1995 ANNUAL MONITORING REPORT
ON-SITE GROUNDWATER
REMEDIAL MEASURE
UNION PACIFIC RAILROAD YARD
SACRAMENTO, CALIFORNIA

DAMES & MOORE

DECEMBER 1995
PROJECT NO. 00173-080-044

UPSAC200.10

DAMES & MOORE
8801 FOLSOM BOULEVARD, SUITE 200, SACRAMENTO, CALIFORNIA 95826
(916) 387-8800 FAX: (916) 387-0802

December 29, 1995

Sacramento Metropolitan Air Quality Management District
8411 Jackson Road
Sacramento CA 95826

Attention: Loni Adams
Air Pollution Control Specialist

Re: 1995 Annual Monitoring Report
On-Site Groundwater
Remedial Measure
Union Pacific Railroad Yard
Sacramento, California
Project No. 00173-080-044

Dear Ms. Adams,

This letter provides a summary of the operation and maintenance activities for the above referenced facility during the year of 1995.

INTRODUCTION

The on-site groundwater remedial measure consists of extraction of groundwater from three extraction wells, MW-4, MW-32 and EW-1. The groundwater is treated using a low-profile air stripper and granular activated carbon (GAC) for the air stripper off-gas. The treated effluent is discharged to an existing 114-inch sewer line under Wastewater Discharge Permit No. SIU164. The facility also operates under the following permits:

- Permit to Operate No. 10877, Sacramento Metropolitan Air Quality Management District (SMAQMD).
- Memorandum of Understanding (MOU) No. 93CGW001, City of Sacramento.

PERMIT CONDITIONS

The Wastewater Discharge Permit has set maximum constituent discharge limits and flow rates as shown below:

- The effluent discharge levels shall not exceed 45 gallons per minute (gpm) with the effluent discharge limitations shown in the following tables.

Parameter	Daily Maximum (mg/l)
Benzene	0.134
Ethylbenzene	0.380
Toluene	0.074
1,2-Dichloroethane (1,2 DCA)	0.574
1,1,1-Trichloroethane (TCA)	0.059
1,1-Dichloroethane (1,1 DCA)	0.059
1,1-Dichloroethylene (1,1 DCE)	0.060
Trichloroethylene (TCE)	0.069

The air permit requires air emissions to be controlled by at least 90% without exceeding the following levels:

Parameter	Discharge Limit (lbs/day)
Benzene	0.0095
Total Petroleum Hydrocarbons as Gasoline (TPH_g)	0.02
1,2 DCA	0.006
TCE	0.03

To assure compliance with the above requirements, flow rates and system parameters were recorded on a weekly basis. Monitoring of the constituent levels in the extraction wells and the air stripper discharge were initially monitored on a monthly basis and currently are being monitored on a quarterly basis under the Wastewater Discharge Permit.

SYSTEM PERFORMANCE

The system has been performing as designed. Maintenance operations of the system throughout the year are recorded in the following table:

Date	Operation
1/5/95	Bail sump, replace top seal in bag filter, empty rain gauge, system down due to rain, restart.
1/10/95	System shut down due to rain.
1/12/95	Restart system.
1/17/95	System shut down due to rain, restart system, change outside light bulb, water draining from GAC unit.
1/24/95	System shut down due to high sump, drain sump, restart system.
1/26/95	Replaced magnehelic gauge on stripper, flow problems, cannot maintain positive pressure in GAC units, Air stripper requires cleaning.
1/27/95	System down for air stripper cleaning.
2/4/95	Air stripper reassembly, restart system.
2/9/95	Collect samples for monthly monitoring.
2/13/95	EW-1 pump test.
3/7/95	Flow meter for MW-4 not working.
3/13/95	Cleaned sensor for flowmeter on MW-4, system down due to rain, empty rain gauge, replace bag filter.
3/17/95	Cleaned flow meter sensors on MW-32 and EW-1.
3/23/95	System down, high influent level in tank, replaced bag filter.
3/31/95	Air stripper relay tripped, reset and restart system.
4/6/95	Rewired outside light to activate with air stripper discharge pump, fixed PVC crack in air stripper pipe, replaced outside light bulb, rewired panel so that blowers turn off under alarm condition.
4/20/95	System shut down due to tripped air stripper discharge pump, reset relay, restart system.
4/28/95	Empty rain gauge.

Date	Operation
5/01/95	System shut down due to rain, emptied rain gauge, restart system.
5/5/95	Empty rain gauge.
5/12/95	Plant down, no apparent reason, replaced outside light globe with plastic RAB-GL100PG, covered outside pipes wit a 26" x 36" irrigation valve box to protect from solar degradation.
5/26/95	Replace outside light bulb.
6/1/95	System shut down, replaced bag filter, reset air stripper discharge pump relay.
6/2/95	greased blower motors, checked pumps for vibration and bearing wear, no apparent problems.
6/9/95	MW-32 pumping air, adjust flow rate.
6/16/95	System shut down for carbon change-out, change carbon in GAC #1, Booster blower discharge magnehelic gauge not functioning properly, restarted system adjusting air flow to enter GAC #2 first,replaced magnehelic gauge to booster blower, MW-32 flow rate fluctuating, inspected flow sensor, flow sensor clean, recalibrated pump saver on MW-32 and set the restart to 1 hour vs. 2 hours.
6/20/95	Met Erickson to remove spent carbon from site.
6/23/95	Replaced magnehelic gauge on air stripper discharge with 0-2 "WC gauge, quarterly monitoring sampling.
6/30/95	Adjust influent discharge pump flow rate to 55 gpm, shut down system for weekend air stripper cleaning.
7/5/95	Reassemble air stripper and restart system.
7/7/95	Install remote dialer to call when system shuts down.
7/31/95	MW-32 flow rate @ 0 gpm, allowed well to recover, reset pump to 8 gpm.
8/18/95	System shut down for no apparent reason, MW-4 flow reading 0 gpm, cleaned paddle wheel on flow sensor, paddle wheel covered in iron bacteria, meter reading 20 gpm, suggest checking screen on pump MW-4.
8/25/95	System shut down for electrical inspection for plant upgrade.
8/29/95	Individual flow indicators not functioning.
8/30/95	Reset breaker for flow indicators, indicators functioning normally.
9/15/95	Clean MW-4 sensor paddle wheel, paddle wheel covered in iron bacteria.
9/26/95	System shut down for off-site plant upgrade site walk, quarterly monitoring.

Date	Operation
10/20/95	Install phone.
11/3/95	Tried to pull MW-4 pump to clean screen, unable to pull pump, adjusted air stripper air flow rate, paint over graffiti on back side of treatment plant building.
11/20/95	Water flowing from GAC units, turned off system and emptied water from units, emptied water from sump, replaced and cleaned bag filter, removed toad from sump, readjusted air flow rates in air stripper, lowered discharge flow rate to 45 gpm, replace outside light bulb, inspected air stripper, requires cleaning, cleaned MW-4 sensor paddle wheel.
12/1/95	Treatment plant down due to high water level in sump, empties sump, started system, negative pressure at top of air stripper, water still coming from GAC unit, bypassed GAC to keep running, water noted in air stripper discharge magnehelic gauge.
12/8/95	System shut down to weekend stripper cleaning.
12/11/95	Finished cleaning air stripper, reassembled air stripper, GAC back on line, new mister eliminator required, emptied rain gauge.
12/12/95	Emptied rain gauge, adjusted effluent flow rate to 60 gpm. MW-4 appears to be reading high (38 gpm).
12/13/95	System shut down due to rain, emptied rain gauge, restart system.
12/20/95	Water sample collection for quarterly system monitoring.
12/23/95	System shut down, replaced bag filter, emptied rain gauge, changed outside light bulb, checked operation of flow meters and sensors (functioning within parameters).
12/29/95	Emptied rain gauge.

Flow rates for the year are compiled in the following table. December flow rates are recorded through December 29.

Month	Meter Reading	Monthly Discharge (gallons)	Monthly Discharge Limit (gallons)
December 94	21,867,800		
January	22,664,520	796,720	1,728,000
February	24,101,070	1,436,550	1,728,000

Month	Meter Reading	Monthly Discharge (gallons)	Monthly Discharge Limit (gallons)
March	25,289,450	1,188,380	1,728,000
April	26,970,410	1,680,960	1,728,000
May	28,200,940	1,230,530	1,944,000
June	29,889,950	1,689,010	1,944,000
July	31,301,490	1,411,540	1,944,000
August	33,087,410	1,785,920	1,944,000
September	34,408,280	1,620,870	1,944,000
October	36,553,370	1,845,090	1,944,000
November	37,844,810	1,291,440	1,944,000
December	39,130,350	1,285,540	1,944,000

The flow meters have been checked and are working within instrument specifications.

MONITORING RESULTS

Groundwater influent and effluent monitoring was conducted in the months of January, February, March and quarterly at the end of June, September and December. The results for the extraction wells and the air stripper discharge are presented in the following table. Only constituents reported above the detection limits are shown below.

		Influent			Effluent
Constituent	Date	MW-4	MW-32	EW-1	AS-1
TPH_g (mg/l)	1/9/95	0.34	ND	ND	ND
Nickel (mg/l)	1/9/95	0.024	0.030	ND	0.034
Benzene (μg/l)	1/9/95	84.	ND	ND	ND
1,1-DCA (μg/l)	1/9/95	4.3	4.9	5.3	ND
1,1-DCE (μg/l)	1/9/95	46.	51.	10.	ND
Ethylbenzene (μg/l)	1/9/95	4.6	ND	ND	ND

		Influent			Effluent
Constituent	**Date**	**MW-4**	**MW-32**	**EW-1**	**AS-1**
Tetrachloroethene (PCE) (μg/l)	1/9/95	2.1	ND	ND	ND
Toluene (μg/l)	1/9/95	13	ND	ND	ND
TCE (μg/l)	1/9/95	2.8	6.9	ND	ND
Xylenes (μg/l)	1/9/95	15	ND	ND	ND
TPH_g (mg/l)	2/9/95	0.43	ND	ND	ND
Nickel (mg/l)	2/9/95	0.0080	0.019	ND	0.0070
Benzene (μg/l)	2/9/95	68.	ND	ND	ND
1,1-DCA (μg/l)	2/9/95	3.1	3.1	5.0	ND
1,2-DCA (μg/l)	2/9/95	2.3	ND	ND	ND
1,1-DCE (μg/l)	2/9/95	40.	31.	10.	ND
Ethylbenzene (μg/l)	2/9/95	3.4	ND	ND	ND
PCE (μg/l)	2/9/95	ND	ND	ND	ND
Toluene (μg/l)	2/9/95	11	ND	ND	ND
TCE (μg/l)	2/9/95	2.5	6.9	ND	ND
Xylenes (μg/l)	2/9/95	19	ND	ND	ND
TPH_g (mg/l)	3/3/95	0.34	ND	ND	ND
Nickel (mg/l)	3/3/95	0.0050	0.017	ND	0.0065
Benzene (μg/l)	3/3/95	39.	ND	ND	ND
Chloroform (μg/l)	3/3/95	ND	ND	1.1	ND
1,1-DCA (μg/l)	3/3/95	2.5	3.5	4.5	ND
1,2-DCA (μg/l)	3/3/95	1.4	ND	ND	ND
1,1-DCE (μg/l)	3/3/95	33.	34.	9.2	ND
Ethylbenzene (μg/l)	3/3/95	2.0	ND	ND	ND
PCE (μg/l)	3/3/95	1.1	ND	ND	ND
Toluene (μg/l)	3/3/95	7.5	ND	ND	ND

		Influent			Effluent
Constituent	**Date**	**MW-4**	**MW-32**	**EW-1**	**AS-1**
TCE (µg/l)	3/3/95	2.4	6.7	ND	ND
Xylenes (µg/l)	3/3/95	11	ND	ND	ND
TPH_g (mg/l)	6/23/95	0.43	ND	ND	ND
Benzene (µg/l)	6/23/95	78.	ND	ND	ND
Chloroform (µg/l)	6/23/95	ND	ND	1.7	ND
1,1-DCA (µg/l)	6/23/95	2.8	4.3	4.0	ND
1,2-DCA (µg/l)	6/23/95	2.5	1.2	ND	ND
1,1-DCE (µg/l)	6/23/95	34	40.	8.0	ND
Ethylbenzene (µg/l)	6/23/95	2.8	ND	ND	ND
PCE (µg/l)	6/23/95	1.2	0.91	ND	ND
Toluene (µg/l)	6/23/95	9.1	ND	ND	ND
TCA (µg/l)	6/23/95	0.78	0.96	ND	ND
TCE (µg/l)	6/23/95	2.4	6.0	ND	ND
Xylenes (µg/l)	6/23/95	13	ND	ND	ND
TPH_g (mg/l)	9/26/95	0.16	ND	ND	ND
Benzene (µg/l)	9/26/95	41.	0.86	ND	ND
Chloroform (µg/l)	9/26/95	ND	ND	1.3	ND
1,1-DCA (µg/l)	9/26/95	2.6	3.2	2.6	ND
1,2-DCA (µg/l)	9/26/95	2.0	1.8	ND	ND
1,1-DCE (µg/l)	9/26/95	19.	23.	3.8	ND
Ethylbenzene (µg/l)	9/26/95	ND	ND	ND	ND
PCE (µg/l)	9/26/95	0.72	ND	ND	ND
Toluene (µg/l)	9/26/95	1.0	ND	ND	ND
TCA (µg/l)	9/26/95	ND	0.55	ND	ND
TCE (µg/l)	9/26/95	1.6	3.3	ND	ND

Constituent	Date	Influent			Effluent
		MW-4	MW-32	EW-1	AS-1
Xylenes (µg/l)	9/26/95	5.0	ND	ND	ND
TPH_g (mg/l)	12/20/95	0.21	ND	ND	ND
Benzene (µg/l)	12/20/95	22.	ND	ND	ND
Chloroform (µg/l)	12/20/95	ND	ND	1.4	ND
1,1-DCA (µg/l)	12/20/95	2.6	5.4	3.4	ND
1,2-DCA (µg/l)	12/20/95	0.9	0.82	ND	ND
1,1-DCE (µg/l)	12/20/95	29.	43.	5.6	ND
Ethylbenzene (µg/l)	12/20/95	1.9	ND	ND	ND
PCE (µg/l)	12/20/95	0.95	ND	ND	ND
Toluene (µg/l)	12/20/95	5.7	ND	ND	ND
TCA (µg/l)	12/20/95	ND	ND	ND	ND
TCE (µg/l)	12/20/95	1.6	6.4	ND	ND
Xylenes (µg/l)	12/20/95	3.6	ND	ND	ND

Laboratory reports are included in Appendix A. None of the reported effluent concentrations have exceeded the discharge limits required in the Wastewater Discharge Permit. Additionally, the influent concentrations have consistently been below the effluent discharge limits required under the Wastewater Discharge Permit.

The air stripper effectively removed the constituents from the groundwater to levels below detection limits. Based on a 90% GAC removal rate of the vapor phase constituents, the emission rates have been calculated using the following equation.

lbs/day = mg/l x 1g/1000mg x 0.002205 lbs/g x 3.785 l/gallon x total gallons / total operating days

The constituents of concern for emissions requiring monitoring under the air permit are presented below.

Constituent	Emission Limit (lbs/day)	Influent into GAC (lbs/day)	Removal (90%) (lbs/day)	Emissions (lbs/day)
Benzene	0.0095	0.0185	0.0166	0.0019
TPHg	0.0200	0.0910	0.0819	0.0091
1,2-DCA	0.0060	0.0010	0.0009	0.0001
TCE	0.0300	0.0023	0.0020	0.0003

The emissions have consistently met the requirements of the air emissions limits as stated in the SMAQMD Permit to Operate.

PLANNED EXPANSION

An expansion of the existing system is expected to be completed during the first quarter of 1996. The expanded system will include treatment of off-site groundwater increasing the total flow rate to approximately 100 gpm. A risk analysis for emissions of the modified system was completed and submitted to the SMAQMD with a new permit application. Results indicated that no emission controls are necessary on the expansion.

If you have any questions or comments, please feel free to contact either of the undersigned at (916) 387-7519.

Sincerely,
DAMES & MOORE

Roger Blair for Jim Brake

Jim Brake, R.G.
Project Manager

Roger Blair, P.E.
Project Engineer

Attachment

cc: Harry Patterson, Union Pacific Sacramento
Donna Dessoir, County of Sacramento, Water Quality Division

UPSAC200.10

APPENDIX A

LABORATORY REPORTS

Copy

D&M LABORATORIES
ENVIRONMENTAL AND INDUSTRIAL HYGIENE SERVICES

3700 Lakeville Highway, Petaluma, CA 94954
Telephone: (707) 763-8245
FAX (707) 763-4065

Jim Brake
Dames & Moore-Sacramento
8801 Folsom Blvd - Suite 200
Sacramento, CA 95826

January 20, 1995

Customer Project: 00173-080-044 UPRR, Sacramento
Laboratory Job: L9501040

On January 10, 1995 we received 5 sample(s) for analysis. Samples were analyzed by the following method(s):

Halog. & Aromatic Volatiles (EPA 8010A/8020A)

Gasoline (8015 Modified)

Nickel (EPA 7521)

Project Manager

for: Laboratory Director
Robert Peak

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for: Dames & Moore-Sacramento
Project Id: 00173-080-044 UPRR, Sacramento
Sample Id: GW-1-EFF
Lab Id: L9501040-1

Collected: 09-JAN-95
Received: 10-JAN-95
Reported: 20-JAN-95

Parameter		Value	RDL	Units	Extracted	Analyzed
Gasoline						
Gasoline		ND <	0.050	mg/L	16-JAN-95	16-JAN-95
-	-					
Surrogate	-					
4-Bromofluorobenzene		71.	-	%	16-JAN-95	16-JAN-95
-	-					
Comments:	None					
Metals by Graphite Furnace/Cold Vapor/Flame AA						
Nickel - EPA 7521		0.032	0.0050	mg/L	17-JAN-95	18-JAN-95
-	-					
Comments:	-					

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for: Dames & Moore-Sacramento
Project Id: 00173-080-044 UPRR, Sacramento
Sample Id: GW-1-EFF
Lab Id: L9501040-1

Collected: 09-JAN-95
Received: 10-JAN-95
Reported: 20-JAN-95

Parameter	Value		RDL	Units	Extracted	Analyzed
8010/8020						
Benzene	ND	<	0.50	ug/L	19-JAN-95	19-JAN-95
Bromodichloromethane	ND	<	0.50	ug/L	19-JAN-95	19-JAN-95
Bromoform	ND	<	0.50	ug/L	19-JAN-95	19-JAN-95
Bromomethane	ND	<	1.0	ug/L	19-JAN-95	19-JAN-95
Carbon Tetrachloride	ND	<	0.50	ug/L	19-JAN-95	19-JAN-95
Chlorobenzene	ND	<	0.50	ug/L	19-JAN-95	19-JAN-95
Chloroethane	ND	<	1.0	ug/L	19-JAN-95	19-JAN-95
Chloroform	ND	<	0.50	ug/L	19-JAN-95	19-JAN-95
Chloromethane	ND	<	1.0	ug/L	19-JAN-95	19-JAN-95
Dibromochloromethane	ND	<	0.50	ug/L	19-JAN-95	19-JAN-95
1,2-Dichlorobenzene	ND	<	0.50	ug/L	19-JAN-95	19-JAN-95
1,3-Dichlorobenzene	ND	<	0.50	ug/L	19-JAN-95	19-JAN-95
1,4-Dichlorobenzene	ND	<	0.50	ug/L	19-JAN-95	19-JAN-95
1,1-Dichloroethane	ND	<	0.50	ug/L	19-JAN-95	19-JAN-95
1,2-Dichloroethane	ND	<	0.50	ug/L	19-JAN-95	19-JAN-95
1,1-Dichloroethene	ND	<	0.50	ug/L	19-JAN-95	19-JAN-95
1,2-Dichloroethene (Total)	ND	<	0.50	ug/L	19-JAN-95	19-JAN-95
1,2-Dichloropropane	ND	<	0.50	ug/L	19-JAN-95	19-JAN-95
Cis-1,3-Dichloropropene	ND	<	0.50	ug/L	19-JAN-95	19-JAN-95
Trans-1,3-Dichloropropene	ND	<	0.50	ug/L	19-JAN-95	19-JAN-95
Ethyl Benzene	ND	<	0.50	ug/L	19-JAN-95	19-JAN-95
Methylene Chloride	ND	<	1.0	ug/L	19-JAN-95	19-JAN-95
1,1,2,2-Tetrachloroethane	ND	<	0.50	ug/L	19-JAN-95	19-JAN-95
Tetrachloroethene	ND	<	0.50	ug/L	19-JAN-95	19-JAN-95
Toluene	ND	<	0.50	ug/L	19-JAN-95	19-JAN-95
1,1,1-Trichloroethane	ND	<	0.50	ug/L	19-JAN-95	19-JAN-95
1,1,2-Trichloroethane	ND	<	0.50	ug/L	19-JAN-95	19-JAN-95
Trichloroethene	ND	<	0.50	ug/L	19-JAN-95	19-JAN-95
Trichlorofluoromethane	ND	<	1.0	ug/L	19-JAN-95	19-JAN-95
Vinyl Chloride	ND	<	1.0	ug/L	19-JAN-95	19-JAN-95
Xylenes (Total)	ND	<	0.50	ug/L	19-JAN-95	19-JAN-95
-	-					
Surrogate:	-					
4-Bromofluorobenzene (8010)	99.1		-	%	19-JAN-95	19-JAN-95
4-Bromofluorobenzene (8020)	97.8		-	%	19-JAN-95	19-JAN-95
-	-					
Comments:	None.					
-	-					
-	-					
-	-					

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for: Dames & Moore-Sacramento
Project Id: 00173-080-044 UPRR, Sacramento
Sample Id: MW-4
Lab Id: L9501040-2

Collected: 09-JAN-95
Received: 10-JAN-95
Reported: 20-JAN-95

Parameter		Value	RDL	Units	Extracted	Analyzed
Gasoline						
Gasoline		0.34	0.050	mg/L	16-JAN-95	16-JAN-95
-	-					
Surrogate	-					
4-Bromofluorobenzene		80.	-	%	16-JAN-95	16-JAN-95
-	-					
Comments:	None					
Metals by Graphite Furnace/Cold Vapor/Flame AA						
Nickel - EPA 7521		0.024	0.0050	mg/L	17-JAN-95	18-JAN-95
-	-					
Comments:	-					

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for: Dames & Moore-Sacramento
Project Id: 00173-080-044 UPRR, Sacramento
Sample Id: MW-4
Lab Id: L9501040-2

Collected: 09-JAN-95
Received: 10-JAN-95
Reported: 20-JAN-95

Parameter	Value	RDL	Units	Extracted	Analyzed
8010/8020					
Benzene	84.	5.0	ug/L	18-JAN-95	18-JAN-95
Bromodichloromethane	ND <	0.50	ug/L	18-JAN-95	18-JAN-95
Bromoform	ND <	0.50	ug/L	18-JAN-95	18-JAN-95
Bromomethane	ND <	1.0	ug/L	18-JAN-95	18-JAN-95
Carbon Tetrachloride	ND <	0.50	ug/L	18-JAN-95	18-JAN-95
Chlorobenzene	ND <	0.50	ug/L	18-JAN-95	18-JAN-95
Chloroethane	ND <	1.0	ug/L	18-JAN-95	18-JAN-95
Chloroform	ND <	0.50	ug/L	18-JAN-95	18-JAN-95
Chloromethane	ND <	1.0	ug/L	18-JAN-95	18-JAN-95
Dibromochloromethane	ND <	0.50	ug/L	18-JAN-95	18-JAN-95
1,2-Dichlorobenzene	ND <	0.50	ug/L	18-JAN-95	18-JAN-95
1,3-Dichlorobenzene	ND <	0.50	ug/L	18-JAN-95	18-JAN-95
1,4-Dichlorobenzene	ND <	0.50	ug/L	18-JAN-95	18-JAN-95
1,1-Dichloroethane	4.3	0.50	ug/L	18-JAN-95	18-JAN-95
1,2-Dichloroethane	ND <	0.50	ug/L	18-JAN-95	18-JAN-95
1,1-Dichloroethene	46.	5.0	ug/L	18-JAN-95	18-JAN-95
1,2-Dichloroethene (Total)	ND <	0.50	ug/L	18-JAN-95	18-JAN-95
1,2-Dichloropropane	ND <	0.50	ug/L	18-JAN-95	18-JAN-95
Cis-1,3-Dichloropropene	ND <	0.50	ug/L	18-JAN-95	18-JAN-95
Trans-1,3-Dichloropropene	ND <	0.50	ug/L	18-JAN-95	18-JAN-95
Ethyl Benzene	4.6	0.50	ug/L	18-JAN-95	18-JAN-95
Methylene Chloride	ND <	1.0	ug/L	18-JAN-95	18-JAN-95
1,1,2,2-Tetrachloroethane	ND <	0.50	ug/L	18-JAN-95	18-JAN-95
Tetrachloroethene	2.1	0.50	ug/L	18-JAN-95	18-JAN-95
Toluene	13.	0.50	ug/L	18-JAN-95	18-JAN-95
1,1,1-Trichloroethane	ND <	0.50	ug/L	18-JAN-95	18-JAN-95
1,1,2-Trichloroethane	ND <	0.50	ug/L	18-JAN-95	18-JAN-95
Trichloroethene	2.8	0.50	ug/L	18-JAN-95	18-JAN-95
Trichlorofluoromethane	ND <	1.0	ug/L	18-JAN-95	18-JAN-95
Vinyl Chloride	ND <	1.0	ug/L	18-JAN-95	18-JAN-95
Xylenes (Total)	15.	0.50	ug/L	18-JAN-95	18-JAN-95
-	-				
Surrogate:	-				
4-Bromofluorobenzene (8010)	94.6	-	%	18-JAN-95	18-JAN-95
4-Bromofluorobenzene (8020)	102.	-	%	18-JAN-95	18-JAN-95
-	-				
Comments:	None.				
-	-				
-	-				
-	-				

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for: Dames & Moore-Sacramento
Project Id: 00173-080-044 UPRR, Sacramento
Sample Id: MW-32
Lab Id: L9501040-3

Collected: 09-JAN-95
Received: 10-JAN-95
Reported: 20-JAN-95

Parameter		Value	RDL	Units	Extracted	Analyzed
Gasoline						
Gasoline		ND <	0.050	mg/L	16-JAN-95	16-JAN-95
-	-					
Surrogate	-					
4-Bromofluorobenzene		89.	-	%	16-JAN-95	16-JAN-95
-	-					
Comments:	None					
Metals by Graphite Furnace/Cold Vapor/Flame AA						
Nickel - EPA 7521		0.030	0.0050	mg/L	17-JAN-95	18-JAN-95
-	-					
Comments:	-					

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for: Dames & Moore-Sacramento
Project Id: 00173-080-044 UPRR, Sacramento
Sample Id: MW-32
Lab Id: L9501040-3

Collected: 09-JAN-95
Received: 10-JAN-95
Reported: 20-JAN-95

Parameter	Value		RDL	Units	Extracted	Analyzed
8010/8020						
Benzene	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Bromodichloromethane	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Bromoform	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Bromomethane	ND	<	1.0	ug/L	18-JAN-95	18-JAN-95
Carbon Tetrachloride	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Chlorobenzene	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Chloroethane	ND	<	1.0	ug/L	18-JAN-95	18-JAN-95
Chloroform	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Chloromethane	ND	<	1.0	ug/L	18-JAN-95	18-JAN-95
Dibromochloromethane	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
1,2-Dichlorobenzene	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
1,3-Dichlorobenzene	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
1,4-Dichlorobenzene	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
1,1-Dichloroethane	4.9		0.50	ug/L	18-JAN-95	18-JAN-95
1,2-Dichloroethane	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
1,1-Dichloroethene	51.		5.0	ug/L	19-JAN-95	19-JAN-95
1,2-Dichloroethene (Total)	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
1,2-Dichloropropane	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Cis-1,3-Dichloropropene	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Trans-1,3-Dichloropropene	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Ethyl Benzene	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Methylene Chloride	ND	<	1.0	ug/L	18-JAN-95	18-JAN-95
1,1,2,2-Tetrachloroethane	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Tetrachloroethene	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Toluene	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
1,1,1-Trichloroethane	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
1,1,2-Trichloroethane	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Trichloroethene	6.9		0.50	ug/L	18-JAN-95	18-JAN-95
Trichlorofluoromethane	ND	<	1.0	ug/L	18-JAN-95	18-JAN-95
Vinyl Chloride	ND	<	1.0	ug/L	18-JAN-95	18-JAN-95
Xylenes (Total)	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
-	-					
Surrogate:	-					
4-Bromofluorobenzene (8010)	97.7		-	%	18-JAN-95	18-JAN-95
4-Bromofluorobenzene (8020)	95.4		-	%	18-JAN-95	18-JAN-95
-	-					
Comments:	None.					
-	-					
-	-					
-	-					

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for: Dames & Moore-Sacramento
Project Id: 00173-080-044 UPRR, Sacramento
Sample Id: EW-1
Lab Id: L9501040-4

Collected: 09-JAN-95
Received: 10-JAN-95
Reported: 20-JAN-95

Parameter		Value	RDL	Units	Extracted	Analyzed
Gasoline						
Gasoline		ND <	0.050	mg/L	16-JAN-95	16-JAN-95
-	-					
Surrogate	-					
4-Bromofluorobenzene		90.	-	%	16-JAN-95	16-JAN-95
-	-					
Comments:	None					
Metals by Graphite Furnace/Cold Vapor/Flame AA						
Nickel - EPA 7521		ND<	0.0050	mg/L	17-JAN-95	18-JAN-95
-	-					
Comments:	-					

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for: Dames & Moore-Sacramento
Project Id: 00173-080-044 UPRR, Sacramento
Sample Id: EW-1
Lab Id: L9501040-4

Collected: 09-JAN-95
Received: 10-JAN-95
Reported: 20-JAN-95

Parameter	Value		RDL	Units	Extracted	Analyzed
8010/8020						
Benzene	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Bromodichloromethane	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Bromoform	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Bromomethane	ND	<	1.0	ug/L	18-JAN-95	18-JAN-95
Carbon Tetrachloride	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Chlorobenzene	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Chloroethane	ND	<	1.0	ug/L	18-JAN-95	18-JAN-95
Chloroform	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Chloromethane	ND	<	1.0	ug/L	18-JAN-95	18-JAN-95
Dibromochloromethane	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
1,2-Dichlorobenzene	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
1,3-Dichlorobenzene	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
1,4-Dichlorobenzene	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
1,1-Dichloroethane	5.3		0.50	ug/L	18-JAN-95	18-JAN-95
1,2-Dichloroethane	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
1,1-Dichloroethene	10.		0.50	ug/L	18-JAN-95	18-JAN-95
1,2-Dichloroethene (Total)	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
1,2-Dichloropropane	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Cis-1,3-Dichloropropene	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Trans-1,3-Dichloropropene	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Ethyl Benzene	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Methylene Chloride	ND	<	1.0	ug/L	18-JAN-95	18-JAN-95
1,1,2,2-Tetrachloroethane	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Tetrachloroethene	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Toluene	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
1,1,1-Trichloroethane	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
1,1,2-Trichloroethane	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Trichloroethene	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Trichlorofluoromethane	ND	<	1.0	ug/L	18-JAN-95	18-JAN-95
Vinyl Chloride	ND	<	1.0	ug/L	18-JAN-95	18-JAN-95
Xylenes (Total)	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
-	-					
Surrogate:	-					
4-Bromofluorobenzene (8010)	83.5		-	%	18-JAN-95	18-JAN-95
4-Bromofluorobenzene (8020)	88.7		-	%	18-JAN-95	18-JAN-95
-	-					
Comments:	None.					
-	-					
-	-					
-	-					

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for: Dames & Moore-Sacramento
Project Id: 00173-080-044 UPRR, Sacramento
Sample Id: TRIP BLANK
Lab Id: L9501040-5

Collected: 09-JAN-95
Received: 10-JAN-95
Reported: 20-JAN-95

Parameter	Value		RDL	Units	Extracted	Analyzed
8010/8020						
Benzene	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Bromodichloromethane	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Bromoform	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Bromomethane	ND	<	1.0	ug/L	18-JAN-95	18-JAN-95
Carbon Tetrachloride	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Chlorobenzene	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Chloroethane	ND	<	1.0	ug/L	18-JAN-95	18-JAN-95
Chloroform	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Chloromethane	ND	<	1.0	ug/L	18-JAN-95	18-JAN-95
Dibromochloromethane	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
1,2-Dichlorobenzene	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
1,3-Dichlorobenzene	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
1,4-Dichlorobenzene	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
1,1-Dichloroethane	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
1,2-Dichloroethane	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
1,1-Dichloroethene	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
1,2-Dichloroethene (Total)	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
1,2-Dichloropropane	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Cis-1,3-Dichloropropene	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Trans-1,3-Dichloropropene	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Ethyl Benzene	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Methylene Chloride	ND	<	1.0	ug/L	18-JAN-95	18-JAN-95
1,1,2,2-Tetrachloroethane	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Tetrachloroethene	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Toluene	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
1,1,1-Trichloroethane	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
1,1,2-Trichloroethane	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Trichloroethene	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Trichlorofluoromethane	ND	<	1.0	ug/L	18-JAN-95	18-JAN-95
Vinyl Chloride	ND	<	1.0	ug/L	18-JAN-95	18-JAN-95
Xylenes (Total)	ND	<	0.50	ug/L	18-JAN-95	18-JAN-95
Surrogate:						
4-Bromofluorobenzene (8010)	77.9		-	%	18-JAN-95	18-JAN-95
4-Bromofluorobenzene (8020)	84.1		-	%	18-JAN-95	18-JAN-95
Comments:	None.					

D&M Laboratories

QUALITY CONTROL REPORT

Prepared for:
Project Id:
Sample Id: Method Blank
Lab Id: WG6701-4

Reported: 19-JAN-95

Parameter	Value	RDL	Units	Extracted	Analyzed
Metals by Graphite Furnace/Cold Vapor/Flame AA					
Nickel - EPA 7521	ND<	0.0050	mg/L	17-JAN-95	18-JAN-95

Comments:

D&M Laboratories

QUALITY CONTROL REPORT

Prepared for:
Project Id:
Sample Id: Method Blank Spike
Lab Id: WG6701-5

Reported: 20-JAN-95

Parameter	Value	Units	Spike	Units	% Rec	Extracted	Analyzed
Metals by Graphite Furnace/Cold Vapor/Flame AA							
Nickel - EPA 7521	0.107	mg/L	.1	mg/L	107.%	17-JAN-95	18-JAN-95

Comments:

D&M Laboratories

QUALITY CONTROL REPORT

Prepared for:
Project Id:
Sample Id: MX
Lab Id: WG6701-1

Reported: 19-JAN-95

Parameter	Value	RDL	Units	Extracted	Analyzed
Metals by Graphite Furnace/Cold Vapor/Flame AA					
Nickel - EPA 7521	ND<	0.0050	mg/L	17-JAN-95	18-JAN-95

Comments: MX = L9501041-1

D&M Laboratories

QUALITY CONTROL REPORT

Prepared for:
Project Id:
Sample Id: Matrix Spike
Lab Id: WG6701-2

Reported: 20-JAN-95

Parameter	Value	Units	Spike	Units	% Rec	Extracted	Analyzed
Metals by Graphite Furnace/Cold Vapor/Flame AA							
Nickel - EPA 7521	0.112	mg/L	.1	mg/L	112.%	17-JAN-95	18-JAN-95
-	-						
Comments:	-						

D&M Laboratories

QUALITY CONTROL REPORT

Prepared for:
Project Id:
Sample Id: Matrix Spike Dup
Lab Id: WG6701-3

Reported: 20-JAN-95

Parameter	Value	Units	% Rec	RPD	Extracted	Analyzed
Metals by Graphite Furnace/Cold Vapor/Flame AA						
Nickel - EPA 7521	0.110	mg/L	110.%	1.8	17-JAN-95	18-JAN-95

Comments:

D&M Laboratories

QUALITY CONTROL REPORT

Prepared for:
Project Id:
Sample Id: Method Blank
Lab Id: WG6685-14

Reported: 18-JAN-95

Parameter	Value	RDL	Units	Extracted	Analyzed
GAS/BTEX					
Benzene	ND <	0.50	ug/L	16-JAN-95	16-JAN-95
Ethyl Benzene	ND <	0.50	ug/L	16-JAN-95	16-JAN-95
Toluene	ND <	0.50	ug/L	16-JAN-95	16-JAN-95
Xylene	ND <	0.50	ug/L	16-JAN-95	16-JAN-95
Gasoline	ND <	0.050	mg/L	16-JAN-95	16-JAN-95
-	-				
Surrogate:	-				
Bromofluorobenzene	66.4	-	%	16-JAN-95	16-JAN-95
-	-				
Comments:	None				
-	-				
-	-				

D&M Laboratories

QUALITY CONTROL REPORT

Prepared for:
Project Id:
Sample Id: Method Blank Spike
Lab Id: WG6685-15

Reported: 18-JAN-95

Parameter	Value	Units	Spike	Units	% Rec	Extracted	Analyzed
GAS/BTEX							
Benzene	22.8	ug/L	25	ug/L	91.%	16-JAN-95	16-JAN-95
Ethyl Benzene	23.6	ug/L	25	ug/L	94.%	16-JAN-95	16-JAN-95
Toluene	23.4	ug/L	25	ug/L	94.%	16-JAN-95	16-JAN-95
Xylene	71.7	ug/L	75	ug/L	96.%	16-JAN-95	16-JAN-95
Gasoline	1.04	mg/L	1	mg/L	104.%	16-JAN-95	16-JAN-95
-	-						
Surrogate:	-						
Bromofluorobenzene	79.0	%				16-JAN-95	16-JAN-95
-	-						
Comments:	None						
-	-						
-	-						

D&M Laboratories

QUALITY CONTROL REPORT

Prepared for:
Project Id:
Sample Id: MX
Lab Id: WG6685-1

Reported: 18-JAN-95

Parameter	Value	RDL	Units	Extracted	Analyzed
GAS/BTEX					
Benzene	ND <	0.50	ug/L	14-JAN-95	14-JAN-95
Ethyl Benzene	ND <	0.50	ug/L	14-JAN-95	14-JAN-95
Toluene	ND <	0.50	ug/L	14-JAN-95	14-JAN-95
Xylene	ND <	0.50	ug/L	14-JAN-95	14-JAN-95
Gasoline	1.4	0.050	mg/L	14-JAN-95	14-JAN-95
-	-				
Surrogate:	-				
Bromofluorobenzene	87.6	-	%	14-JAN-95	14-JAN-95
-	-				
Comments:	8020MX= L950171-1; Gas MX= L950171-2				
-	-				
-	-				

D&M Laboratories

QUALITY CONTROL REPORT

Prepared for:
Project Id:
Sample Id: Matrix Spike
Lab Id: WG6685-2

Reported: 18-JAN-95

Parameter	Value	Units	Spike	Units	% Rec	Extracted	Analyzed
GAS/BTEX							
Benzene	22.5	ug/L	25	ug/L	89.%	14-JAN-95	14-JAN-95
Ethyl Benzene	22.1	ug/L	25	ug/L	88.%	14-JAN-95	14-JAN-95
Toluene	22.1	ug/L	25	ug/L	88.%	14-JAN-95	14-JAN-95
Xylene	59.9	ug/L	75	ug/L	80.%	14-JAN-95	14-JAN-95
Gasoline	2.29	mg/L	1	mg/L	91.%	14-JAN-95	14-JAN-95
-	-						
Surrogate:	-						
Bromofluorobenzene	91.9	%				14-JAN-95	14-JAN-95
-	-						
Comments:	None						
-	-						
-	-						

QUALITY CONTROL REPORT

In order to provide you with the means of assessing the quality of the data in our report, **D&M Laboratories** reports the results of Quality Control samples analyzed with your samples.

The Quality Control samples provide the following QC information:

The Method Blank (**MB**) monitors the level of contamination introduced by reagents or glassware. A minimum of one MB is run per batch of 20 samples or less.

The Method Blank Spike (**MBS**) measures the accuracy of analytical techniques and is not subject to matrix effects. A minimum of one MBS is run per batch of 20 samples or less.

The Matrix Spike (**MS**) measures the accuracy of the method for a matrix type. Due to the high variability within matrix types and the necessity of batching samples from varied sources, matrix spike information from one sample is not necessarily relevant to other samples on the batch. A minimum of two matrix spikes, MS and MSD, are run per batch of 20 samples or less. The sample selected for the matrix spike is designated **MX**, and may or may not have been submitted by the recipient of this report.

The Matrix Spike Duplicate (**MSD**), along with the MS, is used to monitor the precision (**RPD**) of the method and to indicate possible non homogeneity of the sample matrix.

Equations used for determining percent recovery and relative percent difference (RPD) are as follows:

MBS % Recovery = (MBS result / MBS spike level) x 100
MS % Recovery = [(MS result - MX result) / MS spike level] x 100
RPD ={ | MS result - MSD result | / [(MS result + MSD result) / 2]} x 100

We continue to strive to improve the quality of service to our clients. We welcome any questions or comments you may have about this information, or about **D&M Laboratories** in general. Please contact a Project Manager for further information.

D&M LABORATORIES
ENVIRONMENTAL AND INDUSTRIAL HYGIENE SERVICES

700 Lakeville Highway, Petaluma, CA 94954
. Box 808024, Petaluma, CA 94975-8024
hone: (707) 763-8245 Fax: (707) 763-4065

L9501040

SAMPLE CHAIN OF CUSTODY / WORK ORDER

Client's Name DAMES & MOORE Phone (916) 987-8800
Address 8801 FOLSOM BLVD. SUITE #200
City, State, Zip SACRAMENTO, CA 95826
Client's or Representative's Signature Kim Thomaso
(signature authorizes the work and terms listed below)

All samples remain the property of the client who is responsible for disposal. A disposal fee may be imposed if client fails to pick up samples.

PROJ. NO.	PROJECT NAME
0173-080-044	UPSAC RAILYARD

SAMPLERS *(Signature)*: Kim Thomaso

STA. NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	4 VOA - HCl	1 POLY - NP	REMARKS	LAB USE ONLY LAB NO.
GW-1-EFF	1/5	0930		X	GW-1-EFF	5	4	1		
MW-4		0957		X	MW-4	5	4	1		
MW-32		1045		X	MW-32	5	4	1		
EW-1	↓	1115		X	EW-1	5	4	1		
					TRIP BLANK	1	1			

COOLER CUSTODY SEALS INTACT ☐ NOT INTACT ☐ N/A
COOLER TEMPERATURE COLD °C

SAMPLES RECEIVED IN GOOD CONDITION
NO BROKEN OR LEAKING CONTAINERS

20 VOA's + 4 500ml poly

Relinquished by: *(Signature)*	DATE	TIME	Received by: *(Signature)*
Kim Thomaso	1/5/95	1300	UPS NEXT DAY AIR 0197 3123 203
Relinquished by: *(Signature)*	DATE	TIME	Received by: *(Signature)*
Relinquished by: *(Signature)*	DATE	TIME	Received by: *(Signature)*

General Remarks:
VOA's PRESERVED W/ HCl
PLY. PRESERVED W/ HNO3
ANALYZE 1 T.P. FOR TPH/BTEX

RECEIVED
JAN 06 1995
9:39 AM

D&M LABORATORIES
ENVIRONMENTAL AND INDUSTRIAL HYGIENE SERVICES

3700 Lakeville Highway, Petaluma, CA 94954
Telephone: (707) 763-8245
FAX (707) 763-4065

Jim Brake
Dames & Moore-Sacramento
8801 Folsom Blvd - Suite 200
Sacramento, CA 95826

February 23, 1995

Customer Project: 00173-080-044 UPRR, Sacramento
Laboratory Job: L9502117

On February 11, 1995 we received 5 sample(s) for analysis. Samples were analyzed by the following method(s):

Halogenated Volatile Organics (EPA 601/SW 8010A)

Gasoline & BTEX (EPA 8015M/8020A)

Nickel (EPA 7521)

Stella Wands
Project Manager
for D. Denney

Robert Peak
Laboratory Director
Robert Peak

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for: Dames & Moore-Sacramento
Project Id: 00173-080-044 UPRR, Sacramento
Sample Id: MW-32
Lab Id: L9502117-1

Collected: 09-FEB-95
Received: 11-FEB-95
Reported: 23-FEB-95

Parameter	Value	RDL	Units	Extracted	Analyzed
Graphite Furnance AA					
Nickel - EPA 7521	0.019	0.0050	mg/L	11-FEB-95	15-FEB-95
GAS/BTEX					
Benzene	ND <	0.50	ug/L	14-FEB-95	14-FEB-95
Ethyl Benzene	ND <	0.50	ug/L	14-FEB-95	14-FEB-95
Toluene	ND <	0.50	ug/L	14-FEB-95	14-FEB-95
Xylene	ND <	0.50	ug/L	14-FEB-95	14-FEB-95
Gasoline	ND <	0.050	mg/L	14-FEB-95	14-FEB-95
-	-				
Surrogate:	-				
Bromofluorobenzene	93.4	-	%	14-FEB-95	14-FEB-95
Volatile Halogenated Hydrocarbons					
Bromodichloromethane	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Bromoform	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Bromomethane	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Carbon Tetrachloride	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Chlorobenzene	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Chloroethane	ND <	1.0	ug/L	20-FEB-95	20-FEB-95
Chloroform	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Chloromethane	ND <	1.0	ug/L	20-FEB-95	20-FEB-95
Dibromochloromethane	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
1,2-Dichlorobenzene	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
1,3-Dichlorobenzene	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
1,4-Dichlorobenzene	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
1,1-Dichloroethane	3.1	0.50	ug/L	20-FEB-95	20-FEB-95
1,2-Dichloroethane	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
1,1-Dichloroethene	31.	0.50	ug/L	20-FEB-95	20-FEB-95
1,2-Dichloroethene (Total)	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
1,2-Dichloropropane	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Cis-1,3-Dichloropropene	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Trans-1,3-Dichloropropene	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Methylene Chloride	ND <	1.0	ug/L	20-FEB-95	20-FEB-95
1,1,2,2-Tetrachloroethane	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Tetrachloroethene	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
1,1,1-Trichloroethane	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
1,1,2-Trichloroethane	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Trichloroethene	6.9	0.50	ug/L	20-FEB-95	20-FEB-95
Trichlorofluoromethane	ND <	1.0	ug/L	20-FEB-95	20-FEB-95
Vinyl Chloride	ND <	1.0	ug/L	20-FEB-95	20-FEB-95
-	-				
Surrogate:	-				
4-Bromofluorobenzene	79.2	-	%	20-FEB-95	20-FEB-95

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for: Dames & Moore-Sacramento
Project Id: 00173-080-044 UPRR, Sacramento
Sample Id: MW-4
Lab Id: L9502117-2

Collected: 09-FEB-95
Received: 11-FEB-95
Reported: 23-FEB-95

Parameter	Value		RDL	Units	Extracted	Analyzed
Graphite Furnance AA						
Nickel - EPA 7521	0.0080		0.0050	mg/L	11-FEB-95	15-FEB-95
GAS/BTEX						
Benzene	68.		0.50	ug/L	14-FEB-95	14-FEB-95
Ethyl Benzene	3.4		0.50	ug/L	14-FEB-95	14-FEB-95
Toluene	11.		0.50	ug/L	14-FEB-95	14-FEB-95
Xylene	19.		0.50	ug/L	14-FEB-95	14-FEB-95
Gasoline	0.43		0.050	mg/L	14-FEB-95	14-FEB-95
Surrogate:						
Bromofluorobenzene	90.9		-	%	14-FEB-95	14-FEB-95
Volatile Halogenated Hydrocarbons						
Bromodichloromethane	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
Bromoform	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
Bromomethane	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
Carbon Tetrachloride	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
Chlorobenzene	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
Chloroethane	ND	<	1.0	ug/L	20-FEB-95	20-FEB-95
Chloroform	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
Chloromethane	ND	<	1.0	ug/L	20-FEB-95	20-FEB-95
Dibromochloromethane	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
1,2-Dichlorobenzene	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
1,3-Dichlorobenzene	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
1,4-Dichlorobenzene	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
1,1-Dichloroethane	3.1		0.50	ug/L	20-FEB-95	20-FEB-95
1,2-Dichloroethane	2.3		0.50	ug/L	20-FEB-95	20-FEB-95
1,1-Dichloroethene	40.		0.50	ug/L	20-FEB-95	20-FEB-95
1,2-Dichloroethene (Total)	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
1,2-Dichloropropane	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
Cis-1,3-Dichloropropene	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
Trans-1,3-Dichloropropene	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
Methylene Chloride	ND	<	1.0	ug/L	20-FEB-95	20-FEB-95
1,1,2,2-Tetrachloroethane	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
Tetrachloroethene	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
1,1,1-Trichloroethane	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
1,1,2-Trichloroethane	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
Trichloroethene	2.5		0.50	ug/L	20-FEB-95	20-FEB-95
Trichlorofluoromethane	ND	<	1.0	ug/L	20-FEB-95	20-FEB-95
Vinyl Chloride	ND	<	1.0	ug/L	20-FEB-95	20-FEB-95
Surrogate:						
4-Bromofluorobenzene	80.1		-	%	20-FEB-95	20-FEB-95

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for: Dames & Moore-Sacramento
Project Id: 00173-080-044 UPRR, Sacramento
Sample Id: EW-1
Lab Id: L9502117-3

Collected: 09-FEB-95
Received: 11-FEB-95
Reported: 23-FEB-95

Parameter	Value	RDL	Units	Extracted	Analyzed
Graphite Furnance AA					
Nickel - EPA 7521	ND<	0.0050	mg/L	11-FEB-95	15-FEB-95
Volatile Halogenated Hydrocarbons					
Bromodichloromethane	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Bromoform	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Bromomethane	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Carbon Tetrachloride	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Chlorobenzene	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Chloroethane	ND <	1.0	ug/L	20-FEB-95	20-FEB-95
Chloroform	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Chloromethane	ND <	1.0	ug/L	20-FEB-95	20-FEB-95
Dibromochloromethane	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
1,2-Dichlorobenzene	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
1,3-Dichlorobenzene	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
1,4-Dichlorobenzene	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
1,1-Dichloroethane	5.0	0.50	ug/L	20-FEB-95	20-FEB-95
1,2-Dichloroethane	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
1,1-Dichloroethene	10.	0.50	ug/L	20-FEB-95	20-FEB-95
1,2-Dichloroethene (Total)	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
1,2-Dichloropropane	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Cis-1,3-Dichloropropene	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Trans-1,3-Dichloropropene	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Methylene Chloride	ND <	1.0	ug/L	20-FEB-95	20-FEB-95
1,1,2,2-Tetrachloroethane	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Tetrachloroethene	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
1,1,1-Trichloroethane	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
1,1,2-Trichloroethane	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Trichloroethene	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Trichlorofluoromethane	ND <	1.0	ug/L	20-FEB-95	20-FEB-95
Vinyl Chloride	ND <	1.0	ug/L	20-FEB-95	20-FEB-95
-	-				
Surrogate:	-				
4-Bromofluorobenzene	84.7	-	%	20-FEB-95	20-FEB-95

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for: Dames & Moore-Sacramento
Project Id: 00173-080-044 UPRR, Sacramento
Sample Id: GW-1-EFF
Lab Id: L9502117-4

Collected: 09-FEB-95
Received: 11-FEB-95
Reported: 23-FEB-95

Parameter	Value	RDL	Units	Extracted	Analyzed
Graphite Furnance AA					
Nickel - EPA 7521	0.0070	0.0050	mg/L	11-FEB-95	15-FEB-95
GAS/BTEX					
Benzene	ND <	0.50	ug/L	14-FEB-95	14-FEB-95
Ethyl Benzene	ND <	0.50	ug/L	14-FEB-95	14-FEB-95
Toluene	ND <	0.50	ug/L	14-FEB-95	14-FEB-95
Xylene	ND <	0.50	ug/L	14-FEB-95	14-FEB-95
Gasoline	ND <	0.050	mg/L	14-FEB-95	14-FEB-95
Surrogate:					
Bromofluorobenzene	91.5	-	%	14-FEB-95	14-FEB-95
Volatile Halogenated Hydrocarbons					
Bromodichloromethane	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Bromoform	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Bromomethane	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Carbon Tetrachloride	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Chlorobenzene	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Chloroethane	ND <	1.0	ug/L	20-FEB-95	20-FEB-95
Chloroform	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Chloromethane	ND <	1.0	ug/L	20-FEB-95	20-FEB-95
Dibromochloromethane	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
1,2-Dichlorobenzene	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
1,3-Dichlorobenzene	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
1,4-Dichlorobenzene	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
1,1-Dichloroethane	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
1,2-Dichloroethane	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
1,1-Dichloroethene	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
1,2-Dichloroethene (Total)	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
1,2-Dichloropropane	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Cis-1,3-Dichloropropene	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Trans-1,3-Dichloropropene	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Methylene Chloride	ND <	1.0	ug/L	20-FEB-95	20-FEB-95
1,1,2,2-Tetrachloroethane	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Tetrachloroethene	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
1,1,1-Trichloroethane	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
1,1,2-Trichloroethane	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Trichloroethene	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Trichlorofluoromethane	ND <	1.0	ug/L	20-FEB-95	20-FEB-95
Vinyl Chloride	ND <	1.0	ug/L	20-FEB-95	20-FEB-95
Surrogate:					
4-bromofluorobenzene	87.2	-	%	20-FEB-95	20-FEB-95

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for: Dames & Moore-Sacramento
Project Id: 00173-080-044 UPRR, Sacramento
Sample Id: TRIP BLANK
Lab Id: L9502117-5

Collected: 09-FEB-95
Received: 11-FEB-95
Reported: 23-FEB-95

Parameter	Value	RDL	Units	Extracted	Analyzed
GAS/BTEX					
Benzene	ND <	0.50	ug/L	14-FEB-95	14-FEB-95
Ethyl Benzene	ND <	0.50	ug/L	14-FEB-95	14-FEB-95
Toluene	ND <	0.50	ug/L	14-FEB-95	14-FEB-95
Xylene	ND <	0.50	ug/L	14-FEB-95	14-FEB-95
Gasoline	ND <	0.050	mg/L	14-FEB-95	14-FEB-95
Surrogate:					
Bromofluorobenzene	87.5	-	%	14-FEB-95	14-FEB-95
Volatile Halogenated Hydrocarbons					
Bromodichloromethane	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Bromoform	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Bromomethane	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Carbon Tetrachloride	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Chlorobenzene	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Chloroethane	ND <	1.0	ug/L	20-FEB-95	20-FEB-95
Chloroform	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Chloromethane	ND <	1.0	ug/L	20-FEB-95	20-FEB-95
Dibromochloromethane	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
1,2-Dichlorobenzene	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
1,3-Dichlorobenzene	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
1,4-Dichlorobenzene	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
1,1-Dichloroethane	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
1,2-Dichloroethane	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
1,1-Dichloroethene	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
1,2-Dichloroethene (Total)	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
1,2-Dichloropropane	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Cis-1,3-Dichloropropene	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Trans-1,3-Dichloropropene	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Methylene Chloride	ND <	1.0	ug/L	20-FEB-95	20-FEB-95
1,1,2,2-Tetrachloroethane	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Tetrachloroethene	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
1,1,1-Trichloroethane	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
1,1,2-Trichloroethane	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Trichloroethene	ND <	0.50	ug/L	20-FEB-95	20-FEB-95
Trichlorofluoromethane	ND <	1.0	ug/L	20-FEB-95	20-FEB-95
Vinyl Chloride	ND <	1.0	ug/L	20-FEB-95	20-FEB-95
Surrogate:					
4-Bromofluorobenzene	82.1	-	%	20-FEB-95	20-FEB-95

D&M Laboratories
QUALITY CONTROL REPORT

Reported: 15-FEB-95

QC for: Graphite Furnance AA

Lab Id: WG6929-1 Sample Id: Method Blank

Parameter	Value	RDL	Units	Extracted	Analyzed
Nickel - EPA 7521	ND<	0.0050	mg/L	11-FEB-95	15-FEB-95
-	-				
Comments:	-				

Lab Id: WG6929-2 Sample Id: Method Blank Spike

Parameter	Value	Units	Spike	Units	% Rec	Extracted	Analyzed
Nickel - EPA 7521	0.0532	mg/L	.05	mg/L	106.%	11-FEB-95	15-FEB-95
-	-						
Comments:	-						

Lab Id: WG6929-3 Sample Id: MX

Parameter	Value	RDL	Units	Extracted	Analyzed
Nickel - EPA 7521	0.0188	0.0050	mg/L	11-FEB-95	15-FEB-95
-	-				
Comments:	-				

Lab Id: WG6929-4 Sample Id: Matrix Spike

Parameter	Value	Units	Spike	Units	% Rec	Extracted	Analyzed
Nickel - EPA 7521	0.0776	mg/L	.05	mg/L	118.%	11-FEB-95	15-FEB-95
-	-						
Comments:	-						

Lab Id: WG6929-5 Sample Id: Matrix Spike Dup

Parameter	Value	Units	% Rec	RPD	Extracted	Analyzed
Nickel - EPA 7521	0.0787	mg/L	120.%	1.4	11-FEB-95	15-FEB-95
-	-					
Comments:	-					

D&M Laboratories
QUALITY CONTROL REPORT

Reported: 20-FEB-95

QC for: GAS/BTEX

Lab Id: WG6962-4 Sample Id: Method Blank

Parameter	Value	RDL	Units	Extracted	Analyzed
Benzene	ND <	0.50	ug/L	14-FEB-95	14-FEB-95
Ethyl Benzene	ND <	0.50	ug/L	14-FEB-95	14-FEB-95
Toluene	ND <	0.50	ug/L	14-FEB-95	14-FEB-95
Xylene	ND <	0.50	ug/L	14-FEB-95	14-FEB-95
Gasoline	ND <	0.050	mg/L	14-FEB-95	14-FEB-95
-	-				
Surrogate:	-				
Bromofluorobenzene	93.8 -		%	14-FEB-95	14-FEB-95
-	-				
Comments:	None				
-	-				
-	-				

Lab Id: WG6962-5 Sample Id: Method Blank Spike

Parameter	Value	Units	Spike	Units	% Rec	Extracted	Analyzed
Benzene	26.5	ug/L	25	ug/L	106.%	14-FEB-95	14-FEB-95
Ethyl Benzene	26.0	ug/L	25	ug/L	104.%	14-FEB-95	14-FEB-95
Toluene	26.1	ug/L	25	ug/L	104.%	14-FEB-95	14-FEB-95
Xylene	78.8	ug/L	75	ug/L	105.%	14-FEB-95	14-FEB-95
Gasoline	0.971	mg/L	1	mg/L	97.%	14-FEB-95	14-FEB-95
-	-						
Surrogate:	-						
Bromofluorobenzene	95.1	%	25	ug/L		14-FEB-95	14-FEB-95
-	-						
Comments:	None						
-	-						
-	-						

Lab Id: WG6962-1 Sample Id: MX

Parameter	Value	RDL	Units	Extracted	Analyzed
Benzene	ND <	0.50	ug/L	16-FEB-95	16-FEB-95
Ethyl Benzene	ND <	0.50	ug/L	16-FEB-95	16-FEB-95
Toluene	ND <	0.50	ug/L	16-FEB-95	16-FEB-95
Xylene	ND <	0.50	ug/L	16-FEB-95	16-FEB-95
-	-				
Surrogate	-				
Bromofluorobenzene	97.7 -		%	16-FEB-95	16-FEB-95
-	-				
Comments:	MX BTEX = L9502120-1				

Parameter	Value	RDL	Units	Extracted	Analyzed
Gasoline	ND <	0.050	mg/L	16-FEB-95	16-FEB-95
-	-				
Surrogate	-				
4-Bromofluorobenzene	96.3 -		%	16-FEB-95	16-FEB-95
-	-				
Comments:	MX = L9502120-3				

D&M Laboratories
QUALITY CONTROL REPORT

Reported: 20-FEB-95

QC for: Gasoline

Lab Id: WG6962-2 Sample Id: Matrix Spike

Parameter	Value	Units	Spike	Units	% Rec	Extracted	Analyzed
Benzene	26.4	ug/L	25	ug/L	106.%	14-FEB-95	14-FEB-95
Ethyl Benzene	25.8	ug/L	25	ug/L	103.%	14-FEB-95	14-FEB-95
Toluene	26.2	ug/L	25	ug/L	105.%	14-FEB-95	14-FEB-95
Xylene	78.2	ug/L	75	ug/L	104.%	14-FEB-95	14-FEB-95
-	-						
Surrogate	-						
Bromofluorobenzene	96.1	%				14-FEB-95	14-FEB-95
-	-						
Comments:	None						

Parameter	Value	Units	Spike	Units	% Rec	Extracted	Analyzed
Gasoline	0.905	mg/L	1	mg/L	90.%	14-FEB-95	14-FEB-95
-	-						
Surrogate	-						
4-Bromofluorobenzene	93.2	%				14-FEB-95	14-FEB-95
-	-						
Comments:	None						

Lab Id: WG6962-3 Sample Id: Matrix Spike Dup

Parameter	Value	Units	% Rec	RPD	Extracted	Analyzed
Benzene	26.4	ug/L	106.%	0.020	14-FEB-95	14-FEB-95
Ethyl Benzene	26.0	ug/L	104.%	0.70	14-FEB-95	14-FEB-95
Toluene	26.2	ug/L	105.%	0.16	14-FEB-95	14-FEB-95
Xylene	78.4	ug/L	104.%	0.27	14-FEB-95	14-FEB-95
-	-					
Surrogate	-					
Bromofluorobenzene	93.7	%			14-FEB-95	14-FEB-95
-	-					
Comments:	None					

Parameter	Value	Units	% Rec	RPD	Extracted	Analyzed
Gasoline	0.897	mg/L	90.%	0.95	14-FEB-95	14-FEB-95
-	-					
Surrogate	-					
4-Bromofluorobenzene	92.6	%			14-FEB-95	14-FEB-95
-	-					
Comments:	None					

D&M Laboratories

QUALITY CONTROL REPORT

Prepared for:
Project Id:
Sample Id: Method Blank
Lab Id: WG6993-4

Reported: 22-FEB-95

Parameter	Value		RDL	Units	Extracted	Analyzed
8010/8020						
Benzene	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
Bromodichloromethane	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
Bromoform	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
Bromomethane	ND	<	1.0	ug/L	20-FEB-95	20-FEB-95
Carbon Tetrachloride	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
Chlorobenzene	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
Chloroethane	ND	<	1.0	ug/L	20-FEB-95	20-FEB-95
Chloroform	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
Chloromethane	ND	<	1.0	ug/L	20-FEB-95	20-FEB-95
Dibromochloromethane	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
1,2-Dichlorobenzene	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
1,3-Dichlorobenzene	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
1,4-Dichlorobenzene	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
1,1-Dichloroethane	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
1,2-Dichloroethane	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
1,1-Dichloroethene	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
1,2-Dichloroethene (Total)	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
1,2-Dichloropropane	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
Cis-1,3-Dichloropropene	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
Trans-1,3-Dichloropropene	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
Ethyl Benzene	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
Methylene Chloride	ND	<	1.0	ug/L	20-FEB-95	20-FEB-95
1,1,2,2-Tetrachloroethane	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
Tetrachloroethene	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
Toluene	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
1,1,1-Trichloroethane	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
1,1,2-Trichloroethane	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
Trichloroethene	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
Trichlorofluoromethane	ND	<	1.0	ug/L	20-FEB-95	20-FEB-95
Vinyl Chloride	ND	<	1.0	ug/L	20-FEB-95	20-FEB-95
Xylenes (Total)	ND	<	0.50	ug/L	20-FEB-95	20-FEB-95
-	-					
Surrogate:	-					
4-Bromofluorobenzene (8010)	80.9		-	%	20-FEB-95	20-FEB-95
4-Bromofluorobenzene (8020)	91.1		-	%	20-FEB-95	20-FEB-95
-	-					
Comments:	None.					
-	-					
-	-					
-	-					

D&M Laboratories

QUALITY CONTROL REPORT

Prepared for:
Project Id:
Sample Id: Method Blank Spike
Lab Id: WG6993-5

Reported: 22-FEB-95

Parameter	Value	Units	Spike	Units	% Rec	Extracted	Analyzed
8010/8020-QC							
1,1-Dichloroethene	18.9	ug/L	20	ug/L	95.%	20-FEB-95	20-FEB-95
Trichloroethene	18.9	ug/L	20	ug/L	95.%	20-FEB-95	20-FEB-95
Chlorobenzene-601	23.6	ug/L	20	ug/L	118.%	20-FEB-95	20-FEB-95
Benzene	19.5	ug/L	20	ug/L	97.%	20-FEB-95	20-FEB-95
Toluene	19.8	ug/L	20	ug/L	99.%	20-FEB-95	20-FEB-95
Chlorobenzene-602	19.3	ug/L	20	ug/L	97.%	20-FEB-95	20-FEB-95
-	-						
Surrogate:	-						
4-Bromofluorobenzene (8010)	88.9	%				20-FEB-95	20-FEB-95
4-Bromofluorobenzene (8020)	94.1	%				20-FEB-95	20-FEB-95
-	-						
Comments:	None						
-	None						

D&M LABORATORIES
ENVIRONMENTAL AND INDUSTRIAL HYGIENE SERVICES

3700 Lakeville Highway, Petaluma, CA 94954
Telephone: (707) 763-8245
FAX (707) 763-4065

Jim Brake
Dames & Moore-Sacramento
8801 Folsom Blvd - Suite 200
Sacramento, CA 95826

March 16, 1995

Customer Project: 00173-080-2143-044 UP Sac
Laboratory Job: L9503033

On March 4, 1995 we received 5 sample(s) for analysis. Samples were analyzed by the following method(s):

Halog. & Aromatic Volatiles (EPA 8010A/8020A)

Gasoline (8015 Modified)

Nickel (EPA 7521)

Hold Sample

Project Manager

Laboratory Director
Robert Peak

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for: Dames & Moore-Sacramento
Project Id: 00173-080-2143-044 UP Sac
Sample Id: MW-4
Lab Id: L9503033-1

Collected: 03-MAR-95
Received: 04-MAR-95
Reported: 16-MAR-95

Parameter		Value		RDL	Units	Extracted	Analyzed
Graphite Furnance AA							
Nickel - EPA 7521		ND<		0.0050	mg/L	07-MAR-95	08-MAR-95
Gasoline							
Gasoline		0.34		0.050	mg/L	09-MAR-95	09-MAR-95
-	-						
Surrogate	-						
4-Bromofluorobenzene		100		-	%	09-MAR-95	09-MAR-95
-	-						
Comments:		Hydrocarbon response in gasoline range does not resemble a typical gasoline pattern.					
-							
8010/8020							
Benzene		39.		0.50	ug/L	10-MAR-95	10-MAR-95
Bromodichloromethane		ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
Bromoform		ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
Bromomethane		ND	<	1.0	ug/L	10-MAR-95	10-MAR-95
Carbon Tetrachloride		ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
Chlorobenzene		ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
Chloroethane		ND	<	1.0	ug/L	10-MAR-95	10-MAR-95
Chloroform		ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
Chloromethane		ND	<	1.0	ug/L	10-MAR-95	10-MAR-95
Dibromochloromethane		ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
1,2-Dichlorobenzene		ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
1,3-Dichlorobenzene		ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
1,4-Dichlorobenzene		ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
1,1-Dichloroethane		2.5		0.50	ug/L	10-MAR-95	10-MAR-95
1,2-Dichloroethane		1.4		0.50	ug/L	10-MAR-95	10-MAR-95
1,1-Dichloroethene		33.		0.50	ug/L	10-MAR-95	10-MAR-95
1,2-Dichloroethene (Total)		ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
1,2-Dichloropropane		ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
Cis-1,3-Dichloropropene		ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
Trans-1,3-Dichloropropene		ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
Ethyl Benzene		2.0		0.50	ug/L	10-MAR-95	10-MAR-95
Methylene Chloride		ND	<	1.0	ug/L	10-MAR-95	10-MAR-95
1,1,2,2-Tetrachloroethane		ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
Tetrachloroethene		1.1		0.50	ug/L	10-MAR-95	10-MAR-95
Toluene		7.5		0.50	ug/L	10-MAR-95	10-MAR-95
1,1,1-Trichloroethane		ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
1,1,2-Trichloroethane		ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
Trichloroethene		2.4		0.50	ug/L	10-MAR-95	10-MAR-95
Trichlorofluoromethane		ND	<	1.0	ug/L	10-MAR-95	10-MAR-95
Vinyl Chloride		ND	<	1.0	ug/L	10-MAR-95	10-MAR-95
Xylenes (Total)		11.		0.50	ug/L	10-MAR-95	10-MAR-95
-	-						
Surrogate:	-						
4-Bromofluorobenzene (8010)		77.6		-	%	10-MAR-95	10-MAR-95
4-Bromofluorobenzene (8020)		91.3		-	%	10-MAR-95	10-MAR-95

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for: Dames & Moore-Sacramento
Project Id: 00173-080-2143-044 UP Sac
Sample Id: GW-1-EFF
Lab Id: L9503033-2

Collected: 03-MAR-95
Received: 04-MAR-95
Reported: 15-MAR-95

Parameter	Value		RDL	Units	Extracted	Analyzed
Graphite Furnance AA						
Nickel - EPA 7521	0.0065		0.0050	mg/L	07-MAR-95	08-MAR-95
Gasoline						
Gasoline	ND	<	0.050	mg/L	09-MAR-95	09-MAR-95
-						
Surrogate						
4-Bromofluorobenzene	100		-	%	09-MAR-95	09-MAR-95
8010/8020						
Benzene	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
Bromodichloromethane	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
Bromoform	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
Bromomethane	ND	<	1.0	ug/L	10-MAR-95	10-MAR-95
Carbon Tetrachloride	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
Chlorobenzene	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
Chloroethane	ND	<	1.0	ug/L	10-MAR-95	10-MAR-95
Chloroform	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
Chloromethane	ND	<	1.0	ug/L	10-MAR-95	10-MAR-95
Dibromochloromethane	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
1,2-Dichlorobenzene	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
1,3-Dichlorobenzene	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
1,4-Dichlorobenzene	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
1,1-Dichloroethane	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
1,2-Dichloroethane	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
1,1-Dichloroethene	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
1,2-Dichloroethene (Total)	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
1,2-Dichloropropane	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
Cis-1,3-Dichloropropene	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
Trans-1,3-Dichloropropene	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
Ethyl Benzene	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
Methylene Chloride	ND	<	1.0	ug/L	10-MAR-95	10-MAR-95
1,1,2,2-Tetrachloroethane	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
Tetrachloroethene	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
Toluene	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
1,1,1-Trichloroethane	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
1,1,2-Trichloroethane	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
Trichloroethene	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
Trichlorofluoromethane	ND	<	1.0	ug/L	10-MAR-95	10-MAR-95
Vinyl Chloride	ND	<	1.0	ug/L	10-MAR-95	10-MAR-95
Xylenes (Total)	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
-						
Surrogate:						
4-Bromofluorobenzene (8010)	73.6		-	%	10-MAR-95	10-MAR-95
4-Bromofluorobenzene (8020)	90.2		-	%	10-MAR-95	10-MAR-95

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for: Dames & Moore-Sacramento
Project Id: 00173-080-2143-044 UP Sac
Sample Id: EW-1
Lab Id: L9503033-3

Collected: 03-MAR-95
Received: 04-MAR-95
Reported: 16-MAR-95

Parameter	Value		RDL	Units	Extracted	Analyzed
Graphite Furnance AA						
Nickel - EPA 7521	ND	<	0.0050	mg/L	07-MAR-95	08-MAR-95
Gasoline						
Gasoline	ND	<	0.050	mg/L	09-MAR-95	09-MAR-95
-						
Surrogate						
4-Bromofluorobenzene	100		-	%	09-MAR-95	09-MAR-95
8010/8020						
Benzene	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
Bromodichloromethane	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
Bromoform	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
Bromomethane	ND	<	1.0	ug/L	10-MAR-95	10-MAR-95
Carbon Tetrachloride	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
Chlorobenzene	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
Chloroethane	ND	<	1.0	ug/L	10-MAR-95	10-MAR-95
Chloroform	1.4		0.50	ug/L	10-MAR-95	10-MAR-95
Chloromethane	ND	<	1.0	ug/L	10-MAR-95	10-MAR-95
Dibromochloromethane	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
1,2-Dichlorobenzene	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
1,3-Dichlorobenzene	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
1,4-Dichlorobenzene	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
1,1-Dichloroethane	4.5		0.50	ug/L	10-MAR-95	10-MAR-95
1,2-Dichloroethane	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
1,1-Dichloroethene	9.2		0.50	ug/L	10-MAR-95	10-MAR-95
1,2-Dichloroethene (Total)	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
1,2-Dichloropropane	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
Cis-1,3-Dichloropropene	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
Trans-1,3-Dichloropropene	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
Ethyl Benzene	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
Methylene Chloride	ND	<	1.0	ug/L	10-MAR-95	10-MAR-95
1,1,2,2-Tetrachloroethane	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
Tetrachloroethene	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
Toluene	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
1,1,1-Trichloroethane	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
1,1,2-Trichloroethane	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
Trichloroethene	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
Trichlorofluoromethane	ND	<	1.0	ug/L	10-MAR-95	10-MAR-95
Vinyl Chloride	ND	<	1.0	ug/L	10-MAR-95	10-MAR-95
Xylenes (Total)	ND	<	0.50	ug/L	10-MAR-95	10-MAR-95
-						
Surrogate:						
4-Bromofluorobenzene (8010)	71.1		-	%	10-MAR-95	10-MAR-95
4-Bromofluorobenzene (8020)	85.2		-	%	10-MAR-95	10-MAR-95

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for: Dames & Moore-Sacramento
Project Id: 00173-080-2143-044 UP Sac
Sample Id: MW-32
Lab Id: L9503033-4

Collected: 03-MAR-95
Received: 04-MAR-95
Reported: 16-MAR-95

Parameter	Value	RDL	Units	Extracted	Analyzed
Graphite Furnance AA					
Nickel - EPA 7521	0.017	0.0050	mg/L	07-MAR-95	08-MAR-95
Gasoline					
Gasoline	ND <	0.050	mg/L	09-MAR-95	09-MAR-95
Surrogate					
4-Bromofluorobenzene	100 -		%	09-MAR-95	09-MAR-95
8010/8020					
Benzene	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
Bromodichloromethane	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
Bromoform	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
Bromomethane	ND <	1.0	ug/L	10-MAR-95	10-MAR-95
Carbon Tetrachloride	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
Chlorobenzene	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
Chloroethane	ND <	1.0	ug/L	10-MAR-95	10-MAR-95
Chloroform	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
Chloromethane	ND <	1.0	ug/L	10-MAR-95	10-MAR-95
Dibromochloromethane	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
1,2-Dichlorobenzene	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
1,3-Dichlorobenzene	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
1,4-Dichlorobenzene	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
1,1-Dichloroethane	3.5	0.50	ug/L	10-MAR-95	10-MAR-95
1,2-Dichloroethane	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
1,1-Dichloroethene	34.	0.50	ug/L	10-MAR-95	10-MAR-95
1,2-Dichloroethene (Total)	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
1,2-Dichloropropane	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
Cis-1,3-Dichloropropene	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
Trans-1,3-Dichloropropene	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
Ethyl Benzene	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
Methylene Chloride	ND <	1.0	ug/L	10-MAR-95	10-MAR-95
1,1,2,2-Tetrachloroethane	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
Tetrachloroethene	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
Toluene	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
1,1,1-Trichloroethane	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
1,1,2-Trichloroethane	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
Trichloroethene	6.7	0.50	ug/L	10-MAR-95	10-MAR-95
Trichlorofluoromethane	ND <	1.0	ug/L	10-MAR-95	10-MAR-95
Vinyl Chloride	ND <	1.0	ug/L	10-MAR-95	10-MAR-95
Xylenes (Total)	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
Surrogate:					
4-Bromofluorobenzene (801C)	80.1 -		%	10-MAR-95	10-MAR-95
4-Bromofluorobenzene (802C)	89.7 -		%	10-MAR-95	10-MAR-95

D&M Laboratories
QUALITY CONTROL REPORT

Reported: 09-MAR-95

QC for: Graphite Furnance AA

Lab Id: WG7134-1 Sample Id: Method Blank

Parameter	Value	RDL	Units	Extracted	Analyzed
Nickel - EPA 7521	ND<	0.0050	mg/L	07-MAR-95	08-MAR-95

Comments:

Lab Id: WG7134-2 Sample Id: Method Blank Spike

Parameter	Value	Units	Spike	Units	% Rec	Extracted	Analyzed
Nickel - EPA 7521	0.0470	mg/L	.05	mg/L	94.%	07-MAR-95	08-MAR-95

Comments:

Lab Id: WG7134-3 Sample Id: MX

Parameter	Value	RDL	Units	Extracted	Analyzed
Nickel - EPA 7521	ND<	0.0050	mg/L	07-MAR-95	08-MAR-95

Comments: MX=L9503051-3.

Lab Id: WG7134-4 Sample Id: Matrix Spike

Parameter	Value	Units	Spike	Units	% Rec	Extracted	Analyzed
Nickel - EPA 7521	0.0485	mg/L	.05	mg/L	97.%	07-MAR-95	08-MAR-95

Comments:

Lab Id: WG7134-5 Sample Id: Matrix Spike Dup

Parameter	Value	Units	% Rec	RPD	Extracted	Analyzed
Nickel - EPA 7521	0.0518	mg/L	104.%	6.6	07-MAR-95	08-MAR-95

Comments:

D&M Laboratories
QUALITY CONTROL REPORT

Reported: 15-MAR-95

QC for: GAS/BTEX

Lab Id: WG7125-4 Sample Id: Method Blank

Parameter	Value	RDL	Units	Extracted	Analyzed
Benzene	ND <	0.50	ug/L	09-MAR-95	09-MAR-95
Ethyl Benzene	ND <	0.50	ug/L	09-MAR-95	09-MAR-95
Toluene	ND <	0.50	ug/L	09-MAR-95	09-MAR-95
Xylene	ND <	0.50	ug/L	09-MAR-95	09-MAR-95
Gasoline	ND <	0.050	mg/L	09-MAR-95	09-MAR-95
-	-				
Surrogate:	-				
Bromofluorobenzene	96.4	-	%	09-MAR-95	09-MAR-95
-	-				
Comments:	None				
-	-				
-	-				

Lab Id: WG7125-5 Sample Id: Method Blank Spike

Parameter	Value	Units	Spike	Units	% Rec	Extracted	Analyzed
Benzene	25.2	ug/L	25	ug/L	101.%	09-MAR-95	09-MAR-95
Ethyl Benzene	26.0	ug/L	25	ug/L	104.%	09-MAR-95	09-MAR-95
Toluene	25.6	ug/L	25	ug/L	102.%	09-MAR-95	09-MAR-95
Xylene	80.9	ug/L	75	ug/L	108.%	09-MAR-95	09-MAR-95
Gasoline	1.00	mg/L	1	mg/L	100%	09-MAR-95	09-MAR-95
-	-						
Surrogate:	-						
Bromofluorobenzene	100.	%	25	ug/L		09-MAR-95	09-MAR-95
-	-						
Comments:	None						
-	-						
-	-						

D&M Laboratories
QUALITY CONTROL REPORT

Reported: 15-MAR-95

QC for: GAS/BTEX

Lab Id: WG7125-6 Sample Id: Method Blank

Parameter	Value	RDL	Units	Extracted	Analyzed
Benzene	ND <	0.50	ug/L	13-MAR-95	13-MAR-95
Ethyl Benzene	ND <	0.50	ug/L	13-MAR-95	13-MAR-95
Toluene	ND <	0.50	ug/L	13-MAR-95	13-MAR-95
Xylene	ND <	0.50	ug/L	13-MAR-95	13-MAR-95
Gasoline	ND <	0.050	mg/L	13-MAR-95	13-MAR-95
-	-				
Surrogate:	-				
Bromofluorobenzene	102.	-	%	13-MAR-95	13-MAR-95
-	-				
Comments:	None				
-	-				
-	-				

Lab Id: WG7125-7 Sample Id: Method Blank Spike

Parameter	Value	Units	Spike	Units	% Rec	Extracted	Analyzed
Benzene	21.7	ug/L	25	ug/L	87.%	13-MAR-95	13-MAR-95
Ethyl Benzene	22.6	ug/L	25	ug/L	90.%	13-MAR-95	13-MAR-95
Toluene	22.3	ug/L	25	ug/L	89.%	13-MAR-95	13-MAR-95
Xylene	93.2	ug/L	75	ug/L	93.%	13-MAR-95	13-MAR-95
Gasoline	1.03	mg/L	1	mg/L	103.%	13-MAR-95	13-MAR-95
-	-						
Surrogate:	-						
Bromofluorobenzene	90.6	%	25	ug/L		13-MAR-95	13-MAR-95
-	-						
Comments:	None						
-	-						
-	-						

D&M Laboratories
QUALITY CONTROL REPORT

Reported: 15-MAR-95

QC for: GAS/BTEX

Lab Id: WG7125-1 Sample Id: MX

Parameter	Value	RDL	Units	Extracted	Analyzed
Benzene	ND <	0.50	ug/L	09-MAR-95	09-MAR-95
Ethyl Benzene	ND <	0.50	ug/L	09-MAR-95	09-MAR-95
Toluene	ND <	0.50	ug/L	09-MAR-95	09-MAR-95
Xylene	ND <	0.50	ug/L	09-MAR-95	09-MAR-95
Gasoline	ND <	0.050	mg/L	09-MAR-95	09-MAR-95
-	-				
Surrogate:	-				
Bromofluorobenzene	102.	-	%	09-MAR-95	09-MAR-95
-	-				
Comments:	MX btex = L9503033-3, MX gas = L9503033-4.				
-	-				
-	-				

Lab Id: WG7125-2 Sample Id: Matrix Spike

Parameter	Value	Units	Spike	Units	% Rec	Extracted	Analyzed
Benzene	28.4	ug/L	25	ug/L	114.%	13-MAR-95	13-MAR-95
Ethyl Benzene	29.3	ug/L	25	ug/L	117.%	13-MAR-95	13-MAR-95
Toluene	29.1	ug/L	25	ug/L	117.%	13-MAR-95	13-MAR-95
Xylene	89.3	ug/L	75	ug/L	119.%	13-MAR-95	13-MAR-95
Gasoline	1.02	mg/L	1	mg/L	102.%	13-MAR-95	13-MAR-95
-	-						
Surrogate:	-						
Bromofluorobenzene	103.	%	25	ug/L		13-MAR-95	13-MAR-95
-	-						
Comments:	None						
-	-						
-	-						

Lab Id: WG7125-3 Sample Id: Matrix Spike Dup

Parameter	Value	Units	% Rec	RPD	Extracted	Analyzed
Benzene	29.2	ug/L	117.%	2.6	13-MAR-95	13-MAR-95
Ethyl Benzene	29.6	ug/L	119.%	1.2	13-MAR-95	13-MAR-95
Toluene	29.5	ug/L	118.%	1.2	13-MAR-95	13-MAR-95
Xylene	91.2	ug/L	122.%	2.1	13-MAR-95	13-MAR-95
Gasoline	1.01	mg/L	101.%	1.4	13-MAR-95	13-MAR-95
-	-					
Surrogate:	-					
Bromofluorobenzene	104.	%			13-MAR-95	13-MAR-95
-	-					
Comments:	None					
-	-					
-	-					

D&M Laboratories
QUALITY CONTROL REPORT

Reported: 15-MAR-95

QC for: 8010/8020

Lab Id: WG7181-4 Sample Id: Method Blank

Parameter	Value	RDL	Units	Extracted	Analyzed
Benzene	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
Bromodichloromethane	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
Bromoform	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
Bromomethane	ND <	1.0	ug/L	10-MAR-95	10-MAR-95
Carbon Tetrachloride	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
Chlorobenzene	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
Chloroethane	ND <	1.0	ug/L	10-MAR-95	10-MAR-95
Chloroform	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
Chloromethane	ND <	1.0	ug/L	10-MAR-95	10-MAR-95
Dibromochloromethane	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
1,2-Dichlorobenzene	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
1,3-Dichlorobenzene	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
1,4-Dichlorobenzene	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
1,1-Dichloroethane	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
1,2-Dichloroethane	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
1,1-Dichloroethene	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
1,2-Dichloroethene (Total)	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
1,2-Dichloropropane	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
Cis-1,3-Dichloropropene	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
Trans-1,3-Dichloropropene	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
Ethyl Benzene	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
Methylene Chloride	ND <	1.0	ug/L	10-MAR-95	10-MAR-95
1,1,2,2-Tetrachloroethane	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
Tetrachloroethene	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
Toluene	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
1,1,1-Trichloroethane	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
1,1,2-Trichloroethane	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
Trichloroethene	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
Trichlorofluoromethane	ND <	1.0	ug/L	10-MAR-95	10-MAR-95
Vinyl Chloride	ND <	1.0	ug/L	10-MAR-95	10-MAR-95
Xylenes (Total)	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
-	-				
Surrogate:	-				
4-Bromofluorobenzene (8010)	95.0	-	%	10-MAR-95	10-MAR-95
4-Bromofluorobenzene (8020)	101.	-	%	10-MAR-95	10-MAR-95
-	-				
Comments:	None.				
-	-				
-	-				
-	-				

D&M Laboratories

QUALITY CONTROL REPORT

Prepared for:
Project Id:
Sample Id: Method Blank Spike
Lab Id: WG7181-5

Reported: 15-MAR-95

Parameter	Value	Units	Spike	Units	% Rec	Extracted	Analyzed
8010/8020-QC							
1,1-Dichloroethene	19.3	ug/L	20	ug/L	96.%	10-MAR-95	10-MAR-95
Trichloroethene	19.5	ug/L	20	ug/L	98.%	10-MAR-95	10-MAR-95
Chlorobenzene-601	19.7	ug/L	20	ug/L	98.%	10-MAR-95	10-MAR-95
Benzene	19.4	ug/L	20	ug/L	97.%	10-MAR-95	10-MAR-95
Toluene	19.4	ug/L	20	ug/L	97.%	10-MAR-95	10-MAR-95
Chlorobenzene-602	19.5	ug/L	20	ug/L	97.%	10-MAR-95	10-MAR-95
-	-						
Surrogate:	-						
4-Bromofluorobenzene (8010)	97.3	%				10-MAR-95	10-MAR-95
4-Bromofluorobenzene (8020)	106.	%				10-MAR-95	10-MAR-95
-	-						
Comments:	None						
-	None						

D&M Laboratories
QUALITY CONTROL REPORT

Reported: 15-MAR-95

QC for: 8010/8020

Lab Id: WG7181-1 Sample Id: MX

Parameter	Value	RDL	Units	Extracted	Analyzed
Benzene	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
Bromodichloromethane	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
Bromoform	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
Bromomethane	ND <	1.0	ug/L	10-MAR-95	10-MAR-95
Carbon Tetrachloride	0.56	0.50	ug/L	10-MAR-95	10-MAR-95
Chlorobenzene	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
Chloroethane	ND <	1.0	ug/L	10-MAR-95	10-MAR-95
Chloroform	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
Chloromethane	ND <	1.0	ug/L	10-MAR-95	10-MAR-95
Dibromochloromethane	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
1,2-Dichlorobenzene	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
1,3-Dichlorobenzene	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
1,4-Dichlorobenzene	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
1,1-Dichloroethane	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
1,2-Dichloroethane	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
1,1-Dichloroethene	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
1,2-Dichloroethene (Total)	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
1,2-Dichloropropane	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
Cis-1,3-Dichloropropene	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
Trans-1,3-Dichloropropene	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
Ethyl Benzene	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
Methylene Chloride	ND <	1.0	ug/L	10-MAR-95	10-MAR-95
1,1,2,2-Tetrachloroethane	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
Tetrachloroethene	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
Toluene	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
1,1,1-Trichloroethane	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
1,1,2-Trichloroethane	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
Trichloroethene	18.	0.50	ug/L	10-MAR-95	10-MAR-95
Trichlorofluoromethane	ND <	1.0	ug/L	10-MAR-95	10-MAR-95
Vinyl Chloride	ND <	1.0	ug/L	10-MAR-95	10-MAR-95
Xylenes (Total)	ND <	0.50	ug/L	10-MAR-95	10-MAR-95
-	-				
Surrogate:	-				
4-Bromofluorobenzene (8010)	107.	-	%	10-MAR-95	10-MAR-95
4-Bromofluorobenzene (8020)	107.	-	%	10-MAR-95	10-MAR-95
-	-				
Comments:	MX = L9503058-1				
-	-				
-	-				
-	-				

D&M Laboratories
QUALITY CONTROL REPORT

Reported: 15-MAR-95

QC for: 8010/8020-QC

Lab Id: WG7181-2 Sample Id: Matrix Spike

Parameter	Value	Units	Spike	Units	% Rec	Extracted	Analyzed
1,1-Dichloroethene	19.7	ug/L	20	ug/L	98.%	10-MAR-95	10-MAR-95
Trichloroethene	32.6	ug/L	20	ug/L	72.%	10-MAR-95	10-MAR-95
Chlorobenzene-601	20.1	ug/L	20	ug/L	101.%	10-MAR-95	10-MAR-95
Benzene	20.1	ug/L	20	ug/L	100%	10-MAR-95	10-MAR-95
Toluene	20.2	ug/L	20	ug/L	101.%	10-MAR-95	10-MAR-95
Chlorobenzene-602	20.3	ug/L	20	ug/L	102.%	10-MAR-95	10-MAR-95
-	-						
Surrogate:	-						
4-Bromofluorobenzene (8010)	95.6	%				10-MAR-95	10-MAR-95
4-Bromofluorobenzene (8020)	107.	%				10-MAR-95	10-MAR-95
-	-						
Comments:	None						
-	None						

Lab Id: WG7181-3 Sample Id: Matrix Spike Dup

Parameter	Value	Units	% Rec	RPD	Extracted	Analyzed
1,1-Dichloroethene	19.7	ug/L	98.%	0.0	10-MAR-95	10-MAR-95
Trichloroethene	32.6	ug/L	72.%	0.0	10-MAR-95	10-MAR-95
Chlorobenzene-601	22.1	ug/L	111.%	9.5	10-MAR-95	10-MAR-95
Benzene	21.0	ug/L	105.%	4.4	10-MAR-95	10-MAR-95
Toluene	21.6	ug/L	108.%	6.7	10-MAR-95	10-MAR-95
Chlorobenzene-602	22.4	ug/L	112.%	9.8	10-MAR-95	10-MAR-95
-	-					
Surrogate:	-					
4-Bromofluorobenzene (8010)	94.7	%			10-MAR-95	10-MAR-95
4-Bromofluorobenzene (8020)	108.	%			10-MAR-95	10-MAR-95
-	-					
Comments:	None					
-	None					

QUALITY CONTROL REPORT

In order to provide you with the means of assessing the quality of the data in our report, **D&M Laboratories** reports the results of Quality Control samples analyzed with your samples.

The Quality Control samples provide the following QC information:

The Method Blank (**MB**) monitors the level of contamination introduced by reagents or glassware. A minimum of one MB is run per batch of 20 samples or less.

The Method Blank Spike (**MBS**) measures the accuracy of analytical techniques and is not subject to matrix effects. A minimum of one MBS is run per batch of 20 samples or less.

The Matrix Spike (**MS**) measures the accuracy of the method for a matrix type. Due to the high variability within matrix types and the necessity of batching samples from varied sources, matrix spike information from one sample is not necessarily relevant to other samples on the batch. A minimum of two matrix spikes, MS and MSD, are run per batch of 20 samples or less. The sample selected for the matrix spike is designated **MX**, and may or may not have been submitted by the recipient of this report.

The Matrix Spike Duplicate (**MSD**), along with the MS, is used to monitor the precision (**RPD**) of the method and to indicate possible non homogeneity of the sample matrix.

Equations used for determining percent recovery and relative percent difference (RPD) are as follows:

MBS % Recovery = (MBS result / MBS spike level) x 100
MS % Recovery = [(MS result - MX result) / MS spike level] x 100
RPD ={ | MS result - MSD result | / [(MS result + MSD result) / 2]} x 100

We continue to strive to improve the quality of service to our clients. We welcome any questions or comments you may have about this information, or about **D&M Laboratories** in general. Please contact a Project Manager for further information.

L9503035

CHAIN-OF-CUSTODY RECORD

WHITE COPY - Original (Accompanies Samples) YELLOW COPY - Collector PINK COPY - Project Manager

Sample Number	Depth	Time	H_2O Grab Sample Type	Container Type	VOA 601/8010	VOA 602/8020	VOA 624/8240	Semi Vol 625/8270	PEST/PCB 8080	PNA 610/8310	DIESEL 8015M	TPHIDQ 8015M	GAS/BTEX 8010	Ni TPH 418.1	PH	RCRA METALS (8)	PP METALS (13)	TTLC METALS (17)	Asbestos	PRESERVATIVE	FIELD NOTES:	Total Number Of Containers	Laboratory Note Number
MW-4	N/A	1155	H_2O	4 VOA's								X	X							HCl		4	
MW-4		1155	H_2O	1 POLY										X						HNO_3		1	
GW-1-EFF		1210	H_2O	4 VOA's								X	X							HCl		4	
GW-1-EFF		1210	H_2O	1 POLY										X						HNO_3		1	
EW-1		1225	H_2O	4 VOA's								X	X							HCl		4	
EW-1		1225	H_2O	1 POLY										X						HNO_3		1	
MW-32		1245	H_2O	4 VOA's								X	X							HCl		4	
MW-32		1245	H_2O	1 POLY										X						HNO_3		1	
TRIP BLANKS	↓	—	H_2O	4 VOA's																HCl		4	

SAMPLES RECEIVED IN GOOD CONDITION
NO BROKEN OR LEAKING CONTAINERS

COOLER CUSTODY SEALS INTACT ☐ NA NOT INTACT ☐
COOLER TEMPERATURE COLD °C

RELINQUISHED BY: (Signature) Kim Thomason DATE/TIME 3/3/95 1350 RECEIVED BY: (Signature) UPS NEXT DAY # 0714 1637 702

RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature)

LABORATORY NOTES:
NO ANALYSIS ON THE TRIP BLANKS.
20 VOA + 4 WA — UPS Red

Clients Name: DAMES & MOORE
Address: 8801 FOLSOM BLVD. SUITE 200
City, State, Zip: SACTO, CA 95833
Phone: (916) 387-8800 Fax: (916) 387-0802
Laboratory Contact: KIM THOMASON / JIM BRAKE

3700 Lakeville Highway, Petaluma, CA 94954
P.O. Box 808024, Petaluma, CA 94975-8024
Telephone: (707) 763-8245
FAX: (707) 763-4065

JOB NO.: 00173-080-2143-044 SHEET 1 OF 1
PROJECT UP SAC
LOCATION SACTO, CA
COLLECTOR KIM THOMASON DATE OF COLLECTION 3/3/95

D&M LABORATORIES
ENVIRONMENTAL AND INDUSTRIAL HYGIENE SERVICES

3700 Lakeville Highway, Petaluma, CA 94954
Telephone: (707) 763-8245
FAX (707) 763-4065

Jim Brake
Dames & Moore-Sacramento
8801 Folsom Blvd - Suite 200
Sacramento, CA 95826

July 6, 1995

Customer Project: 00173-080-044 UPRR, Sacramento
Laboratory Job: L9506256

On June 24, 1995 we received 5 sample(s) for analysis. Samples were analyzed by the following method(s):

Halogenated & Aromatic Vols (EPA 601&602/SW 8010A&8020A)

Gasoline (8015 Modified)

Project Manager

Laboratory Director
Robert Peak

D&M Laboratories
ANALYTICAL DATA REPORT
Prepared for: Dames & Moore-Sacramento

Project Id: 00173-080-044 Reported: 06-JUL-95

Lab Id: L9506256-2 Sample Id: MW-4 Collected: 23-JUN-95 Received: 24-JUN-95

Parameter	Value		RDL	Units	Extracted	Analyzed
Gasoline						
Gasoline	0.43		0.050	mg/L	29-JUN-95	29-JUN-95
-	-					
Surrogate	-					
4-Bromofluorobenzene	82.	-		%	29-JUN-95	29-JUN-95
Volatile Halogenated and Aromatic Hydrocarbons						
Benzene	78.		5.0	ug/L	30-JUN-95	30-JUN-95
Bromodichloromethane	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Bromoform	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Bromomethane	ND	<	1.0	ug/L	29-JUN-95	29-JUN-95
Carbon Tetrachloride	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Chlorobenzene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Chloroethane	ND	<	1.0	ug/L	29-JUN-95	29-JUN-95
Chloroform	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Chloromethane	ND	<	1.0	ug/L	29-JUN-95	29-JUN-95
Dibromochloromethane	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,2-Dichlorobenzene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,3-Dichlorobenzene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,4-Dichlorobenzene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,1-Dichloroethane	2.8		0.50	ug/L	29-JUN-95	29-JUN-95
1,2-Dichloroethane	2.5		0.50	ug/L	29-JUN-95	29-JUN-95
1,1-Dichloroethene	34.		0.50	ug/L	29-JUN-95	29-JUN-95
1,2-Dichloroethene (Total)	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,2-Dichloropropane	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
cis-1,3-Dichloropropene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
trans-1,3-Dichloropropene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Ethyl Benzene	2.8		0.50	ug/L	29-JUN-95	29-JUN-95
Methylene Chloride	ND	<	1.0	ug/L	29-JUN-95	29-JUN-95
1,1,2,2-Tetrachloroethane	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Tetrachloroethene	1.2		0.50	ug/L	29-JUN-95	29-JUN-95
Toluene	9.1		0.50	ug/L	29-JUN-95	29-JUN-95
1,1,1-Trichloroethane	0.78		0.50	ug/L	29-JUN-95	29-JUN-95
1,1,2-Trichloroethane	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Trichloroethene	2.4		0.50	ug/L	29-JUN-95	29-JUN-95
Trichlorofluoromethane	ND	<	1.0	ug/L	29-JUN-95	29-JUN-95
Vinyl Chloride	ND	<	1.0	ug/L	29-JUN-95	29-JUN-95
Xylenes (Total)	13.		0.50	ug/L	29-JUN-95	29-JUN-95
-	-					
Surrogate:	-					
4-Bromofluorobenzene (8010)	79.8	-		%	29-JUN-95	29-JUN-95
4-Bromofluorobenzene (8020)	83.0	-		%	29-JUN-95	29-JUN-95

D&M Laboratories
ANALYTICAL DATA REPORT
Prepared for: Dames & Moore-Sacramento

Project Id: 00173-080-044 Reported: 06-JUL-95

Lab Id: L9506256-4 Sample Id: MW-32 Collected: 23-JUN-95 Received: 24-JUN-95

Parameter	Value		RDL	Units	Extracted	Analyzed
Gasoline						
Gasoline	ND	<	0.050	mg/L	29-JUN-95	29-JUN-95
-	-					
Surrogate	-					
4-Bromofluorobenzene	82.		-	%	29-JUN-95	29-JUN-95
Volatile Halogenated and Aromatic Hydrocarbons						
Benzene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Bromodichloromethane	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Bromoform	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Bromomethane	ND	<	1.0	ug/L	29-JUN-95	29-JUN-95
Carbon Tetrachloride	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Chlorobenzene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Chloroethane	ND	<	1.0	ug/L	29-JUN-95	29-JUN-95
Chloroform	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Chloromethane	ND	<	1.0	ug/L	29-JUN-95	29-JUN-95
Dibromochloromethane	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,2-Dichlorobenzene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,3-Dichlorobenzene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,4-Dichlorobenzene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,1-Dichloroethane	4.3		0.50	ug/L	29-JUN-95	29-JUN-95
1,2-Dichloroethane	1.2		0.50	ug/L	29-JUN-95	29-JUN-95
1,1-Dichloroethene	40.		0.50	ug/L	29-JUN-95	29-JUN-95
1,2-Dichloroethene (Total)	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,2-Dichloropropane	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
cis-1,3-Dichloropropene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
trans-1,3-Dichloropropene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Ethyl Benzene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Methylene Chloride	ND	<	1.0	ug/L	29-JUN-95	29-JUN-95
1,1,2,2-Tetrachloroethane	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Tetrachloroethene	0.91		0.50	ug/L	29-JUN-95	29-JUN-95
Toluene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,1,1-Trichloroethane	0.96		0.50	ug/L	29-JUN-95	29-JUN-95
1,1,2-Trichloroethane	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Trichloroethene	6.0		0.50	ug/L	29-JUN-95	29-JUN-95
Trichlorofluoromethane	ND	<	1.0	ug/L	29-JUN-95	29-JUN-95
Vinyl Chloride	ND	<	1.0	ug/L	29-JUN-95	29-JUN-95
Xylenes (Total)	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
-	-					
Surrogate:	-					
4-Bromofluorobenzene (8010)	94.1		-	%	29-JUN-95	29-JUN-95
4-Bromofluorobenzene (8020)	87.6		-	%	29-JUN-95	29-JUN-95

D&M Laboratories
ANALYTICAL DATA REPORT
Prepared for: Dames & Moore-Sacramento

Project Id: 00173-080-044 Reported: 06-JUL-95

Lab Id: L9506256-1 Sample Id: EW-1 Collected: 23-JUN-95 Received: 24-JUN-95

Parameter	Value	RDL	Units	Extracted	Analyzed
Gasoline					
Gasoline	ND <	0.050	mg/L	29-JUN-95	29-JUN-95
-	-				
Surrogate	-				
4-Bromofluorobenzene	87.	-	%	29-JUN-95	29-JUN-95
Volatile Halogenated and Aromatic Hydrocarbons					
Benzene	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
Bromodichloromethane	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
Bromoform	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
Bromomethane	ND <	1.0	ug/L	29-JUN-95	29-JUN-95
Carbon Tetrachloride	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
Chlorobenzene	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
Chloroethane	ND <	1.0	ug/L	29-JUN-95	29-JUN-95
Chloroform	1.7	0.50	ug/L	29-JUN-95	29-JUN-95
Chloromethane	ND <	1.0	ug/L	29-JUN-95	29-JUN-95
Dibromochloromethane	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
1,2-Dichlorobenzene	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
1,3-Dichlorobenzene	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
1,4-Dichlorobenzene	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
1,1-Dichloroethane	4.0	0.50	ug/L	29-JUN-95	29-JUN-95
1,2-Dichloroethane	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
1,1-Dichloroethene	8.0	0.50	ug/L	29-JUN-95	29-JUN-95
1,2-Dichloroethene (Total)	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
1,2-Dichloropropane	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
cis-1,3-Dichloropropene	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
trans-1,3-Dichloropropene	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
Ethyl Benzene	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
Methylene Chloride	ND <	1.0	ug/L	29-JUN-95	29-JUN-95
1,1,2,2-Tetrachloroethane	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
Tetrachloroethene	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
Toluene	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
1,1,1-Trichloroethane	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
1,1,2-Trichloroethane	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
Trichloroethene	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
Trichlorofluoromethane	ND <	1.0	ug/L	29-JUN-95	29-JUN-95
Vinyl Chloride	ND <	1.0	ug/L	29-JUN-95	29-JUN-95
Xylenes (Total)	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
-	-				
Surrogate:	-				
4-Bromofluorobenzene (8010)	72.5	-	%	29-JUN-95	29-JUN-95
4-Bromofluorobenzene (8020)	73.3	-	%	29-JUN-95	29-JUN-95

D&M Laboratories
ANALYTICAL DATA REPORT
Prepared for: Dames & Moore-Sacramento

Project Id: 00173-080-044 Reported: 06-JUL-95

Lab Id: L9506256-3 Sample Id: AS-1 Collected: 23-JUN-95 Received: 24-JUN-95

Parameter	Value		RDL	Units	Extracted	Analyzed
Gasoline						
Gasoline	ND	<	0.050	mg/L	29-JUN-95	29-JUN-95
-	-					
Surrogate	-					
4-Bromofluorobenzene	82.		-	%	29-JUN-95	29-JUN-95
Volatile Halogenated and Aromatic Hydrocarbons						
Benzene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Bromodichloromethane	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Bromoform	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Bromomethane	ND	<	1.0	ug/L	29-JUN-95	29-JUN-95
Carbon Tetrachloride	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Chlorobenzene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Chloroethane	ND	<	1.0	ug/L	29-JUN-95	29-JUN-95
Chloroform	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Chloromethane	ND	<	1.0	ug/L	29-JUN-95	29-JUN-95
Dibromochloromethane	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,2-Dichlorobenzene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,3-Dichlorobenzene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,4-Dichlorobenzene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,1-Dichloroethane	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,2-Dichloroethane	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,1-Dichloroethene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,2-Dichloroethene (Total)	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,2-Dichloropropane	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
cis-1,3-Dichloropropene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
trans-1,3-Dichloropropene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Ethyl Benzene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Methylene Chloride	ND	<	1.0	ug/L	29-JUN-95	29-JUN-95
1,1,2,2-Tetrachloroethane	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Tetrachloroethene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Toluene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,1,1-Trichloroethane	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,1,2-Trichloroethane	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Trichloroethene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Trichlorofluoromethane	ND	<	1.0	ug/L	29-JUN-95	29-JUN-95
Vinyl Chloride	ND	<	1.0	ug/L	29-JUN-95	29-JUN-95
Xylenes (Total)	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
-	-					
Surrogate:	-					
4-Bromofluorobenzene (8010)	85.4		-	%	29-JUN-95	29-JUN-95
4-Bromofluorobenzene (8020)	87.9		-	%	29-JUN-95	29-JUN-95

D&M Laboratories
ANALYTICAL DATA REPORT
Prepared for: Dames & Moore-Sacramento

Project Id: 00173-080-044 Reported: 06-JUL-95

Lab Id: L9506256-5 Sample Id: TP-1 Collected: 23-JUN-95 Received: 24-JUN-95

Parameter	Value	RDL	Units	Extracted	Analyzed
Gasoline					
Gasoline	ND <	0.050	mg/L	29-JUN-95	29-JUN-95
-	-				
Surrogate	-				
4-Bromofluorobenzene	77.	-	%	29-JUN-95	29-JUN-95
Volatile Halogenated and Aromatic Hydrocarbons					
Benzene	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
Bromodichloromethane	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
Bromoform	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
Bromomethane	ND <	1.0	ug/L	29-JUN-95	29-JUN-95
Carbon Tetrachloride	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
Chlorobenzene	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
Chloroethane	ND <	1.0	ug/L	29-JUN-95	29-JUN-95
Chloroform	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
Chloromethane	ND <	1.0	ug/L	29-JUN-95	29-JUN-95
Dibromochloromethane	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
1,2-Dichlorobenzene	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
1,3-Dichlorobenzene	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
1,4-Dichlorobenzene	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
1,1-Dichloroethane	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
1,2-Dichloroethane	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
1,1-Dichloroethene	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
1,2-Dichloroethene (Total)	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
1,2-Dichloropropane	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
cis-1,3-Dichloropropene	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
trans-1,3-Dichloropropene	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
Ethyl Benzene	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
Methylene Chloride	ND <	1.0	ug/L	29-JUN-95	29-JUN-95
1,1,2,2-Tetrachloroethane	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
Tetrachloroethene	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
Toluene	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
1,1,1-Trichloroethane	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
1,1,2-Trichloroethane	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
Trichloroethene	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
Trichlorofluoromethane	ND <	1.0	ug/L	29-JUN-95	29-JUN-95
Vinyl Chloride	ND <	1.0	ug/L	29-JUN-95	29-JUN-95
Xylenes (Total)	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
-	-				
Surrogate:	-				
4-Bromofluorobenzene (8010)	89.6	-	%	29-JUN-95	29-JUN-95
4-Bromofluorobenzene (8020)	88.8	-	%	29-JUN-95	29-JUN-95

D&M Laboratories
QUALITY CONTROL REPORT

Reported: 05-JUL-95

QC for: Gas/BTEX

Lab Id: WG8183-1 Sample Id: MX

Parameter	Value	RDL	Units	Extracted	Analyzed
Benzene	ND <	0.50	ug/L	28-JUN-95	28-JUN-95
Ethyl Benzene	ND <	0.50	ug/L	28-JUN-95	28-JUN-95
Toluene	ND <	0.50	ug/L	28-JUN-95	28-JUN-95
Xylene	ND <	0.50	ug/L	28-JUN-95	28-JUN-95
Gasoline	ND <	0.050	mg/L	28-JUN-95	28-JUN-95
-	-				
Surrogate:	-				
Bromofluorobenzene	81.1	-	%	28-JUN-95	28-JUN-95
-	-				
Comments:	MX = L9506232-3				
-	-				
-	-				

Lab Id: WG8183-2 Sample Id: Matrix Spike

Parameter	Value	Units	Spike	Units	% Rec	Extracted	Analyzed
Benzene	21.	ug/L	25	ug/L	89.%	28-JUN-95	28-JUN-95
Ethyl Benzene	20.	ug/L	25	ug/L	89.%	28-JUN-95	28-JUN-95
Toluene	20.	ug/L	25	ug/L	89.%	28-JUN-95	28-JUN-95
Xylene	62.	ug/L	75	ug/L	88.%	28-JUN-95	28-JUN-95
Gasoline	1.0	mg/L	1	mg/L	101.%	28-JUN-95	28-JUN-95
-	-						
Surrogate:	-						
Bromofluorobenzene	83.9	%	25	ug/L		28-JUN-95	28-JUN-95

Lab Id: WG8183-3 Sample Id: Matrix Spike Dup

Parameter	Value	Units	% Rec	RPD	Extracted	Analyzed
Benzene	21.	ug/L	88.%	0.95	28-JUN-95	28-JUN-95
Ethyl Benzene	20.	ug/L	88.%	1.5	28-JUN-95	28-JUN-95
Toluene	20.	ug/L	87.%	2.0	28-JUN-95	28-JUN-95
Xylene	60.	ug/L	60.%	2.8	28-JUN-95	28-JUN-95
Gasoline	1.0	mg/L	101.%	0.0	28-JUN-95	28-JUN-95
-	-					
Surrogate:	-					
Bromofluorobenzene	84.7	%			28-JUN-95	28-JUN-95

Lab Id: WG8183-6 Sample Id: Method Blank

Parameter	Value	RDL	Units	Extracted	Analyzed
Benzene	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
Ethyl Benzene	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
Toluene	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
Xylene	ND <	0.50	ug/L	29-JUN-95	29-JUN-95
Gasoline	ND <	0.050	mg/L	29-JUN-95	29-JUN-95
-	-				
Surrogate:	-				
Bromofluorobenzene	88.0	-	%	29-JUN-95	29-JUN-95

D&M Laboratories
QUALITY CONTROL REPORT

Reported: 05-JUL-95

QC for Gas/BTEX

Lab Id: WG8183-7 Sample Id: Method Blank Spike

Parameter	Value	Units	Spike	Units	% Rec	Extracted	Analyzed
Benzene	22.	ug/L	25	ug/L	88.%	29-JUN-95	29-JUN-95
Ethyl Benzene	22.	ug/L	25	ug/L	87.%	29-JUN-95	29-JUN-95
Toluene	22.	ug/L	25	ug/L	89.%	29-JUN-95	29-JUN-95
Xylene	68.	ug/L	75	ug/L	90.%	29-JUN-95	29-JUN-95
Gasoline	1.1	mg/L	1	mg/L	107.%	29-JUN-95	29-JUN-95
-	-						
Surrogate:	-						
Bromofluorobenzene	92.2	%	25	ug/L		29-JUN-95	29-JUN-95

D&M Laboratories
QUALITY CONTROL REPORT

Reported: 05-JUL-95

QC for: Volatile Halogenated and Aromatic Hydrocarbons

Lab Id: WG8207-1 Sample Id: MX

Parameter	Value		RDL	Units	Extracted	Analyzed
Benzene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Bromodichloromethane	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Bromoform	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Bromomethane	ND	<	1.0	ug/L	29-JUN-95	29-JUN-95
Carbon Tetrachloride	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Chlorobenzene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Chloroethane	ND	<	1.0	ug/L	29-JUN-95	29-JUN-95
Chloroform	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Chloromethane	ND	<	1.0	ug/L	29-JUN-95	29-JUN-95
Dibromochloromethane	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,2-Dichlorobenzene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,3-Dichlorobenzene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,4-Dichlorobenzene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,1-Dichloroethane	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,2-Dichloroethane	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,1-Dichloroethene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,2-Dichloroethene (Total)	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,2-Dichloropropane	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
cis-1,3-Dichloropropene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
trans-1,3-Dichloropropene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Ethyl Benzene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Methylene Chloride	ND	<	1.0	ug/L	29-JUN-95	29-JUN-95
1,1,2,2-Tetrachloroethane	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Tetrachloroethene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Toluene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,1,1-Trichloroethane	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,1,2-Trichloroethane	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Trichloroethene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Trichlorofluoromethane	ND	<	1.0	ug/L	29-JUN-95	29-JUN-95
Vinyl Chloride	ND	<	1.0	ug/L	29-JUN-95	29-JUN-95
Xylenes (Total)	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
-	-					
Surrogate:	-					
4-Bromofluorobenzene (8010)	85.4		-	%	29-JUN-95	29-JUN-95
4-Bromofluorobenzene (8020)	87.9		-	%	29-JUN-95	29-JUN-95
-	-					
Comments:	MX = L9506256-3					

D&M Laboratories
QUALITY CONTROL REPORT

Reported: 05-JUL-95

QC for: Volatile Halogenated and Aromatic Hydrocarbons

Lab Id: WG8207-2 Sample Id: Matrix Spike

Parameter	Value	Units	Spike	Units	% Rec	Extracted	Analyzed
1,1-Dichloroethene	19.1	ug/L	20	ug/L	95.%	30-JUN-95	30-JUN-95
Trichloroethene	18.6	ug/L	20	ug/L	93.%	30-JUN-95	30-JUN-95
Chlorobenzene-601	19.1	ug/L	20	ug/L	95.%	30-JUN-95	30-JUN-95
Benzene	20.5	ug/L	20	ug/L	103.%	30-JUN-95	30-JUN-95
Toluene	19.8	ug/L	20	ug/L	99.%	30-JUN-95	30-JUN-95
Chlorobenzene-602	18.8	ug/L	20	ug/L	94.%	30-JUN-95	30-JUN-95
-	-						
Surrogate:	-						
4-Bromofluorobenzene (8010)	82.9	%				30-JUN-95	30-JUN-95
4-Bromofluorobenzene (8020)	86.7	%				30-JUN-95	30-JUN-95

Lab Id: WG8207-3 Sample Id: Matrix Spike Dup

Parameter	Value	Units	% Rec	RPD	Extracted	Analyzed
1,1-Dichloroethene	18.7	ug/L	94.%	2.1	30-JUN-95	30-JUN-95
Trichloroethene	17.9	ug/L	89.%	3.8	30-JUN-95	30-JUN-95
Chlorobenzene-601	18.2	ug/L	91.%	4.8	30-JUN-95	30-JUN-95
Benzene	20.3	ug/L	101.%	0.98	30-JUN-95	30-JUN-95
Toluene	19.2	ug/L	96.%	3.1	30-JUN-95	30-JUN-95
Chlorobenzene-602	19.0	ug/L	95.%	1.1	30-JUN-95	30-JUN-95
-	-					
Surrogate:	-					
4-Bromofluorobenzene (8010)	88.0	%			30-JUN-95	30-JUN-95
4-Bromofluorobenzene (8020)	88.2	%			30-JUN-95	30-JUN-95

D&M Laboratories
QUALITY CONTROL REPORT

Reported: 05-JUL-95

QC for: Volatile Halogenated and Aromatic Hydrocarbons

Lab Id: WG8207-4 Sample Id: Method Blank

Parameter	Value		RDL	Units	Extracted	Analyzed
Benzene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Bromodichloromethane	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Bromoform	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Bromomethane	ND	<	1.0	ug/L	29-JUN-95	29-JUN-95
Carbon Tetrachloride	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Chlorobenzene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Chloroethane	ND	<	1.0	ug/L	29-JUN-95	29-JUN-95
Chloroform	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Chloromethane	ND	<	1.0	ug/L	29-JUN-95	29-JUN-95
Dibromochloromethane	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,2-Dichlorobenzene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,3-Dichlorobenzene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,4-Dichlorobenzene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,1-Dichloroethane	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,2-Dichloroethane	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,1-Dichloroethene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,2-Dichloroethene (Total)	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,2-Dichloropropane	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
cis-1,3-Dichloropropene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
trans-1,3-Dichloropropene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Ethyl Benzene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Methylene Chloride	ND	<	1.0	ug/L	29-JUN-95	29-JUN-95
1,1,2,2-Tetrachloroethane	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Tetrachloroethene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Toluene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,1,1-Trichloroethane	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
1,1,2-Trichloroethane	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Trichloroethene	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
Trichlorofluoromethane	ND	<	1.0	ug/L	29-JUN-95	29-JUN-95
Vinyl Chloride	ND	<	1.0	ug/L	29-JUN-95	29-JUN-95
Xylenes (Total)	ND	<	0.50	ug/L	29-JUN-95	29-JUN-95
-	-					
Surrogate:	-					
4-Bromofluorobenzene (8010)	90.9	-		%	29-JUN-95	29-JUN-95
4-Bromofluorobenzene (8020)	90.5	-		%	29-JUN-95	29-JUN-95

Lab Id: WG8207-5 Sample Id: Method Blank Spike

Parameter	Value	Units	Spike	Units	% Rec	Extracted	Analyzed
1,1-Dichloroethene	19.8	ug/L	20	ug/L	99.%	29-JUN-95	29-JUN-95
Trichloroethene	20.3	ug/L	20	ug/L	102.%	29-JUN-95	29-JUN-95
Chlorobenzene-601	19.3	ug/L	20	ug/L	96.%	29-JUN-95	29-JUN-95
Benzene	20.3	ug/L	20	ug/L	101.%	29-JUN-95	29-JUN-95
Toluene	19.7	ug/L	20	ug/L	99.%	29-JUN-95	29-JUN-95
Chlorobenzene-602	19.1	ug/L	20	ug/L	95.%	29-JUN-95	29-JUN-95
-	-						
Surrogate:	-						
4-Bromofluorobenzene (8010)	95.1	%				29-JUN-95	29-JUN-95
4-Bromofluorobenzene (8020)	92.1	%				29-JUN-95	29-JUN-95

D&M Laboratories
QUALITY CONTROL REPORT

Reported: 05-JUL-95

QC for: Volatile Halogenated and Aromatic Hydrocarbons

Lab Id: WG8207-6 Sample Id: Method Blank

Parameter	Value		RDL	Units	Extracted	Analyzed
Benzene	ND	<	0.50	ug/L	30-JUN-95	30-JUN-95
Bromodichloromethane	ND	<	0.50	ug/L	30-JUN-95	30-JUN-95
Bromoform	ND	<	0.50	ug/L	30-JUN-95	30-JUN-95
Bromomethane	ND	<	1.0	ug/L	30-JUN-95	30-JUN-95
Carbon Tetrachloride	ND	<	0.50	ug/L	30-JUN-95	30-JUN-95
Chlorobenzene	ND	<	0.50	ug/L	30-JUN-95	30-JUN-95
Chloroethane	ND	<	1.0	ug/L	30-JUN-95	30-JUN-95
Chloroform	ND	<	0.50	ug/L	30-JUN-95	30-JUN-95
Chloromethane	ND	<	1.0	ug/L	30-JUN-95	30-JUN-95
Dibromochloromethane	ND	<	0.50	ug/L	30-JUN-95	30-JUN-95
1,2-Dichlorobenzene	ND	<	0.50	ug/L	30-JUN-95	30-JUN-95
1,3-Dichlorobenzene	ND	<	0.50	ug/L	30-JUN-95	30-JUN-95
1,4-Dichlorobenzene	ND	<	0.50	ug/L	30-JUN-95	30-JUN-95
1,1-Dichloroethane	ND	<	0.50	ug/L	30-JUN-95	30-JUN-95
1,2-Dichloroethane	ND	<	0.50	ug/L	30-JUN-95	30-JUN-95
1,1-Dichloroethene	ND	<	0.50	ug/L	30-JUN-95	30-JUN-95
1,2-Dichloroethene (Total)	ND	<	0.50	ug/L	30-JUN-95	30-JUN-95
1,2-Dichloropropane	ND	<	0.50	ug/L	30-JUN-95	30-JUN-95
cis-1,3-Dichloropropene	ND	<	0.50	ug/L	30-JUN-95	30-JUN-95
trans-1,3-Dichloropropene	ND	<	0.50	ug/L	30-JUN-95	30-JUN-95
Ethyl Benzene	ND	<	0.50	ug/L	30-JUN-95	30-JUN-95
Methylene Chloride	ND	<	1.0	ug/L	30-JUN-95	30-JUN-95
1,1,2,2-Tetrachloroethane	ND	<	0.50	ug/L	30-JUN-95	30-JUN-95
Tetrachloroethene	ND	<	0.50	ug/L	30-JUN-95	30-JUN-95
Toluene	ND	<	0.50	ug/L	30-JUN-95	30-JUN-95
1,1,1-Trichloroethane	ND	<	0.50	ug/L	30-JUN-95	30-JUN-95
1,1,2-Trichloroethane	ND	<	0.50	ug/L	30-JUN-95	30-JUN-95
Trichloroethene	ND	<	0.50	ug/L	30-JUN-95	30-JUN-95
Trichlorofluoromethane	ND	<	1.0	ug/L	30-JUN-95	30-JUN-95
Vinyl Chloride	ND	<	1.0	ug/L	30-JUN-95	30-JUN-95
Xylenes (Total)	ND	<	0.50	ug/L	30-JUN-95	30-JUN-95
-	-					
Surrogate:	-					
4-Bromofluorobenzene (8010)	92.0	-		%	30-JUN-95	30-JUN-95
4-Bromofluorobenzene (8020)	88.6	-		%	30-JUN-95	30-JUN-95

Lab Id: WG8207-7 Sample Id: Method Blank Spike

Parameter	Value	Units	Spike	Units	% Rec	Extracted	Analyzed
1,1-Dichloroethene	18.8	ug/L	20	ug/L	94.%	30-JUN-95	30-JUN-95
Trichloroethene	17.8	ug/L	20	ug/L	89.%	30-JUN-95	30-JUN-95
Chlorobenzene-601	18.6	ug/L	20	ug/L	93.%	30-JUN-95	30-JUN-95
Benzene	19.8	ug/L	20	ug/L	99.%	30-JUN-95	30-JUN-95
Toluene	19.9	ug/L	20	ug/L	99.%	30-JUN-95	30-JUN-95
Chlorobenzene-602	19.0	ug/L	20	ug/L	95.%	30-JUN-95	30-JUN-95
-	-						
Surrogate:	-						
4-Bromofluorobenzene (8010)	84.7	%				30-JUN-95	30-JUN-95
4-Bromofluorobenzene (8020)	92.4	%				30-JUN-95	30-JUN-95

QUALITY CONTROL REPORT

In order to provide you with the means of assessing the quality of the data in our report, **D&M Laboratories** reports the results of Quality Control samples analyzed with your samples. The Quality Control samples provide the following QC information:

The Method Blank (**MB**) monitors the level of contamination introduced be reagents or glassware. A minimum of one MB is run per batch of 20 samples or less.

The Method Blank Spike (**MBS**) measures the accuracy of analytical techniques and is not subject to matrix effects. A minimum of one MBS is run per batch of 20 samples or less.

The Matrix Spike (**MS**) measures the accuracy of the method for a matrix type. Due to the high variability within matrix types and the necessity of batching samples from varied sources, matrix spike information from one sample is not necessarily relevant to other samples on the batch. A minimum of two matrix spikes, MS and MSD are run per batch of 20 samples or less. The sample selected for the matrix spike is designated MX, and may or may not have been submitted by the recipient of this report.

The Matrix Spike Duplicate (**MSD**), along with the MS, is used to monitor the precision (**RPD**) of the method and to indicate possible non homogeneity of the sample matrix.

Equations used for determining percent recovery and Relative Percent Difference (RPD) are as follows:

MBS % Recovery = (MBS result / MBS spike level) x 100
MS % Recovery = [(MS result - MX result) / MS spike level] x 100
RPD = { | MS result - MSD result | / [(MS result + MSD result) / 2]} x 100

We continue to strive to improve the quality of service to our clients. We welcome any questions or comments you may have about this information, or about **D&M Laboratories** in general. Please contact a Project Manager for further information.

RDL = Report Detection Limit
ND = Not Detected

CHAIN-OF-CUSTODY RECORD

9500256

WHITE COPY - Original (Accompanies Samples) YELLOW COPY - Collector PINK COPY - Project Manager

Sample Number	Depth	Time	Sample Type	Container Type	VOA 601/8010	VOA 602/8020	VOA 624/8240	Semi Vol 625/8270	PEST/PCB 8080	PNA 610/8310	DIESEL 8015M	TPHIDQ 8015M	GAS/BTEX	TPH 418.1	PH	RCRA METALS (8)	PP METALS (13)	TTLC METALS (17)	Asbestos	FIELD NOTES:	Total Number Of Containers	Laboratory Note Number
EW-1	NA	8:45	Grab	4X 40mL VOA	X															4 Ul preserved	4	
EW-1		8:45										X									4	
MW-4		9:15			X																4	
MW-4		9:15										X									4	
AS-1		9:45			X																4	
AS-1		9:45										X									4	
MW-32		10:15			X																4	
MW-32		10:15										X									4	
TP-1	NA	NA	Trip Blank		X																2	
TP-1	NA	NA	Trip Blank									X									2	

SAMPLES RECEIVED IN GOOD CONDITION
NO BROKEN OR LEAKING CONTAINERS

COOLER CUSTODY SEALS INTACT ☐ ~~NOT INTACT~~ ☐ NA

~~COOLER TEMPERATURE~~ Cold °C

RECEIVED
D&M LABORATORIES
1995 JUN 24 AM 10 10

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
Giulio Ferruzzi	6/23/95	Yami Nebbia
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

LABORATORY NOTES:

Send Results to Roger Blair

36-VOAs -UPS Red

Clients Name: Dames & Moore
Address: 8801 Folsom Blvd
City, State, Zip: Sacramento CA 95826
Phone: (916) 387-8800 Fax: (916) 387-0802
Laboratory Contact: Carol M.

D&M LABORATORIES
ENVIRONMENTAL AND INDUSTRIAL HYGIENE SERVICES
3700 Lakeville Highway, Petaluma CA 94954
Telephone: (707) 763-8245
FAX: (707) 763-4065

JOB NO.: 00173-080-044 SHEET 1 OF 1

PROJECT UPRR Sacramento

LOCATION Sacramento

COLLECTOR Giulio Ferruzzi DATE OF COLLECTION 6/23/95

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

October 10, 1995

Dames & Moore
8801 Folsom Blvd., Suite 200
Sacramento, CA 95826
Attention: Roger Blair

Client Project ID: Union Pacific Railroad Yard
Sequoia Project ID: 5091436

Enclosed are the analytical results for samples received by Sequoia Analytical on September 26, 1995. The following table lists Sequoia's sample number with your corresponding sample identification.

Sequoia Sample #	Client sample Identification	Date Sampled	Analysis Requested
5091436	Water, EW-1	9/26/95	EPA 5030/8010 EPA 5030/8020 TPH Gas
5091437	Water, MW-4	9/26/95	EPA 5030/8010 EPA 5030/8020 TPH Gas
5091438	Water, MW-32	9/26/95	EPA 5030/8010 EPA 5030/8020 TPH Gas
5091439	Water, AS-1	9/26/95	EPA 5030/8010 EPA 5030/8020 TPH Gas
5091440	Water, TB-1	9/26/95	EPA 5030/8010 EPA 5030/8020

Sequoia will maintain custody of these samples for six weeks from date of receipt. At that time, samples will be disposed according to Sequoia's waste protocol. If you need to make other arrangements for these samples, please notify Sequoia prior to that time.

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

We would like to take this opportunity to thank you for choosing Sequoia Analytical for your project needs. If you have any questions regarding this project or any other analytical needs, please contact me at (916) 921-9600.

Sincerely,

SEQUOIA ANALYTICAL

Janet Harlan

Janet Harlan
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Dames & Moore	Client Project ID:	Union Pacific Railroad Yard	Sampled:	Sep 26, 1995
8801 Folsom Blvd., Suite 200	Sample Descript:	Water, MW-4	Received:	Sep 26, 1995
Sacramento, CA 95826	Analysis Method:	EPA 5030/8010	Analyzed:	Oct 3, 1995
Attention: Roger Blair	Lab Number:	509-1437	Reported:	Oct 10, 1995

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Reporting Limit µg/L	Sample Results µg/L
Bromodichloromethane	0.50	N.D.
Bromoform	0.50	N.D.
Bromomethane	1.0	N.D.
Carbon tetrachloride	0.50	N.D.
Chlorobenzene	0.50	N.D.
Chloroethane	1.0	N.D.
2-Chloroethylvinyl ether	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	1.0	N.D.
Dibromochloromethane	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,1-Dichloroethane	**0.50**	**2.6**
1,2-Dichloroethane	**0.50**	**2.0**
1,1-Dichloroethene	**0.50**	**19**
cis-1,2-Dichloroethene	0.50	N.D.
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	0.50	N.D.
trans-1,3-Dichloropropene	0.50	N.D.
Methylene chloride	5.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	**0.50**	**0.72**
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	**0.50**	**1.6**
Trichlorofluoromethane	0.50	N.D.
Vinyl chloride	1.0	N.D.

Analytes reported as N.D. were not detected at or above the reporting limit.

SEQUOIA ANALYTICAL, ELAP #1624

Janet Harlan

Janet Harlan
Project Manager

5091436.DAM <2>

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Dames & Moore	Client Project ID:	Union Pacific Railroad Yard	Sampled:	Sep 26, 1995
8801 Folsom Blvd., Suite 200	Sample Descript:	Water, MW-4	Received:	Sep 26, 1995
Sacramento, CA 95826	Analysis Method:	EPA 5030/8020	Analyzed:	Oct 3, 1995
Attention: Roger Blair	Lab Number:	509-1437	Reported:	Oct 10, 1995

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Reporting Limit µg/L	Sample Results µg/L
Benzene	**0.50**	**41**
Chlorobenzene	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Toluene	**0.50**	**1.0**
Total Xylenes	**0.50**	**5.0**

Analytes reported as N.D. were not detected at or above the reporting limit.

SEQUOIA ANALYTICAL, ELAP #1624

Janet Harlan

Janet Harlan
Project Manager

5091436.DAM <7>

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Dames & Moore	Client Project ID:	Union Pacific Railroad Yard	Sampled:	Sep 26, 1995
8801 Folsom Blvd., Suite 200	Sample Descript:	Water, MW-32	Received:	Sep 26, 1995
Sacramento, CA 95826	Analysis Method:	EPA 5030/8010	Analyzed:	Oct 3, 1995
Attention: Roger Blair	Lab Number:	509-1438	Reported:	Oct 10, 1995

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Reporting Limit µg/L	Sample Results µg/L
Bromodichloromethane	0.50	N.D.
Bromoform	0.50	N.D.
Bromomethane	1.0	N.D.
Carbon tetrachloride	0.50	N.D.
Chlorobenzene	0.50	N.D.
Chloroethane	1.0	N.D.
2-Chloroethylvinyl ether	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	1.0	N.D.
Dibromochloromethane	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,1-Dichloroethane	**0.50**	**3.2**
1,2-Dichloroethane	**0.50**	**1.8**
1,1-Dichloroethene	**0.50**	**23**
cis-1,2-Dichloroethene	0.50	N.D.
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	0.50	N.D.
trans-1,3-Dichloropropene	0.50	N.D.
Methylene chloride	5.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	N.D.
1,1,1-Trichloroethane	**0.50**	**0.55**
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	**0.50**	**3.3**
Trichlorofluoromethane	0.50	N.D.
Vinyl chloride	1.0	N.D.

Analytes reported as N.D. were not detected at or above the reporting limit.

SEQUOIA ANALYTICAL, ELAP #1624

Janet Harlan
Project Manager

5091436.DAM <3>

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Dames & Moore	Client Project ID:	Union Pacific Railroad Yard	Sampled:	Sep 26, 1995
8801 Folsom Blvd., Suite 200	Sample Descript:	Water, MW-32	Received:	Sep 26, 1995
Sacramento, CA 95826	Analysis Method:	EPA 5030/8020	Analyzed:	Oct 3, 1995
Attention: Roger Blair	Lab Number:	509-1438	Reported:	Oct 10, 1995

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Reporting Limit µg/L	Sample Results µg/L
Benzene	**0.50**	**0.86**
Chlorobenzene	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Toluene	0.50	N.D.
Total Xylenes	0.50	N.D.

Analytes reported as N.D. were not detected at or above the reporting limit.

SEQUOIA ANALYTICAL, ELAP #1624

Janet Hanlan
Project Manager

5091436.DAM <8>

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Dames & Moore	Client Project ID:	Union Pacific Railroad Yard	Sampled:	Sep 26, 1995
8801 Folsom Blvd., Suite 200	Sample Descript:	Water, EW-1	Received:	Sep 26, 1995
Sacramento, CA 95826	Analysis Method:	EPA 5030/8010	Analyzed:	Oct 3, 1995
Attention: Roger Blair	Lab Number:	509-1436	Reported:	Oct 10, 1995

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Reporting Limit µg/L	Sample Results µg/L
Bromodichloromethane	0.50	N.D.
Bromoform	0.50	N.D.
Bromomethane	1.0	N.D.
Carbon tetrachloride	0.50	N.D.
Chlorobenzene	0.50	N.D.
Chloroethane	1.0	N.D.
2-Chloroethylvinyl ether	1.0	N.D.
Chloroform	**0.50**	**1.3**
Chloromethane	1.0	N.D.
Dibromochloromethane	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,1-Dichloroethane	**0.50**	**2.6**
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	**0.50**	**3.8**
cis-1,2-Dichloroethene	0.50	N.D.
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	0.50	N.D.
trans-1,3-Dichloropropene	0.50	N.D.
Methylene chloride	5.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	N.D.
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	0.50	N.D.
Vinyl chloride	1.0	N.D.

Analytes reported as N.D. were not detected at or above the reporting limit.

SEQUOIA ANALYTICAL, ELAP #1624

Janet Harlan

Janet Harlan
Project Manager

5091436.DAM <1>

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Dames & Moore	Client Project ID:	Union Pacific Railroad Yard	Sampled:	Sep 26, 1995
8801 Folsom Blvd., Suite 200	Sample Descript:	Water, EW-1	Received:	Sep 26, 1995
Sacramento, CA 95826	Analysis Method:	EPA 5030/8020	Analyzed:	Oct 3, 1995
Attention: Roger Blair	Lab Number:	509-1436	Reported:	Oct 10, 1995

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Reporting Limit µg/L	Sample Results µg/L
Benzene	0.50	N.D.
Chlorobenzene	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Toluene	0.50	N.D.
Total Xylenes	0.50	N.D.

Analytes reported as N.D. were not detected at or above the reporting limit.

SEQUOIA ANALYTICAL, ELAP #1624

Janet Harlan

Janet Harlan
Project Manager

5091436.DAM <6>

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Dames & Moore	Client Project ID:	Union Pacific Railroad Yard	Sampled: Sep 26, 1995
8801 Folsom Blvd., Suite 200	Sample Descript:	Water, AS-1	Received: Sep 26, 1995
Sacramento, CA 95826	Analysis Method:	EPA 5030/8010	Analyzed: Oct 3, 1995
Attention: Roger Blair	Lab Number:	509-1439	Reported: Oct 10, 1995

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Reporting Limit µg/L	Sample Results µg/L
Bromodichloromethane	0.50	N.D.
Bromoform	0.50	N.D.
Bromomethane	1.0	N.D.
Carbon tetrachloride	0.50	N.D.
Chlorobenzene	0.50	N.D.
Chloroethane	1.0	N.D.
2-Chloroethylvinyl ether	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	1.0	N.D.
Dibromochloromethane	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	0.50	N.D.
cis-1,2-Dichloroethene	0.50	N.D.
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	0.50	N.D.
trans-1,3-Dichloropropene	0.50	N.D.
Methylene chloride	5.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	N.D.
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	0.50	N.D.
Vinyl chloride	1.0	N.D.

Analytes reported as N.D. were not detected at or above the reporting limit.

SEQUOIA ANALYTICAL, ELAP #1624

Janet Harlan

Janet Harlan
Project Manager

5091436.DAM <4>

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Dames & Moore	Client Project ID:	Union Pacific Railroad Yard	Sampled:	Sep 26, 1995
8801 Folsom Blvd., Suite 200	Sample Descript:	Water, AS-1	Received:	Sep 26, 1995
Sacramento, CA 95826	Analysis Method:	EPA 5030/8020	Analyzed:	Oct 3, 1995
Attention: Roger Blair	Lab Number:	509-1439	Reported:	Oct 10, 1995

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Reporting Limit µg/L	Sample Results µg/L
Benzene	0.50	N.D.
Chlorobenzene	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Toluene	0.50	N.D.
Total Xylenes	0.50	N.D.

Analytes reported as N.D. were not detected at or above the reporting limit.

SEQUOIA ANALYTICAL, ELAP #1624

Janet Harlan
Project Manager

5091436.DAM <9>

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Dames & Moore	Client Project ID:	Union Pacific Railroad Yard	Sampled: Sep 26, 1995
8801 Folsom Blvd., Suite 200	Sample Matrix:	Water	Received: Sep 26, 1995
Sacramento, CA 95826	Analysis Method:	EPA 5030/8015	Reported: Oct 10, 1995
Attention: Roger Blair	First Sample #:	509-1436	

TOTAL PURGEABLE PETROLEUM HYDROCARBONS

Analyte	Reporting Limit µg/L	Sample I.D. 509-1436 EW-1	Sample I.D. 509-1437 MW-4	Sample I.D. 509-1438 MW-32	Sample I.D. 509-1439 AS-1
Purgeable Hydrocarbons	50	N.D.	160	N.D.	N.D.
Chromatogram Pattern:		--	Gasoline C6-C12	--	--

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0	1.0
Date Analyzed:	10/6/95	10/6/95	10/6/95	10/6/95
Instrument Identification:	GCHP-2	GCHP-2	GCHP-2	GCHP-2
Surrogate Recovery: (QC Limits = 70-130%)	102	101	106	102

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected at or above the reporting limit.

SEQUOIA ANALYTICAL, ELAP #1624

Janet Harlan

Janet Harlan
Project Manager

5091436.DAM <11>

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Dames & Moore	Client Project ID:	Union Pacific Railroad Yard	Sampled:	Sep 26, 1995
8801 Folsom Blvd., Suite 200	Sample Descript:	Water, TB-1	Received:	Sep 26, 1995
Sacramento, CA 95826	Analysis Method:	EPA 5030/8010	Analyzed:	Oct 3, 1995
Attention: Roger Blair	Lab Number:	509-1440	Reported:	Oct 10, 1995

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Reporting Limit µg/L	Sample Results µg/L
Bromodichloromethane	0.50	N.D.
Bromoform	0.50	N.D.
Bromomethane	1.0	N.D.
Carbon tetrachloride	0.50	N.D.
Chlorobenzene	0.50	N.D.
Chloroethane	1.0	N.D.
2-Chloroethylvinyl ether	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	1.0	N.D.
Dibromochloromethane	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	0.50	N.D.
cis-1,2-Dichloroethene	0.50	N.D.
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	0.50	N.D.
trans-1,3-Dichloropropene	0.50	N.D.
Methylene chloride	5.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	N.D.
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	0.50	N.D.
Vinyl chloride	1.0	N.D.

Analytes reported as N.D. were not detected at or above the reporting limit.

SEQUOIA ANALYTICAL, ELAP #1624

Janet Harlan
Project Manager

5091436.DAM <5>

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Dames & Moore	Client Project ID:	Union Pacific Railroad Yard	Sampled:	Sep 26, 1995
8801 Folsom Blvd., Suite 200	Sample Descript:	Water, TB-1	Received:	Sep 26, 1995
Sacramento, CA 95826	Analysis Method:	EPA 5030/8020	Analyzed:	Oct 3, 1995
Attention: Roger Blair	Lab Number:	509-1440	Reported:	Oct 10, 1995

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Reporting Limit µg/L	Sample Results µg/L
Benzene	0.50	N.D.
Chlorobenzene	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Toluene	0.50	N.D.
Total Xylenes	0.50	N.D.

Analytes reported as N.D. were not detected at or above the reporting limit.

SEQUOIA ANALYTICAL, ELAP #1624

Janet Hartan
Project Manager

5091436.DAM <10>

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Dames & Moore
8801 Folsom Blvd., Suite 200
Sacramento, CA 95826
Attention: Roger Blair

Client Project ID: Union Pacific Railroad Yard
Matrix: Water
QC Sample Group 5091436-1440

Reported: Oct 10, 1995

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	C. Lee	C. Lee	C. Lee	C. Lee
Concentration Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
LCS Batch#:	LCS100695	LCS100695	LCS100695	LCS100695
Date Prepared:	10/6/95	10/6/95	10/6/95	10/6/95
Date Analyzed:	10/6/95	10/6/95	10/6/95	10/6/95
Instrument I.D.#:	GCHP-2	GCHP-2	GCHP-2	GCHP-2
LCS % Recovery:	103	99	102	102
Control Limits:	75-125	75-125	75-125	75-125
MS/MSD Batch #:	5091412	5091412	5091412	5091412
Date Prepared:	10/6/95	10/6/95	10/6/95	10/6/95
Date Analyzed:	10/6/95	10/6/95	10/6/95	10/6/95
Instrument I.D.#:	GCHP-2	GCHP-2	GCHP-2	GCHP-2
Matrix Spike % Recovery:	98	95	97	97
Matrix Spike Duplicate % Recovery:	105	102	105	104
Relative % Difference:	6.9	7.1	7.9	7.0

SEQUOIA ANALYTICAL

Janet Hardan
Project Manager

Please Note:
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation and analytical methods employed for the samples. The LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results.

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Dames & Moore
8801 Folsom Blvd., Suite 200
Sacramento, CA 95826
Attention: Roger Blair

Client Project ID: Union Pacific Railroad Yard
Matrix: Water

QC Sample Group: 5091436-1440

Reported: Oct 10, 1995

QUALITY CONTROL DATA REPORT

ANALYTE	1,1-DCA	Trichloro-ethene	Chloro-benzene	Benzene	Toluene	Chloro-benzene
Method:	EPA 601	EPA 601	EPA 601	EPA 602	EPA 602	EPA 602
Analyst:	K. Pocan	K. Pocan	K. Pocan	K. Pocan	K. Pocan	K. Pocan
Concentration Spiked:	10 µg/L	10 µg/L	10 µg/L	10 µg/L	10 µg/L	10 µg/L
LCS Batch#:	LCS092995	LCS092995	LCS092995	LCS092995	LCS092995	LCS092995
Date Prepared:	9/29/95	9/29/95	9/29/95	9/29/95	9/29/95	9/29/95
Date Analyzed:	9/29/95	9/29/95	9/29/95	9/29/95	9/29/95	9/29/95
Instrument I.D.#:	GC 6	GC 6	GC 6	GC 6	GC 6	GC 6
LCS % Recovery:	87	88	101	94	93	98
Control Limits:	70-130	70-130	70-130	70-130	70-130	70-130
MS/MSD Batch #:	5091224	5091224	5091224	5091224	5091224	5091224
Date Prepared:	10/3/95	10/3/95	10/3/95	10/3/95	10/3/95	10/3/95
Date Analyzed:	10/3/95	10/3/95	10/3/95	10/3/95	10/3/95	10/3/95
Instrument I.D.#:	GC 6	GC 6	GC 6	GC 6	GC 6	GC 6
Matrix Spike % Recovery:	*	87	98	92	102	94
Matrix Spike Duplicate % Recovery:	*	75	93	81	91	87
Relative % Difference:	*	15	5.2	13	11	7.7

Please Note:
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation and analytical methods employed for the samples. The LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results. *Matrix interference.

SEQUOIA ANALYTICAL

Janet Harlan

Janet Harlan
Project Manager

5091436.DAM <13>

SEQUOIA ANALYTICAL CHAIN OF CUSTODY

☐ 680 Chesapeake Drive • Redwood City, CA 94063 • (415) 364-9600 FAX (415) 364-9233
☒ 819 West Striker Ave. • Sacramento, CA 95834 • (916) 921-9600 FAX (916) 921-0100
☐ 1900 Bates Ave., Suite LM • Concord, CA 94520 • (510) 686-9600 FAX (510) 686-9689

Company Name: DAMES & MOORE	Project Name: Union Pacific Railroad Yard
Address: 8801 Folsom BLVD Suite 290	Billing Address (if different):
City: SACRAMENTO State: CA Zip Code: 95826	
Telephone: 916 387-8800 FAX #: 387-0802	P.O. #:
Report To: Roger Blair Sampler: Diane Gale	QC Data: ☒ Level A (Standard) ☐ Level B ☐ Level C ☐ Level D

Turnaround Time: ☒ 10 Working Days ☐ 3 Working Days ☐ 2 - 8 Hours ☐ 7 Working Days ☐ 2 Working Days ☐ 5 Working Days ☐ 24 Hours

☐ Drinking Water ☐ Waste Water ☒ Other

Analyses Requested

Client Sample I.D.	Date/Time Sampled	Matrix Desc.	# of Cont.	Cont. Type	Sequoia's Sample #	8010/8020 - VOC	8015M - GAS						Comments
1. EW-1	26 Sept 1248	Water	4	40ml VOA		X	X			5091436	A-D		
2. MW-4	26Sept 1212		4	40ml VOA		X	X			1437			
3. MW-32	26 Sept 1222		4	40ml VOA		X	X			1438			
4. AS-1	26 Sept 1237		4	40ml VOA		X	X			1439			
5. TB-1 TRIP BLANK	26 Sept		1	40mlVOA		*X	X			1440			
6.													
7.													
8.													
9.													*assign Trip Blank to BD10/8020 as per client. SMP 9/26/95
10.													

Relinquished By: Diane Gale	Date: 9/26/95	Time: 1332	Received By: John Jowell	Date: 9/26/95	Time: 1525
Relinquished By: John Jowell	Date: 9/26/95	Time: 1610	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By Lab: Stacy Allen	Date: 9/26/95	Time: 1610

Samples on Ice? ☒ Yes ☐ No Method of Shipment: Sequoia

Page 1 of 1

Pink - Client
Yellow - Sequoia
White - Sequoia

MBT Environmental
Laboratories

3083 Gold Canal Drive
Rancho Cordova
CA 95670
Phone 916/852-6600
Fax 916/852-7292

Master Builders Technologies

Date: January 4, 1996
LP #: 13174

Roger Blair
Dames & Moore
8801 Folsom Blvd., Ste. 200
Sacramento, CA 95826

Dear Mr. Blair:

Enclosed are the laboratory results for the samples submitted to MBT Environmental Laboratories on December 20, 1995, for the project *Union Pacific Sacramento*.

The report consists of the following sections:

1. Cover Page
2. Copy of Chain-of-Custody
3. General Narrative
4. Analytical and Quality Control Results

Unless otherwise instructed by you, samples will be disposed of four weeks from the date of this letter.

Thank you for choosing MBT Environmental Laboratories. We are looking forward to serving you in the future. Should you have any questions concerning this analytical report or the analytical methods employed, please do not hesitate to call.

Sincerely,

Kevin Hanlon
Project Coordinator

ANALYTICAL REPORT

LABORATORY PROJECT (LP) NUMBER 13174

UNION PACIFIC SACRAMENTO

The analyses performed by MBT Environmental Laboratories in this report comply with the requirements under the following certification/approval:

	ARIZONA:	Hazardous Waste, #AZ0468 Waste Water, # AZ0468 Drinking Water, #AZ0468	OKLAHOMA:	Hazardous Waste, #9318 Waste Water, #9318
✓	CALIFORNIA:	Hazardous Waste, #1417 Waste Water, # 1417 Drinking Water, #1417 Mobile Lab, #2070	SOUTH CAROLINA:	Hazardous Waste, #87013 Waste Water, #87013
	CONNECTICUT:	Waste Water, #PH0799	TENNESSEE:	Underground Storage Tank
	FLORIDA:	Environmental Water, #E87298 CQAPP #930105	WASHINGTON:	Hazardous Waste, #C048
	KANSAS:	Hazardous Waste, #E-1167 Waste Water, #E-192 Drinking Water, #E-192	WISCONSIN:	Hazardous Waste, #999940920 Waste Water, #999940920
	NEW HAMPSHIRE:	Waste Water, #253195-B Drinking Water, #253195-A	USACOE:	Hazardous Waste Waste Water
	NEW JERSEY:	Waste Water, #44818	AFCEE	Hazardous Waste Waste Water
	NEW YORK:	Hazardous Waste, #11241 Waste Water, #11241 CLP, #11241		

(CN13174)

MBT Environmental Laboratories
3083 Gold Canal Drive
Rancho Cordova
CA 95670
Phone 916/852-6600
Fax 916/852-7292

CHAIN OF CUSTODY RECORD 18034

SEE SIDE 2 FOR COMPLETE INSTRUCTIONS

Project Name: Union Pacific Sacramento
Project Number: 00173-080-044
Project Location: (State) California

FOR LABORATORY USE ONLY
Laboratory Project #: 13174 *Storage ID:* 8
Sample Condition Upon Receipt: Temp: 12 °C *Geiger:*
Custody Seals Present? Yes/No Intact? Yes/No Samples Intact? Yes/No

Sample Disposal (check one)
☒ Laboratory Standard
☐ Other

Level of QC (see Side 2): ☒ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6A ☐ 6B ☐ 6C ☐ 6D ☐ 6E ☐ 6F ☐ 7 ☐ 8 ☐ A

Write in Analysis Method →

SAMPLE INFORMATION

ANALYSES REQUESTED

FOR LABORATORY USE ONLY Lab ID	Sample ID Number	Date	Time	Description: Locator	Description: Depth	Container(s): #	Container(s): Type	Matrix Type	Pres. Type	TAT	601/602	TPH-D
1 13174-001	MW-4	12/20	405			4	VOA	Wate		5	X	X
2 002	MW-32	12/20	345			4	VOA	"		5	X	X
3 003	EW-1	12/20	355			4	VOA	"		5	X	X
4 004	AS-1	12/20	415			4	VOA	"		5	X	X
5 005	Trip Blank					1	VOA	"		5	X	X
6												
7												
8												
9												
10												

SEND REPORT TO:
Company Name Dames & Moore
Client Name Roger Blair
Address 8801 Folsom Blvd Ste 200
Sacramento CA 95826
Phone 387 8800 Fax 387-0802

BILL TO (if different):
Company Name
Address
PO #
Phone Fax

Special Instructions/Comments

Sampler Name: Roger Blair
Signature
PPE Worn in Field

Relinquished By: Roger Blair	Date/Time Dec 20 95 1645	Received By or Method of Shipment/Shipment I.D. Courier	Date/Time 12/20/95 1645
Relinquished By:	Date/Time	Received By or Method of Shipment/Shipment I.D.	Date/Time
Relinquished By:	Date/Time	Received By or Method of Shipment/Shipment I.D.	Date/Time

Common Analytical Methods
413.1
413.2 Long Method
413.2 Short Method
418.1 Long Method
418.1 Short Method
420.1
502.2
503E
503.1
524.2
601
602
604
608
610
624
625
8010
8015
8015 Mod.
8020
8021
8040
8080
8100
8150
8240
8270
8310
Acidity
Alkalinity
BTEX
Chloride
CLP (see Side 2)
COD
Color
Conductivity
Corrosivity
Cyanide
Flashpoint
Fluoride
General Mineral
Hex. Chromium
Ion Balance
Metals (write specific metal & method #)*
Metals 6010*
Metals PP*
Metals Title 22:
TTLC Level
STLC Level
(see Side 2)
Nitrate
Nitrite
Odor
Org. Lead
Org. Mercury
Percent Moisture
Percent Solid
Perchlorate
pH
Phosphates
Phosphorus
Sulfate
Sulfides
TCLP:
VOA
Semivos
Metals
Pesticide
TDS
Total Hardness
Total Solids
TPH/D
TPH/G
TSS
Tur
* Sp[redacted]al or D[redacted]

GENERAL NARRATIVE

Comments:

Test methods may include minor modifications of published EPA methods (e.g., reporting limits or parameter lists). Reporting limits are adjusted to reflect dilution of the sample when appropriate. Solids and waste are analyzed with no correction made for moisture content.

Percent recoveries for laboratory control samples and matrix spikes have been calculated using unrounded concentration values. Therefore, percent recoveries reported may differ slightly from those obtained from the rounded concentration values which appear on the report.

TPH/G:

The surrogate recoveries for the analytes flagged on the data sheet were beyond acceptance limits due to the presence of a suspect interferant for the following sample: 13174-1.

Abbreviations and Definitions:

MB	*Method Blank* - An aliquot of a blank matrix carried throughout the entire analytical process
LCS	*Laboratory Control Sample* - A blank to which known quantities of specific analytes are added prior to sample preparation and analysis to assess the accuracy of the method
MS/MSD	*Matrix Spike/Matrix Spike Duplicate* - Duplicate samples to which known quantities of specific analytes are added prior to sample preparation and analysis to assess the extent of matrix bias or interference on analyte recovery
RPD	*Relative Percent Difference* - The measurement of precision between duplicate analyses
BRL	*Below Reporting Limit*
NS	*Not Specified*
NA	*Not Applicable*

Flags:

Organics -

J — Estimated value below the reporting limit and at or above the method detection limit.

B — Analyte found in the associated blank, as well as in the sample.

Inorganics -

B — Estimated value below the reporting limit and at or above the method detection limit.

VOLATILE AROMATIC COMPOUNDS

Analytical Method: TPH/G by LUFT
Preparation Method: EPA 5030

Company: Dames & Moore
Project Name: Union Pacific Sacramento
Sample Description: NA
Sample Number: MW-4
Date/Time Received: 12/20/95 16:45
Date Prepared: NA
Initial Wt./Volume: NA
Final Volume: NA

SDG #: 13174
Project Number: 00173080044
Lab ID: 13174-1/35162-4305
Date/Time Sampled: 12/20/95 04:05
Matrix: Water (W)
Batch Number: 4825

Instrument/Column: vgc03/RTX-VOA
Data File: 95355c46-0

Analyte	Result ug/L (ppb)	Reporting Limit ug/L (ppb)	Dilution Factor	Date Analyzed
TPH - Gasoline	210	50	1	12/22/95

Surrogates	% Recovery	Limits
Orthochlorotoluene	68 *	80 - 120

Qualifier Legend:
* - Values outside QC limits

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 12-28-95

MBT Environmental Laboratories

Master Builders Technologies

Report Generated: 12/28/95

VOLATILE AROMATIC COMPOUNDS

Analytical Method: TPH/G by LUFT
Preparation Method: EPA 5030

Company: Dames & Moore
Project Name: Union Pacific Sacramento
Sample Description: NA
Sample Number: MW-32
Date/Time Received: 12/20/95 16:45
Date Prepared: NA
Initial Wt./Volume: NA
Final Volume: NA

SDG #: 13174
Project Number: 00173080044
Lab ID: 13174-2/35163-4305
Date/Time Sampled: 12/20/95 03:45
Matrix: Water (W)
Batch Number: 4825

Instrument/Column: vgc03/RTX-VOA
Data File: 95355c43-0

Analyte	Result ug/L (ppb)	Reporting Limit ug/L (ppb)	Dilution Factor	Date Analyzed
TPH - Gasoline	BRL	50	1	12/22/95
Surrogates		**% Recovery**	**Limits**	
Orthochlorotoluene		85	80 - 120	

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 12-28-95

MBT Environmental Laboratories

Master Builders Technologies

Report Generated: 12/28/95

VOLATILE AROMATIC COMPOUNDS

Analytical Method: TPH/G by LUFT
Preparation Method: EPA 5030

Company: Dames & Moore
Project Name: Union Pacific Sacramento
Sample Description: NA
Sample Number: EW-1
Date/Time Received: 12/20/95 16:45
Date Prepared: NA
Initial Wt./Volume: NA
Final Volume: NA

SDG #: 13174
Project Number: 00173080044
Lab ID: 13174-3/35164-4305
Date/Time Sampled: 12/20/95 03:55
Matrix: Water (W)
Batch Number: 4825

Instrument/Column: vgc03/RTX-VOA
Data File: 95355c44-0

Analyte	Result ug/L (ppb)	Reporting Limit ug/L (ppb)	Dilution Factor	Date Analyzed
TPH - Gasoline	BRL	50	1	12/22/95
Surrogates		**% Recovery**	**Limits**	
Orthochlorotoluene		85	80 - 120	

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 1-4-96

MBT Environmental Laboratories

Master Builders Technologies

Report Generated: 01/04/96

VOLATILE AROMATIC COMPOUNDS

Analytical Method: TPH/G by LUFT
Preparation Method: EPA 5030

Company: Dames & Moore
Project Name: Union Pacific Sacramento
Sample Description: NA
Sample Number: AS-1
Date/Time Received: 12/20/95 16:45
Date Prepared: NA
Initial Wt./Volume: NA
Final Volume: NA

SDG #: 13174
Project Number: 00173080044
Lab ID: 13174-4/35165-4305
Date/Time Sampled: 12/20/95 04:15
Matrix: Water (W)
Batch Number: 4825

Instrument/Column: vgc03/RTX-VOA
Data File: 95355c45-0

Analyte	Result ug/L (ppb)	Reporting Limit ug/L (ppb)	Dilution Factor	Date Analyzed
TPH - Gasoline	BRL	50	1	12/22/95
Surrogates		**% Recovery**	**Limits**	
Orthochlorotoluene		86	80 - 120	

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 12-28-95

MBT Environmental Laboratories

Master Builders Technologies

Report Generated: 12/28/95

VOLATILE AROMATIC COMPOUNDS

Analytical Method: TPH/G by LUFT
Preparation Method: EPA 5030

Company: Dames & Moore
Project Name: Union Pacific Sacramento
Sample Description: NA
Sample Number: Trip Blank
Date/Time Received: 12/20/95 16:45
Date Prepared: NA
Initial Wt./Volume: NA
Final Volume: NA

SDG #: 13174
Project Number: 00173080044
Lab ID: 13174-5/35166-4305
Date/Time Sampled: 00:00
Matrix: Water (W)
Batch Number: 4825

Instrument/Column: vgc03/RTX-VOA
Data File: 95355c42-0

Analyte	Result ug/L (ppb)	Reporting Limit ug/L (ppb)	Dilution Factor	Date Analyzed
TPH - Gasoline	BRL	50	1	12/22/95
Surrogates		% Recovery	Limits	
Orthochlorotoluene		84	80 - 120	

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 12-28-95

MBT Environmental Laboratories

Master Builders Technologies

Report Generated: 12/28/95

METHOD BLANK

VOLATILE AROMATIC COMPOUNDS

Analytical Method: TPH/G by LUFT
Preparation Method: EPA 5030

Sample ID: 12/22/95 MB/35707
Date Prepared: NA

Lab ID: 35707-MB /4305
Matrix: Water
Batch Number: 4825
Instrument/Column: vgc03/RTX-VOA
Data File: 95355c31-0

Analyte	Result ug/L (ppb)	Reporting Limit ug/L (ppb)	Date Analyzed
TPH - Gasoline	BRL	50	12/22/95

Surrogates	% Recovery	Limits
Orthochlorotoluene	82	80 - 120

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 12-28-95

MBT Environmental Laboratories

Master Builders Technologies

Report Generated: 12/28/95

LABORATORY CONTROL SPIKE/LABORATORY CONTROL SPIKE DUPLICATE

VOLATILE AROMATIC COMPOUNDS

Analytical Method: TPH/G by LUFT
Preparation Method: EPA 5030

Date Prepared: NA

LCS Date Analyzed: 12/22/95

Lab ID: 35708-LS1 /4305
Matrix: Water Units: ug/L (ppb)
Batch Number: 4825
LCSD Date Analyzed: NA
Instrument/Column: vgc03/RTX-VOA
Data File: 95355c36-0

Analyte	(a) Sample Conc.	(b) Spike Conc.	(c) Sample + Spike Conc.	(d) Spike Rec %	(e) Sample Dup. + Spike Conc.	(f) Spike Dup. Rec %	(g) RPD %	Acceptance Limits % Rec.	Acceptance Limits RPD
TPH - Gasoline	0	100	120	116	NA	NA	NA	100-127	≤20

Spike Recovery = d = ((c-a)/b) x 100
Spike Duplicate Recovery = f = ((e-a)/b) x 100
Relative Percent Difference = g = (|c-e|)/((c+e) x .5) x 100

Surrogate	(h) LCS/ LCSD Surr. Spike Conc.	(i) Sample + Surr. Spike Conc.	(j) Surr. Spike Rec %	(k) Sample Dup. + Surr. Spike Conc.	(l) Surr. Spike Dup. Rec %	Acceptance Limits
Orthochlorotoluene	4.0	4.4	109	NA	NA	80-120

Surrogate % Recovery = j = (i-h) x 100
Surrogate Duplicate Recovery = l = (k/h) x 100

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 12-28-95

MBT Environmental Laboratories

Master Builders Technologies

Report Generated: 12/28/95

VOLATILE HALOGENATED ORGANIC COMPOUNDS

Analytical Method: EPA 601
Preparation Method: EPA 5030

Company: Dames & Moore
Project Name: Union Pacific Sacramento
Sample Description: NA
Sample Number: MW-4
Date/Time Received: 12/20/95 16:45
Date Prepared: NA
Initial Wt./Volume: NA
Final Volume: NA

SDG #: 13174
Project Number: 00173080044
Lab ID: 13174-1/35162-4001B
Date/Time Sampled: 12/20/95 04:05
Matrix: Water (W)
Batch Number: 4825

Instrument/Column: vgc10/RTX-502.2
Data File: 95355h32-0

Analyte	Result ug/L (ppb)	Reporting Limit ug/L (ppb)	Dilution Factor	Date Analyzed
Chloromethane	BRL	4.0	1	12/22/95
Bromomethane	BRL	4.0	1	12/22/95
Vinyl Chloride	BRL	1.0	1	12/22/95
Chloroethane	BRL	4.0	1	12/22/95
Methylene Chloride	BRL	10	1	12/22/95
Trichlorofluoromethane	BRL	0.50	1	12/22/95
1,1-Dichloroethene	29	5.0	10	12/29/95
1,1-Dichloroethane	2.6	0.50	1	12/22/95
cis-1,2-Dichloroethene	BRL	0.50	1	12/22/95
trans-1,2-Dichloroethene	BRL	0.50	1	12/22/95
Chloroform	BRL	0.50	1	12/22/95
1,2-Dichloroethane	0.90	0.50	1	12/22/95
1,1,1-Trichloroethane	BRL	0.50	1	12/22/95
Carbon Tetrachloride	BRL	0.50	1	12/22/95
Bromodichloromethane	BRL	0.50	1	12/22/95
1,2-Dichloropropane	BRL	0.50	1	12/22/95
cis-1,3-Dichloropropene	BRL	0.50	1	12/22/95
Trichloroethene	1.6	0.50	1	12/22/95
Dibromochloromethane	BRL	1.0	1	12/22/95
1,1,2-Trichloroethane	BRL	0.50	1	12/22/95
trans-1,3-Dichloropropene	BRL	0.50	1	12/22/95
Bromoform	BRL	1.0	1	12/22/95
1,1,2,2-Tetrachloroethane	BRL	1.0	1	12/22/95
Tetrachloroethene	0.95	0.50	1	12/22/95

VOLATILE HALOGENATED ORGANIC COMPOUNDS

Analytical Method: EPA 601

Lab ID: 13174-1/35162-4001B

Analyte	Result ug/L (ppb)	Reporting Limit ug/L (ppb)	Dilution Factor	Date Analyzed
Chlorobenzene	BRL	0.50	1	12/22/95
1,3-Dichlorobenzene	BRL	0.50	1	12/22/95
1,2-Dichlorobenzene	BRL	0.50	1	12/22/95
1,4-Dichlorobenzene	BRL	0.50	1	12/22/95
Freon 113	BRL	2.0	1	12/22/95

Surrogates	% Recovery	Limits
Bromochloromethane	72	51 - 144
Orthochlorotoluene	108	80 - 120

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 1-3-96

MBT Environmental Laboratories

Master Builders Technologies

Report Generated: 01/03/96

VOLATILE HALOGENATED ORGANIC COMPOUNDS

Analytical Method: EPA 601
Preparation Method: EPA 5030

Company: Dames & Moore
Project Name: Union Pacific Sacramento
Sample Description: NA
Sample Number: MW-32
Date/Time Received: 12/20/95 16:45
Date Prepared: NA
Initial Wt./Volume: NA
Final Volume: NA

SDG #: 13174
Project Number: 00173080044
Lab ID: 13174-2/35163-4001B
Date/Time Sampled: 12/20/95 03:45
Matrix: Water (W)
Batch Number: 4825

Instrument/Column: vgc10/RTX-502.2
Data File: 95355h33-0

Analyte	Result ug/L (ppb)	Reporting Limit ug/L (ppb)	Dilution Factor	Date Analyzed
Chloromethane	BRL	4.0	1	12/22/95
Bromomethane	BRL	4.0	1	12/22/95
Vinyl Chloride	BRL	1.0	1	12/22/95
Chloroethane	BRL	4.0	1	12/22/95
Methylene Chloride	BRL	10	1	12/22/95
Trichlorofluoromethane	BRL	0.50	1	12/22/95
1,1-Dichloroethene	43	5.0	10	12/29/95
1,1-Dichloroethane	5.4	0.50	1	12/22/95
cis-1,2-Dichloroethene	BRL	0.50	1	12/22/95
trans-1,2-Dichloroethene	BRL	0.50	1	12/22/95
Chloroform	BRL	0.50	1	12/22/95
1,2-Dichloroethane	0.82	0.50	1	12/22/95
1,1,1-Trichloroethane	BRL	0.50	1	12/22/95
Carbon Tetrachloride	BRL	0.50	1	12/22/95
Bromodichloromethane	BRL	0.50	1	12/22/95
1,2-Dichloropropane	BRL	0.50	1	12/22/95
cis-1,3-Dichloropropene	BRL	0.50	1	12/22/95
Trichloroethene	6.4	0.50	1	12/22/95
Dibromochloromethane	BRL	1.0	1	12/22/95
1,1,2-Trichloroethane	BRL	0.50	1	12/22/95
trans-1,3-Dichloropropene	BRL	0.50	1	12/22/95
Bromoform	BRL	1.0	1	12/22/95
1,1,2,2-Tetrachloroethane	BRL	1.0	1	12/22/95
Tetrachloroethene	BRL	0.50	1	12/22/95

VOLATILE HALOGENATED ORGANIC COMPOUNDS

Analytical Method: EPA 601

Lab ID: 13174-2/35163-4001B

Analyte	Result ug/L (ppb)	Reporting Limit ug/L (ppb)	Dilution Factor	Date Analyzed
Chlorobenzene	BRL	0.50	1	12/22/95
1,3-Dichlorobenzene	BRL	0.50	1	12/22/95
1,2-Dichlorobenzene	BRL	0.50	1	12/22/95
1,4-Dichlorobenzene	BRL	0.50	1	12/22/95
Freon 113	BRL	2.0	1	12/22/95

Surrogates	% Recovery	Limits
Bromochloromethane	86	51 - 144
Orthochlorotoluene	105	80 - 120

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 1-3-96

MBT Environmental Laboratories

Master Builders Technologies

Report Generated: 01/03/96

VOLATILE HALOGENATED ORGANIC COMPOUNDS

Analytical Method: EPA 601
Preparation Method: EPA 5030

Company: Dames & Moore
Project Name: Union Pacific Sacramento
Sample Description: NA
Sample Number: EW-1
Date/Time Received: 12/20/95 16:45
Date Prepared: NA
Initial Wt./Volume: NA
Final Volume: NA

SDG #: 13174
Project Number: 00173080044
Lab ID: 13174-3/35164-4001B
Date/Time Sampled: 12/20/95 03:55
Matrix: Water (W)
Batch Number: 4825

Instrument/Column: vgc10/RTX-502.2
Data File: 95355h34-0

Analyte	Result ug/L (ppb)	Reporting Limit ug/L (ppb)	Dilution Factor	Date Analyzed
Chloromethane	BRL	4.0	1	12/22/95
Bromomethane	BRL	4.0	1	12/22/95
Vinyl Chloride	BRL	1.0	1	12/22/95
Chloroethane	BRL	4.0	1	12/22/95
Methylene Chloride	BRL	10	1	12/22/95
Trichlorofluoromethane	BRL	0.50	1	12/22/95
1,1-Dichloroethene	5.6	0.50	1	12/22/95
1,1-Dichloroethane	3.4	0.50	1	12/22/95
cis-1,2-Dichloroethene	BRL	0.50	1	12/22/95
trans-1,2-Dichloroethene	BRL	0.50	1	12/22/95
Chloroform	1.4	0.50	1	12/22/95
1,2-Dichloroethane	BRL	0.50	1	12/22/95
1,1,1-Trichloroethane	BRL	0.50	1	12/22/95
Carbon Tetrachloride	BRL	0.50	1	12/22/95
Bromodichloromethane	BRL	0.50	1	12/22/95
1,2-Dichloropropane	BRL	0.50	1	12/22/95
cis-1,3-Dichloropropene	BRL	0.50	1	12/22/95
Trichloroethene	BRL	0.50	1	12/22/95
Dibromochloromethane	BRL	1.0	1	12/22/95
1,1,2-Trichloroethane	BRL	0.50	1	12/22/95
trans-1,3-Dichloropropene	BRL	0.50	1	12/22/95
Bromoform	BRL	1.0	1	12/22/95
1,1,2,2-Tetrachloroethane	BRL	1.0	1	12/22/95
Tetrachloroethene	BRL	0.50	1	12/22/95

VOLATILE HALOGENATED ORGANIC COMPOUNDS

Analytical Method: EPA 601

Lab ID: 13174-3/35164-4001B

Analyte	Result ug/L (ppb)	Reporting Limit ug/L (ppb)	Dilution Factor	Date Analyzed
Chlorobenzene	BRL	0.50	1	12/22/95
1,3-Dichlorobenzene	BRL	0.50	1	12/22/95
1,2-Dichlorobenzene	BRL	0.50	1	12/22/95
1,4-Dichlorobenzene	BRL	0.50	1	12/22/95
Freon 113	BRL	2.0	1	12/22/95

Surrogates	% Recovery	Limits
Bromochloromethane	100	51 - 144
Orthochlorotoluene	115	80 - 120

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 1-3-96

MBT Environmental Laboratories

Master Builders Technologies

VOLATILE HALOGENATED ORGANIC COMPOUNDS

Analytical Method: EPA 601
Preparation Method: EPA 5030

Company: Dames & Moore
Project Name: Union Pacific Sacramento
Sample Description: NA
Sample Number: AS-1
Date/Time Received: 12/20/95 16:45
Date Prepared: NA
Initial Wt./Volume: NA
Final Volume: NA

SDG #: 13174
Project Number: 00173080044
Lab ID: 13174-4/35165-4001B
Date/Time Sampled: 12/20/95 04:15
Matrix: Water (W)
Batch Number: 4825

Instrument/Column: vgc10/RTX-502.2
Data File: 95355h35-0

Analyte	Result ug/L (ppb)	Reporting Limit ug/L (ppb)	Dilution Factor	Date Analyzed
Chloromethane	BRL	4.0	1	12/22/95
Bromomethane	BRL	4.0	1	12/22/95
Vinyl Chloride	BRL	1.0	1	12/22/95
Chloroethane	BRL	4.0	1	12/22/95
Methylene Chloride	BRL	10	1	12/22/95
Trichlorofluoromethane	BRL	0.50	1	12/22/95
1,1-Dichloroethene	BRL	0.50	1	12/22/95
1,1-Dichloroethane	BRL	0.50	1	12/22/95
cis-1,2-Dichloroethene	BRL	0.50	1	12/22/95
trans-1,2-Dichloroethene	BRL	0.50	1	12/22/95
Chloroform	BRL	0.50	1	12/22/95
1,2-Dichloroethane	BRL	0.50	1	12/22/95
1,1,1-Trichloroethane	BRL	0.50	1	12/22/95
Carbon Tetrachloride	BRL	0.50	1	12/22/95
Bromodichloromethane	BRL	0.50	1	12/22/95
1,2-Dichloropropane	BRL	0.50	1	12/22/95
cis-1,3-Dichloropropene	BRL	0.50	1	12/22/95
Trichloroethene	BRL	0.50	1	12/22/95
Dibromochloromethane	BRL	1.0	1	12/22/95
1,1,2-Trichloroethane	BRL	0.50	1	12/22/95
trans-1,3-Dichloropropene	BRL	0.50	1	12/22/95
Bromoform	BRL	1.0	1	12/22/95
1,1,2,2-Tetrachloroethane	BRL	1.0	1	12/22/95
Tetrachloroethene	BRL	0.50	1	12/22/95

VOLATILE HALOGENATED ORGANIC COMPOUNDS

Analytical Method: EPA 601

Lab ID: 13174-4/35165-4001B

Analyte	Result ug/L (ppb)	Reporting Limit ug/L (ppb)	Dilution Factor	Date Analyzed
Chlorobenzene	BRL	0.50	1	12/22/95
1,3-Dichlorobenzene	BRL	0.50	1	12/22/95
1,2-Dichlorobenzene	BRL	0.50	1	12/22/95
1,4-Dichlorobenzene	BRL	0.50	1	12/22/95
Freon 113	BRL	2.0	1	12/22/95

Surrogates	% Recovery	Limits
Bromochloromethane	74	51 - 144
Orthochlorotoluene	109	80 - 120

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 1-3-96

MBT Environmental Laboratories

Master Builders Technologies

Report Generated: 01/03/96

VOLATILE HALOGENATED ORGANIC COMPOUNDS

Analytical Method: EPA 601
Preparation Method: EPA 5030

Company: Dames & Moore
Project Name: Union Pacific Sacramento
Sample Description: NA
Sample Number: Trip Blank
Date/Time Received: 12/20/95 16:45
Date Prepared: NA
Initial Wt./Volume: NA
Final Volume: NA

SDG #: 13174
Project Number: 00173080044
Lab ID: 13174-5/35166-4001B
Date/Time Sampled: 00:00
Matrix: Water (W)
Batch Number: 4825

Instrument/Column: vgc10/RTX-502.2
Data File: 95355h31-0

Analyte	Result ug/L (ppb)	Reporting Limit ug/L (ppb)	Dilution Factor	Date Analyzed
Chloromethane	BRL	4.0	1	12/22/95
Bromomethane	BRL	4.0	1	12/22/95
Vinyl Chloride	BRL	1.0	1	12/22/95
Chloroethane	BRL	4.0	1	12/22/95
Methylene Chloride	BRL	10	1	12/22/95
Trichlorofluoromethane	BRL	0.50	1	12/22/95
1,1-Dichloroethene	BRL	0.50	1	12/22/95
1,1-Dichloroethane	BRL	0.50	1	12/22/95
cis-1,2-Dichloroethene	BRL	0.50	1	12/22/95
trans-1,2-Dichloroethene	BRL	0.50	1	12/22/95
Chloroform	BRL	0.50	1	12/22/95
1,2-Dichloroethane	BRL	0.50	1	12/22/95
1,1,1-Trichloroethane	BRL	0.50	1	12/22/95
Carbon Tetrachloride	BRL	0.50	1	12/22/95
Bromodichloromethane	BRL	0.50	1	12/22/95
1,2-Dichloropropane	BRL	0.50	1	12/22/95
cis-1,3-Dichloropropene	BRL	0.50	1	12/22/95
Trichloroethene	BRL	0.50	1	12/22/95
Dibromochloromethane	BRL	1.0	1	12/22/95
1,1,2-Trichloroethane	BRL	0.50	1	12/22/95
trans-1,3-Dichloropropene	BRL	0.50	1	12/22/95
Bromoform	BRL	1.0	1	12/22/95
1,1,2,2-Tetrachloroethane	BRL	1.0	1	12/22/95
Tetrachloroethene	BRL	0.50	1	12/22/95

VOLATILE HALOGENATED ORGANIC COMPOUNDS

Analytical Method: EPA 601

Lab ID: 13174-5/35166-4001B

Analyte	Result ug/L (ppb)	Reporting Limit ug/L (ppb)	Dilution Factor	Date Analyzed
Chlorobenzene	BRL	0.50	1	12/22/95
1,3-Dichlorobenzene	BRL	0.50	1	12/22/95
1,2-Dichlorobenzene	BRL	0.50	1	12/22/95
1,4-Dichlorobenzene	BRL	0.50	1	12/22/95
Freon 113	BRL	2.0	1	12/22/95

Surrogates	% Recovery	Limits
Bromochloromethane	72	51 - 144
Orthochlorotoluene	110	80 - 120

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 1-3-96

MBT Environmental Laboratories

Master Builders Technologies

METHOD BLANK

VOLATILE HALOGENATED ORGANIC COMPOUNDS

Analytical Method: EPA 601
Preparation Method: EPA 5030

Sample ID: 12/21/95 MB/36243
Date Prepared: NA

Lab ID: 36243-MB /4001B
Matrix: Water
Batch Number: 4825
Instrument/Column: vgc10/RTX-502.2
Data File: 95355h15-0

Analyte	Result ug/L (ppb)	Reporting Limit ug/L (ppb)	Date Analyzed
Chloromethane	BRL	4.0	12/21/95
Bromomethane	BRL	4.0	12/21/95
Vinyl Chloride	BRL	1.0	12/21/95
Chloroethane	BRL	4.0	12/21/95
Methylene Chloride	BRL	10	12/21/95
Trichlorofluoromethane	BRL	0.50	12/21/95
1,1-Dichloroethene	BRL	0.50	12/21/95
1,1-Dichloroethane	BRL	0.50	12/21/95
cis-1,2-Dichloroethene	BRL	0.50	12/21/95
trans-1,2-Dichloroethene	BRL	0.50	12/21/95
Chloroform	BRL	0.50	12/21/95
1,2-Dichloroethane	BRL	0.50	12/21/95
1,1,1-Trichloroethane	BRL	0.50	12/21/95
Carbon Tetrachloride	BRL	0.50	12/21/95
Bromodichloromethane	BRL	0.50	12/21/95
1,2-Dichloropropane	BRL	0.50	12/21/95
cis-1,3-Dichloropropene	BRL	0.50	12/21/95
Trichloroethene	BRL	0.50	12/21/95
Dibromochloromethane	BRL	1.0	12/21/95
1,1,2-Trichloroethane	BRL	0.50	12/21/95
trans-1,3-Dichloropropene	BRL	0.50	12/21/95
Bromoform	BRL	1.0	12/21/95
1,1,2,2-Tetrachloroethane	BRL	1.0	12/21/95
Tetrachloroethene	BRL	0.50	12/21/95
Chlorobenzene	BRL	0.50	12/21/95
1,3-Dichlorobenzene	BRL	0.50	12/21/95
1,2-Dichlorobenzene	BRL	0.50	12/21/95
1,4-Dichlorobenzene	BRL	0.50	12/21/95
Freon 113	BRL	2.0	12/21/95

METHOD BLANK

VOLATILE HALOGENATED ORGANIC COMPOUNDS

Analytical Method: EPA 601

Lab ID: 36243-MB /4001B 1917

Surrogates	% Recovery	Limits
Bromochloromethane	98	51 - 144
Orthochlorotoluene	107	80 - 120

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 1-3-96

MBT Environmental Laboratories

Master Builders Technologies

LABORATORY CONTROL SPIKE/LABORATORY CONTROL SPIKE DUPLICATE

VOLATILE HALOGENATED ORGANIC COMPOUNDS

Analytical Method: EPA 601
Preparation Method: EPA 5030

Date Prepared: NA

LCS Date Analyzed: 12/21/95

Lab ID: 36244-LS1 /4001B
Matrix: Water Units: ug/L (ppb)
Batch Number: 4825
LCSD Date Analyzed: NA
Instrument/Column: /RTX-502.2
Data File: 95355h13-0

Analyte	(a) Sample Conc.	(b) Spike Conc.	(c) Sample + Spike Conc.	(d) Spike Rec %	(e) Sample Dup. + Spike Conc.	(f) Spike Dup. Rec %	(g) RPD %	Acceptance Limits % Rec.	Acceptance Limits RPD
1,1-Dichloroethane	0	10	11	108	NA	NA	NA	64-128	≤20
1,1,1-Trichloroethane	0	10	11	113	NA	NA	NA	65-118	≤20
Trichloroethene	0	10	9.8	98	NA	NA	NA	69-131	≤20

Spike Recovery = d = ((c-a)/b) x 100
Spike Duplicate Recovery = f = ((e-a)/b) x 100
Relative Percent Difference = g = (|c-e|)/((c+e) x .5) x 100

Surrogate	(h) LCS/ LCSD Surr. Spike Conc.	(i) Sample + Surr. Spike Conc.	(j) Surr. Spike Rec %	(k) Sample Dup. + Surr. Spike Conc.	(l) Surr. Spike Dup. Rec %	Acceptance Limits
Bromochloromethane	8.0	6.7	84	NA	NA	51-144
Orthochlorotoluene	8.0	7.7	97	NA	NA	80-120

Surrogate % Recovery = j = (i-h) x 100
Surrogate Duplicate Recovery = l = (k/h) x 100

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 1-3-96

MBT Environmental Laboratories

Master Builders Technologies

Report Generated: 01/03/96

VOLATILE AROMATIC COMPOUNDS

Analytical Method: EPA 602
Preparation Method: EPA 5030

Company: Dames & Moore
Project Name: Union Pacific Sacramento
Sample Description: NA
Sample Number: MW-4
Date/Time Received: 12/20/95 16:45
Date Prepared: NA
Initial Wt./Volume: NA
Final Volume: NA

SDG #: 13174
Project Number: 00173080044
Lab ID: 13174-1/35162-4001A
Date/Time Sampled: 12/20/95 04:05
Matrix: Water (W)
Batch Number: 4825

Instrument/Column: vgc03/DB-WAX
Data File: 95355c46-0

Analyte	Result ug/L (ppb)	Reporting Limit ug/L (ppb)	Dilution Factor	Date Analyzed
Benzene	22	0.50	1	12/22/95
Toluene	5.7	0.50	1	12/22/95
Chlorobenzene	BRL	0.50	1	12/22/95
Ethyl benzene	1.9	0.50	1	12/22/95
1,2-Xylene	3.6	0.50	1	12/22/95
1,3-Xylene	BRL	0.50	1	12/22/95
1,4-Xylene	BRL	0.50	1	12/22/95
1,2-Dichlorobenzene	BRL	0.50	1	12/22/95
1,3-Dichlorobenzene	BRL	0.50	1	12/22/95
1,4-Dichlorobenzene	BRL	0.50	1	12/22/95

Surrogates	% Recovery	Limits
Orthochlorotoluene	105	80 - 120

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 1-3-96

MBT Environmental Laboratories

Master Builders Technologies

Report Generated: 01/03/96

VOLATILE AROMATIC COMPOUNDS

Analytical Method: EPA 602
Preparation Method: EPA 5030

Company: Dames & Moore
Project Name: Union Pacific Sacramento
Sample Description: NA
Sample Number: MW-32
Date/Time Received: 12/20/95 16:45
Date Prepared: NA
Initial Wt./Volume: NA
Final Volume: NA

SDG #: 13174
Project Number: 00173080044
Lab ID: 13174-2/35163-4001A
Date/Time Sampled: 12/20/95 03:45
Matrix: Water (W)
Batch Number: 4825

Instrument/Column: vgc03/DB-WAX
Data File: 95355c43-0

Analyte	Result ug/L (ppb)	Reporting Limit ug/L (ppb)	Dilution Factor	Date Analyzed
Benzene	BRL	0.50	1	12/22/95
Toluene	BRL	0.50	1	12/22/95
Chlorobenzene	BRL	0.50	1	12/22/95
Ethyl benzene	BRL	0.50	1	12/22/95
1,2-Xylene	BRL	0.50	1	12/22/95
1,3-Xylene	BRL	0.50	1	12/22/95
1,4-Xylene	BRL	0.50	1	12/22/95
1,2-Dichlorobenzene	BRL	0.50	1	12/22/95
1,3-Dichlorobenzene	BRL	0.50	1	12/22/95
1,4-Dichlorobenzene	BRL	0.50	1	12/22/95

Surrogates	% Recovery	Limits
Orthochlorotoluene	105	80 - 120

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 1-3-96

MBT Environmental Laboratories

Master Builders Technologies

Report Generated: 01/03/96

VOLATILE AROMATIC COMPOUNDS

Analytical Method: EPA 602
Preparation Method: EPA 5030

Company: Dames & Moore
Project Name: Union Pacific Sacramento
Sample Description: NA
Sample Number: EW-1
Date/Time Received: 12/20/95 16:45
Date Prepared: NA
Initial Wt./Volume: NA
Final Volume: NA

SDG #: 13174
Project Number: 00173080044
Lab ID: 13174-3/35164-4001A
Date/Time Sampled: 12/20/95 03:55
Matrix: Water (W)
Batch Number: 4825

Instrument/Column: vgc03/DB-WAX
Data File: 95355c44-0

Analyte	Result ug/L (ppb)	Reporting Limit ug/L (ppb)	Dilution Factor	Date Analyzed
Benzene	BRL	0.50	1	12/22/95
Toluene	BRL	0.50	1	12/22/95
Chlorobenzene	BRL	0.50	1	12/22/95
Ethyl benzene	BRL	0.50	1	12/22/95
1,2-Xylene	BRL	0.50	1	12/22/95
1,3-Xylene	BRL	0.50	1	12/22/95
1,4-Xylene	BRL	0.50	1	12/22/95
1,2-Dichlorobenzene	BRL	0.50	1	12/22/95
1,3-Dichlorobenzene	BRL	0.50	1	12/22/95
1,4-Dichlorobenzene	BRL	0.50	1	12/22/95

Surrogates	% Recovery	Limits
Orthochlorotoluene	108	80 - 120

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 1-3-96

MBT Environmental Laboratories

Master Builders Technologies

Report Generated: 01/03/96

VOLATILE AROMATIC COMPOUNDS

Analytical Method: EPA 602
Preparation Method: EPA 5030

Company: Dames & Moore
Project Name: Union Pacific Sacramento
Sample Description: NA
Sample Number: AS-1
Date/Time Received: 12/20/95 16:45
Date Prepared: NA
Initial Wt./Volume: NA
Final Volume: NA

SDG #: 13174
Project Number: 00173080044
Lab ID: 13174-4/35165-4001A
Date/Time Sampled: 12/20/95 04:15
Matrix: Water (W)
Batch Number: 4825

Instrument/Column: vgc03/DB-WAX
Data File: 95355c45-0

Analyte	Result ug/L (ppb)	Reporting Limit ug/L (ppb)	Dilution Factor	Date Analyzed
Benzene	BRL	0.50	1	12/22/95
Toluene	BRL	0.50	1	12/22/95
Chlorobenzene	BRL	0.50	1	12/22/95
Ethyl benzene	BRL	0.50	1	12/22/95
1,2-Xylene	BRL	0.50	1	12/22/95
1,3-Xylene	BRL	0.50	1	12/22/95
1,4-Xylene	BRL	0.50	1	12/22/95
1,2-Dichlorobenzene	BRL	0.50	1	12/22/95
1,3-Dichlorobenzene	BRL	0.50	1	12/22/95
1,4-Dichlorobenzene	BRL	0.50	1	12/22/95

Surrogates	% Recovery	Limits
Orthochlorotoluene	110	80 - 120

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 1-3-96

MBT Environmental Laboratories

Master Builders Technologies

Report Generated: 01/03/96

VOLATILE AROMATIC COMPOUNDS

Analytical Method: EPA 602
Preparation Method: EPA 5030

Company: Dames & Moore
Project Name: Union Pacific Sacramento
Sample Description: NA
Sample Number: Trip Blank
Date/Time Received: 12/20/95 16:45
Date Prepared: NA
Initial Wt./Volume: NA
Final Volume: NA

SDG #: 13174
Project Number: 00173080044
Lab ID: 13174-5/35166-4001A
Date/Time Sampled: 00:00
Matrix: Water (W)
Batch Number: 4825

Instrument/Column: vgc03/DB-WAX
Data File: 95355c42-0

Analyte	Result ug/L (ppb)	Reporting Limit ug/L (ppb)	Dilution Factor	Date Analyzed
Benzene	BRL	0.50	1	12/22/95
Toluene	BRL	0.50	1	12/22/95
Chlorobenzene	BRL	0.50	1	12/22/95
Ethyl benzene	BRL	0.50	1	12/22/95
1,2-Xylene	BRL	0.50	1	12/22/95
1,3-Xylene	BRL	0.50	1	12/22/95
1,4-Xylene	BRL	0.50	1	12/22/95
1,2-Dichlorobenzene	BRL	0.50	1	12/22/95
1,3-Dichlorobenzene	BRL	0.50	1	12/22/95
1,4-Dichlorobenzene	BRL	0.50	1	12/22/95

Surrogates	% Recovery	Limits
Orthochlorotoluene	105	80 - 120

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 1-3-96

MBT Environmental Laboratories

Master Builders Technologies

Report Generated: 01/03/96

METHOD BLANK

VOLATILE AROMATIC COMPOUNDS

Analytical Method: EPA 602
Preparation Method: EPA 5030

Sample ID: 12/22/95 MB/36241
Date Prepared: NA

Lab ID: 36241-MB /4001A
Matrix: Water
Batch Number: 4825
Instrument/Column: vgc03/DB-WAX
Data File: 95355c41-0

Analyte	Result ug/L (ppb)	Reporting Limit ug/L (ppb)	Date Analyzed
Benzene	BRL	0.50	12/22/95
Toluene	BRL	0.50	12/22/95
Chlorobenzene	BRL	0.50	12/22/95
Ethyl benzene	BRL	0.50	12/22/95
1,2-Xylene	BRL	0.50	12/22/95
1,3-Xylene	BRL	0.50	12/22/95
1,4-Xylene	BRL	0.50	12/22/95
1,2-Dichlorobenzene	BRL	0.50	12/22/95
1,3-Dichlorobenzene	BRL	0.50	12/22/95
1,4-Dichlorobenzene	BRL	0.50	12/22/95

Surrogates	% Recovery	Limits
Orthochlorotoluene	105	80 - 120

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 1-3-96

MBT Environmental Laboratories

Master Builders Technologies

Report Generated: 01/03/96

LABORATORY CONTROL SPIKE/LABORATORY CONTROL SPIKE DUPLICATE

VOLATILE AROMATIC COMPOUNDS

Analytical Method: EPA 602
Preparation Method: EPA 5030

Date Prepared: NA

LCS Date Analyzed: 12/22/95

Lab ID: 36242-LS1 /4001A
Matrix: Water Units: ug/L (ppb)
Batch Number: 4825
LCSD Date Analyzed: NA
Instrument/Column: vgc03/DB-WAX
Data File: 95355c37-0

Analyte	(a) Sample Conc.	(b) Spike Conc.	(c) Sample + Spike Conc.	(d) Spike Rec %	(e) Sample Dup. + Spike Conc.	(f) Spike Dup. Rec %	(g) RPD %	Acceptance Limits % Rec.	Acceptance Limits RPD
Benzene	0	10	9.9	99	NA	NA	NA	72-134	≤20
Chlorobenzene	0	10	10	102	NA	NA	NA	69-131	≤20
Ethyl benzene	0	10	9.7	97	NA	NA	NA	72-128	≤20

Spike Recovery = d = ((c-a)/b) x 100
Spike Duplicate Recovery = f = ((e-a)/b) x 100
Relative Percent Difference = g = (|c-e|)/((c+e) x .5) x 100

Surrogate	(h) LCS/ LCSD Surr. Spike Conc.	(i) Sample + Surr. Spike Conc.	(j) Surr. Spike Rec %	(k) Sample Dup. + Surr. Spike Conc.	(l) Surr. Spike Dup. Rec %	Acceptance Limits
Orthochlorotoluene	4.0	3.9	97	NA	NA	80-120

Surrogate % Recovery = j = (i-h) x 100
Surrogate Duplicate Recovery = l = (k/h) x 100

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 1-3-96

MBT Environmental Laboratories

Master Builders Technologies

Report Generated: 01/03/96