EXCELTECH

FEBRUARY QUARTERLY REPORT GROUNDWATER SAMPLING AND ANALYSIS

FOR

FORMER SHELL STATION
7194 AMADOR VALLEY BOULEVARD
DUBLIN, CALIFORNIA

April 1990

Project No. 1826G
April 1990

Northern California Regional Office 41674 Christy Street, Fremont, CA 94538-3114 (415) 659-0404 Fax: (415) 651-4677

EXCELTECH

April 3, 1990

Shell Oil Company
1390 Willow Pass Road
Suite 900
Concord, California 94520

Attention: Ms. Diane Lundquist

Subject: February Quarterly Report
Groundwater Sampling and Analysis
Former Shell Station,
7194 Amador Valley Boulevard, Dublin, California
Project No. 1826G

Dear Ms. Lundquist:

This letter report presents the results of groundwater sampling and analyses performed at the subject site since the September 1989 quarterly report. It includes all current and past analytical data acquired at the site in the City of Dublin, Alameda County, California (Figure 1).

Groundwater Sampling

Groundwater samples were collected from 12 monitoring wells and one recovery well on and adjacent to the site according to Exceltech's groundwater sampling protocol (Appendix A). The groundwater purged from the wells and equipment rinse water was placed in Department of Transportation-approved drums and left on-site pending removal by a licensed hauler to the Shell refinery for recycling.

Laboratory Analyses

National Environmental Testing, Inc. (NET) located in Santa Rosa, California, a state-certified laboratory, analyzed the groundwater samples for the presence of total petroleum hydrocarbons as gasoline (TPHG); and benzene, toluene, ethyl benzene, and total xylenes (BTEX).

Summary of Laboratory Results

The results of the groundwater sampling and analyses are summarized in Table 1. The analytical reports from NET and chain-of-custody documents are attached in Appendix B. Hydrocarbon-related contamination was detected at least once in the three sampling events during the last quarter in eight of the 12 monitoring wells and in the recovery well (MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-10, and RW-1).

Discussion

Over the past several months a general decrease in hydrocarbon-related contamination levels has been observed in the groundwater samples collected from the monitoring wells at and adjacent to this site. Groundwater elevations obtained from depth to groundwater measurements obtained prior to sampling were used to generate groundwater elevation contour maps shown in Figures 2, 3, and 4.

Reporting Requirements

A copy of this report will be forwarded to the following agencies:

Alameda County Flood Control and
Water Conservation District, (Zone 7)
5997 Parkside Drive
Pleasanton, California 94566
Attention: Mr. Craig Mayfield
Water Resources Engineer

California Regional Water Quality
Control Board
San Francisco Bay Region
1800 Harrison Street, Suite 700
Oakland, California 94612-3429
Attention: Mr. Donald Dalke

Alameda County Health Care Services
Department of Environmental Health
Hazardous Materials Division
80 Swan Way, Suite 200
Oakland, California 94621
Attention: Mr. Gil Wistar
Hazardous Materials Specialist

Disclaimer

This report has been prepared solely for the use of Shell and any reliance on this report by third parties shall be as such party's sole risk.

Limitations

The discussion and recommendations presented in this report are based on the following:

1. The observations by field personnel.
2. The results of laboratory analyses performed by a state-certified laboratory.
3. Our understanding of the regulations of the State of California, Alameda County, and the City of Dublin.

It is possible that variations in the soil or groundwater conditions could exist beyond the points explored in this investigation. Also, changes in the groundwater conditions could occur at some time in the future due to variations in rainfall, temperature, regional water usage, or other factors.

The service performed by Exceltech has been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in the Dublin area. Please note that contamination of soil and groundwater must be reported to the appropriate agencies in a timely manner. No other warranty, expressed or implied, is made.

Exceltech includes in this report chemical analytical data from a state-certified laboratory. The analytical tests are performed according to procedures suggested by the U.S. EPA and State of California. Exceltech is not responsible for laboratory errors in procedure or result reporting.

If you have any questions or require additional information, please call.

Sincerely,
Exceltech

Richard A. Garlow, R.E.A. 1365
Project Geologist

Lawrence D. Pavlak, C.E.G. 1187
Senior Program Geologist

RAG/LDP/sr
Enclosures

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TABLE 1
GROUNDWATER ANALYSES DATA

Well	Date	TPHG (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl Benzene (ppm)	Xylenes (ppm)	Depth To Water (ft.)	Well Elevation (ft.)
MW-1	05/09/88	0.44	0.12	0.05	N R	0.12	8.72	334.83
	08/26/88	200	4.4	0.26	0.30	0.45	9.15	
	10/05/88	17	6.7	0.36	0.21	0.73	8.54	
	11/22/88	8	3.9	0.83	0.25	0.34	9.31	
	12/09/88	11	0.79	0.036	0.0073	0.068	9.33	
	01/13/89	8.8	3.8	0.11	0.33	0.09	N A	
	02/10/89	18	4.7	0.4	0.66	0.19	8.51	
	03/02/89	14	6.1	0.77	0.32	0.44	8.71	
	04/04/89	11	4.8	0.77	0.27	0.78	7.93	
	05/01/89	11	2.8	0.88	0.41	0.78	8.43	
	06/01/89	N D	N D	N D	N D	N D	8.56	
	06/29/89	4.7	0.31	0.16	0.075	0.26	8.60	
	08/09/89	12	1.3	0.62	0.83	0.68	8.43	
	09/11/89	N D	N D	N D	N D	0.0022	8.65	
	10/10/89	8.7	1.1	0.31	0.18	0.59	8.52	
	10/25/89	7.5	0.66	0.25	0.46	0.48	8.56	
	12/20/89	6.2	0.27	0.11	0.26	0.22	8.80	
	01/17/90	7.4	0.20	0.17	0.16	0.26	8.47	
	02/23/90	1.5	0.130	0.013	0.030	0.024	8.25	
MW-2	05/09/88	N D	N D	N D	N R	N D	10.85	336.96
	08/26/88	1.7	0.23	0.016	0.087	0.12	11.29	
	10/05/88	0.2	0.02	0.0023	0.0083	0.012	10.83	
	11/22/88	0.8	0.093	0.0016	0.0043	0.06	11.42	
	12/09/88	0.27	0.045	0.0036	0.0072	0.014	11.45	

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Well	Date	TPHG (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl Benzene (ppm)	Xylenes (ppm)	Depth To Water (ft.)	Well Elevation (ft.)
MW-2 (CONT.)	01/13/89	0.18	0.026	0.0023	0.017	0.007	N A	
	02/10/89	0.32	0.043	0.0017	0.034	0.015	10.74	
	03/02/89	0.23	0.024	0.0009	0.0092	0.018	10.91	
	04/04/89	0.23	0.053	0.0023	0.0071	0.02	10.06	
	05/01/89	N D	0.0027	N D	N D	N D	10.58	
	05/31/89	0.12	0.014	N D	0.0039	0.0076	10.73	
	06/28/89	N D	0.0041	N D	N D	N D	10.90	
	08/08/89	0.088	0.0039	N D	N D	N D	10.78	
	09/08/89	N D	0.0032	N D	N D	N D	10.97	
	10/09/89	0.11	0.0067	N D	N D	N D	10.88	
	10/24/89	N D	0.0025	N D	N D	0.0019	11.00	
	12/21/89	<0.05	0.0071	<0.0005	0.005	0.0098	11.06	
	01/17/90	<0.05	0.0044	<0.0005	0.0016	0.0014	10.78	
	02/23/90	0.07	0.0063	<0.0005	0.0027	0.0025	10.35	
MW-3	05/09/88	0.076	0.01	0.0044	N R	0.015	10.59	336.96
	08/26/88	5.2	0.17	0.006	0.032	0.054	11.10	
	10/05/88	0.26	0.1	0.0027	0.0058	0.007	10.43	
	11/22/88	0.18	0.075	0.0014	0.0081	0.004	11.16	
	12/09/88	0.16	0.005	0.0059	N D	N D	11.24	
	01/13/89	0.16	0.036	0.0012	0.003	0.002	N A	
	02/10/89	0.3	0.083	N D	0.0086	0.008	10.43	
	03/02/89	0.57	0.16	0.001	0.017	0.009	10.59	
	04/04/89	0.15	0.064	0.0008	0.0027	0.006	9.45	
	05/01/89	0.13	0.048	0.0012	0.0034	0.002	10.20	

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Well	Date	TPHG (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl Benzene (ppm)	Xylenes (ppm)	Depth To Water (ft.)	Well Elevation (ft.)
MW-3	06/01/89	N D	N D	N D	N D	N D	10.40	
(CONT.)	06/28/89	0.09	0.068	0.0007	N D	0.0051	10.60	
	08/09/89	0.15	0.023	0.0053	0.0026	N D	10.64	
	09/11/89	N D	N D	N D	N D	N D	10.83	
	10/10/89	0.08	0.0064	0.00072	N D	N D	10.95	
	10/26/89	0.15	0.011	N D	0.0016	N D	10.86	
	12/21/89	<0.05	0.0068	<0.0005	<0.0005	<0.0005	11.09	
	01/23/90	<0.05	0.004	<0.0005	0.00068	<0.0005	10.90	
	02/23/90	0.05	0.010	<0.0005	0.0012	0.0009	10.52	
MW-4	05/09/88	0.29	0.076	0.033	N R	0.15	10.88	337.14
	08/26/88	0.21	0.64	0.041	0.11	0.16	11.34	
	10/05/88	0.45	0.11	0.0063	0.016	0.02	10.87	
	11/22/88	0.5	0.11	0.004	0.02	0.027	11.41	
	12/09/88	0.26	0.92	0.0075	0.0059	0.011	11.46	
	01/13/89	0.99	0.2	0.0065	0.046	0.014	N A	
	02/10/89	0.29	0.09	0.0036	0.0088	0.009	10.78	
	03/02/89	0.63	0.21	0.0062	0.034	0.007	10.92	
	04/04/89	0.64	0.34	0.013	0.025	0.04	10.04	
	05/01/89	0.1	0.065	0.002	0.003	0.004	10.52	
	05/31/89	0.06	N D	N D	N D	N D	10.62	
	06/28/89	0.11	0.062	0.0013	N D	0.0048	11.00	
	08/09/89	0.16	0.11	0.002	0.0064	N D	10.92	
	09/08/89	0.094	0.045	0.0005	0.0038	N D	11.05	
	10/10/89	0.09	0.03	0.001	0.0019	N D	10.97	

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MW-4	10/26/89	N D	0.0034	N D	N D	N D	11.35	
(CONT.)	12/21/89	<0.05	0.035	0.0011	0.0036	0.0016	11.07	
	01/17/90	<0.05	0.004	<0.0005	0.00068	<0.0005	11.08	
	02/23/90	<0.05	0.008	<0.0005	0.0011	0.0007	10.90	
MW-5	08/26/88	0.21	0.006	0.044	0.009	0.019	9.10	334.96
	10/05/88	7.5	2.7	N D	0.11	0.59	9.95	
	11/22/88	0.15	0.021	0.026	0.003	0.002	8.93	
	12/09/88	0.24	0.037	0.0022	0.0067	0.0077	10.48	
	01/13/89	0.08	0.0016	N D	0.0077	0.002	N A	
	02/10/89	0.06	N D	N D	N D	N D	10.35	
	03/02/89	N D	N D	N D	N D	N D	8.50	
	04/05/89	N D	N D	N D	N D	N D	7.72	
	05/01/89	N D	0.0013	N D	N D	N D	8.21	
	06/01/89	N D	N D	N D	N D	N D	8.40	
	06/29/89	N D	N D	N D	N D	N D	8.65	
	08/09/89	0.089	0.0085	0.0018	0.0015	0.0022	8.76	
	09/11/89	1.1	0.0078	0.0014	N D	0.0063	8.80	
	10/10/89	N D	N D	N D	N D	N D	11.92	
	10/25/89	N D	0.0014	N D	N D	0.0016	9.03	
	12/20/89	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	11.26	
	01/18/90	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	9.95	
	02/23/90	<0.05	<0.0005	<0.0005	0.0006	<0.0005	8.30	

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Well	Date	TPHG (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl Benzene (ppm)	Xylenes (ppm)	Depth To Water (ft.)	Well Elevation (ft.)
MW-6	08/26/88	15	0.39	0.39	0.67	1.7	9.69	335.42
	10/05/88	2.7	0.13	0.038	0.96	0.22	9.27	
	11/22/88	N A	N A	N A	N A	N A	9.77	
	12/09/88	0.54	0.062	0.003	0.026	0.005	9.85	
	01/13/89	0.98	0.16	0.022	0.12	0.029	N A	
	02/10/89	1.9	0.29	0.024	0.093	0.048	9.10	
	03/02/89	1.4	0.16	0.02	0.13	0.033	9.29	
	04/04/89	1.2	0.22	0.027	0.074	0.069	8.48	
	05/01/89	0.79	0.12	0.011	0.025	0.017	8.90	
	06/01/89	1.2	0.049	0.049	0.069	0.03	9.16	
	06/29/89	0.94	0.13	0.015	0.069	0.035	9.30	
	08/09/89	1.4	0.28	0.039	0.17	0.064	9.30	
	09/11/89	N D	N D	N D	N D	N D	9.31	
	10/10/89	1.0	0.085	0.011	0.012	0.016	9.32	
	10/24/89	1.5	0.067	0.02	0.05	0.039	9.30	
	12/20/89	<0.05	0.0049	0.00051	<0.0005	<0.0005	9.58	
	01/18/90	<0.05	0.067	0.012	0.048	0.018	9.46	
	02/23/90	0.0010	0.150	0.016	0.047	0.030	8.94	
MW-7	08/26/88	N D	0.0008	N D	N D	N D	7.94	333.23
	10/05/88	N D	N D	N D	N D	N D	7.54	
	11/22/88	0.7	0.041	0.009	0.001	0.02	N A	
	12/09/88	N D	N D	N D	N D	0.0006	7.53	
	01/13/89	N D	N D	N D	N D	N D	N A	
	02/10/89	N D	N D	N D	N D	N D	6.62	

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Well	Date	TPHG (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl Benzene (ppm)	Xylenes (ppm)	Depth To Water (ft.)	Well Elevation (ft.)
MW-7 (CONT.)	03/02/89	N D	N D	N D	N D	N D	7.03	
	04/05/89	N D	N D	N D	N D	N D	6.80	
	05/01/89	N D	N D	N D	N D	N D	6.53	
	05/31/89	N D	N D	N D	N D	N D	6.93	
	06/28/89	N D	N D	N D	N D	N D	6.85	
	08/09/89	N D	N D	N D	N D	N D	6.67	
	09/07/89	N D	N D	N D	N D	N D	6.90	
	10/10/89	N D	N D	N D	N D	N D	6.90	
	10/24/89	N D	N D	N D	N D	N D	7.29	
	12/20/89	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	7.47	
	01/18/90	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	7.49	
	02/23/90	<0.05	<0.0005	<0.0005	<0.0005	0.0007	6.92	
MW-8	03/01/89	N D	N D	N D	N D	N D	8.28	335.80
	04/04/89	N D	N D	N D	N D	N D	7.31	
	05/01/89	N D	N D	N D	N D	N D	8.97	
	05/31/89	N D	N D	N D	N D	N D	9.17	
	06/28/89	N D	N D	N D	N D	N D	9.40	
	08/08/89	N D	N D	N D	N D	N D	9.42	
	09/07/89	N D	N D	N D	N D	N D	8.50	
	10/10/89	N D	N D	N D	N D	N D	9.46	
	10/26/89	N D	N D	N D	N D	N D	9.56	
	12/21/89	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	9.57	
	01/18/90	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	9.29	
	02/26/90	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	8.50	

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Well	Date	TPHG (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl Benzene (ppm)	Xylenes (ppm)	Depth To Water (ft.)	Well Elevation (ft.)
MW-9	03/01/89	N D	N D	N D	N D	N D	8.48	334.57
	04/04/89	N D	N D	N D	N D	N D	7.69	
	05/01/89	N D	N D	N D	N D	N D	8.20	
	05/31/89	N D	N D	N D	N D	N D	8.72	
	06/28/89	N D	N D	N D	N D	N D	9.00	
	08/08/89	N D	N D	N D	N D	N D	8.53	
	09/07/89	N D	N D	N D	N D	N D	8.99	
	10/09/89	N D	N D	N D	N D	N D	8.89	
	10/23/89	N D	N D	N D	N D	N D	9.02	
	12/21/89	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	9.48	
	01/18/90	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	8.73	
	02/26/90	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	9.06	
MW-10	03/02/89	1	0.14	0.036	N D	0.077	8.95	335.37
	04/04/89	3.3	0.76	0.24	0.046	0.63	7.89	
	05/01/89	0.68	0.099	0.024	0.0081	0.032	9.07	
	06/01/89	1.4	0.12	0.039	N D	0.045	8.86	
	06/29/89	1.3	0.051	0.0014	0.0061	0.091	9.05	
	08/09/89	0.86	0.31	0.026	0.045	0.082	9.70	
	09/07/89	0.39	0.055	0.0029	0.0040	0.018	8.14	
	10/10/89	0.46	0.085	0.0076	0.010	0.045	9.21	
	10/26/89	0.27	0.02	0.0014	0.0035	0.0093	9.60	
	12/20/89	<0.05	0.0057	<0.0005	<0.0005	<0.0005	9.42	
	01/18/90	NA	NA	NA	NA	NA	NA	
	02/26/90	NA	NA	NA	NA	NA	NA	

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Well	Date	TPHG (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl Benzene (ppm)	Xylenes (ppm)	Depth To Water (ft.)	Well Elevation (ft.)
MW-11	03/02/89	N D	N D	N D	N D	N D	8.30	334.20
	04/04/89	N D	N D	N D	N D	N D	7.52	
	05/01/89	N D	N D	N D	N D	N D	7.97	
	05/31/89	N D	N D	N D	N D	N D	8.13	
	06/28/89	N D	N D	N D	N D	N D	8.30	
	08/08/89	N D	N D	N D	N D	N D	8.22	
	09/07/89	N D	N D	N D	N D	N D	8.32	
	10/09/89	N D	N D	N D	N D	N D	8.28	
	10/24/89	N D	N D	N D	N D	N D	8.38	
	12/20/89	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	8.48	
	01/18/90	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	8.20	
	02/26/90	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	7.86	
MW-12	03/02/89	N D	N D	N D	N D	N D	6.94	332.53
	04/04/89	N D	N D	N D	N D	N D	6.33	
	05/01/89	N D	N D	N D	N D	N D	6.62	
	06/01/89	N D	N D	N D	N D	N D	6.82	
	06/29/89	N D	N D	N D	N D	N D	7.00	
	08/09/89	N D	N D	N D	N D	N D	6.76	
	09/07/89	N D	N D	N D	N D	N D	6.81	
	10/09/89	N D	N D	N D	N D	N D	7.11	
	10/24/89	N D	N D	N D	N D	N D	7.60	
	12/20/89	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	8.25	
	01/18/90	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	8.23	
	02/26/90	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	7.54	

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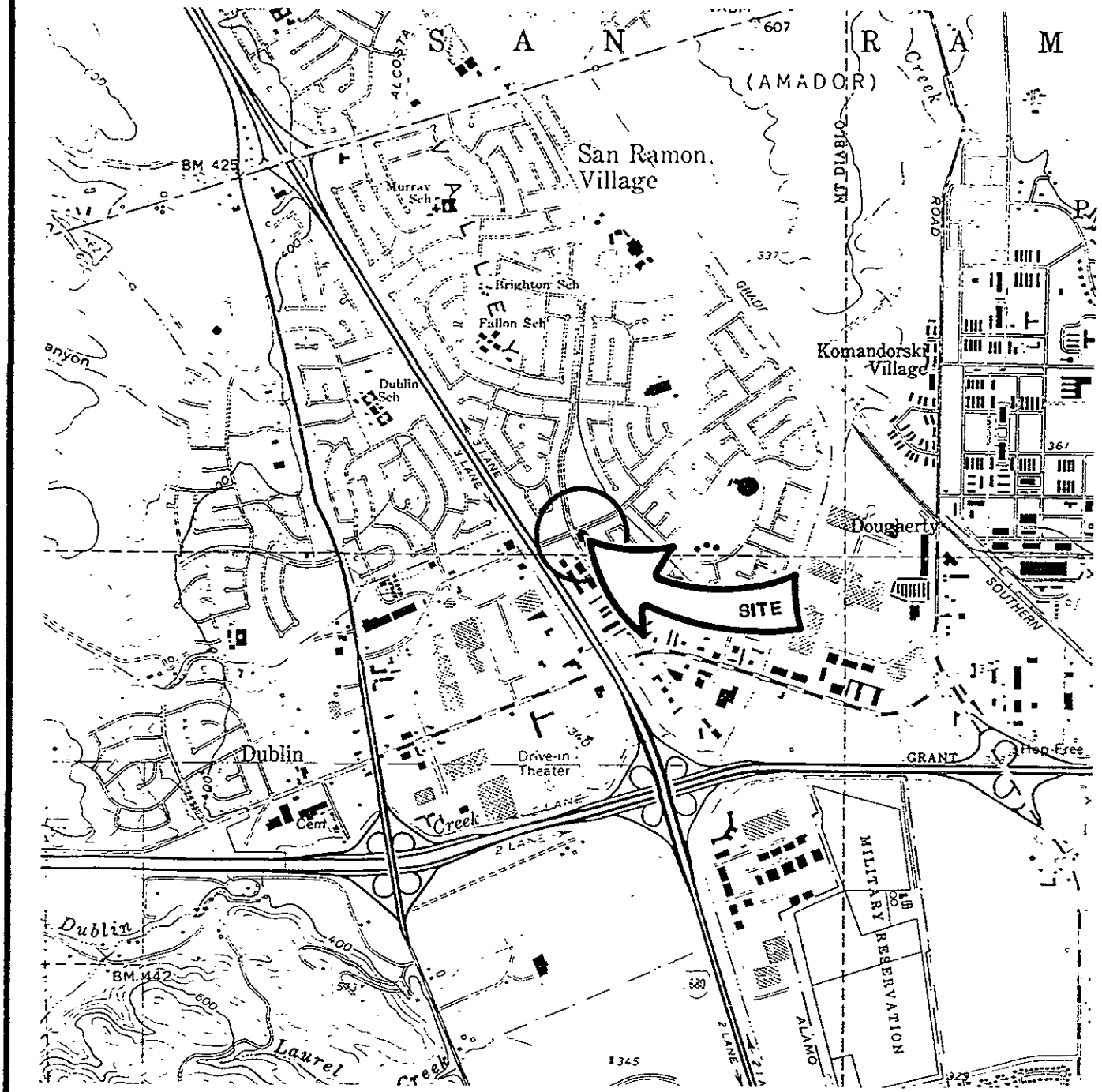
7194 Amador Valley Blvd. Dublin
Dublin, CA

TABLE 1
GROUNDWATER ANALYSES DATA

Well	Date	TPHG (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl Benzene (ppm)	Xylenes (ppm)	Depth To Water (ft.)	Well Elevation (ft.)
RW-1	12/09/89	6.8	0.74	0.005	0.011	0.037	10.73	336.19
	01/13/89	10	3.2	0.027	0.06	N D	N A	
	02/10/89	6	2.8	N D	N D	N D	10.91	
	03/02/89	3.9	2.4	N D	N D	N D	10.15	
	04/05/89	1.7	1	N D	0.009	N D	9.34	
	05/01/89	0.9	0.39	0.005	0.01	N D	9.85	
	06/01/89	1.1	0.0014	0.0033	N D	0.013	9.96	
	06/30/89	1.4	N D	N D	N D	N D	9.90	
	08/09/89	7.5	1.7	0.21	0.28	0.30	9.80	
	09/11/89	0.097	0.0017	0.0021	0.0023	0.014	10.02	
	10/10/89	1.4	0.048	0.0045	N D	0.003	9.88	
	10/25/89	0.82	0.051	0.0012	0.025	0.003	9.80	
	12/21/89	0.49	0.016	0.001	0.0085	0.019	10.25	
	01/17/90	N D	0.027	0.0017	0.014	0.0016	9.80	
	02/23/90	0.42	0.042	0.0018	0.013	0.0027	9.60	

ppm	parts per million (mg/kg)
TPHG	Total petroleum hydrocarbons as gasoline
N A	Data not available
N R	Analysis not requested
N D	Not detected at or above laboratory listed detection limit
<0 05	Not detected at or above the indicated detection limit
Note:	For unlisted detection limits, refer to laboratory reports



SOURCE: USGS 7.5' MAP, DUBLIN QUADRANGLE

LEGEND

SITE LOCATION

0 1

SCALE IN MILES

N

EXCELTECH

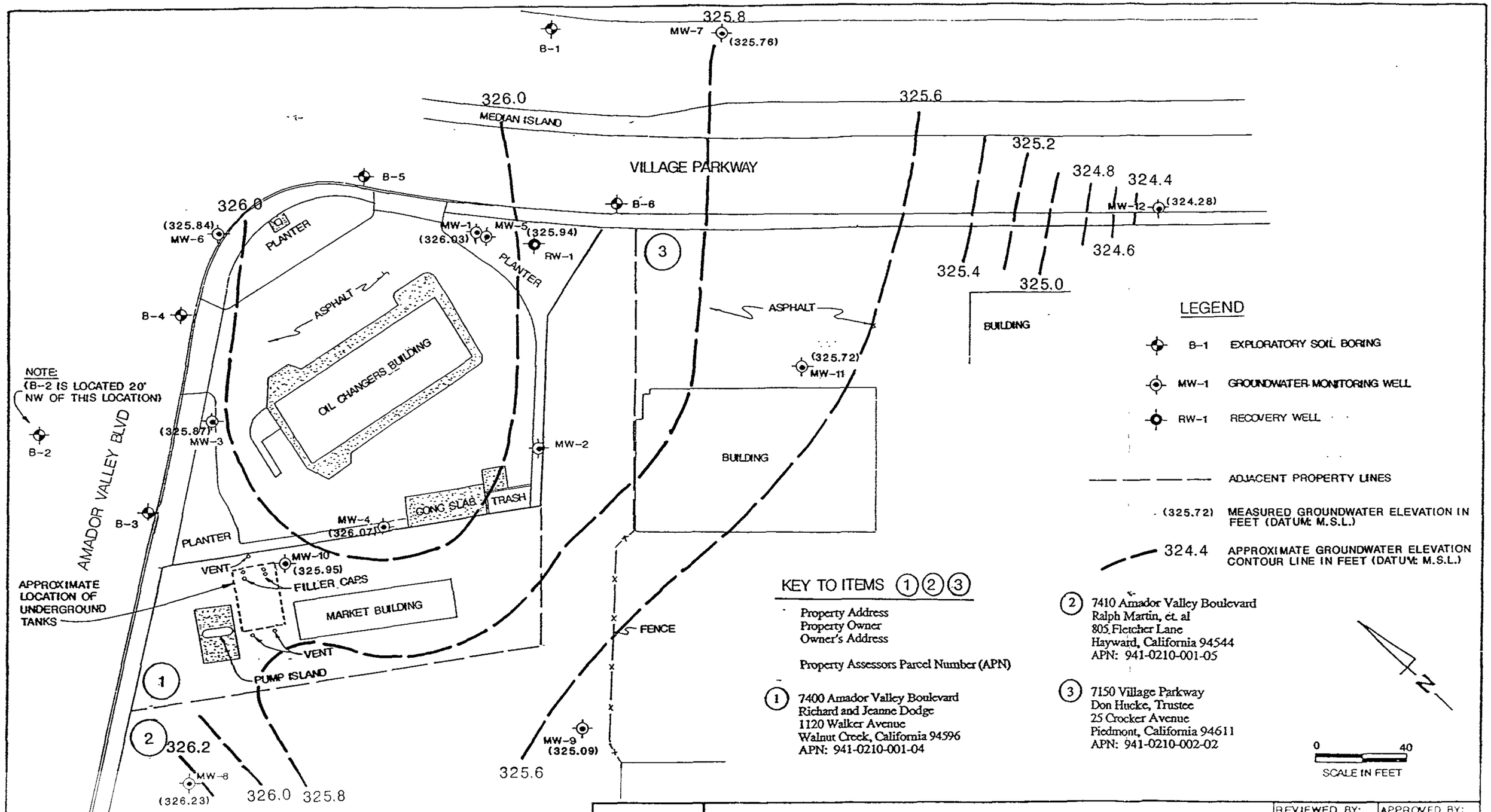
SITE LOCATION MAP

FORMER SHELL STATION

7194 AMADOR VALLEY BLVD

DUBLIN, CALIFORNIA

REVIEWED BY	APPROVED BY
JOB # 1826G	DRAWN BY J.C.
DATE 4-5-89	DRAWING # FIG. 1



EXCELTECH

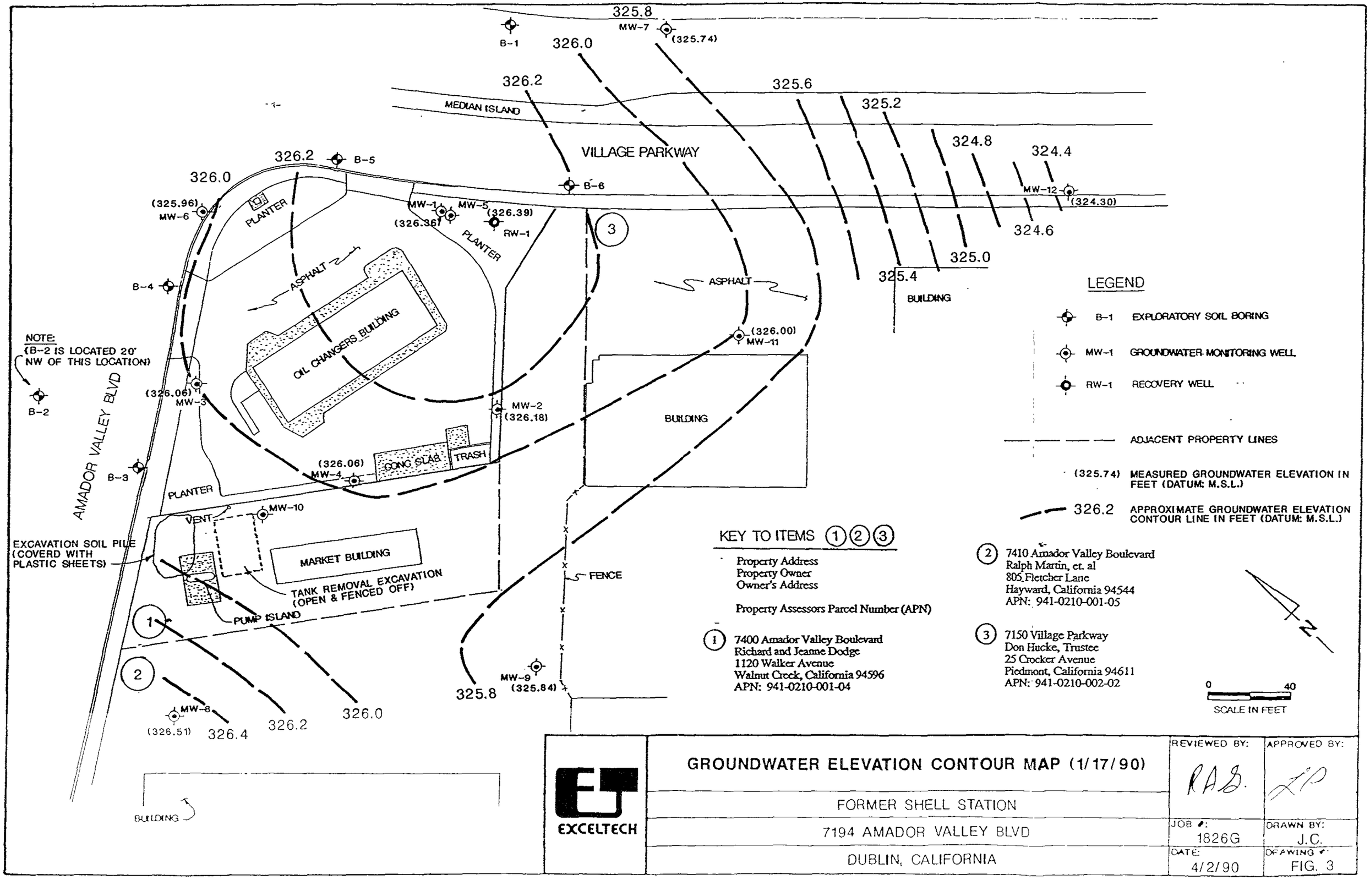
GROUNDWATER ELEVATION CONTOUR MAP (12/19/89)

FORMER SHELL STATION

7194 AMADOR VALLEY BLVD

DUBLIN, CALIFORNIA

REVIEWED BY:	APPROVED BY:
RAS	
JOB #: 1826G	DRAWN BY: J.C.
DATE: 4/2/90	DRAWING #: FIG. 2



EXCELTECH

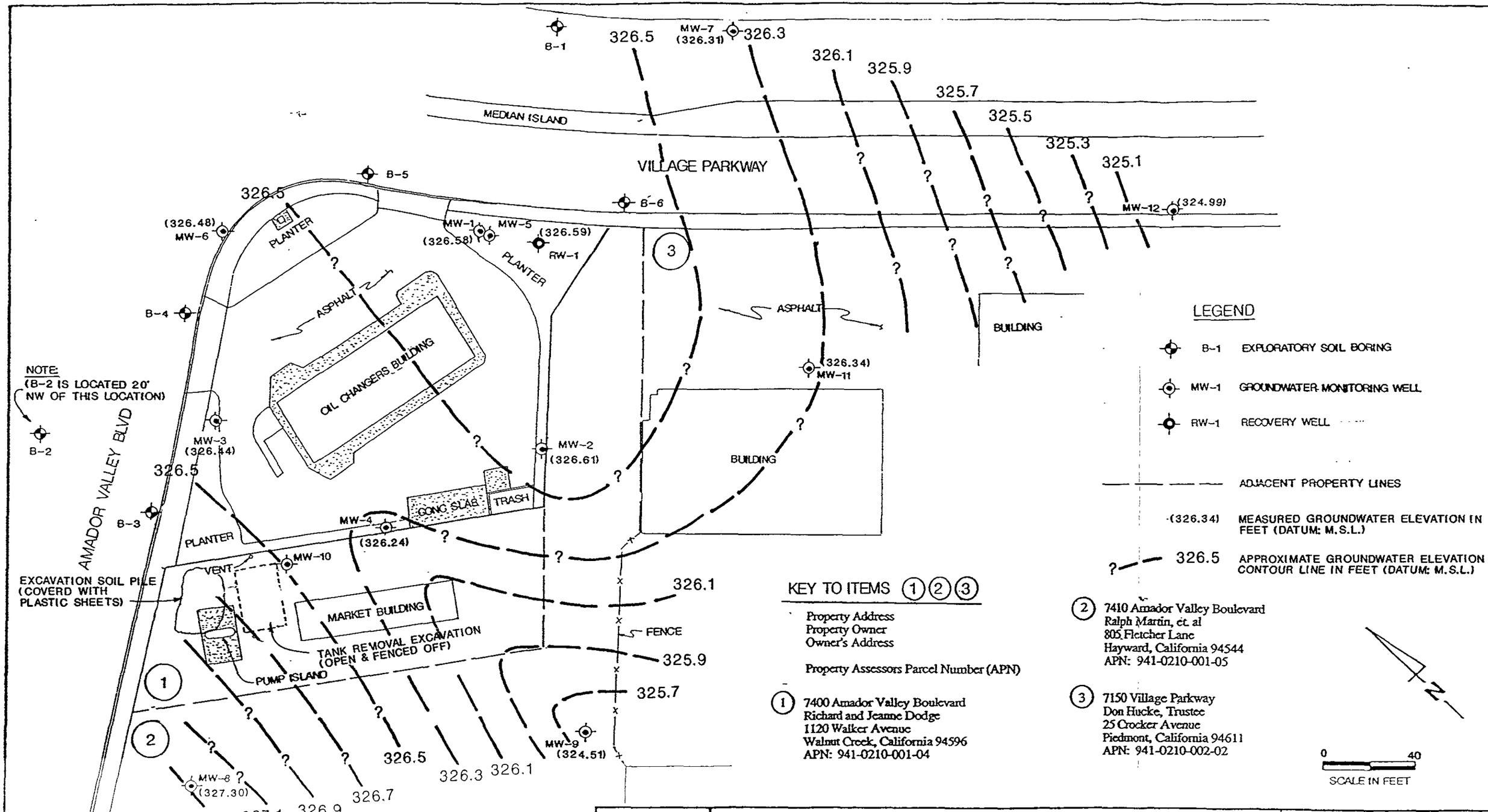
GROUNDWATER ELEVATION CONTOUR MAP (1/17/90)

FORMER SHELL STATION

7194 AMADOR VALLEY BLVD

DUBLIN, CALIFORNIA

REVIEWED BY:	APPROVED BY:
R.A.S.	
JOB #: 1826G	DRAWN BY: J.C.
DATE: 4/2/90	DRAWING #: FIG. 3



KEY TO ITEMS (1)(2)(3)

Property Address
Property Owner
Owner's Address

Property Assessors Parcel Number (APN)

(1) 7400 Amador Valley Boulevard
Richard and Jeanne Dodge
1120 Walker Avenue
Walnut Creek, California 94596
APN: 941-0210-001-04

(2) 7410 Amador Valley Boulevard
Ralph Martin, et. al
805 Fletcher Lane
Hayward, California 94544
APN: 941-0210-001-05

(3) 7150 Village Parkway
Don Hucke, Trustee
25 Crocker Avenue
Piedmont, California 94611
APN: 941-0210-002-02

EXCELTECH

GROUNDWATER ELEVATION CONTOUR MAP (2/23/90)

FORMER SHELL STATION
7194 AMADOR VALLEY BLVD
DUBLIN, CALIFORNIA

REVIEWED BY:	APPROVED BY:
RAJ	LP
JOB #: 1826G	DRAWN BY: J.C.
DATE: 4/2/90	DRAWING #: FIG. 4

APPENDIX A

GROUNDWATER SAMPLING PROTOCOL

EXCELTECH

GROUNDWATER SAMPLING PROTOCOL

GROUNDWATER SAMPLING PROTOCOL

Sampling of groundwater is performed by Exceltech sampling technicians. Summarized field sampling procedures are as follows:

1. Measurements of liquid surface in the well and depth of monitoring well.

2. Field check for presence of floating product.

3. Purge well prior to collecting samples.

4. Monitor groundwater for temperature, pH, and specific conductance during purging.

5. Collect samples using Environmental Protection Agency (EPA) approved sample collection devices, i.e., teflon or stainless steel bailers or pumps.

6. Transfer samples into laboratory-supplied EPA-approved containers.

7. Label samples and log onto chain-of-custody form.

8. Store samples in a chilled ice chest for shipment to a state-certified analytical laboratory.

GROUNDWATER SAMPLING PROCEDURES

Equipment Cleaning

All water samples are placed in precleaned laboratory-supplied bottles. Sample bottles and caps remain sealed until actual usage at the site. All equipment which comes in contact with the well or groundwater is thoroughly cleaned with a trisodium phosphate (TSP) solution and rinsed with deionized or distilled water before use at the site. This cleaning procedure is followed between each well sampled. Wells are sampled in approximate order of increasing contamination. If a teflon cord is used, the cord is cleaned. If a nylon or cotton cord is used, a new cord is used in each well All equipment blanks are collected prior to sampling. The blanks are analyzed periodically to ensure proper cleaning.

Water Level Measurements

Depth to groundwater is measured in each well using a sealed sampling tape or scaled electric sounder prior to purging or sampling. If the well is known or suspected of containing free-phase petroleum hydrocarbons, an optical interface probe is used to measure the hydrocarbon thickness and groundwater level. Measurements are collected and recorded to the nearest 0.01 foot.

Bailer Sheen Check

If no measurable free-phase petroleum hydrocarbons are detected, a clear acrylic bailer is used to determine the presence of a sheen. Any observed film as well as odor and color of the water is recorded.

Groundwater Sampling

Prior to groundwater sampling, each well is purged of "standing" groundwater. Either a bailer, hand pump, or submersible pump is used to purge the well. The amount of purging is dependent on the well yield. In a high yield formation, samples will be collected when normal field measurement, including temperature, pH, and specific conductance stabilize, provided a minimum of three well-casing volumes of water have been removed. Field measurements will be taken after purging each well volume. In low yield formations, the well is purged such that the "standing" water is removed and the well is allowed to recharge. (Normal field measurements will be periodically recorded during the purging process.) In

situations where recovery to 80% of static water level is estimated, or observed to exceed a two hour duration, a sample will be collected when sufficient volume is available for a sample for each parameter. At no time will the well be purged dry so that the recharge rate causes the formation water to cascade into the well.

In wells where free-phase hydrocarbons are detected, the free-phase portion will be bailed from the well and the volume removed recorded. A groundwater sample will be collected if bailing reduces the amount of free-phase hydrocarbons to the point where they are not present in the well. Well sampling will be conducted using one of the aforementioned methods depending on the formation yield. However, if free-phase hydrocarbons persist throughout bailing, then a groundwater samples will not be collected.

Groundwater sample containers are labeled with a unique sample number, location, product name and number, and date of collection. All samples are logged into a chain-of-custody form and placed in a chilled ice chest for shipment to a laboratory certified by the State of California Department of Health Services.

APPENDIX B

CERTIFIED LABORATORY REPORTS AND CHAIN-OF-CUSTODY DOCUMENTS

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Pacific, Inc.
435 Tesconi Circle
Santa Rosa, CA 95401
Tel: (707) 526-7200
Fax (707) 526-9623

James Durkin
ENSCO Environmental
41674 Christy St.
Fremont, CA 94538

Date: 01-03-90
NET Client Acct. No: 18.06
NET Pacific Log No: 9084
Received: 12-22-89 2100

Client Reference Information

SHELL-Dublin, 7194 Amador Valley Blvd

Dear James Durkin

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

Judy Kadlec for
Jules Skamarack
Laboratory Manager

Enclosure(s)

SAMPLE DESCRIPTION: RW-1 12-21-89 1115
LAB Job No: (-42577)

Parameter	Reporting Limit	Results	Units
PETROLEUM HYDROCARBONS		--	
VOLATILE (WATER)		--	
DILUTION FACTOR *		1	
DATE ANALYZED		12-29-89	
METHOD GC FID/5030		--	
as Gasoline	0.05	0.49	ppm
METHOD 602		--	
Benzene	0.0005	0.016	ppm
Ethylbenzene	0.0005	0.0085	ppm
Toluene	0.0005	0.001	ppm
Xylenes, total	0.0005	0.019	ppm

SAMPLE DESCRIPTION: MW-8 12-21-89 1220
LAB Job No: (-42578)

Parameter	Reporting Limit	Results	Units
PETROLEUM HYDROCARBONS		--	
VOLATILE (WATER)		--	
DILUTION FACTOR *		1	
DATE ANALYZED		12-29-89	
METHOD GC FID/5030		--	
as Gasoline	0.05	ND	ppm
METHOD 602		--	
Benzene	0.0005	ND	ppm
Ethylbenzene	0.0005	ND	ppm
Toluene	0.0005	ND	ppm
Xylenes, total	0.0005	ND	ppm

SAMPLE DESCRIPTION: MW-4 12-21-89 1335
LAB Job No: (-42579)

Parameter	Reporting Limit	Results	Units
PETROLEUM HYDROCARBONS		--	
VOLATILE (WATER)		--	
DILUTION FACTOR *		1	
DATE ANALYZED		12-29-89	
METHOD GC FID/5030		--	
as Gasoline	0.05	ND	ppm
METHOD 602		--	
Benzene	0.0005	0.035	ppm
Ethylbenzene	0.0005	0.0036	ppm
Toluene	0.0005	0.0011	ppm
Xylenes, total	0.0005	0.0016	ppm

SAMPLE DESCRIPTION: MW-2 12-21-89 1423
LAB Job No: (-42580)

Parameter	Reporting Limit	Results	Units
PETROLEUM HYDROCARBONS		--	
VOLATILE (WATER)		--	
DILUTION FACTOR *		1	
DATE ANALYZED		12-29-89	
METHOD GC FID/5030		--	
as Gasoline	0.05	ND	ppm
METHOD 602		--	
Benzene	0.0005	0.0071	ppm
Ethylbenzene	0.0005	0.005	ppm
Toluene	0.0005	ND	ppm
Xylenes, total	0.0005	0.0098	ppm

SAMPLE DESCRIPTION: MW-3 12-21-89 1515
LAB Job No: (-42581)

Parameter	Reporting Limit	Results	Units
PETROLEUM HYDROCARBONS		--	
VOLATILE (WATER)		--	
DILUTION FACTOR *		1	
DATE ANALYZED		12-29-89	
METHOD GC FID/5030		--	
as Gasoline	0.05	ND	ppm
METHOD 602		--	
Benzene	0.0005	0.0068	ppm
Ethylbenzene	0.0005	ND	ppm
Toluene	0.0005	ND	ppm
Xylenes, total	0.0005	ND	ppm

SAMPLE DESCRIPTION: MW-9 12-21-89 1557
LAB Job No: (-42582)

Parameter	Reporting Limit	Results	Units
PETROLEUM HYDROCARBONS		--	
VOLATILE (WATER)		--	
DILUTION FACTOR *		1	
DATE ANALYZED		12-29-89	
METHOD GC FID/5030		--	
as Gasoline	0.05	ND	ppm
METHOD 602		--	
Benzene	0.0005	ND	ppm
Ethylbenzene	0.0005	ND	ppm
Toluene	0.0005	ND	ppm
Xylenes, total	0.0005	ND	ppm

NET

NET Pacific, Inc.

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in results column indicates analyte not detected at the value following, which supercedes the listed reporting limit.
mean	:	Average; sum of measurements divided by number of measurements.
mg/Kg (ppm)	:	Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
mg/L	:	Concentration in units of milligrams of analyte per liter of sample.
mL/L/hr	:	Milliliters per liter per hour.
MPN/100 mL	:	Most probable number of bacteria per one hundred milliliters of sample.
N/A	:	Not applicable.
NA	:	Not analyzed.
ND	:	Not detected; the analyte concentration is less than applicable listed reporting limit.
NTU	:	Nephelometric turbidity units.
RPD	:	Relative percent difference, 100 [Value 1 - Value 2]/mean value.
SNA	:	Standard not available.
ug/Kg (ppb)	:	Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
ug/L	:	Concentration in units of micrograms of analyte per liter of sample.
umhos/cm	:	Micromhos per centimeter.

Method References

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986.

* Reporting Limits are a function of the dilution factor for any given sample. To obtain the actual reporting limits for this sample, multiply the stated reporting limits by the dilution factor.

9084

CHAIN OF CUSTODY RECORD

PROJECT NO	PROJECT NAME
1826-20	Shell, Dublin 7194 Amador Valley Blvd.

SAMPLERS (Signature) Michael Friedman

NO.	DATE	TIME	STATION AND LOCATION	TPH6/BTEX							REMARKS
RW-1	12-21-89	11:15	2 Pres. VOAs	X							
MW-8	"	12:30	"	X							
MW-4	"	1:35	"	X							
MW-2	"	2:23	"	X							
MW-3	"	3:15	"	X							
MW-9	"	3:57	"	X							Only one VOA 12/22/89

P.O. #

LAB Net Pacific

TURN AROUND TIME 5 day

WIC # : 204-2279-0105

AFE # 986639

RELINQUISHED BY:	DATE: TIME:	RECEIVED BY:
[signature]	12/22/89 1500	[signature]
RELINQUISHED BY:	DATE: TIME:	RECEIVED BY:

RELINQUISHED BY:	DATE: TIME:	RECEIVED BY:
[signature]		
RELINQUISHED BY:	DATE: TIME:	RECEIVED BY:
FEDEX (VIA NCS)	12/22/89 2100	[signature]

REMARKS:

REPORT TO:

FORM DATED 5-30-89

ensco environmental services, Inc.
41674 Christy Street
Fremont, C.A. 94538-3114
(415) 659-0404
Fax (415) 651-4077
Conv. Lic. No. 550205

NET NATIONAL ENVIRONMENTAL TESTING, INC.

NET Pacific, Inc.
435 Tesconi Circle
Santa Rosa, CA 95401
Tel: (707) 526-7200
Fax: (707) 526-9623

James Durkin
ENSCO Environmental
41674 Christy St.
Fremont, CA 94538

01-04-90
NET Pacific Log No: 9060
Series No: 18.06
Client Ref: Proj# 1826-2G

Subject: Analytical Results for "Shell-7144 Amador Valley Blvd" Received 12-22-89.

Dear Mr. Durkin:

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

Jules Skamarack
Laboratory Manager

/ma
Enc: Sample Custody Document

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in results column indicates analyte not detected at the value following, which supercedes the listed reporting limit.
mean	:	Average; sum of measurements divided by number of measurements.
mg/Kg (ppm)	:	Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
mg/L	:	Concentration in units of milligrams of analyte per liter of sample.
mL/L/hr	:	Milliliters per liter per hour.
MPN/100 mL	:	Most probable number of bacteria per one hundred milliliters of sample.
N/A	:	Not applicable.
NA	:	Not analyzed.
ND	:	Not detected; the analyte concentration is less than applicable listed reporting limit.
NTU	:	Nephelometric turbidity units.
RPD	:	Relative percent difference, 100 [Value 1 - Value 2]/mean value.
SNA	:	Standard not available.
ug/Kg (ppb)	:	Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
ug/L	:	Concentration in units of micrograms of analyte per liter of sample.
umhos/cm	:	Micromhos per centimeter.

Method References

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986.

* Reporting Limits are a function of the dilution factor for any given sample. To obtain the actual reporting limits for this sample, multiply the stated reporting limits by the dilution factor.

Parameter	Reporting Limit (ppm)	Descriptor, Lab No. and Results BB-1 12-20-89 0840 (-42492)	MW-11 12-20-89 0930 (-42493)	MW-12 12-20-89 1030 (-42494)	MW-7 12-20-89 1115 (-42495)	MW-1 12-20-89 1345 (-42496)
PETROLEUM HYDROCARBONS		—	—	—	—	—
VOLATILE (WATER)		—	—	—	—	—
DILUTION FACTOR *		1	1	1	1	5
DATE ANALYZED		12-29-89	12-29-89	12-29-89	12-29-89	01-02-90
METHOD GC FID/5030		—	—	—	—	—
as Gasoline	0.05	ND	ND	ND	ND	6.2
METHOD 602		—	—	—	—	—
Benzene	0.0005	0.00082	ND	ND	ND	0.27
Ethylbenzene	0.0005	0.00078	ND	ND	ND	0.26
Toluene	0.0005	ND	ND	ND	ND	0.11
Xylenes, total	0.0005	ND	ND	ND	ND	0.22

Parameter	Reporting Limit (ppm)	Descriptor, Lab No. and Results MW-5 12-20-89 1220 (-42497)	 MW-6 12-20-89 1450 (-42498)	 MW-10 12-20-89 1540 (-42499)
pH (pH units)	N/A	6.9	6.9	7.3
Tot. Dissolved Solids(TFR)	10	2,300	3,300	3,600
Tot. Suspended Solids(NFR)	4	5,400	140	10
Alkalinity, as CaCO3	--			
Total	10	490	1,200	1,000
Bicarbonate	10	490	1,200	1,000
Carbonate	10	ND	ND	ND
Hydroxide	10	ND	ND	ND
Hardness total as CaCO3	10	1700	1200	1100
Calcium	1	450	380	350
Magnesium	0.5	150	68	63
PETROLEUM HYDROCARBONS		--	--	--
VOLATILE (WATER)		--	--	--
DILUTION FACTOR *		1	1	1
DATE ANALYZED		12-29-89	12-29-89	12-29-89
METHOD GC FID/5030		--	--	--
as Gasoline	0.05	ND	ND	ND
METHOD 602		--	--	--
Benzene	0.0005	ND	0.0049	0.0057
Ethylbenzene	0.0005	ND	ND	ND
Toluene	0.0005	ND	0.00051	ND
Xylenes, total	0.0005	ND	ND	ND

9060

CHAIN OF CUSTODY RECORD

PROJECT NO	PROJECT NAME
1826-26	Shell, Dublin 7194 Amador Valley Blvd

SAMPLERS (Signature) Michael Friedman

P.O. #

LAB Net Pacific

TURN AROUND TIME ~~Normal~~ 5 day

NO.	DATE	TIME	STATION AND LOCATION	TPHG/BTEX	(*)						REMARKS
BB-1	12-20-88	8:40	2 Pres. VOAs	X							
MW-11	"	9:30	"	X							
MW-12	"	10:30	"	X							
MW-4	"	11:15	"	X							
MW-5	"	12:20	" 1 Amber liter	X	X						
MW-1	"	1:45	"	X							
MW-6	"	2:40	" "	X	X						
MW-10	"	3:40	" "	X	X						

(*) Test for Ph, Alkalinity (mg/l) TDS (mg/l), Ca (mg/l), Mg (mg/l), Hardness (mg/l) suspended solids

WIC # 204-[illegible]

AFE # 186639

RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:
Michael H. Friedman	12/21	12:55	Jeff Winkler	Jeff Winkler			
Fran Goyle				(via NCS)	12/22/88	0700	K Temple

REMARKS:

REPORT TO:

ensco environmental services, Inc.
41674 Christy Street
Fremont, C.A. 94538-3114
(415) 659-0404
Fax (415) 651-4077
Conv. Lic. No. 550205

FORM DATED 5-30-89

NET NATIONAL ENVIRONMENTAL TESTING, INC.

NET Pacific, Inc.
435 Tesconi Circle
Santa Rosa, CA 95401
Tel: (707) 526-7200
Fax: (707) 526-9623

Richard Garlow
ENSCO Environmental
41674 Christy St.
Fremont, CA 94538

Date: 01-29-90
NET Client Acct No: 18.06
NET Pacific Log No: 9368
Received: 01-19-90 2300

Client Reference Information

SHELL, 7194 Amador Valley Blvd., Dublin; Project# 182G-2G

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

Jules Skamarack
Laboratory Manager

Enclosure(s)

Parameter	Reporting Limit	Descriptor, Lab No. and Results BB-1 01-17-90 1 130 44152	 MW-1 01-17-90 1 136 44153	 RW-1 01-17-90 1 157 44154	Units
PETROLEUM HYDROCARBONS		--	--	--	
VOLATILE (WATER)		--	--	--	
DILUTION FACTOR *		1	5	1	
DATE ANALYZED		01-23-90	01-23-90	01-23-90	
METHOD GC FID/5030		--	--	--	
as Gasoline	0.05	ND	7.4	ND	ppm
METHOD 602		--	--	--	
Benzene	0.0005	ND	0.20	0.027	ppm
Ethylbenzene	0.0005	ND	0.16	0.014	ppm
Toluene	0.0005	ND	0.17	0.0017	ppm
Xylenes, total	0.0005	ND	0.26	0.0016	ppm

Parameter	Reporting Limit	Descriptor, Lab No. and Results MW-2 01-17-90 1 343 44155	 MW-4 01-17-90 1 430 44156	 MW-3 01-17-90 1 526 44157	Units
PETROLEUM HYDROCARBONS		--	--	--	
VOLATILE (WATER)		--	--	--	
DILUTION FACTOR *		1	1	1	
DATE ANALYZED		01-23-90	01-23-90	01-23-90	
METHOD GC FID/5030		--	--	--	
as Gasoline	0.05	ND	ND	ND	ppm
METHOD 602		--	--	--	
Benzene	0.0005	0.0044	0.031	0.004	ppm
Ethylbenzene	0.0005	0.0016	0.0049	0.00068	ppm
Toluene	0.0005	ND	0.0016	ND	ppm
Xylenes, total	0.0005	0.0014	ND	ND	ppm

Parameter	Reporting Limit	Descriptor, Lab No. and Results MW-12 01-18-90 0 855 44158	 MW-5 01-18-90 0 945 44159	 MW-6 01-18-90 1 051 44160	Units
PETROLEUM HYDROCARBONS		--	--	--	
VOLATILE (WATER)		--	--	--	
DILUTION FACTOR *		1	1	1	
DATE ANALYZED		01-23-90	01-24-90	01-24-90	
METHOD GC FID/5030		--	--	--	
as Gasoline	0.05	ND	ND	ND	ppm
METHOD 602		--	--	--	
Benzene	0.0005	ND	ND	0.067	ppm
Ethylbenzene	0.0005	ND	ND	0.048	ppm
Toluene	0.0005	ND	ND	0.012	ppm
Xylenes, total	0.0005	ND	ND	0.018	ppm

Parameter	Reporting Limit	Descriptor, Lab No. and Results MW-7 01-18-90 1 155 44161	 MW-8 01-18-90 1 258 44162	 MW-9 01-18-90 1 345 44163	Units
PETROLEUM HYDROCARBONS		--	--	--	
VOLATILE (WATER)		--	--	--	
DILUTION FACTOR *		1	1	1	
DATE ANALYZED		01-24-90	01-24-90	01-24-90	
METHOD GC FID/5030		--	--	--	
as Gasoline	0.05	ND	ND	ND	ppm
METHOD 602		--	--	--	
Benzene	0.0005	ND	ND	ND	ppm
Ethylbenzene	0.0005	ND	ND	ND	ppm
Toluene	0.0005	ND	ND	ND	ppm
Xylenes, total	0.0005	ND	ND	ND	ppm

NET Pacific, Inc.

Client No: 18.06
Client Name: ENSCO Environmental
NET Log No: 9368

Date: 01-29-90

Parameter	Reporting Limit	Descriptor, Lab No. and Results MW-11 01-18-90 1 435 44164	Units
PETROLEUM HYDROCARBONS		--	
VOLATILE (WATER)		--	
DILUTION FACTOR *		1	
DATE ANALYZED		01-24-90	
METHOD GC FID/5030		--	
as Gasoline	0.05	ND	ppm
METHOD 602		--	
Benzene	0.0005	ND	ppm
Ethylbenzene	0.0005	ND	ppm
Toluene	0.0005	ND	ppm
Xylenes, total	0.0005	ND	ppm

NET Pacific, Inc.

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in results column indicates analyte not detected at the value following, which supercedes the listed reporting limit.
mean	:	Average; sum of measurements divided by number of measurements.
mg/Kg (ppm)	:	Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
mg/L	:	Concentration in units of milligrams of analyte per liter of sample.
mL/L/hr	:	Milliliters per liter per hour.
MPN/100 mL	:	Most probable number of bacteria per one hundred milliliters of sample.
N/A	:	Not applicable.
NA	:	Not analyzed.
ND	:	Not detected; the analyte concentration is less than applicable listed reporting limit.
NTU	:	Nephelometric turbidity units.
RPD	:	Relative percent difference, 100 [Value 1 - Value 2]/mean value.
SNA	:	Standard not available.
ug/Kg (ppb)	:	Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
ug/L	:	Concentration in units of micrograms of analyte per liter of sample.
umhos/cm	:	Micromhos per centimeter.

Method References

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986.

* Reporting Limits are a function of the dilution factor for any given sample. To obtain the actual reporting limits for this sample, multiply the stated reporting limits by the dilution factor.

9368

CHAIN OF CUSTODY RECORD

PROJECT NO	PROJECT NAME
1826-26	Shell, Dublin 7194 Amador Valley Blvd. Dublin

SAMPLERS (Signature) Michael Friedman, James Gonzales

NO.	DATE	TIME	STATION AND LOCATION	TPHG/BTEX							REMARKS
BB-C	1-17-90	11:30	2 prev VOAs	X							
MW-1	"	11:36	"	X							
RW-4	"	11:47	"	X							
MW-2	"	1:43	"	X							
MW-4	"	2:30	"	X							
MW-3	"	3:26	"	X							
MW-12	1-18-90	8:55	"	X							
MW-5	"	9:45	"	X							
MW-6	"	10:57	"	X							
MW-7	"	11:35	"	X							
MW-8	"	12:58	"	X							
MW-9	"	1:45	"	X							
MW-11	"	2:35	"	X							

TEST REQUESTED

P.O. #

LAB (MFA) NET Pacific

TURN AROUND TIME 5 day

204-2277-0105

WIC # [redacted] (MW-9)

AFF # 986639

samples stored on ice @ 4°C

RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:
Michael H Friedman	1/19/90	1525	Jeff Wickham
RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:

RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:
Jeff Wickham			
RELINQUISHED BY: (VIA NCSJ)	1/19/90	2300	RECEIVED BY: H Temple

REMARKS: R

REPORT TO: Rich Garlow

ensco environmental services, Inc.
41674 Christy Street
Fremont, C.A. 94538-3114
(415) 659-0404
Fax (415) 651-4677
Conv. Lic. No. 550205

FORM DATED 5-30-89

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Pacific, Inc.
435 Tesconi Circle
Santa Rosa, CA 95401
Tel: (707) 526-7200
Fax: (707) 526-9623

Richard Garlow
ENSCO Environmental
41674 Christy St.
Fremont, CA 94538

Date: 03-06-90
NET Client Acct No: 18.06
NET Pacific Log No: 9892
Received: 02-27-90 0700

Client Reference Information

SHELL, Dublin; Project: 1826-2G

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

Jules Skamarack
Laboratory Manager

Enclosure(s)

Ref: SHELL, Dublin; Project: 1826-2G

Parameter	Reporting Limit	Descriptor, Lab No. and Results MW-8 02-26-90 0955 47319	 MW-9 02-26-90 1035 47320	Units
PETROLEUM HYDROCARBONS		--	--	
VOLATILE (WATER)		--	--	
DILUTION FACTOR *		1	1	
DATE ANALYZED		03-01-90	03-01-90	
METHOD GC FID/5030		--	--	
as Gasoline	0.05	ND	ND	mg/L
METHOD 602		--	--	
Benzene	0.5	ND	ND	ug/L
Ethylbenzene	0.5	ND	ND	ug/L
Toluene	0.5	ND	ND	ug/L
Xylenes, total	0.5	ND	ND	ug/L

Ref: SHELL, Dublin; Project: 1826-2G

Parameter	Reporting Limit	Descriptor, Lab No. and Results MW-11 02-26-90 1123 47321	 MW-12 02-26-90 1236 47322	Units
PETROLEUM HYDROCARBONS		--	--	
VOLATILE (WATER)		--	--	
DILUTION FACTOR *		1	1	
DATE ANALYZED		03-01-90	03-01-90	
METHOD GC FID/5030		--	--	
as Gasoline	0.05	ND	ND	mg/L
METHOD 602		--	--	
Benzene	0.5	ND	ND	ug/L
Ethylbenzene	0.5	ND	ND	ug/L
Toluene	0.5	ND	ND	ug/L
Xylenes, total	0.5	ND	ND	ug/L

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in results column indicates analyte not detected at the value following, which supercedes the listed reporting limit.
mean	:	Average; sum of measurements divided by number of measurements.
mg/Kg (ppm)	:	Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
mg/L	:	Concentration in units of milligrams of analyte per liter of sample.
mL/L/hr	:	Milliliters per liter per hour.
MPN/100 mL	:	Most probable number of bacteria per one hundred milliliters of sample.
N/A	:	Not applicable.
NA	:	Not analyzed.
ND	:	Not detected; the analyte concentration is less than applicable listed reporting limit.
NTU	:	Nephelometric turbidity units.
RPD	:	Relative percent difference, 100 [Value 1 - Value 2]/mean value.
SNA	:	Standard not available.
ug/Kg (ppb)	:	Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
ug/L	:	Concentration in units of micrograms of analyte per liter of sample.
umhos/cm	:	Micromhos per centimeter.

Method References

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986.

* Reporting Limits are a function of the dilution factor for any given sample. To obtain the actual reporting limits for this sample, multiply the stated reporting limits by the dilution factor.

9892

CHAIN OF CUSTODY RECORD

PROJECT NO	PROJECT NAME
1826-26	Shell Dublin

SAMPLERS (Signature): [signatures]

NO.	DATE	TIME	STATION AND LOCATION	TPHG/BTEX
MW-8	2-26-90	9:55	2 pres VOA's	X
MW 9	"	10:35	"	X
MW-11	"	11:23	"	X
MW-R	"	12:36		X

TEST REQUESTED: TPHG/BTEX

P.O. #

LAB: NET Pacific

TURN AROUND TIME: 5 day

REMARKS:

WIC # 204-2277-0105
AFE # 986639

RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:
[signature]	2/26	16:15	[signature]

RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:
[signature]			
(VIA NCS)	2/27/90	0700	[signature]

REMARKS:

REPORT TO: Rich Garlow

FORM DATED 5-30-89

ensco environmental services, inc.
41674 Christy Street
Fremont, C.A. 94538-3114
(415) 659-0404
Fax (415) 651-4677
Contr. Lic. No. 550205

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Pacific, Inc.
435 Tesconi Circle
Santa Rosa, CA 95401
Tel: (707) 526-7200
Fax: (707) 526-9623

Richard Garlow
ENSCO Environmental
41674 Christy St.
Fremont, CA 94538

Date: 03-06-90
NET Client Acct No: 18.06
NET Pacific Log No: 9893
Received: 02-27-90 0700

Client Reference Information

SHELL, 7194 Amador Valley Blvd., Dublin; Project: 1826-2G

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

Jules Skamarack
Laboratory Manager

Enclosure(s)

Ref: SHELL, 7194 Amador Valley Blvd., Dublin; Project: 1826-2G

Parameter	Reporting Limit	Descriptor, Lab No. and Results BB-1 02-23-90 1001 47323	 RW-1 02-23-90 1030 47324	 MW-1 02-23-90 1111 47325	Units
PETROLEUM HYDROCARBONS		--	--	--	
VOLATILE (WATER)		--	--	--	
DILUTION FACTOR *		1	1	1	
DATE ANALYZED		03-01-90	03-01-90	03-01-90	
METHOD GC FID/5030		--	--	--	
as Gasoline	0.05	ND	0.42	1.5	mg/L
METHOD 602		--	--	--	
Benzene	0.5	ND	42	130	ug/L
Ethylbenzene	0.5	ND	13	30	ug/L
Toluene	0.5	ND	1.8	13	ug/L
Xylenes, total	0.5	ND	2.7	24	ug/L

Ref: SHELL, 7194 Amador Valley Blvd., Dublin; Project: 1826-2G

Parameter	Reporting Limit	Descriptor, Lab No. and Results MW-4 02-23-90 1141 47326	 MW-2 02-23-90 1239 47327	 MW-3 02-23-90 1310 47328	Units
PETROLEUM HYDROCARBONS		--	--	--	
VOLATILE (WATER)		--	--	--	
DILUTION FACTOR *		1	1	1	
DATE ANALYZED		03-01-90	03-01-90	03-01-90	
METHOD GC FID/5030		--	--	--	
as Gasoline	0.05	ND	0.07	0.05	mg/L
METHOD 602		--	--	--	
Benzene	0.5	8.0	6.3	10	ug/L
Ethylbenzene	0.5	1.1	2.7	1.2	ug/L
Toluene	0.5	ND	ND	ND	ug/L
Xylenes, total	0.5	0.7	2.5	0.9	ug/L

Ref: SHELL, 7194 Amador Valley Blvd., Dublin; Project: 1826-2G

Parameter	Reporting Limit	Descriptor, Lab No. and Results MW-5 02-23-90 1340 47329	 MW-6 02-23-90 1409 47330	 MW-7 02-23-90 1434 47331	Units
PETROLEUM HYDROCARBONS		--	--	--	
VOLATILE (WATER)		--	--	--	
DILUTION FACTOR *		1	1	1	
DATE ANALYZED		03-01-90	03-01-90	03-01-90	
METHOD GC FID/5030		--	--	--	
as Gasoline	0.05	ND	1.0	ND	mg/L
METHOD 602		--	--	--	
Benzene	0.5	ND	150	ND	ug/L
Ethylbenzene	0.5	0.6	47	ND	ug/L
Toluene	0.5	ND	16	ND	ug/L
Xylenes, total	0.5	ND	30	0.7	ug/L

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in results column indicates analyte not detected at the value following, which supercedes the listed reporting limit.
mean	:	Average; sum of measurements divided by number of measurements.
mg/Kg (ppm)	:	Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
mg/L	:	Concentration in units of milligrams of analyte per liter of sample.
mL/L/hr	:	Milliliters per liter per hour.
MPN/100 mL	:	Most probable number of bacteria per one hundred milliliters of sample.
N/A	:	Not applicable.
NA	:	Not analyzed.
ND	:	Not detected; the analyte concentration is less than applicable listed reporting limit.
NTU	:	Nephelometric turbidity units.
RPD	:	Relative percent difference, 100 [Value 1 - Value 2]/mean value.
SNA	:	Standard not available.
ug/Kg (ppb)	:	Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
ug/L	:	Concentration in units of micrograms of analyte per liter of sample.
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Method References

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Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986.

* Reporting Limits are a function of the dilution factor for any given sample. To obtain the actual reporting limits for this sample, multiply the stated reporting limits by the dilution factor.

CHAIN OF CUSTODY RECORD

9893

PROJECT NO	PROJECT NAME	TEST REQUESTED	P.O. #
1826-2G	SHELL - Dublin		LAB NET Pacific
			TURN AROUND TIME 5 days

SAMPLERS (Signature): [signatures]

NO.	DATE	TIME	STATION AND LOCATION	TPHG	BTEX						REMARKS
BB-1	2-23-90	10:01	2 pres. VOAS	X	X						
RW-1	↓	10:32	" " "	X	X						
mw-1		11:11	" " "	X	X						
mw-4		11:41	" " "	X	X						
mw-2		12:39	" " "	X	X						
mw-3		1:10	" " "	X	X						
mw-5		1:40	" " "	X	X						Address: 7194 Amador
mw-6		2:09	" " "	X	X						Valley Blvd, Dublin
mw-7	↓	2:34	" " "	X	X						
											WIC# : 204 2277 0105
											AFE# : 486639
											Exp. Code:
											Contact:

RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:
[signature]	2/23	4:01	[signature]	[signature]	2/26	1615	[signature]
RELINQUISHED BY: [signature]	DATE:	TIME:	RECEIVED BY:	RELINQUISHED BY: * (VIA NCS)	2/27/90	0900	RECEIVED BY: [signature]

REMARKS: report in ppm

REPORT TO: Rich Garlow

ensco environmental services, inc.
41674 Christy Street
Fremont, C.A. 94538-3114
(415) 659-0404
Fax (415) 651-4677
Conv. Lic. No. 550205

FORM DATED 5-30-89