



FACSIMILE MESSAGE

CHEVRON U.S.A. PRODUCTS COMPANY
Northwest Region
Marketing Department SR-2410 Camino Ramon

Mail Address: P.O. Box 5004, San Ramon, CA 94583-0804
(Street Address: 2410 Camino Ramon)

Reply by Facsimile: (510) 842-8252

Date: JANUARY 7, 1994

To: JENNIFER EBERLE Fax Number: 569-4757

ACHCS

From: Mark A. Miller Phone No.: (510) 842-8134

Site Assessment and Remediation Engineer

Subject: CHEVRON SS# 9-4587

609 OAK STREET, OAKLAND, CA

Comments: _____

FOLLOWING IS THE GROUND WATER EXTRACTION
SYSTEM STARTUP REPORT. DUE TO
ILLNESSES AND PROJECT TURNOVER AND SOME
UNFOUNDED DELAYS WITH MY CONSULTANT, THE
CARBON PROFILE FORMS WILL BE SENT OUT
ON MONDAY, JANUARY 10. I'LL MAKE SURE
THE CHANGEDOUT OCCURS EXPEDITIOUSLY FROM
THIS POINT ON.

NUMBER OF PAGES INCLUDING COVER SHEET 6

December 13, 1993
Project No. RC0113.002

Mr. Rodney Temples
Wastewater Control Representative
East Bay Municipal Utility District
P.O. Box 24055
Oakland, CA 94623-1055

(510) 287-1744

**SUBJECT: System Startup Report, Chevron U.S.A. Products Company Service Station
#9-4587, 609 Oak Street, Oakland, California.**

Dear Mr. Temples:

Geraghty & Miller, Inc. (Geraghty & Miller) is submitting this system startup report for the groundwater extraction and treatment system at the above-referenced site on behalf of our client, Chevron U.S.A. Products Company (Chevron). The sanitary sewer discharge permit for this system was issued September 15, 1993, under Account No. 502-79291. Written notification of the intent to start the system was submitted to Stan Archacki at East Bay Municipal Utility District (EBMUD) in Geraghty & Miller's letter dated July 20, 1993. The system was originally to be started on August 11, 1993 but, due to delays in obtaining final City of Oakland Building Department inspections, the startup was delayed until November 8, 1993. Approval to start the system was given by Safa Toma of EBMUD on November 8, 1993, during a telephone conversation with Geraghty & Miller. As described in Geraghty & Miller's Sewer Discharge Permit application dated December 1, 1992, the groundwater extraction and treatment system consists of a 1/2-horsepower (hp) electric submersible pump installed in Extraction Well CR-1 with extracted groundwater being treated by two 1,000-pound aqueous carbon vessels plumbed in series.

The permit conditions stipulate that samples are to be collected from the influent, intermediate, and effluent of the carbon system on a weekly basis for the first month of operation. These samples are to be submitted for analysis to a USEPA-certified laboratory for analysis of total petroleum hydrocarbons (TPH) as gasoline (USEPA Method 8015, modified) and benzene, toluene, ethylbenzene, and xylenes (BTEX) (USEPA Method 8020).

Samples were collected on November 8, 1993, approximately 1 hour after startup, at a flow rate of approximately 5 gallons per minute (gpm). These samples were submitted to the



laboratory on a 24-hour turnaround and analyzed for the constituents described above. The analytical results indicated that concentrations of dissolved TPH as gasoline in the extracted groundwater were 110,000 micrograms per liter ($\mu\text{g/L}$). It was determined that, at this concentration and flow rate, hydrocarbon breakthrough of the aqueous carbon filter would occur more rapidly than anticipated. Therefore, a second complete set of samples was collected on November 11, in advance of the one-week interval, and again submitted to the laboratory on a 24-hour basis. The results of this second analysis indicated that, although the concentrations of dissolved petroleum hydrocarbons had decreased substantially (13,000 $\mu\text{g/L}$), the mass of hydrocarbons which had been adsorbed by the first carbon vessel might be near the loading capacity of the first carbon vessel. A third complete set of samples was collected on November 17, at which time the system was turned off pending analytical results. The results of this analysis indicated that the concentrations of petroleum hydrocarbons were continuing to decline (7,600 $\mu\text{g/L}$) and that the first carbon was near saturation.

Geraghty & Miller recommends that the first carbon vessel in the series be replaced prior to restarting the system. Upon restart, the system should be sampled on a weekly basis, with the first sampling submitted to the laboratory on a rapid turnaround basis. Although the flow rate during the initial 9 days of operation in November was approximately 5 gpm, it is expected that the long-term extraction rate will be 3 gpm, as originally proposed in the sewer discharge permit application. Should a higher flow rate be considered necessary to maintain hydraulic containment, a request for an increase in the sewer discharge capacity allotment will be submitted to EBMUD prior to operating at a sustained higher flow rate. It is expected that, if the flow rate is reduced to 3 gpm and the concentrations of TPH in the extracted groundwater remain at 7 ppm with a carbon loading efficiency of 5%, that the first aqueous carbon vessel would last for approximately 7 months. This calculation is shown below.

$$\frac{3 \text{ gal}}{\text{min}} \times \frac{43,200 \text{ min}}{\text{month}} \times \frac{7,000 \mu\text{g/L TPH}}{1,000,000,000 \mu\text{g/L H}_2\text{O}} \times \frac{100 \text{ lb carbon}}{5 \text{ lb TPH}} \times \frac{8.3 \text{ lb H}_2\text{O}}{\text{gal}} = \frac{150 \text{ lb carbon}}{\text{month}}$$

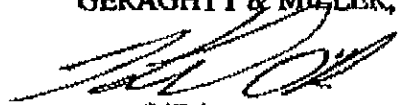
$$1,000 \text{ lb carbon} \times \frac{1 \text{ month}}{150 \text{ lb}} = 7 \text{ months}$$

Copies of the certified laboratory reports and the chain-of-custody documentation are included in Attachment 1. The volume of treated water discharged from system startup on November 8 to November 17, 1993, was 65,765 gallons. A summary of the totalizing flowmeter readings is presented in Table 1. Analytical results are presented in Table 2.

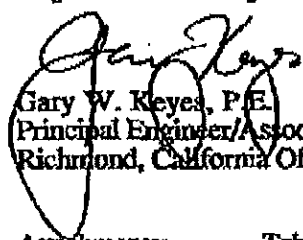
GERAGHTY & MILLER, INC.

If you have any questions regarding this matter, please contact the undersigned at (510) 233-3200.

Sincerely,
GERAGHTY & MILLER, INC.



Kent O'Brien
Project Scientist/Project Manager



Gary W. Keyes, P.E.
Principal Engineer/Associate
Richmond, California Office Manager

Attachments: Table 1 Flow Totalizer Readings
 Table 2 Groundwater Analytical Results

Attachment 1 Copies of Certified Laboratory Reports and
 Chain-of-Custody Documentation

cc: Mark Miller, Chevron U.S.A. Products Company

Project No. RC0113.002



Table 1: Flow Totalizer Readings
 Chevron Service Station #9-4587
 609 Oak Street, Oakland, California.

Date	Totalizer Reading (Gallons)	Gallons Discharged This Period	Cumulative Gallons	Days Since Previous Reading	Average Discharge Rate (GPM)	Notes
8-Nov-93	910 (a)	0	0	0	0	System startup
11-Nov-93	26,301	25,391	25,391	3	5.88	
17-Nov-93	66,675	40,374	65,765	6	4.67	

(a) Meter not zeroed when system began operation.

Table 2: System Analytical Results
 Chevron Service Station #9-4587
 609 Oak Street, Oakland, California.

Sample	Date	TPH as Gasoline (µg/L) (a)	Benzene (µg/L) (b)	Toluene (µg/L) (b)	Ethylbenzene (µg/L) (b)	Xylenes (µg/L) (b)
CARB 1 IN	8-Nov-93	110,000	9,000	11,000	1,600	9,100
CARB 1 IN	11-Nov-93	13,000	1,600	500	140	790
CARB 1 IN	17-Nov-93	7,600	1,500	270	100	490
CARB 2 IN	8-Nov-93	ND(<50)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<1.5)
CARB 2 IN	11-Nov-93	ND(<50)	ND(<0.5)	0.8	ND(<0.5)	ND(<1.5)
CARB 2 IN	17-Nov-93	97	9.0	2.3	1.0	7.1
CARB 2 OUT	8-Nov-93	ND(<50)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<1.5)
CARB 2 OUT	11-Nov-93	ND(<50)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<1.5)
CARB 2 OUT	17-Nov-93	ND(<50)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)
Trip Blank	8-Nov-93	ND(<50)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<1.5)
Trip Blank	11-Nov-93	ND(<50)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<1.5)
Trip Blank	17-Nov-93	ND(<50)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)

(a) Analyzed by USEPA Method 8015, modified.
 (b) Analyzed by USEPA Method 8020.

TPH Total petroleum hydrocarbons
 µg/L Micrograms per liter
 ND() Laboratory method detection limit; limit in parentheses

