

January 5, 1994

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**Chevron**

Ms. Jennifer Eberle  
Alameda County Health Care Services  
80 Swan Way, Room 200  
Oakland, CA 94621

**Chevron U.S.A. Products Company**  
2410 Camino Ramon  
San Ramon, CA 94583  
P.O. Box 5004  
San Ramon, CA 94583-0804

**Marketing Department**  
Phone 510 842 9500

**Re: Former Chevron Service Station #9-4816  
301 14th Street, Oakland**

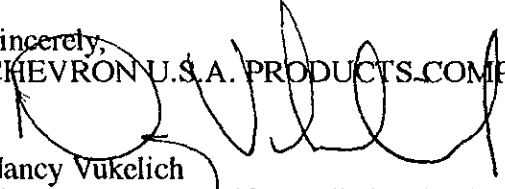
Dear Ms. Eberle:

Enclosed we are forwarding the Bimonthly Progress Report dated December 9, 1993, prepared by our consultant Weiss Associates (WA) for the above referenced site. This report presents an evaluation of the soil vapor extraction and treatment system operating at the referenced site during the period of October 1, 1993 to November 3, 1993. The system was shut down on September 30, 1993, due to failure of the centrifugal blower belts. The system was repaired after receipt of replacement belts from the manufacturer and subsequently recommenced operation on October 19, 1993. During this period approximately 82 lbs. of hydrocarbons were recovered resulting in a cumulative total recovery of 11,057 lbs.

As we agreed to in our conversation of December 16, 1993, I will contact you upon receipt of the ground water analytical data collected on December 20, 1993, to further canvass the issues discussed. I expect to receive informal results on January 7, 1994. In addition, we have instructed our consultant to conduct an aquifer test and also assess if a feasible location exists for installation of an additional well northwest (down-gradient) of C-5. As discussed, an aquifer test was not proposed due to our experience with installation of systems in similar geologic environments. Should the data collected from the aquifer test vary greatly from initial estimates, we will reevaluate extraction well placements and modify our well configuration accordingly.

If you have any questions or comments, please do not hesitate to contact me at (510) 842-9581.

Sincerely,  
CHEVRON U.S.A. PRODUCTS COMPANY

  
Nancy Vukelich  
Site Assessment and Remediation Engineer

Enclosure

cc: Mr. Rich Hiatt, RWQCB  
Mr. J.N. Robbins, CHVPKV/1156  
Ms B.C. Owen  
File (9-4816-11)

Ms. Beth D. Castleberry  
Ware & Freidenrich  
400 Hamilton Avenue  
Palo Alto, CA 94301-1825



**Weiss Associates**

5500 Shellmound Street, Emeryville, CA 94608-2411

Environmental and Geologic Services

Fax: 510-547-5043 Phone: 510-450-6000

DEC 10 1993 K.L.N.

December 9, 1993

Nancy Vukelich  
Chevron U.S.A. Products Company  
P.O. Box 5004  
San Ramon CA 94583-0804

Re: Bi-monthly Progress Report  
October through November 1993  
Former Chevron Service Station #9-4816  
301-14th Street  
Oakland, California  
WA Job #4-582-53

Dear Ms. Vukelich,

As you requested, Weiss Associates (WA) submits this bi-monthly report for the soil vapor extraction (SVE) and emission treatment system operating at the above-referenced site (Figure 1). The SVE and emission treatment system extracts hydrocarbon vapors from wells VEW1, VEW2, VEW3, CR1 and C5 (Figure 2) and consists of a water knockout drum, a 5-hp blower and three 1,000-lb granulated activated carbon (GAC) vessels connected in series.

On September 20, 1993, we restarted the SVE and emission treatment system. As required by the Bay Area Air Quality Management District (BAAQMD), we monitored the GAC vessels influent, midpoints, and effluent daily, Monday through Friday, for 2 weeks for vapor-phase hydrocarbons, shutting the system off on weekends. On September 30, the centrifugal blower belts failed, shutting down the system. On October 5, we presented the daily monitoring results and requested a monitoring frequency reduction from BAAQMD. On October 7, we received Permit to Operate (PTO) #8271 and permission from BAAQMD to monitor the system semi-monthly. On October 19, we restarted the system. As required by the PTO, we performed two O&M visits in November 1993. Data collected during these visits and the daily monitoring visits is presented in Table 1. As required by the PTO, we shut down the system on December 1 because our technician measured 10% of the influent hydrocarbon concentration to the second carbon vessel in its effluent. We are presently coordinating a carbon changeout for the first vessel and expect to restart the system in mid-December 1993.

WA will continue bi-monthly reporting and semi-monthly monitoring activities for the activated carbon system as specified by the BAAQMD permit.

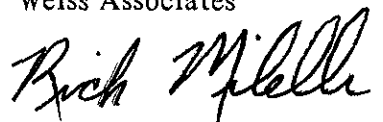
Nancy Vukelich  
December 9, 1993

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Please call if you have any questions or require additional information.

Sincerely,  
Weiss Associates



Rick Milelli  
Staff Engineer



Mike Cooke  
Project Geologist

MC:rjm

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Attachments:      Figure 1 - Site Location Map  
                         Figure 2 - Monitoring and Extraction Well Locations  
                         Table 1 - SVE System Performance and Total Hydrocarbon Removal

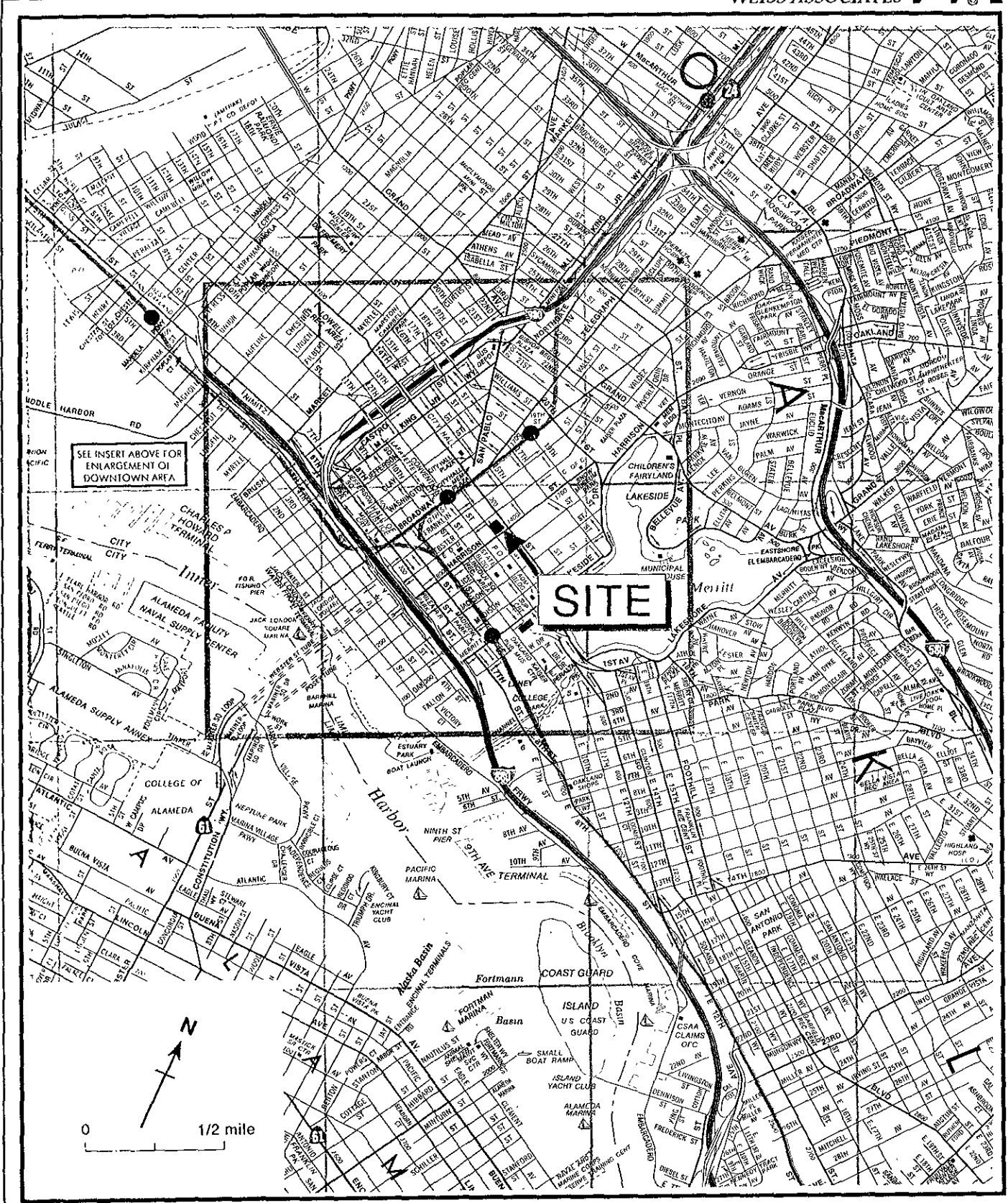


Figure 1. Site Location Map - Former Chevron Service Station #9-4816, 301 14th Street, Oakland, California

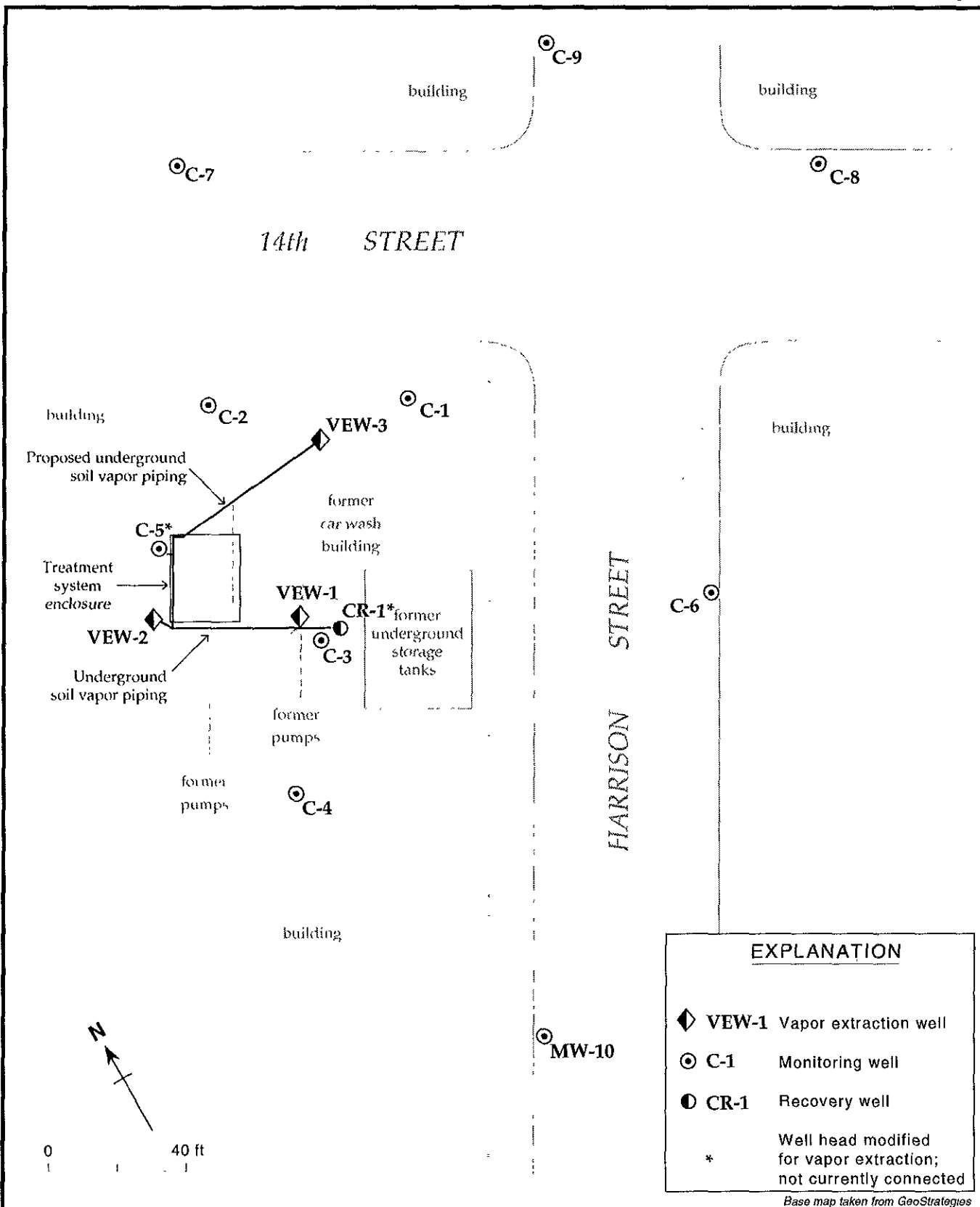


Figure 2. Monitoring and Extraction Well Locations - Former Chevron Service Station #9-4816, 301 14th Street, Oakland, California

Table 1. SVE System Performance and Total Hydrocarbon Removal, Former Chevron SS#9-4816, 301 14th Street, Oakland, California

Date	Extraction Well ID	Hours of Operation a	Total Well Gas Flow Rate (scfm)	Influent Conc. ppmv b	Removal Rate #TPH-G/hr c	Interval Average #TPH-G/hr	Interval Hours	Interval TPH-G Pound Removed	Cumulative Total Pounds TPH-G Removed
03/12/92	CR1/C5	5	4.9	>46,000	6.54	6.54	5	33	33
03/13/92	CR1/C5	23	4.9	>47,800	6.42	6.48	18	117	150
03/16/92	CR1/C5	98	4.9	>50,000	5.04	5.73	75	430	579
04/14/92	CR1/C5	790	5.1	2,550	2.71	3.88	692	2,682	3,261
05/12/92	CR1/C5	1,465	2.7	6,500	1.08	1.90	675	1,279	4,541
06/17/93	d CR1/C5/VEW1/VEW2	2,071	8.0	---	3.21	e 2.15	606	1,300	5,841
06/19/92	CR1/C5/VEW1/VEW2	2,077	25.6	2,100	3.75	3.75	6	23	5,864
07/20/92	CR1/C5/VEW1/VEW2	2,422	31.0	900	3.15	3.45	345	1,190	7,054
08/24/92	VEW1/VEW2	3,204	31.4	---	0.45	1.80	782	1,408	8,462
09/21/92	VEW1/VEW2	3,852	37.6	15,740	0.90	0.68	648	437	8,899
10/16/92	f VEW1/VEW2	4,400	40.0	---	0.90	0.90	548	493	9,392
11/02/92	g VEW1/VEW2	4,400	30.2	1,330	3.80	3.80	171	650	10,041
11/09/92	f VEW1/VEW2	4,571							
11/16/92	g VEW1/VEW2	4,571							
11/23/92	f VEW1/VEW2	4,766	35.5	450	0.62	0.62	195	121	10,162
12/15/92	VEW1/VEW2	4,942	33.0	---	0.00	0.31	313	97	10,259
01/11/93	VEW1/VEW2/CR1	5,255	30.0	---	1.40	0.70	563	394	10,653
02/08/93	VEW1/VEW2/CR1	5,818	18.0	251	0.22	0.13	462	61	10,714
03/18/93	VEW1/VEW2/CR1	6,280	20.1	200	0.042	0.054	446	24	10,738
04/13/93	VEW1/VEW3/CR1/C5	6,726	12.5	515	0.067	0.033	446	15	10,753

--- Table 1 continues on next page ---

Table 1. SVE System Performance and Total Hydrocarbon Removal, Former Chevron SS#9-4816, 301 14th Street, Oakland, California

Date	Extraction Well ID	Hours of Operation a	Total Well Gas Flow Rate (scfm)	Influent Conc. ppmv b	Removal Rate #TPH-G/hr c	Interval Average #TPH-G/hr c	Interval Hours	Interval TPH-G Pound Removed	Cumulative Total Pounds TPH-G Removed
***** SVE System switched from internal combustion engine to carbon absorption for emission abatement *****									
09/20/93	VEW1/VEW2/VEW3/CR1/C5	1	38.6	21,900	11.3	11.3	1	11.3	10,765
09/21/93	VEW1/VEW2/VEW3/CR1/C5	20	41.0	5,418	3.0	7.1	19	135.6	10,900
09/22/93	VEW1/VEW2/VEW3/CR1/C5	49	40.1	839	0.4	1.7	29	49.6	10,950
09/23/93	VEW1/VEW2/VEW3/CR1/C5	67	41.0	671	0.4	0.4	18	7.4	10,957
09/24/93	VEW1/VEW2/VEW3/CR1/C5	68	39.3	622	0.3	0.3	29	10.1	10,967
09/27/93	VEW1/VEW2/VEW3/CR1/C5	69	41.5	540	0.3	0.3	1	0.3	10,968
09/28/93	VEW1/VEW2/VEW3/CR1/C5	91	43.2	191	0.1	0.2	22	4.5	10,972
09/29/93	VEW1/VEW2/VEW3/CR1/C5	118	42.9	146	0.1	0.1	27	2.6	10,975
11/03/93	g VEW1/VEW2/VEW3/CR1/C5	477	41.3	204	0.1	0.1	359	35.2	11,010
11/17/93	VEW1/VEW2/VEW3/CR1/C5	813	34.4	140	0.1	0.1	336	29.7	11,040
12/01/93	h VEW1/VEW2/VEW3/CR1/C5	1,149	31.0	90	0.04	0.1	336	17.1	11,057

Notes:

a = Total hours of engine operation equals engine hours on computer printout minus 3050 hours.

b = Measured by flame ionization detector (FID).

c = removal rate (lbs/hr) = total well gas flow (scfm) \* influent concentration (ppmv)/1,000,000 \* 86 lbs TPH-G/lb-mole \* 60 min/hr \* 1lb-mole/386 ft<sup>3</sup>

d = First day of system operation with the two new vapor extraction wells (installed June 11, 1992).

e = Calculated estimates based on concentrations in samples collected June 12, 1992.

f = System shutdown upon departure to re-equilibrate subsurface vapors.

g = System restarted.

h = System shutdown due to breakthrough of the second carbon vessel.

scfm = Standard cubic feet per minute.

ppmv = Parts per million by volume.

# = Pounds

TPH-G = Total petroleum hydrocarbons as gasoline.