A Report Prepared for

Carnation Company 800 North Brand Boulevard Glendale, California 91203

QUARTERLY MONITORING REPORT
JUNE THROUGH AUGUST 1991
CARNATION FACILITY
OAKLAND, CALIFORNIA

9-18-91

HLA Job No. 20294,005.02

bу

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September 18, 1991



September 23, 1991

20294,003.02

Alameda County Health Care Services Department of Environmental Health Hazardous Materials Division 80 Swan Way, Room 200 Oakland, California 94621

Attention:

Mr. Dennis J. Byrne

Senior Hazardous Materials Specialist

Ladies and Gentlemen:

Quarterly Monitoring Report Carnation Facility Oakland, California

Enclosed is Harding Lawson Associates' (HLA) Quarterly Monitoring Report for the Carnation Dairy Facility at 1310 14th Street in Oakland, California. This report describes the results of monitoring groundwater quality in June 1991, and measurement of groundwater elevations and product thickness at the facility.

If you have any questions, please feel free to contact me at (415) 899-7319.

Yours very truly,

HARDING LAWSON ASSOCIATES

R. Bruce Scheibach

Principal Hydrogeologist

Enclosure: Quarterly Monitoring Report

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1.0 INTRODUCTION

From 1929 to 1991, Carnation Company operated a dairy production facility at 1310 14th Street, Oakland, California (Plate 1). The facility was used for dairy product processing and for vehicle maintenance. An "L" shaped building consisting of a warehouse with four vehicle service bays occupies the northern and western sides of the site (Plate 2). In January 1989, Carnation excavated an underground waste oil tank, two underground gasoline tanks, and two underground diesel storage tanks, which were located beneath and south of the warehouse building. During removal of the tanks, gasoline and diesel were observed to be present as a separate phase floating in the excavations. Carnation investigated the extent of the hydrocarbons and implemented several interim remedial measures. The chemicals detected, which include free-phase gasoline, diesel, waste oil, and their dissolved chemical components, are believed to have been released from the leaking underground waste oil tank and from piping connected to the four underground fuel storage tanks. In addition to the petroleum hydrocarbons, polychlorinated biphenyls (PCBs) were detected in oil floating on the groundwater table at one location. Animal fats were also reported to have been found floating on the groundwater table beneath the facility.

In April 1991, Carnation retained Harding Lawson Associates (HLA) to conduct additional site investigations, and to perform an engineering analysis of remediation alternatives. A Work Plan for the quarterly monitoring and other site investigation work was submitted to the Alameda County Department of Environmental Health and the California Regional Water Quality Control Board in May 1991 (HLA, 1991a). All field work was conducted in accordance with the Quality Assurance/Quality Control (QA/QC) Plan contained in the Work Plan. This report presents the results of the first quarterly

groundwater chemistry monitoring for the period of June through August, 1991. A more comprehensive analysis of soil and groundwater chemistry at the facility is presented in the Site Characterization Report (HLA, 1991b).

2.0 WATER-LEVEL ELEVATION AND FREE-PHASE PETROLEUM PRODUCT MEASUREMENTS AND GROUNDWATER CHEMISTRY MONITORING

2.1 Water-Level Elevation and Free-Phase Petroleum Product Measurement

HLA conducted water-level elevation and free-phase petroleum product thickness measurements on April 16, May 24, July 9, and August 15, 1991 to monitor groundwater elevations and the thickness and distribution of free-phase petroleum product. All accessible monitoring wells and selected product recovery wells were measured during each monitoring event. Water-level and free-phase product measurements were conducted using an electrical oil-water interface probe calibrated with a steel tape. Measurement procedures are described in detail in the QA/QC Plan (HLA, 1991a).

2.2 Groundwater Chemistry Monitoring

On June 25 and 26, 1991, groundwater samples from 20 onsite and offsite monitoring wells that did not contain free product were collected for chemical analysis. The five monitoring wells containing free product were not sampled. QA/QC procedures followed during sampling are described in detail in the QA/QC Plan (HLA, 1991a).

Prior to collection of groundwater samples, the depth to free-phase petroleum product and depth to water were measured in each well using an oil-water interface probe. While purging the well prior to sampling, water levels and well production were monitored to evaluate formation permeability. Chemical analyses of the groundwater samples were performed by National Environmental Testing, Inc., Santa Rosa, California (NET). Groundwater samples were analyzed for TPH as gasoline, TPH as diesel, and TPH as motor oil using EPA Test Method 8015. To determine if volatile halogenated compounds exist in groundwater, samples from 9 of the 20 monitoring wells

(Wells MW-1, MW-4, MW-5, MW-13, MW-14, MW-15, MW-26, MW-29, and MW-32) were analyzed using EPA Test Method 8240. Samples from 10 of the remaining 11 wells were analyzed for BTEX using EPA Test Method 8020. Also, samples from 10 wells (Wells MW-1 through MW-5, MW-13, MW-16, MW-26, MW-29, and MW-32) were analyzed for polar and nonpolar oil and grease using EPA Test Methods 503D and E to assess the distribution of animal fats reported to be present in the groundwater. As described in the QA/QC Plan, a field blank was collected for each day of sampling and one duplicate water sample was analyzed for every 10 samples collected. The groundwater generated during the sampling was contained onsite and will be discharged to the sanitary sewer after obtaining a discharge permit from the East Bay Municipal Utility District (EBMUD).

3.0 RESULTS OF INVESTIGATIONS

3.1 Water-Level Elevations

Table 1 contains the groundwater elevation data collected on April 16, May 24, July 9, and August 15, 1991. All accessible monitoring wells and selected product recovery wells were used to monitor the groundwater elevations and free-phase petroleum product thicknesses.

Plate 3 presents a groundwater elevation contour map using data collected on July 9, 1991. Note that in Table 1 and on Plate 3, corrected groundwater elevations for wells containing free-phase petroleum product were calculated using an assumed product density of 0.80 grams per cubic centimeter. These groundwater elevation data were not used in contouring.

The groundwater elevation data collected each month indicate groundwater flow is to the northwest beneath the southern portion of the site, and is to the south and southwest beneath the northern portion of the site (Plate 3). The hydraulic gradient beneath the northern portion of the site is approximately 1.0 x 10⁻³ to 7.5 x 10⁻³ foot/foot (ft/ft) in a southwest direction from 16th Street onto the site. The hydraulic gradient beneath the southern portion of the site is approximately 1.0 x 10⁻³ ft/ft in a northwest direction. This convergent flow appears to result in a net westerly flow direction in the chemical-bearing area (Plate 3). These data contradict historical groundwater elevation data which indicated a generally north-northwest flow, offsite onto 16th Street.

3.2 <u>Distribution of Free Product</u>

Table 1 contains the free-product thickness data collected on April 16, May 24, July 9, and August 16, 1991. The distribution of free-phase product measured on July 9, 1991, is shown on Plate 4. In general, the horizontal extent of free-phase

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product during July 1991 was similar to but less than that measured in 1989 and 1990. The apparent product thickness was greatest in Well MW-22 (5.16 feet), near the northern wall of the warehouse building (Plate 4). However, product was not and has not been observed in the five offsite wells (MW-25 through MW-29), all of which are located relatively close to the Carnation warehouse. The consistent lack of free-phase petroleum product in the offsite wells and the wells on the west side of the property (MW-3, MW-14, MW-15, and MW-16) suggests that the product is restricted to the onsite area and has not migrated offsite.

3.3

Twenty wells were sampled in June 1991, with duplicate samples collected from Market 1991.

AW-3 and MW-26. Chemical results for the groundwater samples are

rized in Table 2 and presented on Plate 5 Wells MW-3 and MW-26. Chemical results for the groundwater samples are summarized in Table 2 and presented on Plate 5. Groundwater sampling forms are contained in Appendix A. Laboratory data sheets are contained in Appendix B.

Distribution of Petroleum Hydrocarbons in Groundwater 3.3.1

Of the 22 samples collected from 20 wells, TPH as gasoline, diesel, and motor oil were detected in samples from only 3, 1, and 1 of the wells, respectively (Table 2). The highest TPH as gasoline, TPH as diesel, and TPH as motor oil concentrations were found in duplicate samples from Well MW-26. Oil and grease, total and non-polar, were found above the reporting limit in only 1 of 14 samples tested (Well MW-26). Dissolved BTEX compounds were found in 7 of the 22 samples. Plate 21 shows the dissolved BTEX results. The dissolved BTEX plume is fully delineated by nondetectable concentrations in samples from upgradient Wells MW-1, MW-9, MW-10, MW-4, MW-11, MW-31, MW-2, MW-12, and MW-13. No BTEX compounds were detected in samples from downgradient Wells MW-15, MW-14, and offsite Wells MW-29 and

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MW-28; only 0.8 and 1.8 μ g/l benzene were detected in offsite Wells MW-25 and MW-27, respectively. These data suggest that a dissolved petroleum hydrocarbon plume has not been transported a significant distance offsite.

3.3.2 Distribution of Chlorinated Hydrocarbons in Groundwater

One chlorinated hydrocarbon, 1,2-dichloroethane (1,2-DCA), was detected in duplicate samples from offsite Well MW-26 (at concentrations of 470 and 480 μ g/l, respectively), and in the sample from onsite Well MW-32 (at 14 μ g/l). HLA recommends continued monitoring of these two wells and analysis of samples for chlorinated hydrocarbons to verify the presence of this compound.

3.3.3 Distribution of Animal Fats in Groundwater

Total and non-polar oil and grease were found in only 1 of 14 samples tested (Well MW-26) at concentrations of 5,400 and 5,100 μ g/l, respectively. Oil and grease were not detected in the duplicate sample from Well MW-26 above the reporting limit of 5,000 μ g/l (Table 2).

3.3.4 Groundwater OA/OC Data

Field quality control samples consisted of 2 field blanks, 1 trip blank, and 2 duplicate samples. Analytical results are presented in Table 7, and the certified laboratory data sheets are presented in Appendix B.

Field blanks consist of organic-free deionized water that is poured into sample containers under field conditions. Field blanks are prepared and analyzed to check for potential contamination during sample preparation in the field. A field blank was poured on each of the two days that sampling occurred and transported to the analytical laboratory with the groundwater samples. No analytes were detected at or above the reported detection limits in the field blanks.

Trip blanks are prepared by the analytical laboratory and consist of organic-free deionized water provided in laboratory-prepared sample bottles; trip blanks are not decanted from their original containers. These blanks are used to detect potential contamination introduced through field or laboratory procedures. They are taken to the field and subjected to storage and transport conditions similar to those for groundwater samples. A trip blank was transported to the analytical laboratory with the groundwater samples. No analytes were detected at or above the reported detection limits in the trip blank.

Duplicate samples were collected from 2 wells (Wells MW-3 and MW-26) and were analyzed using the following EPA Test Methods: 8015, 8020, 8240, 503D, and 503E. The purpose of these samples is to evaluate analytical laboratory precision. Precision is assessed by calculating the relative percent difference (RPD) between the initial sample results (X_1) and the duplicate sample results (X_2) ; a low RPD indicates high precision. The equation used to calculate RPD is:

$$RPD = \frac{|X_1 - X_2|}{(X_1 + X_2)/2} \quad x \quad 100$$

RPDs were calculated for 13 sets of data where analytes were detected above the reporting limit in the duplicate samples. Only 1 of the RPDs (TPH as gasoline for samples from Well MW-26) exceeded the quality assurance goal of 100 percent specified in the QA/QC Plan (HLA, 1991a). The other RPDs for this quarter were generally below 50 percent, indicating good precision.

Laboratory quality control data included surrogate recoveries and blank spike recoveries. Laboratory data sheets are presented in Appendix B. In general, surrogate recoveries and blank spike recoveries were all close to 100 percent.

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4.0 PROPOSED GROUNDWATER MONITORING PLAN

Carnation will continue to monitor groundwater elevations and free-phase petroleum product thicknesses monthly, and will monitor groundwater chemistry quarterly.

Due to the limited distribution of dissolved hydrocarbons, Carnation proposes to reduce the number of wells sampled to 9 wells quarterly. Wells MW-3, MW-14, MW-25, MW-26, MW-27, MW-28, MW-29, MW-30, and MW-32 will be sampled each quarter, with samples from all wells analyzed for aromatic hydrocarbons using EPA Test Method 8020. Additionally, samples from Wells MW-26 and MW-32 will be analyzed for chlorinated hydrocarbons using EPA Test Method 8010. Quality assurance/quality control samples will be collected in accordance with the QA/QC Plan (HLA. 1991a).

5.0 REFERENCES

Harding Lawson Associates, 1991a. Work Plan, Carnation Facility, Oakland, California. May.

_____, 1991b. Site Characterization Report, Carnation Facility, Oakland, California.

September.

TABLES

Table 1. Groundwater Elevations and Free-Phase Petroleum Product Thicknesses

Well Number	Measuring Point Elevation (ft AMSL)	Date	Depth to Water (ft BGS)	Depth to Product (ft BGS)	Product Thickness (ft)	Water Level Elevation* (ft AMSL)
MW- 1	16.49 16.49 16.49 16.49	4/16/91 5/24/91 7/9/91 8/15/91	10.27 10.66 11.25 11.61			6.22 5.83 5.24 4.88
MW- 2	15.11 15.11 15.11 15.11	4/16/91 5/24/91 7/9/91 8/15/91	9.15 9.48 10.02 10.33			5.96 5.63 5.09 4.78
MW- 3	14.30 14.30 14.30 14.30	4/16/91 5/24/91 7/9/91 8/15/91	8.44 8.75 9.26 9.57			5.86 5.55 5.04 4.73
MW- 4	14.42 14.42 14.42 14.42	4/16/91 5/24/91 7/9/91 8/15/91	8.46 Dry 9.38 9.71			5.96 5.04 4.71
MW- 5	14.41 14.41 14.41 14.41	4/16/91 5/24/91 7/9/91 8/15/91	8.48 8.81 9.32 9.60			5.93 5.60 5.09 4.81
MW- 6	14.12 14.12 14.12 14.12	4/16/91 5/24/91 7/9/91 8/15/91	8.15 8.46 8.95 9.21			5.97 5.66 5.17 4.91
MW- 7	14.29 14.29 14.29 14.29	4/16/91 5/24/91 7/9/91 8/15/91	11.22 10.79 10.30 11.04	8.32 7.72 8.33 8.40	2.90 3.07 1.97 2.64	5.39 5.96 5.57 5.36
MW- 8	14.20 14.20 14.20 14.20	4/16/91 5/24/91 7/9/91 8/15/91	8.15 8.83 9.43 9.68	8.40 8.85 9.12	0.43 0.58 0.56	6.05 5.71 5.23 4.97
MW- 9	14.96 14.96 14.96	5/24/91 7/9/91 8/15/91	9.31 9.86 10.19			5.65 5.10 4.77
MW-10	15.73 15.73 15.73 15.73	4/16/91 5/24/91 7/9/91 8/15/91	9.71 10.06 10.62 10.78			6.02 5.67 5.11 4.95
MW-11	14.55 14.55 14.55	5/24/91 7/9/91 8/15/91	8.85 9.43 9.74			5.70 5.12 4.81

Table 1. Groundwater Elevations and Free-Phase Petroleum Product Thicknesses

Well Number	Measuring Point Elevation (ft AMSL)	Date	Depth to Water (ft BGS)	Depth to Product (ft BGS)	Product Thickness (ft)	Water Level Elevation* (ft AMSL)
MW-12	15.28 15.28 15.28 15.28	4/16/91 5/24/91 7/9/91 8/15/91	9.24 9.59 10.14 10.42			6.04 5.69 5.14 4.86
MW-13	14.85 14.85 14.85 14.85	4/16/91 5/24/91 7/9/91 8/15/91	8.84 9.19 9.73 10.12			6.01 5.66 5.12 4.73
MW-14	14.10 14.10	7/9/91 8/15/91	9.16 9.45			4.94 4.65
MW-15	14.17 14.17	7/9/91 8/15/91	9.24 9.53			4.93 4.64
MW-16	14.11 14.11 14.11 14.11	4/16/91 5/24/91 7/9/91 8/15/91	8.76 8.61 9.14 9.40			5.35 5.50 4.97 4.71
MW-22	14.44 14.44 14.44 14.44	4/16/91 5/24/91 7/9/91 8/15/91	12.58 13.05 13.43 13.69	7.52 7.77 8.27 8.53	5.06 5.28 5.16 5.16	5.91 5.61 5.14 4.88
MW-23	14.48 14.48 14.48	5/24/91 7/9/91 8/15/91	9.97 10.67 10.91	8.53 8.93 9.26	1.44 1.74 1.65	5.66 5.20 4.89
MW-24	14.67 14.67 14.67	4/16/91 5/24/91 8/15/91	8.75 9.76 11.24	8.83 9.44	0.93 1.80	5.92 5.65 4.87
MW-OS25	12.86 12.86 12.86 12.86	4/17/91 5/24/91 7/9/91 8/15/91	7.79 7.70 7.42 7.72			5.07 5.16 5.44 5.14
MW-OS26	12.71 12.71 12.71 12.71	4/17/91 5/24/91 7/9/91 8/15/91	6.93 6.95 7.40 7.53			5.78 5.76 5.31 5.18
MW-OS27	14.04 14.04 14.04 14.04	4/17/91 5/24/91 7/9/91 8/15/91	9.01 8.23 8.71 8.75			5.03 5.81 5.33 5.29
MW-OS28	13.45 13.45 13.45 13.45	4/17/91 5/24/91 7/9/91 8/15/91	7.55 7.67 8.08 8.22			5.90 5.78 5.37 5.23

Table 1. Groundwater Elevations and Free-Phase Petroleum Product Thicknesses

Well Number	Measuring Point Elevation (ft AMSL)	Date	Depth to Water (ft BGS)	Depth to Product (ft BGS)	Product Thickness (ft)	Water Level Elevation* (ft AMSL)
MW-OS29	12.60 12.60 12.60 12.60	4/17/91 5/24/91 7/9/91 8/15/91	7.04 6.90 7.24 7.42			5.56 5.70 5.36 5.18
MW-30	14.54	8/15/91	9.75			4.79
MW-31	14.92	8/15/91	10.14			4.78
MW-32	14.76	8/15/91	10.02			4.74
PR-20	14.36 14.36 14.36 14.36	4/16/91 5/24/91 7/9/91 8/15/91	9.06 9.94 10.07 10.32	7.90 8.10 8.74 9.03	1.16 1.84 1.33 1.29	6.23 5.89 5.35 5.07
PR-22	14.43 14.43 14.43 14.43	4/16/91 5/24/91 7/9/91 8/15/91	9.68 10.20 10.44 10.61	8.01 8.30 8.83 9.01	1.67 1.90 1.61 1.60	6.09 5.75 5.28 5.10
PR-24	14.32	4/16/91	8.40			5.92
PR-27	NA NA NA	5/24/91 7/9/91 8/15/91	8.58 9.10 9.36			
PR-31	14.08	4/16/91	7.92			6.16
PR-33	14.36 14.36 14.36 14.36	4/16/91 5/24/91 7/9/91 8/15/91	7.78 8.30 8.78 9.07			6.58 6.06 5.58 5.29
PR-35	14.55	4/16/91	8.98	8.26	0.72	6.15
PR-38	14.47	4/16/91	8.58			5.89
PR-40	NA	4/16/91	8.58			
PR-41	NA NA NA	5/24/91 7/9/91 8/15/91	7.13 7.76 9.11	6.67 7.13 7.40	0.46 0.63 1.71	
PR-43	NA NA NA	5/24/91 7/9/91 8/15/91	8.85 9.20 9.87			
PR-44	NA NA NA	5/24/91 7/9/91 8/15/91	8.26 9.10 10.56	6.69 7.69 8.22	1.57 1.41 2.34	
PR-45	NA NA NA	5/24/91 7/9/91 8/15/91	8.93 9.50 9.72	8.85 9.30 9.53	0.08 0.20 0.19	

Table 1. Groundwater Elevations and Free-Phase Petroleum Product Thicknesses

Well Number	Measuring Point Elevation (ft AMSL)	Date	Depth to Water (ft BGS)	Depth to Product (ft BGS)	Product Thickness (ft)	Water Level Elevation* (ft AMSL)
PR-46	NA NA	7/9/91 8/15/91	8.60 8.95			
PR-48	NA	4/16/91	8.75	8.65	0.10	
PR-49	NA	5/24/91	7.62			
PR-52	NA NA NA	5/24/91 7/9/91 8/15/91	9.26 9.74 10.03	8.76 9.17 9.38	0.50 0.57 0.65	
PR-53	NA NA NA	5/24/91 7/9/91 8/15/91	10.45 10.57 10.73	8.25 8.85 9.20	2.20 1.72 1.53	
PR-55	NA NA NA	5/24/91 7/9/91 8/15/91	9.51 10.26 10.58	8.59 8.82 9.07	0.92 1.44 1.51	
PR-56	NA NA	7/9/91 8/15/91	10.86 10.93	9.02 9.33	1.84 1.60	
PR-57	NA	4/16/91	7.69			
PR-58	NA NA NA NA	4/16/91 5/24/91 7/9/91 8/15/91	8.99 9.39 10.03 10.37	8.03 8.39 8.86 9.13	0.96 1.00 1.17 1.24	
PR-59	NA NA NA NA	4/16/91 5/24/91 7/9/91 8/15/91	8.09 8.41 9.03 8.83			
PR-61	NA NA NA	5/24/91 7/9/91 8/15/91	9.06 9.55 9.89	8.94 9.43 9.71	0.12 0.12 0.18	
PR-63	NA NA NA	5/24/91 7/9/91 8/15/91	8.98 9.46 9.77	8.96 9.45 9.75	0.02 0.01 0.02	
PR-65	NA	5/24/91	8.76	8.68	80.0	
PR-67	NA	4/16/91	8.77	8.03	0.74	
PR-69	NA NA NA NA	4/16/91 5/24/91 7/9/91 8/15/91	7.08 7.47 8.13 8.04			
PR-70	NA	4/16/91	8.86	7.46	1.40	
PR-71	NA	4/16/91	8.71			

Table 1. Groundwater Elevations and Free-Phase Petroleum Product Thicknesses

Well Number	Measuring Point Elevation (ft AMSL)	Date	Depth to Water (ft BGS)	Depth to Product (ft BGS)	Product Thickness (ft)	Water Level Elevation* (ft AMSL)
PR-72	NA	4/16/91	9.03			
PR-77	NA NA NA	5/24/91 7/9/91 8/15/91	8.65 9.18 9.38			
PR-81	NA	4/16/91	8.35			

^{*} When product is present the equivalent water level elevation is calculated by adding 0.8 times the product thickness to the product/water interface elevation.

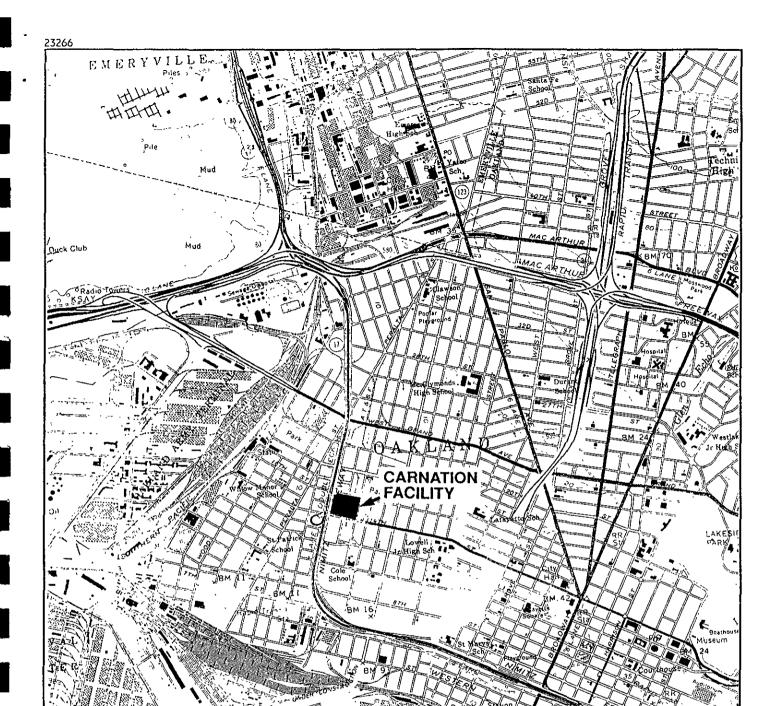
AMSL = Elevation Above Mean Sea Level BGS = Below Ground Surface NA = Data Not Available

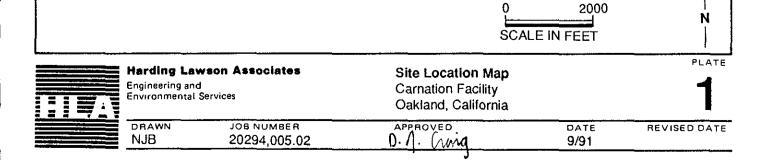
Table 2. Petroleum Hydrocarbon Concentrations in Groundwater Samples

		Hydrocarbon Concentrations (ug/l)									
Well	Sample	TPH	TPH	TPH	Oil and	Oil and Grease	Benzene	Toluene	Ethyl-	Xylenes	Other 8240
Number	Number	as gasoline	as diesel	as motor oil	Grease (Total)	(Nonpolar)			Benzene	(Total)	Compounds
MW-1	91062501	< 50	<50	<500	< 5000	< 5000	<5.0	<5.0	<5.0	<5.0	<5.0-<10
MW-2	91062510	<50	< 50	< 500	< 5000	< 5000	<0.5	< 0.5	< 0.5	<0.5	NT
MW-3	91062605	<50	<50	< 500	< 5000	< 5000	22	< 0.5	0.5	< 0.5	NT
	91062606	100	<50	<500	< 5000	< 5000	25	< 0.5	0.6	< 0.5	NT
MW-4	91062502	<50	< 50	<500	< 5000	< 5000	<5.0	<5.0	<5.0	<5.0	<5.0-<10
MW-5	91062509	<50	<50	< 500	< 5000	< 5000	<5.0	<5.0	<5.0	<5.0	<5.0-<10
MW-9	91062503	<50	< 50	<500	NT	NT	< 0.5	<0.5	<0.5	<0.5	NT
MW-10	91062504	<50	<50	< 500	NT	NT	< 0.5	< 0.5	< 0.5	< 0.5	NT
MW-11	91062505	<50	<50	< 500	NT	NT	< 0.5	< 0.5	<0.5	< 0.5	NT
MW-12	91062512	<50	< 50	< 500	NT	NT	< 0.5	< 0.5	<0.5	< 0.5	NT
MW-13	91062506	<50	<50	< 500	< 5000	< 5000	<5.0	<5.0	<5.0	<5.0	<5.0-<10
MW-14	91062507	<50	< 50	< 500	NT	NT	<5.0	<5.0	<5.0	<5.0	<5.0-<10
MW-15	91062508	<50	< 50	< 500	NT	NT	<5.0	<5.0	<5.0	<5.0	<5.0-<10
MW-16	91062513	< 50	<50	< 500	< 5000	<5000	NT_	NT	NT	NT	NT
MW-25	91062607	<50	<50	<500	NT	NT	0.8	< 0.5	< 0.5	<0.5	NT
MW-26	91062608	300000	2100	1600	< 5000	< 5000	4400	3600	260	4600	470 (1,2-DCA)
MW-26 dup	91062609	85000	1100	1000	5400	5100	3700	2700	160	3100	480 (1,2-DCA)
MW-27	91062610	<50	<50	< 500	NT	NT	1.8	<0.5	<0.5	<0.5	NT
MW-28	91062601	<50	<50	< 500	NT	NT	< 0.5	< 0.5	< 0.5	< 0.5	NT
MW-29	91062602	<50	<50	< 500	<5000	< 5000	<5.0	< 5.0	<5.0	<5.0	<5.0-<10
MW-31	91062603	<50	<50	< 500	NT	NT	<0.5	< 0.5	<0.5	< 0.5	NT
MW-32	91062604	690	<50	< 500	< 5000	<5000	550	<5.0	7.6	11	14 (1,2-DCA)
Field Blank	91062511	<50	<50	< 500	<5000	<5000	< 0.5	< 0.5	<0.5	< 0.5	NT
Field Blank	91062611	<50	<50	<500	<5000	<5000	<5.0	< 5.0	<5.0	<5.0	<5.0-<10
Trip Blank	Trip Blank		NT	NT	NT	NT	<0.5	< 0.5	<0.5	< 0.5	NT

Notes: <50 - Chemical not detected above reporting limit. NT- Not Tested.

PLATES

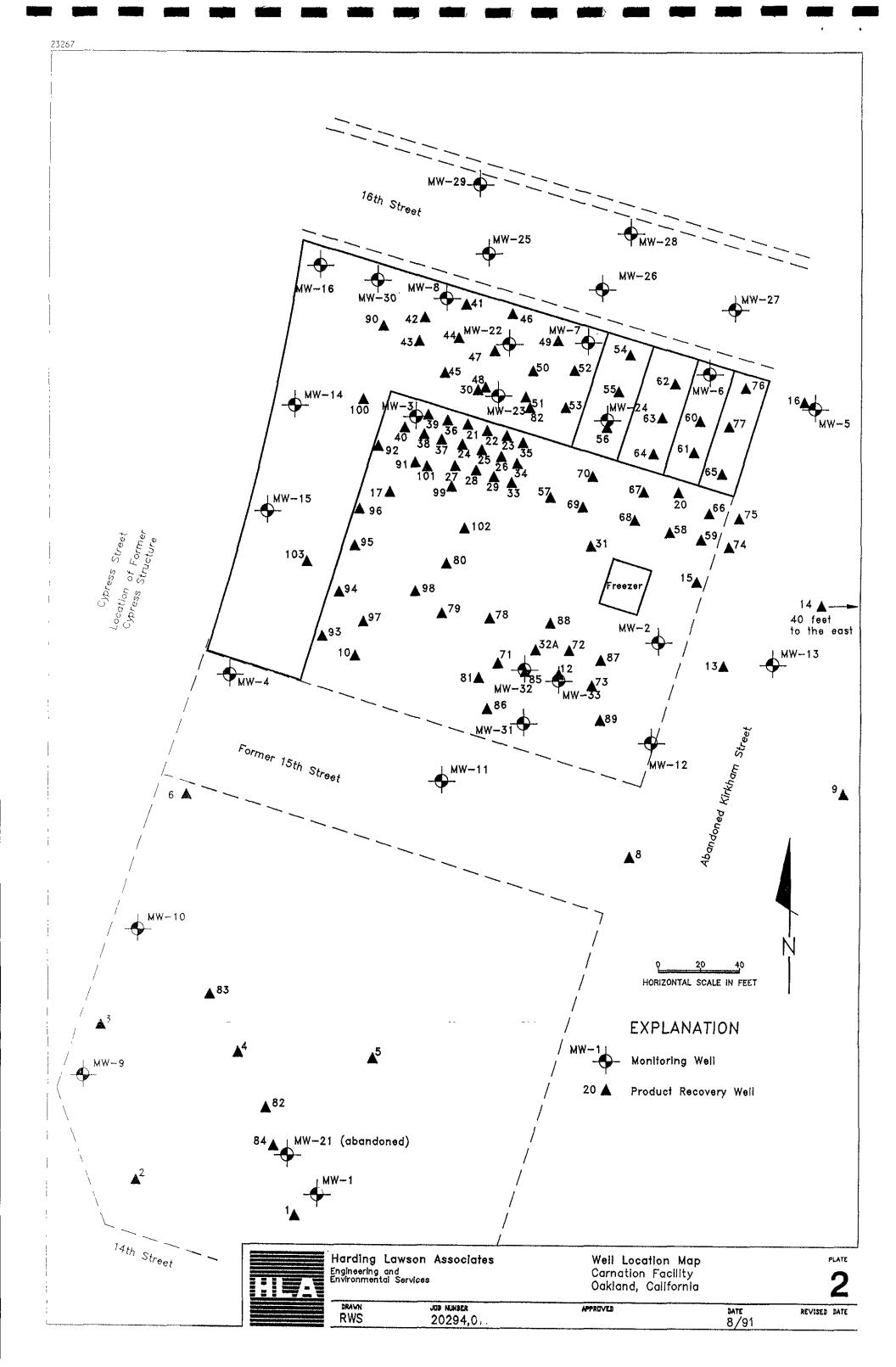


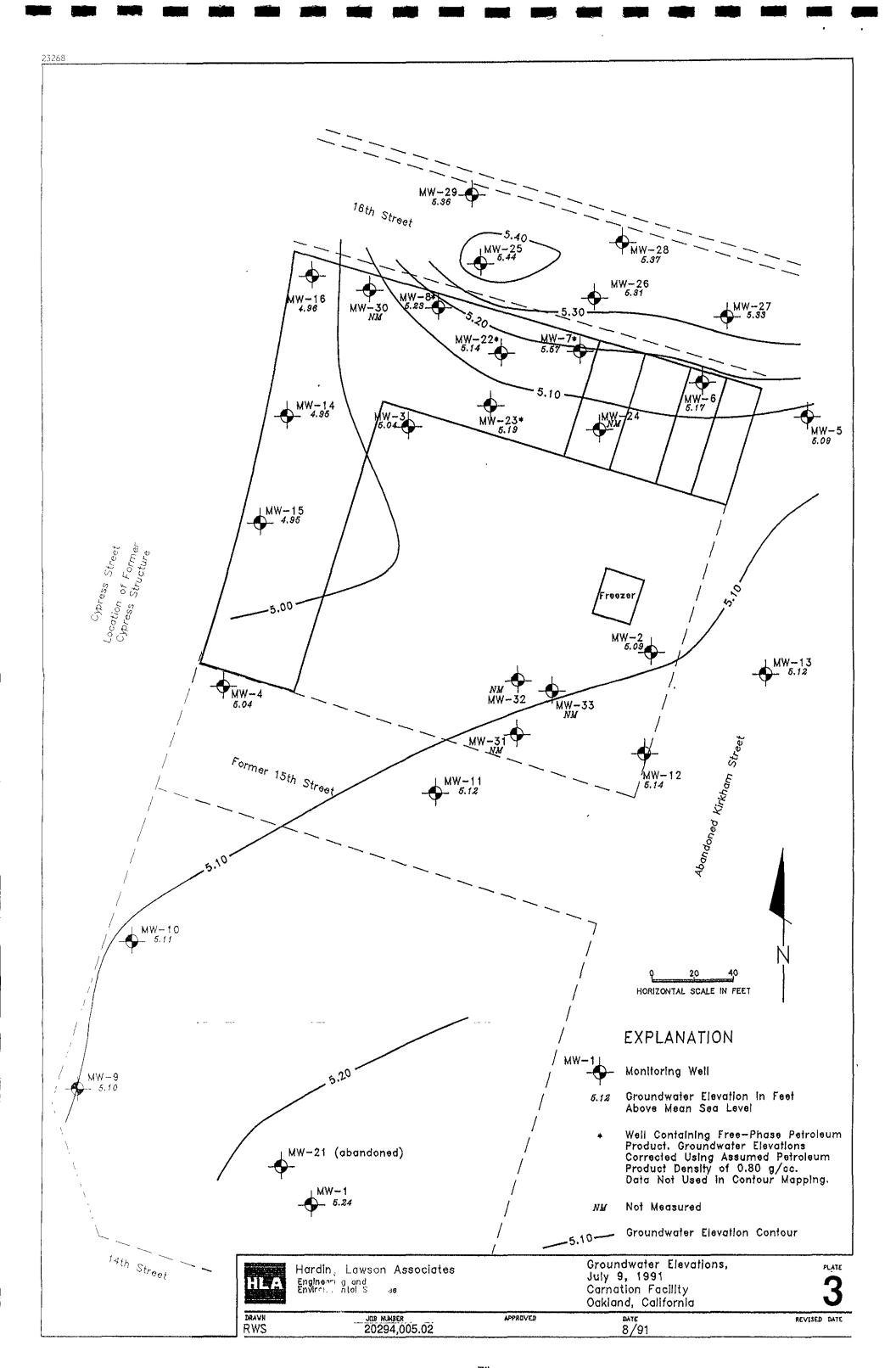


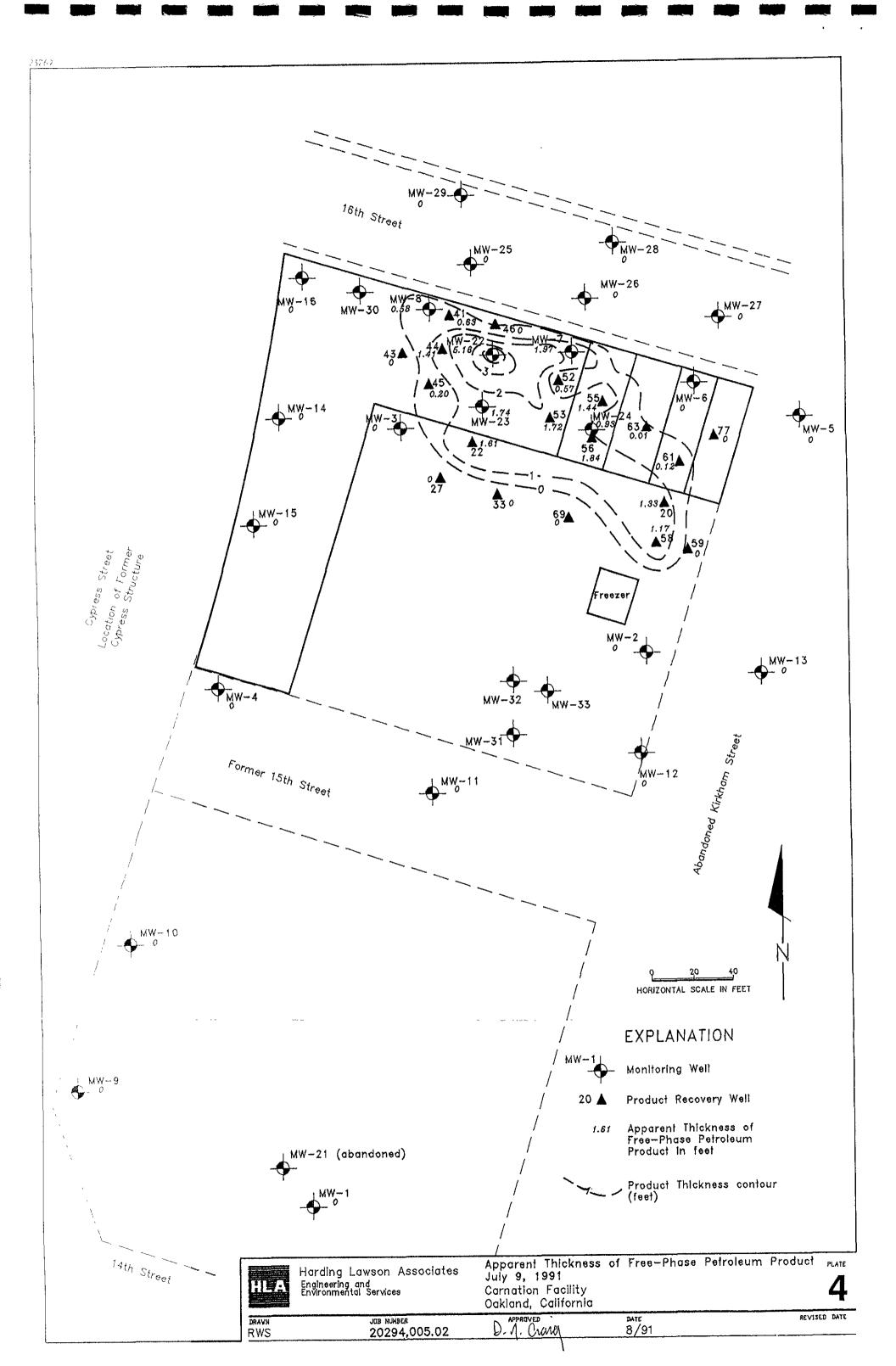
Reference: U.S.G.S. 7.5 Minute Oakland West Quadrangle, 1980

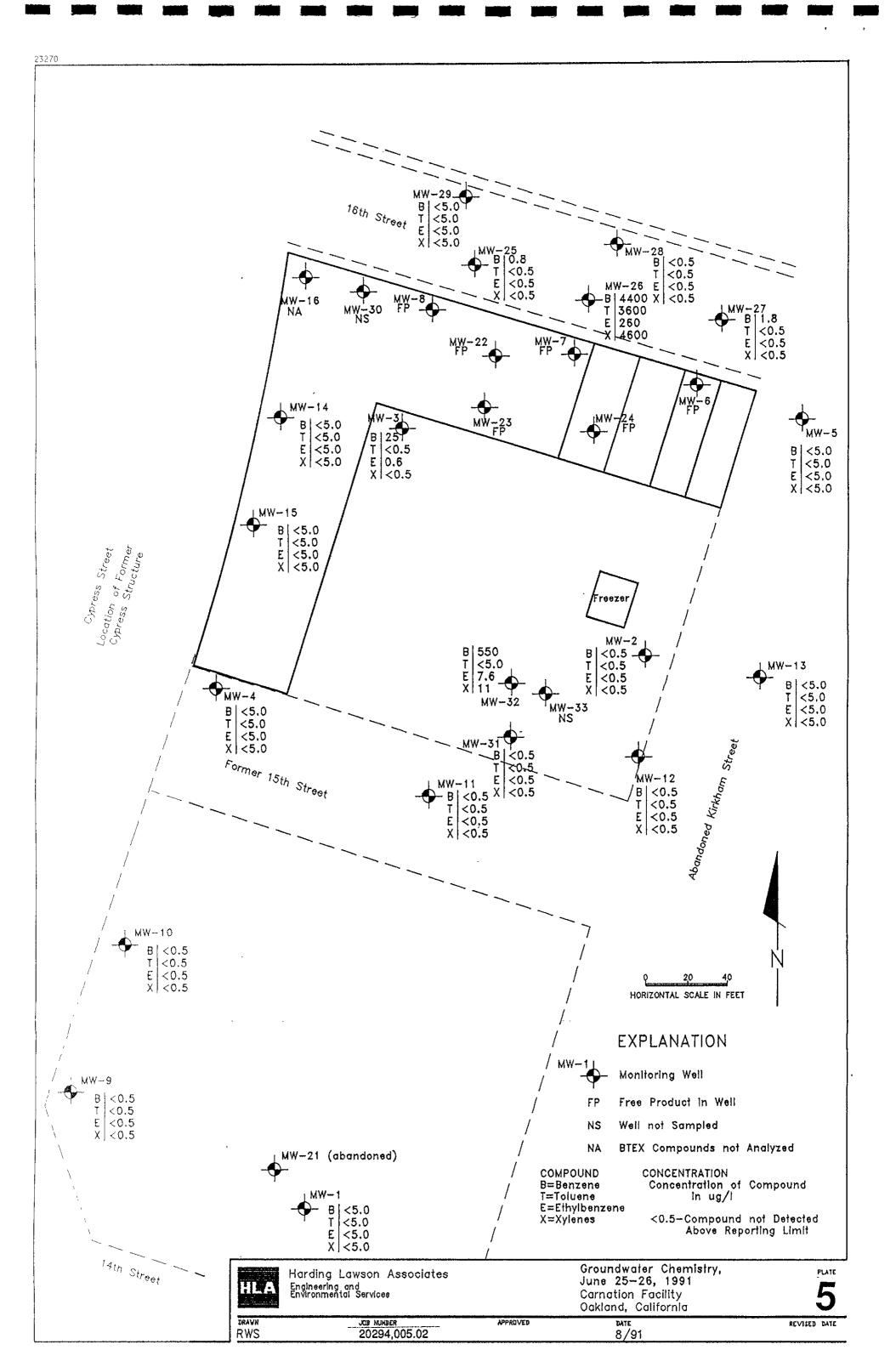
70 ° . - .8M 11

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Appendix A

GROUNDWATER SAMPLING FORMS

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Engineers and Geoscientists

GROUND	WATER	SAMPL	ING FORI
unuunu	- V V A 1 E D	SAIVIFL	

						Well No	wu.	- \		
						Well Type:	⊒Moni	itor 🗆 Extrac	tion 🗆 🔾	ther
Job Name	Carne	noite		·····		Well Material:	: (3 P	VC St. St	eel 🗆 O	ther
Job Number	202	94.003	<u>.02</u>			Date6-	<u>\5-9</u>	٦٠	Time	0925
Recorded by	rich	Elen				Sampled by	24	S. DME		
		(\$4)	jnalure)						(Initials)	
				WE	LL P	<u>JRGING</u>				
PURGE VOLUM	ИĖ					PURGE MET	ΉṎ́Ď			
Casing Diameter	(D in Inc	:hes):				🔲 Bailer - Type	:			
2-inch 24-in	nch 🗀]6-inch □C	Other			Submersible	⊉ €er	ntrifugal 🔲 Blac	lder; Pump	No.:
Total Depth of Ca	sing (Ti) in feet BTO	C): 47			Other - Type	:			· · · · · · · · · · · · · · · · · · ·
Water Level Depti	h (WL ir	feet BTOC):	11.0	5		PUMP INTAK	E SÉT	TING		
Number of Well V	olumes	to be purged	(# Vols)			☐ Near Bottom	ı □N	ear Top 🔲 🗆	ther	
2 3 □4 □5	□ 10 [Other				Depth in feet (B	STOC):_	1.5 Scre	en interval	in feet (BTOC):
PURGE VOLUI	VIE CĂ	LCULATIO	N					from	ì	_ to
/ 42 -		~ \ Y	A	2 Y	5	Y 0.0408	=	30		
TD (feet)	WL	(feet)	D (inches)	- ^	<u>ح</u> ∜ Vols	X 0.0408		Calculated F	Purge Volur	me gailons
PURGE TIME					GE RA					GÉ VOLUME
			_	•						-
Start C				Initial		_gpm Final3	L gp	m <u></u> .	0	gallons
FIELD PARAMI		Cond.		<u> </u>		Minutes Since		Cond,	I mac	·-
Pumping Began	рΗ	(μmhos/cm) TER	Other 12	<u>r b</u>	Pumping Began	рН	(µmhos/cm)	τ □°¢	Other
initial	3.0	390	18.5	> 100						
35 - 2943	3.0	390	هدا	50 A	<u>. </u>					
30 "	7.0	320	19.0	42	٠,				<u> </u>	
				<u> </u>						<u> </u>
						Meter Nos.				
Observations Duri	ing Purg	ing (Well Co	ndition, Turbi	dity, Color	, Odor)	: herbid gr	عمرعهد	م بن سموا	urge	
Discharge Water (Storm Se		Other balke			•	
				WEL	L SA	MPLING			·····	
CALIDI INC NE	TUOD							<u> </u>		
SAMPLING ME						☐ Same As Abo				
Bailer - Type:_						☐ Grab - Type:				
Submersible		•				☐ Other - Type	:			
Sample No.			mple Series:			Preservatives		1 - 1-		omments
		ime/Cont.	Analysis Re					Lab		oniments
2501	1	•	TPH gas			: 4-50+	N-	<u>+</u>	<u> </u>	
	13	2 &6	<u>8240,0</u>	15				···		
	+									
						•				
					 					
	 		.		 		<u> </u>		_	
	 									,
		04454 = 5			L		L			· · · · · · · · · · · · · · · · · · ·
QUALITY CON					Rlank C	amples		~	ner Sample	•
Original Sample	icate Sa No. Du		le No.	Туре	J.W. IN 3	Sample No.		Type		Sample No.
- Simple		,p					-	.,,,,,	<u> </u>	
							 -	···		* · · · · · · · · · · · · · · · · · · ·
							 -			· ·
	<u> </u>						 -			
1.004				UEE	ICE (COPY				074

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GROUND-WATER SAMPLING FORM

				Well No				
Late Manner				• • • • • • • • • • • • • • • • • • • •	Well Type: ☐-Monitor ☐ Extraction ☐ Other			
Job Name <u>Carnation</u>] Other	
Job Number <u>volad solon</u>				Date <u>b</u> :	25.91	Time .	1504	
Recorded by	eil End		Sampled by	RUE - DM	(folials)			
		(Signature)	14/51			(a meas)		
			WEL	L PURGING				
PURGE VOLUM	!E			PURGE ME	PURGE METHOD			
Casing Diameter (I	D in inches):			🔲 Bailer - Typ	e:			
2-inch 2-inch	ch 🗆 6-inch 🗆]Other		Submersible	☐ Submersible ☐ Gentrifugal ☐ Bladder; Pump No.:			
Total Depth of Cas	sing (TD in feet BT	OC):1		Other - Typ	e:			
Water Level Depth	(WL in feet BTOC):	38	PUMP INTA	KE ŠĒTTING			
Number of Well Vo	olumes to be purg	ed (# Vols)		☐ Near Bottor	m □ Near Top	Other		
₽3 □4 □5 I	☐ 10 ☐ Other			Depth in feet (BTOC):	_ Screen Inter	val in feet (BTOC):	
PURGE VOLUM	ME CALCULATION	ON				from	to	
•			2	V 0.0408	== . <u>-</u> .			
73.2 -	WL (feet) X	D (inches)	- ^ 	X 0.0408	Calcul	ated Purge Vo	gallons olume	
****		_ (,						
PURGE TIME			PURG	E RATE			JRGE VOLUME	
1454 Start 14			Initial_	3 gpm Final	 gpm		gallons	
FIELD PARAME	TER MEASURE							
Minutes Since Pumping Began	pH Cond. (μmhos/d	cm) τ ፫፫ ° ξ	Other + U	Minutes Since Pumping Begar	pH (μmho	d. T G	CF Other	
	L.4 B25		>100					
	6.4 835							
26 "	6.7 800	21.5	[_					
	B:2 000	<u> </u>						
				Meter Nos.	†			
Ob					: Silly brown			
			•		er tank			
Discharge Water D	isposal: Sanii	ary Sewer	Storm Sev		7644			
		<u></u> .	WELI	SAMPLING		· <u>.</u>		
SAMPLING ME	THOD			☐ Same As Al	oove			
☐ Bailer - Type: _	<u> </u>			Grab - Type	Grab - Type:			
☐ Submersible ☐		adder: Pump I	No.:		e:			
SAMPLE DISTR	•	Sample Series						
Sample No.	Volume/Cont.	Analysis F	 	Preservatives	Lab		Comments	
2510	1 VOA	، عمو	1	HCI	Nat			
	2 2 44	dies	I	_				
		ن نو لا		H ₂ SO ₄	7			
				· · · · · · · · · · · · · · · · · · ·				
01141774 0017	TOOL SAMELE	.1						
QUALITY CONT	THOL SAMPLES cate Samples	5	R	lank Samples		Other Sam	ioles	
	No. Duplicate San	nple No.	Туре	Sample No.		rpe	Sample No.	
Originar Oampio	. to: papirodo our			2511		F		
		 	FR	4311	 			
<u> </u>		 -						
		 						
ı	ı	1 1		į	1 1	ı		

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GROUND-WATER SAMPLING FORM

Job Number					Well No					
				Well Type: ☐Monitor ☐Extraction ☐Other						
					Well Material: ☐PVC ☐ St. Steel ☐ Other Date Time Time					
				Date	<u> </u>	<u> </u>	Time	213		
Recorded by Richards (Signature)				Sampled by Pula (Initials)						
		(Signa	rinue)	- \WEI	I DI	JRGING			(uncons)	
i i a a mi a a a ii i				AACT	<u></u>		LIOD.		, , Al	
PURGE VOLUME					PURGE METHOD Bailer - Type:					
Casing Diameter (D in inches): □ 2-inch □ 4-inch □ 6-inch □ Other Total Depth of Casing (TD in feet BTOC): 22. 2										
					☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:					
						er kummen and	auth .			
Water Level Depth (WL in feet BTOC): 4,5 3				_	PLIMP INTAK					
Number of Well V						Near Bottom		•		:-
2 3 □4 □5						Depth in feet (B	100):_			
PÚRGE VOLUK				2						_ to
้วน.น -	9.0	<u> </u>	4-	_ x	3	X 0.0408 ·		23		gallo
TD (feet)	WL (feet) / D	(inches)	#	Vols			Calculated I	Purge Volur	ne
PÜRGÉ TİME				PURC	E RA	TE		ACT	UAL PUR	GE VOLUM
במת Start במסמו	s St	on &!	Elaosed			_ gpm Final <u>১৮৫</u>	4 goi	n	0	gallo
FIELD PARAME					•	- 5 p	, o,			•
Minutes Since		Cond.	T - D°C	0444		Minutes Since	ρН	Cond.	T A SE	Other
Pumping Began	ρН	(µmhos/cm)	T Book	Other 4	***	Pumping Began	pπ	(µmhos/cm)	<mark> '□°F</mark>	Other
mitial	6.1	900	19.0	>:0	۵_				 	<u> </u>
15 - gale	6.5	925	21.5	-	ŀ					<u> </u>
1-1-0			ľ			1	,		P .	•
30 ''	6.5	980	21.0	>10	0					<u> </u>
	T 1	9\$0	21.0	>:0	0					
30'	6.5					Meter Nos.				
30'	6.5						مسمي	# C 00	lor	
30 · · ·	b.s	ing (Well Con	dition, Turk	pidity, Color,	Odor)	Meter Nos.	rous to	#10 00	lor	
30 · · ·	b.s	ing (Well Con	dition, Turk	oidity, Color,	Odor) wer	Silly by	our to	#10 00	lor-	
Observations Duri	ng Purgi	ing (Well Con ☐ Sanitary	dition, Turk	oidity, Color,	Odor) wer	Ecte 60 Bother 4944 MPLING		#1000	lor	
Observations Duri	ng Purg Disposal:	ing (Well Con	dition, Turk Sewer	oidity, Color, Storm Se	Odor) wer	E Silty by ☐Other bats MPLING ☐ Same As Ab	ove			
Observations Duri Discharge Water Discharge Wa	ng Purg Disposal:	ing (Well Con	dition, Turk Sewer	oidity, Color, Storm Se	Odor) wer	E Sille An Bother As As MPLING Same As Ab Grab - Type:	ove			
Observations Duri Discharge Water C SAMPLING ME Baller - Type:	ng Purg Disposal:	ing (Well Con	dition, Turk Sewer	bidity, Color, Storm Se WEL	Odor) wer L SA	E Silty by ☐Other bats MPLING ☐ Same As Ab	ove			
Observations Duri Discharge Water C SAMPLING ME Baller - Type: Submersible C SAMPLE DISTI	ng Purg Disposal: THOD S.S	ing (Well Con- Sanitary Sanitary Sanitary	dition, Turk Sewer er; Pump f	oidity, Color, Storm Se WEL	Odor) wer	E Silly by MPLING □ Same As Abo □ Grab - Type: □ Other - Type	ove			
Observations Duri Discharge Water Discharge Wa	ng Purg Disposal: THOD S.S.	ing (Well Con-	dition, Turk Sewer er; Pump I aple Series Analysis R	wEL	Odor) wer	E Site by MPLING Same As Ab Grab - Type: Other - Type Preservatives	ove	Lab		
Observations Duri Discharge Water C SAMPLING ME Baller - Type: Submersible C SAMPLE DISTI	THOD S.S Centrific RIBUTI	ing (Well Con-	er; Pump Inple Series Analysis R	WEL	Odor) wer	E Silfe by MPLING ☐ Same As Ab ☐ Grab - Type: ☐ Other - Type Preservatives	ove			
Observations Duri Discharge Water D SAMPLING ME Baller - Type: Submersible D SAMPLE DISTI	THOD S.S Centrific RIBUTI	ing (Well Con-	dition, Turk Sewer er; Pump I nple Series Analysis R	WEL No.:	Odor) wer	Sile by MPLING Same As Ab Grab - Type: Other - Type Preservatives	ove	Lab		
Observations Duri Discharge Water Discharge Wa	THOD S.S Centrific RIBUTI	ing (Well Con-	er; Pump Inple Series Analysis R	WEL No.:	Odor) wer	E Silfe by MPLING ☐ Same As Ab ☐ Grab - Type: ☐ Other - Type Preservatives	ove	Lab		
Observations Duri Discharge Water Discharge Wa	THOD S.S Centrific RIBUTI	ing (Well Con-	dition, Turk Sewer er; Pump I nple Series Analysis R	WEL No.:	Odor) wer	Sile by MPLING Same As Ab Grab - Type: Other - Type Preservatives	ove	Lab		
Observations Duri Discharge Water Discharge Wa	THOD S.S Centrific RIBUTI	ing (Well Con-	dition, Turk Sewer er; Pump I nple Series Analysis R	WEL No.:	Odor) wer	Sile by MPLING Same As Ab Grab - Type: Other - Type Preservatives	ove	Lab		
Observations Duri Discharge Water Discharge Wa	THOD S.S Centrific RIBUTI	ing (Well Con-	dition, Turk Sewer er; Pump I nple Series Analysis R	WEL No.:	Odor) wer	Sile by MPLING Same As Ab Grab - Type: Other - Type Preservatives	ove	Lab		
Observations Duri Discharge Water Discharge Wa	THOD S.S Centrific RIBUTI	ing (Well Con-	dition, Turk Sewer er; Pump I nple Series Analysis R	WEL No.:	Odor) wer	Sile by MPLING Same As Ab Grab - Type: Other - Type Preservatives	ove	Lab		
Observations Duri Discharge Water D SAMPLING ME Saller - Type: Submersible D SAMPLE DISTI Sample No.	ng Purg Disposal: THOD S.S Centrific Volu	ing (Well Con-	dition, Turk Sewer er; Pump I nple Series Analysis R	WEL No.:	Odor) wer	Sile by MPLING Same As Ab Grab - Type: Other - Type Preservatives	ove	Lab		
Observations Duri Discharge Water D SAMPLING ME Baller - Type: Submersible D SAMPLE DISTI Sample No.	THOD S.S Centrific Volu TROL	ing (Well Con-	dition, Turk Sewer er; Pump I nple Series Analysis R	No.:	Odor) wer L SA	Site by MPLING Same As Ab Grab - Type: Other - Type Preservatives	ove	Lab		Comments
Observations Duri Discharge Water D SAMPLING ME Baller - Type: Submersible D SAMPLE DISTI Sample No. 2605	THOD S.S Centrific Volu TROL icate Sa	ing (Well Con- Sanitary Ugai Bladdo ON Samitary UDA 1 SAMPLES mples	dition, Turk Sewer	No.:	Odor) wer L SA	Same As Ab. Grab - Type: Other - Type Other - Type	ove	Lab		Comments
Observations Duri Discharge Water D SAMPLING ME Saller - Type: SAMPLE DISTI Sample No. 2605 QUALITY CON Dup Original Sample	ng Purg Disposal: THOD S.S Centrific RIBUTI Volu S TROL Sicate Sa No. Du	ing (Well Congress) Sanitary Ugai Sladdo ON Sam Ime/Cont. Uba S SAMPLES mples plicate Sample	dition, Turk Sewer	No.:	Odor) wer L SA	Site by MPLING Same As Ab Grab - Type: Other - Type Preservatives	ove	Lab		Comments
Observations Duri Discharge Water D SAMPLING ME Baller - Type: Submersible D SAMPLE DISTI Sample No. 2605	ng Purg Disposal: THOD S.S Centrific RIBUTI Volu S TROL Sicate Sa No. Du	ing (Well Con- Sanitary Ugai Bladdo ON Samitary UDA 1 SAMPLES mples	dition, Turk Sewer	No.:	Odor) wer L SA	Same As Ab. Grab - Type: Other - Type Other - Type	ove	Lab		Comments
Observations Duri Discharge Water D SAMPLING ME Saller - Type: SAMPLE DISTI Sample No. 2605 QUALITY CON Dup Original Sample	ng Purg Disposal: THOD S.S Centrific RIBUTI Volu S TROL Sicate Sa No. Du	ing (Well Congress) Sanitary Ugai Sladdo ON Sam Ime/Cont. Uba S SAMPLES mples plicate Sample	dition, Turk Sewer	No.:	Odor) wer L SA	Same As Ab. Grab - Type: Other - Type Other - Type	ove	Lab		Comments

Harding Lawson Associates Engineers and Geoscientists

		Well No					
		• •	Well Type: ☐Monitor ☐ Extraction ☐ Other				
Job Name <u>Carnation</u>			Well Material: ☐ PVC ☐ St. Steel ☐ Other				
Job Number 10194.003.01		Date	25-Q1	Time			
Recorded by Ric C (Signature)		Sampled by	Sampled by Pue Dime (Initials)				
	WEI	L PURGING					
PURGE VOLUME			HOD				
Casing Diameter (D in inches):			PÜRGE METHOD				
☐ 2-Inch ☐ 4-inch ☐ 6-inch ☐ Other		•••	☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:				
Total Depth of Casing (TD in feet BTOC): AD.L			Other - Type:				
Water Level Depth (WL in feet BTOC):			PUMP INTAKE SETTING				
Number of Well Volumes to be purged (# Vols)				ther			
[273		Depth in feet (E	Scre	en Interval in feet (BTOC):			
PURGE VOLUME CALCULATION			fron	1 to			
/ And - And \Y A	2 Y :	x 0.0408	= ()				
(40.6	— ^ #	Vols	Calculated i	Purge Volume			
PURGÉTIME	PLIBO	SE RATE	ACT	UAL PURGE VOLUME			
0945 Start 0954 Stop 9-mm Elapsed		gpm Final		53 gallons			
FIELD PARAMETER MEASUREMENT	anna.	gpiii i iiai <u>t</u>	<u> gpiii</u>	gailons			
Minutes Since Cond 1-0	Other_	Minutes Since	pH Cond.	T C Other			
Pumping Began PH (µmhos/cm) T 0 °F	Other	Pumping Began	pH (μmhos/cm)	T⊟°ĕ Other			
initial 3.0 330 20.0	>100						
30-9-45 6.9 380 19.0							
60 " 6.9 380 19.0	> 140						
		Meter Nos.					
Observations During Purging (Well Condition, Turi	olaity, Color, Storm Se	•	+ rears grands				
Discharge Water Disposal: Sanitary Sewer							
	VVEL.	LSAMPLING					
SAMPLING METHOD		Same As Ab	- · •				
G-Bailer - Type:							
Submersible Centrifugal Bladder; Pump I		Other - Type	:				
SAMPLE DISTRIBUTION Sample Series Sample No. Volume/Cont. Analysis R		Preservatives	Lab	Comments			
	1			Confinents			
	105e	HCL HCC	- Web				
3 100 8240							
QUALITY CONTROL SAMPLES							
Duplicate Samples		llank Samples	Ot	her Samples			
Original Sample No. Duplicate Sample No.	Sample No.	Туре	Sample No.				

Harding Lawson Associates Engineers and Geoscientists	GROUND-WATER SAMPLING FORM				
	Well No. Num - 5				
	Well Type: ☐Monitor ☐Extraction ☐ Other				
Job Name Carnakion					
Job Number					
Recorded by <u>Rick Edga</u>	Sampled by Rue: bue (Initials)				
WELL	PURGING				
	A				
PURGE VOLUME	PURGE METHOD				
Casing Diameter (D in inches): ☐ 2-inch ☐ 2-inch ☐ 6-inch ☐ Other	☐ Bailer - Type: ☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:				
Total Depth of Casing (TD in feet BTOC): 13.5	· · · · · · · · · · · · · · · · · · ·				
Water Level Depth (WL in feet BTOC):	Application Should not for yours and to provide				
Number of Well Volumes to be purged (# Vols)	□ Near Bottom □ Near Top □ Other				
□ 3 □ 4 □ 5 □ 10 □ Other	•				
PURGE VOLUME CALCULATION	from to				
ž 2					
(23.5 - q.16) X 4 X 3	X 0.0408 = 78 gallons Calculated Purge Volume				
	· · · · · · · · · · · · · · · · · · ·				
PURGE TIME PÜRĞÊ	RATE ACTUAL PURGE VOLUME				
1420 Start 1414 Stop 4 Elapsed Initial	3 gpm Final 3 gpm 28 gallons				
FIELD PARAMETER MEASUREMENT					
Minutes Since Pumping Began PH (μmhos/cm) ΤΗ C Other	Minutes Since Pumping Began pH Cond. T Cond. T Cond. T Cond. T Cond.				
initial 6.3 925 19.5 >100					
19-gals 6.3 923 20.5					
18 6:3 925 20.5 3600					
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					
	Meter Nos.				
Observations During Bureing (Mail Condition Turbidity Color O	odor): Silly brown				
	er Fother baken tank				
VVCLL	SAMPLING				
SAMPLING METHOD	☐ Same As Above				
Bailer - Type: S.S.	Grab - Type:				
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:	Other - Type:				
SAMPLE DISTRIBUTION Sample Series: 910b					
Sample No. Volume/Cont. Analysis Requested	Preservatives Lab Comments				
2509 8-WA 8015-3-1-0	Her Nun				
3 & A6 BOLD OF 6	И-224 (,				
QUALITY CONTROL SAMPLES	nk Samples Other Samples				
Duplicate Samples Blar Original Sample No. Duplicate Sample No. Type	nk Samples Other Samples Sample No. Type Sample No.				
7,70					

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Engineers and Geoscientists

GROUND-WATER SAMPLING FORM

	Well No			
	Well Type: ☐Monitor ☐ Extraction ☐ Other			
Job Name <u>carnation</u>	man			
Job Number				
Recorded by (Signature)	Sampled by Rus: Aus-			
	WELL PURGING			
PURGÉ VOLUME	PURGE METHOD			
Casing Diameter (D in inches):	Bailer - Type:			
□ 2-inch □ 2-inch □ 0ther	_			
Total Depth of Casing (TD in feet BTOC): 23				
Water Level Depth (WL in feet BTOC): 9.69	EUMP INTAKE SETTING			
Number of Well Volumes to be purged (# Vols)	☐ Near Bottom ☐ Near Top ☐ Other			
Ø3 □4 □5 □10 □ Other	Depth in feet (BTOC):/S Screen Interval in feet (BTOC):			
PURGE VOLUME CALCULATION	from to			
(13 - 1.69 X A X TD (feet) X D (inches)	3 X 0.0408 = 26 gallons # Vols Calculated Purge Volume			
TD (feet) WL (feet) D (inches)	# Vols Calculated Purge Volume			
PURGE TIME F	PURGE RATE ACTUAL PURGE VOLUME			
•	nitial 7 gpm Final 3 gpm 28 gallons			
FIELD PARAMETER MEASUREMENT				
Minutes Since Pumping Began PH (μmhos/cm) T PC Other	er type Minutes Since Pumping Began PH Cond. T □ °C Other Pumping Began PH (µmhos/cm) T □ °F Other Pumping Began PH (µmhos/cm) T □ °F Other Pm Pm Pm Pm Pm Pm Pm P			
	> (80			
	>.00			
	Meter Nos.			
Observations During Purging (Well Condition Turbidity (Color, Odor): turbial grang			
Discharge Water Disposal: Sanitary Sewer Stor	rm Sewer Dother baken tank			
	VELL SAMPLING			
SAMPLING METHOD	☐ Same As Above			
Baller - Type: S.S.	-			
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.: —				
SAMPLE DISTRIBUTION Sample Series: - 911				
Sample No. Volume/Cont. Analysis Requeste				
2503 3 VOA BOLD	HCL NET			
2 8 AG BO(5	42504 "			
QUALITY CONTROL SAMPLES	Blank Samples Other Samples			
Duplicate Samples Original Sample No. Duplicate Sample No. T	ype Sample No. Type Sample No.			
Original Sample 140. Duplicate Sample 140.	1/50			
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GROUND-WATER SAMPLING FORM

	Well No			
	Well Type: ☑ Monitor ☐ Extraction ☐ Other			
Job Name <u>Camation</u>	Well Material: ☐PVC ☐ St. Steel ☐ Other			
Job Number 20144.002.02	Date 6-25-91 Time 1109			
Recorded by	Sampled by Rue · Due (Initials)			
(Signature)				
WELL F	PURGING			
PURGE VOLUME	PURGE METHOD			
Casing Diameter (D in inches):	☐ Bailer - Type:			
2-inch 4-inch 6-inch Other	☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:			
Total Depth of Casing (TD in feet BTOC):	Other - Type:			
Water Level Depth (WL in feet BTOC): (0.47	PUMP INTAKE SETTING			
Number of Well Volumes to be purged (# Vols)	☐ Near Bottom ☐ Near Top ☐ Other			
23	Depth in feet (BTOC): Screen Interval in feet (BTOC):			
PURGE VOLUME CALCULATION	from to			
/ 22 / = 12 A2 \X A 2 X 3	X 0.0408 = 3.4			
TD (feet) WL (feet) D (inches) # Vols	X 0.0408 = 24 gallons Calculated Purge Volume			
• • • • • • • • • • • • • • • • • • •				
, -	*			
	gpm Final 3- gpm gallons			
FIELD PARAMETER MEASUREMENT				
Minutes Since Pumping Began pH (μmhos/cm) T C Other +υ-6	Minutes Since Pumping Began pH (μmhos/cm) T □°C Other			
initial 6.2 750 18.0 7.00				
15-gals 6.5 750 18.5				
28-4 6.5 350 18.5 >100				
	Meter Nos.			
Observations During Purging (Well Condition Turbidity Color Odg	r): slaylably trubual mosts haven thread silly be			
	Gother baka tank			
	AMPLING			
SAMPLING METHOD	Same As Above			
Baller - Type:S.	Grab - Type:			
Submersible Centrifugal Bladder; Pump No.:	Other - Type:			
SAMPLE DISTRIBUTION Sample Series: 9106				
Sample No. Volume/Cont. Analysis Requested	Preservatives Lab Comments			
2504 3 UOA 80LD	HCC NET			
7. 2 AG 9005	H_20_ (1			
QUALITY CONTROL SAMPLES	9			
	Samples Other Samples			
Original Sample No. Duplicate Sample No. Type	Sample No. Type Sample No.			

HL:	
Job Na	
Job Nui Records	

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GROUND-WATER SAMPLING FORM

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i i i i	3.0 4.10	30030/0/1/1313				Well No	Mu	<i>></i> ~			·
The state of the s						Well Type:	Œ₩c	nitor DExt	raction	□ Ot	ther
Job Name	Cer	nation	<u> </u>			Well Materia	l: 🖪	PVC □St.	Steel	□ Of	ther
Job Number	مد_	-94.00	009.00			Dateb	. 1.5	-9,1	Tim	ie	241
Recorded by	_lii	il Ealer				Sampled by <u>Pure</u> · Amer					
		(Si	gnature)						(Initia	is)	
				WE	LL P	<u>URGING</u>					
PURGE VOLUI	ME					PURGE ME	LHO)			
Casing Diameter	(D in inc	ches):				☐ Bailer - Typ	e:				
☐ 2-inch ☐ 47	nch [] 6-inch 🔲 (Other			☐ Submersible	• 🖽	entrifugal 🔲	3ladder;	Pump	No.:
Total Depth of Ca	asing (Ti	o in feet BTC	C): <u> </u>	3		Other - Type					
Water Level Dept	h (WL ir	feet BTOC):	9.2	<u> </u>		PUMP INTAI	Œ SE	TTING			
Number of Well \	/olumes	to be purged	d (# Vols)			Near Botton	n 🗀	Near Top	Other.		
23 □4 □5	□10 t	☐ Other				Depth in feet (BTOC)	:_15:	Screen in	iterval i	in feet (BTOC):
PURGE VOLU	ME ÇA	LCULATIO	Ņ	^				1	from		- to
(22.0 -	٠ ٩.١	-2 \x	Δ	ŹX	3	X 0.0408	=	ኒፍ			gallor
TD (feet)	WL	(feet)	D (inches)		# Vols		_	Calculate	d Purge	Volum	gallor ne
PURGE TIME				PLIR	GE RA	ATE		8	CTUAL	PLIR/	SE VOLUME
TONGE TIME	133 C	د ۸	. Flancad			•	.	• •			gallon
FIELD PARAM		· • ·	· ·	mua		gpm Final3	∓ —_	3pm _			yalloli
		Cond.	v		1	Minutes Since	Τ.	Cond.		П°С	1
Minutes Since Pumping Began	ρН	(μmhos/cr	n) T Fig	Other_+	- كامي	Pumping Began		(μmhos/c	m)	□°¢ □° <u>¢</u>	Other
initial	6. 2.	325	51.2	21.5 >100			-				
15 - gals	6.3	372	- 205	·					_		<u> </u>
28 "	6.3	72.5	22,0	>10			 			· · · · · · · · · · · · · · · · · · ·	
							 				[
	<u> </u>			1		Meter Nos.	<u> </u>				
Observations Dur	ing Purg	ging (Well Co	ondition, Turb	idity, Color	, Odor	: trobiel	bee	<u> </u>			
Discharge Water	Disposal	: 🗌 Sanita	ry Sewer [☐ Storm Se	ewer	Other bak	<u>. ~ ،</u>	tout			
				WEL	L SA	MPLING					
SAMPLING ME	ETHOD)				☐ Same As At	ove				
Bailer - Type:						☐ Grab - Type					
Submersible [Other - Type					
SAMPLE DIST		_	ample Series:								
Sample No.		ume/Cont.	Analysis Re			Preservatives		Lab		C	omments
2505		020	3	-		<u> </u>		Nex			
		2 8 46	8015			N. SO.		67			***· · · · · · · · · · · · · · · · · ·
							<u> </u>				
					<u> </u>			7.0			
					<u> </u>						
QUALITY CON	ITROL	SAMPLES									
Dup	licate Sa	amples			Blank (Samples			Other S		
Original Sample	No. Du	plicate Sam	ple No.	Туре		Sample No.		Туре		 	Sample No.
		 						ļ		 	
<u></u>			<u> </u>				-			 	
						<u> </u>				ļ <u> </u>	
			[<u> </u>				<u> </u>	

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Engineers and Geoscientists

GROUND-WATER SAMPLING	FOR
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Engineers and decodernate	Well Noww~in					
loh Nomo	Well Type: ☐Monitor ☐ Extraction ☐ Other					
Job Name Comation	Well Material: ☐PVC ☐ St. Steel ☐ Other					
Job Number 10194. 003.01	Date 6-25-21 Time 1602					
Recorded by Rill Endur	Sampled by Rue - hus (Initials)					
WELL	PURGING					
PURGE VOLUME	PURGE METHOD					
Casing Diameter (D in Inches):	Bailer - Type:					
2-inch 2-inch 6-inch Other	☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:					
Total Depth of Casing (TD in feet BTOC):	Other - Type:					
Water Level Depth (WL in feet BTOC):	PUMP INTAKE SETTING					
Number of Well Volumes to be purged (# Vols)	☐ Near Bottom ☐ Near Top ☐ Other					
2-3 □4 □5 □10 □ Other	Depth in feet (BTOC): Screen interval in feet (BTOC):					
PURGE VOLUME CALCULATION	from to					
/ 22-8 - 1001 X	X 0.0408 = 3 s					
TD (feet) WL (feet) D (inches) # Vol	X 0.0408 = 25 gailons Calculated Purge Volume					
PURGE TIME PURGE	RATE ACTUAL PURGE VOLUME					
-	gpm Final 3 gpm gallons					
FIELD PARAMETER MEASUREMENT	gallons gallons					
Minutes Since Cond F-C	Minutes Since Pumping Began PH (µmhos/cm) T C Other					
Pumping Began ρΗ (μmhos/cm) T • Cother 1	Pumping Began pH (μmhos/cm) T ο F Other					
121 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1						
15-gals 6.2 900 22.0						
25 " 6.7 900 71.5 7100						
	<u> </u>					
	Meter Nos.					
Observations During Purging (Well Condition, Turbidity, Color, Odd						
Discharge Water Disposal: Sanitary Sewer Sewer Sewer	Gother baker tank					
WELL S	AMPLING					
SAMPLING METHOD	☐ Same As Above					
Bailer - Type: S.S.	Grab - Type:					
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:	Other - Type:					
SAMPLE DISTRIBUTION Sample Series: 9106						
Sample No. Volume/Cont. Analysis Requested	Preservatives Lab Comments					
2512 3 VOA BOIS-6, BOLO	Her Nex					
2 LAL 8015 D	- 4					
QUALITY CONTROL SAMPLES						
	Samples Other Samples					
Original Sample No. Duplicate Sample No. Type	Sample No. Type Sample No.					

7.		ieoscientisis	1			GRO					
Engineers and Geoscientists						Well No3					
		Well Type:	⊡ -Mor	nitor 🗆	Extract	tion 🗆 O	ther				
ob Name		Well Type: ☐Monitor ☐ Extraction ☐ Other Well Material: ☐PVC ☐ St. Steel ☐ Other									
ob Number							1313				
ecorded by											
ecorded by		Sampled b	у _к.	119-0		(Initials)					
				WE	LL Pl	JRGING					
PURGE VOLUA	Æ					PURGE ME	THOD				
Casing Diameter (☐ Bailer - Ty	pe:				· · · · · · · · · · · · · · · · · · ·					
2-inch 24-in	nch 🗆	6-inch	Other						□Blad	ider; Pump	No.:
Total Depth of Ca	sing (TC) in feet BT	OC):			Other - Typ	pe:				
Water Level Depti	n (WL in	feet BTOC): q .	\$5		PUMP INTA	KE SE	TING			
Number of Well V	olumes	to be purge	d (# Vols)			☐ Near Botto	om 🗆 t	vear Top		ther	
23 🗆 4 🗀 5	□ 10 [Other				Depth in feet	(BTOC):	10	Scre	en Interval	in feet (BTOC)
PURGE VOLUM			-								_ to
<u></u> -	9.5	<u>s</u>) x	4	2 X	3	X 0.0408	=	74	·	·····	gallo
TD (feet)	WL ((feet) /	D (inche					Calcu			
PURGE TIME				PUR	GE RA	TE			ACTU	JAL PUR	GE VOLUM
1305 Start 1	309_S	top <u>4</u>	Elapsed	Initial	-	_gpm Final_	3 gg	om	~ 28	.	gailo
FIELD PARAME	TER N										_
Minutes Since Pumping Began	рΗ	Cond. (µmhos/c	m) 7 🗗	C Other 1	<u>-</u>	Minutes Since Pumping Bega	n pH	Co (μmh	nd. os/cm)	T B°C	Other
initial	5.5	500		0 2.00				ļ .			
(\$ -gals	67	429	20.	T				<u> </u>			
ւՏ ''	6.5	500	2.1	5 >.0	20						
	-		1	i i						1	
						Meter Nos.		<u> </u>			
Observations Duri	na Pura	ina (Well C	condition. T	urbidity. Color	r. Odor):	<u> </u>	_1	<u> </u>			
						- humbia	heave				
				Storm S	ewer	Dother bak	heave				
Observations Duri	Disposat	: 🔲 Sanita		Storm S	ewer	Dother back	heave to				
Discharge Water [isposal THOD	: Sanita	ary Sewer	Storm S	ewer	Dether book	heave L	<u> </u>		· · · · · · · · · · · · · · · · · · ·	
Discharge Water Discharge Wate	Disposal THOD	: □ Sanita	ary Sewer	Storm S	ewer L SA	Dether books MPLING □ Same As A □ Grab - Typ	Above			· · · · · · · · · · · · · · · · · · ·	
Discharge Water [SAMPLING ME Baller - Type: _ Submersible	THOD	: □Sanita	ary Sewer	Storm So	ewer	Dether book	Above			· · · · · · · · · · · · · · · · · · ·	
Discharge Water Discharge Wate	THOD Centrif	: Sanita	ary Sewer dder; Pum _l Sample Seri	Storm So WEL	ewer LL SA	Dether books MPLING □ Same As A □ Grab - Typ	Above				
SAMPLING ME Bailer - Type: Submersible SAMPLE DISTI	THOD Centrif	S Saniti	ary Sewer dder; Pumple Sample Seri Analysis	Storm So WEL O No.: les: 9005 Requested	L SA	Other Same As A Grab - Typ Other - Typ	Above	Lab			comments
Discharge Water Discharge Wate	THOD Centrif RIBUTI Volu	Sanita Sanita Sugal Bla ON Sume/Cont.	dder; Pump Sample Seri Analysis	Storm Sowell	ewer LL SA	Dother	Above				
SAMPLING ME Bailer - Type: Submersible SAMPLE DISTI	THOD Centrif RIBUTI Volu	Sanita Sanita Sugal Bla ON Sume/Cont.	dder; Pump Sample Seri Analysis	Storm So WEL O No.: les: 9005 Requested	ewer LL SA	Other Same As A Grab - Typ Other - Typ	Above	Lab			
SAMPLING ME Baller - Type: Submersible SAMPLE DISTI	THOD Centrif RIBUTI Volu	Sanita Sanita Sugal Bla ON Sume/Cont.	dder; Pump Sample Seri Analysis	Storm Sowell	ewer LL SA	Dother	Above	Lab			
SAMPLING ME Bailer - Type: Submersible SAMPLE DISTI	THOD Centrif RIBUTI Volu	Sanita Sanita Sugal Bla ON Sume/Cont.	dder; Pump Sample Seri Analysis	Storm Sowell	ewer LL SA	Dother	Above	Lab			
SAMPLING ME Bailer - Type: Submersible SAMPLE DISTI	THOD Centrif RIBUTI Volu	Sanita Sanita Sugal Bla ON Sume/Cont.	dder; Pump Sample Seri Analysis	Storm Sowell	ewer LL SA	Dother	Above	Lab			
SAMPLING ME Bailer - Type: Submersible SAMPLE DISTI	THOD Centrif RIBUTI Volu	Sanita Sanita Sugal Bla ON Sume/Cont.	dder; Pump Sample Seri Analysis	Storm Sowell	ewer LL SA	Dother	Above	Lab			
SAMPLING ME Bailer - Type: Submersible SAMPLE DISTI	THOD Centrif RIBUTI Volu	Sanita Sanita Sugal Bla ON Sume/Cont.	dder; Pump Sample Seri Analysis	Storm Sowell	ewer LL SA	Dother	Above	Lab			
SAMPLING ME Baller - Type: Submersible SAMPLE DISTI Sample No.	THOD Centrif RIBUTI Volu	Sanita Sanita Sugal □ Bla ON Sume/Cont.	dder; Pump Sample Seri Analysis	Storm Sowell	ewer LL SA	Dother	Above	Lab			
Discharge Water E SAMPLING ME Baller - Type: _ Submersible [SAMPLE DISTI Sample No. 2506	THOD Centrif RIBUTI Volu TROL icate Sa	SAMPLES	dder; Pump Sample Seri Analysis	Storm Sowell	ewer LL SA	Dother Look: MPLING Same As A Grab - Typ Other - Typ Other - Typ Preservatives	Above De:	Lab		C C	comments
Discharge Water E SAMPLING ME Bailer - Type: _ Submersible [SAMPLE DISTI Sample No. 2506	THOD Centrif RIBUTI Volu TROL icate Sa	SAMPLES	dder; Pump Sample Seri Analysis	Storm Sowell	ewer LL SA	Dether bak	Above De:	Lab		C C	omments
Discharge Water E SAMPLING ME Bailer - Type: _ Submersible [SAMPLE DISTI Sample No. 2505	THOD Centrif RIBUTI Volu TROL icate Sa	SAMPLES	dder; Pump Sample Seri Analysis	Storm Sowell	ewer LL SA	Dother Look: MPLING Same As A Grab - Typ Other - Typ Other - Typ Preservatives	Above De:	Lab	Oth	C C	comments
Discharge Water E SAMPLING ME Bailer - Type: _ Submersible [SAMPLE DISTI Sample No. 2505	THOD Centrif RIBUTI Volu TROL icate Sa	SAMPLES	dder; Pump Sample Seri Analysis	Storm Sowell	ewer LL SA	Dother Look: MPLING Same As A Grab - Typ Other - Typ Other - Typ Preservatives	Above De:	Lab	Oth	C C	comments
SAMPLING ME Bailer - Type: _ Submersible SAMPLE DISTI Sample No. 1506	THOD Centrif RIBUTI Volu TROL icate Sa	SAMPLES	dder; Pump Sample Seri Analysis	Storm Sowell	ewer LL SA	Dother Look: MPLING Same As A Grab - Typ Other - Typ Other - Typ Preservatives	Above De:	Lab	Oth	C C	comments

	HI≢A
	Job Nar Job Nur Recorde
	PURGE Casing 1 2-inci Total De Water L Number PURGE TD (PURGE Ninute Pumpir init: 3-9 Observa Discharg
ŀ	SAMPI

=	Harding	Lawson Associates
Ī	Engineers	and Geoscientists

GROUND-WATER SAMPLING FORM

										<u> </u>			· ·····
							•						ther
Job Name Carnation													ther
Job Number							Date _	<u> </u>	· ~ \$	- 91		Time	1345
ecorded by	<u>ai</u>	1 End	gnature)				Sample	d by	_R	~ 5 · D	<u>~e</u>	(Initials)	
		(34	Buerale)		14/5		1001110	·····				(ministra)	
,					WE	LL PI	URGING					·	
PURGE VOLU	ŅΕ						PURGE	METH	(OD	ı			
Casing Diameter	(D in Incl	hes):					⊿ Bailer	- Type:		PVC			
☐ 2-inch ☐ 4-i	nch 🗆	6-inch	Other				☐ Subm	ersible	□c	entrifugal	☐ Blad	der; Pump	No.:
Total Depth of Ca	ising (TD	in feet BTC	C):9	1.5			☐ Other	- Type:					····
Water Level Dept	h (WL in	feet BTOC):		199			PUMP.	NTAK	E SE	TTING			
Number of Well V	/olumes 1	to be purged	l (# Vols	5)			☐ Near I	Bottom		Near Top		ther	
Ø3 □4 □5	□ 10 □	Other					Depth in	feet (B1	TOC):	!	Scre	en Interval	in feet (BTOC):
PURGE VOLU	ME CAI	LCULATIO	Ň	_							from		_ to
1 19 = -		, \x	-	2	<	7	X 0.04	108 =		_			collon
TD (feet)	WL (feet)	D (incl	hes)	*	Vols			_	Calcu	lated P	urge Volun	gailon
PURGE TIME					PURC	2E D/	TE				ACTI	ÍAI DI ID	GE VOLUME
	. 40 0		Cl						_				GE AOFOINE
Start L			-	a	mittai .		_gpm Fir	la!	 - 9	ρm			gallon
FIELD PARAMI		Cond.		1°C			Minutes	Since		Co	nd	_ <u> </u>	Т
Pumping Began	ρН	_(μmhos/cn	n) T	†ိုင္ငံ ဝ	ther 40	<u>-6</u>	Pumping	Began	pН		os/cm)	τ <u> </u> ;;	Other
initia	h.3	800		-2.	مما ح								
3-9013	6.4	800	18	0.0									
5 "	6.4	_ උගය	18	.0	7,00								
										<u> </u>			
							Meter N	los.					
Observations Duri	ing Purgi	ing (Well Co	ndition,	Turbidity	y, Color,	, Odor)	: stite	ـيوي_	مم			-0045 /	u ues
Discharge Water I	· · · · · · · · · · · · · · · · · · ·				torm Se				•				
					WFI	LSA	MPLING						
		····											
SAMPLING ME							Same As Above						
Bailer - Type:							☐ Grab - Type:						
Submersible [=					☐ Other	- Type:					····
SAMPLE DIST			imple Se				 						
Sample No.		ime/Cont.		is Reque			Preservatives			Lab			comments
2503	- 1	VOA	•	<u></u>		 	HCL			<u>Ke W</u>			
ļ		_\$.&&_	80	<u>(\$</u>			H1504						····
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	-						 						
	+											-	
	-												
						<u> </u>						_L	
QUALITY CON					-	.							
Duplicate Samples Blank Samples Other Samples Original Sample No. Duplicate Sample No. Type Sample No. Type Sample No.													
Original Sample	No. Du	pucate Samp	DIE NO.		Туре		Samp	e NO.	-		уре		Sample No.
				<u> </u>			-		\dashv				
									\dashv				
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1	1		- 1	I			İ			l		[

GROUND-WATER SAMPLING FL Harding Lawson Associates Engineers and Geoscientists Well No. June 15 Well Type: ☐Monitor ☐ Extraction ☐ Other _____ Well Material: □PVC □ St. Steel □ Other _____ Job Name Carnation Date 6-25-91 Time 1410 Job Number 20194 003 00 Recorded by Rich Bullin Sampled by Rue - Dus **WELL PURGING PURGE METHOD PURGE VOLUME** Bailer - Type: AVC Casing Diameter (D in Inches): ☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.: ____ 27-inch 4-inch 6-inch Other_ Total Depth of Casing (TD in feet BTOC): 18.5 Other - Type: . PUMP INTAKE SETTING Water Level Depth (WL in feet BTOC): 9.14 Other ___ ☐ Near Bottom ☐ Near Top Number of Well Volumes to be purged (# Vols) Depth in feet (BTOC): _____ Screen Interval in feet (BTOC): 2-3 □4 □5 □10 □ Other_ PURGE VOLUME CALCULATION from _____ to ____ 2 X 3 X 0.0408 = 5 D (inches) # Vols Calculated Purge Volume **ACTUAL PURGE VOLUME PURGE RATE PURGE TIME** Initial _____gpm Final ___ ___ gpm 1400 Start 1405 Stop Elapsed FIELD PARAMETER MEASUREMENT Minutes Since Pumping Began Minutes Since Pumping Began Cond. (µmhos/cm) Cond. (µmhos/cm) pΗ Other + + v - + 6,2 800 initial 16.5 7100 3- gals 6.3 පිතර 6.3 800 16.0 > 100 Meter Nos. Storm Sewer Bother baken tout Discharge Water Disposal: Sanitary Sewer WELL SAMPLING Same As Above SAMPLING METHOD Grab - Type: Bailer - Type: _____S.S.__ Other - Type: Submersible ☐ Centrifugal ☐ Bladder; Pump No.: _____ SAMPLE DISTRIBUTION Sample Series: 9105 Lab Preservatives Analysis Requested Sample No. Volume/Cont. KP CA HCL 2508 3 VOA **8020**

Comments 2 AL HISOA 8015

QUALITY CONTROL SAMPLES

Duplicate Samples	Blank S	amples	Other Samples			
Original Sample No. Duplicate Sample No.	Туре	Sample No.	Туре	Sample No.		

Other Samples

gallons

gailons

Other_

: LA

Harding Lawson Associates

Engineers and Geoscientists

GROUND-WATER SAMPLING FORM

						Well Type: ☐Monitor ☐ Extraction ☐ Other							
Job Name <u>camation</u> Job Number <u>roration</u>													
		(24	(nature)							(11111000)			
				WE	LL PU	RGING	*						
PURGE VOLU	ŅĒ				PURGE METHOD								
Casing Diameter	-				Bailer - Type: S.S.								
☑ 2-inch ☐ 4-i						☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:							
Total Depth of Ca													
Water Level Dept				98	PUMP INTAKE SETTING ☐ Near Bottom ☐ Near Top ☐ Other								
Number of Well V								•					
2 3 □4 □5	_	_				Depth in feet (B	TOC):						
PURGĘ VOLŲ!				2							_ to		
<u>√ ~.6. </u>	9 .5 WL ((feet) X _	Z D (inche	x) X	₹ Vols	X 0.0408 ·	-	Calcula	ted P	urge Volun	gall		
PURGE TIME				PUR	GE RAT	Ë		3	ÄČTL		GE VOLUM		
나 <mark>니고 Start LL</mark> FIELD PARAM				Initial		gpm Final	<u>~</u> g∣	om .		Ь	galle		
Minutes Since Pumping Began		Cond. (µmhos/cn	T-P°	C Other_t	<u>v~5</u>	Minutes Since Pumping Began	рΗ	Cond (µmhos	l, /cm)	τ¦;¢	Other		
mitial	5.8	375	18.9	<u> </u>				ļ					
3 - gals	6.3	o2f	18.	3							ļ		
6 "	6.3	275	18	015 0	<u> </u>			<u> </u>			 		
						Meter Nos.							
Observations Dur Discharge Water				Storm Se	ewer (Silly 6~ Dother baken MPLING	- +	mk					
SAMPLING ME	THOD			***	O/ \//	☐ Same As Ab	01/0						
Bailer - Type:.													
☑ Submersible [der: Pumr	No:									
SAMPLE DIST		-		es; <u> </u>		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	•	·					
Sample No.		ime/Cont.		Requested		reservatives		Lab		C	comments		
2513	3	V0 A	8015	<u>- ع در بي</u>		Her	<u> </u>	يوبع					
	<u></u>	e ac	- 44	dieser	<u> </u>								
			ه ځړ د	=	ļ	Wasoa							
					<u> </u>								
			<u></u> .				ļ						
	_				<u> </u>		<u> </u>						
					 		 						
							L						
QUALITY CON	VTROL plicate Sa				Blank Sa	ımples			Oth	ner Sample	es		
Original Sample			ole No.	Туре		Sample No.		Ту	эе		Sample No.		
•													

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Engineers and Geoscientists

GROUND	WATED	CAMPI	INC	FORM
CHUUNU	-444	JAIVIEL	LINU	CODIV

Engineers and Geoscientists	Well No. mu. 25 B (street)
	Well Type: ☐Monitor ☐Extraction ☐ Other
lob Name <u>Camation</u>	Market Days Day Oracl Dotton
ob Name <u>Carration</u> ob Number <u>Loves and an</u>	
decorded by Rich Enline	
(Signature)	Sampled by Due: Due (Initials)
	WELL PURGING
PURGE VÖLUME	PÜRGE METHOD
Casing Diameter (D in inches):	Bailer - Type:
☐ 2-inch ☐ 4-inch ☐ Other	Submersible Centrifugal Bladder; Pump No.:
Total Depth of Casing (TD in feet BTOC): 19.5	Other - Type:
Water Level Depth (WL in feet BTOC): 3.25	
Number of Well Volumes to be purged (# Vols)	☐-Near Bottom ☐ Near Top ☐ Other
-3	Depth in feet (BTOC): Screen Interval in feet (BTOC):
PURGE VOLUME CALCULATION	from to
/ 19 = - 22 = X	3 X 0.0408 = 3 A gailons
TD (feet) WL (feet) D (inches)	3 X 0.0408 = 24 gallons # Vols Calculated Purge Volume
PURGE TIME	URGE RATE ACTUAL PURGE VOLUME
	nitial 1 gpm Final gpm 10 gallons
FIELD PARAMETER MÉASUREMENT	dy e 10-9215 former wc=1442e11
Minutes Cines I Cond I Clack	Minutes Since Cond O°C
	Pumping Began PH (μmhos/cm) Other
1 1 2 2 2 13 13 13 13 13 13 13 13 13 13 13 13 13	> 100
	Meter Nos.
	Color, Odor):
Discharge Water Disposal: Sanitary Sewer Sto	
V	VELL SAMPLING
SAMPLING METHOD	Same As Above
Baller - Type: S.S.	Grab - Type:
Submersible Centrifugal Bladder; Pump No.:	Other - Type:
SAMPLE DISTRIBUTION Sample Series: 91	
Sample No. Volume/Cont. Analysis Request	ed Preservatives Lab Comments
2002 3-1000 8015-6- 801	o HCL NET
2 8AG " D	- "
QUALITY CONTROL SAMPLES	
Duplicate Samples	Blank Samples Other Samples
Original Sample No. Duplicate Sample No.	ype Sample No. Type Sample No.

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GROUND-W	ATER SAMP	LING	FORM

action Other Steel Other Other Ime (235)
Time
(Initials)
5. · · · · · · · · · · · · · · · · · · ·
ladder; Pump No.:
adder, rump No
Other
creen Interval in feet (BTOC):
om to
gallons
TUAL PURGE VOLUME
35 gallons
T_O°CT.
n) T C Other
HICOOL

······································
Comments
Other Samples
Other Samples Sample No.

HLA
Job Nan Job Nun Recorde
PURGE
Casing D
2-inch
Total De

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GROUND-WATER	SAMPL	ING FORM
---------------------	-------	----------

Well Type: Monitor Extraction Other Ot	- 14 F							Well NO	\sim	, —				
Date	C stack a similar similar property							Well Type: E	∃Mo	nitor 🗆 Ex	dract	ion 🗆 O	ther	
Sampled by Sampled by Sampled by Sampled by Sampled by Sampled by Sampled by Sampled by Sampled by Sampled Sampled by Sampled Samp	lob Name <u> </u>	aru	<u> </u>		····			Well Material:		₽VC □S	t. Ste	eel 🗆 O	ther	
WELL PURGING PURGE VOLUME Sating Diameter (O in Inches): Sa	lob Number	2029	4. 003	٠				Date6-1	ا ا	3.1		Time	308	
WELL PURGING PURGE VOLUME Sating Diameter (O in Inches): Sa	ecorded by	Pied	EN					Sampled by	2	u2 - Nu	تغد			
BURGE VOLUME Sating Dameter (0 in Inches): Sation Cartinoh		-										(Initials)		
Casing Diameter (D in inches): Sailer - Type: Gentrifugal Bladder; Pump No.: Total Depth of Casing (TD in feet BTOC): 13.9 Control Depth of Casing (TD in feet BTOC): 13.9 Control Depth of Casing (TD in feet BTOC): 13.9 Control Depth of Casing (TD in feet BTOC): 13.9 Control Depth of Casing (TD in feet BTOC): 13.9 Control Depth of Casing (TD in feet BTOC): 13.9 Control Depth in feet (BTOC): 13.9 Control Depth in feet (BTOC): 13.9 Control Depth in feet (BTOC): 13.0					WE	LL P	JRGING							
Casing Diameter (D in inches): Sailer - Type: Gentrifugal Bladder; Pump No.: Total Depth of Casing (TD in feet BTOC): 13.9 Control Depth of Casing (TD in feet BTOC): 13.9 Control Depth of Casing (TD in feet BTOC): 13.9 Control Depth of Casing (TD in feet BTOC): 13.9 Control Depth of Casing (TD in feet BTOC): 13.9 Control Depth of Casing (TD in feet BTOC): 13.9 Control Depth in feet (BTOC): 13.9 Control Depth in feet (BTOC): 13.9 Control Depth in feet (BTOC): 13.0 PURGE VOLÚM	1E						PURGE MET	HOE)					
24nch 24-inch 34nch 34	•	-	hes):						-					
Cother - Type: Cother - Type: Cother - Type: Cother - Type: Cother - Type: Cother - Type: Cother - Type: Cother - Type: Cother - Type: Cother - Type: Cother - Type: C				Other						entrifugal [] Blade	der: Pumo	No :	
Water Level Depth (WL in feet BTOC): S. 48										=			71011 2	
Number of Well Volumes to be purged (# Vols) Near Bottom Near Top Other	-	• •		•						And the second second				
Depth in feet (BTCC): Screen Interval in feet (BTCC):											ПО	har		
PURGE VOLUME CALCULATION 13 A										•				
TD (feet) WL (feet) X								Septir in reet (5	100)	t-01				•
PURGE TIME PURGE RATE ACTUAL PURGE VOLUME 135 Start 1331 Stop Samples Initial 3 gpm Final 3 gpm 30 gallor FIELD PARAMETER MEASUREMENT Minutes Since PH (umhos/cm) T 5 PC Other Samples No. Minutes Since Ph (umhos/cm) T 5 PC Other Minutes	· - •				2	2								
PURGE TIME PURGE RATE ACTUAL PURGE VOLUME 135 Start 1331 Stop Samples Initial 3 gpm Final 3 gpm 30 gallor FIELD PARAMETER MEASUREMENT Minutes Since PH (umhos/cm) T 5 PC Other Samples No. Minutes Since Ph (umhos/cm) T 5 PC Other Minutes	<u> 134 -</u>	8.	48_X	4		. ×	_3	X 0.0408 ⁻	= _	30				gallon
Sample No. Volume/Cont. Analysis Requested Preservatives Lab Comments	√ TD (feet)	WL ((feet) /	D (in	ches)	1	# Vois			Calcula	ited Pi	urge Volun	ne	
Sample No. Volume/Cont. Analysis Requested Preservatives Lab Comments	PURGE TIME					PUR	GE RA	TE		•	AČTL	JAL PUR	ĠĔ VOI	ÛME
Minutes Since PH (Cond. T T T Cother_starts PH (Cond. T T T T T T T T T	1.3-\$-3-Start1.3-	. 0. 1. Si	top <u>~~</u>	Elapse	ed .	Initial	3	_com Final3	L c					
Minutes Since PH Cond T C Other Survey				_				3,	•	4				•
Deservations During Purging (Well Condition, Turbidity, Color, Odor): St. Deservations During Purging (Well Condition, Turbidity, Color, Odor): St. Deservations During Purging (Well Condition, Turbidity, Color, Odor): St. Deservations During Purging (Well Condition, Turbidity, Color, Odor): St. Deservations During Purging (Well Condition, Turbidity, Color, Odor): St. Deservations During Purging (Well Condition, Turbidity, Color, Odor): St. Deservations During Purging (Well Condition, Turbidity, Color, Odor): St. Deservations During Purging (Well Condition, Turbidity, Color, Odor): St. Deservations During Purging (Well Condition, Turbidity, Color, Odor): St. Deservations During Purging (Well Condition, Turbidity, Color, Odor): St. Deservations During Purging (Well Condition, Turbidity, Color, Odor): St. Deservations During Purging (Well Condition, Turbidity, Color, Odor): St. Deservations During Purging (Well Condition, Turbidity, Color, Odor): St. Deservations During Purging (Well Condition, Turbidity, Color, Odor): St. Deservations During Purging (Well Condition, Turbidity, Color, Odor): St. Deservations During Purging (Well Condition, Turbidity, Color, Odor): St. Deservations During Purging (Well Condition, Turbidity, Color, Odor): St. Deservations During Purging (Well Condition, Turbidity, Color, Odor): St. Deservations During Purging (Well Condition, Turbidity, Color, Odor): St. Deservations During Purging (Well Condition, Turbidity, Color, Odor): St. Deservations During Purging (Well Condition, Turbidity, Color, Odor): St. Deservations During Purging (Well Condition, Turbidity, Color, Odor): St. Deservations During Purging (Well Condition, Turbidity, Color, Odor): St. Deservations During Purging (Well Condition, Turbidity, Color, Odor): St. Deservations During Purging (Well Condition, Turbidity, Color, Odor): St. Deservations During Purging (Well Condition, Turbidity, Color, Odor): St. Deservations During Purging (Well Condition, Turbidity, Color, Odor)	Minutes Since				∃°C	Other &		_Minutes Since	οH	Cond	ī	- □°C	Torbac.	
Sample No. Volume/Cont. Analysis Requested Preservatives Lab Comments	Pumping Began				°F	Other_R		Pumping Began	Pi	(µmhos	/cm)	_ ' □°F	Other_	
Meter Nos.	instin		<u> </u>	1	2.0	>100	2						 	
Meter Nos.	15-gads	6.7	150										 	
Observations During Purging (Well Condition, Turbidity, Color, Odor): Sanitary Sewer	٠٠ م3	6.7	091		20.0	>10	<u>a</u>						 	
Observations During Purging (Well Condition, Turbidity, Color, Odor): Sanitary Sewer			~ 							<u> </u>				
Sample No. Volume/Cont. Analysis Requested Preservatives Lab Comments						L		Meter Nos.					 	
WELL SAMPLING SAMPLING METHOD Same As Above Grab - Type: Other - Type: Sample No. Volume/Cont. Analysis Requested Preservatives Lab Comments Sample No. Volume/Cont. Analysis Requested Preservatives Lab Comments	Observations Durin	ng Purg	ing (Well C	ondition.	Turbio	dity, Color	, Odor)	: silly 64	حيد					
SAMPLING METHOD Same As Above Grab - Type: Other - Type: Submersible Centrifugal Bladder; Pump No.: SAMPLE DISTRIBUTION Sample Series: 9.105 Sample No. Volume/Cont. Analysis Requested Preservatives Lab Comments	Discharge Water D	isposal	: 🔲 Sanita	ary Sewe	r 🗆	Storm Se	ewer	Other baken		tank				
SAMPLING METHOD Same As Above Grab - Type: Other - Type: Submersible Centrifugal Bladder; Pump No.: SAMPLE DISTRIBUTION Sample Series: 9.105 Sample No. Volume/Cont. Analysis Requested Preservatives Lab Comments	·					WFI	LSA	MPI ING			·-··	······································	~-~-	
Baller - Type: Grab - Type: Other - Type: Submersible Centrifugal Bladder; Pump No.: Other - Type: SAMPLE DISTRIBUTION Sample Series: 9105 Sample No. Volume/Cont. Analysis Requested Preservatives Lab Comments 200 3 VOA 8042 - G 8020 HCC VOTA VOTA VOTA VOTA VOTA VOTA VOTA VOTA						*****								 -
Submersible Centrifugal Bladder; Pump No.: Other - Type: SAMPLE DISTRIBUTION Sample Series: 9.105 Sample No. Volume/Cont. Analysis Requested Preservatives Lab Comments 1.10 3. Vol. 8012 - 6. 8010 H.C. Vol. 1.10 3. Vol. 8012 - 6. 8010 H.C. Vol. 1.10 3. Vol. 8012 - 6. 8010 H.C. Vol. 2.10 3. Vol. 8012 - 6. 8010 H.C. Vol. 2.10 3. Vol. 8012 - 6. 8010 H.C. Vol. 2.10 3. Vol. 8012 - 6. 8010 H.C. Vol. 2.10 3. Vol. 8012 - 6. 8010 H.C. Vol. 2.10 3. Vol. 8012 - 6. 8010 H.C. Vol. 4. Vol. 9. Vol. Vol. Vol. 4. Vol. 9. Vol. Vol. Vol. 5. Vol. 9. Vol. Vol. Vol. Vol. 5. Vol. 9. Vol. Vol. Vol. Vol. 6. Vol. 9. Vol. Vol. Vol. 6. Vol. 9. Vol. Vol. Vol. 7. Vol. 9. Vol. Vol. Vol. 8. Vol. 9. Vol. Vol. Vol. 8. Vol. 9. Vol. Vol. Vol. 9. Vol. 9. Vol. Vol. Vol. Vol. 9. Vol. 9. Vol. Vol. Vol. 9. Vol. 9. Vol. Vol. Vol. 9. Vol. 9. Vol. Vol. Vol. 9. Vol. 9. Vol. Vol. Vol. Vol. 9. Vol. 9. Vol. Vol. Vol. 9. Vol. 9. Vo														
SAMPLE DISTRIBUTION Sample Series: 9.05 Sample No. Volume/Cont. Analysis Requested Preservatives Lab Comments 100 3 VOM 8045 - 4 8020 H-C L VOX 1 1 A 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1														 -
Sample No. Volume/Cont. Analysis Requested Preservatives Lab Comments Lio 3 VOA Boss - G Boso Hos - G Boso H			-		-			Other - Type:	:					
QUALITY CONTROL SAMPLES Duplicate Samples Original Sample No. Duplicate Sample No. Type Sample No. Duplicate Sample No. Type Sample No. Type Sample No. Type Sample No.				· · · · · · · · · · · · · · · · · · ·										
QUALITY CONTROL SAMPLES Duplicate Samples Duplicate Sample No. Duplicate Sample No. Type Sample No. Type Sample No.	Sample No.	<u> </u>	* · · 										omments	<u>;</u>
QUALITY CONTROL SAMPLES Duplicate Samples Original Sample No. Duplicate Sample No. Type Sample No. Type Sample No.				8015	- (₅₋	8010		HCL		Kou		 		<u></u>
Duplicate Samples Blank Samples Other Samples Original Sample No. Duplicate Sample No. Type Sample No. Type Sample No. Type Sample No.	ļ	<u> </u>	LAG	<u> </u>	_4									
Duplicate Samples Blank Samples Other Samples Original Sample No. Duplicate Sample No. Type Sample No. Type Sample No. Type Sample No.	 	ļ												
Duplicate Samples Blank Samples Other Samples Original Sample No. Duplicate Sample No. Type Sample No. Type Sample No. Type Sample No.		ļ												
Duplicate Samples Blank Samples Other Samples Original Sample No. Duplicate Sample No. Type Sample No. Type Sample No. Type Sample No.			···								<u> </u>		 	
Duplicate Samples Blank Samples Other Samples Original Sample No. Duplicate Sample No. Type Sample No. Type Sample No. Type Sample No.														
Duplicate Samples Blank Samples Other Samples Original Sample No. Duplicate Sample No. Type Sample No. Type Sample No. Type Sample No.			,-,											
Duplicate Samples Blank Samples Other Samples Original Sample No. Duplicate Sample No. Type Sample No. Type Sample No. Type Sample No.														
Original Sample No. Duplicate Sample No. Type Sample No. Type Sample No.				3		1	Blank S	iamoles			Oth	er Sample	e	
				ple No.	ſ		_iuin C			Tvr				
	Signal wantiple							***************************************	\dashv	.,,,		- - '		
		-				<u> </u>		(6)(
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Harding Lawson Associates

Harding Lawson Associations
Engineers and Geoscientists

GROUND-WATER SAMPLING FOR	GRO	IND-W	/ATER S	SAMPI	ING FOR	? N
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				Well No				-
totalone a di				• •		nitor DExtract		
Job Name <u>Carnatio</u>						PVC St. Ste		
Job Number 1014.	=		<u>'</u>		810			
Recorded by	(Signature)			Sampled by	μw	5. Mrz	(Initials)	
		WEL	L Pl	JRGING		· · · · · · · · · · · · · · · · · · ·		
PURGE VOLUME				PURGE MET				
Casing Diameter (D in inches):							····	
☐ 2-inch ☐ 4-inch ☐ 6-inch	Other			☐ Submersible	₽	entrifugal 🔲 Blade	der; Pump	No.:
Total Depth of Casing (TD in fee	t BTOC): 25.1						·	
Water Level Depth (WL in feet B	TOC): <u>፯.ዓ</u> 3	<u> </u>		NUMP INTAK	E SE	ÎTÎNG		
Number of Well Volumes to be p	ourged (# Vois)			Near Bottom		Near Top 🔲 Ot	her	
23 □4 □5 □10 □ Othe			···	Depth in feet (B'	TOC):	Scree	en Interval in	n feet (BTOC):
PURGE VOLUME CALCUL		9						to
TD (feet) - 1.83	X <u>A</u> D (inches)	X3	Vols	X 0.0408 =	-	SA Calculated Pi	urge Volum	galions
PURGE TIME		PURG					IAL PLING	E VOLUME
0759 Start 2804 Stop \$	Flansed			_gpm Final3_				gallons
FIELD PARAMETER MEASI		11111111	-	- 8biii - 1 11121	9i	JIII		gallons
Minutes Since	ond. TE°C	Other +v.	~6	Minutes Since	pН	Cond.	т₽≎	Other
Tamping Degan / (pm		-		Pumping Began	P' !	(μmhos/cm)	' °F	0.000
	40 (3.0	> 100	2					
	10 18.5 30 19.0	> +00						
	30 110	7.00					•	
		1		Meter Nos.			,	
Observations During Purging (W	ell Condition. Turbi	dity. Color.	Odor):	soll t	100U	·~	············	
Discharge Water Disposal:		Storm Sev		Other bakes				
		WELL	SAI	MPLING		· · · · · · · · · · · · · · · · · · ·		
SAMPLING METHOD			 	☐ Same As Abo	VA.			
Bailer • Type:				☐ Grab - Type:				_
☐ Submersible ☐ Centrifugal ☐	Bladder: Pump No).!		☐ Other - Type:				
SAMPLE DISTRIBUTION	Sample Series:							
Sample No. Volume/Co	nt. Analysis Re	quested	٩	reservatives		Lab	Co	mments
2601 3-UOA	8015 -9	es. 80	۰	Her		NUL		
2 L A	11 -	(i'as e					 	
		-					-	
			•			, , <u>, , , , , , , , , , , , , , , , , </u>	†	
QUALITY CONTROL SAMP	LES							
Duplicate Samples	On mark At 1		lank Sa	amples	— r		er Samples	
Original Sample No. Duplicate	Sample No.	Туре		Sample No.	\dashv \mid	Туре	<u>s</u>	ample No.
			+		\dashv \mid			
	 				\dashv			
					-		-	
					`			

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Engineers	and Geos	cientists

GROUND-WATER SAMPLING FORM

L/ Igilloo							Well No	بمط	٠-٦٩		
					• •				ther		
Job Name <u>canadou</u>					Well Material: ☐ PVC ☐ St. Steel ☐ Other						
Job Number 1. 003.07 Recorded by				Date <u>6-26-91</u> Time <u>0840</u>							
				Sampled by	Pu	12 - Due	(Indiate)	**** * * * * * * * * * * * * * * * * * *			
		(5	Signature)		WFI	I PI	JRGING			(minute)	
AUDOE VOLUM							PURGE MET	HOD			
PURGE VOLUM	,	£					Bailer - Type:				
Casing Diameter			Oth -				-				No.:
☐ 2-inch ☐ 4-id Total Depth of Ca							Other - Type:		_	ader, ramp	10
							EUMP INTAK		AT MEMBER		
Water Level Depti							☐ Near Bottom			Yher	
Number of Well V							Depth in feet (B				
☐3 ☐4 ☐5					• • • •		Deptii iii ieet (D	100,.			to
PURGE VOLU				2	2						
<u> </u>		(B) X	4		_ ×	3	X 0.0408 =	-	Colordated	Duran Value	gallons
' TD (feet)	WL	(teet) /	D (inci	nes)			_		* * **	v vie =1	
PURGE TIME					PURC	SE RA	ŢΕ		ÁCT	UAL PUR	GE VOLUME
OS14. Start at	ع حصور	top <u>*</u>	<u>⊶</u> Elapsed	d	Initial .	_}	_gpm Final 3	9	pm	31	gallons
FIELD PARAM	ETER I	MEASURE	MENT								
Minutes Since Pumping Began	рΗ	Cond. (µmhos/c	m) τ =	₽Ç]°F	Other +	who .	Minutes Since Pumping Began	pН	Cond. (µmhos/cm)	₹뭐╬	Other
امانكنما	3.5			· <u>s</u>							
15 -gals		, ,		 ک.د							
'	1.0	1	1 -	7.2	> 10				,		
30 -	4.2		1	·	7.0						
							Meter Nos.		 		
Obsessations Dur	ina Pur	ring (Well C	`andition	Tuchic	dity Color	Odor	sich br	• • •			
Discharge Water				_	Storm Se		Dother bake	- <i>+</i>	enk		
Discharge Water	Disposa	. CJ Carni			·····		MPLING				
					AAET	LOM	WIF LING				
SAMPLING ME							Same As Abo				
☐ Bailer - Type:											
☐ Submersible [-					Other - Type	:			
SAMPLE DIST					<u> 910P</u>			,	1 - 1-		Comments
Sample No.		ume/Cont.			quested	ļ	Preservatives		Lab		Zinments
3-805		JOU	I	-	8240	 	<u> </u>		nex		
	7	l AL	1.							·	
	+		20	<u> </u>			H2504				
			 				· · · · · · · · · · · · · · · · · · ·				
<u> </u>	+-					ļ	<u> </u>			 	
			 						 		
			_								
<u></u>			<u> </u>			l		L			
QUALITY CON			3			Diami: 1	Comples		,	ther Campl	ae.
	licate S		nola Na		Туре	Blank !	Samples Sample No.		Type	ther Sample	Sample No.
Original Sample	140. DI	upiicate San	ipie 140.	<u> </u>	iypo		Sample (40.	\dashv	, i ype		
-				-				-	<u> </u>		
				-							
				<u></u>				\dashv			
. L					<u></u>		<u> </u>		<u> </u>		

Harding Lawson Associates Engineers and Geoscientists	GROUND-WATER SAMPLING FORM					
		Well Type:	∃Mon	itor DExtract	ion □Ot	ther
Job Name						ther
Job Number		Date6_3	6-c		Time	912
Recorded by	·····	Sampled by	Ru	E. DWE	*	
(Signature)	·				(Initials)	
	WELL PL				* 	
PURGE VOLUME		PURGE MET	HQD			
Casing Diameter (D in inches):		* -				
2-inch 24-inch 6-inch Other		☐ Submersible	D€	ntrifugal 🗌 Blade	der; Pump	No.:
Total Depth of Casing (TD in feet BTOC): 24.0		Other - Type:	. st Y	** *** ***		
Water Level Depth (WL in feet BTOC): 9.55		PUMP INTAK				
Number of Well Volumes to be purged (# Vols)				lear Top 🔲 Ot		
23		Depth in feet (B	TOC):	Lo Scree		
PURGE VOLUME CALCULATION						_ to
(74.a - 9.55) X 4 D (inches)	X <u>3</u> # Vols	X 0.0408 =	=	2.8 Calculated P	urge Volum	galions
PURGE TIME	PURGE RA	TE		ÄCTU	JAL PUR	SE VOLUME
Ociob Start Daio Stop 4 Elapsed		_gpm Final_3.	gr	om <u>28</u>		galions
FIELD PARAMETER MEASUREMENT	•					
Miguton Cond DeC	Other tyre	Minutes Since Pumping Began	рΗ	Cond. (µmhos/cm)	τ °° ¢	Other
initial 6.6 400 19.5	> 100					
15-gals 6A 500 Z1.5			<u> </u>			
18- 6.5 500 11.0	> 100				<u></u>	
				<u> </u>		
		Meter Nos.				}
Observations During Purging (Well Condition, Turbidi						
Discharge Water Disposal: Sanitary Sewer S	Storm Sewer	Other bake	<u>- to</u>	<u>k</u>		
	WELL SA	MPLING				
SAMPLING METHOD		☐ Same As Abo	ve			
☐Bailer - Type:		Grab - Type:				
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:		Other - Type:				
SAMPLE DISTRIBUTION Sample Series:						
Sample No. Volume/Cont. Analysis Requ	ested f	Preservatives		Lab	C	omments
2603 3 VOA 8015-6, 80	20	Hec		مامه	<u> </u>	
2 LAC " D		~		fr		
					 	
				· · · · · · · · · · · · · · · · · · ·		
					 	
QUALITY CONTROL SAMPLES						
Duplicate Samples		Samples	— r	······	er Sample	
Original Sample No. Duplicate Sample No.	Туре	Sample No.		Туре		Sample No.
			∤			
<u> </u>						

Harding Lawson Associates Engineers and Geoscientists

GROUND	_WATED	CAMPI	INC	FORM
CHUUNU	-VV A I E H	SAMPL	LINLE	CURIN

	Well No		
Table Address	• •	⊟Monitor □ Extract	
Job Name <u>Carrolis</u>			el Other
Job Number			Time <u>0945</u>
Recorded by E. F. (Signature)	Sampled by	y pue out	(Initials)
F	ELL PURGING	<u></u>	
	No	TLIOD	
PURGE VOLUME	PURGE ME		
Casing Diameter (D in inches):		De:	der; Pump No.:
☐ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other ☐ Other ☐ Total Depth of Casing (TD in feet BTOC): 2.3.1.			
Water Level Depth (WL in feet BTOC): 9.54	CONTRACTOR TO A CONTRACTOR OF	SETTING	
Number of Well Volumes to be purged (# Vols)			her
☐ 3		(BTOC): Scree	
PURGE VOLUME CALCULATION	Dopar in reet	·	to
(23.1 - 2.4) X <u>4</u> X _ D (inches)	3 X 0.0408	= 26	gailons urge Volume
77***			
	IRGE RATE		IAL PURGE VOLUME
	ialgpm Final &	zwyc√ ∂bw	gallons
FIELD PARAMETER MEASUREMENT	Minutes Cine		
Minutes Since Pumping Began pH Cond. T Cond. T Conder	Minutes Since Pumping Bega	pH Cond. (μmhos/cm)	T : C Other
initial 6.4 800 19.5 2	.00		
15-gals 6.5 800 20.0			
	20		
	Meter Nos.		
Observations During Purging (Well Condition, Turbidity, Co	ilor, Odor): Silly be	auna mana s	exclust renovem
Discharge Water Disposal: Sanitary Sewer Storm	Sewer Dother	an tank	
WI	ELL SAMPLING		
SAMPLING METHOD	☐ Same As A	bove	
☐-Baller - Type: <u>\$.\$.</u>	- 	e:	
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.: ——		De:	
SAMPLE DISTRIBUTION Sample Series: 910			
Sample No. Volume/Cont. Analysis Requested		Lab	Comments
2604 6 UDA BOIS-6, BL40	Hec	NA	
2 e da " D			
1 11 04 6	N,SO.		
QUALITY CONTROL SAMPLES			
Duplicate Samples	Blank Samples		er Samples
Original Sample No. Duplicate Sample No. Typ	e Sample No	. Type	Sample No.
	3		

Appendix B

GROUNDWATER CHEMISTRY LABORATORY RESULTS AND CHAIN OF CUSTODY FORMS



NET Pacific, Inc. 435 Tesconi Circle Santa Rosa. CA 95401

Tel: (707) 526-7200 Fax: (707) 526-9623

Bruce Scheibach Harding Lawson Associates 200 Rush Landing Novato, CA 94947 Date: 07-16-91

NET Client Acct. No: 281 NET Pacific Log No: 8296 Received: 06-25-91 1752

Client Reference Information

Carnation-Oakland, Job: 20294,007.02

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)



Client Name: Harding Lawson Associates

NET Log No: 8296

Date: 07-16-91

Page: 2

Ref: Carnation-Oakland, Job: 20294,007.02

SAMPLE DESCRIPTION: 91062501 LAB Job No: (-89669) 06-25-91 0930

2.12 002 1101 / 0.	,,,,	Reporting		
Parameter	Method	Limit	Results	Units
Oil & Grease(Total)	EPA9070	5	ND	mg/L
Oil & Grease (Non-Polar)	SM5520BF	5	ND	mg/L
PETROLEUM HYDROCARBONS				
VOLATILE (WATER)				
DILUTION FACTOR *			1	
DATE ANALYZED			07-08-91	
METHOD GC FID/5030				
as Gasoline		0.05	ND	mg/L
PETROLEUM HYDROCARBONS				
EXTRACTABLE (WATER)				
DILUTION FACTOR *			1	
DATE EXTRACTED			06-28-91	
DATE ANALYZED			07-02-91	
METHOD GC FID/3510				
as Diesel		0.05	ND	mg/L
as Motor Oil		0.5	ND	mg/L



Client Name: Harding Lawson Associates

NET Log No: 8296

Date: 07-16-91

Page: 3

Ref: Carnation-Oakland, Job: 20294,007.02

SAMPLE DESCRIPTION: 91062501

06-25-91

0930

No: (-89669) Reporting	
Method Limit Results	Units
07-02-91	
. * 1	
10 ND	ug/L
5.0 ND	ug/L
thane 5.0 ND	ug/L
5.0 ND	ug/L
5.0 ND	ug/L
10 ND	ug/L
e 5.0 ND	ug/L
oride 5.0 ND	ug/L
5.0 ND	ug/L
5.0 ND	ug/L
inyl Ether 10 ND	ug/L
5.0 ND	ug/L
5.0 ND	ug/L
thane 5.0 ND	ug/L
zene 6.0 ND	ug/L
zene 6.0 ND	ug/L
zene 6.0 ND	ug/L
ane 5.0 ND	ug/L
ane 5.0 ND	ug/L
ene 5.0 ND	ug/L
oroethene 5.0 ND	ug/L
pane 5.0 ND	ug/L
opropene 5.0 ND	ug/L
oropropene 5.0 ND	ug/L
5.0 ND	ug/L
10 ND	ug/L
ide 5.0 ND	ug/L
anone 10 ND	ug/L
5.0 ND	ug/L
loroethane 5.0 ND	ug/L
ne 5.0 ND	ug/L
5.0 ND	ug/L
ethane 5.0 ND	ug/L ug/L
ethane 5.0 ND	ug/L ug/L
5.0 ND	ug/L ug/L
methane 5.0 ND	ug/L ug/L
10 ND	ug/L ug/L
5.0 ND	
5.0 ND	ug/L
TS	ug/L
TS 95	9 Dan
	% Rec.
	% Rec. % Rec.
ene ane-d4	95 92 85



Client Name: Harding Lawson Associates

NET Log No: 8296

Date: 07-16-91

Page: 4

Ref: Carnation-Oakland, Job: 20294,007.02

SAMPLE DESCRIPTION: 91062502

06-25-91

1000

LAB Job No: (-89670)

LAB OUD NO: (-0:	,670)	Damantidan		
Parameter	Method	Reporting Limit	Results	Units
Oil & Grease(Total) Oil & Grease(Non-Polar)	EPA9070 SM5520BF	5 5	ND ND	mg/L mg/L
PETROLEUM HYDROCARBONS VOLATILE (WATER) DILUTION FACTOR * DATE ANALYZED METHOD GC FID/5030 as Gasoline		0.05	 1 07-08-91 ND	mg/L
PETROLEUM HYDROCARBONS EXTRACTABLE (WATER) DILUTION FACTOR * DATE EXTRACTED DATE ANALYZED METHOD GC FID/3510 as Diesel		0.05	 1 06-28-91 07-02-91 ND	mg/L
as Motor Oil		0.5	ND	mg/L



Client Name: Harding Lawson Associates

NET Log No: 8296

Ref: Carnation-Oakland, Job: 20294,007.02

1000

Date: 07-16-91

Page: 5

SAMPLE DESCRIPTION: 91062502 06-25-91

LAB Job No: (-89670)

		Reporting		
Parameter	Method	Limit	Results	Units
ETHOD 8240				
DATE ANALYZED			07-02-91	
DILUTION FACTOR *			1	
Acetone		10	ND	ug/L
Benzene		5.0	ND	ug/L
Bromodichloromethane		5.0	ND	ug/L
Bromoform		5.0	ND	ug/L
Bromomethane		5.0	ND	ug/L
2-Butanone		10	ND	ug/L
Carbon Disulfide		5.0	ND	ug/L
Carbon Tetrachloride		5.0	ND	ug/L
Chlorobenzene		5.0	ND	ug/L
Chloroethane		5.0	ND	ug/L
2-Chloroethyl Vinyl Ether		10	ND	ug/L
Chloroform		5.0	ND	ug/L
Chloromethane		5.0	ND	ug/L
Dibromochloromethane		5.0	ND	ug/L
1,2-Dichlorobenzene		6.0	ND	ug/L
1,3-Dichlorobenzene		6.0	ND	ug/L
1,4-Dichlorobenzene		6.0	ND	ug/L
l,1-Dichloroethane		5.0	ND	ug/L
1,2-Dichloroethane		5.0	ND	ug/L
1,1-Dichloroethene		5.0	ND	ug/L
trans-1,2-Dichloroethene		5.0	ND	ug/L
l,2-Dichloropropane		5.0	ND	ug/L
cis-1,3-Dichloropropene		5.0	ND	ug/L
rans-1,3-Dichloropropene		5.0	ND	ug/L
Ethylbenzene		5.0	ND	ug/L
2-Hexanone		10	ND	ug/L
Methylene Chloride		5.0	ND	ug/L
4-Methy1-2-pentanone		10	ND	ug/L
Styrene		5.0	ND	ug/L
1,1,2,2-Tetrachloroethane		5.0	ND	ug/L
Tetrachloroethene		5.0	ND	ug/L
Coluene		5.0	ND	ug/L
1,1,1-Trichloroethane		5.0	ND	ug/L
1,1,2-Trichloroethane		5.0	ND	ug/L
Crichloroethene		5.0	ND	ug/L
Crichlorofluoromethane		5.0	ND	ug/L
/inyl acetate		10	ND	ug/L
/inyl acecate /inyl chloride		5.0	ND	ug/L ug/L
Yinyi chioride Kylenes, total		5.0	ND	ug/L ug/L
SURROGATE RESULTS		J. U		-9/1
Foluene-d8			97	% Rec.
			101	% Rec.
Bromofluorobenzene			92	% Rec.
1,2-Dichloroethane-d4			34	a Rec.



Client Name: Harding Lawson Associates

NET Log No: 8296

Date: 07-16-91

Page: 6

Ref: Carnation-Oakland, Job: 20294,007.02

SAMPLE DESCRIPTION: 91062506

06-25-91

1315

LAB Job No: (-89671)

EAD 000 NO. (0.	,	Reporting		
Parameter	Method	Limit	Results	Units
Oil & Grease(Total)	EPA9070	5	ND	mg/L
Oil & Grease(Non-Polar)	S M5520BF	5	ND	mg/L
PETROLEUM HYDROCARBONS				
VOLATILE (WATER)				
DILUTION FACTOR *			1	
DATE ANALYZED			07-02-91	
METHOD GC FID/5030				
as Gasoline		0.05	ND	mg/L
PETROLEUM HYDROCARBONS				
EXTRACTABLE (WATER)				
DILUTION FACTOR *			1	
DATE EXTRACTED			06-28-91	
DATE ANALYZED			07-02-91	
METHOD GC FID/3510				
as Diesel		0.05	ND	mg/L
as Motor Oil		0.5	ND	mg/L



Client Name: Harding Lawson Associates

NET Log No: 8296

Date: 07-16-91 Page: 7

Ref: Carnation-Oakland, Job: 20294,007.02

SAMPLE DESCRIPTION: 91062506 06-25-91 1315

LAB Job No: (-89671)

Parame ter	Method	Reporting Limit	Results	Units
METHOD 8240				
DATE ANALYZED			07-03-91	
DILUTION FACTOR *			1	
Ace tone		10	ND	ug/L
Benzene		5.0	ND	ug/L
Bromodichloromethane		5.0	ND	ug/L
Bromoform		5.0	ND	ug/L
Bromomethane		5.0	ND	ug/L
2-Butanone		10	ND	ug/L
Carbon Disulfide		5.0	ND	ug/L
Carbon Tetrachloride		5.0	ND	ug/L
Chlorobenzene		5.0	ND	ug/L
Chloroethane		5.0	ND	ug/L
2-Chloroethyl Vinyl Ether		10	ND	ug/L
Chloroform		5.0	ND	ug/L
Chloromethane		5.0	ND	ug/L
Dibromochloromethane		5.0	ND	ug/L
1,2-Dichlorobenzene		6.0	ND	ug/L
1,3-Dichlorobenzene		6.0	ND	ug/L
1,4-Dichlorobenzene		6.0	ND	ug/L ug/L
		5.0	ND	
l,1-Dichloroethane l,2-Dichloroethane		5.0	ND	ug/L
		5.0	ND	ug/L
l,1-Dichloroethene		5.0	•	ug/L
trans-1,2-Dichloroethene			ND	ug/L
1,2-Dichloropropane		5.0	ND	ug/L
cis-1,3-Dichloropropene		5.0	ND	ug/L
rans-1,3-Dichloropropene		5.0	ND	ug/L
Ethylbenzene		5.0	ND	ug/L
2-Hexanone		10	ND	ug/L
Methylene Chloride		5.0	ND	ug/L
4-Methyl-2-pentanone		10	ND	ug/L
Styrene		5.0	ND	ug/L
1,1,2,2-Tetrachloroethane		5.0	ND	ug/L
Tetrachloroethene		5.0	ND	ug/L
Toluene		5.0	ND	ug/L
1,1,1-Trichloroethane		5.0	ND	ug/L
1,1,2-Trichloroethane		5.0	ND	ug/L
Trichloroethene		5.0	ND	ug/L
Frichlorofluoromethane		5.0	ND	ug/L
/inyl acetate		10	ND	ug/L
Vinyl chloride		5.0	ND	ug/L
Kylenes, total		5.0	ND	ug/L
SURROGATE RESULTS				31
Foluene-d8			99	% Rec.
Bromofluorobenzene			100	% Rec.
sromoriuoropenzene 1,2-Dichloroethane-d4			105	% Rec.
1,2-Dicutorostuane-d4			100	a vec.



Client Name: Harding Lawson Associates

NET Log No: 8296

Date: 07-16-91

Page: 8

Ref: Carnation-Oakland, Job: 20294,007.02

SAMPLE DESCRIPTION: 91062509

06-25-91

1445

LAB Job No: (-89672)

LAB DOD NO: (-0:	,,,,	Reporting		
Parameter	Method	Limit	Results	Units
Oil & Grease(Total)	EPA9070	5	ND	mg/L
Oil & Grease(Non-Polar)	SM5520BF	5	ND	mg/L
PETROLEUM HYDROCARBONS				
VOLATILE (WATER)				
DILUTION FACTOR *			1	
DATE ANALYZED			07-08-91	
METHOD GC FID/5030				
as Gasoline		0.05	ND	mg/L
PETROLEUM HYDROCARBONS				
EXTRACTABLE (WATER)			en **-	
DILUTION FACTOR *			1	
DATE EXTRACTED			06-28-91	
DATE ANALYZED			07-02-91	
METHOD GC FID/3510			***	
as Diesel		0.05	ND	mg/L
as Motor Oil		0.5	ND	mg/L



Parameter

Client Acct: 281

Client Name: Harding Lawson Associates

NET Log No: 8296

Date: 07-16-91 Page: 9

Ref: Carnation-Oakland, Job: 20294,007.02

SAMPLE DESCRIPTION: 91062509

06-25-91

1445

LAB Job No: (-89672)

Method	Reporting Limit	Results	Unite

rat muecer	Mechou	Dimi	Results	011202
METHOD 8240				
DATE ANALYZED			07-03-91	
DILUTION FACTOR *			1	
Acetone		10	ND	ug/L
Benzene		5.0	ND	ug/L
Bromodichloromethane		5.0	ND	ug/L
Bromoform		5.0	ND	\mathtt{ug}/\mathtt{L}
Bromomethane		5.0	ND	ug/L
2-Butanone		10	ND	ug/L
Carbon Disulfide		5.0	ND	ug/L
Carbon Tetrachloride		5.0	ND	ug/L
Chlorobenzene		5.0	ND	ug/L
Chloroethane		5.0	ND	ug/L
2-Chloroethyl Vinyl Ethe	er	10	ND	ug/L
Chloroform		5.0	ND	ug/L
Chloromethane		5.0	ND	ug/L
Dibromochloromethane		5.0	ND	ug/L
1,2-Dichlorobenzene		6.0	ND	ug/L
1,3-Dichlorobenzene		6.0	ND	ug/L
1,4-Dichlorobenzene		6.0	ND	ug/L
1,1-Dichloroethane		5.0	ND	ug/L
1,2-Dichloroethane		5.0	ND	ug/L
1,1-Dichloroethene		5.0	ND	ug/L
trans-1,2-Dichloroethene	•	5.0	ND	ug/L
1,2-Dichloropropane		5.0	ND	ug/L
cis-1,3-Dichloropropene		5.0	ND	ug/L
trans-1,3-Dichloroproper	ne	5.0	ND	${\tt ug/L}$
Ethylbenzene		5.0	ND	ug/L
2-Hexanone		10	ND	ug/L
Methylene Chloride		5.0	ND	ug/L
4-Methyl-2-pentanone		10	ND	ug/L
Styrene		5.0	ND	ug/L
1,1,2,2-Tetrachloroethar	1e	5.0	ND	ug/L
Tetrachloroethene		5.0	ND	ug/L
Toluene		5.0	ND	ug/L
1,1,1-Trichloroethane		5.0	ND	ug/L
1,1,2-Trichloroethane		5.0	ND	ug/L
Trichloroethene		5.0	ND	ug/L
Trichlorofluoromethane		5.0	ND	ug/L
Vinyl acetate		10	ND	ug/L
Vinyl chloride		5.0	ND	ug/L
Xylenes, total		5.0	ND	ug/L
SURROGATE RESULTS				
Toluene-d8			102	% Rec.
Bromofluorobenzene			104	% Rec.
1,2-Dichloroethane-d4			110	% Rec.



Client Name: Harding Lawson Associates

NET Log No: 8296

Date: 07-16-91

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Ref: Carnation-Oakland, Job: 20294,007.02

SAMPLE DESCRIPTION: 91062503

06-25-91

1030

LAB Job No: (-89792)

TWP TOD NO: (-6	37/72)	Reporting		
Parameter	Method	Limit	Results	Units
PETROLEUM HYDROCARBONS				
VOLATILE (WATER)				
DILUTION FACTOR *			1	
DATE ANALYZED			07-08-91	
METHOD GC FID/5030				
as Gasoline		0.05	ND	mg/L
METHOD 602				
DILUTION FACTOR *			1	
DATE ANALYZED			07-08-91	
Benzene		0.5	ND	ug/L
Ethylbenzene		0.5	ND	ug/L
Toluene		0.5	ND	ug/L
Xylenes, total		0.5	ND	ug/L
PETROLEUM HYDROCARBONS				
EXTRACTABLE (WATER)				
DILUTION FACTOR *			1	
DATE EXTRACTED			06-28-91	
DATE ANALYZED			07-02-91	
METHOD GC FID/3510				
as Diesel		0.05	ND	mg/L
as Motor Oil		0.5	ND	mg/L



Client Name: Harding Lawson Associates

NET Log No: 8296

Date: 07-16-91 Page: 11

Ref: Carnation-Oakland, Job: 20294,007.02

1115

SAMPLE DESCRIPTION: 91062504 06-25-91

LAB Job No: (-89793)

<u> </u>		Reporting		
Parameter	Method	Limit	Results	Units
PETROLEUM HYDROCARBONS				
VOLATILE (WATER)				
DILUTION FACTOR *			1	
DATE ANALYZED			07-08-91	
METHOD GC FID/5030				
as Gasoline		0.05	ND	mg/L
METHOD 602			~~	
DILUTION FACTOR *			1	
DATE ANALYZED			07-08-91	
Benzene		0.5	ND	ug/L
Ethylbenzene		0.5	ND	ug/L
Toluene		0.5	ND	ug/L
Xylenes, total		0.5	ND	ug/L
PETROLEUM HYDROCARBONS				
EXTRACTABLE (WATER)				
DILUTION FACTOR *			1	
DATE EXTRACTED			06-28-91	
DATE ANALYZED			07-02-91	
METHOD GC FID/3510			****	
as Diesel		0.05	ND	mg/L
as Motor Oil		0.5	ND	mg/L



Client Name: Harding Lawson Associates

NET Log No: 8296

Date: 07-16-91

mg/L

mg/L

Page: 12

Ref: Carnation-Oakland, Job: 20294,007.02

SAMPLE DESCRIPTION: 91062505

as Diesel

as Motor Oil

06-25-91

1230

•	-	Reporting		
Parameter	Method	Limit	Results	Units
PETROLEUM HYDROCARBONS				
VOLATILE (WATER)				
DILUTION FACTOR *			1	
DATE ANALYZED			07-08-91	
METHOD GC FID/5030				
as Gasoline		0.05	ND	mg/L
METHOD 602			-	
DILUTION FACTOR *			1	
DATE ANALYZED			07-08-91	
Benzene		0.5	ND	ug/L
Ethylbenzene		0.5	ND	ug/L
Toluene		0.5	ND	ug/L
Xylenes, total		0.5	ND	ug/L
PETROLEUM HYDROCARBONS				
EXTRACTABLE (WATER)				
DILUTION FACTOR *			1	
DATE EXTRACTED			06-28-91	
DATE ANALYZED			07-02-91	
METHOD GC FID/3510				

0.05

0.5

ND

ND



³ Client Name: Harding Lawson Associates

NET Log No: 8296

Ref: Carnation-Oakland, Job: 20294,007.02

SAMPLE DESCRIPTION: 91062512 LAB Job No: (-89795)

06-25-91

1600

Date: 07-16-91

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TWR TOD NO: (-8	LAB JOD NO: (-89/95) Reporting						
Parameter	Method	Limit	Results	Units			
PETROLEUM HYDROCARBONS							
VOLATILE (WATER)							
DILUTION FACTOR *			1				
DATE ANALYZED			07-08-91				
METHOD GC FID/5030							
as Gasoline		0.05	ND	mg/L			
METHOD 602							
DILUTION FACTOR *			1				
DATE ANALYZED			07-08-91				
Benzene		0.5	ND	ug/L			
Ethylbenzene		0.5	ND	ug/L			
Toluene		0.5	ND	ug/L			
Xylenes, total		0.5	ND	ug/L			
PETROLEUM HYDROCARBONS							
EXTRACTABLE (WATER)							
DILUTION FACTOR *			1				
DATE EXTRACTED			06-28-91				
DATE ANALYZED			07-02-91				
METHOD GC FID/3510							
as Diesel		0.05	ND	mg/L			
as Motor Oil		0.5	ND	mg/L			



Client Name: Harding Lawson Associates

NET Log No: 8296

Date: 07-16-91

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Ref: Carnation-Oakland, Job: 20294,007.02

SAMPLE DESCRIPTION: 91062507

06-25-91 1345

LAB Job No: (-89799

Parameter	Method	Reporting Limit	Results	Units
PROPERTY IN THE PROPERTY OF				
PETROLEUM HYDROCARBONS				
VOLATILE (WATER) DILUTION FACTOR *				
			1 07 09 01	
DATE ANALYZED			07-08-91	
METHOD GC FID/5030		0.05		1=
as Gasoline		0.05	ND	mg/L
PETROLEUM HYDROCARBONS				
EXTRACTABLE (WATER)				
DILUTION FACTOR *			1	
DATE EXTRACTED			06-28-91	
DATE ANALYZED			07-02-91	
METHOD GC FID/3510				
as Diesel		0.05	ND	mg/L
as Motor Oil		0.5	ND	mg/L



: Client Name: Harding Lawson Associates

NET Log No: 8296

Date: 07-16-91

Page: 15

Ref: Carnation-Oakland, Job: 20294,007.02

SAMPLE DESCRIPTION: 91062507 06-25-91 1345

LAB Job No: (-89799)

		Reportin	ıg	
Parameter	Method	Limit	Results	Units
METHOD 8240				
DATE ANALYZED			07-03-91	
DILUTION FACTOR *			1	
Acetone		10	ND	ug/L
Benzene		5.0	ND	ug/L
Bromodichloromethane		5.0	ND	ug/L
Bromoform		5.0	ND	ug/L
Bromomethane		5.0	ND	ug/L
2-Butanone		10	ND	ug/L
Carbon Disulfide		5.0	ND	ug/L
Carbon Tetrachloride		5.0	ND	ug/L
Chlorobenzene		5.0	ND	ug/L
Chloroethane		5.0	ND	ug/L
2-Chloroethyl Vinyl Ether		10	ND	ug/L
Chloroform		5.0	ND	ug/L
Chloromethane		5.0	ND	ug/L
Dibromochloromethane		5.0	ND	ug/L
1,2-Dichlorobenzene		6.0	ND	ug/L
1,3-Dichlorobenzene		6.0	ND	ug/L
1,4-Dichlorobenzene		6.0	ND	ug/L
1,1-Dichloroethane		5.0	ND	ug/L
1,2-Dichloroethane		5.0	ND	ug/L
1,1-Dichloroethene		5.0	ND	ug/L
trans-1,2-Dichloroethene		5.0	ND	ug/L
1,2-Dichloropropane		5.0	ND	ug/L
cis-1,3-Dichloropropene		5.0	ND	ug/L
trans-1,3-Dichloropropene		5.0	ND	ug/L
Ethylbenzene		5.0	ND	ug/L
2-Hexanone		10	ND	ug/L
Methylene Chloride		5.0	ND	ug/L
4-Methyl-2-pentanone		10	ND	ug/L ug/L
<u> </u>		5.0	ND	ug/L
Styrene 1,1,2,2-Tetrachloroethane		5.0	ND	ug/L
Tetrachloroethene		5.0	ND	ug/L ug/L
Toluene		5.0	ND	ug/L
		5.0	ND	ug/L
1,1,1-Trichloroethane		5.0	ND	
1,1,2-Trichloroethane				ug/L
Trichloroethene		5.0	ND ND	ug/L
Trichlorofluoromethane		5.0	ND ND	ug/L
Vinyl acetate		10	ND ND	ug/L
Vinyl chloride		5.0	ND ND	ug/L
Xylenes, total		5.0	ND	ug/L
SURROGATE RESULTS			104	a n
Toluene-d8			104	% Rec.
Bromofluorobenzene			104	% Rec.
1,2-Dichloroethane-d4			112	% Rec.



Client Name: Harding Lawson Associates

NET Log No: 8296

Date: 07-16-91

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Ref: Carnation-Oakland, Job: 20294,007.02

SAMPLE DESCRIPTION: 91062508 LAB Job No: (-89800) 06-25-91 1415

Parameter	Method	Reporting Limit	Results	Units
PETROLEUM HYDROCARBONS				
VOLATILE (WATER)				
DILUTION FACTOR *			1	
DATE ANALYZED			07-08-91	
METHOD GC FID/5030				
as Gasoline		0.05	ND	mg/L
PETROLEUM HYDROCARBONS				
EXTRACTABLE (WATER)				
DILUTION FACTOR *			1	
DATE EXTRACTED			06-28-91	
DATE ANALYZED			07-02-91	
METHOD GC FID/3510				
as Diesel		0.05	ND	mg/L
as Motor Oil		0.5	ND	mg/L



: Client Name: Harding Lawson Associates

NET Log No: 8296

Date: 07-16-91

Page: 17

Ref: Carnation-Oakland, Job: 20294,007.02

SAMPLE DESCRIPTION: 91062508 06-25-91 1415 LAB Job No: (-89800)

LAB Job No: (-898	300)	Dan		
Parameter	Method	Reporting Limit	Results	Units
ÆTHOD 8240				
DATE ANALYZED			07-03-91	
DILUTION FACTOR *			1	
Acetone		10	ND	ug/L
Benzene		5.0	ND	ug/L
Bromodichloromethane		5.0	ND	ug/L
Bromoform		5.0	ND	ug/L
Bromomethane		5.0	ND	ug/L
2-Butanone		10	ND	ug/L
Carbon Disulfide		5.0	ND	ug/L
Carbon Tetrachloride		5.0	ND	ug/L
Chlorobenzene		5.0	ND	ug/L
Chloroethane		5.0	ND	ug/L
2-Chloroethyl Vinyl Ether		10	ND	ug/L
Chloroform		5.0	ND	ug/L
Chloromethane		5.0	ND	ug/L
Dibromochloromethane		5.0	ND	ug/L
,2-Dichlorobenzene		6.0	ND	ug/L
,3-Dichlorobenzene		6.0	ND	ug/L
,4-Dichlorobenzene		6.0	ND	ug/L
,1-Dichloroethane		5.0	ND	ug/L
,2-Dichloroethane		5.0	ND	ug/L
,1-Dichloroethene		5.0	ND	ug/L
rans-1,2-Dichloroethene		5.0	ND	ug/L
,2-Dichloropropane		5.0	ND	ug/L
is-1,3-Dichloropropene		5.0	ND	ug/L
rans-1,3-Dichloropropene		5.0	ND	ug/L
thylbenzene		5.0	ND	ug/L
-Hexanone		10	ND	ug/L
Methylene Chloride		5.0	ND	ug/L
-Methyl-2-pentanone		10	ND	ug/L
tyrene		5.0	ND	ug/L
.,1,2,2-Tetrachloroethane		5.0	ND	ug/L
etrachloroethene		5.0	ND	ug/L
Coluene		5.0	ND	ug/L
.,1,1-Trichloroethane		5.0	ND	ug/L
,1,2-Trichloroethane		5.0	ND	
richloroethene		5.0	ND	ug/L
		5.0		ug/L
richlorofluoromethane		10	ND ND	ug/L
inyl acetate			ND ND	ug/L
inyl chloride		5.0	ND ND	ug/L
ylenes, total		5.0	ND	ug/L
URROGATE RESULTS			102	
Coluene-d8			103	% Rec.
romofluorobenzene			106	% Rec.
,2-Dichloroethane-d4			111	% Rec.



: Client Name: Harding Lawson Associates

Date: 07-16-91 Page: 18

NET Log No: 8296

Ref: Carnation-Oakland, Job: 20294,007,02

SAMPLE DESCRIPTION: 91062510 06-25-91 1515

LAB Job No: (-89805)

Parameter	Method	Reporting Limit	Results	Units
Oil & Grease(Total)	EPA9070	5	ND	mg/L
Oil & Grease(Non-Polar)	SM5520BF	5	ND	mg/L
PETROLEUM HYDROCARBONS				
VOLATILE (WATER)				
DILUTION FACTOR *			1	
DATE ANALYZED			07-08-91	
METHOD GC FID/5030				
as Gasoline		0.05	ND	mg/L
METHOD 602				
DILUTION FACTOR *			1	
DATE ANALYZED			07-08-91	
Benzene		0.5	ND	ug/L
Ethylbenzene		0.5	ND	ug/L
Toluene		0.5	ND	ug/L
Xylenes, total		0.5	ND	ug/L
PETROLEUM HYDROCARBONS				
EXTRACTABLE (WATER)				
DILUTION FACTOR *			1	
DATE EXTRACTED			06-28-91	
DATE ANALYZED			07-02-91	
METHOD GC FID/3510				
as Diesel		0.05	ND	mg/L
as Motor Oil		0.5	ND	mg/L



- Client Name: Harding Lawson Associates

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Date: 07-16-91

NET Log No: 8296

Ref: Carnation-Oakland, Job: 20294,007.02

SAMPLE DESCRIPTION: 91062511

06-25-91

1530

LAB Job No: (-89806)

EAD COD NO. (-03)	,	Poporting			
Parameter	Method	Reporting Limit	Results	Units	
Oil & Grease(Total)	EPA9070	5	ND	mg/L	
Oil & Grease (Non-Polar)	S M5520BF	5	ND	mg/L	
PETROLEUM HYDROCARBONS					
VOLATILE (WATER)					
DILUTION FACTOR *			1		
DATE ANALYZED			07-08-91		
METHOD GC FID/5030					
as Gasoline		0.05	ND	mg/L	
METHOD 602			~~		
DILUTION FACTOR *			1		
DATE ANALYZED			07-08-91		
Benzene		0.5	ND	ug/L	
Ethylbenzene		0.5	ND	ug/L	
Toluene		0.5	ND	ug/L	
Xylenes, total		0.5	ИД	ug/L	
PETROLEUM HYDROCARBONS					
EXTRACTABLE (WATER)					
DILUTION FACTOR *			1		
DATE EXTRACTED			06-28-91		
DATE ANALYZED			07-02-91		
METHOD GC FID/3510					
as Diesel		0.05	ND	mg/L	
as Motor Oil		0.5	ND	mg/L	



Client Name: Harding Lawson Associates

NET Log No: 8296

Date: 07-16-91

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Ref: Carnation-Oakland, Job: 20294,007.02

SAMPLE DESCRIPTION: 91062511

06-25-91

1530

LAB Job No: (-89806)

•			*	
R	ebo	rt.	1	na

		Reporting		
Parameter	Method	Limit	Results	Units
METHOD 8240				
DATE ANALYZED			07-03-91	
DILUTION FACTOR *			1	
Acetone		10	ND	ug/L
Benzene		5.0	ND	ug/L
Bromodichloromethane		5.0	ND	ug/L
Bromoform		5.0	ND	ug/L
Bromomethane		5.0	ND	ug/L
2-Butanone		10	ND	ug/L
Carbon Disulfide		5.0	ND	ug/L
Carbon Tetrachloride		5.0	ND	ug/L
Chlorobenzene		5.0	ND	ug/L
Chloroethane		5.0	ND	ug/L
2-Chloroethyl Vinyl Ether		10	ND	ug/L
Chloroform		5.0	ND	ug/L
Chloromethane		5.0	ND	ug/L
Dibromochloromethane		5.0	ND	ug/L
1,2-Dichlorobenzene		6.0	ND	ug/L
1,3-Dichlorobenzene		6.0	ND	ug/L
1,4-Dichlorobenzene		6.0	ND	ug/L
1,1-Dichloroethane		5.0	ND	ug/L
1,2-Dichloroethane		5.0	ND	• '
1,1-Dichloroethene		5.0	ND	ug/L ug/L
trans-1,2-Dichloroethene		5.0	ND	ug/L ug/L
		5.0	ND	
1,2-Dichloropropane		5.0		ug/L
cis-1,3-Dichloropropene			ND	ug/L
trans-1,3-Dichloropropene		5.0 5.0	ND	ug/L
Ethylbenzene		10	ND	ug/L
2-Hexanone		= -	ND	ug/L
Methylene Chloride		5.0	ND	ug/L
4-Methyl-2-pentanone		10	ND	ug/L
Styrene		5.0	ND	ug/L
1,1,2,2-Tetrachloroethane		5.0	ND	ug/L
Tetrachloroethene		5.0	ND	ug/L
Toluene		5.0	ND	ug/L
1,1,1-Trichloroethane		5.0	ND	ug/L
1,1,2-Trichloroethane		5.0	ND	ug/L
Prichloroethene		5.0	ND	ug/L
Prichlorofluoromethane		5.0	ND	ug/L
Vinyl acetate		10	ND	ug/L
Vinyl chloride		5.0	ND	\mathtt{ug}/\mathtt{L}
Xylenes, total		5.0	ND	ug/L
SURROGATE RESULTS				•
Toluene-d8			106	% Rec.
Bromofluorobenzene			107	% Rec.
1,2-Dichloroethane-d4			111	% Rec.



Client Name: Harding Lawson Associates

NET Log No: 8296

Ref: Carnation-Oakland, Job: 20294,007.02

Date: 07-16-91

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SAMPLE DESCRIPTION: 91062513 06-25-91 1630

LAB Job No: (-89824)

Parameter	Method	Reporting Limit	Results	Units
Oil & Grease(Total) Oil & Grease(Non-Polar)	EPA9070 SM5520BF	5 5	ND ND	mg/L mg/L
PETROLEUM HYDROCARBONS VOLATILE (WATER) DILUTION FACTOR * DATE ANALYZED METHOD GC FID/5030 as Gasoline		0.05	 1 07-08-91 ND	mg/L
PETROLEUM HYDROCARBONS EXTRACTABLE (WATER) DILUTION FACTOR * DATE EXTRACTED DATE ANALYZED METHOD GC FID/3510 as Diesel as Motor Oil		0.05 0.5	 1 06-28-91 07-02-91 ND ND	mg/L mg/L



NET Log No: 8296

Client Acct: 281 Client Name: Harding Lawson Associates

Date: 07-15-91

Page: 22

Ref: Carnation-Oakland, Job: 20294,007.02

QUALITY CONTROL DATA

Parameter	Reporting Limits	Units	Cal Verf Stand % Recovery		Spike % Recovery	Duplicate Spike % Recovery	RPD
O&G(Total) O&G(Non-Polar)	5 5	mg/L mg/L	101 92	ND ND	96 N/A	101 N/A	5.1 N/A
O&G(Total) O&G(Non-Polar)	5 5	mg/L mg/L	98 98	ND ND	96 N/A	95 N/A	1.1 N/A
Diesel Motor Oil	0.05 0.5	mg/L mg/L	99 96	ND ND	47 N/A	55 N/A	16 N/A
Gasoline	0.05	mg/L	110	ND	113	100	13
COMMENT:	Blank Resu	lts were	ND on oth	er ana:	lytes test	ed.	
Gasoline	0.05	mg/L	99	ND	100	90	11
COMMENT:	Blank Resu	lts were	ND on oth	er ana:	lytes test	ed.	
Benzene Chlorobenzene 1,1-Dichloroethene Toluene Trichloroethene	5.0 5.0 5.0 5.0	ug/L ug/L ug/L ug/L ug/L	90 96 101 96 99	ND ND ND ND	103 106 100 106 107	106 105 95 103 110	3.4 0 5.1 2.9 2.4

COMMENT: Blank Results were ND on other analytes tested.



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.

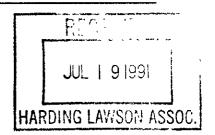
Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986.

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



NET Pacific, Inc 435 Tesconi Circle Santa Rosa, CA 95401

Tel. (707) 526-7200 Fax: (707) 526-9623



Bruce Sheibach Harding Lawson Associates 200 Rush Landing Novato, CA 94947 Date: 07-17-91

NET Client Acct. No: 281 NET Pacific Log No: 8324 Received: 06-26-91 1610

Client Reference Information

Carnation-Oakland, 20294.007.02

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)



Client Acct: 281 Client Name: Harding Lawson Associates

NET Log No: 8324

Date: 07-17-91

Page: 2

Ref: Carnation-Oakland, 20294.007.02

SAMPLE DESCRIPTION: 91062601 06-26-91 0815

LAB Job No: (-89840)

Parameter	Method	Reporting Limit	Results	Units
PETROLEUM HYDROCARBONS				
VOLATILE (WATER)				
DILUTION FACTOR *			1	
DATE ANALYZED			07-08-91	
METHOD GC FID/5030				
as Gasoline		0.05	ND	mg/L
METHOD 602				3/ -
Benzene		0.5	ND	ug/L
Ethylbenzene		0.5	ND	ug/L
Toluene		0.5	ND	ug/L
Xylenes, total		0.5	ND	ug/L
PETROLEUM HYDROCARBONS				
EXTRACTABLE (WATER)			-	
DILUTION FACTOR *			1	
DATE EXTRACTED			06-28-91	
DATE ANALYZED			06-30-91	
METHOD GC FID/3510				
as Diesel		0.05	ND	mg/L
as Motor Oil		0.5	ND	mg/L



Client Name: Harding Lawson Associates

NET Log No: 8324

Date: 07-17-91

Page: 3

Ref: Carnation-Oakland, 20294.007.02

SAMPLE DESCRIPTION: 91062603 06-26-91 LAB Job No: (-89841)

eporting

0920

		Reporting		
Parameter	Method	Limit	Results	Units
PETROLEUM HYDROCARBONS			-	
VOLATILE (WATER)				
DILUTION FACTOR *			1	
DATE ANALYZED			07-08-91	
METHOD GC FID/5030				
as Gasoline		0.05	ND	mg/L
METHOD 602				- ·
Benzene		0.5	ND	ug/L
Ethylbenzene		0.5	ND	ug/L
Toluene		0.5	ND	ug/L
Xylenes, total		0.5	ND	ug/L
PETROLEUM HYDROCARBONS				
EXTRACTABLE (WATER)				
DILUTION FACTOR *			1	
DATE EXTRACTED			06-28-91	
DATE ANALYZED			06-30-91	
METHOD GC FID/3510				
as Diesel		0.05	ND	mg/L
as Motor Oil		0.5	ND	mg/L



Client Name: Harding Lawson Associates

NET Log No: 8324

Date: 07-17-91

Page: 4

Ref: Carnation-Oakland, 20294.007.02

SAMPLE DESCRIPTION: 91062607 06-26-91 1145

LAB Job No: (-6	· · · · · · · · · · · · · · · · · · ·					
Parameter	Method	Reporting Limit	Results	Units		
PETROLEUM HYDROCARBONS						
VOLATILE (WATER)						
DILUTION FACTOR *			1			
DATE ANALYZED			07-08-91			
METHOD GC FID/5030						
as Gasoline METHOD 602		0.05	ND 	mg/L		
Benzene		0.5	0.8	ug/L		
Ethylbenzene		0.5	ND	ug/L		
Toluene		0.5	ND	ug/L		
Xylenes, total		0.5	ND	ug/L		
PETROLEUM HYDROCARBONS						
EXTRACTABLE (WATER)						
DILUTION FACTOR *			1			
DATE EXTRACTED			06-28-91			
DATE ANALYZED METHOD GC FID/3510			06-30-91			
as Diesel		0.05	ND	mg/L		
as Motor Oil		0.5	ND	mg/L		



Client Name: Harding Lawson Associates

NET Log No: 8324

Date: 07-17-91

mg/L

mg/L

Page: 5

Ref: Carnation-Oakland, 20294.007.02

SAMPLE DESCRIPTION: 91062610 LAB Job No: (-89843)

DATE ANALYZED

as Motor Oil

as Diesel

METHOD GC FID/3510

06-26-91

1300

06-30-91

ND

ND

TWR DOD NO: (~e	Reporting				
Parameter	Method	Limit	Results	Units	
PETROLEUM HYDROCARBONS					
VOLATILE (WATER)					
DILUTION FACTOR *			1		
DATE ANALYZED			07-08-91		
METHOD GC FID/5030					
as Gasoline		0.05	ND	mg/L	
METHOD 602				- ·	
Benzene		0.5	1.8	ug/L	
Ethylbenzene		0.5	ND	ug/L	
Toluene		0.5	ND	ug/L	
Xylenes, total		0.5	ND	ug/L	
PETROLEUM HYDROCARBONS					
EXTRACTABLE (WATER)					
DILUTION FACTOR *			1		
DATE EXTRACTED			06-28-91		

0.05

0.5



Client Name: Harding Lawson Associates

NET Log No: 8324

Date: 07-17-91

Page: 6

Ref: Carnation-Oakland, 20294.007.02

SAMPLE DESCRIPTION: 91062602

06-26-91 0840

LAB Job No: (-89859)

to	,	Reporting		
Parameter	Method 	Limit	Results	Units
Oil & Grease(Total)	EPA9070	5	ND	mg/L
Oil & Grease(Non-Polar)	SM5520BF	5	ND	mg/L
PETROLEUM HYDROCARBONS				
VOLATILE (WATER)				
DILUTION FACTOR *			1	
DATE ANALYZED			07-08-91	
METHOD GC FID/5030				
as Gasoline		0.05	ND	mg/L
PETROLEUM HYDROCARBONS				
EXTRACTABLE (WATER)				
DILUTION FACTOR *			1	
DATE EXTRACTED			06-28-91	
DATE ANALYZED			06-30-91	
METHOD GC FID/3510				
as Diesel		0.05	ND	mg/L
as Motor Oil		0.5	ND	mg/L



Client Name: Harding Lawson Associates

NET Log No: 8324

Ref: Carnation-Oakland, 20294.007.02

SAMPLE DESCRIPTION: 91062602

06-26-91 0840

Date: 07-17-91

Page: 7

LAB Job No: (-89859)

Parameter	Method	Reporting Limit	Results	Units
ÆTHOD 8240				
DATE ANALYZED			07-08-91	
DILUTION FACTOR *			1	
Acetone		10	ND	ug/L
Benzene		5.0	ND	ug/L
Bromodichloromethane		5.0	ND	ug/L
Bromoform		5.0	ND	ug/L
Bromomethane		5.0	ND	\mathtt{ug}/\mathtt{L}
2-Butanone		10	ND	ug/L
Carbon Disulfide		5.0	ND	ug/L
Carbon Tetrachloride		5.0	ND	ug/L
Chlorobenzene		5.0	ND	\mathtt{ug}/\mathtt{L}
Chloroethane		5.0	ND	ug/L
2-Chloroethyl Vinyl Ether		10	ND	ug/L
Chloroform		5.0	ND	ug/L
Chloromethane		5.0	ND	ug/L
Dibromochloromethane		5.0	ND	ug/L
1,2-Dichlorobenzene		6.0	ND	ug/L
1,3-Dichlorobenzene		6.0	ND	ug/L
1,4-Dichlorobenzene		6.0	ND	ug/L
1,1-Dichloroethane		5.0	ND	ug/L
1,2-Dichloroethane		5.0	ND	ug/L
1,1-Dichloroethene		5.0	ND	ug/L
trans-1,2-Dichloroethene		5.0	ND	ug/L
1,2-Dichloropropane		5.0	ND	ug/L
cis-1,3-Dichloropropene		5.0	ND	ug/L
trans-1,3-Dichloropropene		5.0	ND	ug/L
Ethylbenzene		5.0	ND	ug/L
2-Hexanone		10	ND	ug/L
Methylene Chloride		5.0	ND	ug/L
4-Methyl-2-pentanone		10	ND	ug/L
Styrene		5.0	ND	ug/L
1,1,2,2-Tetrachloroethane		5.0	ND	ug/L
Tetrachloroethene		5.0	ND	ug/L
Toluene		5.0	ND	ug/L
1,1,1-Trichloroethane		5.0	ND	ug/L
1,1,2-Trichloroethane		5.0	ND	ug/L
Trichloroethene		5.0	ND	ug/L
Trichlorofluoromethane		5.0	ND	ug/L
Vinyl acetate		10	ND	ug/L
Vinyl chloride		5.0	ND	ug/L
Xylenes, total		5.0	ND	ug/L
SURROGATE RESULTS				- ·
Toluene-d8			96	% Rec.
Bromofluorobenzene			96	% Rec.
1,2-Dichloroethane-d4			86	% Rec.



Client Name: Harding Lawson Associates

NET Log No: 8324

Date: 07-17-91

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Ref: Carnation-Oakland, 20294.007.02

SAMPLE DESCRIPTION: 91062604

06-26-91 0950

LAB Job No: (-89860)

Parameter	Reporting Method Limit		Results	Units
Oil & Grease(Total)	EPA9070	5	ND	mg/L
Oil & Grease(Non-Polar)		5	ND	mg/L
PETROLEUM HYDROCARBONS				
VOLATILE (WATER)				
DILUTION FACTOR *			1	
DATE ANALYZED			07-08-91	
METHOD GC FID/5030		0.05		,_
as Gasoline		0.05	0.69	mg/L
PETROLEUM HYDROCARBONS				
EXTRACTABLE (WATER)				
DILUTION FACTOR *			1	
DATE EXTRACTED			06-28-91	
DATE ANALYZED			06-30-91	
METHOD GC FID/3510				
as Diesel		0.05	ND	mg/L
as Motor Oil		0.5	ND	mg/L



- Client Name: Harding Lawson Associates

NET Log No: 8324

Ref: Carnation-Oakland, 20294.007.02

SAMPLE DESCRIPTION: 91062604

06-26-91 0950

Date: 07-17-91

Page: 9

LAB Job No: (-89860)

Reporting

Parameter	Method	Limit	Results	Units
METHOD 8240	,			
DATE ANALYZED			07-08-91	
DILUTION FACTOR *			1	
Acetone		10	ND	ug/L
Benzene		25	550	ug/L
Bromodichloromethane		5.0	ND	ug/L
Bromoform		5.0	ND	ug/L
Bromomethane		5.0	ND	ug/L
2-Butanone		10	ND	ug/L
Carbon Disulfide		5.0	ND	ug/L
Carbon Tetrachloride		5.0	ND	\mathtt{ug}/\mathtt{L}
Chlorobenzene		5.0	ND	ug/L
Chloroethane		5.0	ND	ug/L
2-Chloroethyl Vinyl Ethe	er	10	ND	ug/L
Chloroform		5.0	ND	ug/L
Chloromethane		5.0	ND	ug/L
Dibromochloromethane		5.0	ND	ug/L
1,2-Dichlorobenzene		6.0	ND	ug/L
1,3-Dichlorobenzene		6.0	ND	ug/L
1,4-Dichlorobenzene		6.0	ND	ug/L
1,1-Dichloroethane		5.0	ND	ug/L
1,2-Dichloroethane		5.0	14	ug/L
1,1-Dichloroethene		5.0	ND	ug/L
trans-1,2-Dichloroethene	2	5.0	ND	ug/L
1,2-Dichloropropane		5.0	ND	ug/L
cis-1,3-Dichloropropene		5.0	ND	ug/L
trans-1,3-Dichloroproper	ne	5.0	ND	ug/L
Ethylbenzene		5.0	7.6	ug/L
2-Hexanone		10	ND	\mathtt{ug}/\mathtt{L}
Methylene Chloride		5.0	ND	ug/L
4-Methyl-2-pentanone		10	ND	ug/L
Styrene		5.0	ND	ug/L
1,1,2,2-Tetrachloroethan	1e	5.0	ND	ug/L
Tetrachloroethene		5.0	ND	ug/L
Toluene		5.0	ND	ug/L
1,1,1-Trichloroethane		5.0	ND	ug/L
1,1,2-Trichloroethane		5.0	ND	ug/L
Trichloroethene		5.0	ND	ug/L
Trichlorofluoromethane		5.0	ND	ug/L
Vinyl acetate		10	ND	ug/L
Vinyl chloride		5.0	ND	ug/L
Xylenes, total		5.0	11	ug/L
SURROGATE RESULTS				·
Toluene-d8			98	% Rec.
			98	9. Do-
Bromofluorobenzene			70	% Rec.



Client Name: Harding Lawson Associates

Page: 10

Date: 07-17-91

Log No. 8324

NET Log No: 8324

Ref: Carnation-Oakland, 20294.007.02

SAMPLE DESCRIPTION: 91062608

06-26-91 1210

LAB Job No: (-89861)

TWB 200 NO: (-0:	,001 ,	Reporting		Units
Parameter	Method	Limit	Results	
Oil & Grease(Total)	EPA9070	5	ND	mg/L
Oil & Grease(Non-Polar)	SM5520BF	5	ND	mg/L
PETROLEUM HYDROCARBONS				
VOLATILE (WATER)				
DILUTION FACTOR *			1000	
DATE ANALYZED			07-08-91	
METHOD GC FID/5030				
as Gasoline		0.05	300	mg/L
PETROLEUM HYDROCARBONS				
EXTRACTABLE (WATER)			~~	
DILUTION FACTOR *			1	
DATE EXTRACTED			06-28-91	
DATE ANALYZED			06-30-91	
METHOD GC FID/3510				
as Diesel		0.05	2.1	mg/L
as Motor Oil		0.5	1.6	mg/L



Client Name: Harding Lawson Associates

NET Log No: 8324

Ref: Carnation-Oakland, 20294.007.02

SAMPLE DESCRIPTION: 91062608

06-26-91 1210

Date: 07-17-91

Page: 11

SAMPLE DESCRIPTION: 91062 LAB Job No: (-898	32608 06-26-91 1210 9861)				
Parameter	Method	Reporting Limit	Results	Units	
		 			
ÆTHOD 8240					
DATE ANALYZED			07-09-91		
DILUTION FACTOR *			25		
Acetone		10	ND	ug/L	
Benzene		5.0	4400	ug/L	
Bromodichloromethane		5.0	ND	ug/L	
Bromoform		5.0	ND	ug/L	
Bromomethane		5.0	ND	ug/L	
2-Butanone		10	ND	ug/L	
Carbon Disulfide		5.0	ND	ug/L	
Carbon Tetrachloride		5.0	ND	ug/L	
Chlorobenzene		5.0	ND	ug/L	
Chloroethane		5.0	ND	ug/L	
2-Chloroethyl Vinyl Ether		10	ND	ug/L	
Chloroform		5.0	ND	ug/L	
Chloromethane		5.0	ND	ug/L	
Dibromochloromethane		5.0	ND	ug/L	
1,2-Dichlorobenzene		6.0	ND	ug/L	
1,3-Dichlorobenzene		6.0	ND	ug/L	
l,4-Dichlorobenzene		6.0	ND	ug/L	
1,1-Dichloroethane		5.0	ND	ug/L	
1,2-Dichloroethane		5.0	470	ug/L	
l,1-Dichloroethene		5.0	ND	ug/L	
trans-1,2-Dichloroethene		5.0	ND	ug/L	
1,2-Dichloropropane		5.0	ND	ug/L	
cis-1,3-Dichloropropene		5.0	ND	ug/L	
trans-1,3-Dichloropropene		5.0	ND	ug/L	
Ethylbenzene		5.0	260	ug/L	
2-Hexanone		10	ND	\mathtt{ug}/\mathtt{L}	
Methylene Chloride		5.0	ND	ug/L	
4-Methyl-2-pentanone		10	ND	ug/L	
Styrene		5.0	ND	ug/L	
1,1,2,2-Tetrachloroethane		5.0	ND	ug/L	
Tetrachloroethene		5.0	ND	ug/L	
Toluene		5.0	3600	ug/L	
1,1,1-Trichloroethane		5.0	ND	ug/L	
1,1,2-Trichloroethane		5.0	ND	ug/L	
Prichloroethene		5.0	ND	ug/L	
Prichlorofluoromethane		5.0	ND	ug/L	
Vinyl acetate		10	ND	ug/L	
Vinyl chloride		5.0	ND	ug/L	
Xylenes, total		5.0	4600	ug/L	
SURROGATE RESULTS					
Toluene-d8			98	% Rec.	
Bromofluorobenzene			100	% Rec.	
1,2-Dichloroethane-d4			98	% Rec.	



: Client Name: Harding Lawson Associates

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1230

Date: 07-17-91

NET Log No: 8324

Ref: Carnation-Oakland, 20294.007.02

SAMPLE DESCRIPTION: 91062609 06-26-91

LAB Job No: (-89862**)

Parameter	Method	Reporting Limit	Results	Units
Oil & Grease(Total)	EPA9070	5	5.4	mg/L
Oil & Grease(Non-Polar)	SM5520BF	5	5.1	mg/L
PETROLEUM HYDROCARBONS				
VOLATILE (WATER)				
DILUTION FACTOR *			20	
DATE ANALYZED			07-09-91	
METHOD GC FID/5030				
as Gasoline		0.05	14	mg/L
PETROLEUM HYDROCARBONS				
VOLATILE (WATER)				
DILUTION FACTOR *			100	
DATE ANALYZED			07-08-91	
METHOD GC FID/5030				
as Gasoline		0.05	85	mg/L
PETROLEUM HYDROCARBONS				
EXTRACTABLE (WATER)				
DILUTION FACTOR *			1	
DATE EXTRACTED			06-28-91	
DATE ANALYZED			06-30-91	
METHOD GC FID/3510				
as Diesel		0.05	1.1	mg/L
as Motor Oil		0.5	1.0	mg/L

^{**} Note: This sample was analyzed for gasoline on 07-08-91 at a 1:100 dilution and reanalyzed 07-09-91 at a 1:20 dilution. The results from both dates were reported and there was variability between the voa vials.



Client Name: Harding Lawson Associates

NET Log No: 8324

Ref: Carnation-Oakland, 20294.007.02

SAMPLE DESCRIPTION: 91062609 06-26-91 1230

Date: 07-17-91

Page: 13

LAB Job No: (-89862)

		Reporting		
Parameter	Method	Limit	Results	Units
METHOD 8240				
DATE ANALYZED			07-09-91	
DILUTION FACTOR *			20	
Acetone		10	ND	ug/L
Benzene		5.0	3700	ug/L
Bromodichloromethane		5.0	ND	ug/L
Bromoform		5.0	ND	ug/L
Bromomethane		5.0	ND	ug/L
2-Butanone		10	ND	ug/L
Carbon Disulfide		5.0	ND	ug/L
Carbon Tetrachloride		5.0	ND	ug/L
Chlorobenzene		5.0	ND	ug/L
Chloroethane		5.0	ND	ug/L
2-Chloroethyl Vinyl Ether		10	ND	ug/L
Chloroform		5.0	ND	ug/L
Chloromethane		5.0	ND	ug/L
Dibromochloromethane		5.0	ND	ug/L
1,2-Dichlorobenzene		6.0	ND	ug/L
1,3-Dichlorobenzene		6.0	ND	ug/L
1,4-Dichlorobenzene		6.0	ND	ug/L
1,1-Dichloroethane		5.0	ND	ug/L
1,2-Dichloroethane		5.0	480	ug/L
1,1-Dichloroethene		5.0	ND	ug/L
trans-1,2-Dichloroethene		5.0	ND	ug/L
1,2-Dichloropropane		5.0	ND	ug/L
cis-1,3-Dichloropropene		5.0	ND	ug/L
trans-1,3-Dichloropropene	•	5.0	ND	ug/L
Ethylbenzene		5.0	160	ug/L
2-Hexanone		10	ND	ug/L
Methylene Chloride		5.0	ND	ug/L
4-Methyl-2-pentanone		10	ND	ug/L
Styrene		5.0	ND	ug/L
1,1,2,2-Tetrachloroethane	:	5.0	ND	ug/L
Tetrachloroethene		5.0	ND	ug/L
Toluene		5.0	2700	ug/L
1,1,1-Trichloroethane		5.0	ND	ug/L
1,1,2-Trichloroethane		5.0	ND	ug/L
Trichloroethene		5.0	ND	ug/L
Trichlorofluoromethane		5.0	ND	ug/L
Vinyl acetate		10	ND	ug/L
Vinyl chloride		5.0	ND	ug/L
Xylenes, total		5.0	3100	ug/L
SURROGATE RESULTS				<u> </u>
			100	% Rec.
Toluene-d8 Bromofluorobenzene			100 101	% Rec. % Rec.



Client Name: Harding Lawson Associates

NET Log No: 8324

Date: 07-17-91

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Ref: Carnation-Oakland, 20294.007.02

SAMPLE DESCRIPTION: 91062605 06-26-91 1015

LAB Job No: (-89863)

TWR TOD NO: (-83	863)	Reporting			
Parameter	Method	Limit	Results	Units	
Oil & Grease(Total)	EPA9070	5	ND	mg/L	
Oil & Grease(Non-Polar)	SM5520BF	5	ND	mg/L	
PETROLEUM HYDROCARBONS			***		
VOLATILE (WATER)					
DILUTION FACTOR *			1		
DATE ANALYZED			07-08-91		
METHOD GC FID/5030					
as Gasoline		0.05	ND	mg/L	
METHOD 602				_	
Benzene		0.5	22	ug/L	
Ethylbenzene		0.5	0.5	ug/L	
Toluene		0.5	ND	ug/L	
Xylenes, total		0.5	ND	ug/L	
PETROLEUM HYDROCARBONS					
EXTRACTABLE (WATER)					
DILUTION FACTOR *			1		
DATE EXTRACTED			06-28-91		
DATE ANALYZED			06-30-91		
METHOD GC FID/3510					
as Diesel		0.05	ND	mg/L	
as Motor Oil		0.5	ND	mg/L	



Client Name: Harding Lawson Associates

NET Log No: 8324

Ref: Carnation-Oakland, 20294.007.02

SAMPLE DESCRIPTION: 91062606 LAB Job No: (-89864)

06-26-91 1040

Date: 07-17-91

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TWR DOD NO: (-83	700 4)	Reporting			
Parameter	Method	Limit	Results	Units	
Oil & Grease(Total)	EPA9070	5	ND	mg/L	
Oil & Grease(Non-Polar)	SM5520BF	5	ND	mg/L	
PETROLEUM HYDROCARBONS					
VOLATILE (WATER)					
DILUTION FACTOR * DATE ANALYZED			1 07-02-91		
METHOD GC FID/5030					
as Gasoline METHOD 602		0.05	0.10	mg/L	
Benzene		0.5	25	ug/L	
Ethylbenzene		0.5	0.6	ug/L	
Toluene		0.5	ND	ug/L	
Xylenes, total		0.5	ND	ug/L	
PETROLEUM HYDROCARBONS			an en		
EXTRACTABLE (WATER)					
DILUTION FACTOR *			1		
DATE EXTRACTED			06-28-91		
DATE ANALYZED			06-30-91		
METHOD GC FID/3510					
as Diesel		0.05	ND	mg/L	
as Motor Oil		0.5	ND	mg/L	



Client Name: Harding Lawson Associates

NET Log No: 8324

Date: 07-17-91

Page: 16

Ref: Carnation-Oakland, 20294.007.02

SAMPLE DESCRIPTION: 91062611

06-26-91

1330

LAB Job No: (-89867)

THE COD NO. (C.	Domont I no			
Parameter	Method	Reporting Limit	Results	Units
Oil & Grease(Total)	EPA9070	5	ND	mg/L
Oil & Grease(Non-Polar)	SM5520BF	5	ND	mg/L
PETROLEUM HYDROCARBONS				
VOLATILE (WATER)				
DILUTION FACTOR *			1	
DATE ANALYZED			07-08-91	
METHOD GC FID/5030				
as Gasoline		0.05	ND	mg/L
METHOD 602				
Benzene		0.5	ND	ug/L
Ethylbenzene		0.5	ND	ug/L
Toluene		0.5	ND	ug/L
Xylenes, total		0.5	ND	ug/L
PETROLEUM HYDROCARBONS				
EXTRACTABLE (WATER)				
DILUTION FACTOR *			1	
DATE EXTRACTED			06-28-91	
DATE ANALYZED			06-30-91	
METHOD GC FID/3510				
as Diesel		0.05	ND	mg/L
as Motor Oil		0.5	ND	mg/L



Client Name: Harding Lawson Associates

NET Log No: 8324

Date: 07-17-91 Page: 17

Ref: Carnation-Oakland, 20294.007.02

SAMPLE DESCRIPTION: 91062611

06-26-91

1330

LAB	Job	No:	(-89867)
-----	-----	-----	---------	---

Parameter	Method	Reporting Limit	Results	Units
METHOD 8240				
DATE ANALYZED			07-08-91	
DILUTION FACTOR *			1	
Acetone		10	ND	ug/L
Benzene		5.0	ND	ug/L
Bromodichloromethane		5.0	ND	ug/L
Bromoform		5.0	ND	ug/L
Bromomethane		5.0	ND	ug/L
2-Butanone		10	ND	ug/L
Carbon Disulfide		5.0	ND	ug/L
Carbon Tetrachloride		5.0	ND	ug/L
Chlorobenzene		5.0	ND	\mathtt{ug}/\mathtt{L}
Chloroethane		5.0	ND	ug/L
2-Chloroethyl Vinyl Ether		10	ND	ug/L
Chloroform		5.0	ND	ug/L
Chloromethane		5.0	ND	ug/L
Dibromochloromethane		5.0	ND	ug/L
1,2-Dichlorobenzene		6.0	ND	ug/L
1,3-Dichlorobenzene		6.0	ND	ug/L
1,4-Dichlorobenzene		6.0	ND	ug/L
1,1-Dichloroethane		5.0	ND	ug/L
1,2-Dichloroethane		5.0	ND	\mathtt{ug}/\mathtt{L}
1,1-Dichloroethene		5.0	ND	ug/L
trans-1,2-Dichloroethene		5.0	ND	ug/L
1,2-Dichloropropane		5.0	ND	ug/L
cis-1,3-Dichloropropene		5.0	ND	ug/L
trans-1,3-Dichloropropene		5.0	ND	ug/L
Ethylbenzene		5.0	ND	ug/L
2-Hexanone		10	ND	ug/L
Methylene Chloride		5.0	ND	ug/L
4-Methyl-2-pentanone		10	ND	ug/L
Styrene		5.0	ND	ug/L
1,1,2,2-Tetrachloroethane		5.0	ND	ug/L
Tetrachloroethene		5.0	ND	ug/L
Toluene		5.0	ND	ug/L
1,1,1-Trichloroethane		5.0	ND	ug/L
1,1,2-Trichloroethane		5.0	ND	ug/L
Trichloroethene		5.0	ND	ug/L
Trichlorofluoromethane		5.0	ND	ug/L
Vinyl acetate		10	ND	ug/L
Vinyl chloride		5.0	ND	ug/L
Xylenes, total		5.0	ND	ug/L
SURROGATE RESULTS				_
Toluene-d8			102	% Rec.
Bromofluorobenzene			90	% Rec.
1,2-Dichloroethane-d4			82	% Rec.



Client Name: Harding Lawson Associates

NET Log No: 8324

Date: 07-17-91

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Ref: Carnation-Oakland, Job: 20294.007.02

SAMPLE DESCRIPTION: Trip Blank 06-26-91 LAB Job No: (-90084)

Parameter	Method	Reporting Limit	Results	Units
PETROLEUM HYDROCARBONS		· · · · · · · · · · · · · · · ·		
VOLATILE (WATER)				
DILUTION FACTOR *			1	
DATE ANALYZED			07-08-91	
METHOD GC FID/5030				
as Gasoline		0.05	ND	mg/L
METHOD 602				
DILUTION FACTOR *			1	
DATE ANALYZED			07-08-91	
Benzene		0.5	ND	\mathtt{ug}/\mathtt{L}
Ethylbenzene		0.5	ND	ug/L
Toluene		0.5	ND	ug/L
Xylenes, total		0.5	ND	ug/L



NET Log No: 8324

Client Name: Harding Lawson Associates

Date: 07-15-91

Page: 19

Ref: Carnation-Oakland, 20294.007.02

QUALITY CONTROL DATA

Parameter	Reporting Limits	Units	Cal Verf Stand % Recovery	Blank Data	Spike % Recovery	Duplicate Spike % Recovery	RPD
O&G(Total)	5	mg/L	97	ND	102	101	< 1
O&G(Non-Polar)	5	mg/L	97	ND	N/A	N/A	N/A
Diesel	0.05	mg/L	99	ND	46	51	11
Motor Oil	0.5	mg/L	81	ND	N/A	N/A	N/A
Gasoline	0.05	mg/L	110	ND	106	110	3.3
Benzene	0.5	ug/L	94	ND	112	118	3.2
Toluene	0.5	ug/L	101	ND	102	105	2.5
COMMENT:	Blank Resul	ts were	ND on oth	er ana	lytes tes	ted.	
Gasoline	0.05	mg/L	110	nd	113	100	12
Benzene	0.5	ug/L	79	nd	95	89	6.0
Toluene	0.5	ug/L	93	nd	96	90	6.0
COMMENT:	Blank Resul	ts were	ND on oth	er ana	lytes tes	ted.	
Gasoline	0.05	mg/L	110	ND	98	105	7.0
Benzene	0.5	ug/L	79	ND	96	98	2.0
Toluene	0.5	ug/L	93	ND	97	98	1.0
COMMENT:	Blank Resul	ts were	ND on oth	er ana	lytes tes	ted.	
Benzene Chlorobenzene 1,1-Dichloroethene Toluene Trichloroethene	5.0 5.0 5.0 5.0	ug/L ug/L ug/L ug/L ug/L	95 99 112 95 102	ND ND ND ND	93 101 86 103 101	99 99 77 99	5.6 2.2 12 3.8 9.7

COMMENT: Blank Results were ND on other analytes tested.



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,

(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,

(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, 17th Edition, APHA, 1989.

Harding Lawson Associates 7655 Redwood Boulevard

CHAIN OF CUSTODY FORM

		(8296
Lab:	Net	Accific

Sailo 10115

ANALYSIS REQUESTED

PO Box 578 Novalo, California 94948 415/892-0821 Telecopy

MATRIX

General: 415/892-0831 Accounting: 415/898-1052

Job Number: __ 20194. 001 02

Name/Location: Canatton - Oakland Project Manager: Ruce Sheibach

#CONTAINERS

& PRESERV.

Samplers: Rick Frotma

DATE

Dave Evans

NOTES

Recorder: _ Rick E. (Signature Required)

STATION DESCRIPTION/

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	1345
	1415
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SAMPLE

NUMBER

	EPA 601/8010	EPA 602(8020	EPA 624/8240	EPA 625/8270	ICP METALS	EPA 8015M/TPH -	O La poles : Mas								
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	LAB NUMBER		IN		DEPTH IN FEET		OL ITD CD	QA CODE		MISCELLANEOUS	CHAIN OF CUSTODY RECORD					
Yr	Wk		Seq								bt xe by 8020 W/ya Per Kick Erdna to nora 6/24	RELINQUISHED BY: (Signature) RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature) RECEIVED BY: (Signature) RECEIVED BY: (Signature) RECEIVED BY: (Signature) DATE/TIME RECEIVED BY: (Signature) DATE/TIME RECEIVED FOR LAB BY: DATE/TIME STE/TIME RECEIVED FOR LAB BY: DATE/TIME (Signature) (425/11/752			

Harding Lawson Associates 7655 Redwood Boulevard P.O Box 578

CHAIN OF CUSTODY FORM

Lab: Net Dacifice

Novato, California 94948 415/892-0821					
Telecopy: General 415/892-0831 Accounting: 415/898-1052	Samplers: Pick Frolum	ANALYSIS REQUESTED			
Job Number: 20294-003-02					
Name/Location: Canation - Oakland					
Project Manager: Bruce Sheibach	Recorder: Recurred (Signature Required)				
MATRIX *CONTAINERS SAMPLE NUMBER	DATE STATION DESCRIPTION	M/TPH (822/0)			
SOURCE CODE CODE CODE CODE CODE CODE CODE CO	NOTES	EPA 601/8010 EPA 602/8020 EPA 624/8270 ICP METALS EPA 8015M/TPH			
SS N S S S S S S S S S S S S S S S S S	Mo Dy Time	EPA EPA ICP EPA EPA EPA EPA			
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2 3 / 2603	0920	x			
21 6 1 2604	0950				
213 2605	1015	XXX			
213 2606	1040	N N N N N N N N N N N N N N N N N N N			
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216 2609	111130	X			
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LAB DEPTH COL QA NUMBER IN MTD CODE MISCE	LLANEOUS CF	CHAIN OF CUSTODY RECORD			
Yr Wk Seg FEET CD					
* * * * * * * * * * * * * * * * * * *	RELINQUISHED BY: (Signature)	West Signature) 6 2041 1426			
reaction	M N D PREY INQUISHED BY: (Signature)	RECEIVED BY (Signature) DATE/TIME			
	W/ N- 0 PTEL INQUISHED BY: (Signature)				
	RELINGUISHED BY: (Signature)	RECEIVED BY: (Signature) DATE/TIME			
also rec	d z wan				
	THELINOUISHED BY: (Signature)	RECEIVED BY: (Signature) DATE/TIME			
1	DC 15 6/24 BISPATCHED HAST GREATURE)	PATE/TIME RECEIVED FOR LAB BY: DATE/TIME			
matyz	Deid Willes	PATE/TIME RECEIVED FOR LAB BY: DATE/TIME (Signature) (6/26/2 /1610			
perDan	Crale 6/28 non Hand de	liveved			

CUSTODY FORM

ANALYSIS REQUESTED

7655 Redwood Boulevard P.O. Box 578	CHAIN OF CUSTODY FOR			
Novato, California 94948 415/892-0821				
Telecopy: General: 415/892-0831 Accounting: 415/898-1052	Samplers: Rick Erdmen			

Job Number: 20294-003.02 Dave Evans Name/Location: Carnation . Oakland

Proj	ect Manag	jer: <u>Rivce </u>	Sheibaeh	Recorder:	ure Required)	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
SOURCE CODE	Water Sediment Soil Oil	#CONTAINERS & PRESERV.	SAMPLE NUMBER OR LAB NUMBER	DATE	STATION DESCRIPTION/ NOTES	601/8010 602/8020 624/8240 625/8270 METALS 3015M/TPH
0 0 0 0 0	Soil Soil	Unpres. H ₂ SO ₄ HNO ₃	Yr Wk Seq	Yr Mo Dy Time		EPA EPA ICP N ICP N ICP N
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		213	25 (3	1630		XX
		T 1		*		

LAB NUMBER			R			DEPTH IN		M	COL	TD		COĎE GV		MISCELLANEOUS	CHAIN OF CUSTODY RECORD				
Υr	V	Nk	S	eq			FEET		ď	CD		l							
															RELINQUISHED BY: (Signature) RECEIVED BY: (Signature) RECEIVED BY: (Signature) DATE/TIME RECEIVED BY: (Signature) DATE/TIME RECEIVED BY: (Signature) DATE/TIME				
	1								-						REGINQUISHED BY: (Signature) REGEIVED BY: (Signature) DATE/TIME PISNATCHED BY: (Signature) DATE/TIME RECEIVED FOR LAB BY: DATE/TIME (Signature) L/25/1/75				
								1	1						METHOD OF SHIPMENT DE CORED				

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DJC/RBS/DFL/ccd/E18439-H

QUALITY CONTROL REVIEWER

David F. Leland, P.E.
Associate Engineer