EXCELTECH

NOVEMBER QUARTERLY GROUNDWATER SAMPLING AND ANALYSIS

FOR

FORMER SHELL STATION
7194 AMADOR VALLEY BOULEVARD
DUBLIN, CALIFORNIA

Project No. 1826G
December 1990

Northern California Regional Office 41674 Christy Street, Fremont, CA 94538-3114 (415) 659-0404 Fax: (415) 651-4677 Lic. # 596545

EXCELTECH

December 20, 1990

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

Attention: Ms. Diane Lundquist

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

Dear Ms. Lundquist:

This report presents the results of the November Quarterly groundwater sampling and analyses for the subject site in the City of Dublin, Alameda County, California (Figure 1). Included are all current and past analytical data acquired during this ongoing investigation.

Groundwater Sampling

Groundwater samples were collected from 10 monitoring wells and one recovery well on and adjacent to the site (Figure 2). Sampling was done in accordance with Exceltech's groundwater sampling protocol (Appendix A). Because monitoring well MW-1 is within 5 feet of RW-1, only RW-1 was sampled this quarter. Well MW-1 will be sampled next quarter. The groundwater purged from the wells and equipment rinse water was placed in drums approved for this purpose by the Department of Transportation. Drums were left on-site pending removal by a licensed hauler to the Shell refinery for recycling.

Laboratory Analyses

The groundwater samples were transported to NET Pacific, Inc. (NET) located in Santa Rosa, California for analysis. NET, which is a state-certified laboratory, analyzed the 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 in five of the 10 monitoring wells and in the recovery well (MW-2, MW-3, MW-4, MW-5, MW-6, and RW-1).

Discussion

A general decrease in hydrocarbon levels has been observed in the groundwater samples collected from the monitoring wells at and adjacent to this site through the course of the investigation. Hydrocarbon concentrations in RW-1 have increased since the last quarter. Groundwater

elevations obtained from depth-to-groundwater measurements obtained prior to sampling were used to generate the groundwater elevation contour map shown in Figure 2. Figure 3 presents the benzene concentration contours.

Reporting Requirements

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

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

California Regional Water Quality Control
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 because of 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.

Sincerely,
Exceltech, Inc.

Kay Pannell
Staff Geologist

Lawrence D. Pavlak, C.E.G. 1187
Corporate C.E.G.

MD/LDP/sw
Enclosures

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December 20,1990

Shell Oil Company
7194 Amador Valley Boulevard
Dublin, California

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	
	06/04/90	0.83	0.088	0.010	0.0026	0.028	8.62	
	11/20/90	NA	NA	NA	NA	NA	9.50	
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	
	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	

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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-2	03/02/89	0.23	0.024	0.0009	0.0092	0.018	10.91	
(Con't)	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	
	06/04/90	0.06	0.0024	<0.0005	0.0008	<0.0005	10.72	
	11/20/90	0.06	0.0056	<0.0005	<0.0005	<0.0005	11.35	
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	
	06/01/89	N D	N D	N D	N D	N D	10.40	
	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	

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GROUNDWATER ANALYSES DATA

Well	Date	TPHG (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl Benzene (ppm)	Xylenes (ppm)	Depth To Water (ft.)	Well Elevation (ft.)
MW-3	10/10/89	0.08	0.0064	0.00072	N D	N D	10.95	
(Con't)	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	
	06/04/90	0.08	0.010	<0.0005	0.0014	<0.005	10.52	
	11/20/90	0.10	0.026	0.0007	0.0012	0.0019	12.65	
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	
	10/26/89	N D	0.0034	N D	N D	N D	11.35	
	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	
	06/04/90	0.16	0.085	0.0011	0.0019	<0.005	10.74	
	11/20/90	0.14	0.052	0.001	0.0008	0.0009	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-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	
	06/04/90	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	8.57	
	11/20/90	<0.05	<0.0005	<0.0005	<0.0005	0.001	9.45	
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	

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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	05/01/89	0.79	0.12	0.011	0.025	0.017	8.90	
(Con't)	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	
	06/04/90	0.19	<0.0005	<0.0005	<0.0005	0.0006	9.22	
	11/20/90	0.73	0.120	0.012	0.039	0.0210	9.65	
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	
	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	

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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-7	01/18/90	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	7.49	
(Con't)	02/23/90	<0.05	<0.0005	<0.0005	<0.0005	<0.0007	6.92	
	06/04/90	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	6.95	
	11/20/90	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	8.10	
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	
	06/04/90	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	9.04	
	11/20/90	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	10.70	
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	

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GROUNDWATER ANALYSES DATA

Well	Date	TPHG (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl Benzene (ppm)	Xylenes (ppm)	Depth To Water (ft.)	Well Elevation (ft.)
MW-9	12/21/89	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	9.48	
(Con't)	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	
	06/04/90	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	8.64	
	11/20/90	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	9.95	
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	N A	NA	NA	NA	NA	NA	
	06/04/90	N A	N A	N A	N A	N A	N A	
	11/20/90	NA	NA	NA	NA	NA	NA	Destroyed
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	
	11/20/90	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	
	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	

Exceltech, Inc.
Project No. 1826G
December 20,1990

Shell Oil Company
7194 Amador Valley Boulevard
Dublin, California

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-11	10/24/89	N D	N D	N D	N D	N D	8.38	
(Con't)	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	
	06/04/90	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	8.13	
	11/20/90	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	8.83	
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	
	06/04/90	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	7.96	
	11/20/90	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	8.80	
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	

Exceltech, Inc.
Project No. 1826G
December 20,1990

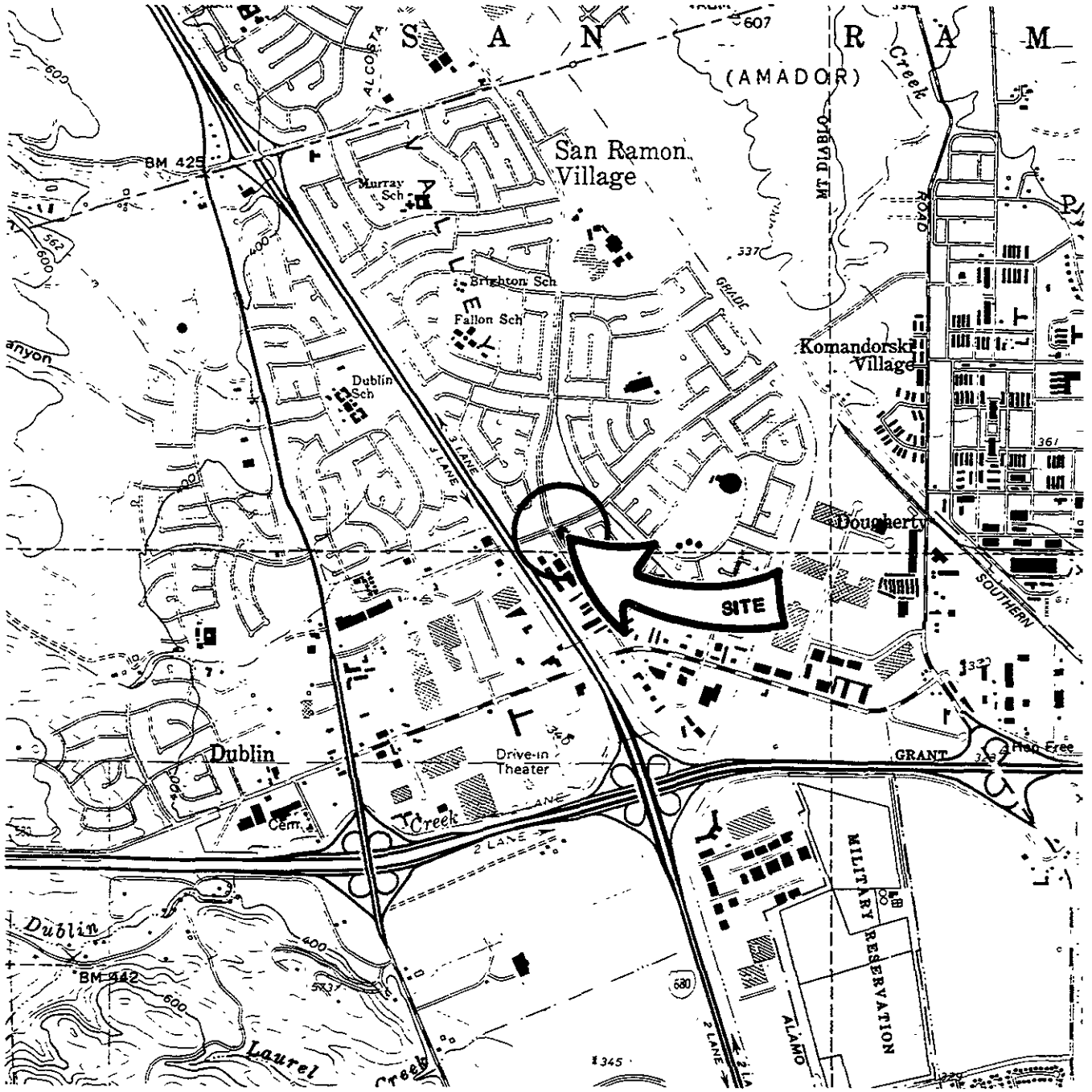
Shell Oil Company
7194 Amador Valley Boulevard
Dublin, California

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	06/30/89	1.4	N D	N D	N D	N D	9.90	
(Con't)	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	
	06/04/90	0.18	0.023	0.0007	0.0053	0.0012	9.97	
	11/20/90	1.9	0.17	0.052	0.029	0.038	10.50	

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

EXCELTECH

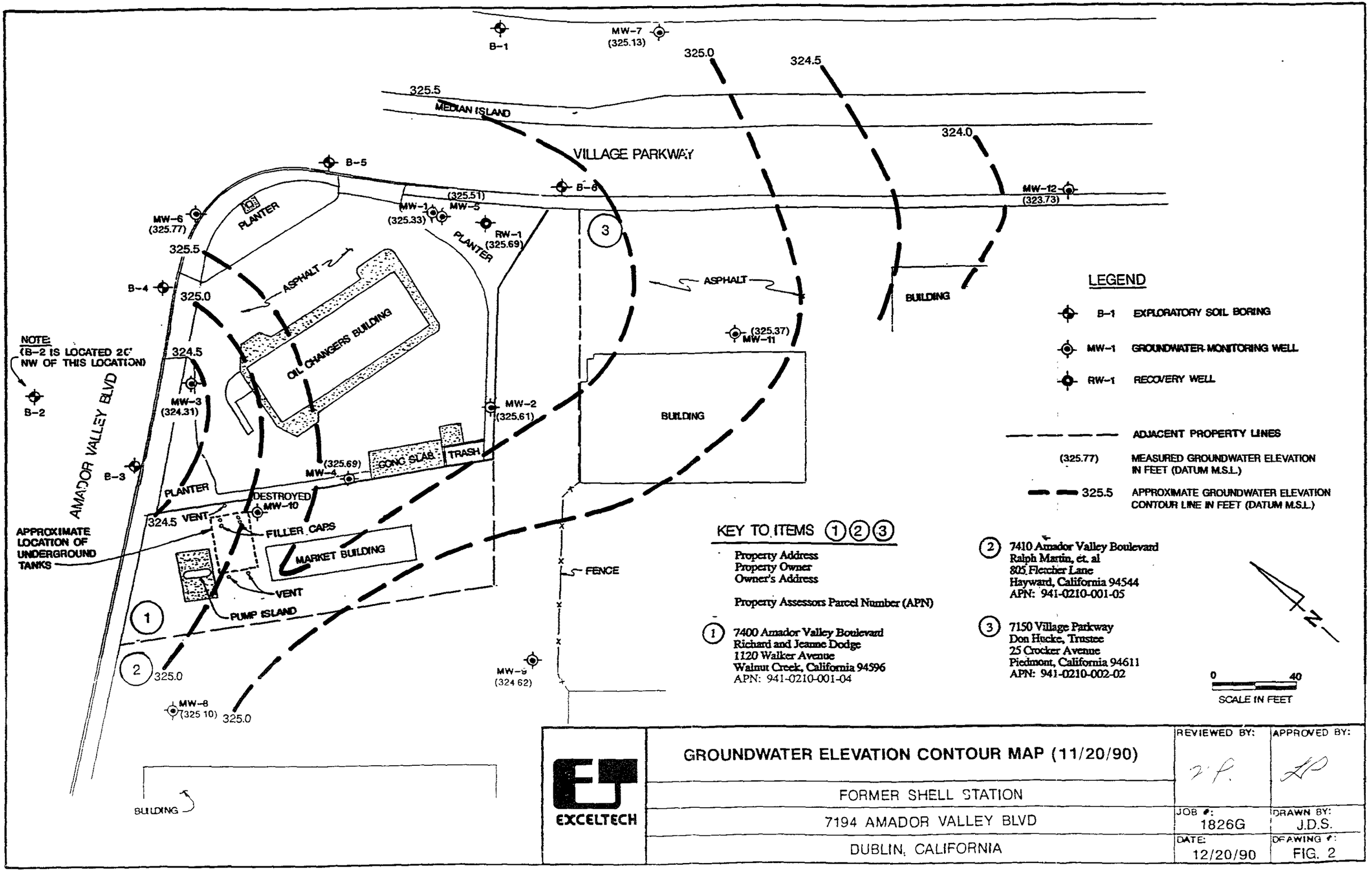
SITE LOCATION MAP

FORMER SHELL STATION

7194 AMADOR VALLEY BLVD

DUBLIN, CALIFORNIA

REVIEWED BY	APPROVED BY
T.F.	K.P.
JOB # 1826G	DRAWN BY J.C.
DATE 12/20/90	DRAWING # FIG. 1



EXCELTECH

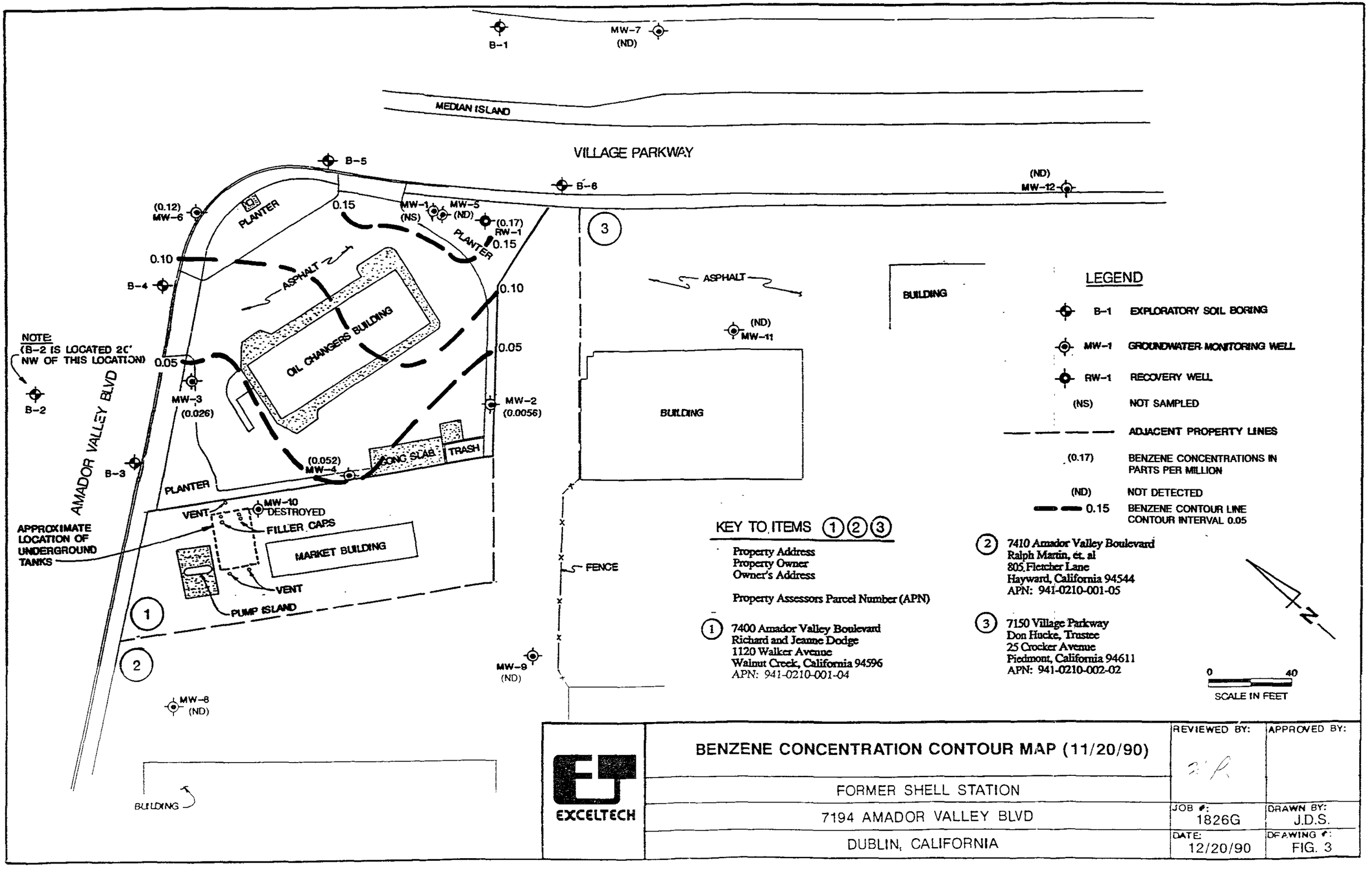
GROUNDWATER ELEVATION CONTOUR MAP (11/20/90)

FORMER SHELL STATION

7194 AMADOR VALLEY BLVD

DUBLIN, CALIFORNIA

REVIEWED BY:	APPROVED BY:
JOB #: 1826G	DRAWN BY: J.D.S.
DATE: 12/20/90	DRAWING #: FIG. 2



EXCELTECH

BENZENE CONCENTRATION CONTOUR MAP (11/20/90)

FORMER SHELL STATION

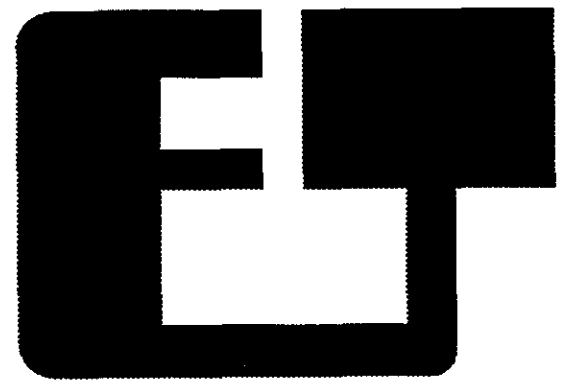
7194 AMADOR VALLEY BLVD

DUBLIN, CALIFORNIA

REVIEWED BY:	APPROVED BY:
JOB #: 1826G	DRAWN BY: J.D.S.
DATE: 12/20/90	DRAWING #: FIG. 3

APPENDIX A

GROUNDWATER SAMPLING PROTOCOL



EXCELTECH

Groundwater Sampling Protocol

GROUNDWATER SAMPLING PROTOCOL

Sampling of groundwater is performed by Exceltech, Inc. 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

Kay Pannell
Exceltech
41674 Christy St.
Fremont, CA 94538

Date: 12-07-90
NET Client Acct No: 18.06
NET Pacific Log No: 5096
Received: 11-27-90 0800

Client Reference Information

SHELL, Dublin; Project: 1826G

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

JS:rct
Enclosure(s)

NET Pacific, Inc.

Client No: 18.06
Client Name: Exceltech
NET Log No: 5096

Date: 12-07-90
Page: 2

Ref: SHELL, Dublin; Project: 1826G

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results BB-1 11-20-90 1630 69341	BB-2 11-20-90 1630 69342	Units
PETROLEUM HYDROCARBONS			--	--	
VOLATILE (WATER)			--	--	
DILUTION FACTOR *			1	1	
DATE ANALYZED			12-02-90	12-02-90	
METHOD GC FID/5030			--	--	
as Gasoline		0.05	ND	ND	mg/L
METHOD 602			--	--	
DILUTION FACTOR *			1	1	
DATE ANALYZED			12-02-90	12-02-90	
Benzene		0.0005	ND	ND	mg/L
Ethylbenzene		0.0005	ND	ND	mg/L
Toluene		0.0005	ND	ND	mg/L
Xylenes, total		0.0005	ND	ND	mg/L

NET Pacific, Inc.

Client No: 18.06
Client Name: Exceltech
NET Log No: 5096

Date: 12-07-90
Page: 3

Ref: SHELL, Dublin; Project: 1826G

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results MW-12 11-20-90 1630 69343	 MW-11 11-20-90 1730 69344	Units
PETROLEUM HYDROCARBONS			--	--	
VOLATILE (WATER)			--	--	
DILUTION FACTOR *			1	1	
DATE ANALYZED			12-02-90	12-02-90	
METHOD GC FID/5030			--	--	
as Gasoline		0.05	ND	ND	mg/L
METHOD 602			--	--	
DILUTION FACTOR *			1	1	
DATE ANALYZED			12-02-90	12-02-90	
Benzene		0.0005	ND	ND	mg/L
Ethylbenzene		0.0005	ND	ND	mg/L
Toluene		0.0005	ND	ND	mg/L
Xylenes, total		0.0005	ND	ND	mg/L

NET Pacific, Inc.

Client No: 18.06
Client Name: Exceltech
NET Log No: 5096

Date: 12-07-90
Page: 4

Ref: SHELL, Dublin; Project: 1826G

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results MW-8 11-20-90 1345 69345	MW-9 11-20-90 1350 69346	Units
PETROLEUM HYDROCARBONS			--	--	
VOLATILE (WATER)			--	--	
DILUTION FACTOR *			1	1	
DATE ANALYZED			12-03-90	12-02-90	
METHOD GC FID/5030			--	--	
as Gasoline		0.05	ND	ND	mg/L
METHOD 602			--	--	
DILUTION FACTOR *			1	1	
DATE ANALYZED			12-03-90	12-02-90	
Benzene		0.0005	ND	ND	mg/L
Ethylbenzene		0.0005	ND	ND	mg/L
Toluene		0.0005	ND	ND	mg/L
Xylenes, total		0.0005	ND	ND	mg/L

NET Pacific, Inc.

Client No: 18.06
Client Name: Exceltech
NET Log No: 5096

Date: 12-07-90
Page: 5

Ref: SHELL, Dublin; Project: 1826G

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results MW-7 11-20-90 0830 69347	MW-5 11-20-90 1315 69348	Units
PETROLEUM HYDROCARBONS			--	--	
VOLATILE (WATER)			--	--	
DILUTION FACTOR *			1	1	
DATE ANALYZED			12-02-90	12-02-90	
METHOD GC FID/5030			--	--	
as Gasoline		0.05	ND	ND	mg/L
METHOD 602			--	--	
DILUTION FACTOR *			1	1	
DATE ANALYZED			12-02-90	12-02-90	
Benzene		0.0005	ND	ND	mg/L
Ethylbenzene		0.0005	ND	ND	mg/L
Toluene		0.0005	ND	ND	mg/L
Xylenes, total		0.0005	ND	0.001	mg/L

NET Pacific, Inc.

Client No: 18.06
Client Name: Exceltech
NET Log No: 5096

Date: 12-07-90
Page: 6

Ref: SHELL, Dublin; Project: 1826G

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results MW-2 11-21-90 1300 69349	RW-1 11-21-90 1310 69350	Units
PETROLEUM HYDROCARBONS			--	--	
VOLATILE (WATER)			--	--	
DILUTION FACTOR *			1	10	
DATE ANALYZED			12-02-90	12-04-90	
METHOD GC FID/5030			--	--	
as Gasoline		0.05	0.06	1.9	mg/L
METHOD 602			--	--	
DILUTION FACTOR *			1	10	
DATE ANALYZED			12-02-90	12-04-90	
Benzene		0.0005	0.0056	0.170	mg/L
Ethylbenzene		0.0005	ND	0.029	mg/L
Toluene		0.0005	ND	0.052	mg/L
Xylenes, total		0.0005	ND	0.038	mg/L

NET Pacific, Inc.

Client No: 18.06
Client Name: Exceltech
NET Log No: 5096

Date: 12-07-90
Page: 7

Ref: SHELL, Dublin; Project: 1826G

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results MW-3 11-21-90 1100 69351	MW-4 11-21-90 1230 69352	Units
PETROLEUM HYDROCARBONS			--	--	
VOLATILE (WATER)			--	--	
DILUTION FACTOR *			1	1	
DATE ANALYZED			12-02-90	12-03-90	
METHOD GC FID/5030			--	--	
as Gasoline		0.05	0.10	0.14	mg/L
METHOD 602			--	--	
DILUTION FACTOR *			1	1	
DATE ANALYZED			12-02-90	12-03-90	
Benzene		0.0005	0.026	0.052	mg/L
Ethylbenzene		0.0005	0.0012	0.0008	mg/L
Toluene		0.0005	0.0007	0.001	mg/L
Xylenes, total		0.0005	0.0019	0.0009	mg/L

NET Pacific, Inc.

Client No: 18.06
Client Name: Exceltech
NET Log No: 5096

Date: 12-07-90
Page: 8

Ref: SHELL, Dublin; Project: 1826G

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results MW-6 11-21-90 1515 69353	Units
PETROLEUM HYDROCARBONS			--	
VOLATILE (WATER)			--	
DILUTION FACTOR *			1	
DATE ANALYZED			12-03-90	
METHOD GC FID/5030			--	
as Gasoline		0.05	0.73	mg/L
METHOD 602			--	
DILUTION FACTOR *			1	
DATE ANALYZED			12-03-90	
Benzene		0.0005	0.120	ug/L
Ethylbenzene		0.0005	0.039	ug/L
Toluene		0.0005	0.012	ug/L
Xylenes, total		0.0005	0.021	ug/L

Ref: SHELL, Dublin; Project: 1826G

QUALITY CONTROL DATA

Parameter	Reporting Limits	Units	Cal Verf Stand % Recovery	Blank Data	Spike % Recovery	Duplicate Spike % Recovery	RPD
Gasoline	0.05	mg/L	101	ND	98	100	2.0
Benzene	0.0005	mg/L	98	ND	89	89	< 1
Toluene	0.0005	mg/L	104	ND	85	85	< 1
Gasoline	0.05	mg/L	96	ND	100	96	4.1
Benzene	0.0005	mg/L	96	ND	100	96	4.1
Toluene	0.0005	mg/L	104	ND	97	91	6.4
Benzene	0.0005	mg/L	78	ND	112	100	11.3
Toluene	0.0005	mg/L	84	ND	104	101	2.9

COMMENT: Blank Results were ND on other analytes tested.

NET Pacific, Inc.

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in results column indicates analyte not detected at the value following. This datum supercedes the listed Reporting Limit.
*	:	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 (but do not multiply reported values).
ICVS	:	Initial Calibration Verification Standard (External Standard).
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 100 through 493: see "Methods for Chemical Analysis of Water & Wastes", U.S. EPA, 600/4-79-020, rev. 1983.

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.

SM: see "Standard Methods for the Examination of Water & Wastewater, 16th Edition, APHA, 1985.

5096

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME	P.O. #	LAB	TURN AROUND TIME
18266	SHELL/DUBLIN	WIC # 204-2277-0105	NET	5 DAYS

SAMPLERS (Signature): Dennis D Martin

TEST REQUESTED: TPHG BTEX

NO.	DATE	TIME	SAMPLE DESCRIPTION	TPHG BTEX							REMARKS
BB1	11/20/90	1630	VOAS (3) total	X							
BB2	11/20/90	1630	" "	X							
MW12	11/20/90	1630	" "	X							
MW11	"	1730	" "	X							
MW8	"	1345	" "	X							
MW9	"	1350	" "	X							
MW7	"	830	" "	X							
MW5	"	1315	" "	X							
MW2	11/21/90	1300	" "	X							
RW1	"	1310	" "	X							
MW3	"	11:00	" "	X							
MW4	"	12:30	" "	X							
MW6	"	3:15	" "	X							
											Custody seal intact JS 11/26/90 @ 1900

RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:
Dennis D Martin	11/21/90	4:15	Gary R. [illegible]	K. Pannell	11/26/90	1220	Mike [illegible]
Mike [illegible]	11/26/90			via NCS	11/27/90	0800	J Schwartz

REMARKS:

REPORT TO: KAT PANNELL

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

FORM DATED 3-27-90