Pacific Gas and Electric Company

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

2-7095

sec. 973-5973
R-Karfiol
Rm F-1635

September 18, 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 month at the Coliseum Way Gas Yard in Oakland. Ground water samples were collected from the monitoring wells OW-1, OW-2, OW-3, OW-4, and OW-5 (new well). The new well OW-5 was installed on April 16, 1991, at the east end of the yard. Prior to sampling, three casing volumes were purged from each well. Ground water samples collected from each well were analyzed for extractable petroleum hydrocarbons: diesel (TPH-D), total oil and grease (SMWW 17:5520BF) and volatile organic compounds (EPA methods 8010 and 8020). One duplicate sample was taken from well OW-5.

As it was true in the last quarter, the presence of benzene in well OW-5 continues to suggest that a gradient (off-site) fuel leak still exists.

All collected samples were below the method detection limit for hydrocarbon oil and grease.

Water level measurements were collected on July 15, 1991, prior to sampling wells OW-1 through OW-5. Ground water elevations are related to a site specific coordinate system for consistency with previous reports. Ground water surface elevations are present in Figure 2 of the attached report. Elevations in OW-1 and OW-5 confirm a general regional ground water flow to the southwest.

We have submitted a closure plan proposal to:

Ms. Cynthia Chapman
Hazardous Materials Specialist
Department of Environmental Health
Alameda County Health and Care Services Agency

91 SEP 23 AM 8:15

We hope to meet with Ms. Chapman within the next few weeks for comments and approval of the proposed site closure plan which was submitted to her on September 9. We will continue to conduct ground water sampling and to supply you with respective data of the next scheduled ground water results in late November or early December 1991. If you have any questions, please call me at (415) 973-5615.

Sincerely,

Wally A. Pearce

WAP:rmm

Enclosure

Quarterly

Groundwater Monitoring Report

July 1991

PGandE
ENCON-GAS Transmission and Distribution Construction Yard
4930 Coliseum Way
Oakland, California

Prepared by:

Aqua Resources Inc.
2030 Addison Street, Suite 500
Berkeley, CA 94704

Report issued:
September 6, 1991

TABLE OF CONTENTS

APPENDICES

1.0 BACKGROUND

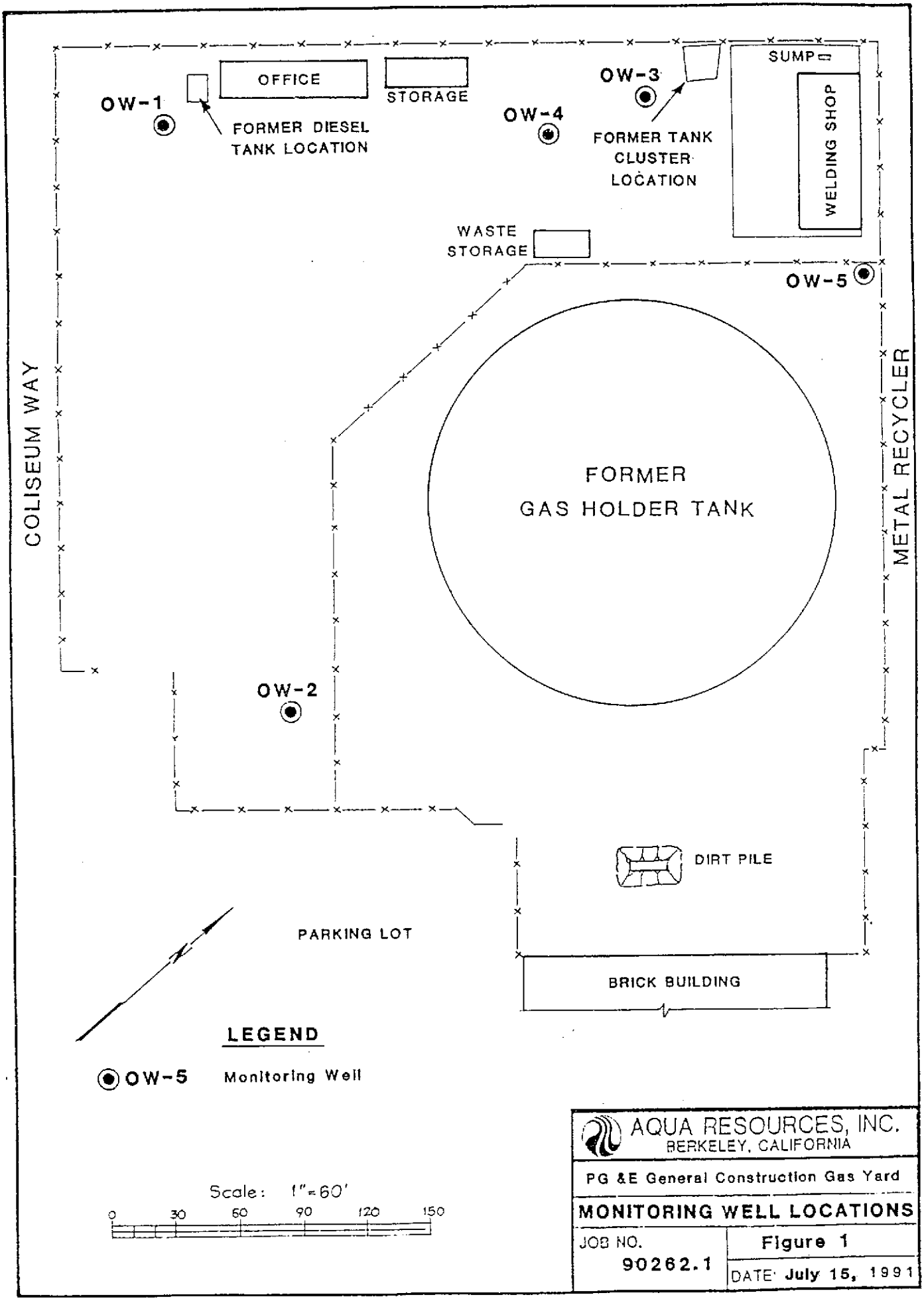
This report presents the results of the quarterly groundwater monitoring performed in July 1991 at the PG&E General Construction Gas Yard. The yard is located at 4930 Coliseum Way in Oakland, California. The groundwater analyses were performed to monitor the distribution of waste oil, solvents, and fuel compounds in the uppermost aquifer beneath the northwestern part of the yard, near the former sites of five underground storage tanks.

The tanks were excavated and removed in January 1988. Analysis of their contents revealed that of the four tanks formerly located in a cluster near the north corner of the yard, two tanks contained mineral spirits and two tanks contained heavy oil. A concrete sump formerly connected to the tank cluster is located approximately 50 feet northeast of the tank cluster. The fifth tank formerly located near the west corner of the yard contained diesel fuel.

2.0 SAMPLING ACTIVITIES

In addition to the four previously existing shallow monitoring wells OW-1 through OW-4, a fifth monitoring well, OW-5, was installed by Aqua Resources Inc. (ARI) on April 16, 1991 at the east end of the welding shop. The goal of this effort was to aid in determining if upgradient sources of fuel contamination may have impacted the site. Figure 1 presents the site plan including all monitoring wells. On July 15, 1991, groundwater samples were collected by ARI personnel from monitoring wells OW-1, OW-2, OW-3, OW-4, and the new well, OW-5. Prior to sampling, three casing volumes were purged from each well.

Groundwater samples collected from each well were analyzed by Curtis & Tompkins, Ltd. Analytical Laboratories, Berkeley, California for extractable petroleum hydrocarbons as diesel (TPH-D; LUFT Manual, October 1989), total oil and grease (SMWW 17:5520BF) and



AQUA RESOURCES, INC.
BERKELEY, CALIFORNIA

PG &E General Construction Gas Yard

MONITORING WELL LOCATIONS

JOB NO. 90262.1

Figure 1

DATE: July 15, 1991

volatile organic compounds (EPA methods 8010 and 8020). One duplicate sample was taken from well OW-5.

Certified laboratory results are presented in Appendix A. Chain-of-Custody documentation is provided in Appendix B.

3.0 ANALYTICAL RESULTS

Table 1 summarizes the analytical results for petroleum hydrocarbons detected in the groundwater samples collected in April 1991. TPH-Diesel was detected only in monitoring well OW-5 at 1.5 and 1.2 mg/l. All samples were below the method detection limit for hydrocarbon oil and grease.

Table 2 presents the analytical results for volatile organic compounds. Several volatile organics were detected in groundwater samples collected from OW-1, OW-3, OW-4, and OW-5. The State maximum contaminant level (MCL) for 1,1-Dichloroethane of 5 µg/l was exceeded in monitoring wells OW-3 (41 µg/l), OW-4 (9.4 µg/l), and OW-5 (7.2 and 8.6 µg/l). In OW-1, 1,4-Dichlorobenzene was detected at 14 µg/l, above the MCL of 5 µg/l. The concentration of benzene in the new monitoring well OW-5 was measured at 20 and 26 µg/l, exceeding the MCL of 1 µg/l. All other organic compounds are below the MCLs.

4.0 GROUNDWATER FLOW DIRECTION

Water level measurements were collected on July 15, 1991 prior to sampling wells OW-1 through OW-5. Groundwater elevations are related to a site specific coordinate system for consistency with previous reports. Groundwater surface elevations are presented in Figure 2. Elevations in OW-1, OW-2, and OW-5 confirm a general regional groundwater flow direction to the southwest.

Table 1. Petroleum Hydrocarbons in Groundwater, in mg/l

Well	Oil & Grease	TPH-Diesel
OW-1	ND	ND
OW-2	ND	ND
OW-3	ND	ND
OW-4	ND	ND
OW-5	ND	1.5
OW-5 (duplicate)	ND	1.2

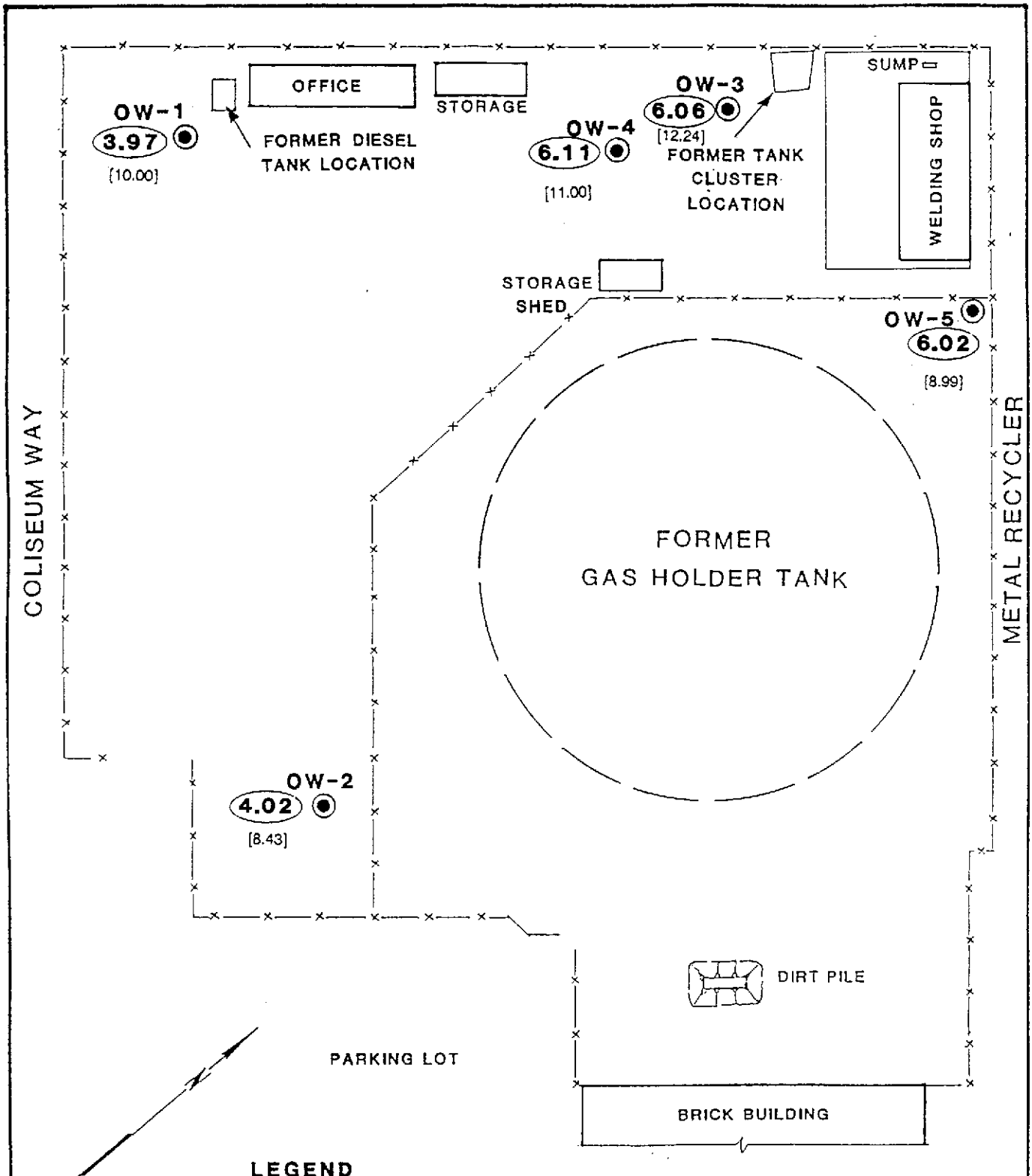
Notes:

1) ND = Not Detected at or above Method Detection Limit (MDL)
2) Oil & Grease = Hydrocarbon Oil & Grease (Gravimetric) Method SMWW 17:5520BF, Reporting Limit = 5 mg/l
3) TPH-Diesel = Extractable Petroleum Hydrocarbons, Diesel Range, LUFT Manual October 1989; Reporting Limit = 0.05 mg/l.

Table 2. Volatile Organic Compounds in Groundwater, in ug/l

PURGEABLE HALOCARBONS	MCL	RL	Well Number					
			OW-1	OW-2	OW-3	OW-4	OW-5	OW-5 (Duplicate)
Chloromethane		2	ND	ND	ND	ND	ND	ND
Vinyl chloride	0.5	2	ND	ND	ND	ND	ND	ND
Bromomethane		2	ND	ND	ND	ND	ND	ND
Chloroethane		2	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	150	1	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	6	1	ND	ND	ND	ND	ND	ND
Methylene Chloride	5#	2	ND	ND	ND	ND	ND	ND
Trans-1,2-Dichloroethene	10	1	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	5	1	4.6	ND	41	9.4	7.2	8.6
Chloroform	100#*	1	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	200	1	ND	ND	ND	ND	26	30
Carbon Tetrachloride	0.5	1	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.5	1	ND	ND	ND	ND	ND	ND
Trichloroethene	5	1	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	5	1	ND	ND	ND	ND	ND	ND
Bromodichloromethane	100#*	1	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	5***	1	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	5***	1	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	32	1	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5	1	ND	ND	ND	ND	ND	ND
Dibromochloromethane	100#*	1	ND	ND	ND	ND	ND	ND
Chlorobenzene	30	1	ND	ND	2	ND	ND	ND
Bromoform	100#*	1	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	1	1	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene		1	2.9	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	5	1	14	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	600#	1	ND	ND	ND	ND	ND	ND
PURGEABLE AROMATICS								
Benzene	1	1	ND	ND	ND	ND	20	26
Toluene	1000#	1	ND	ND	ND	ND	ND	ND
Chlorobenzene	30	1	ND	ND	2	ND	ND	ND
Ethylbenzene	680	1	ND	ND	ND	ND	ND	ND
Total xylenes	1750**	1	ND	ND	ND	ND	4	5
1,3-Dichlorobenzene		1	2.9	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	5	1	14	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	600#	1	ND	ND	ND	ND	ND	ND

Notes:
1) RL = Reporting 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 8010)
9) Purgeable Aromatics (EPA method 8020)



LEGEND

OW-5 Monitoring Well

5.54 [10.00] Groundwater Elevation (site specific) / Top of Well Casing Elevation (site specific)

Scale: 1"=60'

0 30 60 90 120 150

AQUA RESOURCES, INC.
BERKELEY, CALIFORNIA

PG & E ENCON-Gas T & D Construction Yard

POTENTIOMETRIC ELEVATIONS

JOB NO. 90262

Figure 2

DATE: July 15, 1991

5.0 CONCLUSIONS

Results of analyses performed on groundwater samples collected in April 1991 from monitoring wells OW-1, OW-2, OW-3, OW-4, and OW-5 show that diesel fuel was detected only in OW-5 above the method detection limit.

Samples from OW-1, OW-3, OW-4, and OW-5 exceeded the maximum contaminant level for certain volatile organic compounds for drinking water. Benzene, detected in OW-5 above the MCL, might indicate an upgradient (off-site) source of fuel contamination. Groundwater flow across most of the site appears to be to the southwest toward Coliseum Way.

APPENDIX A

CERTIFIED LABORATORY RESULTS

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

DATE RECEIVED: 07/15/91
DATE REPORTED: 07/31/91

AQUA RESOURCES, INC
RECEIVED
AUG - 2 1991
JOB NO. 90262
FILE lab results

LAB NUMBER: 104506

CLIENT: AQUA RESOURCES, INC.

PROJECT ID: 90262

LOCATION: PG&E

RESULTS: SEE ATTACHED

QA/QC Approval

Final Approval

Curtis & Tompkins, Ltd.

Client: Aqua Resources

Laboratory Login Number: 104506

Project Name: PG & E
Project Number: 90262

Report Date: 31 July 91

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric) **METHOD: SMWW 17:5520BF**

Lab ID	Sample ID	Matrix	Sampled	Received	Analyzed	Result	Units	RL	Analyst	QC Batch
104506-001	OW-1-1	Water	15-JUL-91	15-JUL-91	26-JUL-91	ND	mg/L	5	TR	2163
104506-004	OW-2-1	Water	15-JUL-91	15-JUL-91	26-JUL-91	ND	mg/L	5	TR	2163
104506-007	OW-4-1	Water	15-JUL-91	15-JUL-91	26-JUL-91	ND	mg/L	5	TR	2163
104506-010	OW-3-1	Water	15-JUL-91	15-JUL-91	26-JUL-91	ND	mg/L	5	TR	2163
104506-013	OW-5-1	Water	15-JUL-91	15-JUL-91	26-JUL-91	ND	mg/L	5	TR	2163
104506-014	OW-5-1A	Water	15-JUL-91	15-JUL-91	26-JUL-91	ND	mg/L	5	TR	2163

ND = Not Detected at or above Reporting Limit (RL).

Curtis & Tompkins, Ltd.

Q C B a t c h R e p o r t

Client: Aqua Resources
Project Name: PG & E
Project Number: 90262

Laboratory Login Number: 104506
Report Date: 31 July 91

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric) **QC Batch Number: 2163**

Blank Results

Sample ID	Result	MDL	Units	Method	Date Analyzed
BLANK	ND	5	mg/L	SMWW 17:5520BF	26-JUL-91

Spike/Duplicate Results

Sample ID	Recovery	Method	Date Analyzed
BS	88%	SMWW 17:5520BF	26-JUL-91
BSD	85%	SMWW 17:5520BF	26-JUL-91

		Control Limits
Average Spike Recovery	86%	80% - 120%
Relative Percent Difference	3.5%	< 20%

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 104506
CLIENT: AQUA RESOURCES, INC.
PROJECT ID: 90262
LOCATION: PG&E

DATE RECEIVED: 07/15/91
DATE EXTRACTED: 07/22/91
DATE ANALYZED: 07/23,24/91
DATE REPORTED: 07/31/91

Extractable Petroleum Hydrocarbons in Aqueous Solutions
California DOHS Method
LUFT Manual October 1989

LAB ID	CLIENT ID	KEROSENE RANGE (ug/L)	DIESEL RANGE (ug/L)	REPORTING LIMIT* (ug/L)
104506-2	OW-1-2	ND	ND	50
104506-5	OW-2-2	ND	ND	50
104506-8	OW-4-2	ND	ND	50
104506-11	OW-3-2	ND	ND	50
104506-15	OW-5-2	ND	1,500	50
104506-16	OW-5-2a	ND	1,200	50

ND = Not detected at or above reporting limit.

*Reporting limit applies to all analytes.

QA/QC SUMMARY

RPD, %	9
RECOVERY, %	98

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 104506-3
CLIENT: AQUA RESOURCES, INC.
PROJECT ID: 90262
LOCATION: PG&E
SAMPLE ID: OW-1-3

DATE RECEIVED: 07/15/91
DATE ANALYZED: 07/25/91
DATE REPORTED: 07/31/91

EPA 8010
Purgeable Halocarbons in Water

Compound	Result ug/L	Reporting Limit ug/L
chloromethane	ND	2.0
bromomethane	ND	2.0
vinyl chloride	ND	2.0
chloroethane	ND	2.0
methylene chloride	ND	2.0
trichlorofluoromethane	ND	1.0
1,1-dichloroethene	ND	1.0
1,1-dichloroethane	4.6	1.0
cis-1,2-dichloroethene	ND	1.0
trans-1,2-dichloroethene	ND	1.0
chloroform	ND	1.0
freon 113	ND	1.0
1,2-dichloroethane	ND	1.0
1,1,1-trichloroethane	ND	1.0
carbon tetrachloride	ND	1.0
bromodichloromethane	ND	1.0
1,2-dichloropropane	ND	1.0
cis-1,3-dichloropropene	ND	1.0
trichloroethylene	ND	1.0
1,1,2-trichloroethane	ND	1.0
trans-1,3-dichloropropene	ND	1.0
dibromochloromethane	ND	1.0
2-chloroethyl vinyl ether	ND	2.0
bromoform	ND	1.0
tetrachloroethene	ND	1.0
1,1,2,2-tetrachloroethane	ND	1.0
chlorobenzene	ND	1.0
1,3-dichlorobenzene	2.9	1.0
1,2-dichlorobenzene	ND	1.0
1,4-dichlorobenzene	14	1.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	14
RECOVERY, %	80

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 104506-3
CLIENT: AQUA RESOURCES, INC.
PROJECT ID: 90262
LOCATION: PG&E
SAMPLE ID: OW-1-3

DATE RECEIVED: 07/15/91
DATE ANALYZED: 07/25/91
DATE REPORTED: 07/31/91

EPA 8020: Volatile Aromatic Hydrocarbons in Water

COMPOUND	RESULT ug/L	REPORTING LIMIT ug/L
Benzene	ND	1.0
Toluene	ND	1.0
Ethyl Benzene	ND	1.0
Total Xylenes	ND	1.0
Chlorobenzene	ND	1.0
1,4-Dichlorobenzene	14	1.0
1,3-Dichlorobenzene	2.9	1.0
1,2-Dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	3
RECOVERY, %	106

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 104506-6
CLIENT: AQUA RESOURCES, INC.
PROJECT ID: 90262
LOCATION: PG&E
SAMPLE ID: OW-2-3

DATE RECEIVED: 07/15/91
DATE ANALYZED: 07/25/91
DATE REPORTED: 07/31/91

EPA 8010
Purgeable Halocarbons in Water

Compound	Result ug/L	Reporting Limit ug/L
chloromethane	ND	2.0
bromomethane	ND	2.0
vinyl chloride	ND	2.0
chloroethane	ND	2.0
methylene chloride	ND	2.0
trichlorofluoromethane	ND	1.0
1,1-dichloroethene	ND	1.0
1,1-dichloroethane	ND	1.0
cis-1,2-dichloroethene	ND	1.0
trans-1,2-dichloroethene	ND	1.0
chloroform	ND	1.0
freon 113	ND	1.0
1,2-dichloroethane	ND	1.0
1,1,1-trichloroethane	ND	1.0
carbon tetrachloride	ND	1.0
bromodichloromethane	ND	1.0
1,2-dichloropropane	ND	1.0
cis-1,3-dichloropropene	ND	1.0
trichloroethylene	ND	1.0
1,1,2-trichloroethane	ND	1.0
trans-1,3-dichloropropene	ND	1.0
dibromochloromethane	ND	1.0
2-chloroethyl vinyl ether	ND	2.0
bromoform	ND	1.0
tetrachloroethene	ND	1.0
1,1,2,2-tetrachloroethane	ND	1.0
chlorobenzene	ND	1.0
1,3-dichlorobenzene	ND	1.0
1,2-dichlorobenzene	ND	1.0
1,4-dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	14
RECOVERY, %	80

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 104506-6
CLIENT: AQUA RESOURCES, INC.
PROJECT ID: 90262
LOCATION: PG&E
SAMPLE ID: OW-2-3

DATE RECEIVED: 07/15/91
DATE ANALYZED: 07/25/91
DATE REPORTED: 07/31/91

EPA 8020: Volatile Aromatic Hydrocarbons in Water

COMPOUND	RESULT ug/L	REPORTING LIMIT ug/L
Benzene	ND	1.0
Toluene	ND	1.0
Ethyl Benzene	ND	1.0
Total Xylenes	ND	1.0
Chlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	3
RECOVERY, %	106

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 104506-12
CLIENT: AQUA RESOURCES, INC.
PROJECT ID: 90262
LOCATION: PG&E
SAMPLE ID: OW-3-3

DATE RECEIVED: 07/15/91
DATE ANALYZED: 07/25/91
DATE REPORTED: 07/31/91

EPA 8010
Purgeable Halocarbons in Water

Compound	Result ug/L	Reporting Limit ug/L
chloromethane	ND	2.0
bromomethane	ND	2.0
vinyl chloride	ND	2.0
chloroethane	ND	2.0
methylene chloride	ND	2.0
trichlorofluoromethane	ND	1.0
1,1-dichloroethene	ND	1.0
1,1-dichloroethane	41	1.0
cis-1,2-dichloroethene	ND	1.0
trans-1,2-dichloroethene	ND	1.0
chloroform	ND	1.0
freon 113	ND	1.0
1,2-dichloroethane	ND	1.0
1,1,1-trichloroethane	ND	1.0
carbon tetrachloride	ND	1.0
bromodichloromethane	ND	1.0
1,2-dichloropropane	ND	1.0
cis-1,3-dichloropropene	ND	1.0
trichloroethylene	ND	1.0
1,1,2-trichloroethane	ND	1.0
trans-1,3-dichloropropene	ND	1.0
dibromochloromethane	ND	1.0
2-chloroethyl vinyl ether	ND	2.0
bromoform	ND	1.0
tetrachloroethene	ND	1.0
1,1,2,2-tetrachloroethane	ND	1.0
chlorobenzene	2.0	1.0
1,3-dichlorobenzene	ND	1.0
1,2-dichlorobenzene	ND	1.0
1,4-dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	14
RECOVERY, %	80

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 104506-12
CLIENT: AQUA RESOURCES, INC.
PROJECT ID: 90262
LOCATION: PG&E
SAMPLE ID: OW-3-3

DATE RECEIVED: 07/15/91
DATE ANALYZED: 07/25/91
DATE REPORTED: 07/31/91

EPA 8020: Volatile Aromatic Hydrocarbons in Water

COMPOUND	RESULT ug/L	REPORTING LIMIT ug/L
Benzene	ND	1.0
Toluene	ND	1.0
Ethyl Benzene	ND	1.0
Total Xylenes	ND	1.0
Chlorobenzene	2.0	1.0
1,4-Dichlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	3
RECOVERY, %	106

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 104506-9
CLIENT: AQUA RESOURCES, INC.
PROJECT ID: 90262
LOCATION: PG&E
SAMPLE ID: OW-4-3

DATE RECEIVED: 07/15/91
DATE ANALYZED: 07/25/91
DATE REPORTED: 07/31/91

EPA 8010
Purgeable Halocarbons in Water

Compound	Result ug/L	Reporting Limit ug/L
chloromethane	ND	2.0
bromomethane	ND	2.0
vinyl chloride	ND	2.0
chloroethane	ND	2.0
methylene chloride	ND	2.0
trichlorofluoromethane	ND	1.0
1,1-dichloroethene	ND	1.0
1,1-dichloroethane	9.4	1.0
cis-1,2-dichloroethene	ND	1.0
trans-1,2-dichloroethene	ND	1.0
chloroform	ND	1.0
freon 113	ND	1.0
1,2-dichloroethane	ND	1.0
1,1,1-trichloroethane	ND	1.0
carbon tetrachloride	ND	1.0
bromodichloromethane	ND	1.0
1,2-dichloropropane	ND	1.0
cis-1,3-dichloropropene	ND	1.0
trichloroethylene	ND	1.0
1,1,2-trichloroethane	ND	1.0
trans-1,3-dichloropropene	ND	1.0
dibromochloromethane	ND	1.0
2-chloroethyl vinyl ether	ND	2.0
bromoform	ND	1.0
tetrachloroethene	ND	1.0
1,1,2,2-tetrachloroethane	ND	1.0
chlorobenzene	ND	1.0
1,3-dichlorobenzene	ND	1.0
1,2-dichlorobenzene	ND	1.0
1,4-dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	14
RECOVERY, %	80

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 104506-9
CLIENT: AQUA RESOURCES, INC.
PROJECT ID: 90262
LOCATION: PG&E
SAMPLE ID: OW-4-3

DATE RECEIVED: 07/15/91
DATE ANALYZED: 07/25/91
DATE REPORTED: 07/31/91

EPA 8020: Volatile Aromatic Hydrocarbons in Water

COMPOUND	RESULT ug/L	REPORTING LIMIT ug/L
Benzene	ND	1.0
Toluene	ND	1.0
Ethyl Benzene	ND	1.0
Total Xylenes	ND	1.0
Chlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	3
RECOVERY, %	106

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 104506-17
CLIENT: AQUA RESOURCES, INC.
PROJECT ID: 90262
LOCATION: PG&E
SAMPLE ID: OW-5-3

DATE RECEIVED: 07/15/91
DATE ANALYZED: 07/25/91
DATE REPORTED: 07/31/91

EPA 8010
Purgeable Halocarbons in Water

Compound	Result ug/L	Reporting Limit ug/L
chloromethane	ND	2.0
bromomethane	ND	2.0
vinyl chloride	ND	2.0
chloroethane	ND	2.0
methylene chloride	ND	2.0
trichlorofluoromethane	ND	1.0
1,1-dichloroethene	ND	1.0
1,1-dichloroethane	7.2	1.0
cis-1,2-dichloroethene	ND	1.0
trans-1,2-dichloroethene	ND	1.0
chloroform	ND	1.0
freon 113	ND	1.0
1,2-dichloroethane	ND	1.0
1,1,1-trichloroethane	26	1.0
carbon tetrachloride	ND	1.0
bromodichloromethane	ND	1.0
1,2-dichloropropane	ND	1.0
cis-1,3-dichloropropene	ND	1.0
trichloroethylene	ND	1.0
1,1,2-trichloroethane	ND	1.0
trans-1,3-dichloropropene	ND	1.0
dibromochloromethane	ND	1.0
2-chloroethyl vinyl ether	ND	2.0
bromoform	ND	1.0
tetrachloroethene	ND	1.0
1,1,2,2-tetrachloroethane	ND	1.0
chlorobenzene	ND	1.0
1,3-dichlorobenzene	ND	1.0
1,2-dichlorobenzene	ND	1.0
1,4-dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	14
RECOVERY, %	80

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 104506-17
CLIENT: AQUA RESOURCES, INC.
PROJECT ID: 90262
LOCATION: PG&E
SAMPLE ID: OW-5-3

DATE RECEIVED: 07/15/91
DATE ANALYZED: 07/25/91
DATE REPORTED: 07/31/91

EPA 8020: Volatile Aromatic Hydrocarbons in Water

COMPOUND	RESULT ug/L	REPORTING LIMIT ug/L
Benzene	20	1.0
Toluene	ND	1.0
Ethyl Benzene	ND	1.0
Total Xylenes	4.0	1.0
Chlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	3
RECOVERY, %	106

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 104506-18
CLIENT: AQUA RESOURCES, INC.
PROJECT ID: 90262
LOCATION: PG&E
SAMPLE ID: OW-5-3a

DATE RECEIVED: 07/15/91
DATE ANALYZED: 07/25/91
DATE REPORTED: 07/31/91

EPA 8010
Purgeable Halocarbons in Water

Compound	Result ug/L	Reporting Limit ug/L
chloromethane	ND	2.0
bromomethane	ND	2.0
vinyl chloride	ND	2.0
chloroethane	ND	2.0
methylene chloride	ND	2.0
trichlorofluoromethane	ND	1.0
1,1-dichloroethene	ND	1.0
1,1-dichloroethane	8.6	1.0
cis-1,2-dichloroethene	ND	1.0
trans-1,2-dichloroethene	ND	1.0
chloroform	ND	1.0
freon 113	ND	1.0
1,2-dichloroethane	ND	1.0
1,1,1-trichloroethane	30	1.0
carbon tetrachloride	ND	1.0
bromodichloromethane	ND	1.0
1,2-dichloropropane	ND	1.0
cis-1,3-dichloropropene	ND	1.0
trichloroethylene	ND	1.0
1,1,2-trichloroethane	ND	1.0
trans-1,3-dichloropropene	ND	1.0
dibromochloromethane	ND	1.0
2-chloroethyl vinyl ether	ND	2.0
bromoform	ND	1.0
tetrachloroethene	ND	1.0
1,1,2,2-tetrachloroethane	ND	1.0
chlorobenzene	ND	1.0
1,3-dichlorobenzene	ND	1.0
1,2-dichlorobenzene	ND	1.0
1,4-dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	14
RECOVERY, %	80

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 104506-18
CLIENT: AQUA RESOURCES, INC.
PROJECT ID: 90262
LOCATION: PG&E
SAMPLE ID: OW-5-3a

DATE RECEIVED: 07/15/91
DATE ANALYZED: 07/25/91
DATE REPORTED: 07/31/91

EPA 8020: Volatile Aromatic Hydrocarbons in Water

COMPOUND	RESULT ug/L	REPORTING LIMIT ug/L
Benzene	26	1.0
Toluene	ND	1.0
Ethyl Benzene	ND	1.0
Total Xylenes	5.0	1.0
Chlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	3
RECOVERY, %	106

APPENDIX B

CHAIN-OF-CUSTODY DOCUMENTATION

10450c

AQUA RESOURCES, INC.

SHIPMENT NO.: 1

CHAIN OF CUSTODY RECORD

PAGE 1 OF 2

PROJECT NAME: PG&E

DATE 07/15/91

PROJECT NO.: 90262

Sample Number	Location	Type of Sample: Material	Type of Sample: Method	Type of Container	Type of Preservation: Temp	Type of Preservation: Chemical	Analysis Required
OW-1-1		Water	Bailer	~~Jar~~ Jar	3°C	H_2SO_4	O&G
OW-1-2				Jar		None	TEH-Diesel
OW-1-3				VOC vials		HCl	8010/8020
Blank1				Jar		H_2SO_4	O&G ⊗
Blank2				Jar		None	TEH-Diesel ⊗
Blank3				VOC vials		HCl	8010/8020 ⊗
OW-2-1				Jar		H_2SO_4	O&G
OW-2-2				Jar		None	TEH-Diesel
OW-2-3				VOC vials		HCl	8010/8020
OW-4-1				Jar		H_2SO_4	O&G
OW-4-2				Jar		None	TEH-Diesel
OW-4-3				VOC vials		HCl	8010/8020
OW-3-1				Jar		H_2SO_4	O&G
OW-3-2				Jar		None	TEH-Diesel
OW-3-3				VOC vials		HCl	8010/8020
OW-5-1				Jar		H_2SO_4	O&G
OW-5-1a				Jar		H_2SO_4	O&G
OW-5-2				~~VOC vials~~ Jar		None	TEH-Diesel
OW-5-2a				Jar		None	TEH-Diesel
OW-5-3				Jar		HCl	8010/8020

Total Number of Samples Shipped: 21 Sampler's Signature: Beate Neuenhofer

Relinquished By:	Received By:	Date / Time
Signature: Beate Neuenhofer	Signature:	Date: 7/15/91
Printed Name: BEATE NEUENHOFER	Printed Name: JOHN GOETZL	Time: 17:25
Company: ARI	Company: CURTIS & TOMPKINS	
Reason: for analysis at C&T		
Relinquished By:	Received By:	Date / Time
Signature:	Signature:	Date: / /
Printed Name:	Printed Name:	Time:
Company:	Company:	
Reason:		

REMARKS:

O&G ⇒ Oil & Grease (Petroleum Hydrocarbons) SHWW 5520 E,F/3550

TEH-Diesel ⇒ 8015/3550

⊗ Please, hold Equipment Blanks until results of samples are in.

Special Shipment / Handling / Storage Requirements:

24526

AQUA RESOURCES, INC.

SHIPMENT NO.: _____

CHAIN OF CUSTODY RECORD

PAGE 2 OF 2

DATE 7/15/91

PROJECT NAME: PG&E

PROJECT NO.: 90262

Sample Number	Location	Type of Sample		Type of Container	Type of Preservation		Analysis Required
		Material	Method		Temp	Chemical	
OW-5-30		Water	Bailer	VOC vial	3°C	HCl	8010/8020

Total Number of Samples Shipped: 21 | Sampler's Signature: Beate Neuenhofer

Relinquished By: Signature: Beate Neuenhofer Printed Name: BEATE NEUENHOFER Company: ARI Reason: chemical analyses @ C+T	Received By: Signature: Printed Name: JOHN GOUCHE Company: CURTIS & TOMPKINS	Date: 7/15/91 Time: 17:25
Relinquished By: Signature: Printed Name: Company: Reason:	Received By: Signature: Printed Name: Company:	Date: / / Time:

REMARKS:

Special Shipment / Handling / Storage Requirements: