil boring	TIP Sample Depth (feet)	TIP reading	Analytical Sample Depth (feet)	TPH (diesel)	TPH (mineral spirits)	TPH (kerosene)	Oil and Grease	Volatile Organics
OB-11	10-10.5	1	10.5-11	ND	ND	ND	ND	ND
OB-12	10-10.5	2	10.5-11	ND	ND	ND	ND	ND
OB-13	--	-	4-4.5	ND	ND	ND	ND	ND
OB-13	--	-	8.5-9	ND	ND	ND	ND	ND
OW-1	10-10.5	3	10.5-11	ND	ND	ND	ND	ND
EPA Method				<---- modified 8015 ---->			413.2	8010/8020
Method Detection Limit				1	1	1	5	various

TPH - total petroleum hydrocarbons

ND - not detected at or above method detection limit.

Source: PG&E - Underground Tanks Investigation Report, July 1988.



AQUA RESOURCES, INC.
BERKELEY, CALIFORNIA

PG & E ENCON-Gas T & D Construction Yard

MONITORING WELL LOCATIONS

JOB NO. 90262

Figure 2.2

DATE: July 23, 1991

Table 5.5 Petroleum Hydrocarbons and Volatile Aromatics in Groundwater (January 1990 to January 1991)

Well / Date Sampled	TPH (mg/l)	TPH-gas (ug/l)	TPH-diesel/oil (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)
OW-1							
01-26-90	<5	<50	190	3.2	2.3	<.3	2.6*
04-23-90	<5	82	300	<.3	0.4	<.3	2.4*
07-05-90	<5	<50	200	<1	<1	<1	<1**
10-12-90	<5	<50	200	<1	<1	<1	<1**
01-10-91	<5	<500	90[1]	<1	<1	<1	<1**
OW-2							
01-26-90	<5	<50	130	0.4	0.4	<.3	0.4*
04-23-90	<5	<50	140	<.3	0.6	<.3	0.8*
07-05-90	<5	<50	68	<1	<1	<1	<1**
10-12-90	<5	<50	90	<1	<1	<1	<1**
01-10-91	<5	<50	<50	<1	<1	<1	<1**
OW-3							
01-26-90	<5	<50	440	0.5	0.4	<.3	0.7*
04-23-90	<5	52	470	<.3	0.8	0.5	2.1*
07-05-90	<5	<50	450	<1	<1	<1	<1**
10-12-90	<5	<50	130	<1	<1	<1	<1**
01-10-91	<5	<50	110[1]/1200[2]	<1	<1	<1	<1**
OW-3 (duplicate)							
01-26-90	<5	<50	550	0.6	0.5	0.4	1.3*
04-23-90	<5	120	570	0.5	0.9	0.8	1.3*
07-05-90	<5	<50	500	<1	<1	<1	<1**
10-12-90	<5	<50	270	<1	<1	<1	<1**
01-10-91	<5	<50	130	<1	<1	<1	<1**
OW-4							
01-26-90	<5	<50	150	<.3	<.3	<.3	0.6*
04-23-90	<5	<50	210	0.5	0.6	0.3	2.0*
07-05-90	<5	<50	150	<1	<1	<1	<1**
10-12-90	<5	<50	150	<1	<1	<1	<1**
01-10-91	<5	<50	<50	<1	<1	<1	<1**

TPH = total petroleum hydrocarbons by infared method (EPA Method 418.1)
TPH-G = total petroleum hydrocarbons as gasoline (EPA Method 5030/8015)
TPH-diesel/oil = total petroleum hydrocarbons as diesel or motor oil (EPA Method 3510/8015)
BTEX = benzene, toluene, ethylbenzene, and xylenes (EPA Method 5030/8020* or 8240**)
< = not detected at or above method detection limit
1 = identified as diesel
2 = identified as heavy oil

Source: PG&E — Technical and Ecological Services Department, Quarterly Groundwater Monitoring Report, January 1991.

Table 5.6 Halogenated Volatile Organics in Groundwater (January 1990 to January 1991)

Well / Date Sampled	1,1-DCA (ug/l)	1,2-DCB (ug/l)	1,3-DCB (ug/l)	1,4-DCB (ug/l)	Fluoro-benzene (ug/l)	cis-1,2-DCE (ug/l)	Diisopropyl ether (ug/l)	Methylene chloride (ug/l)	Chloro-benzene (ug/l)
OW-1									
01-26-90	4	<1	1	5	ND	<1	5	<5	<1
04-23-90	4	<1	4	13	ND	<1	7	<5	<1
07-05-90	2	<1	4	11	ND	<1	ND	<5	<1
10-12-90	2	<1	1	6	ND	<1	ND	<5	<1
01-10-91	1	<1	3	3	ND	<1	ND	<5	<1
OW-2									
01-26-90	<1	<1	<1	<1	ND	<1	ND	<5	<1
04-23-90	<1	<1	<1	<1	ND	<1	ND	<5	<1
07-05-90	<1	<1	<1	<1	ND	<1	ND	<5	<1
10-12-90	<1	<1	<1	<1	ND	<1	ND	<5	<1
01-10-91	<1	<1	<1	<1	ND	<1	ND	<5	<1
OW-3									
01-26-90	29	2	3	2	ND	<1	8	<5	<1
04-23-90	14	<1	<1	<1	ND	33	ND	9	<1
07-05-90	17	1	2	<1	ND	<1	ND	<5	<1
10-12-90	17	1	2	2	ND	1	ND	<5	<1
01-10-91	15	1	1	1	ND	1	ND	<5	1
OW-3 (duplicate)									
01-26-90	30	2	3	2	ND	<1	9	<5	<1
04-23-90	13	<1	4	13	ND	40	ND	10	<1
07-05-90	21	2	2	<1	10	<1	ND	<5	<1
10-12-90	16	1	2	2	ND	1	ND	<5	<1
01-10-91	17	1	2	2	ND	1	ND	<5	1
OW-4									
01-26-90	<1	<1	<1	<1	ND	<1	ND	<5	<1
04-23-90	<1	<1	<1	<1	ND	<1	ND	<5	<1
07-05-90	<1	<1	<1	<1	ND	<1	ND	<5	<1
10-12-90	<1	<1	<1	<1	ND	<1	ND	<5	<1
01-10-91	3	<1	<1	<1	ND	<1	ND	<5	<1
Field Blank									
01-26-90	<1	<1	<1	<1	ND	<1	ND	<5	<1
04-23-90	na	na	na	na	na	na	na	na	<1
07-05-90	<1	<1	<1	<1	ND	<1	ND	<5	<1
10-12-90	<1	<1	<1	<1	ND	<1	ND	<5	<1
01-10-91	<1	<1	<1	<1	ND	<1	ND	<5	<1
Maximum Containment Level	–	–	–	75	–	–	–	–	1000

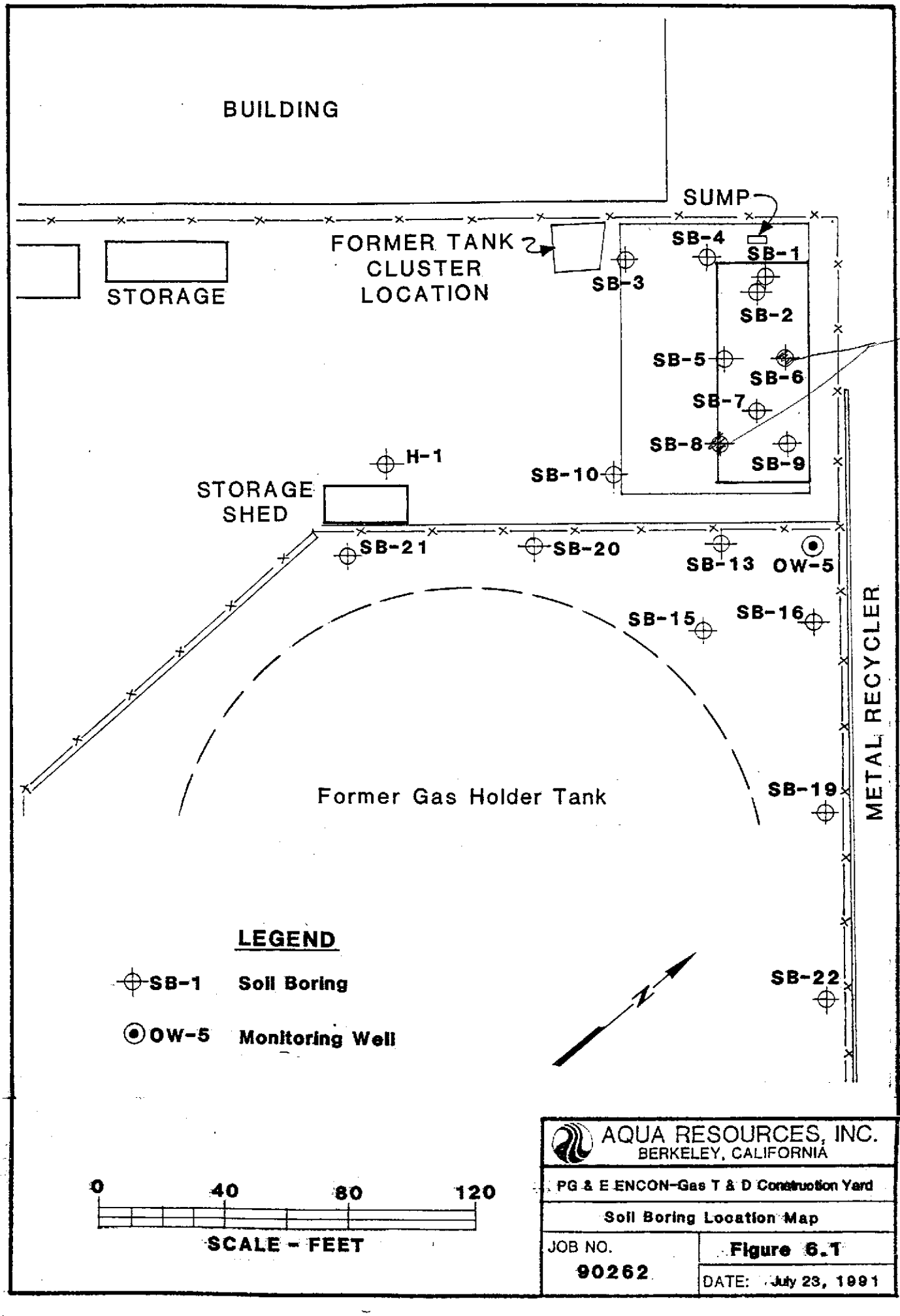
Notes:

DCA = dichloroethane
DCB = dichlorobenzene
DCE = dichloroethene
ND = not detected (detection limit not stated)
na = not analyzed

Source: PG&E — Technical and Ecological Services Department, Quarterly Groundwater Monitoring Report, January 1991.

ARI INVESTIGATIONS PERFORMED AT SITE

- Soil sampling near the POL storage shed
- Soil sampling inside and in front of welding shop
- Soil sampling in the northeastern area of the yard between the welding shop and the concrete pad
- Installation and development of a new groundwater monitoring well (OW-5)
- Quarterly groundwater sampling of five on-site monitoring wells



AQUA RESOURCES, INC.
BERKELEY, CALIFORNIA

PG & E ENCON-Gas T & D Construction Yard

Soil Boring Location Map

JOB NO. 90262

Figure 6.1

DATE: July 23, 1991

Table 6.1. Petroleum Hydrocarbons in Soil, in mg/kg

Sample ID	Depth [feet]	Oil and Grease	TPH	TEH Diesel	TVH Gasoline
SB-1-1b	4.0		32,000	8,900	
SB-1-2	5.0-5.5		11,000	2,100 (a)	
SB-1-3	10.0-10.5		11	< 2.5	
SB-2-1	4.0-4.5		47,000	1,600 (b)	
SB-2-2	8.0-8.5		8	< 2.5	
SB-4-1	5.75-6.25		14,000		
SB-4-2	7.25-7.75		5,800		
SB-4-3	8.0-8.5		6,900		
SB-5-1	2.75-3.25	9,200			
SB-5-2	5.0-5.5	3,500			
SB-5-3	8.0-8.5	<50			
SB-6-1	3.0-3.5	13,000		1,700	
SB-6-2	4.5-5.0	3,600			
SB-6-3	7.5-8.0	2,400			
SB-6-4	9.0-9.5	<50			
SB-7-1	0.5-1.0	96			
SB-7-1a	1.0-1.5 (disturbed)	3,900			
SB-7-2	6.0-6.5	<50			
SB-7-3	8.0-8.5	<50			
SB-8-1	0.0-0.5	<50			
SB-8-2	3.0-3.5	2,700		47	
SB-8-3	5.0-5.5	<50			
SB-8-4	8.0-8.5	<50			
SB-9-1	1.0-1.5	2,100		210	
SB-9-2	5.0-5.5	2,400			
SB-9-3	7.0-7.5	<50			
SB-10-1	2.5-3.0	770			
SB-10-2	5.0-5.5	56			
SB-10-3	8.0-8.5	<50			

(Continued ->)

Notes:

1) (a) = Sample contains a hydrocarbon fuel of approximately 3700 mg/kg, including 2149 mg/kg of diesel fuel
2) (b) = Sample contains a hydrocarbon fuel of approximately 2000 mg/kg, including 1571 mg/kg of diesel fuel
3) Blank = Not Analyzed
4) < = Not Detected at or above Reporting Limit
5) TPH = Total Petroleum Hydrocarbons (EPA method 418.1)
6) TEH-Diesel = Total Extractable Petroleum Hydrocarbons as Diesel (EPA method 8015 mod./3550)
7) TVH-Gasoline = Volatile Hydrocarbons as Gasoline (EPA method 8015 mod./3550)
8) Oil and Grease = Hydrocarbon Oil and Grease (SMWW 17:5520EF)

Table 6.1. Petroleum Hydrocarbons in Soil, in mg/kg (continued)

Sample ID	Depth [feet]	Oil and Grease	TPH	TEH-Diesel	TVH-Gasoline
SB-13-1	2.0-2.5	78			
SB-13-2	5.0-5.5	20			
SB-13-3	7.0-7.5	18			
SB-15-1	2.0-2.5	2,300			
SB-15-2	4.0-4.5	30			
SB-15-3	7.0-7.5	18			
SB-16-1	2.0-2.5	<5.0			
SB-16-2	4.0-4.5	8			
SB-16-3	7.0-7.5	110		510	
SB-19-1	~2.0 (cuttings)	66			
SB-19-2	5.0-5.5	6			
SB-19-3	7.0-7.5	22			
SB-20-1	2.5-3.0	82			
SB-20-2	4.0-4.5	120		66	
SB-20-3	7.0-7.5	34			
SB-21-1	2.0-2.5	24			
SB-21-2	5.0-5.5	< 50		< 1.0	
SB-21-3	7.0-7.5	< 50		< 1.0	
SB-22-1	3.75-4.25	28			
SB-22-2	5.0-5.5	< 50		< 1.0	
SB-22-3	7.0-7.5	< 50		< 1.0	
OW-5-5	2.5-3.0		450		
OW-5-9	4.5-5.0		600	< 50 (c)	2
OW-5-12	6.0-6.5		75		

Notes:

1) (c) = Sample contains a hydrocarbon fuel of approximately 3750 mg/kg, which does not match diesel fuel

2) Blank = Not Analyzed

3) < = Not Detected at or above Reporting Limit

4) TPH = Total Petroleum Hydrocarbons (EPA method 418.1)

5) TEH-Diesel = Total Extractable Petroleum Hydrocarbons as Diesel (EPA method 8015 mod./3550)

6) TVH-Gasoline = Volatile Hydrocarbons as Gasoline (EPA method 8015 mod./3550)

7) Oil and Grease = Hydrocarbon Oil and Grease (SMWW 17:5520EF)

Table 6.2. Volatile Organic Compounds in Soil, in ug/kg

PURGEABLE HALOCARBONS	Sample ID -> Depth [feet] -> MDL	H-1 0.0-0.5 (x1)	SB-1-1 4.0 (x5)	SB-1-2 5.0-5.5 (x5)	SB-1-3 10.0-10. (x1)	SB-2-1 4.0-4.5 (x5)	SB-2-2 8.0-8.5 (x5)	SB-6-1 3.0-3.5 (x2)	SB-8-2 3.0-3.5 (x1)	SB-9-1 1.0-1.5 (x1)
Dichlorodifluoromethane	5		ND	ND	ND	ND	ND			
Chloromethane	5	<10	ND	ND	ND	ND	ND	<20	<10	<10
Vinyl chloride	5	<10	ND	ND	ND	ND	ND	<20	<10	<10
Bromomethane	5	<10	ND	ND	ND	ND	ND	<20	<10	<10
Chloroethane	5	<10	ND	ND	ND	ND	ND	<20	<10	<10
Trichlorofluoromethane	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichloromethane	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichlorothene	5	ND						ND	ND	ND
trans-1,2-Dichloroethene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	5	ND	ND	ND	ND	ND	ND	230	13	ND
Chloroform	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	5	ND						ND	ND	ND
1,1,1-Trichloroethane	5	ND	ND	ND	ND	ND	ND	310	9.3	ND
Carbon Tetrachloride	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloroethylvinylether	10	ND						ND	ND	ND
Chlorobenzene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	44	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chlorotoluene	100		ND	ND	ND	ND	ND			
1,3-Dichlorobenzene	5	ND	ND	ND	19	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	5	ND	ND	ND	20	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
PURGEABLE AROMATICS	MDL	(x1)	(x5)	(x5)	(x1)	(x5)	(x1)	(x2)	(x1)	(x1)
Benzene	5	ND	ND	ND	ND	ND	ND	16	ND	ND
Toluene	5	30	ND	ND	ND	ND	ND	120	ND	ND
Chlorobenzene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	5	ND	45	ND	ND	30	ND	220	45	ND
P-&m-xylene	10		ND	ND	ND	ND	ND			
O-xylene	5		25	ND	ND	ND	ND			
Total Xylenes	5	ND						730	ND	ND
1,3-Dichlorobenzene	5	ND	ND	ND	13	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	5	ND	ND	ND	14	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND

(continued ->)

Table 6.3. PCBs in Soil, in mg/kg

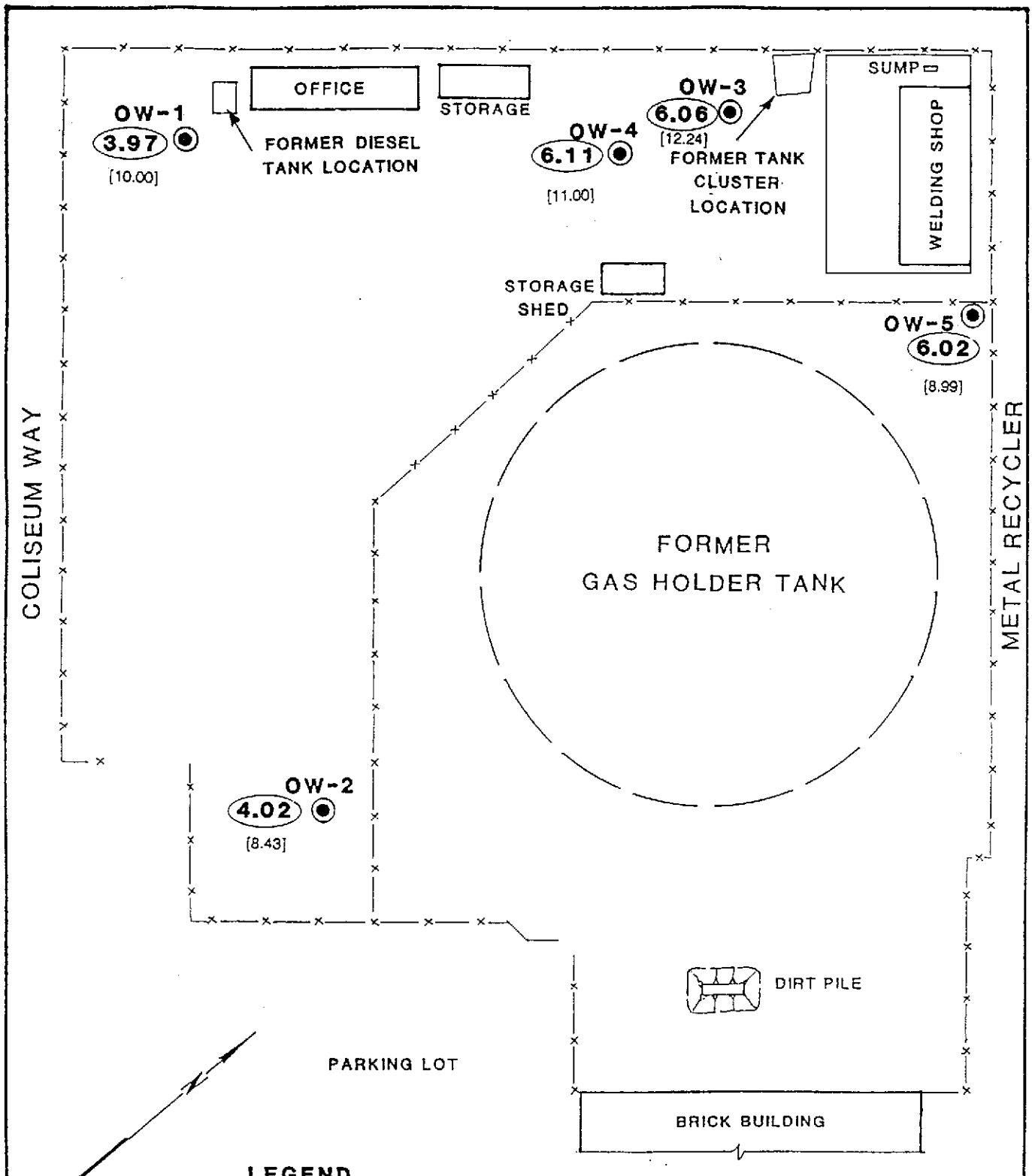
Sample ID	Depth [feet]	PCB-1016	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260
SB-1-1b	4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SB-2-1	4.0-4.5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SB-6-1	3.0-3.5	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017
SB-9-1	1.0-1.5	<0.017	<0.017	<0.017	<0.017	<0.017	1.7	<0.017
SB-13-2	5.0-5.5	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017
SB-16-3	7.0-7.5	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017
SB-19-3	7.0-7.5	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017
OW-5-1	0.5-1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Notes:
1) < = Not Detected at or above Reporting Limit
2) PCBs = Polychlorinated Biphenyls (EPA method 8080)

Table 6.4. Metals in Soil, in mg/kg

Sample ID -> / Depth [feet] -> / Metals	SB-1-1b 4.0	SB-6-1 3.0-3.5	SB-9-1 1.0-1.5	SB-13-2 5.0-5.5	SB-16-3 7.0-7.5	SB-19-3 7.0-7.5	OW-5-9 4.5-5.0
Antimony	19	<2.9	6.6	<2.9	<3.0	<3.0	<8
Arsenic	17	3.3	3.9	<2.5	<2.5	<2.5	6
Barium	290	156	571	133	118	108	190
Beryllium	0.22	0.22	0.42	0.36	0.38	0.35	1.2
Cadmium	0.8	2	4.2	1.9	1.8	1.7	0.29
Chromium VI	<0.4						<0.4
Chromium (total)	28	40.1	51.6	40	46.6	36.2	110
Cobalt	6.9	9.1	13.5	11.8	9.7	11.4	14
Copper	28	39.7	63.9	29.8	21.2	19.4	35
Lead (total)	210	26	168	12.2	5.4	5.5	8.6
Lead (soluble)	6.4		2.57				
Mercury	<0.17	0.11	0.22	0.12	<0.1	<0.1	0.7
Molybdenum	0.7	2.6	<0.7	<0.68	<0.69	<0.7	<0.24
Nickel	60	37.7	66.1	73.5	74.5	70.6	150
Selenium	<1	<2.5	<2.5	<2.5	<2.5	<2.5	<1
Silver	<0.8	<0.49	<0.5	<0.49	<0.49	<0.5	<0.8
Thallium	5.6	<2.5	<2.5	<2.5	<2.5	<2.5	<3
Vanadium	63	27.7	47.4	29.5	29	22.6	59
Zinc	90	50.2	252	43.8	40.2	36.6	80

Notes:
1) Blank = Not Analyzed
2) < = Not Detected at or above Reporting Limit
3) Metal analyses performed according to CCR Title 26



AQUA RESOURCES, INC.
BERKELEY, CALIFORNIA

PG & E ENCON-Gas T & D Construction Yard

POTENTIOMETRIC ELEVATIONS

JOB NO. 90262

Figure 2

DATE: July 15, 1991

Table 6.5. Petroleum Hydrocarbons in Groundwater, in mg/l

Sample ID	TPH	TEH-Diesel
OW-1-1	<0.5	<0.2
OW-2-1	<0.5	<0.2
OW-3-1	<0.5	<0.2 (a)
OW-3-2	<0.5	<0.2(a)
OW-4-1	<0.5	0.58
OW-5-1	<0.5	<0.2(b)

Notes:

1) (a) sample contains a hydrocarbon fuel of approximately 0.7 mg/l, which does not match diesel fuel

2) (b) sample contains a hydrocarbon fuel of approximately 0.6 mg/l, which does not match diesel fuel

3) < = Not Detected at or above Reporting Limit

4) TPH = Total Petroleum Hydrocarbons (EPA method 418.1)

5) TEH-Diesel = Total Extractable Petroleum Hydrocarbons as Diesel (EPA method 8015 mod./EPA 3550)

Table 6.6. Volatile Organic Compounds in Groundwater, in ug/l

PURGEABLE HALOCARBONS	MCL	MDL	Sample ID					
			OW-1-1	OW-2-1	OW-3-1	OW-3-2 (Duplicate of OW-3-1)	OW-4-1	OW-5-1
Chloromethane		2	ND	ND	ND	ND	ND	ND
Vinyl chloride	0.5	1	ND	ND	ND	ND	ND	ND
Bromomethane		1	ND	ND	ND	ND	ND	ND
Chloroethane		1	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	150	0.5	ND	ND	0.82	ND	ND	ND
1,1-Dichloroethene	6	0.5	ND	ND	ND	0.69	ND	ND
Dichloromethane	5#	0.5	ND	ND	ND	ND	ND	ND
Trans-1,2-Dichloroethene	10	0.5	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	5	0.4	2.6	ND	16	17	6.1	1.8
Chloroform	100#*	0.2	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	200	0.2	ND	ND	2.5	1.6	ND	6
Carbon Tetrachloride	0.5	0.5	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.5	0.2	0.63	ND	0.55	0.43	0.49	ND
Trichloroethene	5	0.5	ND	ND	ND	ND	ND	0.75
1,2-Dichloropropane	5	0.2	ND	ND	ND	ND	ND	ND
Bromodichloromethane	100#*	0.5	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	5***	0.5	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	5***	0.5	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	32	0.1	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5	0.2	1.1	0.53	1.4	0.68	ND	0.7
Dibromochloromethane	100#*	0.5	ND	ND	ND	ND	ND	ND
Chlorobenzene	30	0.5	ND	ND	2.3	1	ND	ND
Bromoform	100#*	0.5	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	1	0.2	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene		0.5	1.8	ND	3.3	1.8	ND	ND
1,4-Dichlorobenzene	5	0.5	6.7	ND	3.1	1.8	ND	ND
1,2-Dichlorobenzene	600#	0.5	0.58	ND	2.3	1.2	ND	ND
PURGEABLE AROMATICS								
Benzene	1	0.5	ND	ND	0.54	ND	ND	14
Toluene	1000#	0.5	ND	ND	ND	ND	ND	0.57
Chlorobenzene	30	0.5	ND	ND	2.8	2.9	ND	ND
Ethylbenzene	680	0.5	ND	ND	ND	ND	ND	0.58
P-&m-xylene	1750**	1	ND	ND	ND	ND	ND	4.5
O-xylene	1750**	0.5	ND	ND	ND	ND	ND	1.1
1,3-Dichlorobenzene		0.5	1.6	ND	3.2	3.7	ND	ND
1,4-Dichlorobenzene	5	0.5	7.2	ND	3	3.1	ND	ND
1,2-Dichlorobenzene	600#	0.5	ND	ND	2.1	2.7	ND	ND

Notes:
1) MDL = Method Detection Limit
2) MCL = Maximum Contaminant Level in drinking water (State MCL, if not noted otherwise)
3) # = EPA MCL
4) * = MCL for sum of four compounds
5) ** = MCL for sum of all xylene isomers
6) *** = MCL for sum of trans- and cis-1,3-Dichloropropene
7) ND = Not Detected at or above MDL
8) Purgeable Halocarbons (EPA method 601)
9) Purgeable Aromatics (EPA method 602)

PROPOSED CLEANUP LEVELS FOR SOIL

• TPH as gasoline	10 mg/kg
• TPH as diesel	100 mg/kg
• TPH as kerosene	100 mg/kg
• Oil and grease	1000 mg/kg
• BTEX	5 ug/kg

Table 5.1 Results of the Analyses of Soil Samples Compared to Proposed Cleanup Levels

Sample ID (7)	Depth [feet]	Oil and Grease [mg/kg]	TPH (d) [mg/kg]	TEH-Diesel [mg/kg]	TEH-Kerosene [mg/kg]	TVH-Gasoline [mg/kg]	Benzene [ug/kg]	Toluene [ug/kg]	Ethyl-benzene [ug/kg]	Xylenes [ug/kg]
B1-1-1	3.0	2,000								
B1-2-1	5.5	180							56	150
B2-1-1	5.0	3,500							1,200	1,900
B2-2-1	8.5	1,200							120	90
OB-9	5.5	52,000		3,900						
OB-9	7.5	1,000		400						
OB-14A	8.0	1,200			260					
OB-15	7.0	4,800			340					1,000
OW-3	5.0	220		210						
OW-3	7.0	1,100								
Tank Cluster	0.0-7.0	max 55,400		max 1,100						
SB-1-1b	4.0		32,000	8,900					45	25
SB-1-2	5.0-5.5		11,000	2,100 (a)						
SB-1-3	10.0-10.5		11	< 2.5						
SB-2-1	4.0-4.5		47,000	1,600 (b)					30	
SB-4-1	5.75-6.25		14,000							
SB-4-2	7.25-7.75		5,800							
SB-4-3	8.0-8.5		6,900							
SB-5-1	2.75-3.25	9,200								
SB-5-2	5.0-5.5	3,500								
SB-6-1	3.0-3.5	13,000		1,700			16	120	220	730
SB-6-2	4.5-5.0	3,600								
SB-6-3	7.5-8.0	2,400								
SB-7-1a	1.0-1.5 (e)	3,900								
SB-8-2	3.0-3.5	2,700		47					45	
SB-9-1	1.0-1.5	2,100		210						
SB-9-2	5.0-5.5	2,400								
SB-15-1	2.0-2.5	2,300								
SB-16-3	7.0-7.5	110		510			110	79		140
OW-5-5	2.5-3.0		450							
OW-5-9	4.5-5.0		600	< 50 (c)		2				
OW-5-12	6-6.5		75							
Proposed Cleanup Level (f)		1,000	100	100	100	10	5	5	5	5

Notes:

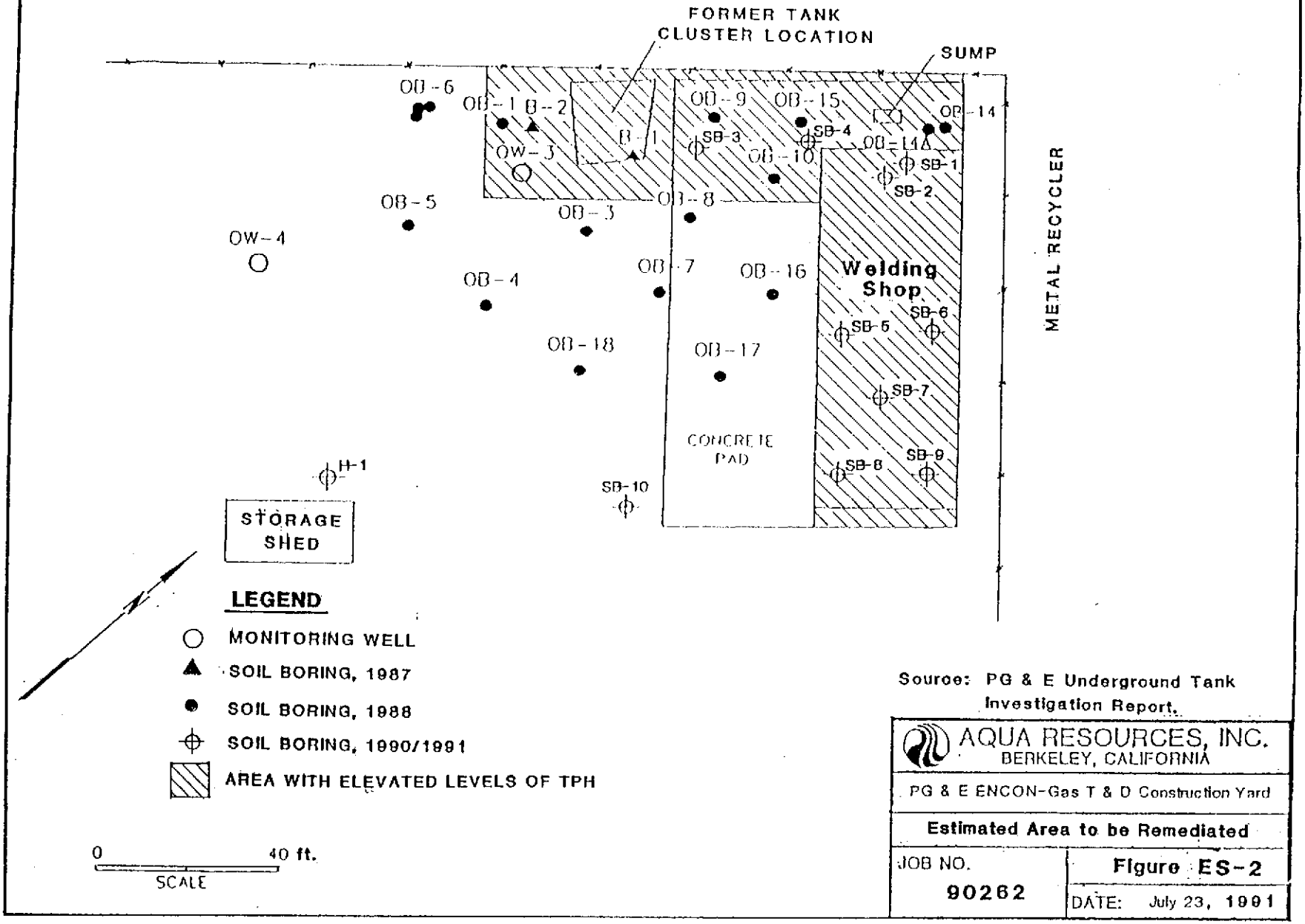
1) (a) = Sample contains a hydrocarbon fuel of approximately 3700 mg/kg, including 2149 mg/kg of diesel fuel
2) (b) = Sample contains a hydrocarbon fuel of approximately 2000 mg/kg, including 1571 mg/kg of diesel fuel
3) (c) = Sample contains a hydrocarbon fuel of approximately 3750 mg/kg, which does not match diesel fuel
4) Blank = Not Analyzed
5) < = Not Detected at or above Reporting Limit
6) (d) = TPH was analyzed by EPA method 418.1 allowing quantitation of the sum of all three hydrocarbon fractions. This is not a specific hydrocarbon determination method and is why proposed cleanup levels for individual hydrocarbons have not been assigned. All samples with concentration of TPH above 10 mg/kg are shown in the table.
7) Samples B1-1-1 through Tank Cluster were collected and analyzed by PG&E in 1987. Samples SB-1-1b through OW-5-9 were collected and analyzed by ARI in 1991 and 1991. SB-1 = Soil Boring 1; 1b = sample number; OW-5 = Observation well 5; 5 = sample number.
8) (e) = Sample could not be collected undisturbed.
9) (f) The basis for the proposed cleanup levels is discussed in Chapter 4.0.

VOLUME OF SOILS TO BE REMEDIATED

APPROXIMATELY 2,250 CUBIC YARDS

- The horizontal extent of contamination was estimated by assuming the contamination spread horizontally half the distance between contaminated and uncontaminated sample points

- The contamination spread vertically down to 8.5 feet (approximate depth to groundwater) below ground surface over the whole area



Source: PG & E Underground Tank Investigation Report.

AQUA RESOURCES, INC.
BERKELEY, CALIFORNIA

PG & E ENCON-Gas T & D Construction Yard

Estimated Area to be Remediated

JOB NO. 90262

Figure ES-2

DATE: July 23, 1991

REMEDIATION ALTERNATIVES

- Off-site Thermal Treatment and Recycling
- Off-site Recycling into Road Materials
- Off-site Disposal
- Bioremediation
- Asphalt Incorporation
- On-site Thermal Treatment

RECOMMENDED REMEDIATION PROGRAM

- REMEDIATE SOILS IMPACTED BY PRIOR PETROLEUM HYDROCARBON RELEASES IN THE FORMER UNDERGROUND TANK CLUSTER AREA

- EXCAVATION

- CONFIRMATION SAMPLING

- REMEDIATE SOILS BY OFF-SITE THERMAL TREATMENT RECYCLING

- CONTINUE GROUNDWATER MONITORING FOR AT LEAST ONE YEAR AND PERFORM A TREND ANALYSIS TO DETERMINE IF GROUNDWATER QUALITY IS IMPROVING

Pacific Gas and Electric Company
One California Street, Room F-235
San Francisco, CA 94106
415/973-5615

91 SEP 10 AM 9:21

September 9, 1991

Alameda County Health Care Services Agency
Department of Environmental Health
Division of Hazardous Materials
80 Swan Way, Room 200
Oakland, CA 94621

Attn.: Ms. Cynthia Chapman
Hazardous Materials Specialist

Subject: Transmittal of Remediation Investigation Report and Feasibility Study and Site Closure Plan
PG&E, ENCON Gas Transmission and Distribution Construction Yard, Former Tank Cluster Area 4930 Coliseum Way, Oakland, California

Dear Ms. Chapman:

Enclosed for your review and comments are the final Remediation Investigation Report and Feasibility Study for the aforementioned property. These reports were prepared in accordance with your discussion with our project consultant, Mr. Clarence Tenley, Aqua Resources, Inc., during a November 16, 1990 meeting and also subsequent conversations.

The reports were prepared in conformance with the standard engineering practices, the criteria and procedures contained in the State of California Leaking Underground Fuel Tank Manual (LUFT, October 1989), and the Tri-Regional Board staff recommendations for Primary Evaluation of Underground Tank Sites.

Your agency's comments and approval of the Site Closure Plan is greatly appreciated. With your concurrence, we hope to undertake the cleanup of the aforementioned property commencing September 23, 1991. To assist you in your review and answer any questions you may have, we would like to schedule a meeting with you to present our findings and proposed closure plan. We would like to meet with you during the week of September 23, 1991. Please call me and confirm a date and time for our meeting with you.

I can be contacted at (415) 973-5615. My address is:

Wally A. Pearce
Pacific Gas and Electric Company
ENCON Gas T&D
1 California Street, Room F235
San Francisco, CA 94106

Also if you have any questions prior to our meeting, please feel free to call me. Your assistance with this project is greatly appreciated.

Wally A. Pearce
Staff Safety Engineer

WAP:rmm

cc: Regional Water Quality Control Board (RWQCB)

Enclosures

Pacific Gas and Electric Company

One California Street, Room F-235
San Francisco, CA 94106
415/973-5615

4930 Coliseum Way
Oak. 94601

May 31, 1991

Mr. Aria Levy
Hazardous Materials Specialist
Division of Hazardous Materials
Department of Environmental Health
Alameda Health Agency
80 Swan Way
Oakland, CA 94621

Dear Mr. Levy:

Here are the results of the quarterly monitoring report performed this April at the Coliseum Way (Gas Yard). Ground water samples collected from the monitoring Wells OW-1 through OW-4 and a fifth well, OW-5 was installed on April 16, 1991, at the east end of the yard. The intent of Well OW-5 was to aid in determining if upgradient sources of fuel contamination may impact the site. Prior to sampling, three casing volumes were purged from each well.

Groundwater samples collected from each well were analyzed for extractable petroleum hydrocarbons as diesel (TPH-D, EPA 8015/EPA 3550) total petroleum hydrocarbons (TPH, EPA method 418.1), volatile organic compounds (EPA methods 601/602), and total dissolved solid (TDS, EPA method 160.1).

One trip blank was analyzed for purgeable aromatics (EPA method 602) for quality control purposes. The sample designated OW-3-2 is a duplicate sample of OW-3-1 collected from monitoring Well OW-3.

Table 1. Summarizes the analytical results for petroleum hydrocarbons detected in the groundwater samples collected in April 1991. TPH-Diesel was detected in monitoring well OW-4 at 0.58 mg/1. Hydrocarbon fuels which did not match diesel fuels were detected in samples from OW-3 and OW-5 at 0.7 mg/1 and 0.6 mg/1. All samples were below the method detection limit for TPH.

Table 2. Presents the results for volatile organics compounds. Several volatile organics were detected in all groundwater samples. Maximum contaminant level (MCL) for 1, 1-Dichloroethane of 5 ug/1 AWS exceeded in monitoring Wells OW-3 (16 ug/1) and OW-4 (6.1 ug/1). Samples from OW-1 (0.63 ug/1) and OW-3 (0.55 ug/1) exceeded the MCL for 1,2-Dichloroethane. In OW-1,1,4 Dichlorobenzene was detected at 6.7 ug/1 above the MCL of 5 ug/1. The concentration of benzene in the new monitoring Well OW-5 was measured at 15 ug/1 exceeding the MCL of ug/1. All other organic compounds are below the MCL.

Elevations in OW-1, OW-2 and OW-5 confirm a general region groundwater flow direction to the southwest. Included in this report are groundwater contour maps prepared from collected data during the past monitoring events.

We are in the process of conducting investigatory activity at this site with the intent to submit site-closure recommendations to Alameda County during the latter part of 1991. The next quarterly sampling will be performed in late July or early August 1991. If you have any questions, please call me at (415) 973-5615.

Sincerely,

WALLY A. PEARCE

WAP:cp

Attachment

cc: Brain Hoefer
Jim McKenna
Jim Pope

Pacific Gas and Electric Company

One California Street, Room F-234
San Francisco, CA 94106
415/973-5600

December 4, 1990

Mr. Aria Levy
Hazardous Materials Specialist
Division of Hazardous Materials
Department of Environmental Health
Alameda Health Agency
80 Swan Way
Oakland, CA 94621

Dear Mr. Levy:

Here are the results of the groundwater monitoring performed in October 1990 at the Coliseum Way General Construction Gas Yard.

Groundwater samples collected from monitoring Wells OW-1 to OW-4 were analyzed for total hydrocarbons by IR (Standard method 503E), total petroleum hydrocarbons as diesel (EPA method 3510/8015), total petroleum hydrocarbons as gasoline (EPA method 5030/8015), and purgeable priority pollutants (EPA method 8240). The samples that were designated "OW-5" on the laboratory data sheets were blind duplicate samples collected from Well OW-3 for quality control purposes. Additionally, a field blank was analyzed as a quality control check on field sampling techniques. All samples were preserved as transmitted within allowable holding times under proper chain-of-custody record.

Table 1 summarizes the analytical results of petroleum hydrocarbons in the October collection samples. TPHS was detected in all the samples but TPH, TPHV and BTEX were not. Table 2 summarizes the analytical results for volatile organics in the October samples.

Water level measurements collected from the wells prior to sampling continue to indicate that the uppermost groundwater beneath the site continues to flow to the west-southwest towards Coliseum Way. Included in this report are groundwater contour maps prepared from data collected during this year's monitoring events.

The next quarterly sampling report will be performed in late March or early April 1991. If you have any further questions, please call me at (415) 973-5615.

Sincerely,

Wally A. Pearce

WAP:rmm

90 DEC -5 AM 10:50

Attachment

Pacific Gas and Electric Company

77 Beale Street
San Francisco, CA 94106
415/972-7000

October 20, 1988

Mr. Ariu Levy
Alameda County Health Department
Hazardous Materials Section
80 Swan Way, Room 200
Oakland, CA 94621

Dear Mr. Levy:

Attached is a copy of the underground tank site investigation for Pacific Gas and Electric Company's facility at 4930 Coliseum Way, Oakland, California.

This report includes a site description, background information, and results of the preliminary investigation. A summary of the results is on page 35 and our conclusions are on page 36 of the report.

Our next step is to prepare a site remediation plan. At your convenience, we would like to meet at the site and discuss options for remediation. Please let me know if you have any questions regarding this attached report.

Nancy Crane

NANCY L. CRANE
ENCON
Environmental Services

NLC:dr

Attachment

cc: Mr. Peter Johnson
Section Leader
Local Program
Regional Water Quality Control Board
San Francisco Bay Region
1111 Jackson, Room 6000
Oakland, CA 94607

2/87 TOG : 3500 ppm
IN TANK FARM AREA TO
5' DEPTH.

1/ft TANK Full
TOG TO 5-5,400 PPM IN TANK
FARM AREA
(DIESEL ANALYSIS = ND

4/ft GRND H_2O
ESSENTIALLY ND. OR BELOW
STATE LIMITS

soil 3-5 FT = DIRTY
TABLE 1

HOW DEEP WERE UST SAMPLES.

1) IF FUEL WAS STAB.
HORIZ & VERT CONTAMIN.
SHOWN ON MAP.

2) HOW DEEP WERE UST SAMPLES

3) EXPLAIN RELATIONSHIP OF
CONCLUSION #3 & 4

1/B/ft 5 UST REMOVED

UNDERGROUND STORAGE TANK UNAUTHORIZED RELEASE (LEAK) / CONTAMINATION SITE REPORT

EMERGENCY [X] YES [ ] NO

HAS STATE OFFICE OF EMERGENCY SERVICES REPORT BEEN FILED? [ ] YES [X] NO

REPORT DATE: 0M 2M 0D 1D 8Y 8Y

CASE #:

FOR LOCAL AGENCY USE ONLY
I HEREBY CERTIFY THAT I AM A DESIGNATED GOVERNMENT EMPLOYEE AND THAT I HAVE REPORTED THIS INFORMATION TO LOCAL OFFICIALS PURSUANT TO SECTION 25180.7 OF THE HEALTH AND SAFTY CODE.

SIGNED _____ DATE _____

REPORTED BY

NAME OF INDIVIDUAL FILING REPORT: Nancy L. Crane

PHONE: (415) 972-5764

SIGNATURE: Nancy L. Crane/dz

REPRESENTING [X] OWNER/OPERATOR [ ] REGIONAL BOARD [ ] LOCAL AGENCY [ ] OTHER _____

COMPANY OR AGENCY NAME: Pacific Gas & Electric Company

ADDRESS: 4930 Coliseum Way (STREET) Oakland (CITY) CA (STATE) 94601 (ZIP)

RESPONSIBLE PARTY

NAME: Pacific Gas & Electric Co. [ ] UNKNOWN

CONTACT PERSON: Nancy Crane

PHONE: (415) 972-5764

ADDRESS: 4930 Coliseum Way (STREET) Oakland (CITY) CA (STATE) 94601 (ZIP)

SITE LOCATION

FACILITY NAME (IF APPLICABLE): Gas Construction/PG&E

OPERATOR: Mike Montoya

PHONE: (415) 535-0600

ADDRESS: 4930 Coliseum Way (STREET) Oakland (CITY) Alameda (COUNTY) 94601 (ZIP)

CROSS STREET

TYPE OF AREA [ ] COMMERCIAL [ ] INDUSTRIAL [ ] RURAL [ ] RESIDENTIAL [ ] OTHER _____

TYPE OF BUSINESS [ ] RETAIL FUEL STATION [ ] FARM [ ] OTHER _____

IMPLEMENTING AGENCIES

LOCAL AGENCY — AGENCY NAME: Alameda County Health Agency

CONTACT PERSON: Ariu Levi

PHONE: (415) 874-7237

REGIONAL BOARD: San Francisco Bay RWQCB

CONTACT PERSON: Greg Zentner

PHONE: (415) 464-0840

SUBSTANCES INVOLVED

(1) NAME: Total petroleum hydrocarbons — QUANTITY LOST (GALLONS): _____ [X] UNKNOWN

(2) Total oil/grease — _____ [X] UNKNOWN

DISCOVERY/ABATEMENT

DATE DISCOVERED: 0M 1M 1D 3D 8Y 8Y

HOW DISCOVERED [ ] INVENTORY CONTROL [ ] SUBSURFACE MONITORING [ ] NUISANCE CONDITIONS [ ] TANK TEST [X] TANK REMOVAL [ ] OTHER _____

DATE DISCHARGE BEGAN: M M D D Y Y [X] UNKNOWN

HAS DISCHARGE BEEN STOPPED? [X] YES [ ] NO IF YES, DATE M M D D Y Y

METHOD USED TO STOP DISCHARGE (CHECK ALL THAT APPLY)
[ ] REMOVE CONTENTS [ ] REPLACE TANK [X] CLOSE TANK
[ ] REPAIR TANK [ ] REPAIR PIPING [ ] CHANGE PROCEDURE
[ ] OTHER _____

SOURCE/CAUSE

SOURCE OF DISCHARGE
[ ] TANK LEAK [X] UNKNOWN
[ ] PIPING LEAK
[ ] OTHER

TANKS ONLY/CAPACITY
_____ GAL.
AGE _____ YRS
[ ] UNKNOWN

MATERIAL
[ ] FIBERGLASS
[X] STEEL
[ ] OTHER _____

CAUSE(S)
[ ] OVERFILL [ ] RUPTURE/FAILURE
[ ] CORROSION [X] UNKNOWN
[ ] SPILL [ ] OTHER _____

CASE TYPE

CHECK ONE ONLY
[ ] UNDETERMINED [ ] SOIL ONLY [ ] GROUNDWATER [ ] DRINKING WATER - (CHECK ONLY IF WATER WELLS HAVE ACTUALLY BEEN AFFECTED)

CURRENT STATUS

CHECK ONE ONLY
[X] SITE INVESTIGATION IN PROGRESS (DEFINING EXTENT OF PROBLEM) [ ] CLEANUP IN PROGRESS [ ] SIGNED OFF (CLEANUP COMPLETED OR UNNECESSARY)
[ ] NO ACTION TAKEN [ ] POST CLEANUP MONITORING IN PROGRESS [ ] NO FUNDS AVAILABLE TO PROCEED [ ] EVALUATING CLEANUP ALTERNATIVES

REMEDIAL ACTION

CHECK APPROPRIATE ACTION(S) (SEE BACK FOR DETAILS)
[ ] CAP SITE (CD) [ ] EXCAVATE & DISPOSE (ED) [ ] REMOVE FREE PRODUCT (FP) [ ] ENHANCED BIO DEGRADATION (IT)
[ ] CONTAINMENT BARRIER (CB) [ ] EXCAVATE & TREAT (ET) [ ] PUMP & TREAT GROUNDWATER (GT) [ ] REPLACE SUPPLY (RS)
[ ] TREATMENT AT HOOKUP (HU) [ ] NO ACTION REQUIRED (NA) [ ] OTHER (OT) _____

COMMENTS

HSC 05 (4/87)

INSTRUCTIONS

EMERGENCY
Indicate whether emergency response personnel and equipment were involved at any time. If so, a Hazardous Material Incident Report should be filed with the State Office of Emergency Services (OES) at 2800 Meadowview Road, Sacramento, CA 95832. Copies of the OES report form may be obtained at your local underground storage tank permitting agency. Indicate whether the OES report has been filed as of the date of this report.

LOCAL AGENCY ONLY
To avoid duplicate notification pursuant to Health and Safety Code Section 25180.7, a designated government employee should sign and date the form in this block. A signature here does not mean that the leak has been determined to pose a significant threat to human health or safety, only that notification procedures have been followed if required.

REPORTED BY
Enter your name, telephone number, and address. Indicate which party you represent and provide company or agency name.

RESPONSIBLE PARTY
Enter name, telephone number, contact person, and address of the party responsible for the leak. The responsible party would normally be the tank owner.

SITE LOCATION
Enter information regarding the tank facility and surrounding area. At a minimum, you must provide the facility name and full address.

IMPLEMENTING AGENCIES
Enter names of the local agency and Regional Water Quality Control Board involved.

SUBSTANCES INVOLVED
Enter the name and quantity lost of the hazardous substance involved. Room is provided for information on two substances if appropriate. If more than two substances leaked, list the two of most concern for cleanup.

DISCOVERY/ABATEMENT
Provide information regarding the discovery and abatement of the leak.

SOURCE/CAUSE
Indicate source(s) of leak. Provide details on tank age; capacity and material if known. Check box(es) indicating cause of leak.

CASE TYPE
Indicate the case type category for this leak. Check one box only. Case type is based on the most sensitive resource affected. For example, if both soil and ground water have been affected, case type will be "Ground Water". Indicate "Drinking Water" only if one or more municipal or domestic water wells have actually been affected. A "Ground Water" designation does not imply that the affected water cannot be, or is not, used for drinking water, but only that water wells have not yet been affected. It is understood that case type may change upon further investigation.

CURRENT STATUS
Indicate the category which best describes the current status of the case. Check one box only. The response should be relative to the case type. For example, if case type is "Ground Water", then "Current Status" should refer to the status of the ground water investigation or cleanup, as opposed to that of soil.

IMPORTANT: THE INFORMATION PROVIDED ON THIS FORM IS INTENDED FOR GENERAL STATISTICAL PURPOSES ONLY AND IS NOT TO BE CONSTRUED AS REPRESENTING THE OFFICIAL POSITION OF ANY GOVERNMENTAL AGENCY

REMEDIAL ACTION
Indicate which actions have been used to cleanup or remediate the leak. Descriptions of options follow:

Cap Site - install horizontal impermeable layer to reduce rainfall infiltration.
Containment Barrier - install vertical dike to block horizontal movement of contaminant.
Excavate and Dispose - remove contaminated soil and dispose in approved site.
Excavate and Treat - remove contaminated soil and treat (includes spreading or land farming).
Remove Free Product - remove floating product from water table.
Pump and Treat Groundwater - generally employed to remove dissolved contaminants.
Enhanced Biodegradation - use of any available technology to promote bacterial decomposition of contaminants.
Replace Supply - provide alternative water supply to affected parties.
Treatment at Hookup - install water treatment devices at each dwelling or other place of use.
No Action Required - incident is minor, requiring no remedial action.

COMMENTS - Use this space to elaborate on any aspects of the incident.
SIGNATURE - Sign the form in the space provided.
DISTRIBUTION

If the form is completed by the tank owner or his agent, retain the last copy and forward the remaining copies in tact to your local tank permitting agency for distribution.

1. Original - Local Tank Permitting Agency
2. State Water Resources Control Board, Division of Water Quality, Underground Tank Program, P. O. Box 100, Sacramento, CA 95801
3. Regional Water Quality Control Board
4. County Board of Supervisors or designee to receive Proposition 65 notifications.
5. Owner/responsible party.

PACIFIC GAS AND ELECTRIC COMPANY

PG&E — 77 BEALE STREET • SAN FRANCISCO, CALIFORNIA 94106 • (415) 972-5740 • TWX 910-372-6587

NANCY L. CRANE
ENVIRONMENTAL COORDINATOR
GENERAL CONSTRUCTION
PERSONNEL & ADMINISTRATIVE
SERVICES DEPARTMENT

972 - 5764

February 3, 1988

Mr. Ariu Levy
Hazardous Materials Specialist
Alameda County Health Agency
470 27th St., Room 322
Oakland, CA 94612

Dear Mr. Levy:

Attached is our completed underground storage tank unauthorized release contamination site report for our facility at 4930 Coliseum Way, Oakland. Also included are the lab results from the samples taken.

I will be in contact with you soon to go over our plan of action to handle this site.

Sincerely,

Nancy L. Crane

Nancy L. Crane

NLC:dr

cc: Mr. Greg Zentner

Attachment

Pacific Gas and Electric Company

Robert C. Karfiol, P.E.
Water Quality Advisor
Environmental Services Department

One California Street, Room F-1635
San Francisco, CA 94106
415/972-7095
Fax 415/972-9201

aqua resources inc.
Consulting Engineers, Scientists & Managers

Frederick A. Tornatore
Sr. Environmental Scientist/Regulatory Specialist

2030 Addison St., Suite 500 • Berkeley, CA 94704 • 510 540-6954
FAX 510 540-7496

Pacific Gas and Electric Company

Wally A. Pearce
Safety Engineer
Gas Transmission and Distribution
Engineering and Construction

One California Street, Room F-235
San Francisco, CA 94111
415/973-5615/5616

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President

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