



Dennis Bates
associates
INCORPORATED

ALCO
HAZMAT
94 NOV 10 PM 2:33

November 2, 1994
93026.00

Mr. Bo K. Gin
OAKLAND AUTO PARTS & TIRES
288 11th Street
Oakland, CA 94706

**RE: SUBMITTAL OF QUARTERLY MONITORING REPORT FOR
706 HARRISON STREET, OAKLAND, CALIFORNIA**

Dear Mr. Gin:

Dennis Bates Associates, Inc. (DBA) is pleased to submit a quarterly monitoring report prepared for the 706 Harrison site in Oakland. This report describes methodology and findings for the September, 1994 monitoring program.

We are submitting two copies of the monitoring report, please forward one copy to Ms. Jennifer Eberle at the Alameda County Department of Environmental Health (ACDEH). Please feel free to call this office with any questions you may have regarding this project.

Sincerely,
DENNIS BATES ASSOCIATES. INC.

Eva Vanek, R.E.A.
Senior Geologist

John H. Sammons, Ph.D.
Principal Scientist

cc: Monterey
File

C:\OAKLAND\1031REPOR.DOC

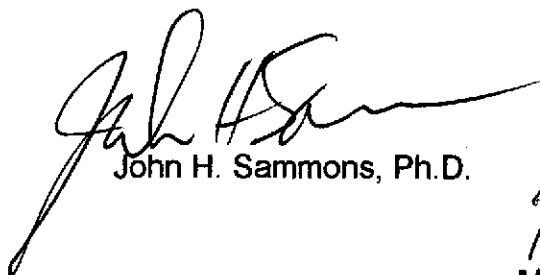
QUARTERLY MONITORING REPORT

Bo K. Gin
706 Harrison Street
Oakland, CA

PREPARED FOR:

Bo K. Gin
OAKLAND AUTO PARTS & TIRES
288 11th Street
Oakland, CA 94706

PREPARED BY:



John H. Sammons, Ph.D.



Eva Vanek, R.E.A.



Mark O. Wiegiers, C.E.G. 1506

Dennis Bates Associates, Inc.
1020 Railroad Avenue, Suite E
Novato, CA 94945

DBA Project #93026.00

October, 1994

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1. INTRODUCTION

This report summarizes the methods and results of sampling conducted in September, 1994 at Oakland Auto Parts located at 706 Harrison Street in Oakland, California (Figure 1).

The site was operated by Mr. Gin as a service station with two pump islands from 1963 to 1985 when retail operations ceased. The site contained two 6000-gallon gasoline underground storage tanks (USTs), four 1000-gallon USTs which were used to store various gasolines and one small waste oil tank (See Figure 2). All USTs were removed in January, 1991 and overexcavation of the main tank area was performed. In July, 1993, three groundwater monitoring wells and two wells intended for vapor extraction, were installed (See Figure 2). Groundwater monitoring was initiated at this site in August, 1993.

2. GROUNDWATER LEVEL ELEVATIONS AND FLOW DIRECTION

Groundwater levels were measured in wells MW1, MW2, and MW3 prior to sampling on September 7, 1994. Water level depths were converted to elevations by subtracting the depth of water from top of casing elevations. Water level measurements for September, 1994, along with previous measurements made at these wells, are included in Table 1. Water level measurements made in September, 1994 indicate that the groundwater flow direction is to the southwest, which is consistent with previous groundwater elevation measurements made for this site (See Figure 2).

3. GROUNDWATER SAMPLING

3.1 Sampling and Analytical Methods

Groundwater samples were collected from wells MW1, MW2, and MW3 on September 7, 1994. Prior to sampling, each of the wells was purged of approximately four casing volumes using a dedicated submersible pump. Sampling data sheets are included in Appendix A.

Groundwater samples from each well were collected using the dedicated submersible pumps and pouring directly into the sample containers. Groundwater sample for analysis of volatile organics (TPHG/BTEX) were collected in 40-milliliter vials. Sample containers were placed in a cooler with blue ice for shipment to the analytical laboratory. Groundwater samples were submitted for total petroleum hydrocarbons (TPH) as gasoline and diesel (EPA Method 8015M), and benzene, toluene, ethylbenzene and xylenes (BTEX; EPA Method 8020M).

3.2 Analytical Results

A summary of sample results for September, 1994, in addition to previous sampling periods, are included in Table 2 and copies of original laboratory data are included in Appendix B. In September, 1994, TPH as gasoline and BTEX were present in MW1 and MW2, but were not present above laboratory detection limits in MW3. In MW1, TPH as gasoline was detected at 3,900 micrograms/liter ($\mu\text{g/l}$), BTEX constituents were detected at 3,400 $\mu\text{g/l}$, 400 $\mu\text{g/l}$, 150 $\mu\text{g/l}$ and 200 $\mu\text{g/l}$, respectively. In MW2, TPH as gasoline was detected at 38,000 $\mu\text{g/l}$ and BTEX constituents were detected at 7,400 $\mu\text{g/l}$, 9,800 $\mu\text{g/l}$, 870 $\mu\text{g/l}$, and 4,200 $\mu\text{g/l}$, respectively.

Laboratory results for MW3 showed non-detect (ND) for TPH as gasoline and BTEX, which is consistent with previous sampling events.

4. PRODUCT RECOVERY

On May 26, 1994, a product recovery system, called the soak-ease oil absorbent kit, was installed in extraction wells VW1 and VW2 (See Figure 2). The soak-ease oil absorbent kit consists of a disposable sorbent material designed to absorb and contain petroleum-based constituents held inside a stainless steel, refillable canister. The soak-ease sorbent tube can absorb one quart per 2-inch diameter tube. Once a tube is saturated with oil, it should be replaced with a dry tube.

DBA conducted product thickness monitoring for approximately four months at the 706 Harrison Street site. During monitoring, product thickness in VW1 and VW2 was measured and the schedule of tube replacement needs was updated. Table 3 lists the product thickness measurements made during monitoring period. From this table it is apparent that product thickness in both extraction wells have significantly decreased. No floating product has been observed in VW1 since early June, and product thickness has decreased from 4 1/4-inch to 1/8-inch in VW-2 in September, 1994. Some fluctuations in product thickness at VW2 has been observed during the monitoring program.

5. DISCUSSION

Comparison of water level measurements over time indicate a consistent flow direction toward the south/southwest. Consistent groundwater flow direction is probably a controlling factor in hydrocarbon concentration trends observed during each monitoring event.

TPH in MW2 decreased between August and December, 1993, but increased in April, 1994 (DBA, June, 1994) and increased again in September, 1994. Well MW2 is located upgradient of the "main tank" area and downgradient of the 6,000-gallon tank area. MW2 is not expected to contain high hydrocarbon concentrations because the tank pit had been over excavated in February, 1993 and soil sample analysis indicated only 93 $\mu\text{g/l}$ TPH as gasoline and no detections of BTEX (DBA, September 1993).

To investigate the potential source of petroleum hydrocarbons detected at MW-2, a review of information available for an upgradient facility (the Unocal service station located approximately 200 feet north of the 706 Harrison site at the corner of 8th and Harrison Streets) was conducted. These data indicate that petroleum hydrocarbons in several wells on that site, particularly MW3, contained hydrocarbon concentrations at least since June, 1990 (up to 2,100 µg/l benzene in December, 1991; MPDS Services, Inc., 1994). Other potential leaking USTs further upgradient from the site could also be contributing hydrocarbons to the subsurface and, a cumulative slug of petroleum hydrocarbons may be flowing toward the 706 Harrison site. In the April, 1994 Quarterly Monitoring Report, DBA recommended further investigation of potential upgradient sources.

Comparison of chemical concentrations measured in MW1 in September, 1994 with previous sampling periods indicate that petroleum hydrocarbon concentrations in this well are consistently decreasing over time. It is not understood why concentrations in MW1 do not follow the same fluctuating trend that MW2 does, which is located approximately 50 feet to the northeast (upgradient) of MW1, particularly since the subsurface consists of relatively homogeneous sand across the site (DBA, data files).

Petroleum hydrocarbons have been consistently ND in well MW3, which is located cross-gradient of the main tank area. ✓

Product thickness has been decreasing in both wells VW1 and VW2, although some fluctuation has been observed in VW2. ✓

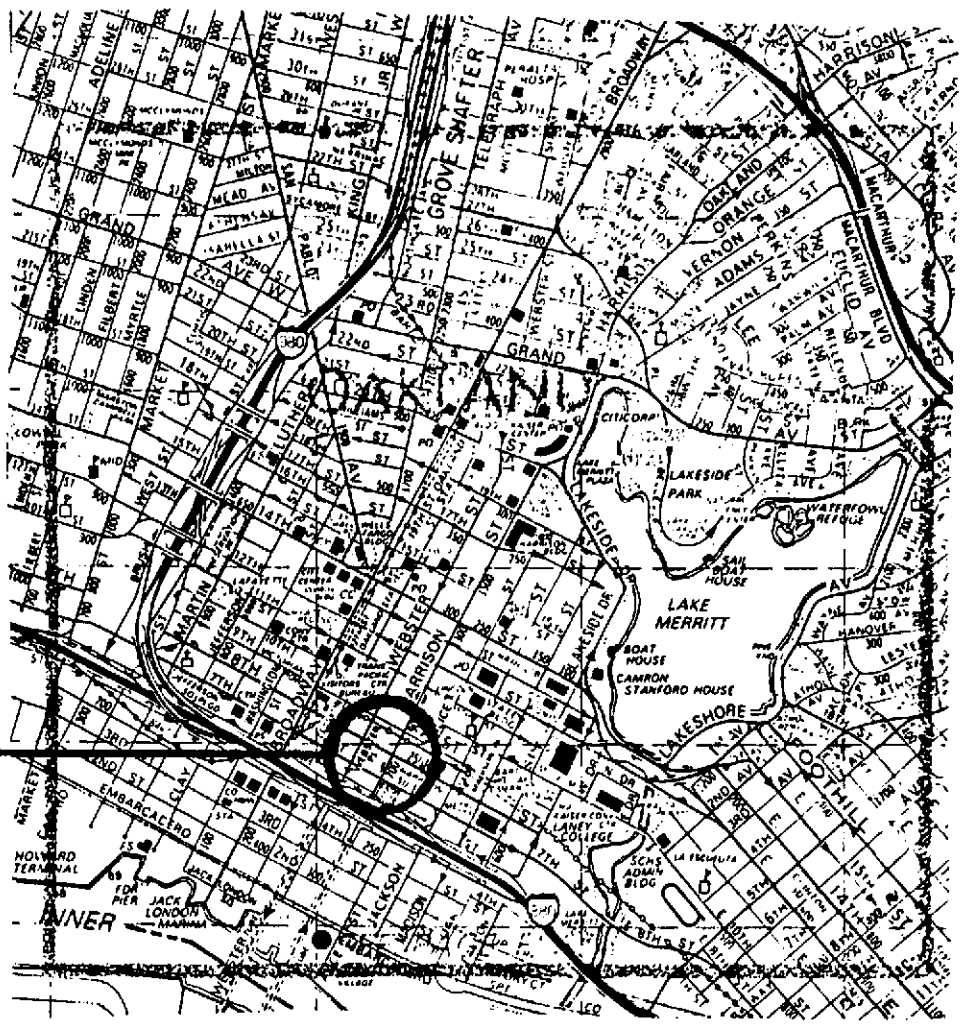
6. REFERENCES

Dennis Bates Associates, Inc. Data Files.

Dennis Bates Associates, Inc. September, 1993, "Report of Groundwater Monitoring Well Installation".

Dennis Bates Associates, Inc. June 2, 1994, "Quarterly Monitoring Report", B. K. Gin, 706 Harrison Street, Oakland.

MPDS Services, Inc., 1994, Data Files Maintained At ACDEH.



SITE



TITLE: SITE LOCATION
 SITE: OAKLAND AUTO PARTS
 ADDRESS: 706 HARRISON STREET, OAKLAND, CA.

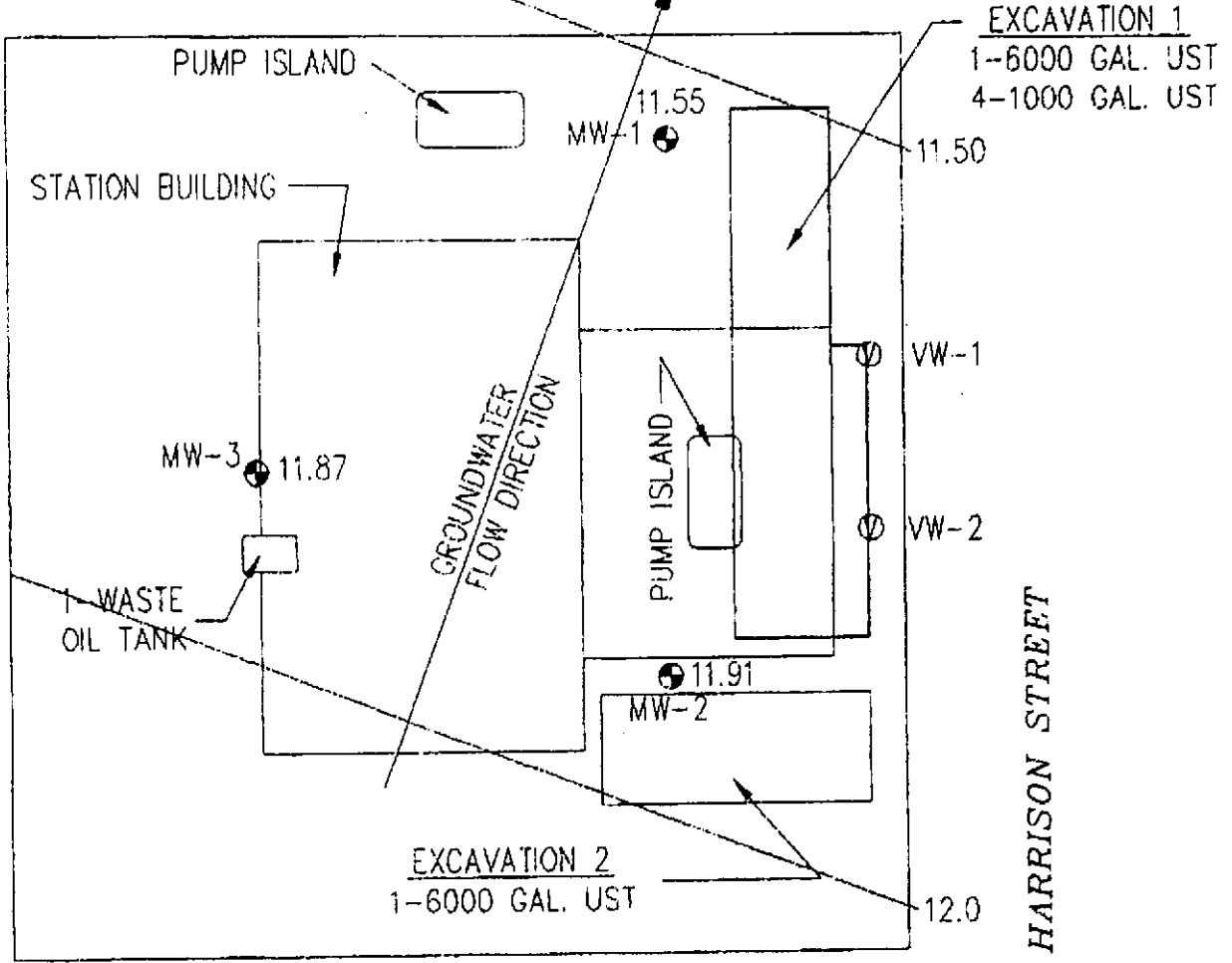
SCALE: 1" = 2200'
 PROJECT # 93026.00
 DATE: SEPTEMBER 1994

DENNIS BATES ASSOCIATES, INC.

494 Alvarado Street, Suite B Monterey, CA. 93940
 1020 RAILROAD AVE. SUITE E. NOVATO, CA. 94945

FIGURE:
1

SEVENTH STREET



EXPLANATION

— 12.0 — GROUNDWATER ELEVATION CONTOURS (ELEVATIONS MEASURED ON 9/7/94)



TITLE: SITE PLAN SHOWING EXCAVATIONS, MONITORING WELL LOCATIONS & GROUNDWATER FLOW DIRECTION SITE: OAKLAND AUTO PARTS ADDRESS: 706 HARRISON STREET, OAKLAND, CA.	SCALE: 1 INCH = 20 FEET
	PROJECT # 93026.00
	DATE: SEPTEMBER 1994

DENNIS BATES ASSOCIATES, INC.
 494 Alvarado Street, Suite B Monterey, CA. 93940
 1020 RAILROAD AVE. SUITE E, NOVATO, CA. 94945

FIGURE:
2

TABLE 1

SUMMARY OF DEPTHS TO GROUNDWATER
AND
GROUNDWATER ELEVATIONS ABOVE MEAN SEA LEVEL

WELL	DATE	DEPTH TO GROUND WATER	TOC ELEVATION AMSL	GROUNDWATER ELEVATION AMSL
MW1	08/10/93	17.1	29.15	12.05
MW2	08/10/93	17.05	30.51	13.46
MW3	08/10/93	16.9	29.77	12.87
MW1	08/13/93	17.4	29.15	11.75
MW2	08/13/93	17.05	30.51	13.46
MW3	08/13/93	17.05	29.77	12.72
MW1	12/14/93	17.27	29.15	11.88
MW2	12/14/93	18.28	30.51	12.23
MW3	12/14/93	17.7	29.77	12.07
MW1	4/15/94	17.00	29.15	12.15
MW2	4/15/94	18.10	30.51	12.41
MW3	4/15/94	17.40	29.77	12.37
MW1	9/7/94	17.6	29.15	11.55
MW2	9/7/94	18.6	30.51	11.91
MW3	9/7/94	17.9	29.77	11.87

TABLE 2

SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES

TPH AS GASOLINE (TPHg)
 BENZENE (B), TOLUENE (T), ETHYL BENZENE (EB), XYLENES (X)
 ALL RESULTS REPORTED IN MICROGRAMS/LITER (µg/L)

ppb

WELL	DATE	TPHg	B	T	EB	X
MW1	08/13/93	20,000	8,500	640	280	440
MW1	12/14/93	17,000	9,200	1,200	4400	540
MW1A	12/14/93	12,000	6,400	360	330	200
MW1	4/15/94	9,500	3,600	530	160	280
MW1	9/7/94	3,500 ✓	3,500 ✓	400	150	200
MW2	08/13/93	34,000	6,800	10,000	740	3,900
MW2	12/14/93	16,000	3,200	4,200	500	1,700
MW2	4/15/94	23,000	2,500	4,200	470	1,800
MW2	9/7/94	3,500 ✓	7,400 ✓	9,800	870	4,200
MW3	08/13/93	ND	ND	ND	ND	ND
MW3	12/14/93	ND	ND	ND	ND	ND
MW3	4/15/94	ND	ND	ND	ND	ND
MW3	9/7/94	ND /	ND /	ND	ND	ND

MW1 on 12/14/93 was collected using the 12 VOC submersible pump.

MW1A on 12/14/93 was collected using a disposable bailer immediately after MW1 was collected.

ND = NOT DETECTED AT THE METHOD REPORTING LIMIT

NA = NOT ANALYZED

NS = NOT SAMPLED

TABLE 3

PRODUCT THICKNESS MEASUREMENTS
AT VW1 AND VW2

706 HARRISON STREET, OAKLAND, CA

DATE	VW1 (INCHES)	VW2 (INCHES)
MAY 26, 1994	1/4	4 1/4
JUNE 9, 1994	0	1/2
JUNE 23, 1994	0	0
JULY 22, 1994	0	3/8
AUGUST 9, 1994	0	1/4
SEPTEMBER 7, 1994	0	

C:\OAKLAND\A\O28\TABL3.DOC

APPENDIX A
SAMPLING DATA SHEETS



DATE: 5 9 0 7 9 4
 PROJECT #:
 CLIENT: Bo Gin

DAILY FIELD RECORD

DIRECT CHARGES		
COMPANY VEHICLE/HOUR	4	VISQUENE
COMPANY VEHICLE/DAY		HANBY-HNU/SAMPLE
AUTO/TRUCK PER MILE		OVM/HOUR
DRUMS		OVM/DAY
LOCKS		PERISTALTIC PUMP/WELL
BRASS LINERS AND CAPS		SAMPLING PUMP/EACH
BAILERS		
2" WELL CAP		
4" WELL CAP		
TUBING (FEET)	60	

TIME OF JOB: ___ a.m./p.m. TO ___ a.m./p.m. WIND:
 WEATHER: TEMP:

NAME	COMPANY/AGENCY	TIME IN	TIME OUT
E. Vaneh	DBA	11:30	1400
B. Gin		11:30	1400

TIME	LOCATION OF WORK, WORK PERFORMED, FIELD EQUIPMENT USED, ETC.
1130	Met Bo Still changing subsense every 2-3 days For last ch week, very slight product in VW2, VW1 still clean
1200	Calibrated pH meter, started purging/ sampling MW3, MW1, MW2
1400	Measured VW1 - no floating product VW2 - '18 product Left site

APPENDIX B
LABORATORY ANALYTICAL SHEETS

RECEIVED
SEP 21 1994

September 19, 1994

Ms. Eva Vanek
Dennis Bates Associates, Inc.
1020 Railroad Ave, Suite E
Novato, CA 94945

RE: PACE Project No. 440907.502
Client Reference: BOK 6th

Dear Ms. Vanek:

Enclosed is the report of laboratory analyses for samples received
September 07, 1994.

Footnotes are given at the end of the report.

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

Sincerely,



Ronald M. Chew
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

Dennis Bates Associates, Inc.
 1020 Railroad Ave, Suite E
 Novato, CA 94945

September 19, 1994
 PACE Project Number: 440907502

Attn: Ms. Eva Vanek

Client Reference: BOK 6th

PACE Sample Number:
 Date Collected:
 Date Received:
 Client Sample ID:
 Parameter

70 0389550
 09/07/94
 09/07/94
 MW 1 ✓

Units MDL DATE ANALYZED

ORGANIC ANALYSIS

PURGEABLE FUELS AND AROMATICS

TOTAL FUEL HYDROCARBONS, (LIGHT):

Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	-	09/15/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			3900 ✓	09/15/94
Benzene	ug/L	25	-	09/15/94
Toluene	ug/L	0.5	3400 ✓	09/15/94
Ethylbenzene	ug/L	0.5	400	09/15/94
			150	09/15/94
Xylenes, Total	ug/L	0.5	200	09/15/94

Ms. Eva Vanek
 Page 2

September 19, 1994
 PACE Project Number: 440907502

Client Reference: BOK 6th

PACE Sample Number:
 Date Collected:
 Date Received:
 Client Sample ID:
 Parameter

70 0389569
 09/07/94
 09/07/94
 MW 2 ✓

Units MDL DATE ANALYZED

ORGANIC ANALYSIS

PURGEABLE FUELS AND AROMATICS

TOTAL FUEL HYDROCARBONS, (LIGHT):			-	09/15/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	5000	38000 ✓	09/15/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	09/15/94
Benzene	ug/L	50	7400 ✓	09/15/94
Toluene	ug/L	50	9800	09/15/94
Ethylbenzene	ug/L	50	870	09/15/94
Xylenes, Total	ug/L	50	4200	09/15/94

Ms. Eva Vanek
 Page 3

September 19, 1994
 PACE Project Number: 440907502

Client Reference: BOK 6th

PACE Sample Number:
 Date Collected:
 Date Received:
 Client Sample ID:

70 0389577
 09/07/94
 09/07/94
 MW 3 ✓

<u>Parameter</u>	<u>Units</u>	<u>MDL</u>		<u>DATE ANALYZED</u>
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ORGANIC ANALYSIS

PURGEABLE FUELS AND AROMATICS

TOTAL FUEL HYDROCARBONS, (LIGHT):			-	09/15/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND ✓	09/15/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	09/15/94
Benzene	ug/L	0.5	ND ✓	09/15/94
Toluene	ug/L	0.5	ND	09/15/94
Ethylbenzene	ug/L	0.5	ND	09/15/94
Xylenes, Total	ug/L	0.5	ND	09/15/94

These data have been reviewed and are approved for release.


 Darrell C. Cain
 Regional Director

Ms. Eva Vanek
Page 4

FOOTNOTES
for pages 1 through 3

September 19, 1994
PACE Project Number: 440907502

Client Reference: BOK 6th

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

Ms. Eva Vanek
Page 5

QUALITY CONTROL DATA

September 19, 1994
PACE Project Number: 440907502

Client Reference: BOK 6th

PURGEABLE FUELS AND AROMATICS

Batch: 70 34052

Samples: 70 0389550, 70 0389569, 70 0389577

METHOD BLANK:

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

SPIKE AND SPIKE DUPLICATE:

Parameter	Units	MDL	700389577		Spike		RPD
			MW 3	Spike	Spike Recv	Dupl Recv	
Benzene	ug/L	0.5	ND	100	105%	105%	0%
Toluene	ug/L	0.5	ND	100	104%	103%	1%
Ethylbenzene	ug/L	0.5	ND	100	99%	98%	1%
Xylenes, Total	ug/L	0.5	ND	300	105%	104%	1%

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference		Dupl		RPD
			Value	Recv	Recv	Recv	
Benzene	ug/L	0.5	100	106%	107%	107%	1%
Toluene	ug/L	0.5	100	104%	106%	106%	2%
Ethylbenzene	ug/L	0.5	100	99%	101%	101%	2%
Xylenes, Total	ug/L	0.5	300	106%	107%	107%	1%

Ms. Eva Vanek
Page 6

FOOTNOTES
for page 5

September 19, 1994
PACE Project Number: 440907502

Client Reference: BOK 6th

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



440907.502

17894

**CHAIN-OF-CUSTODY RECORD
Analytical Request**

Client Dennis Bates Associates, Inc
 Address 1020 Railroad Ave, Suite E
Novato, CA - 94945
 Phone (415) 892 4131

Report To: DBA
 Bill To: DBA
 P.O. # / Billing Reference 93026
 Project Name / No. BUKGIN

Pace Client No. _____
 Pace Project Manager _____
 Pace Project No. _____
 *Requested Due Date: STD

Sampled By (PRINT): J Sammons / E. Vanek
 Sampler Signature [Signature] Date Sampled 9/7/94

NO. OF CONTAINERS	PRESERVATIVES				ANALYSES REQUEST
	UNPRESERVED	H ₂ SO ₄	HNO ₃	VOA	
					<u>TPH6</u> <u>BTEX</u>

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PACE NO.	NO. OF CONTAINERS	UNPRESERVED	H ₂ SO ₄	HNO ₃	VOA	ANALYSES REQUEST	REMARKS
1	<u>mw1</u>	<u>1315</u>	<u>Water</u>	<u>38955.0</u>	<u>3</u>					<u>T</u>	
2	<u>mw2</u>	<u>1345</u>		<u>38956.9</u>	<u>3</u>					<u>X</u>	
3	<u>mw3</u>	<u>1245</u>		<u>38957.7</u>	<u>3</u>					<u>X</u>	
4											
5											
6											
7											
8											

COOLER NOS.	BAILERS	SHIPMENT METHOD		ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME
OUT / DATE	RETURNED / DATE							
					<u>E. Vanek</u>	<u>Dennis Bates</u>	<u>9/7</u>	<u>1510</u>

Additional Comments 5/2