EXXON COMPANY, U.S.A.

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ALCO
HAZMAT

94 FEB -3 PM 12: 12

January 31, 1994

Ms. Juliet Shin
Alameda County Department of Environmental Health
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, CA 94621

RE: Exxon RAS #7-0104, 1725 Park Street, Alameda, CA

Dear Ms. Shin:

Attached for your review and comment is a report entitled **Letter Report Fourth Quarter 1993 Groundwater Monitoring and Remediation Activities** for the above referenced site. This report, prepared by RESNA Industries, Inc., of Novato, California, details the results of the Fourth Quarter 1993 groundwater monitoring and sampling events.

If you have any questions or comments, or require additional information, please contact me at the above listed phone number.

Sincerely,

Marla D. Guensler

Marla D. Guensler
Senior Environmental Engineer

MDG/mdg

enclosure: RESNA Fourth Quarter 1993 Report dated January 19, 1994

cc: w/attachment:
Mr. Richard Hiett - San Francisco Bay RWQCB

w/o attachment:
Mr. Marc Briggs - RESNA - San Jose

RESNA
Working To Restore Nature

3315 Almaden Expressway, Suite 34
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LETTER REPORT
FOURTH QUARTER 1993
GROUNDWATER MONITORING
AND
REMEDIATION ACTIVITIES
at
Exxon Service Station No. 7-0104
1725 Park Street
Alameda, California

170077.01

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January 19, 1994
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170077.01

Ms. Marla Guensler
Exxon Company, U.S.A.
P.O. Box 4032
2300 Clayton Road
Concord, California 94520

Subject: Letter Report, Fourth Quarter 1993 Groundwater Monitoring and Remediation Activities at Exxon Station 7-0104, 1725 Park Street, Alameda, California

Ms. Guensler:

As requested by Exxon Company U.S.A. (Exxon), this letter report summarizes the methods and results of the fourth quarter 1993 groundwater monitoring and remediation activities performed by RESNA Industries Inc. (RESNA) at the above-referenced site. The site is located on the western corner of the intersection of Park Street and Eagle Avenue in Alameda, California, as shown on the Site Vicinity Map (Plate 1).

Exxon has contracted with RESNA to perform quarterly groundwater monitoring, sampling, and analyses; evaluate the groundwater flow direction and gradient, and gasoline hydrocarbon concentrations in the local groundwater; and perform remediation activities. The locations of the groundwater monitoring wells and pertinent site features are shown on the Generalized Site Plan (Plate 2). Remediation activities at this site currently consists of pumping groundwater from groundwater extraction wells EW-1 through EW-5, and passing the groundwater through subsurface collection piping to an aboveground treatment system located east of the station building. Extracted groundwater is then passed through a bioreactor, sediment filtration unit, and activated carbon adsorption canisters for treatment. After treatment, groundwater is discharged into East Bay Municipal Utility District (EBMUD) sanitary sewer.

Groundwater Sampling and Gradient Evaluation

RESNA personnel performed quarterly groundwater monitoring and sampling on November 15 and 16, 1993. During field work at the site, RESNA personnel measured depth-to-water

(DTW) levels, subjectively analyzed the groundwater for the presence of separate phase hydrocarbons, and purged and sampled monitoring wells MW-1 through MW-10 for laboratory analysis. Wells MW-2 and MW-5 were not sampled due to the presence of separate phase product. Extraction wells EW-1 through EW-5 are incorporated into the remediation system and were not accessible for purging and sampling. The results of the subjective analyses are summarized in Table 1, Cumulative Groundwater Monitoring Data and Results of Laboratory Analyses of Groundwater Samples. Field methods are described in RESNA's Field Protocol (RESNA, June 30, 1993).

RESNA calculated groundwater elevations for each well by subtracting the measured DTW from the elevation of the wellhead. The measured DTW levels, wellhead elevations, and groundwater elevations for this and the previous monitorings at the site are summarized in Table 1. Based on the November 15, 1993 data, the interpreted local groundwater surface consists of an apparent depression in the vicinity of wells MW-2, MW-5, EW-2, and EW-3. The evaluated groundwater flow direction was to the northeast with an approximate gradient of 0.03, as shown on Plate 3, Groundwater Gradient Map. This flow direction and gradient are not consistent with those from the previous quarter. Groundwater elevations at the site decreased an average of 0.6 feet since last quarter.

Monitoring wells MW-1, MW-3, MW-4, and MW-6 through MW-10 were purged and sampled in accordance with RESNA's field protocol (RESNA, June 30, 1993). Well purge data sheets for the parameters monitored are included in Appendix A.

Results of Laboratory Analysis

Groundwater samples collected from monitoring wells MW-1, MW-3, MW-4, and MW-6 through MW-10 were analyzed for gasoline constituents total petroleum hydrocarbons as gasoline (TPHg) and benzene, toluene, ethylbenzene, and total xylenes (BTEX) using modified Environmental Protection Agency (EPA) Methods 5030/8015/8020. Groundwater samples were analyzed by PACE Incorporated Laboratories (California Hazardous Waste Testing Laboratory Certification No. 1282) in Novato, California. The laboratory analyses reports and chain of custody records are included in Appendix B. The results of these and previous groundwater analyses are summarized in Table 1. Concentrations of TPHg and BTEX in the groundwater are shown on Plate 4, Gasoline Hydrocarbon Concentrations in Groundwater.

Results of the laboratory analysis of groundwater samples from monitoring wells MW-1, MW-3, MW-4, and MW-6 through MW-10 indicate:

- TPHg and BTEX were not detected at concentrations equal to

or greater than the laboratory method detection limits (MDLs) of 50 parts per billion (ppb) and 0.5 ppb, respectively, in wells MW-8 through MW-10;

- TPHg was detected in wells MW-1, MW-3, MW-4, MW-6, and MW-7 at concentrations ranging from 410 ppb (MW-6) to 7,400 ppb (MW-7);

- benzene was detected in wells MW-1, MW-3, MW-4, MW-6, and MW-7 at concentrations ranging from 18 ppb (MW-1) to 820 ppb (MW-4). These concentrations are greater than the State of California Department of Health Services (DHS) Maximum Contaminant Level (MCL) of 1.0 ppb benzene in drinking water;

- except for toluene in wells MW-3 (400 ppb) and MW-4 (160 ppb), toluene, ethylbenzene, and total xylenes were detected in wells MW-1, MW-3, MW-4, MW-6, and MW-7 at concentrations less than the DHS Drinking Water Action Level (DWAL) of 100 ppb toluene, and MCLs of 680 ppb ethylbenzene and 1,750 ppb total xylenes in drinking water.

Groundwater Remediation System

The interim groundwater remediation system (system) was installed in February 1993 to treat dissolved phase petroleum hydrocarbons in groundwater extracted from the first water-bearing zone beneath the site. The extraction system consists of five pneumatic pumps in on-site extraction wells EW-1 through EW-5, collection piping, and associated instrumentation and controls. The treatment system consists of two main modules: treatment via a bioreactor and post-treatment via filtration followed by carbon polishing. The treatment module consists of a bioreactor, two 200-pound vapor-phase granular activated carbon (GAC) canisters, and associated aeration, nutrient and caustic supply systems. Off gases generated during aeration are polished via two 200-pound vapor-phase carbon canisters. The post-treatment consists of a dual-chamber sand filter, a bag filter, and three 200-pound liquid-phase GAC canisters connected in series. Effluent from the system is discharged to the sanitary sewer regulated by the EBMUD. Sampling ports were installed at various locations of the treatment system and are designated as follows:

"influent"	Composite water sample from recovery wells
"bioreactor"	Water sample from the first compartment of the bioreactor
"A"	Effluent from bioreactor, influent to first GAC canister
"B"	Effluent from second GAC canister, influent to third GAC canister
"C"	Effluent from third GAC canister into sanitary sewer

Modifications to the System

Modifications to the system have been made to increase operating efficiency. Since the bioprocess monitoring of the bioreactor has shown that the bioreactor has been inactive since approximately August of 1993, a removable trickling filter media was installed in the third chamber of the bioreactor on December 7, 1993. The trickling filter media will help to establish an attached culture system rather than a suspended culture system, and will minimize biomass accumulation in the sand filters, bag filters, and the GACs downstream of the bioreactor.

The use of aeration as a supplemental oxygen source for the microbes will be temporarily discontinued. When the bioreactor is supplied with microbes and nutrients, hydrogen peroxide will be added to the bioreactor to serve as the supplemental oxygen source. Additionally, the use of the caustic supply system will also be discontinued because pH fluctuations are not anticipated.

System Field Procedures

Monitoring and maintenance of the System was conducted by RESNA in accordance with the Operation and Maintenance Manual for the system. RESNA personnel visited the site weekly during the month of April 1993 to assess the performance of the interim remediation system. Beginning in May 1993, operation and maintenance of the system has been performed by RESNA bi-weekly.

Sampling of the system is being performed monthly in accordance with the requirements and procedures of the self-monitoring program associated with the EBMUD wastewater discharge permit. A copy of the EBMUD wastewater discharge permit is included in Appendix C. Monthly air monitoring is also being performed in accordance with the guidelines of the Bay Area Air Quality Management District (BAAQMD).

Analytical Results of Interim Remediation System Water Samples

This quarter influent and effluent water samples were collected from the remediation system on October 6, October 15, November 9, December 9, and December 22, 1993. Table 2,

Cumulative Operation and Performance Data for Groundwater Remediation System, summarizes the results of laboratory analysis. Laboratory analytical results of groundwater samples collected from the influent and effluent sample ports of the system indicated:

October 6, 1993:

- The influent sample had a TPHg concentration of 5,000 ppb, and BTEX concentrations of 810 ppb, 56 ppb, 100 ppb, and 460 ppb, respectively.

- Groundwater samples "A", "B", and "C" had TPHg concentrations of 740 ppb, less than the MDL of 50 ppb, and 390 ppb, respectively; benzene concentrations were 18 ppb, less than the MDL of 0.5 ppb, and 7.5 ppb, respectively; toluene concentrations were 1.3 ppb, less than the MDL of 0.5 ppb, and 0.6 ppb, respectively; ethylbenzene concentrations were less than the MDL of 0.5 ppb; and total xylene concentrations were 39 ppb, less than the MDL of 0.5 ppb, and 18 ppb, respectively.

The benzene and total xylene concentrations from sample point "C" were above the maximum allowable discharge limit of 0.005 ppm and 0.011 ppm, respectively.

October 15, 1993:

- The influent sample had a TPHg concentration of 2,300 ppb, and BTEX concentrations of 770 ppb, 38 ppb, 40 ppb, and 220 ppb, respectively.

- Groundwater samples "A", "B", and "C" had TPHg concentrations of 530 ppb, 69 ppb, and less than the MDL of 50 ppb, respectively; benzene concentrations were 17 ppb, 0.5 ppb, and less than the MDL of 0.5 ppb, respectively; toluene concentrations were 3.0 ppb, and less than the MDL of 0.5 ppb from "B" and "C"; ethylbenzene concentrations were less than the MDL of 0.5 ppb; and total xylene concentrations were 33 ppb, and less than the MDL of 0.5 ppb from "B" and "C".

November 9, 1993:

Influent samples were not collected for analyses because bioprocess monitoring will not go into effect until the bioreactor is inoculated. In accordance with EBMUD permit conditions, additional effluent water samples were collected for inorganic analysis using EPA Method 7060 (arsenic), EPA Method 7470 (mercury), EPA Method 6010/200.7 (cadmium, chromium, copper, iron, lead, nickel, silver, zinc); total cyanides using EPA Method 335.2; volatile organics compounds (VOCs) using EPA Method 624; and extractable organics compounds (EOCs) using EPA Method 625. Laboratory analytical results of groundwater samples indicated:

- Groundwater samples "A", "B", and "C" had TPHg concentrations of 550 ppb, and less than the MDL of 50 ppb in "B" and "C"; benzene concentrations were 20 ppb, and less than the MDL of 0.5 ppb in "B" and "C"; toluene and ethylbenzene concentrations were less than the MDL of 0.5 ppb; and total xylenes concentrations were 19 ppb, and less than the MDL of 0.5 ppb from "B" and "C".

- For groundwater sample "A", metals, arsenic, and total cyanides in water were less than their respective MDLs, except for zinc (0.27 ppm); VOCs were less than their respective MDLs, except for benzene (16 ppb), tetrachloroethene (86 ppb), and total xylenes (20 ppb); and, EOCs were less than their respective MDLs.

  For groundwater sample "B", metals, arsenic, and total cyanides in water were less than their respective MDLs, except for iron (0.1 ppm) and zinc (0.18 ppm); VOCs were less than their respective MDLs; and, EOCs were less than their respective MDLs.

  For groundwater sample "C", metals, arsenic, and total cyanides in water were less than their respective MDLs, except for zinc (0.08 ppm) which is less than the maximum allowable discharge limit of 5 ppm; VOCs were less than their respective MDLs; and, EOCs were less than their respective MDLs.

December 9, 1993:

- Groundwater samples "A", "B", and "C" had TPHg concentrations of 1,500 ppb, and less than the MDL of 50 ppb from "B" and "C"; benzene concentrations were 130 ppb, less than the MDL of 0.5 ppb, and 3.6 ppb, respectively; toluene concentrations were 350 ppb, less than the MDL of 0.5 ppb, and 9.5 ppb, respectively; ethylbenzene concentrations were 10 ppb, and less than the MDL of 0.5 ppb from "B" and "C"; and total xylene concentrations were 820 ppb, and less than the MDL of 0.5 ppb from "B" and "C".

December 22, 199.

Effluent groundwater samples collected from sample point "C" on December 9, 1993, indicated that carbon breakthrough was beginning to occur at the third GAC. To verify the effluent results, confirmation water samples were collected and the groundwater extraction system was shutdown. Laboratory analytical results of confirmation water samples indicated:

- TPHg concentration was 190 ppb, benzene concentration was 1.9 ppb, toluene concentration was 1.6 ppb, ethylbenzene concentrations were less than the MDL, and total xylene concentrations were 10 ppb.

Discussion of Analytical Results of Interim Remediation System Water Samples

The detectable concentrations in the effluent collected from sample point "C" on October 6, 1993 were attributed to a possible sample mislabeling. Water samples were collected on October 15, 1993, as confirmation, and the remediation system was shutdown until the samples were analyzed. The analytical results indicated TPHg and BTEX were not detected at their respective MDLs and the system was restarted on October 28, 1993. Because concentrations of benzene (3.6 ppb) and toluene (9.5 ppb) were detected in sample "C" collected on December 9, 1993, confirmation effluent samples from sample point "C" were collected on December 22, 1993 and the remediation system was shutdown until analytical results were available. The results of the confirmation effluent sample indicated detectable concentrations, which were below the permitted discharge limits of 5.0 μg/l (ppb) for benzene, 12.0 ppb for toluene, 5.0 ppb for ethylbenzene, and 11.0 ppb for total xylenes in accordance with the EBMUD permit allowable discharge conditions. All other "C" designated water samples were below the MDL for TPHg and BTEX. The system was

restarted on December 29, 1993

Air monitoring was performed on the off-gases from the system using a photoionization detector (PID) at influent to the first carbon canister, in between the two carbon canisters, and at the effluent of the second carbon canister. The field measurements of the air monitoring indicated concentrations below the BAAQMD allowable discharge conditions (10 parts per million by volume TPHg). The air monitoring data are summarized in Table 3, Cumulative Air Monitoring Data.

Based on RESNA's field data, the interim remediation system has treated approximately 160,488 gallons of groundwater during the fourth quarter 1993, for a cumulative total of 932,928 gallons treated since startup of the interim groundwater remediation system. Approximately 0.70 gallons (based on an extraction rate of 2.5 gpm) of TPHg has been removed during this quarter, for a cumulative total of 3.67 gallons of TPHg removed since system start-up in February 1993. Table 2, Cumulative Operation and Performance Data for Groundwater Remediation System, summarizes the total cumulative discharge recorded during each sampling event. Copies of RESNA's Facility Inspection Logs and Carbon Breakthrough Calculations are included in Appendices D and E, respectively.

Limitations

This report was prepared in accordance with generally accepted standards of environmental geological and engineering practices in California at the time this investigation was performed. This report has been prepared for Exxon Company U.S.A. and any reliance on this report by third parties shall be at such party's sole risk.

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If you have any questions or comments regarding this letter report, please call (408) 264-7723.

Sincerely,
RESNA Industries Inc.

Jeanne Buckthal

Jeanne Buckthal
Staff Geologist

Dora Beck

Dora Beck
Project Engineer

REGISTERED GEOLOGIST
JAMES LEWIS NELSON
No. 1463
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

James L. Nelson
Certified Engineering Geologist No. 1463

Enclosures: References

Plate 1	Site Vicinity Map
Plate 2	Generalized Site Plan
Plate 3	Groundwater Gradient Map (November 15, 1993)
Plate 4	Gasoline Hydrocarbon Concentrations in Groundwater
Table 1	Cumulative Groundwater Monitoring Data and Results of Laboratory Analyses of Groundwater Samples
Table 2	Cumulative Operation and Performance Data for Groundwater Remediation System
Table 3	Cumulative Air Monitoring Data
Appendix A:	Well Purge Data Sheets
Appendix B:	Laboratory Analysis Reports and Chain of Custody Record
Appendix C:	Wastewater Discharge Permit
Appendix D:	Facility Inspection Logs
Appendix E:	Carbon Breakthrough Calculations

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Quarterly Groundwater Monitoring and Remediation Activities — January 19, 1994
Exxon Station 7-0104, Alameda, California — 170077.01

STATEMENT OF CERTIFICATION

I certify under penalty of law that this document and all attachments are prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered an evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge or belief, true, accurate, including the possibility of fine and imprisonment for knowing violations.

EXXON COMPANY, U.S.A

Date:_____

Marla D. Guensler
Senior Environmental Engineer

REFERENCES CITED

RESNA Industries Inc. June 30, 1993. Groundwater Monitoring Status Report, Exxon Station 7-0104, 1725 Park Street, Alameda, California 170077.01

Source: U.S. Geological Survey
7.5-Minute Quadrangles
Oakland East/Oakland West, California
Photorevised 1980

N

Approximate Scale
2000 1000 0 2000
feet

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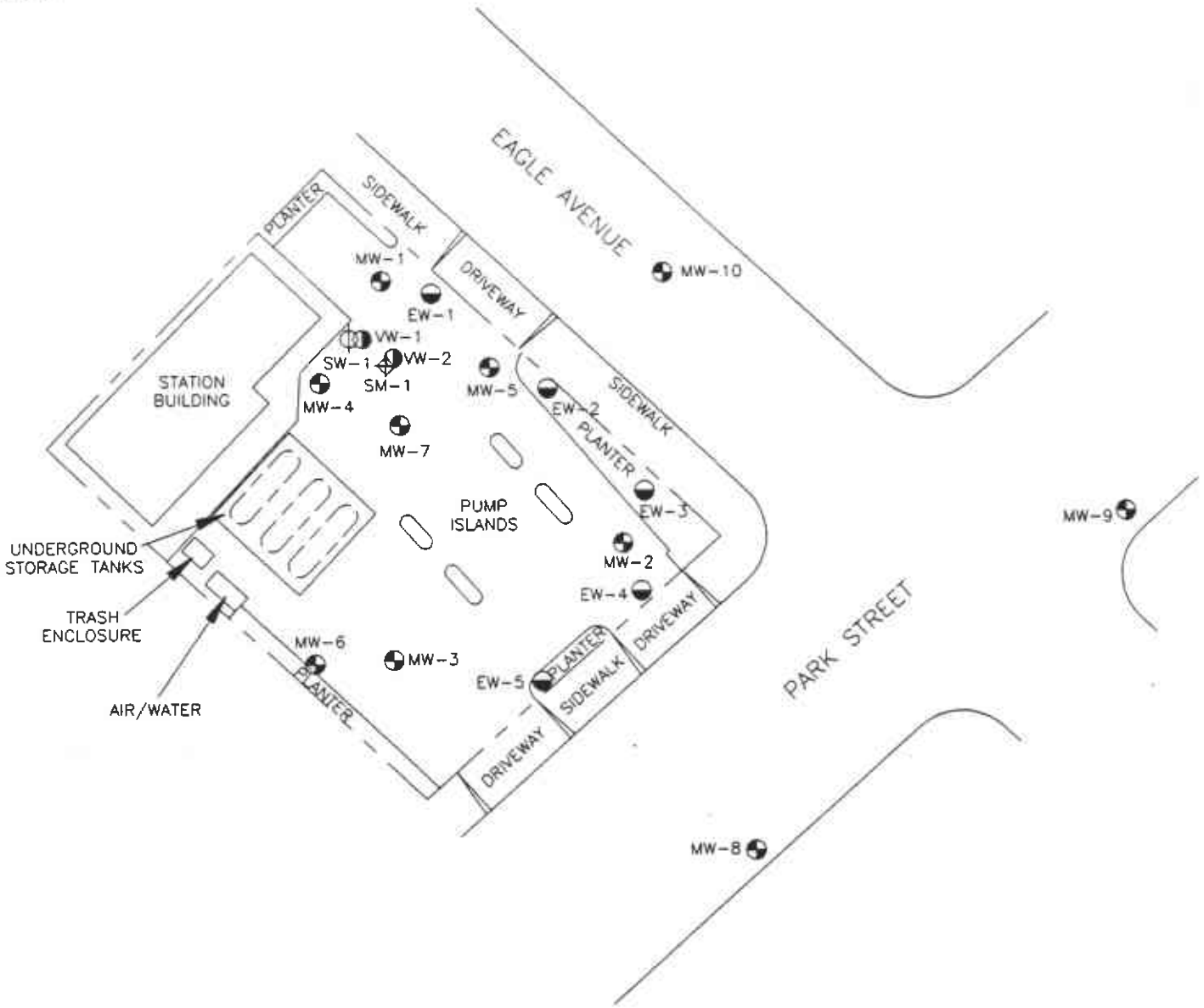
SITE VICINITY MAP
Exxon Service Station 7-0104
1725 Park Street
Alameda, California

PLATE
1

170077Q4



EXPLANATION

MW-10 = Groundwater monitoring well

EW-5 = Groundwater extraction well

VW-2 = Vapor well

SW-1 = Air-sparging well

SM-1 = Sparge monitoring point

N

Approximate Scale

40 20 0 40

feet

Source: Modified from map supplied by Harding Lawson Associates, 1992; survey by Ron Archer, Civil Engineer, Inc., 1993

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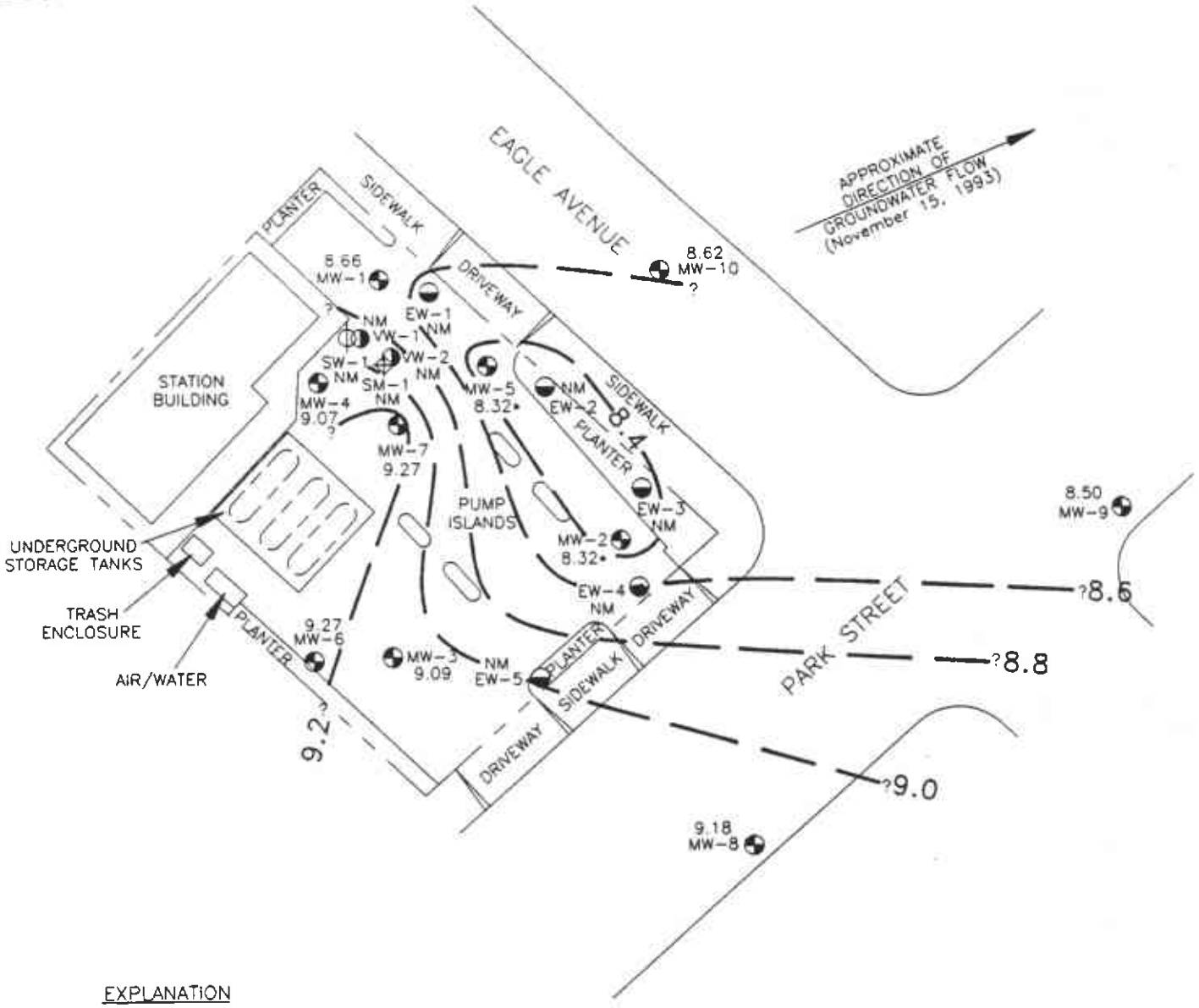
GENERALIZED SITE PLAN
Exxon Service Station 7-0104
1725 Park Street
Alameda, California

PLATE 2

170077Q4



EXPLANATION

9.2 — = Approximate line of equal elevation of groundwater in feet above mean sea level (MSL)

9.27 = Elevation of groundwater in feet above MSL, November 15, 1993

* = Free-phase petroleum hydrocarbons present

NM = Not monitored

MW-10 = Groundwater monitoring well

EW-5 = Groundwater extraction well

VW-2 = Vapor well

SW-1 = Air-sparging well

SM-1 = Sparge monitoring point

N

Approximate Scale

40 20 0 40

feet

Source: Modified from map supplied by Harding Lawson Associates, 1992; survey by Ron Archer, Civil Engineer, Inc., 1993

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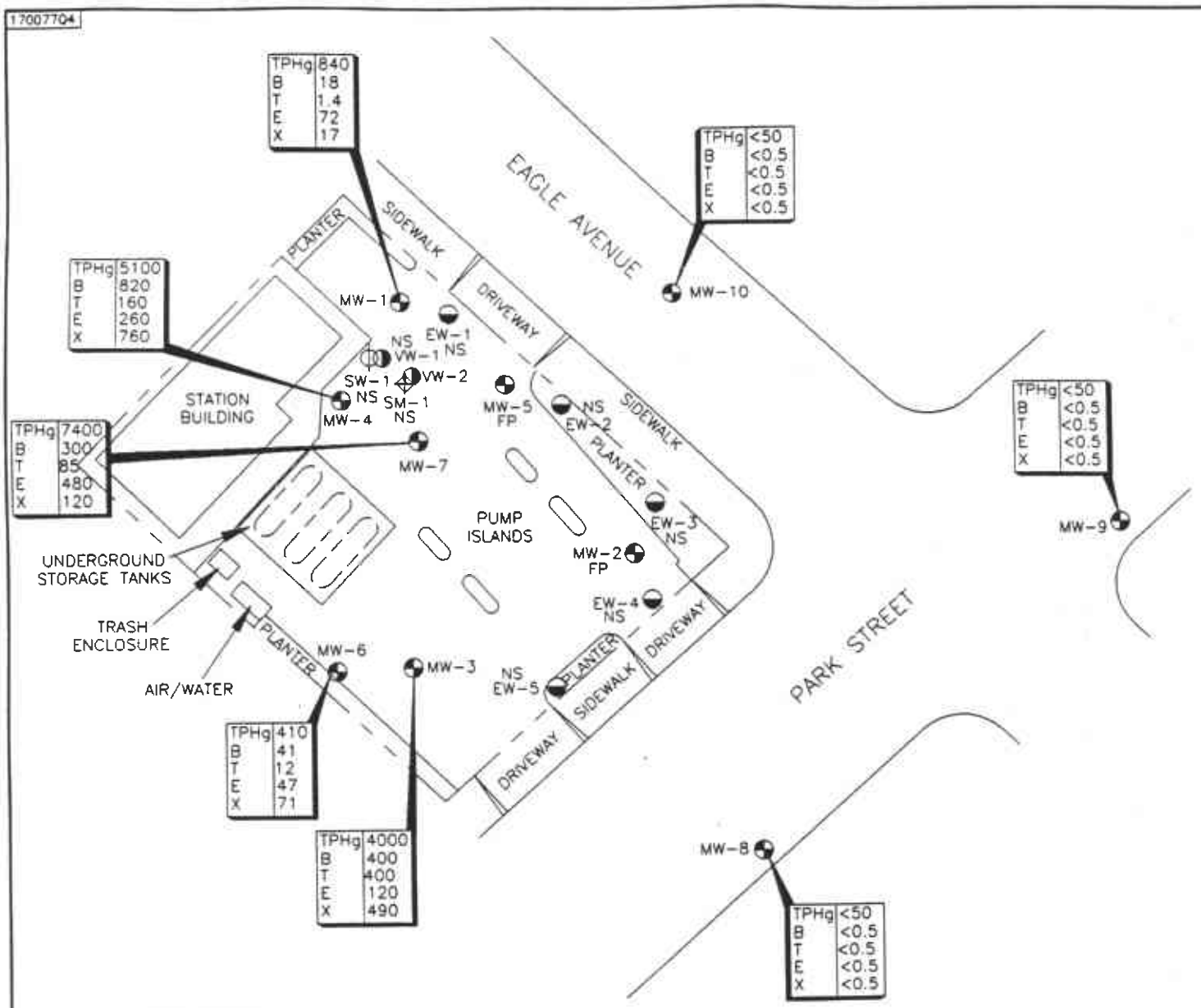
GROUNDWATER GRADIENT MAP
Exxon Service Station 7-0104
1725 Park Street
Alameda, California

PLATE 3



EXPLANATION

TPHg 7400
B 300
T 85
E 480
X 120
= Concentrations of gasoline hydrocarbons in groundwater in parts per billion, November 16, 1993

FP = Free-phase petroleum hydrocarbons

NS = Not sampled

MW-10 = Groundwater monitoring well

EW-5 = Groundwater extraction well

VW-2 = Vapor well

SW-1 = Air-sparging well

SM-1 = Sparge monitoring point

Approximate Scale

40 20 0 40

feet

Source: Modified from map supplied by Harding Lawson Associates, 1992; survey by Ron Archer, Civil Engineer, Inc., 1993

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GASOLINE HYDROCARBON CONCENTRATIONS IN GROUNDWATER
Exxon Service Station 7-0104
1725 Park Street
Alameda, California

PLATE 4

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TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA AND
RESULTS OF LABORATORY ANALYSES OF GROUNDWATER SAMPLES
Exxon Service Station 7-0104
1725 Park Street
Alameda, California
(Page 1 of 8)

Well ID # (TOC)	Sampling Date	SUBJ	DTW	Elev.	TPHg	B	T	E	X
		<	feet	>	<	parts per billion			>
MW-1	06/07/88	---	---	---	27,000	5,000	77	1,100	2,700
(17.35)	06/10/88	NFP	6.35	11.00	---	---	---	---	---
	01/17/89	NFP	5.81	11.54	6,800	2,000	91	800	1,600
	01/24/89	NFP	5.16	12.19	---	---	---	---	---
	06/01/89	sheen	6.27	11.08	1,700	170	6.9	13	230
	09/18/89	NFP	7.11	10.24	2,100	9.0	53	18	130
	10/20/89	NFP	7.28	10.07	---	---	---	---	---
	11/22/89	NFP	7.02	10.33	---	---	---	---	---
	12/11/89	NFP	6.60	10.75	5,800	200	42	290	330
	02/13/90	NFP	6.02	11.33	---	---	---	---	---
	03/07/90(a)	---	---	---	---	---	---	---	---
	03/13/90	NFP	5.91	11.44	2,300	430	14	16	220
	04/18/90	NFP	6.18	11.17	---	---	---	---	---
	05/23/90	NFP	6.29	11.06	---	---	---	---	---
	06/14/90	NFP	6.19	11.28	32,000	1,400	19	<5	120
	08/21/90	NFP	7.03	10.32	---	---	---	---	---
	09/19/90	NFP	7.26	10.09	950	290	2.9	<0.5	27
	12/17/90	NFP	6.75	10.60	2,100	550	13	350	110
	01/31/91	NFP	6.78	10.57	---	---	---	---	---
	02/25/91	NFP	6.59	10.76	---	---	---	---	---
	03/19/91	NFP	5.85	11.50	1,400	900	45	390	150
	04/22/91	sheen	5.72	11.63	---	---	---	---	---
	05/17/91	NFP	6.00	11.35	---	---	---	---	---
	07/24/91	NFP	6.79	10.56	9,700	1,300	670	950	2,100
	09/10/91	NFP	7.25	10.10	---	---	---	---	---
	09/23/91	NFP	7.33	10.02	---	---	---	---	---
	10/21/91	NFP	7.53	9.82	---	---	---	---	---
	10/22/91	---	---	---	40	220	1.8	110	7.8
	11/18/91	NFP	7.13	10.22	---	---	---	---	---
	12/11/91	NFP	7.25	10.10	---	---	---	---	---
	01/21/92	NFP	6.54	10.81	1,800	650	23	300	64
	02/20/92	NFP	4.82	12.53	---	---	---	---	---
	03/19/92	NFP	5.24	12.11	---	---	---	---	---
	04/24/92	NFP	5.71	11.64	4,900	1,600	78	660	250
	05/13/92	NFP	5.99	11.36	---	---	---	---	---
	06/24/92	NFP	6.65	10.70	---	---	---	---	---
	07/16/92	NFP	6.72	10.63	3,400	1,000	11	550	100
	08/19/92	NFP	7.07	10.28	---	---	---	---	---
	09/24/92	NFP	7.36	9.99	3,700	1,300	21	330	<10
	02/05/93	NFP	5.21	12.14	11,000	2,400	160	1,400	790
	04/30/93	NFP	5.88	11.47	6,500	330	320	640	1,300
	05/14/93	NFP	7.22	10.13	---	---	---	---	---
	07/15/93	NFP	8.01	9.34	7,600	270	62	1,100	1,000
	11/16/93	NFP	8.69	8.66	840	18	1.4	72	17
	11/30/93	---	8.38	8.69	---	---	---	---	---

See notes on page 8 of 8

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TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA AND
RESULTS OF LABORATORY ANALYSES OF GROUNDWATER SAMPLES
Exxon Service Station 7-0104
1725 Park Street
Alameda, California
(Page 2 of 8)

Well ID # (TOC)	Sampling Date	SUBJ	DTW	Elev.	TPHg	B	T	E	X
		<	feet	>	<	parts per billion			>
MW-2	06/07/88	---	---	---	110,000	12,000	12,000	2,100	12,000
(16.67)	06/10/88	NFP	6.20	10.47	---	---	---	---	---
	01/17/89	NFP	5.96	10.71	30,000	6,600	3,300	1,600	7,700
	01/24/89	NFP	5.04	11.63	---	---	---	---	---
	06/01/89	sheen	6.32	10.35	8,700	330	280	680	1,200
	09/18/89	NFP	6.73	9.94	17,000	580	280	570	220
	10/20/89	NFP	6.87	9.80	---	---	---	---	---
	11/22/89	NFP	6.80	9.87	---	---	---	---	---
	12/11/89	NFP	6.67	10.10	32,000	1,000	850	310	1,200
	02/13/90	NFP	6.12	10.65	---	---	---	---	---
	03/13/90	NFP	6.02	10.65	39,000	3,500	1,500	2,100	3,900
	04/18/90	NFP	6.35	10.32	---	---	---	---	---
	05/23/90	NFP	6.28	10.39	---	---	---	---	---
	06/14/90	NFP	6.14	10.53	34,000	3,800	730	1,600	3,900
	08/21/90	NFP	6.70	9.97	---	---	---	---	---
	09/19/90	NFP	6.84	9.83	63,000	670	180	390	1,000
	12/17/90	NFP	6.46	10.21	140,000	3,700	2,500	3,000	8,300
	01/31/91	sheen	6.66	10.01	---	---	---	---	---
	02/25/91	NFP	6.50	10.17	---	---	---	---	---
	03/19/91	sheen	5.76	10.91	48,000	4,500	1,600	2,100	5,500
	04/22/91	NFP	5.78	10.89	---	---	---	---	---
	05/17/91	NFP	6.01	10.66	---	---	---	---	---
	07/24/91	NFP	6.43	10.24	49,000	3,500	2,200	2,000	6,400
	09/10/91	NFP	6.81	9.86	---	---	---	---	---
	09/23/91	NFP	6.82	9.85	---	---	---	---	---
	10/21/91	NFP	7.01	9.66	---	---	---	---	---
	10/22/91	---	---	---	34,000	3,700	1,100	1,800	5,200
	11/18/91	NFP	6.66	10.01	---	---	---	---	---
	12/11/91	NFP	6.85	9.82	---	---	---	---	---
	01/21/92	NFP	6.22	10.45	21,000	4,600	1,300	1,700	5,100
	02/20/92	NFP	5.28	11.39	---	---	---	---	---
	03/19/92	NFP	5.34	11.33	---	---	---	---	---
	04/24/92	sheen	5.75	10.92	36,000	5,000	970	2,300	5,200
	05/13/92	NFP	5.95	10.72	---	---	---	---	---
	06/24/92	NFP	6.39	10.28	---	---	---	---	---
	07/16/92	sheen	6.50	10.17	42,000	3,500	490	1,800	3,700
	08/19/92	NFP	6.69	9.98	---	---	---	---	---
	09/24/92	sheen	6.74	9.93	26,000	3,600	670	1,700	3,300
	02/05/93	0.01	5.56	*11.10	---	---	---	---	---
	04/30/93	sheen	5.78	10.89	280,000	11,000	6,500	5,500	160,000
	05/14/93(c)	---	---	---	---	---	---	---	---
	07/15/93	0.01	7.89	*8.79	---	---	---	---	---
	11/16/93	0.02	8.37	*8.32	---	---	---	---	---
	11/30/93	---	7.93	8.74	---	---	---	---	---

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RESNA
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TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA AND
RESULTS OF LABORATORY ANALYSES OF GROUNDWATER SAMPLES
Exxon Service Station 7-0104
1725 Park Street
Alameda, California

Well ID # (TOC)	Sampling Date	SUBJ	DTW	Elev.	TPHg	B	T	E	X
		<	feet	>	<	parts per billion			>
MW-3	06/07/88	---	---	---	28,000	6,000	80	940	1,900
(17.11)	06/10/88	NFP	6.05	11.06	---	---	---	---	---
	01/17/89	NFP	5.49	11.62	5,300	2,500	230	590	1,100
	01/24/89	NFP	5.38	11.73	---	---	---	---	---
	06/01/89	NFP	5.96	11.15	5,400	330	300	570	680
	09/18/89	NFP	6.65	10.46	12,000	680	170	350	860
	10/20/89	NFP	6.88	10.23	---	---	---	---	---
	11/22/89	NFP	6.74	10.37	---	---	---	---	---
	12/11/89	NFP	6.37	10.74	14,000	1,100	150	670	690
	02/13/90	NFP	5.58	11.53	---	---	---	---	---
	03/13/90	NFP	5.48	11.63	18,000	6,300	200	1,100	1,100
	04/18/90	NFP	6.01	11.10	---	---	---	---	---
	05/23/90	NFP	6.14	10.97	---	---	---	---	---
	06/14/90	NFP	5.83	11.28	9,500	1,300	880	310	1,800
	08/21/90	NFP	6.67	10.44	---	---	---	---	---
	09/19/90	NFP	6.88	10.23	16,000	5,000	65	1,500	450
	12/17/90	NFP	6.46	10.65	6,700	1,500	64	650	460
	01/31/91	NFP	6.24	10.87	---	---	---	---	---
	02/25/91	NFP	6.18	10.93	---	---	---	---	---
	03/19/91	NFP	5.35	11.76	18,000	4,200	2,100	1,100	1,200
	04/22/91	NFP	5.72	11.39	---	---	---	---	---
	05/17/91	NFP	5.55	11.56	---	---	---	---	---
	07/24/91	NFP	6.41	10.70	38,000	6,200	990	2,900	9,600
	09/10/91	NFP	6.80	10.31	---	---	---	---	---
	09/23/91	NFP	6.80	10.31	---	---	---	---	---
	10/21/91	NFP	7.09	10.02	---	---	---	---	---
	10/22/91	---	---	---	23,000	3,400	150	2,500	4,400
	11/18/91	NFP	6.74	10.37	---	---	---	---	---
	12/11/91	NFP	6.79	10.32	---	---	---	---	---
	01/21/92	NFP	6.16	10.95	13,000	2,700	30	1,800	740
	02/20/92	NFP	4.89	12.22	---	---	---	---	---
	03/19/92	NFP	4.86	12.26	---	---	---	---	---
	04/24/92	NFP	5.28	11.83	17,000	4,200	170	1,600	600
	05/13/92	NFP	5.58	11.53	---	---	---	---	---
	06/24/92	NFP	6.22	10.89	---	---	---	---	---
	07/16/92	NFP	6.36	10.75	11,000	2,700	230	1,100	570
	08/19/92	NFP	6.65	10.46	---	---	---	---	---
	09/24/92	NFP	6.93	10.18	7,100	2,000	44	1,000	220
	02/05/93	NFP	4.71	12.40	13,000	3,600	110	1,300	430
	04/30/93	NFP	5.46	11.65	13,000	1,600	370	1,600	1,800
	05/14/93	NFP	6.53	10.58	---	---	---	---	---
	07/15/93	NFP	7.28	9.83	2,100	310	152	30	58
	11/16/93	NFP	8.02	9.09	4,000	400	400	120	490
	11/30/93	---	7.79	9.32	---	---	---	---	---

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RESNA
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TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA AND
RESULTS OF LABORATORY ANALYSES OF GROUNDWATER SAMPLES
Exxon Service Station 7-0104
1725 Park Street
Alameda, California

Well ID # (TOC)	Sampling Date	SUBJ	DTW	Elev.	TPHg	B	T	E	X
		<	feet	>	<	parts per billion			>
MW-4	01/17/89	NFP	5.36	11.98	19,000	1,000	1,500	360	2,200
(17.34)	01/24/89	NFP	5.46	11.88	---	---	---	---	---
	06/01/89	NFP	6.01	11.33	3,600	180	240	63	810
	09/18/89	NFP	6.80	10.54	6,000	290	200	28	510
	10/20/89	NFP	7.08	10.26	---	---	---	---	---
	11/22/89	NFP	6.82	10.52	---	---	---	---	---
	12/11/89	NFP	6.37	10.97	13,000	750	910	510	1,200
	02/13/90	NFP	5.49	11.85	---	---	---	---	---
	03/07/90(a)	---	---	---	---	---	---	---	---
	03/13/90	NFP	5.44	11.90	12,000	1,500	1500	470	28,000
	04/18/90	NFP	6.14	11.20	---	---	---	---	---
	05/23/90	NFP	6.22	11.12	---	---	---	---	---
	06/14/90	NFP	5.92	11.42	12,000	5,700	400	1,300	760
	08/21/90	NFP	6.83	10.51	---	---	---	---	---
	09/19/90	NFP	7.07	10.27	5,500	670	180	390	1,000
	12/17/90	NFP	6.60	10.84	14,000	1,400	620	540	2,100
	01/31/91	NFP	6.66	10.68	---	---	---	---	---
	02/25/91	NFP	6.21	11.13	---	---	---	---	---
	03/19/91	NFP	5.29	12.05	11,000	1,500	740	620	2,100
	04/22/91	NFP	5.26	12.08	---	---	---	---	---
	05/17/91	NFP	5.60	11.74	---	---	---	---	---
	07/24/91	NFP	6.54	10.80	10,000	1,200	440	410	1,200
	09/10/91	NFP	7.04	10.30	---	---	---	---	---
	09/23/91	NFP	7.14	10.20	---	---	---	---	---
	10/21/91	sheen	7.30	10.04	---	---	---	---	---
	10/22/91	---	---	---	4,600	750	190	350	780
	11/18/91	NFP	6.90	10.44	---	---	---	---	---
	12/11/91	NFP	7.01	10.33	---	---	---	---	---
	01/21/92	NFP	6.25	11.09	6,000	1,300	320	510	1,200
	02/20/92	NFP	4.79	12.55	---	---	---	---	---
	03/19/92	NFP	4.70	12.64	---	---	---	---	---
	04/24/92	sheen	5.25	12.09	11,000	1,700	630	710	1,600
	05/13/92	sheen	5.62	11.72	---	---	---	---	---
	06/24/92	sheen	6.19	11.15	---	---	---	---	---
	07/16/92	sheen	6.51	10.83	5,400	870	240	440	700
	08/19/92	NFP	6.85	10.49	---	---	---	---	---
	09/24/92	NFP	7.17	10.17	5,900	1,300	130	530	690
	02/05/93	NFP	4.61	12.73	15,000	2,300	820	980	2,200
	04/30/93	NFP	5.59	11.75	21,000	4,000	960	1,500	2,900
	05/14/93	NFP	6.50	10.84	---	---	---	---	---
	07/15/93	NFP	7.60	9.84	2,300	440	55	130	220
	11/16/93	NFP	8.27	9.07	5,100	820	160	260	760
	11/30/93	---	8.02	9.32	---	---	---	---	---

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TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA AND
RESULTS OF LABORATORY ANALYSES OF GROUNDWATER SAMPLES
Exxon Service Station 7-0104
1725 Park Street
Alameda, California
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Well ID # (TOC)	Sampling Date	SUBJ	DTW	Elev.	TPHg	B	T	E	X
		<	feet	>	<	parts per billion			>
MW-5	01/17/89	NFP	5.39	11.32	26,000	8,700	3,900	990	5,900
(16.71)	01/24/89	NFP	5.51	11.20	---	---	---	---	---
	06/01/89	sheen	5.83	10.88	5,200	240	220	130	690
	09/18/89	NFP	6.52	10.19	8,000	340	150	140	460
	10/20/89	NFP	6.72	9.99	---	---	---	---	---
	11/22/89	NFP	6.54	10.17	---	---	---	---	---
	12/11/89	NFP	6.21	10.50	15,000	720	320	450	870
	02/13/90	NFP	5.60	11.11	---	---	---	---	---
	03/07/90	---	---	---	---	---	---	---	---
	03/13/90	NFP	5.54	11.17	10,000	3,400	220	280	800
	04/18/90	NFP	5.75	10.96	---	---	---	---	---
	05/23/90	NFP	5.98	10.73	---	---	---	---	---
	06/14/90	NFP	5.81	10.90	12,000	3,300	160	350	730
	08/21/90	NFP	6.51	10.20	---	---	---	---	---
	09/19/90	NFP	6.70	10.01	8,500	1,800	85	120	460
	12/17/90	sheen	6.24	10.47	18,000	2,300	810	430	1,400
	01/31/91	NFP	6.31	10.40	---	---	---	---	---
	02/25/91	NFP	6.13	10.58	---	---	---	---	---
	03/19/91	NFP	5.32	11.39	17,000	2,900	610	580	1,200
	04/22/91	sheen	5.30	11.41	---	---	---	---	---
	05/17/91	NFP	5.59	11.12	---	---	---	---	---
	07/24/91	NFP	6.33	10.38	16,000	3,200	320	690	1,100
	09/10/91	NFP	6.66	10.05	---	---	---	---	---
	09/23/91	NFP	6.75	9.96	---	---	---	---	---
	10/21/91	sheen	6.92	9.79	---	---	---	---	---
	10/22/91	---	---	---	6,600	2,000	64	320	480
	11/18/91	NFP	6.55	10.16	---	---	---	---	---
	12/11/91	NFP	6.64	10.07	---	---	---	---	---
	01/21/92	sheen	6.07	10.64	14,000	4,000	190	630	1,300
	02/20/92	NFP	4.83	11.88	---	---	---	---	---
	03/19/92	sheen	4.83	11.88	---	---	---	---	---
	04/24/92	sheen	5.32	11.39	12,000	2,600	120	620	530
	05/13/92	sheen	5.61	11.10	---	---	---	---	---
	06/24/92	NFP	6.17	10.54	---	---	---	---	---
	07/16/92	sheen	6.26	10.46	20,000	4,000	48	880	720
	08/19/92	sheen	6.53	10.18	---	---	---	---	---
	09/24/92	sheen	6.80	9.91	9,300	2,200	31	330	250
	02/05/93(b)	NFP	4.70	12.01	---	---	---	---	---
	04/30/93	sheen	5.43	11.28	30,000	5,900	450	1,900	1,500
	05/14/93	NFP	7.31	9.40	---	---	---	---	---
	07/15/93	0.07	7.93	*8.84	---	---	---	---	---
	11/15/93	0.04	8.42	*8.32	---	---	---	---	---
	11/30/93	---	8.10	8.61	---	---	---	---	---

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TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA AND
RESULTS OF LABORATORY ANALYSES OF GROUNDWATER SAMPLES
Exxon Service Station 7-0104
1725 Park Street
Alameda, California
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Well ID # (TOC)	Sampling Date	SUBJ	DTW	Elev.	TPHg	B	T	E	X
		<	feet	>	<	parts per billion			>
MW-6	01/17/89	NFP	5.59	11.97	38,000	7,400	9,300	2,000	9,900
(17.56)	01/24/89	NFP	5.27	12.29	—	—	—	—	—
	06/01/89	sheen	6.25	11.31	23,000	1,900	2,500	2,000	6,000
	09/18/89	NFP	6.95	10.61	17,000	650	410	650	320
	10/20/89	NFP	7.24	10.32	—	—	—	—	—
	11/22/89	NFP	7.05	10.51	—	—	—	—	—
	12/11/89	NFP	6.63	10.93	29,000	1,100	810	330	1,500
	02/13/90	NFP	5.70	11.86	—	—	—	—	—
	03/07/90	---	---	---	—	—	—	—	—
	03/13/90	NFP	5.63	11.93	38,000	12,000	15,000	2,500	12,000
	04/18/90	NFP	6.26	11.30	—	—	—	—	—
	05/23/90	NFP	6.42	11.14	—	—	—	—	—
	06/14/90	NFP	6.19	11.37	38,000	9,100	7,800	2,900	12,000
	08/21/90	NFP	7.01	10.55	—	—	—	—	—
	09/19/90	NFP	7.23	10.33	22,000	4,200	300	1,400	3,400
	12/17/90	NFP	6.66	10.90	20,000	3,100	4,100	890	2,700
	01/31/91	NFP	6.39	11.17	—	—	—	—	—
	02/25/91	NFP	6.39	11.17	—	—	—	—	—
	03/19/91	NFP	5.57	11.99	180,000	11,000	55,000	5,600	28,000
	04/22/91	NFP	5.42	12.14	—	—	—	—	—
	05/17/91	NFP	5.73	11.83	—	—	—	—	—
	07/24/91	NFP	6.72	10.84	48,000	5,400	2,300	2,000	9,000
	09/10/91	NFP	7.15	10.41	—	—	—	—	—
	09/23/91	NFP	7.25	10.31	—	—	—	—	—
	10/21/91	NFP	7.42	10.14	—	—	—	—	—
	10/22/91	---	---	—	18,000	3,100	700	,400	2,900
	11/18/91	NFP	7.08	10.48	—	—	—	—	—
	12/11/91	NFP	7.17	10.39	—	—	—	—	—
	01/21/92	NFP	6.40	11.16	9,400	2,100	370	1,000	1,100
	02/20/92	NFP	5.06	12.50	—	—	—	—	—
	03/19/92	NFP	4.86	12.70	—	—	—	—	—
	04/24/92	NFP	5.44	12.12	42,000	3,500	8,000	2,100	8,000
	05/13/92	NFP	5.83	11.73	—	—	—	—	—
	06/24/92	NFP	6.50	11.06	—	—	—	—	—
	07/16/92	NFP	6.68	10.88	14,000	1,600	1,000	1,000	2,500
	08/19/92	NFP	7.00	10.56	—	—	—	—	—
	09/24/92	NFP	7.28	10.28	4,700	790	97	640	540
	02/05/93	NFP	4.84	12.72	26,000	2,500	4,300	1,700	5,300
	04/30/93	NFP	5.69	11.87	9,600	1,000	410	1,100	1,600
	05/14/93	NFP	6.52	11.04	—	—	—	—	—
	07/15/93	NFP	7.51	10.05	4,600	250	72	540	650
	11/16/93	NFP	8.29	9.27	410	41	12	47	71
	11/30/93	—	8.08	9.48	—	—	—	—	—

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TABLE 1
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RESULTS OF LABORATORY ANALYSES OF GROUNDWATER SAMPLES
Exxon Service Station 7-0104
1725 Park Street
Alameda, California
(Page 7 of 8)

Well ID # (TOC)	Sampling Date	SUBJ	DTW	Elev.	TPHg	B	T	E	X
		<	feet	>	<	parts per billion			>
MW-7	01/09/90	---	---	---	17,000	380	180	330	1,300
(17.12)	02/13/90	NFP	4.98	12.14	---	---	---	---	---
	03/13/90	NFP	4.94	12.18	16,000	360	270	83	460
	05/23/90	NFP	5.87	11.25	---	---	---	---	---
	06/14/90	NFP	5.55	11.57	14,000	1,200	2,800	75	930
	09/19/90	NFP	6.79	10.33	16,000	2,800	95	2,500	1,700
	12/17/90	NFP	6.15	10.97	75,000	2,600	7,000	3,300	14,000
	01/31/91	NFP	6.64	10.48	----	--	---	---	---
	02/25/91	NFP	5.80	11.32	---	---	---	---	---
	03/19/91	NFP	4.96	12.16	44,000	1,600	740	3,400	8,600
	04/22/91	NFP	4.82	12.30	---	---	---	---	---
	05/17/91	NFP	5.18	11.94	---	---	---	---	---
	07/24/91	NFP	6.22	10.90	18,000	1,300	160	2,700	1,000
	09/10/91	NFP	6.71	10.41	---	---	---	---	---
	09/23/91	NFP	6.84	10.28	---	---	---	---	---
	10/21/91	NFP	7.00	10.12	---	---	---	---	---
	10/22/91	---	---	---	10,000	990	26	1,900	490
	11/18/91	NFP	6.56	10.56	---	---	---	---	---
	12/11/91	NFP	6.68	10.44	---	---	---	---	---
	01/21/92	NFP	5.99	11.13	23,000	2,200	3,000	1,800	6,100
	02/20/92	NFP	4.36	12.76	---	---	---	---	---
	03/19/92	NFP	4.22	12.90	---	---	---	---	---
	04/24/92	NFP	4.84	12.28	25,000	1,400	220	2,100	2,600
	05/13/92	NFP	5.24	11.88	---	---	---	---	---
	06/24/92	NFP	6.04	11.08	---	---	---	---	---
	07/16/92	NFP	6.19	10.93	8,700	470	45	970	86
	08/19/92	NFP	6.55	10.57	---	---	---	---	---
	09/24/92	NFP	6.83	10.29	9,200	560	48	1,300	54
	02/05/93	NFP	4.11	13.01	33,000	1,100	2,300	1,200	4,200
	04/30/93(b)	NFP	5.29	11.83	13,000	240	85	710	320
	05/14/93	NFP	5.91	11.21	---	---	---	---	---
	07/15/93	NFP	7.07	10.05	6,900	200	30	500	48
	11/16/93	NFP	7.85	9.27	7,400	300	85	480	120
	11/30/93	---	7.66	9.46	---	---	---	---	---
MW-8	05/14/93	NFP	6.54	9.79	<50	<0.5	<1.0	<0.5	<0.5
(16.33)	07/15/93	NFP	6.57	9.76	<50	<0.5	<0.5	<0.5	<0.5
	11/16/93	NFP	7.15	9.18	<50	<0.5	<0.5	<0.5	<0.5
	11/30/93	---	6.94	9.39	---	---	---	---	---
MW-9	05/14/93	NFP	6.61	9.01	<50	<0.5	<1.0	<0.5	<0.5
(15.62)	07/15/93	NFP	6.79	8.83	<50	<0.5	<0.5	<0.5	<0.5
	11/16/93	NFP	7.12	8.50	<50	<0.5	<0.5	<0.5	<0.5
	11/30/93	---	6.98	8.64	---	---	---	---	---

See notes on page 8 of 8

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TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA AND
RESULTS OF LABORATORY ANALYSES OF GROUNDWATER SAMPLES
Exxon Service Station 7-0104
1725 Park Street
Alameda, California
(Page 8 of 8)

Well ID # (TOC)	Sampling Date	SUBJ	DTW	Elev.	TPHg	B	T	E	X
		<	feet	.... >	<		parts per billion	.....	>
MW-10	05/14/93	NFP	6.91	9.88	97	<0.5	<0.5	9.8	22
(16.79)	07/15/93	NFP	7.47	9.32	160	<0.5	<0.5	15	19
	11/16/93	NFP	8.17	8.62	<50	<0.5	<0.5	<0.5	<0.5
	11/30/93	---	7.96	8.83	---	---	---	---	---
FB	12/11/89	---	---	---	<50	0.88	0.95	0.62	1.7
	12/17/90	---	---	---	<50	<0.5	<0.5	<0.5	<0.5
	03/19/91	---	---	---	<50	<0.5	<0.5	<0.5	<0.5
	07/24/91	---	---	---	<50	<0.5	<0.5	<0.5	<0.6
	10/22/91	---	---	---	<50	<0.5	<0.5	<0.5	<0.5
	01/21/92	---	---	---	<50	<0.5	<0.5	<0.5	<0.5
	07/16/92	---	---	---	<50	<0.5	<0.5	<0.5	<0.5
TB	06/14/90	---	---	---	<50	<0.5	<0.5	<0.5	<0.5
	09/19/90	---	---	---	<50	0.8	<0.5	0.6	1.0
	04/24/92	---	---	---	<50	<0.5	<0.5	<0.5	<0.5
	09/24/92	---	---	---	230	<0.5	<0.5	<0.5	<0.5
MCLs					---	1.0	---	680	1,750
DWAL					---	---	100	---	---

Notes:

ft = Feet
SUBJ = Results of subjective evaluation, separate phase product thickness (PT) in feet
NFP = Free-phase petroleum hydrocarbons not present in well
TOC = Elevation of top of well casing; datum is mean sea level
DTW = Depth to water
Elev. = Elevation of groundwater; datum is mean sea level
* = Groundwater elevation adjusted for free-phase petroleum hydrocarbons using the equation: Elev. = TOC - [DTW + (PT x 0.8)] where PT is the product thickness
ppb = Parts per billion
TPHg = Total petroleum hydrocarbons as gasoline
B = Benzene
T = Toluene
E = Ethylbenzene
X = total Xylenes
< = Less than the indicated detection limit shown by the laboratory
FB = Field blank
TB = Travel blank
--- = Not sampled / not measured
(a) = 03/07/90 sampling: Total Dissolved Solids were detected in samples from MW-1 and MW-4 at 910 parts-per-million (ppm) and 370 ppm, respectively.
(b) = As per Pace Inc., a peak eluting before benzene was present in the groundwater samples from MW-5 and MW-7. Pace Inc. suspects this peak to be methyl tert butyl ether (MTBE).
(c) = 05/14/93: MW-2 was inaccessible for depth-to-water measurement and subjective analysis.

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TABLE 2
CUMULATIVE OPERATION AND PERFORMANCE DATA
FOR GROUNDWATER REMEDIATION SYSTEM
Exxon Service Station No. 7-0104
1725 Park Street
Alameda, California

Sample Date	Cumulative Flow (gal)	Average Flow Rate (gpd)	Sample ID	TPHg	B	T	E	X
				< . . . . . (parts per billion) . . . . . >				
02/16/93	NA	NA	"bioreactor"	660	120	40	25	56
02/17/93	NA	NA	"bioreactor"	140	23	5.3	2.8	9.3
02/18/93	NA	NA	"bioreactor"	<50	<0.5	<0.5	<0.5	<0.5
02/22/93	0	NA	"influent"	NS	NS	NS	NS	NS
			"A"	150	16	11	3.7	15
			"B"	NS	NS	NS	NS	NS
			"C"	<50	<0.5	<0.5	<0.5	<0.5
02/23/93	230	288	"influent"	NS	NS	NS	NS	NS
			"A"	110	12	7.4	2.7	14
			"B"	NS	NS	NS	NS	NS
			"C"	<50	<0.5	<0.5	<0.5	<0.5
02/24/93	4,165	5,328	"influent"	4,800	1,000	700	83	50
			"A"	800	200	110	5.1	80
			"B"	NS	NS	NS	NS	NS
			"C"	<50	<0.5	<0.5	<0.5	<0.5
02/25/93	10,130	4,752	"influent"	3,800	930	820	130	740
			"A"	300	11	2.9	<0.5	33
			"B"	NS	NS	NS	NS	NS
			"C"	NS	NS	NS	NS	NS
02/26/93	15,440	5,328	"influent"	NS	NS	NS	NS	NS
			"A"	NS	NS	NS	NS	NS
			"B"	NS	NS	NS	NS	NS
			"C"	NS	NS	NS	NS	NS
03/04/93	36,240	3,456	"influent"	3,600	760	430	45	600
			"A"	170	5.1	2.1	<0.5	20
			"B"	<50	<0.5	<0.5	<0.5	<0.5
			"C"	<50	<0.5	<0.5	<0.5	<0.5
03/11/93	80,000	6,192	"influent"	3,800	480	390	84	600
			"A"	63	0.5	<0.5	<0.5	0.8
			"B"	<50	<0.5	<0.5	<0.5	<0.5
			"C"	<50	<0.5	<0.5	<0.5	<0.5

See notes on page 5 of 5.

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TABLE 2
CUMULATIVE OPERATION AND PERFORMANCE DATA
FOR GROUNDWATER REMEDIATION SYSTEM
Exxon Service Station No. 7-0104
1725 Park Street
Alameda, California
(Page 2 of 5)

Sample Date	Cumulative Flow (gal)	Average Flow Rate (gpd)	Sample ID	TPHg	B	T	E	X
				< . . . . . (parts per billion) . . . . . >				
03/19/93	NR	NR	"influent"	NS	NS	NS	NS	NS
			"A"	4,100	530	420	100	800
			"B"	NS	NS	NS	NS	NS
			"C"	110	0.8	<0.5	<0.5	7.6
03/31/93	184,321	5,328	"influent"	NS	NS	NS	NS	NS
			"A"	NS	NS	NS	NS	NS
			"B"	NS	NS	NS	NS	NS
			"C"	NS	NS	NS	NS	NS
04/02/93	192,674	4,177	"influent"	NS	NS	NS	NS	NS
			"A"	NS	NS	NS	NS	NS
			"B"	NS	NS	NS	NS	NS
			"C"	NS	NS	NS	NS	NS
04/05/93	208,161	5,162	"influent"	NS	NS	NS	NS	NS
			"A"	NS	NS	NS	NS	NS
			"B"	NS	NS	NS	NS	NS
			"C"	NS	NS	NS	NS	NS
04/07/93	214,604	3,222	"influent"	NS	NS	NS	NS	NS
			"A"	NS	NS	NS	NS	NS
			"B"	NS	NS	NS	NS	NS
			"C"	NS	NS	NS	NS	NS
04/09/93	223,530	4,463	"influent"	NS	NS	NS	NS	NS
			"A"	NS	NS	NS	NS	NS
			"B"	NS	NS	NS	NS	NS
			"C"	NS	NS	NS	NS	NS
04/13/93	238,370	3,710	"influent"	NS	NS	NS	NS	NS
			"A"	NS	NS	NS	NS	NS
			"B"	NS	NS	NS	NS	NS
			"C"	NS	NS	NS	NS	NS
04/16/93	250,960	4,197	"influent"	NS	NS	NS	NS	NS
			"A"	NS	NS	NS	NS	NS
			"B"	NS	NS	NS	NS	NS
			"C"	NS	NS	NS	NS	NS

See notes on page 6 of 5.

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TABLE 2
CUMULATIVE OPERATION AND PERFORMANCE DATA
FOR GROUNDWATER REMEDIATION SYSTEM
Exxon Service Station No. 7-0104
1725 Park Street
Alameda, California

Sample Date	Cumulative Flow (gal)	Average Flow Rate (gpd)	Sample ID	TPHg	B	T	E	X
				< . . . . . (parts per billion) . . . . . >				
04/30/93	270,400	1,389	"influent"	2,700	240	140	35	500
			"A"	380	31	22	14	81
			"B"	55	1.3	<0.5	<0.5	2.3
			"C"	<50	1.5	0.9	<0.5	2.4
05/11/93	308,640	3,476	"influent"	NS	NS	NS	NS	NS
			"A"	NS	NS	NS	NS	NS
			"B"	NS	NS	NS	NS	NS
			"C"	NS	NS	NS	NS	NS
05/20/93	346,407	4,196	"influent"	NS	NS	NS	NS	NS
			"A"	NS	NS	NS	NS	NS
			"B"	NS	NS	NS	NS	NS
			"C"	NS	NS	NS	NS	NS
06/14/93	346,407	0	"influent"	3,300	540	340	88	730
			"A"	<50	<0.5	<0.5	<0.5	1.1
			"B"	<50	<0.5	<0.5	<0.5	<0.5
			"C"	<50	<0.5	<0.5	<0.5	<0.5
06/24/93	393,810	4,740	"influent"	NS	NS	NS	NS	NS
			"A"	NS	NS	NS	NS	NS
			"B"	NS	NS	NS	NS	NS
			"C"	NS	NS	NS	NS	NS
06/29/93	415,739	4,386	"influent"	NS	NS	NS	NS	NS
			"A"	NS	NS	NS	NS	NS
			"B"	NS	NS	NS	NS	NS
07/08/93	455,820	6,048	"influent"	1,600	310	24	11	130
			"A"	110	2.2	0.7	<0.5	1.4
			"B"	<50	<0.5	<0.5	<0.5	<0.5
			"C"	<50	<0.5	<0.5	<0.5	<0.5
08/06/93	569,132	3,600	"influent"	2,900	510	180	56	710
			"A"	94	1.9	<0.5	<0.5	1.1
			"B"	61	<0.5	<0.5	<0.5	<0.5
			"C"	<50	<0.5	<0.5	<0.5	<0.5
09/08/93	675,360	8,784	"influent"	2,200	330	51	21	210
			"A"	<50	2.1	<0.5	<0.5	<0.5
			"B"	60	<0.5	<0.5	<0.5	<0.5
			"C"	<50	<0.5	<0.5	<0.5	<0.5

See notes on page 5 of 5.

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TABLE 2
CUMULATIVE OPERATION AND PERFORMANCE DATA
FOR GROUNDWATER REMEDIATION SYSTEM
Exxon Service Station No. 7-0104
1725 Park Street
Alameda, California
(Page 4 of 5)

Sample Date	Cumulative Flow (gal)	Average Flow Rate (gpd)	Sample ID	TPHg	B	T	E	X
				< . . . . . (parts per billion) . . . . . >				
10/06/93	772,440	3,600	"Influent"	5,000	810	56	100	460
			"A"	740	18	1.3	<0.5	39
			"B"	<50	<0.5	<0.5	<0.5	<0.5
			"C"	390	7.5	0.6	<0.5	18
10/15/93	810,448	4,176	"Influent"	2,300	770	38	40	220
			"A"	530	17	3.0	<0.5	33
			"B"	69	0.5	<0.5	<0.5	<0.5
			"C"	<50	<0.5	<0.5	<0.5	<0.5
11/09/93	851,840	4,176	"A"	550	20	<0.5	<0.5	19
	Inorganic Analysis: All inorganics, metals, arsenic, total cyanides in water are ND, except for zinc (0.27ppm)							
	EPA Method 624: All VOCs ND, except for benzene (16 ppb), tetrachlorethene (86ppb), and total xylenes (20 ppb)							
	EPA Method 625: All EOCs ND							
			"B"	<50	<0.5	<0.5	<0.5	<0.5
	Inorganic Analysis: All inorganics, metals, arsenic, total cyanides in water are ND, except for iron (0.1 ppb) and zinc (0.18 ppb)							
	EPA Method 624: All VOCs ND							
	EPA Method 625: All EOCs ND							
			"C"	<50	<0.5	<0.5	<0.5	<0.5
	Inorganic Analysis: All inorganics, metals, arsenic, total cyanides in water ND, except for zinc (0.08 ppm)							
	EPA Method 642: All VOCs ND							
	EPA Method 625: All EOCs ND							
12/09/93	932,928	2,880	"A"	1,500	130	350	10	82
			"B"	<50	<0.5	<0.5	<0.5	<0.5
			"C"	<50	3.6	9.5	<0.5	<0.5
12/22/93	---	---	"Eff"	190	1.9	1.6	<0.5	10

See notes on page 5 of 5.

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TABLE 2
CUMULATIVE OPERATION AND PERFORMANCE DATA
FOR GROUNDWATER REMEDIATION SYSTEM
Exxon Service Station No. 7-0104
1725 Park Street
Alameda, California

Notes:

gal	:	gallons
gpd	:	gallons per day
TPHg	:	total petroleum hydrocarbons as gasoline
B	:	benzene
T	:	toluene
E	:	ethylbenzene
X	:	total xylenes
NA	:	not applicable
NS	:	not sampled
NR	:	not recorded
ND	:	non detected at or above the method detection limit
VOC	:	volatile organic compounds
EOC	:	extractible organic compounds
"influent"	:	composite sample from recovery wells
"bioreactor"	:	water sample from the first compartment of the bioreactor
"A"	:	effluent from bioreactor, influent to first granular activated carbon (GAC) canister
"B"	:	effluent from second GAC canister, influent to third GAC canister
"C"	:	effluent from third GAC canister into sanitary sewer

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TABLE 3
CUMULATIVE AIR MONITORING DATA
Exxon Service Station No. 7-0104
1725 Park Street
Alameda, California
(non Methane results)

Sample Date	Time	Prior to GAC A1	Downstream of GAC A1	Downstream of GAC A2
03/01/93	1700	8.0	0.0	0.0
03/02/93	0915	7.4	2.5	0.0
03/03/93	0905	4.6	1.5	0.0
03/04/93	0910	4.9	7.6	0.4
04/13/93	1455	2.1	0.0	0.0
05/11/93	1450	2.0	0.0	0.0
06/15/93	1520	1.5	0.0	0.0
07/08/93	1220	1.2	0.0	0.0
08/13/93	1540	1.7	0.0	0.0
09/23/93	1020	0.5	0.0	0.0
10/06/93	0445	0.2	0.0	0.0
11/08/93	1657	0.4	0.0	0.0
11/22/93	1616	0.9	0.5	0.3
12/08/93	1510	0.5	0.3	0.0
12/29/93	1730	0.0	0.0	0.0

Notes:

Values in parts per million by volume (ppmv)

GAC : Granular Activated Carbon

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APPENDIX A

WELL PURGE DATA SHEETS

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WELL PURGE DATA SHEET

Project Name: Exxon 7-0104 Job No. 170077.01

Date: November 16, 1993 Page 1 of 1

Well No. MW-1 Time Started 1250

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)	TURBIDITY (NTU)
1250	Start purging MW-1				
1250	0	70.7	6.51	3.99	33.6
1256	8	69.9	6.53	4.25	28.1
1303	16	68.9	6.49	4.13	75.4
1307	18	DRY			
1345	24	69.3	6.50	4.36	33.0
1353	28	DRY			
1353	Stop purging MW-1				

Notes:

Well Diameter (inches) : 4
Depth to Bottom (feet) : 20.67
Depth to Water - initial (feet)(11/15/93) : 8.69
Depth to Water - final (feet) : 8.90
% recovery : 98
Time Sampled : 1600
Gallons per Well Casing Volume : 7.82
Gallons Purged : 28
Well Casing Volume Purged : 3.6
Approximate Pumping Rate (gpm) : 0.4

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WELL PURGE DATA SHEET

Project Name: Exxon 7-0104 Job No. 170077.01

Date: November 15, 1993 Page 1 of 1

Well No. MW-3 Time Started 1627

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)	TURBIDITY (NTU)
1627	Start purging MW-2				
1627	0	6.77	7.17	3.38	20.8
1630	4	64.3	6.63	3.97	17.1
1632	5.5	DRY			
1705	8	61.0	6.40	3.51	16.1
1707	10	DRY			
1707	Stop purging MW-2				

Notes:

Well Diameter (inches) : 4
Depth to Bottom (feet) : 14.22
Depth to Water - initial (feet) : 8.02
Depth to Water - final (feet)(11/16/93) : 8.04
% recovery : 99
Time Sampled(11/16/93) : 1445
Gallons per Well Casing Volume : 4.05
Gallons Purged : 10
Well Casing Volume Purged : 2.5
Approximate Pumping Rate (gpm) : 0.3

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WELL PURGE DATA SHEET

Project Name: Exxon 7-0104 Job No. 170077.01

Date: November 15, 1993 Page 1 of 1

Well No. MW-4 Time Started 1724

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)	TURBIDITY (NTU)
1724	Start purging MW-4				
1724	0	60.3	6.47	4.53	15.8
1728	6.5	63.9	6.56	4.55	11.8
1731	9.5	DRY			
1806	13	59.6	6.43	4.10	8.2
1821	19.5	59.8	6.43	4.07	14.0
1824	21	DRY			
1824	Stop purging MW-4				

Notes:

Well Diameter (inches)	: 4
Depth to Bottom (feet)	: 18.20
Depth to Water - initial (feet)	: 8.27
Depth to Water - final (feet)(11/16/93)	: 8.29
% recovery	: 99
Time Sampled(11/16/93)	: 1515
Gallons per Well Casing Volume	: 6.48
Gallons Purged	: 21
Well Casing Volume Purged	: 3.2
Approximate Pumping Rate (gpm)	: 0.4

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WELL PURGE DATA SHEET

Project Name: Exxon 7-0104 Job No. 170077.01

Date: November 15, 1993 Page 1 of 1

Well No. MW-6 Time Started 1839

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT (micromho)	TURBIDITY (NTU)
1839	Start purging MW-6				
1839	0	59.3	6.35	3.27	10.6
1845	7	61.6	6.39	3.36	24.3
1852	13	DRY			
1929	21	57.4	6.57	2.98	10.5
1936	28	61.8	6.56	3.15	18.8
1936	Stop purging MW-6				

Notes:

Well Diameter (inches) : 4
Depth to Bottom (feet) : 18.70
Depth to Water - initial (feet) : 8.29
Depth to Water - final (feet)(11/16/93) : 8.32
% recovery : 99
Time Sampled(11/16/93) : 1530
Gallons per Well Casing Volume : 6.80
Gallons Purged : 28
Well Casing Volume Purged : 4.1
Approximate Pumping Rate (gpm) : 0.5

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WELL PURGE DATA SHEET

Project Name: Exxon 7-0104 Job No. 170077.01

Date: November 16, 1993 Page 1 of 1

Well No. MW-7 Time Started 1055

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)	TURBIDITY (NTU)
1055	Start purging MW-7				
1055	0	71.9	6.29	4.25	23.4
1100	5.5	70.0	6.28	3.89	163.3
1105	11	69.8	6.39	3.85	129.5
1110	16.5	70.3	6.39	3.87	120.7
1117	22	70.7	6.44	3.89	111.5
1117	Stop purging MW-7				

Notes:

Well Diameter (inches) : 4
Depth to Bottom (feet) : 16.08
Depth to Water - initial (feet)(11/15/93) : 7.85
Depth to Water - final (feet) : 7.89
% recovery : 99
Time Sampled : 1545
Gallons per Well Casing Volume : 5.37
Gallons Purged : 22
Well Casing Volume Purged : 4.1
Approximate Pumping Rate (gpm) : 1.0

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WELL PURGE DATA SHEET

Project Name: Exxon 7-0104 Job No. 170077.01

Date: November 15, 1993 Page 1 of 1

Well No. MW-8 Time Started 1420

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)	TURBIDITY (NTU)
1420	Start purging MW-8				
1420	0	67.2	7.04	3.02	77.7
1425	1.5	65.7	7.06	2.86	>200
1430	3	65.8	6.85	2.82	>200
1435	4.5	65.9	6.63	2.85	>200
1442	7	66.0	6.63	2.74	>200
1442	Stop purging MW-8				

Notes:

Well Diameter (inches) : 2
Depth to Bottom (feet) : 17.42
Depth to Water - initial (feet) : 7.15
Depth to Water - final (feet)(11/16/93) : 7.18
% recovery : 99
Time Sampled(11/16/93) : 1400
Gallons per Well Casing Volume : 1.72
Gallons Purged : 7
Well Casing Volume Purged : 4.0
Approximate Pumping Rate (gpm) : 0.3

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WELL PURGE DATA SHEET

Project Name: Exxon 7-0104 Job No. 170077.01

Date: November 15, 1993 Page 1 of 1

Well No. MW-9 Time Started 1345

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)	TURBIDITY (NTU)
1345	Start purging MW-9				
1345	0	69.1	7.13	3.10	18.4
1351	2	67.4	7.06	2.98	>200
1357	4	65.8	7.09	3.09	>200
1402	6	66.1	7.18	3.14	>200
1407	8	64.9	7.18	3.30	>200
1407	Stop purging MW-9				

Notes:

Well Diameter (inches)	: 2
Depth to Bottom (feet)	: 18.86
Depth to Water - initial (feet)	: 7.12
Depth to Water - final (feet)(11/16/93)	: 7.13
% recovery	: 99
Time Sampled(11/16/93)	: 1330
Gallons per Well Casing Volume	: 1.96
Gallons Purged	: 8
Well Casing Volume Purged	: 4.1
Approximate Pumping Rate (gpm)	: 0.4

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WELL PURGE DATA SHEET

Project Name: Exxon 7-0104 Job No. 170077.01

Date: November 15, 1993 Page 1 of 1

Well No. MW-10 Time Started 1500

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)	TURBIDITY (NTU)
1500	Start purging MW-10				
1500	0	66.2	7.03	2.81	85.6
1503	1.5	66.0	7.05	2.81	>200
1508	3	65.9	7.03	2.91	>200
1515	4.5	63.7	7.01	2.79	>200
1521	6.5	64.8	6.94	2.77	>200
1521	Stop purging MW-10				

Notes:

Well Diameter (inches)	: 2
Depth to Bottom (feet)	: 17.97
Depth to Water - initial (feet)	: 8.17
Depth to Water - final (feet)(11/16/93)	: 8.19
% recovery	: 99
Time Sampled(11/16/93)	: 1430
Gallons per Well Casing Volume	: 1.64
Gallons Purged	: 6.5
Well Casing Volume Purged	: 4.0
Approximate Pumping Rate (gpm)	: 0.3

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APPENDIX B

LABORATORY ANALYSIS REPORTS AND CHAIN OF CUSTODY RECORD

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REPORT OF LABORATORY ANALYSIS

November 18, 1993

Ms. Dora Chew
RESNA
3315 Almaden Expressway, Suite 34
San Jose, CA 95118

RE: PACE Project No. 431110.506
Client Reference: Exxon 7-0104 (EE)

Dear Ms. Chew:

Enclosed is the report of laboratory analyses for samples received November 10, 1993.

Please note a peak eluting earlier than Benzene and suspected to be methyl tert butyl ether was present in your samples W-A and W-B.

Footnotes are given at the end of the report.

If you have any questions concerning this report, please feel free to contact us.

Sincerely,

Stephanie Matzo

Stephanie Matzo
Project Manager

Enclosures

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Novato, CA 94949
TEL: 415-883-6100
FAX: 415-883-2673

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REPORT OF LABORATORY ANALYSIS

RESNA
3315 Almaden Expressway, Suite 34
San Jose, CA 95118

November 18, 1993
PACE Project Number: 431110506

Attn: Ms. Dora Chew

Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:			70 0188920	
Date Collected:			11/09/93	
Date Received:			11/10/93	
			W-A	
Parameter	Units	MDL		DATE ANALYZED
INORGANIC ANALYSIS				
INDIVIDUAL PARAMETERS				
Arsenic (EPA Method 7060, Furnace AAS)	mg/L	0.005	ND	11/15/93
Cadmium (EPA Method 6010/200.7, ICP)	mg/L	0.005	ND	11/16/93
Chromium (EPA Method 6010/200.7, ICP)	mg/L	0.01	ND	11/16/93
Copper (EPA Method 6010/200.7, ICP)	mg/L	0.01	ND	11/16/93
Iron (EPA Method 6010/200.7, ICP)	mg/L	0.1	ND	11/16/93
Lead (EPA Method 6010/200.7, ICP)	mg/L	0.1	ND	11/16/93
Mercury (EPA Method 7470, Cold Vapor AA)	mg/L	0.0002	ND	11/17/93
Nickel (EPA Method 6010/200.7, ICP)	mg/L	0.02	ND	11/16/93
Silver (EPA Method 6010/200.7, ICP)	mg/L	0.01	ND	11/16/93
Zinc (EPA Method 6010/200.7, ICP)	mg/L	0.01	0.27	11/16/93
CYANIDES IN WATER				
Cyanides, total (EPA 335.2)	mg/L	0.005	ND	11/17/93
Date of Distillation, Cyanides	n/a		11/15/93	
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	11/15/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	550	11/15/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	11/15/93
Benzene	ug/L	0.5	20	11/15/93
Toluene	ug/L	0.5	ND	11/15/93
Ethylbenzene	ug/L	0.5	ND	11/15/93
Xylenes, Total	ug/L	0.5	19	11/15/93
VOLATILE ORGANICS, EPA METHOD 624 GC/MS				
Chloromethane	ug/L	10	ND	11/12/93
Vinyl Chloride	ug/L	10	ND	11/12/93
Bromomethane	ug/L	10	ND	11/12/93
Chloroethane	ug/L	10	ND	11/12/93

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Ms. Dora Chew
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November 18, 1993
PACE Project Number: 431110506

Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:			70 0188920	
Date Collected:			11/09/93	
Date Received:			11/10/93	
Client Sample ID:			W-A	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
VOLATILE ORGANICS, EPA METHOD 624 GC/MS				
Trichlorofluoromethane	ug/L	5	ND	11/12/93
1,1,2-Trichlor-1,2,2-trifluoroethane	ug/L	5	ND	11/12/93
2-Butanone (MEK)	ug/L	50	ND	11/12/93
1,1-Dichloroethene	ug/L	5	ND	11/12/93
Carbon Disulfide	ug/L	5	ND	11/12/93
Acetone	ug/L	50	ND	11/12/93
Methylene Chloride	ug/L	10	ND	11/12/93
trans-1,2-Dichloroethene	ug/L	5	ND	11/12/93
1,1-Dichloroethane	ug/L	5	ND	11/12/93
Chloroform	ug/L	5	ND	11/12/93
1,1,1-Trichloroethane	ug/L	5	ND	11/12/93
1,2-Dichloroethane	ug/L	5	ND	11/12/93
cis-1,2-Dichlorethene	ug/L	5	ND	11/12/93
Carbon Tetrachloride	ug/L	5	ND	11/12/93
Benzene	ug/L	5	16	11/12/93
1,2-Dichloropropane	ug/L	5	ND	11/12/93
Trichloroethene (TCE)	ug/L	5	ND	11/12/93
Bromodichloromethane	ug/L	5	ND	11/12/93
trans-1,3-Dichloropropene	ug/L	5	ND	11/12/93
4-Methyl-2-pentanone (MIBK)	ug/L	50	ND	11/12/93
Toluene	ug/L	5	ND	11/12/93
cis-1,3-Dichloropropene	ug/L	5	ND	11/12/93
1,1,2-Trichloroethane	ug/L	5	ND	11/12/93
Dibromochloromethane	ug/L	5	ND	11/12/93
2-Hexanone	ug/L	50	ND	11/12/93
Tetrachloroethene	ug/L	5	86	11/12/93
Chlorobenzene	ug/L	5	ND	11/12/93
Ethylbenzene	ug/L	5	ND	11/12/93
Bromoform	ug/L	5	ND	11/12/93
Xylene(s) Total	ug/L	5	20	11/12/93
Styrene	ug/L	5	ND	11/12/93

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Ms. Dora Chew
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November 18, 1993
PACE Project Number: 431110506

Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:			70 0188920	
Date Collected:			11/09/93	
Date Received:			11/10/93	
Client Sample ID:			W-A	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
VOLATILE ORGANICS, EPA METHOD 624 GC/MS				
1,1,2,2,-Tetrachloroethane	ug/L	5	ND	11/12/93
1,3-Dichlorobenzene	ug/L	5	ND	11/12/93
1,4-Dichlorobenzene	ug/L	5	ND	11/12/93
1,2-Dichlorobenzene	ug/L	5	ND	11/12/93
1,2-Dichloroethane-d4 (Surrog. Recovery)	%		103	11/12/93
Toluene-d8 (Surrogate Recovery)	%		100	11/12/93
4-Bromofluorobenzene (Surrog.Recovery)	%		98	11/12/93
EXTRACTABLE ORGANICS BY EPA 625 (GC/MS)				
N-Nitrosodimethylamine	ug/L	20	ND	11/17/93
Bis(2-chloroethyl) ether	ug/L	20	ND	11/17/93
1,3-Dichlorobenzene	ug/L	20	ND	11/17/93
1,4-Dichlorobenzene	ug/L	20	ND	11/17/93
Benzyl Alcohol	ug/L	20	ND	11/17/93
1,2-Dichlorobenzene	ug/L	20	ND	11/17/93
Bis(2-chloroisopropyl) ether	ug/L	20	ND	11/17/93
N-Nitroso-di-n-propylamine	ug/L	20	ND	11/17/93
Hexachloroethane	ug/L	20	ND	11/17/93
Nitrobenzene	ug/L	20	ND	11/17/93
Bis(2-chloroethoxy)methane	ug/L	20	ND	11/17/93
1,2,4-Trichlorobenzene	ug/L	20	ND	11/17/93
Naphthalene	ug/L	20	ND	11/17/93
Hexachlorobutadiene	ug/L	20	ND	11/17/93
2-Methylnaphthalene	ug/L	20	ND	11/17/93
Hexachlorocyclopentadiene	ug/L	20	ND	11/17/93
2-Chloronaphthalene	ug/L	20	ND	11/17/93
Dimethylphthalate	ug/L	20	ND	11/17/93
Acenaphthylene	ug/L	20	ND	11/17/93
2,6-Dinitrotoluene	ug/L	20	ND	11/17/93
Acenaphthene	ug/L	20	ND	11/17/93
Dibenzofuran	ug/L	20	ND	11/17/93
2,4-Dinitrotoluene	ug/L	20	ND	11/17/93

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Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:			70 0188920	
Date Collected:			11/09/93	
Date Received:			11/10/93	
Client Sample ID:			W-A	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
EXTRACTABLE ORGANICS BY EPA 625 (GC/MS)				
Diethyl phthalate	ug/L	20	ND	11/17/93
Fluorene	ug/L	20	ND	11/17/93
4-Chlorophenylphenyl ether	ug/L	20	ND	11/17/93
N-Nitrosodiphenyl amine	ug/L	20	ND	11/17/93
1,2-Diphenylhydrazine	ug/L	20	ND	11/17/93
4-Bromophenylphenyl ether	ug/L	20	ND	11/17/93
Hexachlorobenzene	ug/L	20	ND	11/17/93
Phenanthrene	ug/L	20	ND	11/17/93
Anthracene	ug/L	20	ND	11/17/93
Di-n-butyl phthalate	ug/L	20	ND	11/17/93
Fluoranthene	ug/L	20	ND	11/17/93
Pyrene	ug/L	20	ND	11/17/93
Butylbenzyl phthalate	ug/L	20	ND	11/17/93
Benzo(a)anthracene	ug/L	20	ND	11/17/93
3,3'-Dichlorobenzidine	ug/L	40	ND	11/17/93
Chrysene	ug/L	20	ND	11/17/93
Bis(2-ethylhexyl) phthalate	ug/L	20	ND	11/17/93
Di-n-octyl phthalate	ug/L	20	ND	11/17/93
Benzo(b)fluoranthene	ug/L	20	ND	11/17/93
Benzo(k)fluoranthene	ug/L	20	ND	11/17/93
Benzo(a)pyrene	ug/L	20	ND	11/17/93
Indeno(1,2,3-cd)pyrene	ug/L	20	ND	11/17/93
Dibenz(a,h)anthracene	ug/L	20	ND	11/17/93
Benzo(g,h,i)perylene	ug/L	20	ND	11/17/93
Phenol	ug/L	20	ND	11/17/93
2-Chlorophenol	ug/L	20	ND	11/17/93
2-Methylphenol	ug/L	20	ND	11/17/93
4-Methylphenol	ug/L	20	ND	11/17/93
2-Nitrophenol	ug/L	20	ND	11/17/93
2,4-Dimethylphenol	ug/L	20	ND	11/17/93
Benzoic Acid	ug/L	100	ND	11/17/93

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REPORT OF LABORATORY ANALYSIS

Ms. Dora Chew
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November 18, 1993
PACE Project Number: 431110506

Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:			70 0188920	
Date Collected:			11/09/93	
Date Received:			11/10/93	
Client Sample ID:			W-A	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
EXTRACTABLE ORGANICS BY EPA 625 (GC/MS)				
2,4-Dichlorophenol	ug/L	20	ND	11/17/93
4-Chloro-3-methylphenol	ug/L	20	ND	11/17/93
2,4,6-Trichlorophenol	ug/L	20	ND	11/17/93
2,4,5-Trichlorophenol	ug/L	20	ND	11/17/93
2,4-Dinitrophenol	ug/L	100	ND	11/17/93
4-Nitrophenol	ug/L	100	ND	11/17/93
4,6-Dinitro-2-methylphenol	ug/L	100	ND	11/17/93
Pentachlorophenol	ug/L	100	ND	11/17/93
Nitrobenzene-d5 (Surrogate Recovery)			50%	11/17/93
2-Fluorobiphenyl (Surrogate Recovery)			67%	11/17/93
Terphenyl-d14 (Surrogate Recovery)			74%	11/17/93
2-Fluorophenol (Surrogate Recovery)			17%	11/17/93
Phenol-d6 (Surrogate Recovery)			15%	11/17/93
2,4,6-Tribromophenol(Surrogate Recovery)			38%	11/17/93
Date Extracted			11/11/93	

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REPORT OF LABORATORY ANALYSIS

Ms. Dora Chew
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November 18, 1993
PACE Project Number: 431110506

Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:			70 0188946	
Date Collected:			11/09/93	
Date Received:			11/10/93	
Client Sample ID:			W-B	
Parameter	Units	MDL		DATE ANALYZED
INORGANIC ANALYSIS				
INDIVIDUAL PARAMETERS				
Arsenic (EPA Method 7060, Furnace AAS)	mg/L	0.005	ND	11/15/93
Cadmium (EPA Method 6010/200.7, ICP)	mg/L	0.005	ND	11/16/93
Chromium (EPA Method 6010/200.7, ICP)	mg/L	0.01	ND	11/16/93
Copper (EPA Method 6010/200.7, ICP)	mg/L	0.01	ND	11/16/93
Iron (EPA Method 6010/200.7, ICP)	mg/L	0.1	0.1	11/16/93
Lead (EPA Method 6010/200.7, ICP)	mg/L	0.1	ND	11/16/93
Mercury (EPA Method 7470, Cold Vapor AA)	mg/L	0.0002	ND	11/17/93
Nickel (EPA Method 6010/200.7, ICP)	mg/L	0.02	ND	11/16/93
Silver (EPA Method 6010/200.7, ICP)	mg/L	0.01	ND	11/16/93
Zinc (EPA Method 6010/200.7, ICP)	mg/L	0.01	0.18	11/16/93
CYANIDES IN WATER				
Cyanides, total (EPA 335.2)	mg/L	0.005	ND	11/17/93
Date of Distillation, Cyanides	n/a		11/15/93	
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	11/15/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	11/15/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	11/15/93
Benzene	ug/L	0.5	ND	11/15/93
Toluene	ug/L	0.5	ND	11/15/93
Ethylbenzene	ug/L	0.5	ND	11/15/93
Xylenes, Total	ug/L	0.5	ND	11/15/93
VOLATILE ORGANICS, EPA METHOD 624 GC/MS				
Chloromethane	ug/L	10	ND	11/12/93
Vinyl Chloride	ug/L	10	ND	11/12/93
Bromomethane	ug/L	10	ND	11/12/93
Chloroethane	ug/L	10	ND	11/12/93
Trichlorofluoromethane	ug/L	5	ND	11/12/93
1,1,2-Trichlor-1,2,2-trifluoroethane	ug/L	5	ND	11/12/93
2-Butanone (MEK)	ug/L	50	ND	11/12/93

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REPORT OF LABORATORY ANALYSIS

Ms. Dora Chew
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November 18, 1993
PACE Project Number: 431110506

Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:			70 0188946	
Date Collected:			11/09/93	
Date Received:			11/10/93	
Client Sample ID:			W-B	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
VOLATILE ORGANICS, EPA METHOD 624 GC/MS				
1,1-Dichloroethene	ug/L	5	ND	11/12/93
Carbon Disulfide	ug/L	5	ND	11/12/93
Acetone	ug/L	50	ND	11/12/93
Methylene Chloride	ug/L	10	ND	11/12/93
trans-1,2-Dichloroethene	ug/L	5	ND	11/12/93
1,1-Dichloroethane	ug/L	5	ND	11/12/93
Chloroform	ug/L	5	ND	11/12/93
1,1,1-Trichloroethane	ug/L	5	ND	11/12/93
1,2-Dichloroethane	ug/L	5	ND	11/12/93
cis-1,2-Dichlorethene	ug/L	5	ND	11/12/93
Carbon Tetrachloride	ug/L	5	ND	11/12/93
Benzene	ug/L	5	ND	11/12/93
1,2-Dichloropropane	ug/L	5	ND	11/12/93
Trichloroethene (TCE)	ug/L	5	ND	11/12/93
Bromodichloromethane	ug/L	5	ND	11/12/93
trans-1,3-Dichloropropene	ug/L	5	ND	11/12/93
4-Methyl-2-pentanone (MIBK)	ug/L	50	ND	11/12/93
Toluene	ug/L	5	ND	11/12/93
cis-1,3-Dichloropropene	ug/L	5	ND	11/12/93
1,1,2-Trichloroethane	ug/L	5	ND	11/12/93
Dibromochloromethane	ug/L	5	ND	11/12/93
2-Hexanone	ug/L	50	ND	11/12/93
Tetrachloroethene	ug/L	5	ND	11/12/93
Chlorobenzene	ug/L	5	ND	11/12/93
Ethylbenzene	ug/L	5	ND	11/12/93
Bromoform	ug/L	5	ND	11/12/93
Xylene(s) Total	ug/L	5	ND	11/12/93
Styrene	ug/L	5	ND	11/12/93
1,1,2,2,-Tetrachloroethane	ug/L	5	ND	11/12/93
1,3-Dichlorobenzene	ug/L	5	ND	11/12/93
1,4-Dichlorobenzene	ug/L	5	ND	11/12/93

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Ms. Dora Chew
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November 18, 1993
PACE Project Number: 431110506

Client Reference: Exxon 7-0104 (EE)

Parameter	Units	MDL		DATE ANALYZED
PACE Sample Number:			70 0188946	
Date Collected:			11/09/93	
Date Received:			11/10/93	
Client Sample ID:			W-B	
ORGANIC ANALYSIS				
VOLATILE ORGANICS, EPA METHOD 624 GC/MS				
1,2-Dichlorobenzene	ug/L	5	ND	11/12/93
1,2-Dichloroethane-d4 (Surrog. Recovery)	%		105	11/12/93
Toluene-d8 (Surrogate Recovery)	%		101	11/12/93
4-Bromofluorobenzene (Surrog.Recovery)	%		100	11/12/93
EXTRACTABLE ORGANICS BY EPA 625 (GC/MS)				
N-Nitrosodimethylamine	ug/L	10	ND	11/15/93
Bis(2-chloroethyl) ether	ug/L	10	ND	11/15/93
1,3-Dichlorobenzene	ug/L	10	ND	11/15/93
1,4-Dichlorobenzene	ug/L	10	ND	11/15/93
Benzyl Alcohol	ug/L	10	ND	11/15/93
1,2-Dichlorobenzene	ug/L	10	ND	11/15/93
Bis(2-chloroisopropyl) ether	ug/L	10	ND	11/15/93
N-Nitroso-di-n-propylamine	ug/L	10	ND	11/15/93
Hexachloroethane	ug/L	10	ND	11/15/93
Nitrobenzene	ug/L	10	ND	11/15/93
Bis(2-chloroethoxy)methane	ug/L	10	ND	11/15/93
1,2,4-Trichlorobenzene	ug/L	10	ND	11/15/93
Naphthalene	ug/L	10	ND	11/15/93
Hexachlorobutadiene	ug/L	10	ND	11/15/93
2-Methylnaphthalene	ug/L	10	ND	11/15/93
Hexachlorocyclopentadiene	ug/L	10	ND	11/15/93
2-Chloronaphthalene	ug/L	10	ND	11/15/93
Dimethylphthalate	ug/L	10	ND	11/15/93
Acenaphthylene	ug/L	10	ND	11/15/93
2,6-Dinitrotoluene	ug/L	10	ND	11/15/93
Acenaphthene	ug/L	10	ND	11/15/93
Dibenzofuran	ug/L	10	ND	11/15/93
2,4-Dinitrotoluene	ug/L	10	ND	11/15/93
Diethyl phthalate	ug/L	10	ND	11/15/93
Fluorene	ug/L	10	ND	11/15/93
4-Chlorophenylphenyl ether	ug/L	10	ND	11/15/93

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REPORT OF LABORATORY ANALYSIS

November 18, 1993
PACE Project Number: 431110506

Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:	70 0188946
Date Collected:	11/09/93
Date Received:	11/10/93
Client Sample ID:	W-B

Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
EXTRACTABLE ORGANICS BY EPA 625 (GC/MS)				
N-Nitrosodiphenyl amine	ug/L	10	ND	11/15/93
1,2-Diphenylhydrazine	ug/L	10	ND	11/15/93
4-Bromophenylphenyl ether	ug/L	10	ND	11/15/93
Hexachlorobenzene	ug/L	10	ND	11/15/93
Phenanthrene	ug/L	10	ND	11/15/93
Anthracene	ug/L	10	ND	11/15/93
Di-n-butyl phthalate	ug/L	10	ND	11/15/93
Fluoranthene	ug/L	10	ND	11/15/93
Pyrene	ug/L	10	ND	11/15/93
Butylbenzyl phthalate	ug/L	10	ND	11/15/93
Benzo(a)anthracene	ug/L	10	ND	11/15/93
3,3'-Dichlorobenzidine	ug/L	20	ND	11/15/93
Chrysene	ug/L	10	ND	11/15/93
Bis(2-ethylhexyl) phthalate	ug/L	10	ND	11/15/93
Di-n-octyl phthalate	ug/L	10	ND	11/15/93
Benzo(b)fluoranthene	ug/L	10	ND	11/15/93
Benzo(k)fluoranthene	ug/L	10	ND	11/15/93
Benzo(a)pyrene	ug/L	10	ND	11/15/93
Indeno(1,2,3-cd)pyrene	ug/L	10	ND	11/15/93
Dibenz(a,h)anthracene	ug/L	10	ND	11/15/93
Benzo(g,h,i)perylene	ug/L	10	ND	11/15/93
Phenol	ug/L	10	ND	11/15/93
2-Chlorophenol	ug/L	10	ND	11/15/93
2-Methylphenol	ug/L	10	ND	11/15/93
4-Methylphenol	ug/L	10	ND	11/15/93
2-Nitrophenol	ug/L	10	ND	11/15/93
2,4-Dimethylphenol	ug/L	10	ND	11/15/93
Benzoic Acid	ug/L	50	ND	11/15/93
2,4-Dichlorophenol	ug/L	10	ND	11/15/93
4-Chloro-3-methylphenol	ug/L	10	ND	11/15/93
2,4,6-Trichlorophenol	ug/L	10	ND	11/15/93

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REPORT OF LABORATORY ANALYSIS

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November 18, 1993
PACE Project Number: 431110506

Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:			70 0188946	
Date Collected:			11/09/93	
Date Received:			11/10/93	
Client Sample ID:			W-B	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
EXTRACTABLE ORGANICS BY EPA 625 (GC/MS)				
2,4,5-Trichlorophenol	ug/L	10	ND	11/15/93
2,4-Dinitrophenol	ug/L	50	ND	11/15/93
4-Nitrophenol	ug/L	50	ND	11/15/93
4,6-Dinitro-2-methylphenol	ug/L	50	ND	11/15/93
Pentachlorophenol	ug/L	50	ND	11/15/93
Nitrobenzene-d5 (Surrogate Recovery)			82%	11/15/93
2-Fluorobiphenyl (Surrogate Recovery)			80%	11/15/93
Terphenyl-d14 (Surrogate Recovery)			92%	11/15/93
2-Fluorophenol (Surrogate Recovery)			19%	11/15/93
Phenol-d6 (Surrogate Recovery)			25%	11/15/93
2,4,6-Tribromophenol(Surrogate Recovery)			46%	11/15/93
Date Extracted			11/11/93	

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REPORT OF LABORATORY ANALYSIS

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November 18, 1993
PACE Project Number: 431110506

Client Reference: Exxon 7-0104 (EE)

Parameter	Units	MDL		DATE ANALYZED
PACE Sample Number:			70 0188954	
Date Collected:			11/09/93	
Date Received:			11/10/93	
Client Sample ID:			W-C	
INORGANIC ANALYSIS				
INDIVIDUAL PARAMETERS				
Arsenic (EPA Method 7060, Furnace AAS)	mg/L	0.005	ND	11/15/93
Cadmium (EPA Method 6010/200.7, ICP)	mg/L	0.005	ND	11/16/93
Chromium (EPA Method 6010/200.7, ICP)	mg/L	0.01	ND	11/16/93
Copper (EPA Method 6010/200.7, ICP)	mg/L	0.01	ND	11/16/93
Iron (EPA Method 6010/200.7, ICP)	mg/L	0.1	ND	11/16/93
Lead (EPA Method 6010/200.7, ICP)	mg/L	0.1	ND	11/16/93
Mercury (EPA Method 7470, Cold Vapor AA)	mg/L	0.0002	ND	11/17/93
Nickel (EPA Method 6010/200.7, ICP)	mg/L	0.02	ND	11/16/93
Silver (EPA Method 6010/200.7, ICP)	mg/L	0.01	ND	11/16/93
Zinc (EPA Method 6010/200.7, ICP)	mg/L	0.01	0.08	11/16/93
CYANIDES IN WATER				
Cyanides, total (EPA 335.2)	mg/L	0.005	ND	11/17/93
Date of Distillation, Cyanides	n/a		11/15/93	
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	11/15/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	11/15/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	11/15/93
Benzene	ug/L	0.5	ND	11/15/93
Toluene	ug/L	0.5	ND	11/15/93
Ethylbenzene	ug/L	0.5	ND	11/15/93
Xylenes, Total	ug/L	0.5	ND	11/15/93
VOLATILE ORGANICS, EPA METHOD 624 GC/MS				
Chloromethane	ug/L	10	ND	11/12/93
Vinyl Chloride	ug/L	10	ND	11/12/93
Bromomethane	ug/L	10	ND	11/12/93
Chloroethane	ug/L	10	ND	11/12/93
Trichlorofluoromethane	ug/L	5	ND	11/12/93
1,1,2-Trichlor-1,2,2-trifluoroethane	ug/L	5	ND	11/12/93
2-Butanone (MEK)	ug/L	50	ND	11/12/93

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Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:			70 0188954	
Date Collected:			11/09/93	
Date Received:			11/10/93	
Client Sample ID:			W-C	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
VOLATILE ORGANICS, EPA METHOD 624 GC/MS				
1,1-Dichloroethene	ug/L	5	ND	11/12/93
Carbon Disulfide	ug/L	5	ND	11/12/93
Acetone	ug/L	50	ND	11/12/93
Methylene Chloride	ug/L	10	ND	11/12/93
trans-1,2-Dichloroethene	ug/L	5	ND	11/12/93
1,1-Dichloroethane	ug/L	5	ND	11/12/93
Chloroform	ug/L	5	ND	11/12/93
1,1,1-Trichloroethane	ug/L	5	ND	11/12/93
1,2-Dichloroethane	ug/L	5	ND	11/12/93
cis-1,2-Dichlorethene	ug/L	5	ND	11/12/93
Carbon Tetrachloride	ug/L	5	ND	11/12/93
Benzene	ug/L	5	ND	11/12/93
1,2-Dichloropropane	ug/L	5	ND	11/12/93
Trichloroethene (TCE)	ug/L	5	ND	11/12/93
Bromodichloromethane	ug/L	5	ND	11/12/93
trans-1,3-Dichloropropene	ug/L	5	ND	11/12/93
4-Methyl-2-pentanone (MIBK)	ug/L	50	ND	11/12/93
Toluene	ug/L	5	ND	11/12/93
cis-1,3-Dichloropropene	ug/L	5	ND	11/12/93
1,1,2-Trichloroethane	ug/L	5	ND	11/12/93
Dibromochloromethane	ug/L	5	ND	11/12/93
2-Hexanone	ug/L	50	ND	11/12/93
Tetrachloroethene	ug/L	5	ND	11/12/93
Chlorobenzene	ug/L	5	ND	11/12/93
Ethylbenzene	ug/L	5	ND	11/12/93
Bromoform	ug/L	5	ND	11/12/93
Xylene(s) Total	ug/L	5	ND	11/12/93
Styrene	ug/L	5	ND	11/12/93
1,1,2,2,-Tetrachloroethane	ug/L	5	ND	11/12/93
1,3-Dichlorobenzene	ug/L	5	ND	11/12/93
1,4-Dichlorobenzene	ug/L	5	ND	11/12/93

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PACE Project Number: 431110506

Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:			70 0188954	
Date Collected:			11/09/93	
Date Received:			11/10/93	
Client Sample ID:			W-C	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
VOLATILE ORGANICS, EPA METHOD 624 GC/MS				
1,2-Dichlorobenzene	ug/L	5	ND	11/12/93
1,2-Dichloroethane-d4 (Surrog. Recovery)	%		105	11/12/93
Toluene-d8 (Surrogate Recovery)	%		100	11/12/93
4-Bromofluorobenzene (Surrog.Recovery)	%		99	11/12/93
EXTRACTABLE ORGANICS BY EPA 625 (GC/MS)				
N-Nitrosodimethylamine	ug/L	20	ND	11/16/93
Bis(2-chloroethyl) ether	ug/L	20	ND	11/16/93
1,3-Dichlorobenzene	ug/L	20	ND	11/16/93
1,4-Dichlorobenzene	ug/L	20	ND	11/16/93
Benzyl Alcohol	ug/L	20	ND	11/16/93
1,2-Dichlorobenzene	ug/L	20	ND	11/16/93
Bis(2-chloroisopropyl) ether	ug/L	20	ND	11/16/93
N-Nitroso-di-n-propylamine	ug/L	20	ND	11/16/93
Hexachloroethane	ug/L	20	ND	11/16/93
Nitrobenzene	ug/L	20	ND	11/16/93
Bis(2-chloroethoxy)methane	ug/L	20	ND	11/16/93
1,2,4-Trichlorobenzene	ug/L	20	ND	11/16/93
Naphthalene	ug/L	20	ND	11/16/93
Hexachlorobutadiene	ug/L	20	ND	11/16/93
2-Methylnaphthalene	ug/L	20	ND	11/16/93
Hexachlorocyclopentadiene	ug/L	20	ND	11/16/93
2-Chloronaphthalene	ug/L	20	ND	11/16/93
Dimethylphthalate	ug/L	20	ND	11/16/93
Acenaphthylene	ug/L	20	ND	11/16/93
2,6-Dinitrotoluene	ug/L	20	ND	11/16/93
Acenaphthene	ug/L	20	ND	11/16/93
Dibenzofuran	ug/L	20	ND	11/16/93
2,4-Dinitrotoluene	ug/L	20	ND	11/16/93
Diethyl phthalate	ug/L	20	ND	11/16/93
Fluorene	ug/L	20	ND	11/16/93
4-Chlorophenylphenyl ether	ug/L	20	ND	11/16/93

Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:			70 0188954	
Date Collected:			11/09/93	
Date Received:			11/10/93	
Client Sample ID:			W-C	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
EXTRACTABLE ORGANICS BY EPA 625 (GC/MS)				
N-Nitrosodiphenyl amine	ug/L	20	ND	11/16/93
1,2-Diphenylhydrazine	ug/L	20	ND	11/16/93
4-Bromophenylphenyl ether	ug/L	20	ND	11/16/93
Hexachlorobenzene	ug/L	20	ND	11/16/93
Phenanthrene	ug/L	20	ND	11/16/93
Anthracene	ug/L	20	ND	11/16/93
Di-n-butyl phthalate	ug/L	20	ND	11/16/93
Fluoranthene	ug/L	20	ND	11/16/93
Pyrene	ug/L	20	ND	11/16/93
Butylbenzyl phthalate	ug/L	20	ND	11/16/93
Benzo(a)anthracene	ug/L	20	ND	11/16/93
3,3'-Dichlorobenzidine	ug/L	40	ND	11/16/93
Chrysene	ug/L	20	ND	11/16/93
Bis(2-ethylhexyl) phthalate	ug/L	20	ND	11/16/93
Di-n-octyl phthalate	ug/L	20	ND	11/16/93
Benzo(b)fluoranthene	ug/L	20	ND	11/16/93
Benzo(k)fluoranthene	ug/L	20	ND	11/16/93
Benzo(a)pyrene	ug/L	20	ND	11/16/93
Indeno(1,2,3-cd)pyrene	ug/L	20	ND	11/16/93
Dibenz(a,h)anthracene	ug/L	20	ND	11/16/93
Benzo(g,h,i)perylene	ug/L	20	ND	11/16/93
Phenol	ug/L	20	ND	11/16/93
2-Chlorophenol	ug/L	20	ND	11/16/93
2-Methylphenol	ug/L	20	ND	11/16/93
4-Methylphenol	ug/L	20	ND	11/16/93
2-Nitrophenol	ug/L	20	ND	11/16/93
2,4-Dimethylphenol	ug/L	20	ND	11/16/93
Benzoic Acid	ug/L	100	ND	11/16/93
2,4-Dichlorophenol	ug/L	20	ND	11/16/93
4-Chloro-3-methylphenol	ug/L	20	ND	11/16/93
2,4,6-Trichlorophenol	ug/L	20	ND	11/16/93

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REPORT OF LABORATORY ANALYSIS

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November 18, 1993
PACE Project Number: 431110506

Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:			70 0188954	
Date Collected:			11/09/93	
Date Received:			11/10/93	
Client Sample ID:			W-C	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
EXTRACTABLE ORGANICS BY EPA 625 (GC/MS)				
2,4,5-Trichlorophenol	ug/L	20	ND	11/16/93
2,4-Dinitrophenol	ug/L	100	ND	11/16/93
4-Nitrophenol	ug/L	100	ND	11/16/93
4,6-Dinitro-2-methylphenol	ug/L	100	ND	11/16/93
Pentachlorophenol	ug/L	100	ND	11/16/93
Nitrobenzene-d5 (Surrogate Recovery)			58%	11/16/93
2-Fluorobiphenyl (Surrogate Recovery)			63%	11/16/93
Terphenyl-d14 (Surrogate Recovery)			54%	11/16/93
2-Fluorophenol (Surrogate Recovery)			17%	11/16/93
Phenol-d6 (Surrogate Recovery)			3%	11/16/93
2,4,6-Tribromophenol(Surrogate Recovery)			43%	11/16/93
Date Extracted			11/11/93	

These data have been reviewed and are approved for release.

Darrell C. Cain
Regional Director

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Client Reference: Exxon 7-0104 (EE)

MDL Method Detection Limit
ND Not detected at or above the MDL.

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Client Reference: Exxon 7-0104 (EE)

Arsenic (EPA Method 7060, Furnace AAS)
Batch: 70 26413
Samples: 70 0188920, 70 0188946, 70 0188954

METHOD BLANK:

Parameter	Units	MDL	Method Blank
Arsenic (EPA Method 7060, Furnace AAS)	mg/L	0.005	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Arsenic (EPA Method 7060, Furnace AAS)	mg/L	0.005	0.040	98%	110%	11%

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QUALITY CONTROL DATA

November 18, 1993
PACE Project Number: 431110506

Client Reference: Exxon 7-0104 (EE)

Cadmium (EPA Method 6010/200.7, ICP)
Batch: 70 26452
Samples: 70 0188920, 70 0188946, 70 0188954

METHOD BLANK:

Parameter	Units	MDL	Method Blank
Cadmium (EPA Method 6010/200.7, ICP)	mg/L	0.005	ND
Chromium (EPA Method 6010/200.7, ICP)	mg/L	0.01	ND
Copper (EPA Method 6010/200.7, ICP)	mg/L	0.01	ND
Iron (EPA Method 6010/200.7, ICP)	mg/L	0.1	ND
Lead (EPA Method 6010/200.7, ICP)	mg/L	0.1	ND
Nickel (EPA Method 6010/200.7, ICP)	mg/L	0.02	ND
Silver (EPA Method 6010/200.7, ICP)	mg/L	0.01	ND
Zinc (EPA Method 6010/200.7, ICP)	mg/L	0.01	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Cadmium (EPA Method 6010/200.7, ICP)	mg/L	0.005	0.050	108%	104%	3%
Chromium (EPA Method 6010/200.7, ICP)	mg/L	0.01	0.20	100%	100%	0%
Copper (EPA Method 6010/200.7, ICP)	mg/L	0.01	0.25	100%	100%	0%
Iron (EPA Method 6010/200.7, ICP)	mg/L	0.1	1.0	100%	100%	0%
Lead (EPA Method 6010/200.7, ICP)	mg/L	0.1	0.50	106%	112%	5%
Nickel (EPA Method 6010/200.7, ICP)	mg/L	0.02	0.50	98%	102%	4%
Silver (EPA Method 6010/200.7, ICP)	mg/L	0.01	0.050	98%	100%	2%
Zinc (EPA Method 6010/200.7, ICP)	mg/L	0.01	0.50	104%	108%	3%

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QUALITY CONTROL DATA

November 18, 1993
PACE Project Number: 431110506

Client Reference: Exxon 7-0104 (EE)

Mercury (EPA Method 7470, Cold Vapor AA)
Batch: 70 26476
Samples: 70 0188920, 70 0188946, 70 0188954

METHOD BLANK:

Parameter	Units	MDL	Method Blank
Mercury (EPA Method 7470, Cold Vapor AA	mg/L	0.0002	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Mercury (EPA Method 7470, Cold Vapor AA	mg/L	0.0002	0.01	97%	97%	0%

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QUALITY CONTROL DATA

November 18, 1993
PACE Project Number: 431110506

Client Reference: Exxon 7-0104 (EE)

CYANIDES IN WATER
Batch: 70 26460
Samples: 70 0188920, 70 0188946, 70 0188954

METHOD BLANK AND SAMPLE DUPLICATE:

Parameter	Units	MDL	Method Blank	700189063	Duplicate of 70 0189063	RPD
Cyanides, total (EPA 335.2)	mg/L	0.005	ND	ND	ND	NC

LABORATORY CONTROL SAMPLE:

Parameter	Units	MDL	Reference Value	Recv
Cyanides, total (EPA 335.2)	mg/L	0.005	0.1	88%

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QUALITY CONTROL DATA

November 18, 1993
PACE Project Number: 431110506

Client Reference: Exxon 7-0104 (EE)

EXTRACTABLE ORGANICS BY EPA 625 (GC/MS)
Batch: 70 26457
Samples: 70 0188920, 70 0188946, 70 0188954

METHOD BLANK:

Parameter	Units	MDL	Method Blank
N-Nitrosodimethylamine	ug/L	10	ND
Bis(2-chloroethyl) ether	ug/L	10	ND
1,3-Dichlorobenzene	ug/L	10	ND
1,4-Dichlorobenzene	ug/L	10	ND
Benzyl Alcohol	ug/L	10	ND
1,2-Dichlorobenzene	ug/L	10	ND
Bis(2-chloroisopropyl) ether	ug/L	10	ND
N-Nitroso-di-n-propylamine	ug/L	10	ND
Hexachloroethane	ug/L	10	ND
Nitrobenzene	ug/L	10	ND
Bis(2-chloroethoxy)methane	ug/L	10	ND
1,2,4-Trichlorobenzene	ug/L	10	ND
Naphthalene	ug/L	10	ND
Hexachlorobutadiene	ug/L	10	ND
2-Methylnaphthalene	ug/L	10	ND
Hexachlorocyclopentadiene	ug/L	10	ND
2-Chloronaphthalene	ug/L	10	ND
Dimethylphthalate	ug/L	10	ND
Acenaphthylene	ug/L	10	ND
2,6-Dinitrotoluene	ug/L	10	ND
Acenaphthene	ug/L	10	ND
Dibenzofuran	ug/L	10	ND
2,4-Dinitrotoluene	ug/L	10	ND
Diethyl phthalate	ug/L	10	ND
Fluorene	ug/L	10	ND
4-Chlorophenylphenyl ether	ug/L	10	ND
N-Nitrosodiphenyl amine	ug/L	10	ND
1,2-Diphenylhydrazine	ug/L	10	ND
4-Bromophenylphenyl ether	ug/L	10	ND
Hexachlorobenzene	ug/L	10	ND
Phenanthrene	ug/L	10	ND
Anthracene	ug/L	10	ND

Client Reference: Exxon 7-0104 (EE)

EXTRACTABLE ORGANICS BY EPA 625 (GC/MS)
Batch: 70 26457
Samples: 70 0188920, 70 0188946, 70 0188954

METHOD BLANK:

Parameter	Units	MDL	Method Blank
Di-n-butyl phthalate	ug/L	10	ND
Fluoranthene	ug/L	10	ND
Pyrene	ug/L	10	ND
Butylbenzyl phthalate	ug/L	10	ND
Benzo(a)anthracene	ug/L	10	ND
3,3'-Dichlorobenzidine	ug/L	20	ND
Chrysene	ug/L	10	ND
Bis(2-ethylhexyl) phthalate	ug/L	10	ND
Di-n-octyl phthalate	ug/L	10	ND
Benzo(b)fluoranthene	ug/L	10	ND
Benzo(k)fluoranthene	ug/L	10	ND
Benzo(a)pyrene	ug/L	10	ND
Indeno(1,2,3-cd)pyrene	ug/L	10	ND
Dibenz(a,h)anthracene	ug/L	10	ND
Benzo(g,h,i)perylene	ug/L	10	ND
Phenol	ug/L	10	ND
2-Chlorophenol	ug/L	10	ND
2-Methylphenol	ug/L	10	ND
4-Methylphenol	ug/L	10	ND
2-Nitrophenol	ug/L	10	ND
2,4-Dimethylphenol	ug/L	10	ND
Benzoic Acid	ug/L	50	ND
2,4-Dichlorophenol	ug/L	10	ND
4-Chloro-3-methylphenol	ug/L	10	ND
2,4,6-Trichlorophenol	ug/L	10	ND
2,4,5-Trichlorophenol	ug/L	10	ND
2,4-Dinitrophenol	ug/L	50	ND
4-Nitrophenol	ug/L	50	ND
4,6-Dinitro-2-methylphenol	ug/L	50	ND
Pentachlorophenol	ug/L	50	ND
Nitrobenzene-d5 (Surrogate Recovery)			97%
2-Fluorobiphenyl (Surrogate Recovery)			89%

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QUALITY CONTROL DATA

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PACE Project Number: 431110506

Client Reference: Exxon 7-0104 (EE)

EXTRACTABLE ORGANICS BY EPA 625 (GC/MS)
Batch: 70 26457
Samples: 70 0188920, 70 0188946, 70 0188954

METHOD BLANK:

Parameter	Units	MDL	Method Blank
Terphenyl-d14 (Surrogate Recovery)			96%
2-Fluorophenol (Surrogate Recovery)			61%
Phenol-d6 (Surrogate Recovery)			68%
2,4,6-Tribromophenol(Surrogate Recovery			75%

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
1,4-Dichlorobenzene	ug/L	10	100	65%	67%	3%
N-Nitroso-di-n-propylamine	ug/L	10	100	79%	75%	5%
1,2,4-Trichlorobenzene	ug/L	10	100	73%	76%	4%
Acenaphthene	ug/L	10	100	79%	76%	3%
2,4-Dinitrotoluene	ug/L	10	100	110%	110%	0%
Pyrene	ug/L	10	100	89%	91%	2%
Phenol	ug/L	10	150	55%	55%	0%
2-Chlorophenol	ug/L	10	150	60%	63%	4%
4-Chloro-3-methylphenol	ug/L	10	150	73%	73%	0%
4-Nitrophenol	ug/L	50	150	87%	87%	0%
Pentachlorophenol	ug/L	50	150	87%	93%	6%

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Ms. Dora Chew
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QUALITY CONTROL DATA

November 18, 1993
PACE Project Number: 431110506

Client Reference: Exxon 7-0104 (EE)

PURGEABLE FUELS AND AROMATICS
Batch: 70 26438
Samples: 70 0188920, 70 0188946, 70 0188954

METHOD BLANK:

Parameter	Units	MDL	Method Blank
TOTAL FUEL HYDROCARBONS, (LIGHT):			-
Purgeable Fuels, as Gasoline (EPA 8015M	ug/L	50	ND
PURGEABLE AROMATICS (BTXE BY EPA 8020M)			-
Benzene	ug/L	0.5	ND
Toluene	ug/L	0.5	ND
Ethylbenzene	ug/L	0.5	ND
Xylenes, Total	ug/L	0.5	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015M	ug/L	50	1000	99%	110%	10%
Benzene	ug/L	0.5	40	101%	108%	6%
Toluene	ug/L	0.5	40	104%	112%	7%
Ethylbenzene	ug/L	0.5	40	105%	111%	5%
Xylenes, Total	ug/L	0.5	120	108%	114%	5%

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QUALITY CONTROL DATA

November 18, 1993
PACE Project Number: 431110506

Client Reference: Exxon 7-0104 (EE)

VOLATILE ORGANICS, EPA METHOD 624 GC/MS
Batch: 70 26389
Samples: 70 0188920, 70 0188946, 70 0188954

METHOD BLANK:

Parameter	Units	MDL	Method Blank
Chloromethane	ug/L	10	ND
Vinyl Chloride	ug/L	10	ND
Bromomethane	ug/L	10	ND
Chloroethane	ug/L	10	ND
Trichlorofluoromethane	ug/L	5	ND
1,1,2-Trichlor-1,2,2-trifluoroethane	ug/L	5	ND
2-Butanone (MEK)	ug/L	50	ND
1,1-Dichloroethene	ug/L	5	ND
Carbon Disulfide	ug/L	5	ND
Acetone	ug/L	50	ND
Methylene Chloride	ug/L	10	ND
trans-1,2-Dichloroethene	ug/L	5	ND
1,1-Dichloroethane	ug/L	5	ND
Chloroform	ug/L	5	ND
1,1,1-Trichloroethane	ug/L	5	ND
1,2-Dichloroethane	ug/L	5	ND
cis-1,2-Dichlorethene	ug/L	5	ND
Carbon Tetrachloride	ug/L	5	ND
Benzene	ug/L	5	ND
1,2-Dichloropropane	ug/L	5	ND
Trichloroethene (TCE)	ug/L	5	ND
Bromodichloromethane	ug/L	5	ND
trans-1,3-Dichloropropene	ug/L	5	ND
4-Methyl-2-pentanone (MIBK)	ug/L	50	ND
Toluene	ug/L	5	ND
cis-1,3-Dichloropropene	ug/L	5	ND
1,1,2-Trichloroethane	ug/L	5	ND
Dibromochloromethane	ug/L	5	ND
2-Hexanone	ug/L	50	ND
Tetrachloroethene	ug/L	5	ND
Chlorobenzene	ug/L	5	ND
Ethylbenzene	ug/L	5	ND

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Ms. Dora Chew
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QUALITY CONTROL DATA

November 18, 1993
PACE Project Number: 431110506

Client Reference: Exxon 7-0104 (EE)

VOLATILE ORGANICS, EPA METHOD 624 GC/MS
Batch: 70 26389
Samples: 70 0188920, 70 0188946, 70 0188954

METHOD BLANK:

Parameter	Units	MDL	Method Blank
Bromoform	ug/L	5	ND
Xylene(s) Total	ug/L	5	ND
Styrene	ug/L	5	ND
1,1,2,2,-Tetrachloroethane	ug/L	5	ND
1,3-Dichlorobenzene	ug/L	5	ND
1,4-Dichlorobenzene	ug/L	5	ND
1,2-Dichlorobenzene	ug/L	5	ND
1,2-Dichloroethane-d4 (Surrog. Recovery	%		100
Toluene-d8 (Surrogate Recovery)	%		99
4-Bromofluorobenzene (Surrog.Recovery)	%		99

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
1,1-Dichloroethene	ug/L	5	50.00	90%	94%	4%
Benzene	ug/L	5	50.00	92%	98%	6%
Trichloroethene (TCE)	ug/L	5	50.00	88%	94%	6%
Toluene	ug/L	5	50.00	90%	96%	6%
Chlorobenzene	ug/L	5	50.00	90%	94%	4%

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Client Reference: Exxon 7-0104 (EE)

MDL	Method Detection Limit
NC	No calculation due to value below detection limit.
ND	Not detected at or above the MDL.
RPD	Relative Percent Difference

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EXXON COMPANY, U.S.A.

P.O. Box 4415, Houston, TX 77210-4415

CHAIN OF CUSTODY

2/31110.506

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☐ Huntington Beach, CA, 5702 Bolsa Avenue, 92649 (714) 892-2565

Page 1 of 1

Consultant's Name: RESNA

Address: 3315 Almaden Expwy, Suite 34, San Jose CA 95118

Site Location: 1725 Park St. Alameda CA

Project #: 170077.03

Consultant Project #: 170077.03

Consultant Work Release #: 09300238CO#/

Project Contact: Dora Chew

Phone #: 408/264-7723 Fax #: -2435

Laboratory Work Release #:

EXXON Contact: Marla Oversley ☒ EE ☐ C&M

Phone #: 510/246-8768 Fax #: -8798

EXXON RAS #: 7-0104

Sampled by (print): Jim Schollard

Sampler's Signature: Jim Schollard

Shipment Method: Courier

Air Bill #:

Shipment Date:

TAT: ☐ 24 hr ☐ 48 hr ☐ 72 hr ☒ Standard (5 day)

ANALYSIS REQUIRED

Sample Condition as Received
Temperature °C: PACE
Cooler #: COURIER
Inbound Seal Yes No
Outbound Seal Yes No

Sample Description	Collection Date/Time 11/9/93	Matrix Soil/Water	Prsv	# of Cont	PACE Sample #	TPH/GAS/BTEX EPA 8015/8020	TPH/Diesel EPA 8015	TRPH EPA 418.1	EPA 624	EPA 625	metals: Arsenic, Cd, Cr, Copper, Cyanide*, Lead, Mercury, Ni, Silver, Zinc (via TCLP metals scan)					COMMENTS
W-A	12:25-35	W	HCL	6	18897.0	X			X							
W-A	"	W	—	1						X						
W-A	"	W	—	1							X					
W-B	12:35-45	W	HCL	6	18894.6	X			X							
W-B	"	W	—	1						X						
W-B	"	W	—	1							X					
W-C	12:45-55	W	HCL	6	18895.4	X			X							
W-C	"	W	—	1						X						
W-C	"	W	—	1							X					

Relinquished by/Affiliation	Date	Time	Accepted by/Affiliation	Date	Time
Jim Schollard	11/9/93	14:00	Ed Kalb - Pace	11/10	405
Ed Kalb - Pace	11/10	1510	Jennifer McIntosh Pace	11/10/93	1805

Additional Comments:
*CY=Cyanide
*Run all metals ICP except As (furnace) and Hg (Cold Vapor)
per Dora Chew per Jim @ Pace (JM 11/17)

Distribution: White - Original Yellow - Exxon Pink - Lab Goldenrod - Consultant Field Staff

10/14, AW MIS

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REPORT OF LABORATORY ANALYSIS

November 30, 1993

Mr. Marc Briggs
RESNA
3315 Almaden Expressway Suite 34
San Jose, CA 95118

RE: PACE Project No. 431118.528
Client Reference: Exxon 7-0104 (EE)

Dear Mr. Briggs:

Enclosed is the report of laboratory analyses for samples received November 18, 1993.

Please note an atypical peak eluting between Toluene and Ethylbenzene was present in your sample W-7-MW9. The peak exhibited both an FID and a PID response.

Footnotes are given at the end of the report.

If you have any questions concerning this report, please feel free to contact us.

Sincerely,

Stephanie Matzo

Stephanie Matzo
Project Manager

Enclosures

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REPORT OF LABORATORY ANALYSIS

RESNA
3315 Almaden Expressway Suite 34
San Jose, CA 95118

November 30, 1993
PACE Project Number: 431118528

Attn: Mr. Marc Briggs

Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:			70 0195586	
Date Collected:			11/16/93	
Date Received:			11/18/93	
Client Sample ID:			Rinsate	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	11/23/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	11/23/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	11/23/93
Benzene	ug/L	0.5	ND	11/23/93
Toluene	ug/L	0.5	ND	11/23/93
Ethylbenzene	ug/L	0.5	ND	11/23/93
Xylenes, Total	ug/L	0.5	ND	11/23/93

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Mr. Marc Briggs
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November 30, 1993
PACE Project Number: 431118528

Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:			70 0195594	
Date Collected:			11/16/93	
Date Received:			11/18/93	
Client Sample ID:			MW-8R	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	11/23/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	11/23/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	11/23/93
Benzene	ug/L	0.5	ND	11/23/93
Toluene	ug/L	0.5	ND	11/23/93
Ethylbenzene	ug/L	0.5	ND	11/23/93
Xylenes, Total	ug/L	0.5	ND	11/23/93

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Mr. Marc Briggs
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November 30, 1993
PACE Project Number: 431118528

Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:			70 0195608	
Date Collected:			11/16/93	
Date Received:			11/18/93	
Client Sample ID:			W-7-MW8	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	11/23/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	11/23/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	11/23/93
Benzene	ug/L	0.5	ND	11/23/93
Toluene	ug/L	0.5	ND	11/23/93
Ethylbenzene	ug/L	0.5	ND	11/23/93
Xylenes, Total	ug/L	0.5	ND	11/23/93

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Mr. Marc Briggs
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November 30, 1993
PACE Project Number: 431118528

Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:			70 0195624	
Date Collected:			11/16/93	
Date Received:			11/18/93	
Client Sample ID:			W-7-MW9	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	11/23/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	11/23/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	11/23/93
Benzene	ug/L	0.5	ND	11/23/93
Toluene	ug/L	0.5	ND	11/23/93
Ethylbenzene	ug/L	0.5	ND	11/23/93
Xylenes, Total	ug/L	0.5	ND	11/23/93

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REPORT OF LABORATORY ANALYSIS

Mr. Marc Briggs
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November 30, 1993
PACE Project Number: 431118528

Client Reference: Exxon 7-0104 (EE)

Parameter	Units	MDL		DATE ANALYZED
PACE Sample Number:			70 0195640	
Date Collected:			11/16/93	
Date Received:			11/18/93	
Client Sample ID:			W-8-MW10	
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	11/23/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	11/23/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	11/23/93
Benzene	ug/L	0.5	ND	11/23/93
Toluene	ug/L	0.5	ND	11/23/93
Ethylbenzene	ug/L	0.5	ND	11/23/93
Xylenes, Total	ug/L	0.5	ND	11/23/93

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REPORT OF LABORATORY ANALYSIS

Mr. Marc Briggs
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November 30, 1993
PACE Project Number: 431118528

Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:			70 0195667	
Date Collected:			11/16/93	
Date Received:			11/18/93	
Client Sample ID:			W-8-MW3	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	11/24/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	4000	11/24/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	11/24/93
Benzene	ug/L	0.5	400	11/24/93
Toluene	ug/L	0.5	400	11/24/93
Ethylbenzene	ug/L	0.5	120	11/24/93
Xylenes, Total	ug/L	0.5	490	11/24/93

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Mr. Marc Briggs
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November 30, 1993
PACE Project Number: 431118528

Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:			70 0195683	
Date Collected:			11/16/93	
Date Received:			11/18/93	
Client Sample ID:			W-8-MW4	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	11/23/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	250	5100	11/23/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	11/23/93
Benzene	ug/L	2.5	820	11/23/93
Toluene	ug/L	2.5	160	11/23/93
Ethylbenzene	ug/L	2.5	260	11/23/93
Xylenes, Total	ug/L	2.5	760	11/23/93

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REPORT OF LABORATORY ANALYSIS

Mr. Marc Briggs
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November 30, 1993
PACE Project Number: 431118528

Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:			70 0195705	
Date Collected:			11/16/93	
Date Received:			11/18/93	
Client Sample ID:			W-8-MW6	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	11/23/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	410	11/23/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	11/23/93
Benzene	ug/L	0.5	41	11/23/93
Toluene	ug/L	0.5	12	11/23/93
Ethylbenzene	ug/L	0.5	47	11/23/93
Xylenes, Total	ug/L	0.5	71	11/23/93

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REPORT OF LABORATORY ANALYSIS

Mr. Marc Briggs
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November 30, 1993
PACE Project Number: 431118528

Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:			70 0195721	
Date Collected:			11/16/93	
Date Received:			11/18/93	
Client Sample ID:			W-7-MW7	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	11/24/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	1200	7400	11/24/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	11/24/93
Benzene	ug/L	12	300	11/24/93
Toluene	ug/L	12	85	11/24/93
Ethylbenzene	ug/L	12	480	11/24/93
Xylenes, Total	ug/L	12	120	11/24/93

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REPORT OF LABORATORY ANALYSIS

Mr. Marc Briggs
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November 30, 1993
PACE Project Number: 431118528

Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:			70 0195748	
Date Collected:			11/16/93	
Date Received:			11/18/93	
Client Sample ID:			W-8-MW1	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	11/22/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	840	11/22/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	11/22/93
Benzene	ug/L	0.5	18	11/22/93
Toluene	ug/L	0.5	1.4	11/22/93
Ethylbenzene	ug/L	0.5	72	11/22/93
Xylenes, Total	ug/L	0.5	17	11/22/93

These data have been reviewed and are approved for release.

Darrell C. Cain
Regional Director

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Mr. Marc Briggs
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FOOTNOTES
for pages 1 through 10

November 30, 1993
PACE Project Number: 431118528

Client Reference: Exxon 7-0104 (EE)

MDL Method Detection Limit
ND Not detected at or above the MDL.

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Client Reference: Exxon 7-0104 (EE)

PURGEABLE FUELS AND AROMATICS
Batch: 70 26592
Samples: 70 0195748

METHOD BLANK:

Parameter	Units	MDL	Method Blank
TOTAL FUEL HYDROCARBONS, (LIGHT):			-
Purgeable Fuels, as Gasoline (EPA 8015M	ug/L	50	ND
PURGEABLE AROMATICS (BTXE BY EPA 8020M)			-
Benzene	ug/L	0.5	ND
Toluene	ug/L	0.5	ND
Ethylbenzene	ug/L	0.5	ND
Xylenes, Total	ug/L	0.5	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015M	ug/L	50	1000	98%	87%	11%
Benzene	ug/L	0.5	40	99%	104%	4%
Toluene	ug/L	0.5	40	105%	104%	0%
Ethylbenzene	ug/L	0.5	40	105%	103%	1%
Xylenes, Total	ug/L	0.5	120	108%	103%	4%

Mr. Marc Briggs
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QUALITY CONTROL DATA

November 30, 1993
PACE Project Number: 431118528

Client Reference: Exxon 7-0104 (EE)

PURGEABLE FUELS AND AROMATICS
Batch: 70 26637
Samples: 70 0195667

METHOD BLANK:

Parameter	Units	MDL	Method Blank
TOTAL FUEL HYDROCARBONS, (LIGHT):			-
Purgeable Fuels, as Gasoline (EPA 8015M	ug/L	50	ND
PURGEABLE AROMATICS (BTXE BY EPA 8020M)			-
Benzene	ug/L	0.5	ND
Toluene	ug/L	0.5	ND
Ethylbenzene	ug/L	0.5	ND
Xylenes, Total	ug/L	0.5	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015M	ug/L	50	1000	103%	100%	2%
Benzene	ug/L	0.5	100	104%	104%	0%
Toluene	ug/L	0.5	100	108%	109%	0%
Ethylbenzene	ug/L	0.5	100	101%	101%	0%
Xylenes, Total	ug/L	0.5	300	104%	104%	0%

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FAX: 415-883-2673

Client Reference: Exxon 7-0104 (EE)

PURGEABLE FUELS AND AROMATICS
Batch: 70 26642
Samples: 70 0195586, 70 0195594, 70 0195608, 70 0195624, 70 0195640

METHOD BLANK:

Parameter	Units	MDL	Method Blank
TOTAL FUEL HYDROCARBONS, (LIGHT):			-
Purgeable Fuels, as Gasoline (EPA 8015M	ug/L	50	ND
PURGEABLE AROMATICS (BTXE BY EPA 8020M)			-
Benzene	ug/L	0.5	ND
Toluene	ug/L	0.5	ND
Ethylbenzene	ug/L	0.5	ND
Xylenes, Total	ug/L	0.5	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015M	ug/L	50	1000	103%	107%	3%
Benzene	ug/L	0.5	100	98%	104%	5%
Toluene	ug/L	0.5	100	98%	103%	4%
Ethylbenzene	ug/L	0.5	100	99%	103%	3%
Xylenes, Total	ug/L	0.5	300	96%	101%	5%

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REPORT OF LABORATORY ANALYSIS

Mr. Marc Briggs
Page 15

QUALITY CONTROL DATA

November 30, 1993
PACE Project Number: 431118528

Client Reference: Exxon 7-0104 (EE)

PURGEABLE FUELS AND AROMATICS
Batch: 70 26645
Samples: 70 0195721

METHOD BLANK:

Parameter	Units	MDL	Method Blank
TOTAL FUEL HYDROCARBONS, (LIGHT):			-
Purgeable Fuels, as Gasoline (EPA 8015M	ug/L	50	ND
PURGEABLE AROMATICS (BTXE BY EPA 8020M)			-
Benzene	ug/L	0.5	ND
Toluene	ug/L	0.5	ND
Ethylbenzene	ug/L	0.5	ND
Xylenes, Total	ug/L	0.5	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015M	ug/L	50	1000	95%	94%	1%
Benzene	ug/L	0.5	40.0	93%	95%	2%
Toluene	ug/L	0.5	40.0	103%	102%	0%
Ethylbenzene	ug/L	0.5	40.0	108%	110%	1%
Xylenes, Total	ug/L	0.5	120	109%	109%	0%

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Mr. Marc Briggs
Page 16

FOOTNOTES
for pages 12 through 15

November 30, 1993
PACE Project Number: 431118528

Client Reference: Exxon 7-0104 (EE)

MDL	Method Detection Limit
ND	Not detected at or above the MDL.
RPD	Relative Percent Difference

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P.O. Box 4415, Houston, TX 77210-4415

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Y31118.528

[✓] Novato, CA, 11 Digital Drive, 94949 (415) 883-6100

[ ] Huntington Beach, CA, 5702 Bolsa Avenue, 92649 (714) 892-2565

Consultant's Name: RESNA — Page 1 of 2

Address: 3315 Almaden Expwy. #34 San Jose CA 95118 — Site Location: 725 Park St.

Project #: — Consultant Project #: 130077.01 — Consultant Work Release #:

Project Contact: Joane Buckthal/Mark Briggs — Phone (408) 264-7723 Fax #: 264-2435 — Laboratory Work Release #: 09300238

EXXON Contact: Marla Guensler [✓] EE [ ] C&M — Phone (510) 246-8776 Fax #: — EXXON RAS #: 7-0104

Sampled by (print): Chris Allen — Sampler's Signature: Chris Allen

Shipment Method: Courier — Air Bill #: — Shipment Date:

TAT: [ ] 24 hr [ ] 48 hr [ ] 72 hr [✓] Standard (5 day)

Sample Condition as Received
Temperature ° C: ____
Cooler #: ____
Inbound Seal Yes No
Outbound Seal Yes No

Sample Description	Collection Date/Time	Matrix Soil/Water	Prsv	# of Cont	PACE Sample #	TPH/GAS/BTEX EPA 8015/8020	TPH/Diesel EPA 8015	TRPH EPA 418.1	Hold								COMMENTS
Rinsate	11/16	H_2O	HCl	2	19558.6	X											
MW-8R	11/16	↓	↓	2	19559.4	X											
W-7-MW8	11/16 2:00			3	19560.8	X											
MW9R	11/16			2	19561.6				X								
W-7-MW9	11/16 1:38			3	19562.4	X											(not x'ed on COC) run per M. Briggs JM 11/18
MW10R	11/16			2	19563.2				X								
W-8-MW10	11/16 2:30			3	19564.0	X											
MW3R	11/16			2	19565.9				X								
W-8-MW3	11/16 2:45			3	19566.7	X											
MW4R	11/16	↓	↓	2	19567.5				X								

Relinquished by/Affiliation	Date	Time	Accepted by/Affiliation	Date	Time
Chris Allen	11/16	7:00	Ed [illegible] - Pace	11/18	1440
Ed [illegible] Pace	11/18	1620	[illegible] - Pace	11/18/93	1620

Additional Comments: 10 [illegible]

Distribution: White - Original Yellow - Exxon Pink - Lab Goldenrod - Consultant Field Staff

43118.528

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CHAIN OF CUSTODY

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[ ] Huntington Beach, CA, 5702 Bolsa Avenue, 92649 (714) 892-2565

Consultant's Name: RESNA — Page 2 of 2

Address: 3315 Almaden Expwy #34 San Jose CA 95118 — Site Location: 1725 Park St,

Project #: — Consultant Project #: 170077.01 — Consultant Work Release #:

Project Contact: Joane Bechtel/Mark Briggs — Phone #(408)264-7723 Fax #264-2435 — Laboratory Work Release #: 09300238

EXXON Contact: Marla Guensler [✓] EE [ ] C&M — Phone #: (510)246-8776 Fax #: — EXXON RAS #: 7-0104

Sampled by (print): Chris Allen — Sampler's Signature: Chris Allen

Shipment Method: Courier — Air Bill #: — Shipment Date:

TAT: [ ] 24 hr [ ] 48 hr [ ] 72 hr [✓] Standard (5 day)

Sample Description	Collection Date/Time	Matrix Soil/Water	Prsv	# of Cont	PACE Sample #	TPH/GAS/BTEX EPA 8015/8020	TPH/Diesel EPA 8015	TRPH EPA 418.1	Hold	COMMENTS
W8-MW4	11/16 3:15	H2O	HCl	3	19568.3	X				
MW6 B	11/16	↓	↓	2	19569.1				X	
W-8-MW6	11/16 3:30			3	19570.5	X				
MW7 B	11/16			2	19571.3				X	
W-7-MW7	11/16 3:45			3	19572.1	X				
MW1 B	11/16			2	19573.0				X	
W8-MW1	11/16 4:00			3	19574.8	X				

Sample Condition as Received
Temperature ° C: ______
Cooler #: ______
Inbound Seal Yes No
Outbound Seal Yes No

Relinquished by/Affiliation	Date	Time	Accepted by/Affiliation	Date	Time
Chris Allen	11/16	7:00	Ed Matty Pace	11/18	1440
Ed Matty Pace	11/18	1620	Jim McWhorter Pace	11/18/93	1620

Additional Comments: 10/BOT

Distribution White - Original Yellow - Exxon Pink - Lab Goldenrod - Consultant Field Staff

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170077.03

REPORT OF LABORATORY ANALYSIS

October 15, 1993

Ms. Dora Chew
RESNA
3315 Almaden Expressway, Suite 34
San Jose, CA 95118

RE: PACE Project No. 431008.508
Client Reference: Exxon 7-0104 (EE)

Dear Ms. Chew:

Enclosed is the report of laboratory analyses for samples received October 08, 1993.

Please note an unidentified peak was observed on samples A and C which did not resemble a typical hydrocarbon chromatographic pattern. The peak exhibited a PID response.

Footnotes are given at the end of the report.

If you have any questions concerning this report, please feel free to contact us.

Sincerely,

Stephanie Matzo

Stephanie Matzo
Project Manager

Enclosures

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Novato, CA 94949
TEL: 415-883-6100
FAX: 415-883-2673

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REPORT OF LABORATORY ANALYSIS

RESNA
3315 Almaden Expressway, Suite 34
San Jose, CA 95118

October 15, 1993
PACE Project Number: 431008508

Attn: Ms. Dora Chew

Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:			70 0168538	
Date Collected:			10/06/93	
Date Received:			10/08/93	
Client Sample ID:			INF	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	10/13/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	500	5000	10/13/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	10/13/93
Benzene	ug/L	5.0	810	10/13/93
Toluene	ug/L	5.0	56	10/13/93
Ethylbenzene	ug/L	5.0	100	10/13/93
Xylenes, Total	ug/L	5.0	460	10/13/93

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REPORT OF LABORATORY ANALYSIS

Ms. Dora Chew
Page 2

October 15, 1993
PACE Project Number: 431008508

Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:			70 0168546	
Date Collected:			10/06/93	
Date Received:			10/08/93	
Client Sample ID:			A	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	10/13/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	740	10/13/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	10/13/93
Benzene	ug/L	0.5	18	10/13/93
Toluene	ug/L	0.5	1.3	10/13/93
Ethylbenzene	ug/L	0.5	ND	10/13/93
Xylenes, Total	ug/L	0.5	39	10/13/93

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REPORT OF LABORATORY ANALYSIS

Ms. Dora Chew
Page 3

October 15, 1993
PACE Project Number: 431008508

Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:			70 0168554	
Date Collected:			10/06/93	
Date Received:			10/08/93	
Client Sample ID:			B	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	10/13/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	10/13/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	10/13/93
Benzene	ug/L	0.5	ND	10/13/93
Toluene	ug/L	0.5	ND	10/13/93
Ethylbenzene	ug/L	0.5	ND	10/13/93
Xylenes, Total	ug/L	0.5	ND	10/13/93

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REPORT OF LABORATORY ANALYSIS

Ms. Dora Chew
Page 4

October 15, 1993
PACE Project Number: 431008508

Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:			70 0168562	
Date Collected:			10/06/93	
Date Received:			10/08/93	
Client Sample ID:			C	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	10/13/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	390	10/13/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	10/13/93
Benzene	ug/L	0.5	7.5	10/13/93
Toluene	ug/L	0.5	0.6	10/13/93
Ethylbenzene	ug/L	0.5	ND	10/13/93
Xylenes, Total	ug/L	0.5	18	10/13/93

These data have been reviewed and are approved for release.

Darrell C. Cain
Regional Director

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Ms. Dora Chew
Page 5

FOOTNOTES
for pages 1 through 4

October 15, 1993
PACE Project Number: 431008508

Client Reference: Exxon 7-0104 (EE)

MDL Method Detection Limit
ND Not detected at or above the MDL.

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Ms. Dora Chew
Page 6

QUALITY CONTROL DATA

October 15, 1993
PACE Project Number: 431008508

Client Reference: Exxon 7-0104 (EE)

PURGEABLE FUELS AND AROMATICS
Batch: 70 25523
Samples: 70 0168538, 70 0168546, 70 0168554, 70 0168562

METHOD BLANK:

Parameter	Units	MDL	Method Blank
TOTAL FUEL HYDROCARBONS, (LIGHT):			-
Purgeable Fuels, as Gasoline (EPA 8015M	ug/L	50	ND
PURGEABLE AROMATICS (BTXE BY EPA 8020M)			-
Benzene	ug/L	0.5	ND
Toluene	ug/L	0.5	ND
Ethylbenzene	ug/L	0.5	ND
Xylenes, Total	ug/L	0.5	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015M	ug/L	50	1000	100%	96%	4%
Benzene	ug/L	0.5	40	91%	87%	4%
Toluene	ug/L	0.5	40	92%	87%	5%
Ethylbenzene	ug/L	0.5	40	99%	93%	6%
Xylenes, Total	ug/L	0.5	120	100%	95%	5%

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Ms. Dora Chew
Page 7

FOOTNOTES
for page 6

October 15, 1993
PACE Project Number: 431008508

Client Reference: Exxon 7-0104 (EE)

MDL Method Detection Limit
ND Not detected at or above the MDL.
RPD Relative Percent Difference

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4131008 SO8

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☑ Novato, CA, 11 Digital Drive, 94949 (415) 883-6100

☐ Huntington Beach, CA, 5702 Bolsa Avenue, 92649 (714) 892-2565

Consultant's Name: RESNA, 3315 Alamaden Expy, Suite 34, San JOSE CA 95118

Page 1 of 1

Address:

Site Location: 1725 Park Street, Oakland

Project #:

Consultant Project #: 17CC77.03

Consultant Work Release #: 093 00238

Project Contact: Dave Lowe

Phone #: (408) 266 7723 Fax #: 266 2635

Laboratory Work Release #:

EXXON Contact: Marla Guenzler ☑ EE ☐ C&M

Phone #: (510) 547 8776 Fax #:

EXXON RAS #: 7-0104

Sampled by (print): Nemesh.C / Jim Schollard

Sampler's Signature:

Shipment Method:

Air Bill #:

Shipment Date: 10/8/93

TAT: ☐ 24 hr ☐ 48 hr ☐ 72 hr ☑ Standard (5 day)

ANALYSIS REQUIRED

Sample Condition as Received
Temperature ° C: _____
Cooler #: _____
Inbound Seal Yes No
Outbound Seal Yes No

Sample Description	Collection Date/Time	Matrix Soil/Water	Prsv	# of Cont	PACE Sample #	TPH/GAS/BTEX EPA 8015/8020	TPH/Diesel EPA 8015	TRPH EPA 418.1	COMMENTS
TNFP	10/6 5:40PM	H_2O	HCl	3	16853.8	✓			No RAS#
A	10/6 5:30	"	"	3	854.6	✓			↓
B	10/6 5:20	"	"	3	855.4	✓			NO RAS#, TIME +
C	10/6 5:10	"	"	3	856.2	✓			DATE MATCH 10/9

Relinquished by/Affiliation	Date	Time	Accepted by/Affiliation	Date	Time
Jim Schollard/RESNA	10/8/93	12:47	[signature] - PACE	10/8/93	1300
[signature] - PACE	10/8/93	1838	[signature] - PACE	10/8	1838

Additional Comments: 5 | 1

Distribution: White - Original Yellow - Exxon Pink - Lab Goldenrod - Consultant Field Staff

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REPORT OF LABORATORY ANALYSIS

October 21, 1993

Ms. Dora Chew
RESNA
3315 Almaden Expressway, Suite 34
San Jose, CA 95118

RE: PACE Project No. 431018.507
Client Reference: Exxon 7-0104 (EE)

Dear Ms. Chew:

Enclosed is the report of laboratory analyses for samples received October 18, 1993.

Please note a peak eluting earlier than Benzene and suspected to be methyl tert butyl ether was present in samples W-INF, W-A and W-B.

Footnotes are given at the end of the report.

If you have any questions concerning this report, please feel free to contact us.

Sincerely,

Stephanie Matzo
Project Manager

Enclosures

11 Digital Drive
Novato, CA 94949
TEL: 415-883-6100
FAX: 415-883-2673

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REPORT OF LABORATORY ANALYSIS

RESNA
3315 Almaden Expressway, Suite 34
San Jose. CA 95118

October 21, 1993
PACE Project Number: 431018507

Attn: Ms. Dora Chew

Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:	70 0174856
Date Collected:	10/15/93
Date Received:	10/18/93
	W-INF

Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS			-	10/21/93
TOTAL FUEL HYDROCARBONS, (LIGHT):				
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	500	2300	10/21/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	10/21/93
Benzene	ug/L	5.0	770	10/21/93
Toluene	ug/L	5.0	38	10/21/93
Ethylbenzene	ug/L	5.0	40	10/21/93
Xylenes, Total	ug/L	5.0	220	10/21/93

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REPORT OF LABORATORY ANALYSIS

October 21, 1993
PACE Project Number: 431018507

Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:			70 0174864	
Date Collected:			10/15/93	
Date Received:			10/18/93	
Client Sample ID:			W - A	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS			-	10/21/93
TOTAL FUEL HYDROCARBONS, (LIGHT):				
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	530	10/21/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	10/21/93
Benzene	ug/L	0.5	17	10/21/93
Toluene	ug/L	0.5	3.0	10/21/93
Ethylbenzene	ug/L	0.5	ND	10/21/93
Xylenes, Total	ug/L	0.5	33	10/21/93

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REPORT OF LABORATORY ANALYSIS

Ms. Dora Chew
Page 3

October 21, 1993
PACE Project Number: 431018507

Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:			70 0174872	
Date Collected:			10/15/93	
Date Received:			10/18/93	
Client Sample ID:			W - B	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS			-	10/21/93
TOTAL FUEL HYDROCARBONS, (LIGHT):				
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	69	10/21/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	10/21/93
Benzene	ug/L	0.5	0.5	10/21/93
Toluene	ug/L	0.5	ND	10/21/93
Ethylbenzene	ug/L	0.5	ND	10/21/93
Xylenes, Total	ug/L	0.5	ND	10/21/93

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REPORT OF LABORATORY ANALYSIS

Ms. Dora Chew
Page 4

October 21, 1993
PACE Project Number: 431018507

Client Reference: Exxon 7-0104 (EE)

Parameter	Units	MDL		DATE ANALYZED
PACE Sample Number:			70 0174880	
Date Collected:			10/15/93	
Date Received:			10/18/93	
Client Sample ID:			W - C	
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	10/21/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	10/21/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	10/21/93
Benzene	ug/L	0.5	ND	10/21/93
Toluene	ug/L	0.5	ND	10/21/93
Ethylbenzene	ug/L	0.5	ND	10/21/93
Xylenes, Total	ug/L	0.5	ND	10/21/93

These data have been reviewed and are approved for release.

Darrell C. Cain
Regional Director

11 Digital Drive
Novato, CA 94949
TEL: 415-883-6100
FAX: 415-883-2673

REPORT OF LABORATORY ANALYSIS

FOOTNOTES
for pages 1 through 4

October 21, 1993
PACE Project Number: 431018507

Client Reference: Exxon 7-0104 (EE)

MDL Method Detection Limit
ND Not detected at or above the MDL.

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REPORT OF LABORATORY ANALYSIS

Ms. Dora Chew
Page 6

QUALITY CONTROL DATA

October 21. 1993
PACE Project Number: 431018507

Client Reference: Exxon 7-0104 (EE)

PURGEABLE FUELS AND AROMATICS
Batch: 70 25555
Samples: 70 0174872, 70 0174880

METHOD BLANK:

Parameter	Units	MDL	Method Blank
TOTAL FUEL HYDROCARBONS, (LIGHT):			-
Purgeable Fuels, as Gasoline (EPA 8015M	ug/L	50	ND
PURGEABLE AROMATICS (BTXE BY EPA 8020M)			-
Benzene	ug/L	0.5	ND
Toluene	ug/L	0.5	ND
Ethylbenzene	ug/L	0.5	ND
Xylenes, Total	ug/L	0.5	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015M	ug/L	50	1000	106%	106%	0%
Benzene	ug/L	0.5	40.0	99%	100%	1%
Toluene	ug/L	0.5	40.0	100%	102%	1%
Ethylbenzene	ug/L	0.5	40.0	100%	102%	1%
Xylenes, Total	ug/L	0.5	120	102%	103%	0%

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Novato, CA 94949
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FAX: 415 883 2673

Client Reference: Exxon 7-0104 (EE)

PURGEABLE FUELS AND AROMATICS
Batch: 70 25739
Samples: 70 0174856, 70 0174864

METHOD BLANK:

Parameter	Units	MDL	Method Blank
TOTAL FUEL HYDROCARBONS, (LIGHT):			-
Purgeable Fuels, as Gasoline (EPA 8015M	ug/L	50	ND
PURGEABLE AROMATICS (BTXE BY EPA 8020M)			-
Benzene	ug/L	0.5	ND
Toluene	ug/L	0.5	ND
Ethylbenzene	ug/L	0.5	ND
Xylene (total)	ug/L	0.5	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015M	ug/L	50	1000	93%	97%	4%
Benzene	ug/L	0.5	40.0	103%	98%	4%
Toluene	ug/L	0.5	40.0	98%	93%	5%
Ethylbenzene	ug/L	0.5	40.0	96%	91%	5%
Xylene (total)	ug/L	0.5	120	96%	91%	5%

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Novato, CA 94949
TEL: 415-883-6100
FAX: 415-883-2673

Ms. Dora Chew
Page 8

FOOTNOTES
for pages 6 through 7

October 21, 1993
PACE Project Number: 431018507

Client Reference: Exxon 7-0104 (EE)

MDL	Method Detection Limit
ND	Not detected at or above the MDL.
RPD	Relative Percent Difference

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pace INCORPORATED — THE ASSURANCE OF QUALITY

EXXON COMPANY, U.S.A.

P.O. Box 4415, Houston, TX 77210-4415

CHAIN OF CUSTODY

N31C15 507

[X] Novato, CA, 11 Digital Drive, 94949 (415) 883-6100

[ ] Huntington Beach, CA, 5702 Bolsa Avenue, 92649 (714) 892-2565

Consultant's Name: RESNA INDUSTRIES INC, 3315 Almaden Expy, [illegible] — Page 1 of 1

Address: San Jose, CA 95118

Site Location: [illegible]

Project #:

Consultant Project #: 170077.03

Consultant Work Release #: 09300238

Project Contact: Dora Chew

Phone #: (408) 264-7723 — Fax #: 264-2435

Laboratory Work Release #:

EXXON Contact: Marla Guensler [X] EE [ ] C&M

Phone #: (510) 246-8776 — Fax #:

EXXON RAS #: 7-0104

Sampled by (print): Naresh C

Sampler's Signature: N. [illegible] C

Shipment Method:

Air Bill #:

Shipment Date:

TAT: [ ] 24 hr [ ] 48 hr [X] 72 hr [ ] Standard (5 day)

Sample Condition as Received:
Temperature °C ____
Cooler #: ____
Inbound Seal Yes No
Outbound Seal Yes No

ANALYSIS REQUIRED

Sample Description	Collection Date/Time	Matrix Soil/Water	Prsv	# of Cont	PACE Sample #	TPH GAS/BTEX EPA 8015/8020	TPH/Diesel EPA 8015	TRPH EPA 418.1											COMMENTS
W-INF	10/15 5:15PM	H2O	HCl	3	174856	X													
W-A	10/15 5:10PM	"	"	3	174864	X													
W-B	10/15 5:00PM	"	"	3	174872	X													
W-C	10/15 5:00PM	"	"	3	174880	X													

Relinquished by/Affiliation	Date	Time	Accepted by/Affiliation	Date	Time
[signature]	10/18	1415	[signature] - PACE	10/18/93	1410
R. [signature] - PACE	10/18/93	1725	[signature] PACE	10/18	1725

Additional Comments: 10/4

Distribution: White - Original; Yellow - Exxon; Pink - Lab; Goldenrod - Consultant Field Staff

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REPORT OF LABORATORY ANALYSIS

December 17, 1993

Ms. Dora Chew
RESNA
3315 Almaden Expressway, Suite 34
San Jose, CA 95118

RE: PACE Project No. 431210.517
Client Reference: Exxon 7-0104 (EE)

Dear Ms. Chew:

Enclosed is the report of laboratory analyses for samples received December 10, 1993.

Footnotes are given at the end of the report.

If you have any questions concerning this report, please feel free to contact us.

Sincerely,

Stephanie Matzo

Stephanie Matzo
Project Manager

Enclosures

11 Digital Drive
Novato, CA 94949
TEL: 415-883-6100
FAX: 415-883-2673

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REPORT OF LABORATORY ANALYSIS

December 17, 1993
PACE Project Number: 431210517

RESNA
3315 Almaden Expressway, Suite 34
San Jose, CA 95118

Attn: Ms. Dora Chew

Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:			70 0209056	
Date Collected:			12/09/93	
Date Received:			12/10/93	
Client Sample ID:			W-A	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS			-	12/14/93
TOTAL FUEL HYDROCARBONS, (LIGHT):				
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	1500	12/14/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	12/14/93
Benzene	ug/L	0.5	130	12/14/93
Toluene	ug/L	0.5	350	12/14/93
Ethylbenzene	ug/L	0.5	10	12/14/93
Xylenes, Total	ug/L	0.5	82	12/14/93

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THE ASSURANCE OF QUALITY

REPORT OF LABORATORY ANALYSIS

Ms. Dora Chew
Page 2

December 17, 1993
PACE Project Number: 431210517

Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:			70 0209064	
Date Collected:			12/09/93	
Date Received:			12/10/93	
Client Sample ID:			W-B	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	12/14/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	12/14/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	12/14/93
Benzene	ug/L	0.5	ND	12/14/93
Toluene	ug/L	0.5	ND	12/14/93
Ethylbenzene	ug/L	0.5	ND	12/14/93
Xylenes, Total	ug/L	0.5	ND	12/14/93

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REPORT OF LABORATORY ANALYSIS

Ms. Dora Chew
Page 3

December 17, 1993
PACE Project Number: 431210517

Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:			70 0209072	
Date Collected:			12/09/93	
Date Received:			12/10/93	
Client Sample ID:			W-C	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	12/14/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	12/14/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	12/14/93
Benzene	ug/L	0.5	3.6	12/14/93
Toluene	ug/L	0.5	9.5	12/14/93
Ethylbenzene	ug/L	0.5	ND	12/14/93
Xylenes, Total	ug/L	0.5	ND	12/14/93

These data have been reviewed and are approved for release.

Darrell C. Cain
Regional Director

11 Digital Drive
Novato, CA 94949
TEL: 415-883-6100
FAX: 415-883-2673

Client Reference: Exxon 7-0104 (EE)

MDL Method Detection Limit
ND Not detected at or above the MDL.

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THE ASSURANCE OF QUALITY

REPORT OF LABORATORY ANALYSIS

Ms. Dora Chew
Page 5

QUALITY CONTROL DATA

December 17, 1993
PACE Project Number: 431210517

Client Reference: Exxon 7-0104 (EE)

PURGEABLE FUELS AND AROMATICS
Batch: 70 27062
Samples: 70 0209056, 70 0209064, 70 0209072

METHOD BLANK:

Parameter	Units	MDL	Method Blank
TOTAL FUEL HYDROCARBONS, (LIGHT):			-
Purgeable Fuels, as Gasoline (EPA 8015M	ug/L	50	ND
PURGEABLE AROMATICS (BTXE BY EPA 8020M)			-
Benzene	ug/L	0.5	ND
Toluene	ug/L	0.5	ND
Ethylbenzene	ug/L	0.5	ND
Xylenes, Total	ug/L	0.5	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015M	ug/L	50	1000	93%	86%	7%
Benzene	ug/L	0.5	100	99%	106%	6%
Toluene	ug/L	0.5	100	101%	107%	5%
Ethylbenzene	ug/L	0.5	100	98%	101%	3%
Xylenes, Total	ug/L	0.5	300	100%	103%	2%

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Client Reference: Exxon 7-0104 (EE)

MDL	Method Detection Limit
ND	Not detected at or above the MDL.
RPD	Relative Percent Difference

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P.O. Box 4415, Houston, TX 77210-4415

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431210.517

[X] Novato, CA, 11 Digital Drive, 94949 (415) 883-6100

[ ] Huntington Beach, CA, 5702 Bolsa Avenue, 92649 (714) 892-2565

Consultant's Name: RESNA

Address: 3315 Almaden Expy, Suite 34, San Jose CA 95118

Site Location: 1725 Park St, Alameda

Project #: 170077.03

Consultant Project #: 170077.03

Consultant Work Release #: 09300238C0#1

Project Contact: ~~Marla Guenster~~ Dora Chew

Phone #: 408/264-7723 Fax #: -2435

Laboratory Work Release #: 09300238C0#1

EXXON Contact: Marla Gueasler [X] EE [ ] C&M

Phone #: 510/246-8768 Fax #: 8798

EXXON RAS #: 7-0104

Sampled by (print): Jim Schollard

Sampler's Signature: Jim Schollard

Shipment Method: Carier

Air Bill #:

Shipment Date: 12/10/93

TAT: [ ] 24 hr [ ] 48 hr [ ] 72 hr [X] Standard (5 day)

ANALYSIS REQUIRED

Sample Condition as Received
Temperature ° C: _____
Cooler #: _____
Inbound Seal Yes No
Outbound Seal Yes No

Sample Description	Collection Date/Time 12/9/93	Matrix Soil/Water	Prsv	# of Cont	PACE Sample #	TPH/GAS/BTEX EPA 8015/8020	TPH/Diesel EPA 8015	TRPH EPA 418.1										COMMENTS
W-A	16:30	W	HCl	3	20905.6	X												
W-B	16:40	W	↓	3	20906.4	X												
W-C	16:50	W	↓	3	20907.2	X												

Relinquished by/Affiliation	Date	Time	Accepted by/Affiliation	Date	Time
Jim Schollard	12/10/93	1419	Ed Vaitts - Pace	12/10	1420
Ed Vaitts - Pace	12/10	1720	Sandra Briones - Pace	12/10/93	1720

Additional Comments:

10/1

Distribution: White - Original Yellow - Exxon Pink - Lab Goldenrod - Consultant Field Staff

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REPORT OF LABORATORY ANALYSIS

December 27, 1993

Ms. Dora Chew
RESNA
3315 Almaden Expressway, Suite 34
San Jose, CA 95118

RE: PACE Project No. 431223.508
Client Reference: Exxon 7-0104 (EE)

Dear Ms. Chew:

Enclosed is the report of laboratory analyses for samples received December 23, 1993.

Footnotes are given at the end of the report.

If you have any questions concerning this report, please feel free to contact us.

Sincerely,

Stephanie Matzo

Stephanie Matzo
Project Manager

Enclosures

11 Digital Drive
Novato, CA 94949
TEL: 415-883-6100
FAX: 415-883-2673

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THE ASSURANCE OF QUALITY

REPORT OF LABORATORY ANALYSIS

RESNA
3315 Almaden Expressway, Suite 34
San Jose, CA 95118

December 27, 1993
PACE Project Number: 431223508

Attn: Ms. Dora Chew

Client Reference: Exxon 7-0104 (EE)

PACE Sample Number:	70 0220939
Date Collected:	12/22/93
Date Received:	12/23/93
	W-EFF

Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	12/23/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	190	12/23/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	12/23/93
Benzene	ug/L	0.5	1.9	12/23/93
Toluene	ug/L	0.5	1.6	12/23/93
Ethylbenzene	ug/L	0.5	ND	12/23/93
Xylenes, Total	ug/L	0.5	10	12/23/93

These data have been reviewed and are approved for release.

Darrell C. Cain
Regional Director

11 Digital Drive
Novato, CA 94949
TEL: 415-883-6100
FAX: 415-883-2673

Ms. Dora Chew
Page 2

FOOTNOTES
for page 1

December 27, 1993
PACE Project Number: 431223508

Client Reference: Exxon 7-0104 (EE)

MDL Method Detection Limit
ND Not detected at or above the MDL.

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FAX: 415-883-2673

Ms. Dora Chew
Page 3

QUALITY CONTROL DATA

December 27, 1993
PACE Project Number: 431223508

Client Reference: Exxon 7-0104 (EE)

PURGEABLE FUELS AND AROMATICS
Batch: 70 27292
Samples: 70 0220939

METHOD BLANK:

Parameter	Units	MDL	Method Blank
TOTAL FUEL HYDROCARBONS, (LIGHT):			-
Purgeable Fuels, as Gasoline (EPA 8015M	ug/L	50	ND
PURGEABLE AROMATICS (BTXE BY EPA 8020M)			-
Benzene	ug/L	0.5	ND
Toluene	ug/L	0.5	ND
Ethylbenzene	ug/L	0.5	ND
Xylenes, Total	ug/L	0.5	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015M	ug/L	50	1000	122%	122%	0%
Benzene	ug/L	0.5	40.0	108%	109%	0%
Toluene	ug/L	0.5	40.0	111%	108%	2%
Ethylbenzene	ug/L	0.5	40.0	112%	105%	6%
Xylenes, Total	ug/L	0.5	120	110%	103%	6%

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FAX: 415-883-2673

Client Reference: Exxon 7-0104 (EE)

MDL	Method Detection Limit
ND	Not detected at or above the MDL.
RPD	Relative Percent Difference

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EXXON COMPANY, U.S.A.

P.O. Box 4415, Houston, TX 77210-4415

CHAIN OF CUSTODY

431223.508

[X] Novato, CA, 11 Digital Drive, 94949 (415) 883-6100

[ ] Huntington Beach, CA, 5702 Bolsa Avenue, 92649 (714) 892-2565

Page 1 of 1

Consultant's Name: RESNA

Address: 3315 Almaden Expwy, Suite 34, San Jose CA 95118

Site Location: 1725 Park St, Alameda

Project #: 170077.03

Consultant Project #: 170077.03

Consultant Work Release #: 09300238 CO#1

Project Contact: Dora Chew

Phone # (408) 264-7723 Fax #: -2435

Laboratory Work Release #:

EXXON Contact: Marla Guensler [X] EE [ ] C&M

Phone # (510) 246-8768 Fax #: -8798

EXXON RAS #: 7-0104

Sampled by (print): Mark Ebner

Sampler's Signature: Mark Ebner

Shipment Method: Courier

Air Bill #:

Shipment Date: 12/23/93

TAT: [X] 24 hr [ ] 48 hr [ ] 72 hr [ ] Standard (5 day)

Sample Condition as Received
Temperature ° C: ______
Cooler #: ______
Inbound Seal Yes No
Outbound Seal Yes No

Sample Description	Collection Date/Time	Matrix Soil/Water	Prsv	# of Cont	PACE Sample #	TPH/GAS/BTEX EPA 8015/8020	TPH/Diesel EPA 8015	TRPH EPA 418.1										COMMENTS
W-EFF	12/22/93 7:15	W	HCL	3	220939	X												

Relinquished by/Affiliation	Date	Time	Accepted by/Affiliation	Date	Time
Mark Ebner / RESNA	12/23	11:37	Jeanne Buckthal / RESNA	12/23/93	11:40
			[illegible]	12/27	[illegible]
[illegible signature]	12/27	1600	[signature]	12/23	1600

Additional Comments: Mon (12/27/93) for lab results O.K. contact Dora Chew or Jim Schollard

H/1

Distribution: White - Original Yellow - Exxon Pink - Lab Goldenrod - Consultant Field Staff

RESNA
Working to Restore Nature

APPENDIX C

WASTEWATER DISCHARGE PERMIT

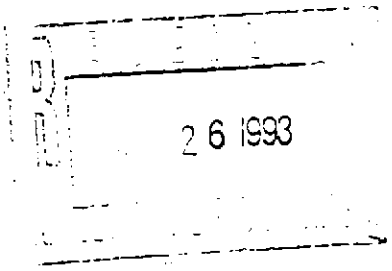
FEB 3 1993

EAST BAY
MUNICIPAL UTILITY DISTRICT

MICHAEL J. WALLIS
DIRECTOR OF WASTEWATER

CERTIFIED MAIL
(Return Receipt Requested)
No. P790 282 870

January 21, 1993



Ms. Marla D. Guensler
Environmental Engineer
Exxon Company USA
P. O. Box 4032
Concord, California 94520

Dear Ms. Guensler:

Re: Wastewater Discharge Permit (Account No. 302-66631)

Enclosed is the Wastewater Discharge Permit for the remediation project for Exxon Service Station No.7-0104, effective January 25, 1993, through January 17, 1994. Please read the Permit Terms and Conditions and the attached Standard Provisions and Reporting Requirements. You are responsible for complying with all Permit conditions and requirements.

Exxon Company USA shall report to the Source Control Division any changes, either permanent or temporary, to the premise or operation that significantly affect either the volume or quality of wastewater discharged or deviate from the Terms and Conditions under which this Permit is granted.

If you have any questions regarding this matter, please contact Safa Toma of the Source Control Division at 510/287-1512.

Sincerely,

JOSEPH G. DAMAS
Manager of Source Control

JGD:SAT:sat

Enclosures

cc: Mike Sides
Harding Lawson Associates
1855 Gateway Blvd, Suite 500
Concord, California 94520

Wastewater Discharge Permit Application

EBMUD

PERMIT NUMBER 502-66631

APPLICANT BUSINESS NAME

Exxon Company, U.S.A.

ADDRESS OF PREMISE DISCHARGING WASTEWATER	BUSINESS MAILING ADDRESS
1725 Park Street (STREET ADDRESS)	P.O. Box 4032 (STREET ADDRESS)
Alameda (CITY) ____ (ZIP CODE)	Concord (CITY) 94520 (ZIP CODE)

~~CHIEF EXECUTIVE OFFICER~~ Exxon Contact

Ms. Marla D. Guensler (NAME) — Environmental Engineer (TITLE)

P.O. Box 4032, 2300 Clayton Road (STREET ADDRESS) — Concord (CITY) 94520 (ZIP CODE)

PERSON TO BE CONTACTED ABOUT THIS APPLICATION	PERSON TO BE CONTACTED IN EVENT OF EMERGENCY
Mr. Michael A. Sides (Harding Lawson Assoc.) (NAME)	Ms. Marla Guensler (NAME)
Senior Engineer (TITLE) (510) 687-9660 (PHONE)	(510) 246-8776 (DAY PHONE) same (NIGHT PHONE)

DOCUMENTATION TO BE RETURNED WITH THE PERMIT APPLICATION:

- [X] PROCESS DESCRIPTION
- [X] WATER BALANCE CALCULATIONS
- [X] WASTEWATER STRENGTH DATA BASE
- [X] SCHEMATIC FLOW DIAGRAM
- [X] BUILDING LAYOUT DIAGRAM
- [X] DESCRIPTION OF PRETREATMENT SYSTEM
- [X] SELF-MONITORING METHOD
- [X] SPILL PREVENTION AND CONTAINMENT PLAN
- [X] A LIST OF ALL ENVIRONMENTAL PERMITS (e.g. Air, Hazardous Waste)
- [X] OTHER (SPECIFY) Work Plan, Groundwater Extraction and Treatment System Installation.

PROVISIONS

Applicant will comply with the District Wastewater Control Ordinance and all applicable rules and regulations.

Applicant will report to EBMUD, Wastewater Department any changes, permanent or temporary, to the premise or operations that significantly change the quality or volume of the wastewater discharge or deviation from the terms and conditions under which this permit is granted.

CERTIFICATION

I have personally examined and am familiar with the information submitted in this document and attachments. To the best of my knowledge the submitted information is true, accurate and complete.

TYPE OR PRINT

Name William Y. Wang

Title Senior Environmental Engineer, Exxon USA

SIGNATURE

11/21/91
DATE

EBMUD

Exxon Company, U.S.A.
BUSINESS NAME

Process Description

PURPOSE – The Process Description is intended to provide a description of the primary business activities and the substances which may enter into the wastewater from the business activity.

EBMUD USE
Permit Number: 502-66631
Business Classification Code: 4950

BUSINESS ACTIVITY

Groundwater Extraction and Treatment

DESCRIPTION OF PRODUCT

TYPE OF PRODUCT OR BRAND NAME	QUANTITIES Past Calendar Year	QUANTITIES Estimated This Year
The effluent of the groundwater treatment system is clean groundwater.	Ø	2.6 M gallons

PROCESS DESCRIPTION

PROCESS DESCRIPTION List all wastewater generating operations	CHARACTERISTICS List all substances that may be discharged to the sewer.
Example: Rinsewater from electroplating bath	Cr, Cu, Ni, Zn
Example: Washdown of milk filling area	fatty acids, milk
Effluent from groundwater treatment system.	no contaminants (activated carbon removes dissolved gasoline from extracted groundwater prior to discharge to the sanitary sewer.)

DISCHARGE PERIOD

a. Time of day from 12 am to 12 am
b. Days of the week 7

BATCH DISCHARGE(S)

a. Day(s) of the week: Ø
b. Time(s) of the day
c. Volume discharged
d. Rate of discharge

OTHER WASTES – List the type and volume of liquid waste and sludges removed from the premises by means other than the community sewer.

WASTE REMOVED BY (Name, address and State Transporter ID No.)	TYPE OF WASTE (Example: alkaline cleaners, organic solvents, treatment sludge)	WASTE I.D. No.	VOLUME (lbs/gal)/mo
US Services Oakland, California CAD052453107	Spent Activated Carbon	N.O.S. ORM-E	200 lbs/Mo

SD-31 • 2/88

EBMUD

Business Name Exxon Company, U.S.A.

Water Balance / Strength Summary

PURPOSE: This information will enable EBMUD to evaluate the volumes, source(s) and strengths of wastewater discharged to the community sewer.

Permit Number: 502-6631

WATER USE AND DISPOSITION: Show on a separate sheet the method and calculations used to determine the quantities shown in the table.

Figures are: ☐ gallons per calendar day ☒ gallons per working day Number of working days per year 365

WATER USE	WATER SUPPLY FROM:			WASTEWATER DISCHARGED TO:					
	EBMUD	OTHER (1)		SIDE SEWER (gal/day)				OTHER (2)	
	gal/day	gal/day	CODE	No. 1	No. ___	No. ___	No. ___	gal/day	CODE
Sanitary				7,200					
Processes									
Boiler									
Cooling									
Washing									
Irrigation									
Product									
Stormwater									
Other (3)		7,200	1						
Subtotal		7,200		7,200					

EBMUD AND OTHER SUPPLY TOTAL 7,200 **ALL SIDE SEWERS TOTAL** 7,200

NOTES:

1. Enter the quantity and the appropriate code letter indicating the source:
   a. Well **b.** Creek **c.** Stormwater **d.** Reclaimed Water **e.** Raw Materials.
2. Enter the quantity and appropriate code letter indicating the discharge point:
   a. Stormdrain **b.** Rail, Truck, Barge **c.** Evaporation **d.** Product
3. Describe Other: Groundwater extracted from 5 on-site extraction wells. Groundwater is treated on site with activated carbon and discharged to the sanitary sewer.

SANITARY DISCHARGE: Please use the following data from the Uniform Plumbing Code, 1985, to determine sanitary wastewater volumes.

Field service employees - 5 gallons per employee per day
Office employees - 20 gallons per employee per day
Production employees - 25 gallons per employee per day
Production employees with showers - 35 gallons per employee per day

Include the effect that seasonal and weekend staffing changes may have on determining average volumes.

AVERAGE WASTEWATER STRENGTH: Data base must be attached, average self-monitoring and EBMUD data.

SIDE SEWER (mg/L)

	No. 1	No. ___	No. ___	No. ___
CODF	15			
TSS	2			

SC-34 • 10/88

RESNA
Working to Restore Nature

APPENDIX D

FACILITY INSPECTION LOGS

RESNA
Working to Restore Nature

DAILY FIELD REPORT

SHEET 1 OF 2
JOB NO. 170077.03
DATE: 10/6/93

PROJECT NAME: Exxon 104

WORK SCOPE: O+M

TIME: 13:00 Jim Schollard & Naresh C., RESNA, on-site

System status:
System up + operating

Operational Data:
Control Panel: On
Nutrient Feed Pump - off } NOT being used @ this time
Caustic Feed Pump - off }
Transfer Pump - on
Nutrient Feed tank low-level - alarm (ok, not in use)
Flowmeter Reading: 772,440 gallons
Flow Rate = 2.5 gpm (should be ~10 gpm) ok ✓
TOT. gallons pumped since last recorded: 97,320 (9/8/93 = 28 days)
(should be ≈ 100,800 ga. @ ave Q of 2.5 gpm or 3,600 ga/day) OK ✓
Caustic tank + Nutrient tank Levels: NA (not in use)
~~Sand filter pressure (for backwashing): not operational~~
Pressure Gauge (inlet) @ Sand filter: 20 PSI (too high!)
Pressure Gauge (outlet) @ Sand filter for backwashing: NO (not operational)
Pressure Gauge (inlet) @ Bag filter: 15 PSI (too high)
Pressure Gauge (outlet) @ 1st Carbon Cannister: 12 PSI (too high)
Note: 1ST Carbon Cannister is under too much pressure, cannister bowing w/ slow leak → will mitigate
Air Compressor: On

Work Conducted:
Backwashed Sand filters (~10 min/cannister), replaced bag filter, backwashed Carbon cannister system (~15 min.), changed out 1ST Carbon Cannister due to drum failure + added new cannister to system as C.C. #3, draining Compressor water + Compressor tank, monitored air sparge - Carbon Cannister sample ports (A, B + C) refer to Air Monitoring Log, collected water samples (Inf., A, B+C)

Continued →

ATTACHMENTS: 1 pg.

INITIAL: JS

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DAILY FIELD REPORT

SHEET 2 OF 2
JOB NO. 170077.03
DATE: 10/6/93

PROJECT NAME: 104
WORK SCOPE: O&M Cont.

TIME:

Operational Data (Post System adjustments + backwashing):
Flow rate = ~10.0 gpm (optimum flow)
Pressure Gauge (inlet) @ Sand filter: 12 PSI (good ~~optimum~~)
Pressure Gauge (outlet) @ Sand filter: NO
Pressure Gauge (inlet) @ Bag filter: 6 PSI (optimum)
Pressure Gauge (outlet) @ 1st C.C.: 1PSI (excellent, optimum)

To be done: - Carbon Canister System is under too much pressure - safety hazard! either replace existing 3 200 lb. Carbon Canisters w/ 2 500 pound carbon canisters or construct a parallel dual carbon canister system using 2 sets of 2 200 lb. canisters (4 in total) per tele w/ Don Chew, prepare change order to conduct 2nd option above as asp. (N.C. 10/6/93)
- replace sand filter P.G (outlet)
- replace transfer pump w/ higher capacity pump

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DAILY FIELD REPORT

SHEET 1 OF 2
JOB NO. 170077.03
DATE: 10/[illegible]/93

PROJECT NAME: Exxon 7-0104

WORK SCOPE: O+M / DTWs

TIME:
9:30 Jim Schollard, onsite. (lunch 12:30 - 1:30)
3:30 offsite

System Status: off, Naresh shut-down on 10/15/93, pending lab results

Operational Data:

Control Panel: off
Nutrient Feed Pump - off 2
Caustic Feed Pump - off 3 not being used
Transfer Pump: off
No alarms ~~initiated~~ Triggered

Flowmeter reading: 810,448.5 (as of 10/15/93)
Flow rate: NA
TOT. gallons pumped since last recorded visit (10/6/93 = 772,440ga.): 38,008.5 ga
≈ 4,223 ga./day or 2.9 gpm (<50 gpm or 7,200 gpd regulation) ok
Compressor: off
Pressure Gauges: 0 PSI

Well ID	Time	DTW	Condition *
MW1	10:48	7.83	Broken lock (replaced), poor seal
MW5	10:55	7.25	Broken lock + seal (replaced lock)
MW3	11:14	7.42	Broken lock (replaced)
MW4	11:24	7.77	Broken lock (replaced)
MW2	11:11	7.24	Broken lock (replaced), poor seal, cracked well head rim
MW6	11:20	7.85	Broken lock (replaced)
MW7	11:29	7.55	Broken lock (replaced)
MW8	11:46	6.83	(2") ok
MW9	11:42	6.97	(2") OK
MW10	11:35	7.57	Corroded 2" well cap, broken lock (replaced)

Continued

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DAILY FIELD REPORT

PROJECT NAME: Exxon 7-0104

JOB NO. 170077.03

DATE: 10/21/93

WORK SCOPE:

TIME: Well ID	Time	DTW	Condition
EW1	12:00	6.67	needs custom well cap (4 lines supported by twine)
EW2	12:20	6.71	
EW3	12:21	6.55	
EW4	12:22	6.13	
EW5	12:23	6.77	

*Note - all MWs had unlocked well caps (locks were left open & were broken -- corroded)
- several hollow hexagonal bolts missing from wellhead covers
- several broken locking well seals (See notes)
- MW1 & MW6 - replace Christy boxes
(left msg. for D. Higgins & J. Buckthall re. need for replacement)

Work Conducted:
System inspection/documentation; Collect DTWs from all wells onsite & inspect conditions of well heads (Overall poor) report well head conditions to P.M. & appropriate personnel to order materials for re; replaced most well locks onsite; added garden hose to system for water source; Posted new BAAQMD approved permit/correspondence & EBMUD permit conditions; Collected reservoirs for additional equip. & fittings; teles. w/ D.H, D.C., JB re. equip well mtrls. & system status; Conducted general clean-up; drained Compressor & Compressor tank Condensate; installed flexible compressor tank drain assembly w/ ball valve

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DAILY FIELD REPORT

SHEET 1 OF 1

PROJECT NAME: Exxon 7-0104

JOB NO. 170077.03

DATE: 10/28/93

WORK SCOPE: System Start-up + inspection + O+M

TIME:
10:15 Jim Schollard onsite
1:15 offsite

System status: off

Work Conducted: Drum inventory, System start-up @ 11:10: all extraction pumps operating, Transfer pump kicked on @ ~ 11:55, discharge flow rate = 5.6 gpm. ok. labeled valves + pressure indicators on the equipt. themselves throughout compound; backwashed Sand filters

Operational data upon departure (12:45 pm):
Control Panel: on
Nutrient + Caustic Feed Pumps: off (not in use)
Transfer Pump: on
Alarms?: Nutrient Feed tank low level (ok, not in use)
Flow meter reading: 810,775
(Flow rate: 5.6 gpm (intermittent Q)
Tot. gallons pumped since last recorded reading + ave. Q: NA
Caustic + Nutrient tank levels: NA (not in use)
Pressure Guage (inlet) @ Sand filter (PI-101): 18 PSI → 15 PSI*
Pressure Guage (outlet) @ " " (PI-102): NO
Pressure Guage (inlet) @ Bag filter (PI-103): 8.5 PSI
Pressure Guage (outlet) @ 1st C.C. (PI): 6.5 PSI
Air Compressor Pressure: 80 PSI ok ✓
Extraction Pumps pressure (PI-403): 65 ok ✓

* after backwashing Sand filters

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DAILY FIELD REPORT

SHEET 1 OF 2
PROJECT NAME: Exxon 7-0104
JOB NO. 170077.03
DATE: 11/9/93

WORK SCOPE: O&M & Water Sampling

TIME: 10:00 Jim Schollard onsite

Operational Data:
Same as Post Oper. Data as yesterday (refer to 11/8/93 O & M Log.

Flowmeter Reading (12:00): 851,840
Instantaneous flow rate (per Fm): ~7.0 gpm
Tot. gal. pumped since last recorded reading (848,730 on 11/8 @ 18:00) & ave Q: 3,110 gal = 2.9 gpm during last 18 hrs. (in compliance) o/c flowrate

12:00 tele. w/ Dora Chan re. status of system. Pressure indicators reveal that pressure differentials & inlet pressures are too high. I recommend re-backwashing sand & carbon, replacing sand, draining sludged particulate from bag filter housing & replacing some or all carbon canisters, & installing a pressure reducing valve to inlet line to carbon system & routing PSV-2 back to bio tank rather than P-3 intake (per Jerry Wilske); she requested that I simply reduce the flow through the system via gating down HV-103 as a temporary measure until further notice -JS

Work Conducted / Samples Collected:
Reduced flow @ pump (P-3) via gating down HV-103 so that Carbon influent pressure is @ 10 PSI (per PI-501) @ 12:10 pm
Collected following water samples for Quarterly & Semi-Annual Analyses:
W-A for BTEX/TPHG, EPA 624 & 625 & Metals (per EBMUD permit)
W-B for " " "
W-C for " " "
W-Biotank for plate count/bio feasibility analyses
W-Wells for " "
Work Conducted Cont.: prepared back-up sample-kit for above analyses & left onsite w/ pre-completed C.O.C.; recorded measurements & specs. of needed replacement parts for order. Cont.

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DAILY FIELD REPORT

SHEET 2 OF 2
JOB NO. 170077.03
DATE: 11/9/93

PROJECT NAME: Exxon 7-0104

WORK SCOPE: O+M Cont.

TIME:

Post flow rate adjustment (Q↓) Operational data:

time: 14:00
Control Panel: On
Transfer Pump: Set on Hand to collect below data
No alarms on
Flow meter reading: 852,200
Intermittent flowrate (per FM): ~6 gpm
PI-101: 15 psi (too high)
PI-102: NO
PI-103: 11 psi } ok = 1 psi diff.
PI-501: 10 psi }
PI-501: 10 psi } ok < 3 psi diff.
PI-502: 2 psi }
AC pressure: 83 psi (ok)
PT-405: 65 psi (ok)
PH: 6.19 (per signet Controller)

14:15 Jim S. offsite

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DAILY FIELD REPORT

SHEET 1 OF 2
JOB NO. 170077.03
DATE: 11/22/93

PROJECT NAME: Exxon 104

WORK SCOPE: O+M

TIME: 1:30 Jim Schofield, RESNA onsite
5:30 offsite

System Status: Up

Operational Data (2:30):

Control Panel: On
Extraction Pumps all pumping: Yes
Nutrient + Feed + Caustic Feed Pumps: off (not in use)
Transfer Pump: Auto (set to "HAND" to record PG info below)
Alarms: None
Flowmeter reading: 900,832
Intermittent Discharge rate: 3.2 gpm (too low)
Tot. gallons pumped since last recorded reading (852,200 on 11/9) & ave discharge rate: 48,632 ga. ÷ 3,741 gpd or ≈ 2.6 gpm (<7200 gpd or 5.0 gpm regulation) • ok

Caustic & Nutrient tank levels: NA (not in use)
Air Compressor oper. & pressure: 100 psi
Extraction pumps pressure (PI-405): 65 psi (ok)
pH: 5.86
PSV-2 ok?: No, still discharging (slight leak)
PG (inlet) @ Sand filter (PI-101): 17.5 psi (too high)
PG (outlet) @ " " (PI-102): NO
PG (inlet) @ Bag filter (PI-103): 13 psi (too hi) ∴ pressure drop = 1 psi (too high)
PG (outlet) @ 1st C.C. (PI-501): 10 psi (too hi) ∴
(Influent extraction wells) pumping rate: ≈ 1.35 gpm (too low)
PG @ 1ST C.C. (PI-501): 10 psi ∴ pressure drop <1 psi (ok)
PG @ last C.C. (PI-502): 0.5 psi

Work Conducted: Backwashed sand filters (~5 min/ea), drained condensate from AC + tank, backwashed carbon canisters for 15 min, monitored air sparge system (Carbon canister sample ports A-C) (refer to air monitoring log),

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DAILY FIELD REPORT

SHEET 2 OF 2

PROJECT NAME: Exxon 104

JOB NO. 700223

DATE: 11/22/93

WORK SCOPE:

TIME:

Work Conducted Cont.:

Untinted Carbon Cannister OK (liquid phase) connection lines (however, need 45° or sweep fittings for more permanent repairation), telecons w/ subs + vendors + D.C. left sump pump, elec. cord + discharge hose onsite to pump off well water from drums during sampling through bioreactor.

Post maintenance Operational Data (5:00 pm)

Control Panel: on
Transfer Pump: still in Auto position
Flowmeter reading: 901,030
Intermittent Discharge rate (per FM): 6.2 (better)
PI-101: 14 PSI (too high)
PI-102: NO
PI-103: 11.5 (too high) } pressure drop 7 (too high)
PI-501: 7.5
PI-502: 1.5 } pressure drop LT 5 psi (ok)
AC pressure: 80 psi (ok)
Extraction pumps pressure (PI-405): 65 ok
PH: 5.89

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DAILY FIELD REPORT

SHEET 1 OF 2

PROJECT NAME: Exxon 104

JOB NO. 170072.03

DATE: 12/8/92

WORK SCOPE: O&M + Sampling

TIME:

1:00 Jim Schalland onsite / 5:00 pm offsite
Great Western driver onsite for P.V. of 3 15 gal. Sodium hydroxide drums. I signed them off.

Note - System discharging on + off intermittently from 11/29 - 12/7 during cleaning + draining of bioreactor. Restarted on 12/7 @ ~3:00 pm

Operational Data (1:30):

Control Panel: on
Extraction Pumps all pumping: Yes
Nutrient Feed + ~~Acetate~~ H_2O_2 Feed Pumps: off (not in use)
Transfer Pump: on (in Auto mode)
Alarms: none
Flowmeter Reading: 932,928

Intermittent discharge rate: ~2.0 gpm (much too low)
Tot. gallons pumped since last recorded visit (reading) (901,030 on 11/22/93) + discharge rate: 31,898 ga (2,021 ga. from bioreactor cleaning 11/29-12/7) ≈ 3,987 gpd from 11/22-29/93 + 11/7-8/93
~2.76 gpm < 7,200 gpd or 5.0 gpm regulation } ok
H_2O_2 + Nutrient tank levels + Condition: H_2O_2 full (ok), Nutrient ~25 ga (o
Air Compressor Oper. + pressure: ok 80 psi (ok)
Extraction Pumps pressure (PI-405): ~78 psi (60-80 psi ok)
PH (Signet): 7.11
PSV-2 ok?: no, leaks (v. slow)
PG (inlet) @ Sand filter (PI-101): 17 psi (too high)
PG (outlet) @ " " (PI-102): NO
PG (inlet) @ Bag filter (PI-103): 7 psi } ΔP = 1 PSI = New filter (ok)
PG (outlet) @ 1st C.C. (PI-501): 6 psi
PG " " : 6 psi } ΔP = 3 psi (ok)
PG @ last C.C. (PI-502): 2.5 psi
Influent Extraction wells pumping rate: ~1.4 gpm

ATTACHMENTS: 1 pg.

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DAILY FIELD REPORT

SHEET 2 OF 2

PROJECT NAME: Exxon 104

JOB NO.

DATE:

WORK SCOPE: O+M + Sampling Cont.

TIME:

Work Conducted:

~~Have~~ Caustic removed from site, Back, backwashed sand filters (~10 min. each), backwashed Carbon cannisters (~15 min.), drained condensate from compressor ~~water~~ + compressor tank, cleaned up compound from biotank draining activities, pumped off some H_2O from buckets + a drum into biotank, monitored air-sparge-Carbon cannister sample ports (A, B, + C) refer to Air Monitoring Log; collected water samples: W-A (3) @ 16:30, W-B (3) @ 16:40 + W-C (3) @ 16:50, Adjusted HV-103 so that PI-501 read 10 psi (increased flow rate + C.C. pressure)

Post Maintenance Operational Data (4:50 pm)

Control Panel: On
Transfer Pump: Set on "hand" to record data (temporarily)
Flow meter reading: 933,270
Intermittent Discharge rate (per FM): ~7.0 gpm *
PI-101: 16
PI-102: NO
PI-1:03: 13.5 } ΔP ~4 psi ok
PI-~~[illegible]~~501: 10 }
PI-501: 10 } ΔP ok
PI-502: 2 }
AC Pressure: 80 psi (ok)
Extraction Pumps Pressure (PI-405): 65 psi (ok)
PH

* increased pumping rate by opening up HV 103

INITIAL:

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Chris Allen

DAILY FIELD REPORT

SHEET 1 OF 1
JOB NO. 17207203
DATE: 12/15/93

PROJECT NAME: Orr

WORK SCOPE: Clean compound

TIME: 9:00 in office
10:20 arrive at site

- Flow meter (10:25) 961,630 gallons
- pH 6.85
- Sand filter 18 psi
- bag filter 15.5 psi
- carbon drum 11.6 psi
- flow ~ 6 g/minute

- Cleaned compound
- drained water in corner of secondary containers into chamber #1.
- cleaned seals on glass chamber lids. Cleaned glass
- put screen back into chamber # 3
- ~~[illegible]~~
- left sump pump on site

· 1:25 finished at site

ATTACHMENTS: _____

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DAILY FIELD REPORT

SHEET 1 OF 1

PROJECT NAME: T-6101

JOB NO. 17077.03

DATE: 12/22/93

WORK SCOPE: Samples & shut down

TIME: 7:15

Took 3 samples at W-EFF

Flow totalizer reading: 991220

Shut down system

off site 7:30

ATTACHMENTS: _____

INITIAL: ME

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Working to Restore Nature

ATTACHMENT E

CARBON BREAKTHROUGH CALCULATIONS

CARBON BREAKTHROUGH CALCULATIONS

Design Criteria

Volume of wastewater treated	=	160,488 gallons
Days of operation	=	64 days (October 6, 1993, through December 9, 1993)
Avg. Influent TPHg Conc.	=	≈ 2338 ppb (based on average results of laboratory analyses of influent water samples (Table 2)
Carbon Canisters	=	Three, 200-pound activated liquid-phase carbon canisters

Assumptions

1) Based on manufacturer's specifications on liquid-phase carbon, carbon has an adsorption capacity of:

   5 pounds (lbs) TPHg/100 lbs carbon = 10 lbs TPHg/200-lb carbon canister

2) Breakthrough is said to have occurred when the first reported detectable levels of hydrocarbons are detected at the sample port downstream of the second carbon (CARB-BT2/BT2).

Breakthrough Calculations

The average amount of TPHg in pounds per gallon, before activated carbon treatment, is calculated below:

$$\frac{2338\ \mu grams\ TPHg}{1\ \ell\ H_2O} \quad \frac{1\ gram}{1{,}000{,}000\mu grams} \quad \frac{1\ lb}{454\ grams} \quad \frac{3.785\ \ell}{1\ gallon} = \frac{1.95\times10^{-5}\ lbs\ TPHg}{1\ gallon\ H_2O}$$

The amount of TPHg in pounds to be treated during this 64 day period on a pound per day basis (lb/day), before activated carbon treatment is calculated below:

$$\frac{1.95\times10^{-5}\ lbs\ TPH}{1\ gallon\ H_2O}\ \frac{160{,}488\ gallons}{64\ days} = \frac{0.049\ lbs\ TPH}{1\ day}$$

Carbon breakthrough rate <u>after</u> flow through two carbon canisters is calculated as follows:

$$\frac{5\ lb\ TPHg}{100\ lbs\ Carbon}\ \frac{200\ lb\ Carbon}{One\ Canister}\ \frac{1\ day}{0.049\ lb\ TPHg} = \frac{204\ days}{One\ Canister}$$

Thus at the design criteria detailed above, 3 in-series liquid-phase carbon canisters appear to be adequate for 204 days.