W. A. CRAIG, INC.
Environmental Contracting and Consulting
6940 Tremont Road
Dixon, California 95620
Contractor and Hazardous Substances License #455752
Cal/OSHA Statewide Annual Excavation Permit #559351
(800) 522-7244
Dixon (707) 693-2929
Napa (707) 252-3353
Fax: (707) 693-2922

October 14, 1998 **Project No. 3628**

Mr. Reed Rinehart
Rino Pacific, Inc.
P.O Box 725
Ukiah, California 95482

Subject: REPORT - Groundwater Monitoring, October 1998
1107 Fifth Street
Oakland, California

Dear Mr. Rinehart:

W. A. Craig, Inc. (WAC) is pleased to submit this Groundwater Monitoring Report for sampling conducted on October 1, 1998 at 1107 Fifth Street (site) in Oakland, California (**Figure 1**). This work was performed in accordance with the scope of work presented in WAC's Work Plan dated September 16, 1996.

This report includes groundwater quality and elevation data for three groundwater monitoring wells and two recovery wells at the site. The installation of the monitoring wells is presented in WAC's "Subsurface Investigation Report," dated January 17, 1997.

SCOPE OF WORK

The scope of work performed by WAC during this period included the following tasks:

- Measuring static water levels in the monitoring wells and recovery wells;
- Purging and sampling groundwater from the monitoring wells at the site;
- Analyzing groundwater samples for total petroleum hydrocarbons as diesel (TPH-d), total petroleum hydrocarbons as gasoline (TPH-g), benzene, toluene, ethylbenzene, and xylenes (BTEX), and methyl tert-butyl ether (MTBE);
- Maintenance and operation of a passive free-product recovery system; and
- Summarizing the site hydrologic conditions, groundwater quality, product recovery results, and recommendations for further site characterization.

GROUNDWATER SAMPLING

Sampling Methods

Three well casing volumes were purged from the monitoring wells on October 1, 1998. Field parameters including temperature, pH, conductivity, and turbidity were intermittently monitored during purging of the well. Groundwater was purged from the wells and samples were collected using disposable polyethylene bailers. Copies of the field monitoring well sampling logs are included in **Attachment A**. The samples were submitted under chain-of-custody control to McCampbell Analytical, Inc. (MAI), of Pacheco, California. The purged well-water is currently stored on-site in sealed, DOT approved, 55-gallon steel drums.

Groundwater Elevations

WAC's staff hydrologist measured the water levels in the monitoring wells on October 1, 1998 using an electronic water level indicator. The surveyed elevations and the field water level measurements were used to calculate the groundwater surface elevations at the site. The monitoring wells, which released pressure when opened, were exposed to atmospheric conditions for one hour to allow water levels to stabilize. The calculated groundwater gradient and flow direction for this event were 0.081 ft/ft, and southeast. Groundwater elevations for this and previous monitoring events are presented in **Table 1**. The locations of the monitoring wells and a depiction of the site groundwater elevation contours are shown in **Figure 2**.

Groundwater flow directions have ranged from southwest to southeast. The groundwater direction continues to be dependent on the groundwater elevation in monitoring well MW-3. Depth to water measurements for monitoring well MW-3 indicate a wide elevation range, from -0.37 feet to -7.99 feet above mean sea level (msl), and has been consistently slow to recover. Monitoring wells MW-1 and MW-2 have displayed a much narrower range of fluctuation, -1.24 to 1.69 feet msl and -0.18 feet to 1.40 feet msl, respectively.

The groundwater elevations measured for recovery wells RW-W and RW-E are substantially higher (2.13 feet to 10.77 feet) than elevations observed in the monitoring wells. These results have remained consistent over the last years monitoring period and suggest mounding in the underground storage tank area.

Analytical Results

The groundwater samples were analyzed by MAI for gasoline and diesel using EPA Method 8015 (modified) and purgeable aromatic hydrocarbons (BTEX) and MTBE using EPA Method 8020. MAI is certified by the State of California to perform these analyses. The analytical laboratory results are summarized in **Table 2**. Copies of the analytical laboratory report and chain-of-custody documents are in **Attachment B**.

Diesel was detected at concentrations of 1100 micrograms per liter (µg/L) in MW-1, 1200 µg/L in MW-2, and 390 µg/L in MW-3. The reported diesel concentrations decreased in monitoring wells MW-1, MW-2 and MW-3 from the previous sampling period in July 1998. Diesel concentrations in monitoring wells MW-1 and MW-2 are higher than were reported for samples collected one year previously, in September 1997.

Gasoline and BTEX were not detected in the samples collected from monitoring wells MW-1 and MW-3 during this sampling event. These results are consistent with previous monitoring results. The analytical results of samples collected from monitoring well MW-2 reported gasoline at a concentration of 1200 µg/L, benzene at a concentration of 330 µg/L, toluene at 12 µg/L, ethylbenzene at 8.8 µg/L and xylenes were detected at 11 µg/L.

MTBE was not detected in MW-1 using EPA method 8020. MTBE was reported at 420,000 µg/L in MW-2. MTBE was reported in MW-3 at 9.2 µg/L. The MTBE concentrations reported in all the wells were relatively unchanged the same time period in 1997.

Groundwater samples from the monitoring wells were analyzed for Oxygenated Volatile Organics [Di-isopropyl Ether (DIPE), Ethyl tert-Butyl Ether (ETBE), Methyl-tert Butyl Ether (MTBE, tert-Amyl Methyl Ether (TAME) and tert Butanol] using EPA 8260. MTBE was reported in MW-1 and MW-3 at concentrations of 1.8 µg/L and 4.8 µg/L respectively. These concentrations are below the MCL for drinking water. The MTBE concentration reported for sample from MW-2 was 360,000 µg/L.

FREE PRODUCT RECOVERY

WAC personnel have intermittently monitored free product in the recovery wells. Product has been recovered from a skimmer placed in recovery well RW-W. The results of the monitoring of the recovery wells are presented in **Table 3**. The recovered product is currently stored in a 55-gallon drum in a secure area of the site. Approximately 6.8 gallons of product have been collected since the installation of the skimmer.

WAC will perform product measurements and collection during quarterly monitoring events. The product in recovery well RW-W was thicker than previous monitoring events. WAC will continue to monitor product thickness in the recovery wells during quarterly monitoring events and will resume more frequent product monitoring.

CONCLUSIONS AND RECOMMENDATIONS

The groundwater flow direction is generally southerly, but ranges from southwest to southeast. The gradient interpretation assumes hydrologic continuity in the subsurface between the three wells at the site. The interpretation of gradient and flow direction on this site are significantly influenced by water levels reported for monitoring well MW-3.

Monitoring well MW-3 is very slow to recover after purging, indicating the water bearing soil at this location is of low permeability. It appears monitoring well MW-3 is not in hydrologic communication with monitoring wells MW-1 and MW-2. Interpretation of the groundwater gradient is therefore suspect. Additional monitoring wells and site investigation have been approved by the Alameda County Environmental Health Services. Water levels have been reported to respond to tidal fluctuations, although this has not been confirmed by WAC's field observations.

Diesel concentrations in groundwater have remained relatively consistent. Gasoline and benzene concentrations have been relatively consistent, with concentrations in the same order of magnitude in monitoring well MW-1 and MW-3, as compared to sampling performed one year ago. MTBE concentrations in MW-2 remain extremely high but have decreased since the last sampling event. The EPA method 8260 test was used this quarter as a quality control to verify the MTBE concentrations. Since the two types of EPA test were in agreement and no other oxygenates were identified, EPA method 8260 will not be used in future analyses.

Professional Certification

This report has been prepared by the staff of W.A. Craig, Inc., under the professional supervision of the persons whose seals and signatures appear hereon. No warranty, either expressed or implied, is made as to the professional advice presented herein. The analysis, conclusions and recommendations contained in this report are based upon site conditions as they existed at the time of quarterly monitoring and sampling and they are subject to change.

The conclusions presented in this report are professional opinions based solely upon visual observations of the site and vicinity, and interpretation of available information as described in this report. W.A. Craig, Inc., recognizes that the limited scope of services performed in execution of this scope of work may not be appropriate to satisfy the needs, or requirements of other state agencies, or of other users. Any use or reuse of this document or its findings, conclusions or recommendations presented herein is at the sole risk of the user. There is no other warranty, either expressed or implied.

We appreciate this opportunity to be of service to you on this project. Should you have any questions regarding this report please call us at (707) 693-2929.

Sincerely,
W.A. Craig, Inc.

REGISTERED ENVIRONMENTAL ASSESSOR
WILLIAM A. CRAIG, II
No. 01414
Expires 6-99
STATE OF CALIFORNIA

W. A. Craig
Principal

REGISTERED GEOLOGIST
DAVID E. CONLEY
NO. 4795
STATE OF CALIFORNIA

David E. Conley, R.G.
Senior Geologist

DEC:tth

Attachments: Table 1 - Groundwater Elevations
Table 2 - Groundwater Sample Analytical Results
Table 3 - Product Recovery Summary
Figure 1 - Site Location Map
Figure 2 - Groundwater Elevation Contour Map
A - Groundwater Sampling Logs
B - Laboratory Analytical Reports

cc: Larry Seto, Alameda County Department of Environmental Health

Table 1

Groundwater Elevation

1107 5th Street Oakland, California

Well Number	Date	Top of Casing (ft)	Depth to Water (ft)	Static Water Elevation
MW-1	10/21/96	3.84	5.08	-1.24
	11/04/96		3.02	0.84
	03/04/97		2.28	1.56
	06/12/97		4.80	-0.96
	07/14/97		2.66	1.18
	09/09/97		2.45	1.39
	09/19/97		2.60	1.24
	02/13/98		2.76	1.08
	07/07/98		2.15	1.69
	10/01/98		3.63	0.21
MW-2	10/21/96	4.48	4.66	-0.02
	11/04/96		4.60	-0.12
	03/04/97		3.68	0.80
	06/12/97		3.70	0.78
	07/14/97		4.16	0.32
	09/09/97		3.88	0.60
	09/19/97		4.50	-0.02
	02/13/98		3.08	1.40
	07/07/98		3.74	0.74
	10/01/98		4.63	-0.15
MW-3	10/21/96	4.81	7.66	-2.85
	11/04/96		5.70	-0.89
	03/04/97		11.38	-6.57
	06/12/97		5.18	-0.37
	07/14/97		7.96	-3.15
	09/09/97		10.16	-5.35
	09/19/97		12.80	-7.99
	02/13/98		11.42	-6.61
	07/07/98		11.76	-6.95
	10/01/98		11.34	-6.53
RW-W	06/13/97	5.26	3.11	2.15
	07/14/97		7.96	-2.70
	09/09/97		not measured	not measured
	09/19/97		3.84	1.42
	02/13/97		not measured	not measured
	07/07/98		2.33	2.93
	10/01/98		3.21	2.05
RW-E	06/13/97	4.65	2.88	1.77
	07/14/97		3.08	1.57
	09/09/97		not measured	not measured
	09/19/97		3.40	1.25
	02/13/97		not measured	not measured
	07/07/98		2.82	1.83
	10/01/98		3.89	0.76

Notes: Monitoring wells elevations are based upon the City of Oakland Datum #16NW15
Recovery well elevations surveyed by W.A. Craig, 6/12/97.

Table 2

Groundwater Sample Analytical Data
1107 5th Street, Oakland California

Data measured in micrograms per liter

Sample	Date	ANALYTES (ug/L)							
		Diesel	TPH-g	MTBE	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE** EPA 8260
MW-1	11/04/96	220	ND	ND	ND	ND	ND	ND	NA
	03/05/97	230	ND	ND	ND	ND	ND	ND	NA
	06/12/97	290	ND	ND	ND	ND	ND	ND	NA
	09/09/97	180	ND	ND	ND	ND	ND	ND	NA
	02/13/98	590	ND	9.4	ND	ND	ND	ND	NA
	07/07/98	1400	ND	ND	ND	ND	ND	ND	2.7
	10/01/98	1100	ND	ND	ND	ND	ND	ND	1.8
MW-2	11/04/96	2700	910	470,000	120	23	3.5	51	NA
	03/05/97	2300	4400	760,000	1500	51	24	100	NA
	06/12/97	2400	3600	840,000	1200	14	12	40	NA
	09/09/97	970	3700	470,000	570	31	19	60	NA
	02/13/98	2200	6500	750,000	2400	31	ND	ND	NA
	07/07/98	2700	5200	950,000	2800	ND	ND	ND	1,000,000
	10/01/98	1200	1200	420,000	330	12	8.8	11	360,000
MW-3	11/04/96	310	ND	1,000	ND	ND	ND	ND	NA
	03/05/97	210	ND	13	ND	ND	ND	ND	NA
	06/12/97	94	ND	17	ND	ND	ND	ND	NA
	09/09/97	2300	ND	12	ND	ND	ND	ND	NA
	02/13/98	570	ND	14	ND	ND	ND	ND	NA
	07/07/98	1100	ND	7.8	ND	ND	ND	ND	6.6
	10/01/98	390	ND	9.2	ND	ND	ND	ND	4.8
RW-W	06/12/97	51000	27000	58000	4000	360	860	7200	NA
	09/09/97	NS	NS	NS	NS	NS	NS	NS	NA
RW-E	06/12/97	31000	31000	32000	1900	3100	250	12000	NA
	09/09/97	NS	NS	NS	NS	NS	NS	NS	NA
California MCL		None Listed	None Listed	40*	1	150	680	1750	

Notes:

NA = Not Analyzed

ND = Not detected at the laboratorty reported limit of detection

NS = Not Sampled

MCL = Maximum Contaminant Level, Drinking Water Standards and Health Advisories Table, EPA document dated August, 1995.

*California Water Quality Goals-Organic Consituents, Human Health and Welfare, Marshak, September 1991.

**Results of the 8260 found DIPE, ETBE, TAME, and tert-Butanol as Non-detected

TABLE 3

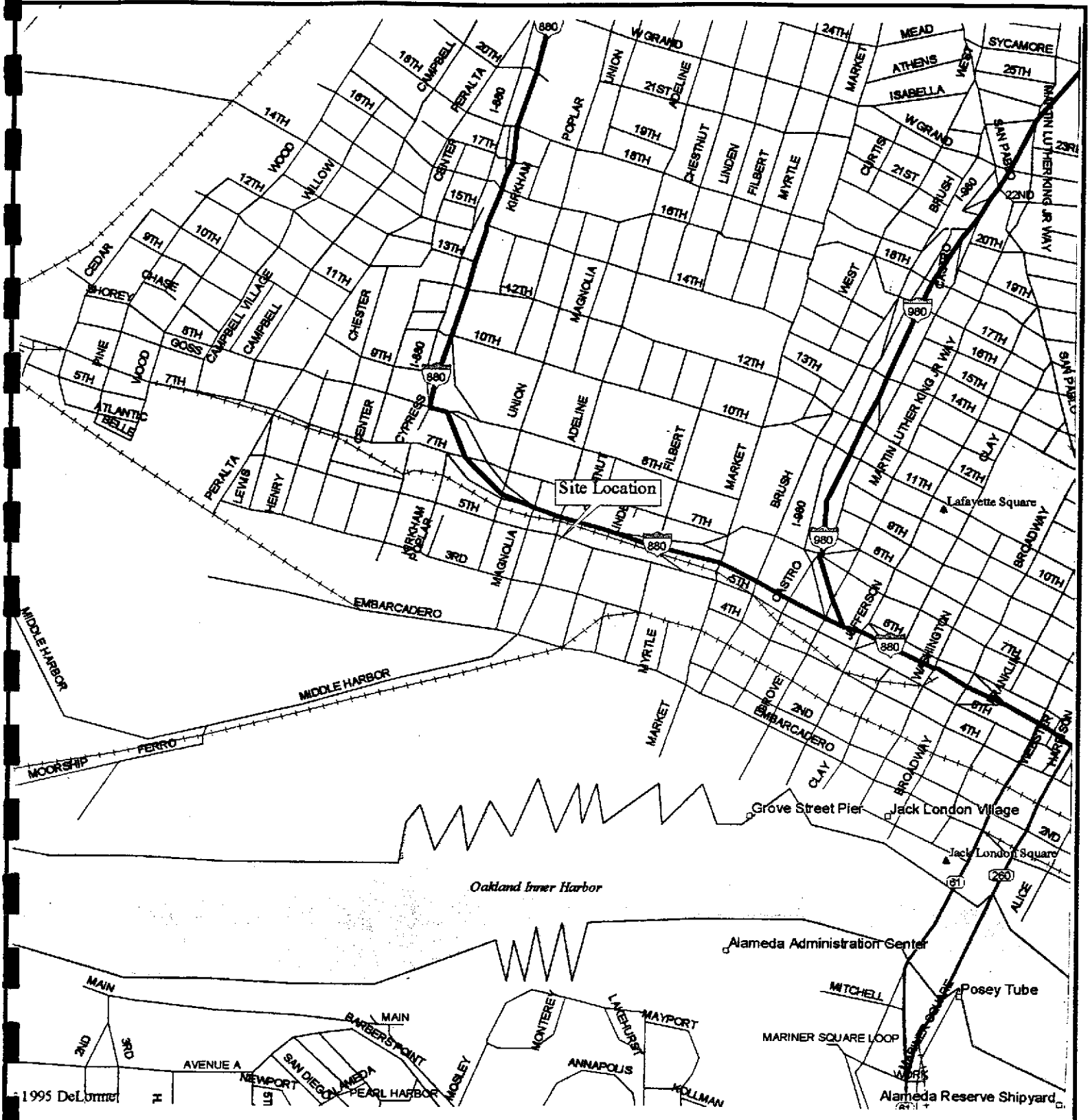
Product Recovery Summary
1107 5th Street
Oakland California

Recovery Well	Date	Personnel	Product Thickness / Volume				Observations & Comments
			Product Thickness	Amount Recovered	Recovered Product (ounces)	Recovered Product (gallons)	
RW-W	03/07/97	R. Gentry	not measured	none	0	0.0	installed skimmer
	03/20/97	R. Gentry	not measured	none	0	0.0	repaired skimmer
	04/01/97	R. Gentry	0.2 inches	full	47	0.4	
	04/25/97	G. Ratliff	0.2 inches	full	94	0.7	
	04/29/97	G. Fiedler	0.2 inches	full	141	1.1	
	04/30/97	G. Fiedler	0.2 inches	half full	164	1.3	
	05/14/97	G. Fiedler	0.2 inches	full	211	1.6	
	05/28/97	G. Fiedler	0.2 inches	full	258	2.0	
	06/11/97	G. Fiedler	0.2 inches	full	305	2.4	
	07/01/97	G. Fiedler	0.2 inches	full	352	2.8	
	07/08/97	G. Fiedler	0.2 inches	none	352	2.8	adjusted Skimmer
	07/14/97	K. Couch	0.2 inches	full	399	3.1	normal skimmer operation
	07/23/97	G. Fiedler	0.2 inches	full	446	3.5	
	09/09/97	J. Smith	0.2 inches	full	493	3.9	
	09/19/97	J. Smith	0.1 inches	full	540	4.2	
	10/21/97	J. Smith	not measured	3/4 full	575	4.5	
	02/04/98	W.Cerrito	not measured	full	622	4.9	normal
	03/12/98	W.Cerrito	0.2 inches	full	669	5.2	emptied skimmer
	03/27/98	W.Cerrito	0.2 inches	full	716	5.6	skimmer adjusted
	04/03/98	W.Cerrito	0.1 inches	half full	740	5.8	skimmer adjusted
	04/16/98	W.Cerrito	0.1 inches	full	787	6.1	skimmer cleaned
	04/24/98	W.Cerrito	0.1 inches	half full	810	6.3	screen cleaned
	04/30/98	W.Cerrito	not measured	none	810	6.3	as above
	05/20/98	W.Cerrito	0	none	810	6.3	as above
	07/07/98	Henderson	0.1 inches	none	810	6.3	skimmer adjusted
	10/01/98	Henderson	0.25 inches	1.25 full	869	6.8	skimmer adjusted

TABLE 3

Product Recovery Summary
1107 5th Street
Oakland California

Recovery Well	Date	Personnel	Product Thickness / Volume				Observations & Comments
			Product Thickness	Amount Recovered	Recovered Product (ounces)	Recovered Product (gallons)	
RW-E	03/07/97	R. Gentry	no product	none	0	0	no sheen- slight odor
	03/20/97	R. Gentry	not measured	none	0	0	as above
	04/01/97	R. Gentry	none	none	0	0	as above
	04/25/97	G. Ratliff	none	none	0	0	as above
	04/29/97	G. Fiedler	none	none	0	0	as above
	04/30/97	G. Fiedler	none	none	0	0	as above
	05/14/97	G. Fiedler	none	none	0	0	some blebs of product
	05/28/97	G. Fiedler	none	none	0	0	as above
	06/11/97	G. Fiedler	none	none	0	0	as above
	10/21/97	J. Smith	not measured	none	0	0	
	02/04/98	W.Cerrito	not measured	none	0	0	sheen and odor present
	03/12/98	W.Cerrito	not measured	none	0	0	as above
	03/27/98	W.Cerrito	not measured	none	0	0	blebs of product observed
	04/03/98	W.Cerrito	0.1 inches	none	0	0	as above
	04/16/98	W.Cerrito	not measured	none	0	0	as above
	04/24/98	W.Cerrito	0.1 inches	none	0	0	blebs of product observed
	04/30/98	W.Cerrito	not measured	none	0	0	as above
	05/20/98	W.Cerrito	not measured	none	0	0	as above
	07/07/98	Henderson	not measured	none	0	0	as above
	10/01/98	Henderson	0.2 inches	none	0	0	thick product observed



Project No: 3628

October 1998

Checked by: _____

Site Location Map

Rino Pacific
1107 5th Street
Oakland, California

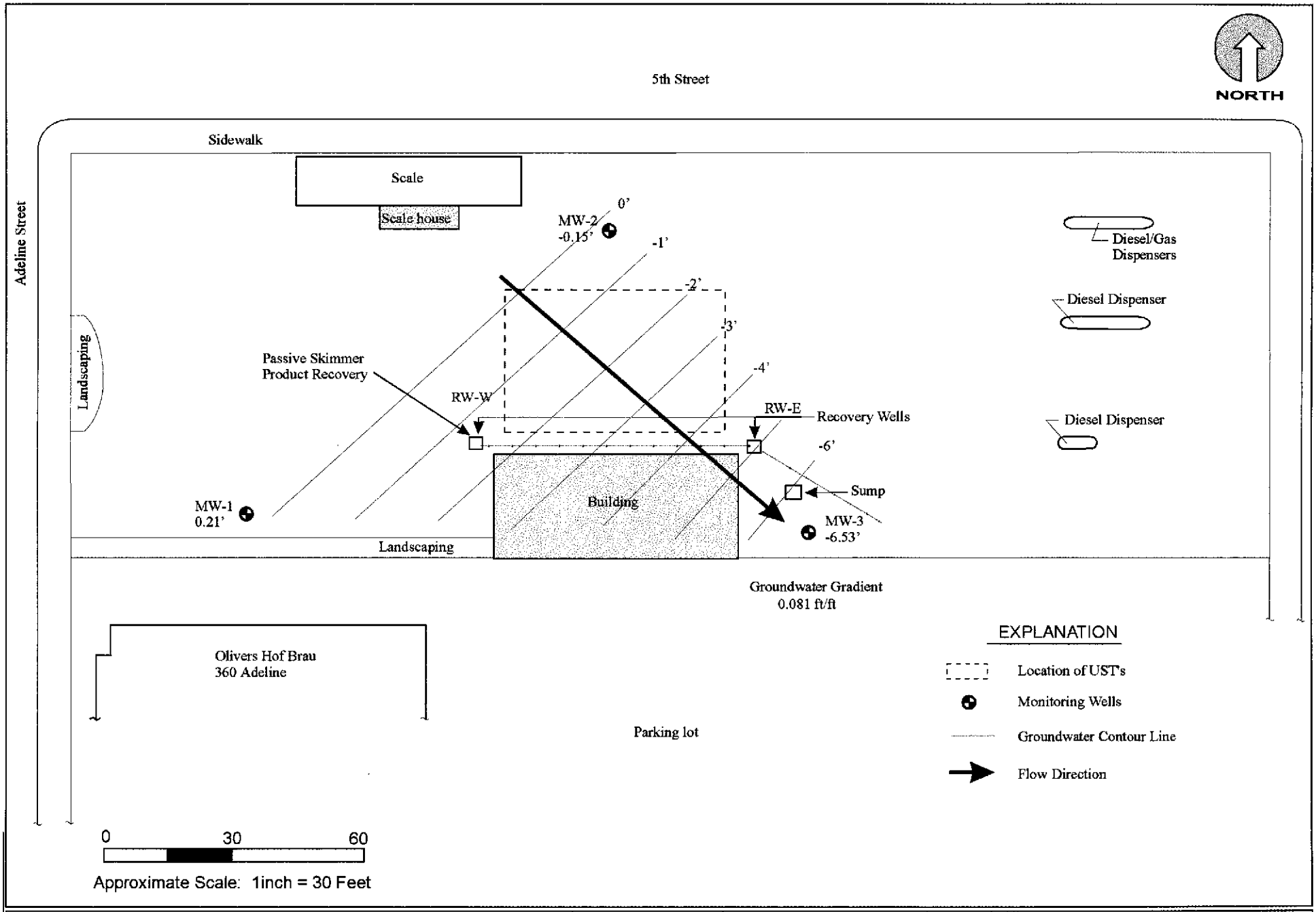
Figure 1

N

W. A. Craig, Inc.
Environmental Contracting and Consulting

6940 Tremont Road
Dixon, California 95620
Cal License #455752

(707) 693-2929
FAX (707) 693-2922



Checked by:

W. A. Craig, Inc.
Environmental Contracting and Consulting
6940 Tremont Road
Dixon, California 95620
Cal License #455752
(707) 693-2929
FAX (707) 693-2922

Project # 3628
October 1998

Groundwater Contour 10/1/98
Rino Pacific
1107 5th Street
Oakland, CA

Figure 2

ATTACHMENT A
MONITORING WELL SAMPLING LOGS

WELL DEVELOPMENT AND SAMPLING LOG

Project Name Rinehardt Job No. 3628 Date 1 OCT 98 Weather Cloudy
Sampler Henderson

Well Data **Well Number** MW-1

Total Depth of Well 19' Casing Elevation _____ Depth to Water 3.63 Groundwater Elevation 0.21
Method of Purging Well Bailer Method of Sampling Well Bailer
Casing Volume 2.55 Volume Factors: 2"=0.166g/ft; 4"=0.653g/ft; 6"=1.47g/ft; 8"=2.61g/ft; 12"=5.88g/ft
Depth to Water Prior to Sampling 3.91

Field Parameters

Time	Volume (gal)	Temperature	SP	pH	Turbidity	Comments (color/odor/sheen/product etc.)
	Begin purging well					
11:30	1.0	67.6	7410	6.77	Slight	No noticeable
11:34	2.	67.0	8340	6.83		• Yellow tint to water
11:39	4.	66.9	8870	6.83		
11:45	6.	66.7	8830	6.87		
11:48	7.	66.8	8890	6.87		

Comments: ① Well under pressure Sampled @ 12:25
② Well slow to recover • Review purging date and procedure

Well Data **Well Number** MW-2

Total Depth of Well ~~19'~~ 12.9 Casing Elevation _____ Depth to Water 4.63 Groundwater Elevation -0.15
Method of Purging Well Bailer Method of Sampling Well Bailer
Casing Volume ~~2.55~~ 1.36 Volume Factors: 2"=0.166g/ft; 4"=0.653g/ft; 6"=1.47g/ft; 8"=2.61g/ft; 12"=5.88g/ft
Depth to Water Prior to Sampling 5.13

Field Parameters

Time	Volume (gal)	Temperature	SP	pH	Turbidity	Comments (color/odor/sheen/product etc.)
	Begin purging well					
11:50	1.0	68.0	6810	6.44	Slight	Petro odor · no sheen
11:55	2.0	67.9	6900	6.60		• green color
12:01	4.0	67.9	6910	6.64		• water foamed easily
12:07	6.0	67.6	6920	6.62	↓	

Comments: • well under pressure
② Well slow to recover
/ low turbidity but heavy discoloration
Sampled @ 12:50

WELL DEVELOPMENT AND SAMPLING LOG

Project Name Rinehardt Job No. 3628 Date 1 OCT 98 Weather Cloudy

Sampler Henderson

Well Data **Well Number** MW 3

Total Depth of Well [redacted] Casing Elevation _____ Depth to Water 11.34 Groundwater Elevation 6.53

Method of Purging Well Bailer Method of Sampling Well Bailer

Casing Volume 0.8 g Volume Factors: 2"=0.166g/ft; 4"=0.653g/ft; 6"=1.47g/ft; 8"=2.61g/ft; 12"=5.88g/ft

Depth to Water Prior to Sampling 11.89

Field Parameters

Time	Volume (gal)	Temperature	SP	pH	Turbidity	Comments (color/odor/sheen/product etc.)
	Begin purging well					
11:05	1.0	69.8	2590	6.57	Slight	No noticable petro odor or sheen
	2.0	69.5	2570	6.43	〃	
	3.0	69.1	2570	6.40	〃	H_2S scent.

Comments: • Very slow to recover
Silt was greenish grey in colour. • Well under pressure when opening

Sampled @ 13:20

Well Data **Well Number** _____

Total Depth of Well _____ Casing Elevation _____ Depth to Water _____ Groundwater Elevation _____

Method of Purging Well _____ Method of Sampling Well _____

Casing Volume _____ Volume Factors: 2"=0.166g/ft; 4"=0.653g/ft; 6"=1.47g/ft; 8"=2.61g/ft; 12"=5.88g/ft

Depth to Water Prior to Sampling _____

Field Parameters

Time	Volume (gal)	Temperature	SP	pH	Turbidity	Comments (color/odor/sheen/product etc.)
	Begin purging well					

Comments:

WELL DEVELOPMENT AND SAMPLING LOG

Project Name Kinchardt Job No. 3628 Date 1 Oct 98 Weather Cloudy
Sampler Henderson

Well Data **Well Number** RW-NW

Total Depth of Well _____ Casing Elevation _____ Depth to Water 3.21 Groundwater Elevation 2.05
Method of Purging Well _____ Method of Sampling Well _____
Casing Volume _____ Volume Factors: 2"=0.166g/ft; 4"=0.653g/ft; 6"=1.47g/ft; 8"=2.61g/ft; 12"=5.88g/ft
Depth to Water Prior to Sampling _____

Field Parameters

Time	Volume (gal)	Temperature	SP	pH	Turbidity	Comments (color/odor/sheen/product etc.)
	Begin purging well					

Comments:
- 1/4" floating product
- Trap 3/4 full (Trap needs to be adjusted more frequently than every 3 months.)
- Trap checked again @ 12:00, found to be 1/2 full
  - Trap needs to be adjusted frequently to be fully operational

Well Data **Well Number** RW-SE

Total Depth of Well _____ Casing Elevation _____ Depth to Water 3.89 Groundwater Elevation 0.76
Method of Purging Well _____ Method of Sampling Well _____
Casing Volume _____ Volume Factors: 2"=0.166g/ft; 4"=0.653g/ft; 6"=1.47g/ft; 8"=2.61g/ft; 12"=5.88g/ft
Depth to Water Prior to Sampling _____

Field Parameters

Time	Volume (gal)	Temperature	SP	pH	Turbidity	Comments (color/odor/sheen/product etc.)
	Begin purging well					

Comments:
- less than 1/8" free product.

ATTACHMENT B
LABORATORY ANALYTICAL RESULTS

McCAMPBELL ANALYTICAL INC.
110 Second Avenue South, #D7, Pacheco, CA 94553
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

W. A. Craig, Inc. 6940 Tremont Road Dixon, CA 95620-9603	Client Project ID: Rinchardt	Date Sampled: 10/01/98
		Date Received: 10/01/98
	Client Contact: Tom Henderson	Date Extracted: 10/02/98
	Client P.O:	Date Analyzed: 10/02-10/07/98

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)*	MTBE	Benzene	Toluene	Ethylben-zene	Xylenes	% Recovery Surrogate
96184	MW1	W	ND	ND	ND	ND	ND	ND	104
96185	MW2	W	1200,c	420,000	330	12	8.8	11	—#
96186	MW3	W	ND	9.2	ND	ND	ND	ND	89
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit	W	50 ug/L	5.0	0.5	0.5	0.5	0.5		
	S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005		

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

cluttered chromatogram; sample peak coelutes with surrogate peak

"The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 Second Avenue South, #D7, Pacheco, CA 94553
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

W. A. Craig, Inc. 6940 Tremont Road Dixon, CA 95620-9603	Client Project ID: Rinchardt	Date Sampled: 10/01/98
		Date Received: 10/01/98
	Client Contact: Tom Henderson	Date Extracted: 10/02/98
	Client P.O:	Date Analyzed: 10/02-10/04/98

Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel *

EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

Lab ID	Client ID	Matrix	TPH(d)*	% Recovery Surrogate
96184	MW1	W	1100,c,b	95
96185	MW2	W	1200,c	94
96186	MW3	W	390,c,g	94
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	
		S	1.0 mg/kg	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP / STLC / SPLP extracts in ug/L.

c cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

b The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) medium boiling point pattern that does not match diesel (?); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment.

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W. A. Craig, Inc. 6940 Tremont Road Dixon, CA 95620-9603	Client Project ID: Rinchardt	Date Sampled: 10/01/98
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	Client P.O:	Date Analyzed: 10/05/98

Oxygenated Volatile Organics By GC/MS

EPA method 8260 modified

Lab ID	96184	96185	96186		Reporting Limit	
Client ID	MW1	MW2	MW3			
Matrix	W	W	W		S	W
Compound	Concentration*				ug/kg	ug/L
Di-isopropyl Ether (DIPE)	ND	ND<10,000	ND		5.0	1.0
Ethyl tert-Butyl Ether (ETBE)	ND	ND<10,000	ND		5.0	1.0
Methyl-tert Butyl Ether (MTBE)	1.8	360,000	4.8		5.0	1.0
tert-Amyl Methyl Ether (TAME)	ND	ND<10,000	ND		5.0	1.0
tert-Butanol	ND	ND<50,000	ND		25	5.0
Surrogate Recoveries (%)						
Dibromofluoromethane	107	104	110			
Comments:						

* water samples are reported in ug/L, soil and sludge samples in ug/kg, wipes in ug/wipe and all TCLP / STLC / SPLP extracts in ug/L
ND means not detected above the reporting limit; N/A means surrogate not applicable to this analysis
(h) lighter than water immiscible sheen is present; (i) liquid sample that contains greater than ~5 vol. % sediment; (j) sample diluted due to high organic content

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMBELL ANALYTICAL INC.

110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553
Telephone: (510) 798-1620 Fax: (510) 798-1622

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HOUR ☐ 48 HOUR ☒ 5 DAY

Report To: Jon Henderson Bill To:
Company: W. A. Craig
P.O. Box 448
Napa, CA 94559-0448
Tele: (707) 252-3353 Fax: (707) 252-3385
Project #: Project Name: Rinehardt
Project Location: Oakland
Sampler Signature: Jon Henderson

SAMPLE ID	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX: Water	Soil	Air	Sludge	Other	METHOD PRESERVED: Ice	HCl	HNO3	Other	Analysis Request: BTEX & TPH as Gas (602/8020 + 8015) MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260 Oxygenates Only	EPA 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)	RCI	Other	Comments
MW1		1 Oct	12:25	2	liter	X					X					X															MW2: Very high MTBE in past.
MW1			12:25	6	40	X					X	X			X								1								
MW2			12:58	2	liter	X					X					X															2 Hour
MW2			12:50	3	40	X					X	X			X								1								
MW3			13:20	2	liter	X					X					X															
MW3			13:20	3	40	X					X	X			X								1								

96184
96185
96186

Relinquished By: Jon Henderson Date: 10/6/98 Time: 14:15 Received By: Dana A Burton
Relinquished By: Date: Time: Received By:
Relinquished By: Date: Time: Received By:

Remarks: [redacted]

ICE/T ✓ PRESERVATION ✓
GOOD CONDITION ✓ APPROPRIATE
HEAD SPACE ABSENT ✓ CONTAINERS ✓

VOAS | O&G | METALS | OTHER