



VAC

1651 Alvarado Street, San Leandro, CA 94577-2636
Tel (510) 351-8900 □ Fax (510) 351-0221

August 26, 1998

Phil Briggs
Chevron Products Company
6001 Bollinger Canyon Road
Bldg. L, Room 1110
P.O. Box 5004
San Ramon, CA 94583-0804

Subject: July Operations Report
Former Chevron 9-0260
21995 Foothill Boulevard, Hayward

Dear Phil:

Terra Vac is pleased to submit the July Operations Report for the former Chevron Station located at 21995 Foothill Boulevard, Hayward. We restarted the system on July 16 and extraction rates have continued to increase since then. The enclosed report includes operating data, duration, rates of hydrocarbon removal and cumulative pounds removed to date.

If you have any questions, please do not hesitate to call me at (510) 351-8900.

Sincerely,


Robert A. Dahl
Project Manager

cc: 30-0236.20



**JULY 1998 OPERATIONS REPORT
FORMER CHEVRON STATION 9-0260
21995 FOOTHILL BOULEVARD
HAYWARD, CALIFORNIA**

1.0 Background

At the request of Chevron Products Company, Terra Vac is operating a soil and groundwater remediation system at the subject site (Figure 1). Existing monitoring wells have been incorporated into the Dual Vacuum Extraction system design in addition to the installation of fifteen DVE wells. The purpose of this report is to provide data on system operation for the month of July, 1998.

2.0 Operations

Initial soil vapor extraction operations began on October 13, 1996. Data collected for operations conducted from startup through July 31 of 1998 are shown in Table 1. Due to the reduction in efficiency of the DVE system caused by high groundwater, the system was operated only briefly between April and mid-July. Groundwater reached the highest elevation recorded at the site during this time period. By July 16th, the groundwater level had dropped sufficiently that operations could be resumed.

Up to July 31, 1998, the dual vapor extraction system has accounted for the removal of a total of approximately 18,000 pounds of hydrocarbons. Chart 1 shows hydrocarbon removal rates, with the significant dropoff evident from day 100 to day 130, during the period winter storms and high groundwater levels. Chart 2 shows the cumulative hydrocarbon mass removal over time.

3.0 Groundwater Treatment

During this operating period, approximately 68,000 gallons of groundwater have been extracted with the DVE system, treated with carbon, polished with alumina and discharged to the sewer. Sampling of the discharge, as required by the Ora Loma Sanitary District, has been conducted and the results transmitted. Appendix A contains laboratory reports for the monthly sampling for COD, Suspended Solids, pH and TPHg/BTEX, all of which were in compliance. TPHg/BTEX concentrations in the discharge stream remain below detection limits.

30-0236.20

August 20, 1998

4.0 Air Permit Compliance

The following table shows collection dates and results of inlet and exhaust vapor samples. All samples were obtained in tedlar bags and transported to the Terra Vac office to be analyzed by GC-FID. Destruction efficiency for the abatement unit was 99.9 percent. Average flow was 327 scfm. Benzene was below detection limits for the sampling events.

Date	Inlet, TPH mg/l (ppmv)	Exhaust, TPH mg/l	Destruction Efficiency (%)
7/17/98	3.47mg/l(1041 ppm)	0.001(0.3)mg/l	99.9

Table 1, Remediation System Operations Data
Former Chevron Service Station 9-0260
21995 Foothill Blvd.
Hayward, California

Date	Mode	run time (days)	bed temp.	delta temp.	flow (scfm)	LEL	#/day	total pounds
13 Oct 97	standby	0.0	1729	0	0	0.0%		0
14 Oct 97	#REF!	1.0	#REF!	#REF!	#REF!	#REF!	144	144
15 Oct 97	run	2.0	1885	145	437	6.4%	134	278
16 Oct 97	run	3.0	1891	136	440	6.4%	128	405
17 Oct 97	run	4.0	1883	192	401	10.5%	160	565
18 Oct 97	run	5.0	1878	210	404	11.6%	172	737
19 Oct 97	run	6.0	1880	205	409	11.2%	171	908
20 Oct 97	run	7.0	1880	193	414	10.6%	164	1,072
21 Oct 97	run	8.0	1880	267	448	14.5%	238	1,310
22 Oct 97	run	9.0	1888	259	460	13.6%	233	1,543
23 Oct 97	run	10.0	1890	227	462	12.1%	208	1,751
24 Oct 97	run	11.0	1889	210	464	11.3%	195	1,946
25 Oct 97	run	12.0	1893	195	460	9.6%	180	2,126
26 Oct 97	run	13.0	1895	185	463	9.3%	174	2,299
27 Oct 97	run	14.0	1896	176	463	9.0%	166	2,465
28 Oct 97	shutdown	14.5	1833	0	0		185	2,558
29 Oct 97	startup	15.4	1873	303	512	15.7%	277	2,801
30 Oct 97	down/up	16.3	1884	212	476	12.3%	237	3,018
31 Oct 97	run	17.3	1885	192	463	11.3%	179	3,197
1 Nov 97	shutdown	17.6	1803	0	0		175	3,255
2 Nov 97	standby	17.6	1739	0	0			3,255
3 Nov 97	standby	17.6	1748	0	0			3,255
4 Nov 97	up/down	17.9	1792	0	0		139	3,295
5 Nov 97	up/down	18.0	1758	0	0			3,323
6 Nov 97	up/down	18.5	1843	0	0		186	3,417
7 Nov 97	up/down	19.0	1847	0	0		218	3,525
8 Nov 97	startup	19.9	1879	184	502	10.4%	179	3,682
9 Nov 97	run	20.9	1890	171	476	9.9%	165	3,847
10 Nov 97	run	21.9	1896	156	472	9.5%	153	4,000
11 Nov 97	run	22.9	1894	156	472	9.9%	153	4,153
12 Nov 97	run	23.9	1894	154	476	9.5%	152	4,305
13 Nov 97	shutdown	24.5	1843	0	0		153	4,394
14 Nov 97	up/down	24.7	1779	0	0			4,414
15 Nov 97	startup	25.4	1863	188	492	11.8%	171	4,543
16 Nov 97	shutdown	26.4	1894	0	0		179	4,714
17 Nov 97	standby	26.4	1731	0	0			4,714
18 Nov 97	startup	27.2	1863	244	502	13.7%	215	4,885
19 Nov 97	run	28.2	1885	157	465	9.2%	149	5,033
20 Nov 97	run	29.2	1893	123	467	8.1%	124	5,157
21 Nov 97	shutdown	29.3	1726	0	0			5,167
22 Nov 97	startup	29.9	1863	135	481	8.2%	118	5,246
23 Nov 97	run	30.9	1883	131	479	8.8%	133	5,379
24 Nov 97	run	31.9	1892	132	481	8.8%	134	5,513
25 Nov 97	run	32.9	1883	307	429	19.7%	253	5,767

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Hayward, California

Date	Mode	run time (days)	bed temp.	delta temp.	flow (scfm)	LEL	#/day	total pounds
26 Nov 97	run	33.9	1878	436	396	26.6%	328	6,095
27 Nov 97	run	34.9	1879	452	386	27.1%	331	6,426
28 Nov 97	run	35.9	1878	398	390	23.6%	296	6,722
29 Nov 97	run	36.9	1876	364	391	21.6%	273	6,995
30 Nov 97	run	37.9	1870	345	389	20.6%	260	7,255
1 Dec 97	shutdown	38.6	1860	0	0		226	7,415
2 Dec 97	startup	39.5	1886	55	502	4.2%	95	7,498
3 Dec 97	run	40.5	1883	55	495	5.0%	69	7,568
4 Dec 97	run	41.5	1883	54	488	5.1%	68	7,636
5 Dec 97	shutdown	41.7	1680	0	0			7,647
6 Dec 97	standby	41.7	1740	0	0			7,647
7 Dec 97	standby	41.7	1688	0	0			7,647
8 Dec 97	standby	41.7	1734	0	0			7,647
9 Dec 97	startup	42.4	1863	118	437	9.6%	82	7,705
10 Dec 97	shutdown	42.8	1824	0	0		126	7,758
11 Dec 97	startup	43.5	1853	157	427	12.1%	126	7,842
12 Dec 97	run	44.5	1870	215	444	14.0%	194	8,035
13 Dec 97	run	45.5	1883	259	448	15.7%	228	8,263
14 Dec 97	run	46.5	1884	259	446	15.8%	226	8,490
15 Dec 97	run	47.5	1880	263	448	16.4%	231	8,721
16 Dec 97	run	48.5	1881	253	444	15.7%	220	8,942
17 Dec 97	run	49.5	1881	244	446	15.4%	215	9,157
18 Dec 97	run	50.5	1878	255	450	16.0%	226	9,383
19 Dec 97	run	51.5	1879	259	451	15.9%	230	9,613
20 Dec 97	run	52.5	1881	264	458	15.9%	236	9,849
21 Dec 97	run	53.5	1881	264	459	16.0%	236	10,085
22 Dec 97	run	54.5	1881	258	456	15.8%	230	10,315
23 Dec 97	run	55.5	1878	314	452	19.5%	276	10,591
24 Dec 97	run	56.5	1871	367	443	22.2%	310	10,901
25 Dec 97	run	57.5	1869	363	447	22.2%	309	11,210
26 Dec 97	shutdown	57.9	1831	0	0		310	11,352
27 Dec 97	standby	57.9	1751	0	0			11,352
28 Dec 97	standby	57.9	1727	0	0			11,352
29 Dec 97	standby	57.9	1747	0	0			11,352
30 Dec 97	startup	58.6	1838	308	447	19.9%	221	11,509
31 Dec 97	run	59.6	1854	324	441	20.2%	276	11,784
1 Jan 98	run	60.6	1863	351	448	21.6%	302	12,086
2 Jan 98	run	61.6	1864	359	451	22.3%	309	12,396
3 Jan 98	run	62.6	1863	356	448	22.2%	305	12,701
4 Jan 98	run	63.6	1861	351	449	21.9%	301	13,002
5 Jan 98	run	64.6	1861	339	443	21.2%	288	13,289
6 Jan 98	run	65.6	1861	309	441	19.6%	263	13,552
7 Jan 98	run	66.6	1862	292	438	18.7%	248	13,800

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Hayward, California

Date	Mode	run time (days)	bed temp.	delta temp.	flow (scfm)	LEL	#/day	total pounds
8 Jan 98	run	67.6	1863	280	445	18.2%	243	14,043
9 Jan 98	run	68.6	1863	269	441	17.7%	231	14,275
10 Jan 98	run	69.6	1862	264	434	17.7%	226	14,500
11 Jan 98	run	70.6	1860	258	432	17.6%	219	14,720
12 Jan 98	run	71.6	1870	155	471	11.9%	145	14,865
13 Jan 98	run	72.6	1880	75	485	8.2%	86	14,951
14 Jan 98	run	73.6	1870	59	475	7.1%	71	15,022
15 Jan 98	run	74.6	1843	72	369	10.7%	68	15,090
16 Jan 98	run	75.6	1838	94	324	10.8%	75	15,165
17 Jan 98	run	76.6	1834	80	337	10.1%	70	15,234
18 Jan 98	down/up	77.3	1817	80	324	11.3%	66	15,278
19 Jan 98	shutdown	77.9	1801	60	0		56	15,314
20 Jan 98	startup	78.8	1802	35	296	8.0%	44	15,351
21 Jan 98	run	79.8	1809	45	324	8.6%	48	15,399
22 Jan 98	run	80.8	1829	60	337	9.5%	58	15,456
23 Jan 98	run	81.8	1834	67	339	9.6%	62	15,518
24 Jan 98	run	82.8	1834	73	339	10.2%	65	15,584
25 Jan 98	run	83.8	1835	99	339	11.4%	82	15,665
26 Jan 98	down/up	84.6	1834	124	365	11.8%	95	15,745
27 Jan 98	down/up	85.4	1830	124	338	12.1%	98	15,826
28 Jan 98	down/up	86.3	1833	126	339	12.7%	96	15,907
29 Jan 98	run	87.3	1837	122	345	12.7%	96	16,003
30 Jan 98	run	88.3	1845	124	355	12.2%	99	16,102
31 Jan 98	run	89.3	1847	113	348	11.7%	91	16,194
1 Feb 98	run	90.3	1845	110	353	11.7%	90	16,284
2 Feb 98	run	91.3	1843	107	348	11.7%	87	16,371
3 Feb 98	run	92.3	1842	96	334	11.5%	78	16,450
4 Feb 98	shutdown	92.4	1727	0	0			16,461
5 Feb 98	standby	92.4	1689	0	0			16,461
6 Feb 98	up/down	92.5	1679	0	0			16,471
7 Feb 98	startup	93.3	1683	19	311	7.3%	43	16,503
8 Feb 98	run	94.3	1708	17	324	7.2%	27	16,531
9 Feb 98	run	95.3	1708	20	332	7.2%	36	16,567
10 Feb 98	run	96.3	1709	22	343	7.0%	24	16,592
11 Feb 98	shutdown	96.4	1744	0	0			16,596
12 Feb 98	standby	96.4	1738	0	0			16,596
13 Feb 98	standby	96.4	1679	0	0			16,596
14 Feb 98	startup	97.2	1739	8	296	6.7%	34	16,621
15 Feb 98	run	98.2	1709	11	299	6.8%	27	16,648
16 Feb 98	run	99.2	1708	11	299	6.8%	18	16,666
17 Feb 98	run	100.2	1709	10	298	6.8%	23	16,689

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Hayward, California

Date	Mode	run time (days)	bed temp.	delta temp.	flow (scfm)	LEL	#/day	total pounds
18 Feb 98	run	101.2	1707	11	300	7.2%	22	16,711
19 Feb 98	down/up	102.1	1733	25	324	9.3%	30	16,739
20 Feb 98	down/up	103.0	1775	28	339	8.5%	37	16,773
21 Feb 98	run	104.0	1782	28	324	9.2%	38	16,811
22 Feb 98	run	105.0	1788	29	323	9.2%	38	16,849
23 Feb 98	run	106.0	1783	28	316	9.2%	37	16,887
24 Feb 98	down/up	106.8	1759	39	333	9.5%	41	16,919
25 Feb 98	down/up	107.5	1751	35	329	10.0%	42	16,947
26 Feb 98	down/up	108.0	1750	38	324	9.4%	41	16,966
27 Feb 98	shutdown	108.3	1719	0	0		39	16,980
28 Feb 98	standby	108.3	1743	0	0			16,980
1 Mar 98	standby	108.3	1679	0	0			16,980
2 Mar 98	standby	108.3	1702	0	0			16,980
3 Mar 98	standby	108.3	1729	0	0			16,980
4 Mar 98	startup	109.0	1697	14	287	1.6%	18	16,993
5 Mar 98	run	110.0	1706	11	293	1.7%	9	17,003
6 Mar 98	run	111.0	1707	12	299	2.1%	14	17,017
7 Mar 98	run	112.0	1703	12	300	2.1%	14	17,031
8 Mar 98	run	113.0	1699	14	300	2.3%	10	17,041
9 Mar 98	run	114.0	1697	15	303	2.5%	4	17,044
10 Mar 98	run	115.0	1688	14	300	2.5%	7	17,051
11 Mar 98	run	116.0	1702	14	299	2.7%	3	17,054
12 Mar 98	run	117.0	1697	14	295	2.9%	3	17,057
13 Mar 98	run	118.0	1697	16	299	3.2%	5	17,063
14 Mar 98	run	119.0	1697	13	297	2.7%	4	17,067
15 Mar 98	run	120.0	1705	12	291	2.7%	4	17,071
16 Mar 98	run	121.0	1703	11	292	2.8%	3	17,074
17 Mar 98	run	122.0	1706	12	289	2.8%	7	17,081
18 Mar 98	shutdown	122.8	1711	0	0		4	17,084
19 Mar 98	standby	122.8	1732	0	0			17,084
20 Mar 98	standby	122.8	1720	0	0			17,084
21 Mar 98	standby	122.8	1683	0	0			17,084
22 Mar 98	standby	122.8	1704	0	0			17,084
23 Mar 98	standby	122.8	1730	0	0			17,084
15 Apr 98	startup	123.7	1686	0.00	273	2.6%	4	17,088
16 Apr 98	run	124.7	1708	1	264	2.5%	0	17,088
17 Apr 98	run	125.7	1703	0.40	262	2.9%	-4	17,084
18 Apr 98	run	126.7	1707	0	261	2.9%	0	17,084
19 Apr 98	run	127.7	1707	1	261	3.3%	-3	17,080
20 Apr 98	run	128.7	1706	1	260	3.5%	-1	17,079
21 Apr 98	run	129.7	1704	1	260	3.2%	6	17,085
22 Apr 98	shutdown	130.1	1703	0	0		14	17,091
23 Apr 98	standby	130.1	1741	0	0			17,091

Table 1, Remediation System Operations Data
Former Chevron Service Station 9-0260
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Hayward, California

Date	Mode	run time (days)	bed temp.	delta temp.	flow (scfm)	LEL	#/day	total pounds
24 Apr 98	standby	130.1	1744	0	0			17,091
25 Apr 98	standby	130.1	1701	0	0			17,091
26 Apr 98	standby	130.1	1688	0	0			17,091
27 Apr 98	standby	130.1	1701	0	0			17,091
28 Apr 98	standby	130.1	1722	0	0			17,091
29 Apr 98	startup	130.4	1736	23	301	4.2%	36	17,101
30 Apr 98	down/up	131.3	1707	18	296	4.8%	9	17,110
16 Jul 98	down/up	132.3	1767	28	313	8.5%	31	17,138
17 Jul 98	run	133.3	1778	31	302	8.4%	33	17,172
18 Jul 98	run	134.3	1811	52	310	9.4%	44	17,216
19 Jul 98	run	135.3	1827	74	311	10.4%	55	17,270
20 Jul 98	shutdown	136.1	1827	0	0		65	17,324
21 Jul 98	startup	136.4	1775	62	320	6.7%	59	17,344
22 Jul 98	shutdown	137.2	1831	96	0		61	17,392
23 Jul 98	startup	138.2	1835	110	339	12.6%	72	17,461
24 Jul 98	down/up	139.1	1836	125	330	13.2%	80	17,534
25 Jul 98	run	140.1	1838	120	327	12.7%	79	17,613
26 Jul 98	down/up	141.0	1834	121	312	13.5%	79	17,689
27 Jul 98	down/up	141.9	1828	121	339	12.7%	82	17,757
28 Jul 98	run	142.9	1838	119	339	12.2%	81	17,838
29 Jul 98	run	143.9	1845	111	347	11.9%	66	17,904
30 Jul 98	run	144.9	1846	112	347	12.3%	79	17,982
31 Jul 98	down/up	145.8	1841	159	348	14.0%	97	18,075

Chart 1, Mass Removal Rate

Chevron 0260
21995 Foothill Boulevard
Hayward

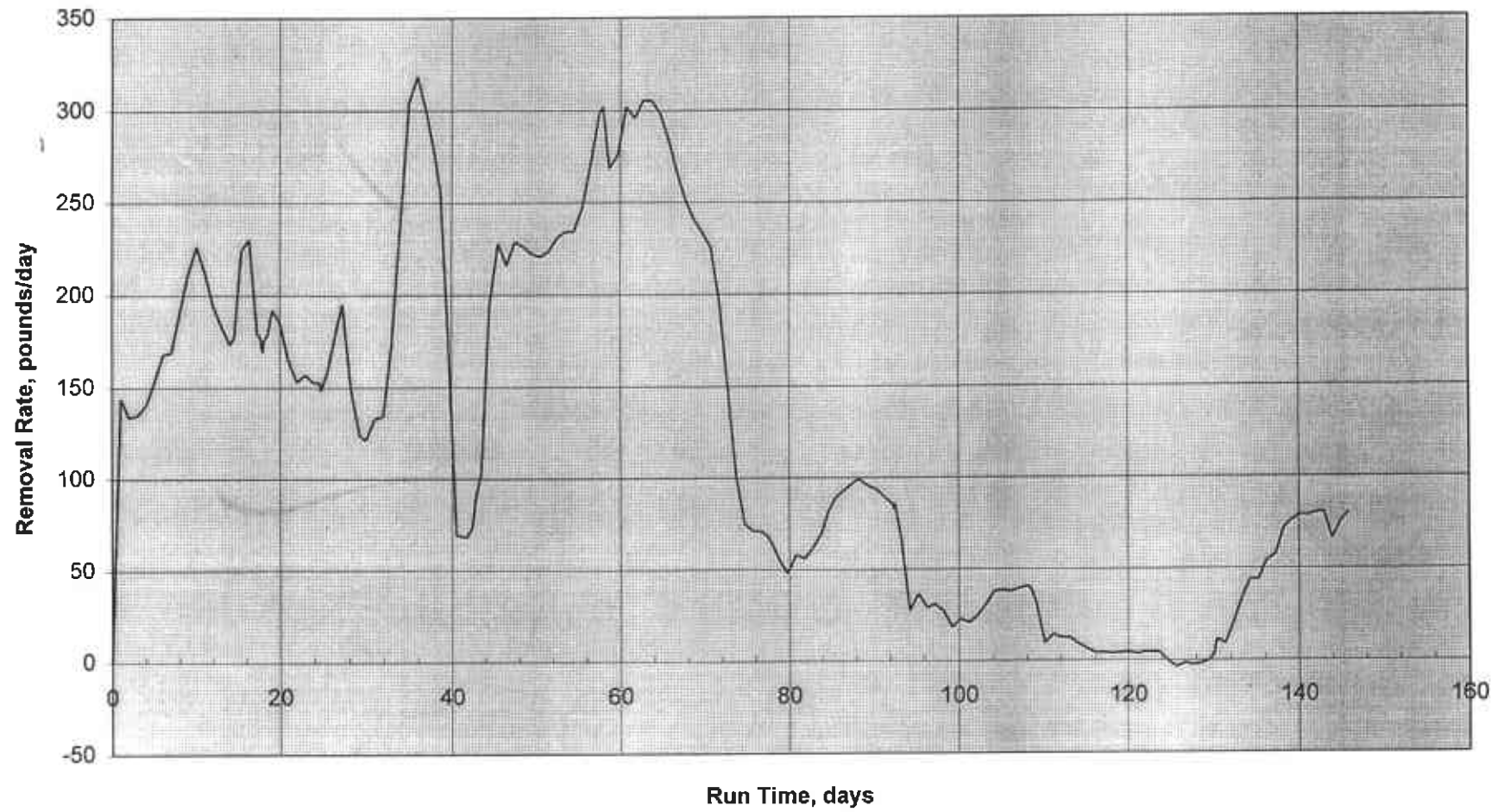
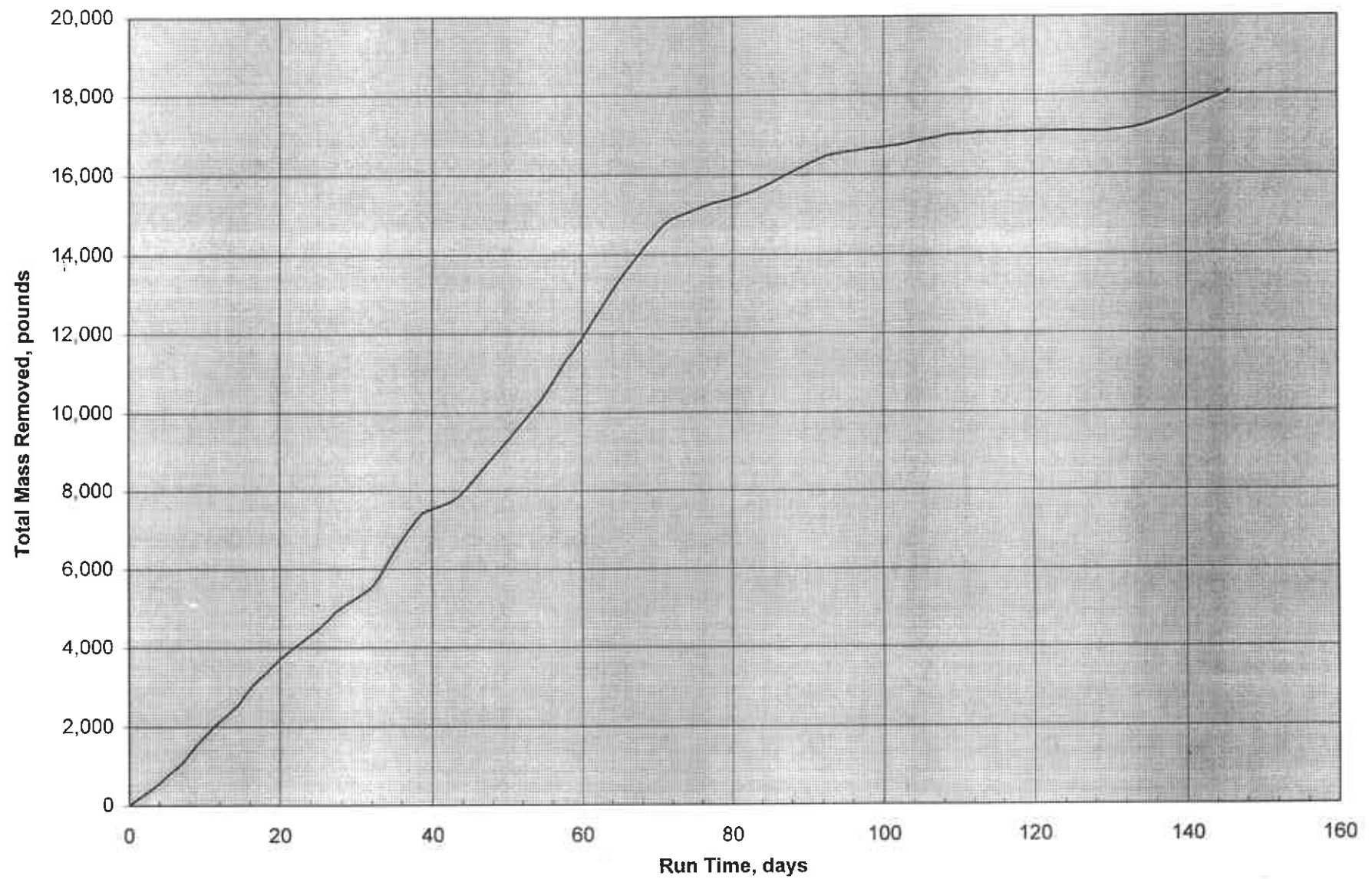


Chart 2, Cumulative Mass Removed

Chevron 0260
21995 Foothill Boulevard
Hayward





VAC

1651 Alvarado Street, San Leandro, CA 94577-2636
Tel (510) 351-8900 □ Fax (510) 351-0221

August 20, 1998

Attn: Ms. Susan Keach
Ora Loma Sanitary District
2600 Grant Avenue
San Lorenzo, CA 94580
FAX 510-276-1528

RE: Discharge flows, Permit 90-025-91
21995 Foothill Boulevard, Hayward

Dear Ms. Keach:

Please find attached a table showing total discharge flows at the above site. The system was shutdown between May and July 16 due to high groundwater.

Monthly samples were collected for TPHg/ BTEX, COD, SS and pH from the effluent discharge on August 4, 1998. The laboratory reports follow, indicating no detectable TPHg/BTEX in the discharge, COD of 74 mg/L, and non-detectable TSS. The pH was measured in the field at 7.35.

If you have any questions, please call me at (510) 351-8900.

Sincerely,
Terra Vac

Robert A. Dahl
Project Manager

cc: Phil Briggs, Chevron
file 30-0236.16.03



Table 1
Sewer Discharge Flows
Permit 90-025-91
Chevron Corporation
21995 Foothill Boulevard
Hayward, CA

Date	Totalizer Rdg.	Gallons discharged/month	Total gallons discharged
November 5, 1997	1,070,524	0	0
December 1, 1997	1,084,405	13,881	13,881
December 29, 1997	1,139,690	55,285	69,166
January 29, 1998	1,313,330	173,640	242,806
March 3, 1998	1,549,400	236,070	478,876
April 14, 1998	1,647,667	98,267	577,143
May 1, 1998	1,691,330	43,663	620,806
July 16, 1998	1,692,341		621,817
July 31, 1998	1,760,576	68,235	690,052

**Sequoia
Analytical**680 Chesapeake Drive
404 N. Wiger Lane
819 Striker Avenue, Suite B
1455 McDowell Blvd. North, Ste. DRedwood City, CA 94063
Walnut Creek, CA 94598
Sacramento, CA 95834
Petaluma, CA 94954(650) 364-9600
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(916) 921-9600
(707) 792-1855FAX (650) 364-9233
FAX (925) 988-9673
FAX (916) 921-0100
FAX (707) 792-0342Terra Vac
1651 Alvarado St.
San Leandro, CA 94577

Client Proj. ID: Chevron 9-0260, Hayward

Lab Proj. ID: 9808148

Sampled: 08/04/98
Received: 08/05/98
Analyzed: see below

Attention: Tony Dahl

Reported: 08/19/98

LABORATORY ANALYSIS

Analyte	Units	Date Analyzed	Detection Limit	Sample Results
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Lab No: 9808148-01
Sample Desc: LIQUID, Effluent

Chemical Oxygen Demand	mg/L	08/12/98	20	74
Total Suspended Solids	mg/L	08/10/98	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210Mike Gregory
Project Manager



**Sequoia
Analytical**

680 Chesapeake Drive
404 N. Wiger Lane
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FAX (707) 792-0342

Terra Vac
1651 Alvarado St.
San Leandro, CA 94577

Client Proj. ID: Chevron 9-0260, Hayward
Sample Descript: Effluent
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9808148-01

Sampled: 08/04/98
Received: 08/05/98

Attention: Tony Dahl

Analyzed: 08/17/98
Reported: 08/19/98

QC Batch Number: GC081798802002A
Instrument ID: HP-2

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas		
Benzene	50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:	0.50	N.D.
Surrogates		
Trifluorotoluene	Control Limits % 70 130	% Recovery 112

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1271


Mike Gregory
Project Manager

