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Transmittal/Memorandum

To: Ms. Susan Hugo
Alameda County Health Agency
Division of Hazardous Materials
Department of Environmental Health
80 Swan Way, Room 200
Oakland, California 94621

From: Paul Supple

Date: March 25, 1992

Subject: Quarterly Ground Water Sampling
Harcros Pigments Plant
4650 Shellmound Street
Emeryville, California 94666

Job No: 19801W

Remarks: Enclosed is one copy of the subject report for your files.

cc: Mr. Mike Herzog, Harcros Pigments, Inc.

**FIRST QUARTER
GROUND WATER MONITORING**

**Harcros Pigments Plant
4650 Shellmound
Emeryville, California**

March 25, 1992

Prepared for:

**Harcros Pigments
Emeryville, California**

Prepared by:

ROUX ASSOCIATES
1855 Gateway Boulevard, Suite 770
Concord, California 94520
(510) 602-2333

Doc #HP19801W.2.7

ROUX

TITLE: First Quarter Ground Water Monitoring
Harcros Pigments Plant
4650 Shellmound Street
Emeryville, California

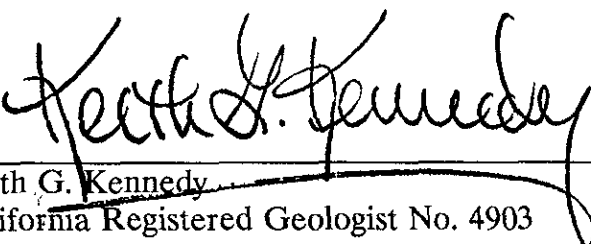
DATE: March 23, 1992

PROJECT NO: HP19801W

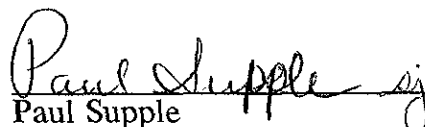
SUBMITTED BY: Roux Associates
1855 Gateway Boulevard, Suite 770
Concord, California 94520

This work was done under the direction of the undersigned California Registered Geologist.

PREPARED BY:



Keith G. Kennedy
California Registered Geologist No. 4903



Paul Supple
Senior Hydrogeologist

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1.0 INTRODUCTION

This report presents the findings of the February 1992 quarterly ground water monitoring activities conducted by Roux Associates (Roux) at the Harcros Pigments Plant located at 4650 Shellmound Street in Emeryville, California. (Site, Figures 1 and 2).

The scope of work for this quarterly ground water monitoring included:

- Collection of depth to water measurements in monitoring wells RW-2, RW-3, RW-22, RW-29, RW-30 and RW-31;
- Collection of a ground water sample from monitoring well RW-22;
- Submission the ground water sample collected from monitoring well RW-22 for analysis of volatile organic compounds (VOCs) by USEPA Method 8240.

2.0 SITE SETTING

The Harcros Pigments Plant, formerly Pfizer Pigments Plant, is located in a predominantly industrial area of Emeryville, California (Figure 1). The plant produces iron oxide pigments and has been in operation since 1925. The Site is on the east side of the San Francisco Bay at an elevation of about seven feet above mean sea level. The current bay shoreline is about 1,000 feet west of the Harcros Pigments property (USGS, 1980). A 1936 aerial photograph of the plant shows the former shoreline located along the eastern edge of present day Shellmound Street. The Site is underlain by estimated low permeability sandy clay to clay (Roux, 1990a). The regional direction of ground water flow is westerly, towards San Francisco Bay (Roux, 1990a).

3.0 BACKGROUND

A total of 12 underground storage tanks (USTs) have been removed from the Site since 1987. One 350-gallon capacity steel UST formerly contained waste oil and waste solvents and was removed from the Site in December, 1987 (Roux, 1988). The waste oil tank was located within the waste oil tank pit immediately east of Service Building No. 10 (Figure 2). A total of nine 10,000-gallon diesel tanks and one 10,000-gallon Bunker C fuel oil tank were removed from the tank pit south of Service Building No. 10 in December, 1989 (Roux, 1990a). A 1,000-gallon gasoline tank was removed from a tank pit south of Maintenance Shop Building No. 6 in December 1989 (Roux, 1990a).

Two double-wall fiberglass USTs are currently in place and used at the Site. A 10,000-gallon diesel tank and one 1,000-gallon gasoline tank were installed east of Service Building No. 10 by Diablo Tank & Equipment of Martinez, California in September, 1989.

In January, 1990, Roux staff discovered diesel fuel floating on top of the water column in monitoring wells RW-4 and RW-11 (Roux, 1990b). Wells RW-4 and RW-11 were located near the northeastern corner of Service Building No. 10 (Figure 2). The monitoring wells were within a former waste oil tank pit and were adjacent to the two recently installed USTs and their associated pipelines.

In March and April, 1990, Roux conducted an additional subsurface investigation to determine the extent of diesel fuel contamination surrounding the former waste oil tank pit. The additional investigation included drilling seven soil borings, installing two monitoring wells (RW-22 and RW-23) in the area surrounding the former waste oil tank pit where free phase product was detected, and collecting ground water samples from the wells at the Site. The analytical results of the soil and ground water sampling analyzed indicated that the presence of diesel fuel was restricted to the soil and ground water around the former waste oil tank pit (Roux, 1990b). In August,

1990, the soil with concentrations of diesel fuel in the former tank pit area were excavated and transported to a Class II disposal facility (Roux, 1991a). Monitoring wells RW-4 and RW-11, located in the former tank pit, were abandoned prior to soil excavation. At the request of the Alameda County Department of Environmental Health, two additional monitoring wells, RW-30 and RW-31, were installed in December, 1990. These wells were installed for the purpose of monitoring ground water quality in the vicinity of the former waste oil tank pit. Quarterly ground water monitoring of wells RW-2, RW-3, RW-22, RW-29, RW-30 and RW-31 was initiated in January, 1991.

Laboratory analyses of ground water samples collected from all six monitoring wells through the four 1991 quarterly sampling events indicated TEH, BTEX, and oil and grease below detection limits for all samples (Table 1). However, unknown hydrocarbons were reported in monitoring wells RW-2, RW-3 and RW-29 during the second quarter sampling event (Roux, 1991b).

All ground water samples collected during the first and third quarterly 1991 sampling events and the ground water sample collected from monitoring well RW-22 during the fourth quarterly sampling event were analyzed for VOCs.

Concentration of VOCs were reported as below the laboratory detection limit from all the ground water samples except RW-22 during third and fourth quarter 1991 ground water sampling. Cis-1,2-Dichloroethene was detected at a concentration of 5.2 parts per billion ($\mu\text{g}/\text{L}$) and 5.3 $\mu\text{g}/\text{L}$ in the third and fourth quarter, respectively, in RW-22.

Based on the laboratory data collected during the 1991 year of quarterly sampling, quarterly sampling was discontinued at this Site with the exception of monitoring well RW-22. Quarterly sampling of well RW-22 will continue through 1992 to monitor for VOCs.

4.0 GROUND WATER SAMPLING

On February 14, 1992, depth to ground water measurements were collected from monitoring wells RW-2, RW-3, RW-22, RW-29, RW-30 and RW-31. Data from RW-22 were used to calculate the volume of water needed to purge prior to sampling. A minimum of three well casing volumes of water was removed from well RW-22 using a teflon bailer.

Ground water samples were collected using the same teflon bailer and poured into two 40 milliliter glass vials for analysis of VOCs. Visual observations of the ground water sample, the measurement of pH, conductivity and temperature at the time of sample collection was recorded on a well sampling form (Appendix A). The sample vials were labeled and stored on ice in a cooler until delivery to the laboratory. A Chain-of-Custody document was maintained for the samples (Appendix B).

All ground water samples were submitted to Curtis & Tompkins Ltd. Analytical Laboratory in Berkeley, California. The ground water sample was analyzed for Volatile Organic Compounds (VOCs) by USEPA Method 8240.

5.0 SUMMARY OF FINDINGS

5.1 Ground Water Flow

Water levels were measured on February 18, 1992 in six on-site monitoring wells. The depth to ground water at the Site has historically been about 3 to 5 feet below ground surface. The depth to ground water measured on February 14, 1992 ranged from 2.14 to 3.68 feet below ground surface. Ground water elevations calculated from these water levels indicated the direction of ground water movement at the Site was to the south at an average gradient of about .017 (Figure 3). The flow direction towards the south-southwest is different than the regional flow direction to the west. The flow direction may be locally influenced by Temescal Creek, located about 170 feet south of Service Building No. 10.

5.2 Analytical Results

Laboratory analyses of the ground water sample collected from well RW-22 indicated concentrations of VOCs as below the laboratory detection limits except cis-1,2-Dichloroethene which was detected at a concentration of 5.6 $\mu\text{g/L}$ and trans-1,2-Dichloroethene which was detected at a concentration of 5.3 $\mu\text{g/L}$ (Table 3). California Drinking Water Quality Standards lists a Maximum Contaminant Level (MCL) for cis-1,2-Dichloroethene as 6 $\mu\text{g/L}$, and trans-1,2-Dichloroethene as 10 $\mu\text{g/L}$.

5.3 Next Sampling

The second quarter (1992) ground water sampling event is tentatively scheduled for the week of May 11. Ground water samples collected from RW-22 will be analyzed for VOCs by USEPA Method 8240.

6.0 REFERENCES

- California Code of Regulations, Title 22 - Social Security, Division 4 - Environmental Health, Chapter 15, 16 and 17; as amended through July, 1990. California Drinking Water Quality Standards.
- Roux Associates West, Inc. 1988. Underground Storage Tank Site Investigation, Pfizer Pigments Plant, Emeryville, California. August 12, 1988.
- Roux Associates West, Inc. 1990a. Diesel Fuel Site Investigation, Pfizer Pigments Plant, Emeryville, California. May 2, 1990.
- Roux Associates West, Inc. 1990b. Work Plan, Site Investigation and Fuel Recovery, Pfizer Pigments Plant, Emeryville, California. March 8, 1990.
- Roux Associates West, Inc. 1991a. Soil Remediation Report, Harcros Pigments Plant, Emeryville, California. May 6, 1991.
- United States Geologic Survey. 1980. Oakland West Quadrangle, California Photo Revised 1980.

TABLES

**Table 1. Summary of Ground Water Analytical Data, 1991 Quarterly Sampling
Harcros Pigments Plant
4650 Shellmound Street
Emeryville, California**

Monitoring Well Number	Date	Total Extractable Hydrocarbons			BTEX	VOCs	O & G
		TEH-K	TEH-D	TEH-M			
RW-2	1/08/91	ND	ND	NA	NA	ND	NA
	4/09/91	ND	ND	ND	ND	NA	NA
	7/11/91	ND	ND	NA	NA	ND	NA
	10/3/91	ND	ND	NA	ND	NA	NA
RW-3	1/08/91	ND	ND	NA	NA	ND	NA
	4/09/91	ND	ND	ND	ND	NA	NA
	7/11/91	ND	ND	NA	NA	ND	NA
	10/3/91	ND	ND	NA	ND	NA	NA
RW-22	1/08/91	ND	ND	NA	NA	ND	NA
	4/09/91	ND	ND	ND	ND	NA	NA
	7/11/91	ND	ND	NA	NA	5.2*	NA
	10/3/91	ND	ND	NA	NA	5.3*	NA
RW-29	1/08/91	NA	NA	NA	NA	ND	NA
	4/09/91	ND	ND	ND	ND	NA	ND
	7/11/91	ND	ND	NA	NA	ND	NA
	10/3/91	ND	ND	NA	ND	NA	NA
RW-30	1/08/91	NA	NA	NA	NA	ND	NA
	4/09/91	ND	ND	ND	ND	NA	NA
	7/11/91	ND	ND	NA	NA	ND	NA
	10/3/91	ND	ND	NA	ND	NA	NA
RW-31	1/08/91	NA	NA	NA	NA	ND	NA
	4/09/91	ND	ND	ND	ND	ND	NA
	7/11/91	ND	ND	NA	NA	ND	NA
	10/3/91	ND	ND	NA	ND	NA	NA

Footnotes:

All detected concentrations are reported in $\mu\text{g/L}$ (ppb)

TEH-K = Total Extractable Hydrocarbons as Kerosene

TEH-D = Total Extractable Hydrocarbons as Diesel

TEH-M = Total Extractable Hydrocarbons as Motor Oil

BTEX = Benzene, Toluene, Ethylbenzene and Xylenes

VOCs = Volatile Organic Compounds

O & G = Oil and Grease

ND = Not Detected at or above reporting limit (For reporting limits, see Laboratory Reports, Appendix C.)

NA = Not Analyzed

* = VOC identified as cis-1,2-dichloroethene (No other VOCs were detected.)

**Table 2. Summary of Ground Water Elevation Data
Harcros Pigments Plant
4650 Shellmound Street
Emeryville, California**

Monitoring Well Number	Date	Measuring Point (1) Elevation	Depth to Water (2)	Ground Water (1) Elevation
RW-2	1/08/91	6.84	4.93	1.91
	4/09/91	6.84	3.50	3.34
	7/11/91	6.84	4.05	2.79
	10/3/91	6.84	4.14	2.70
	2/14/92	6.84	3.00	3.84
RW-3	1/08/91	7.38	4.00	3.38
	4/09/91	7.38	3.13	4.25
	7/11/91	7.38	3.58	3.80
	10/3/91	7.38	3.60	3.78
	2/14/92	7.38	2.93	4.45
RW-22	1/08/91	7.42	4.04	3.38
	4/09/91	7.42	3.53	3.89
	7/11/91	7.42	4.02	3.40
	10/3/91	7.42	3.92	3.50
	2/14/92	7.42	3.06	4.36
RW-29	1/08/91	7.01	5.68	1.33
	4/09/91	7.01	3.95	3.06
	7/11/91	7.01	4.63	2.38
	10/3/91	7.01	4.71	2.30
	2/14/91	7.01	3.68	3.33
RW-30	1/08/91	7.51	4.23	3.28
	4/09/91	7.51	3.24	4.27
	7/11/91	7.51	3.80	3.71
	10/3/91	7.51	3.93	3.58
	2/14/92	7.51	2.99	4.52
RW-31	1/08/91	7.08	3.43	3.65
	4/09/91	7.08	2.57	4.51
	7/11/91	7.08	3.07	4.01
	10/3/91	7.08	3.13	3.95
	2/14/92	7.08	2.14	4.94

Footnotes:

- (1) Depth in feet relative to Emeryville datum
- (2) Depth in feet below measuring point

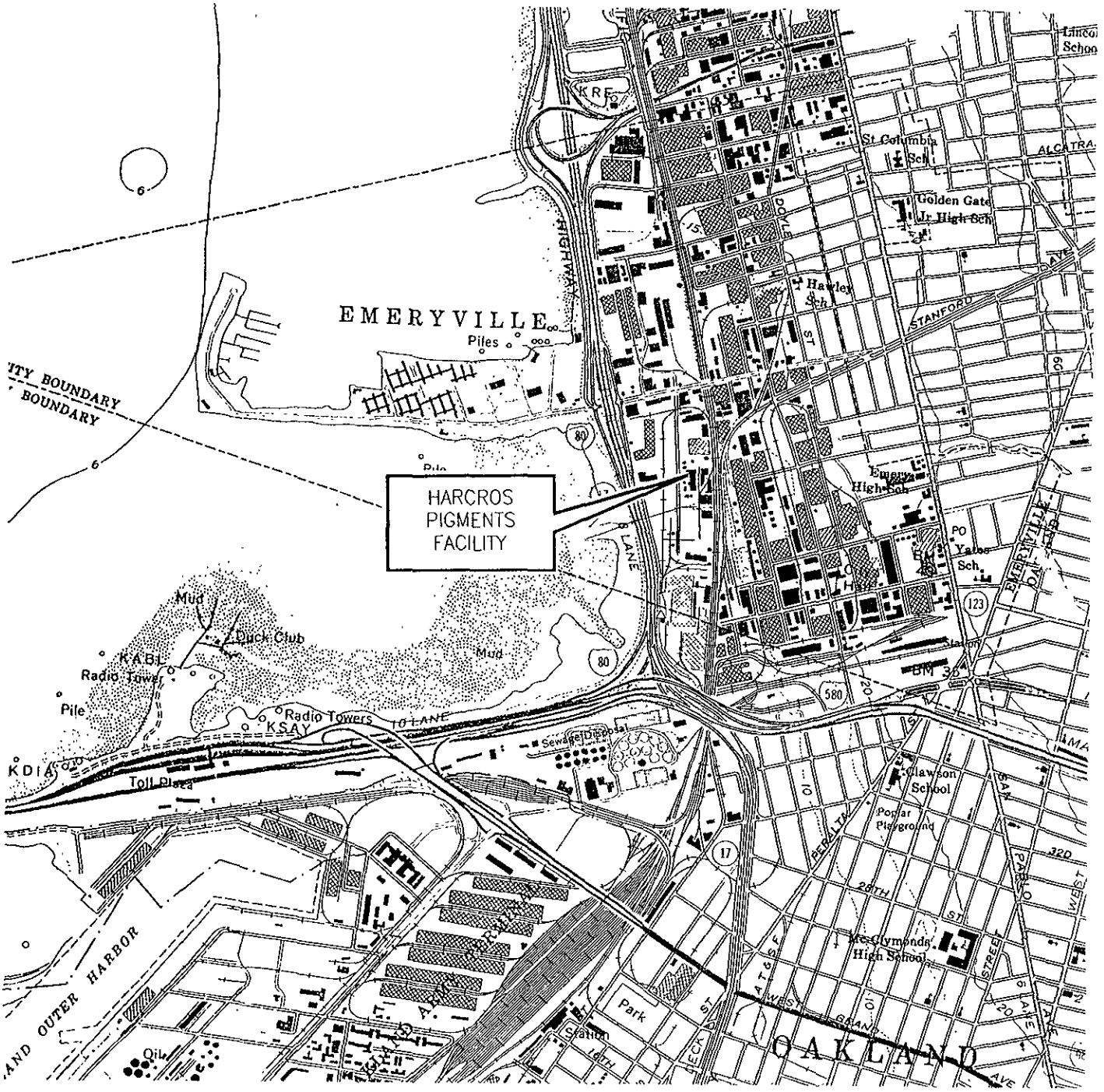
**Table 3. Summary of Ground Water Analytical Data, 1992 Quarterly Sampling
Harcros Pigments Plant
4650 Shellmound Street
Emeryville, California**

Monitoring Well Number	Date	Volatile Organic Compounds	
		cis-1,2-Dichloroethene	trans-1,2-Dichloroethene
RW-22	2/14/92	5.6	5.3

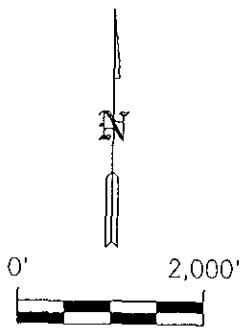
Footnotes:

All detected concentrations are reported in $\mu\text{g/L}$ (ppb)

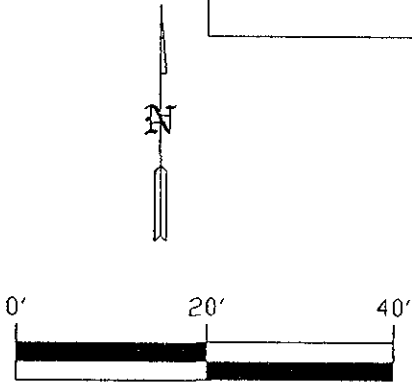
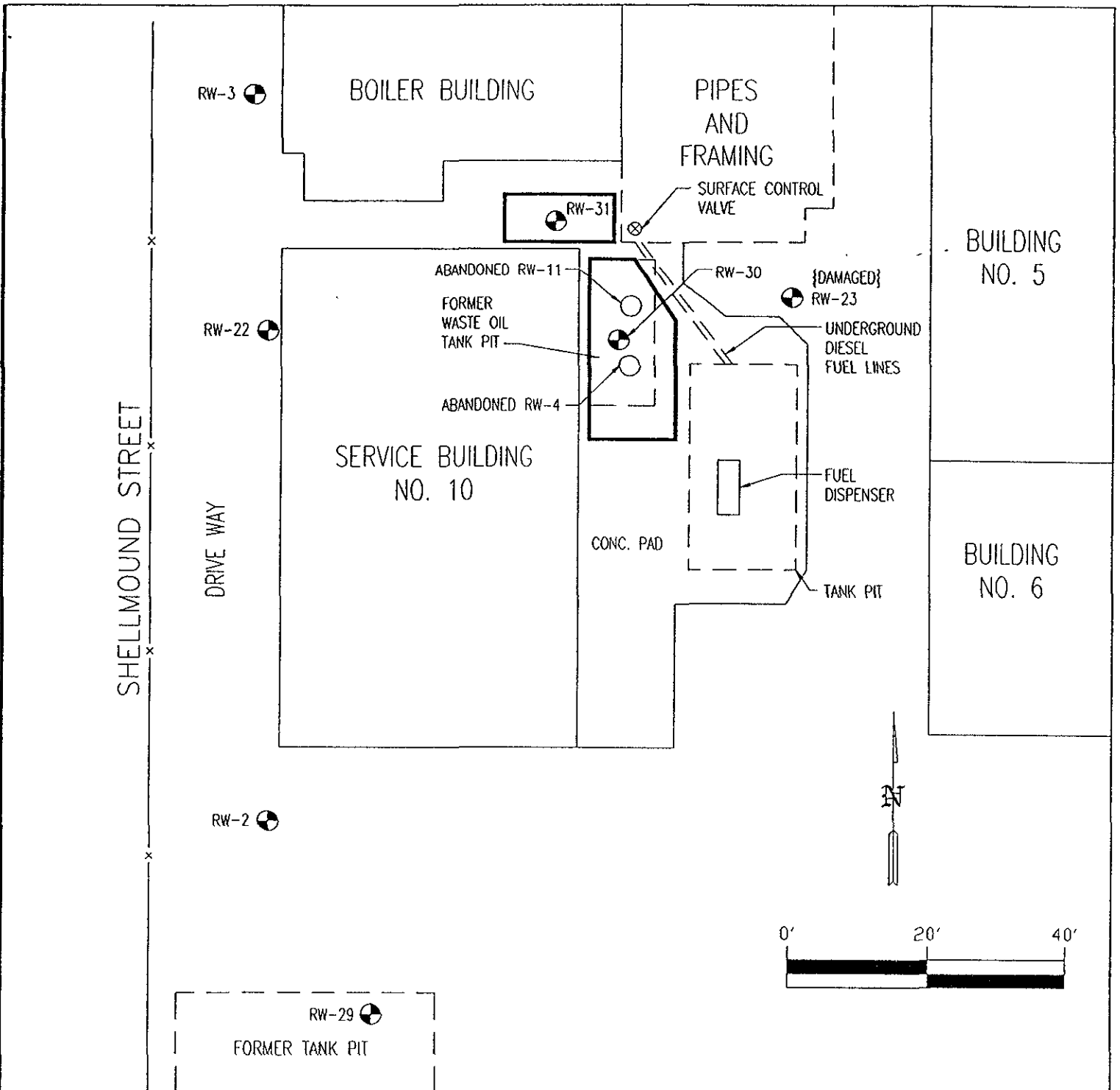
FIGURES



SOURCE:
 USGS 7.5 MINUTE QUADRANGLE
 OAKLAND WEST, CALIFORNIA, 1980.



TITLE				
LOCATION OF SITE				
PREPARED FOR:				
HARCROS PIGMENTS, INC.				
ROUX ROUX ASSOCIATES ENVIRONMENTAL CONSULTING & MANAGEMENT	COMPILED BY	J.F.	DATE:	01/92
	PREPARED BY	R.P.	SCALE	AS SHOWN
	PROJECT MANAGER	P.S.	REVISION	0
	PROJECT NO	19801W	FILE #	19801W01
			FIGURE	1



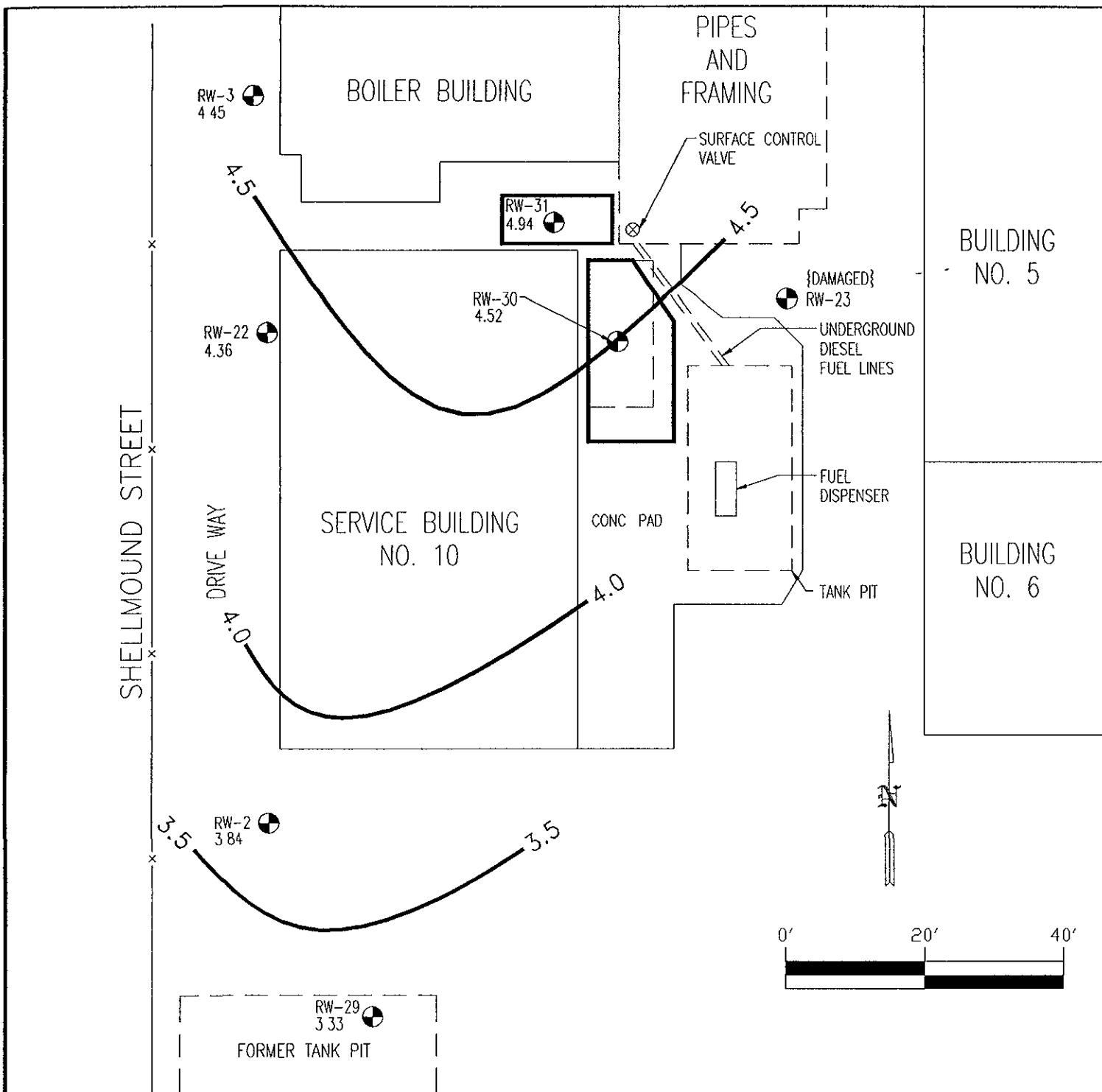
EXPLANATION

- RW-2 MONITORING WELL LOCATION AND DESIGNATION
- RW-11 FORMER MONITORING WELL LOCATION AND DESIGNATION
- APPROXIMATE AREA OF EXCAVATION

TITLE
 LOCATION OF MONITORING WELLS AND FORMER TANK PITS

PREPARED FOR:
 HARCROS PIGMENT, INC.

ROUX ROUX ASSOCIATES ENVIRONMENTAL CONSULTING & MANAGEMENT	COMPILED BY: J.F.	DATE: 01/92	FIGURE 2
	PREPARED BY: R.P.	SCALE: AS SHOWN	
	PROJECT MANAGER: P.S.	REVISION: 0	
	PROJECT NO: 19801W01	FILE #: 19801W01	



EXPLANATION

RW-2
4.36

MONITORING WELL LOCATION AND DESIGNATION WITH GROUND WATER ELEVATIONS IN FEET.

—

APPROXIMATE AREA OF EXCAVATION

4.5

GROUND WATER CONTOUR ELEVATIONS.

TITLE

ELEVATION OF GROUND WATER
FEBRUARY 14th, 1992

PREPARED FOR

HARCROS PIGMENT, INC.

ROUX
ROUX ASSOCIATES
ENVIRONMENTAL CONSULTING
& MANAGEMENT

COMPILED BY:	L.H.	DATE:	03/92
PREPARED BY:	R.P.	SCALE:	AS SHOWN
PROJECT MANAGER:	P.S.	REVISION:	0
PROJECT NO.	19801W	FILE #	19801W01

FIGURE

3

APPENDICES

APPENDIX A
Well Sampling Data Forms

WELL SAMPLING DATA FORM

CLIENT: Harcros Pigments

PROJECT NO.: 19801W

LOCATION: 4650 Shellmound Street, Emeryville, California

WELL NUMBER: RW-22

TYPE OF WELL: 4-inch

DATE: February 14, 1992

STORAGE TANK: _____

WEATHER: Cold, rainy, windy

TIME OF START: 0915

SAMPLED BY: Todd Ramsden, John O'Connell

TIME OF FINISH: 1020

DEPTH TO BOTTOM OF WELL: 13.90 FT.
DEPTH TO WATER: 3.06 FT.
WATER COLUMN: 10.84 FT.
VOLUME OF WATER IN WELL: 7.15 GAL.
VOLUME OF WATER TO REMOVE: 21.45 GAL.
VOLUME REMOVED: 22.0 GAL.

RATE OF PURGE: Not measured

METHOD OF PURGE: Bailing

PHYSICAL APPEARANCE/COMMENTS:

Reddish, low turbidity

FIELD MEASUREMENTS:

TIME: 09351

pH: 6.20

COND: 1288 micromhos

TEMP: 19°C

TURB: Low

Eh: Not measured

O²: Not measured

TYPES OF SAMPLES COLLECTED:

Two 40-milliliter vials

LABORATORY NAME & LOCATION:

Curtis & Tompkins, Ltd.
2323 Fifth Street, Berkeley, California

ROUX ASSOCIATES

APPENDIX B
Chain-of-Custody Documentation

106551



CHAIN OF CUSTODY

Nº 00292W

ROUX ASSOCIATES INC Consulting Ground-Water Geologists & Engineers	1340 ARNOLD DRIVE, SUITE 231 MARTINEZ, CALIFORNIA 94553 (415) 370-2275 FAX. (415) 370-2235	ANALYSES	PAGE OF
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PROJECT NAME HARCOS Pigments	PROJECT NUMBER 19801W	SAMPLE MATRIX volatile organic compounds EPA 624	TOTAL BOTTLES
PROJECT LOCATION 4650 Shellmound St. Emeryville, CA.			
SAMPLER(S) TR, FCC			

SAMPLE DESIGNATION/LOCATION	DATE COLLECTED	TIME COLLECTED	WATER	X						NOTES
RW-22	2/14/92	1020	water	X						2

RELINQUISHED BY: (SAMPLER'S SIGNATURE) <i>John W. Kamm</i>	FOR <i>ROUX</i>	DATE <i>2/14/92</i>	TIME <i>1050</i>	SEAL INTACT <input checked="" type="radio"/> OR N	RECEIVED BY: (SIGNATURE) <i>Scott B...</i>	FOR <i>GFT Berkeley</i>	DATE <i>2/14/92</i>	TIME <i>1030</i>	SEAL INTACT <input checked="" type="radio"/> OR N
RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	SEAL INTACT Y OR N	RECEIVED BY: (SIGNATURE)	FOR	DATE	TIME	SEAL INTACT Y OR N
RELINQUISHED BY: (SIGNATURE)	FOR	DATE	TIME	SEAL INTACT Y OR N	RECEIVED BY: (SIGNATURE)	FOR	DATE	TIME	SEAL INTACT Y OR N

DELIVERY METHOD	COMMENTS STANDARD TURN AROUND TIME
ANALYTICAL LABORATORY CURTIS + TOMPKINS, Berkeley, CA	

APPENDIX C
Laboratory Analytical Reports

RECEIVED MAR 10 1992



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

DATE RECEIVED: 02/14/92

DATE REPORTED: 03/02/92


LABORATORY NUMBER: 106551

CLIENT: ROUX ASSOCIATES, INC.

PROJECT ID: 19801W

LOCATION: HARCROS DIESEL

RESULTS: SEE ATTACHED


Reviewed By


Reviewed By

Berkeley

Wilmington

Los Angeles

LABORATORY NUMBER: 106551-1
 CLIENT: ROUX ASSOCIATES, INC.
 PROJECT ID: 19801W
 LOCATION: HARCROS DIESEL
 SAMPLE ID: RW-22

DATE RECEIVED: 02/14/92
 DATE ANALYZED: 02/26/92
 DATE REPORTED: 03/02/92

EPA METHOD 8240: VOLATILE ORGANICS IN WATER

COMPOUND	Result ug/L	Reporting Limit (ug/L)
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl chloride	ND	10
Chloroethane	ND	10
Methylene chloride	ND	20
Acetone	ND	20
Carbon disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
cis-1,2-Dichloroethene	5.6	5.0
trans-1,2-Dichloroethene	5.3	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5.0
Carbon tetrachloride	ND	5.0
Vinyl acetate	ND	10
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethylene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
2-Chloroethylvinyl ether	ND	10
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethylene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethyl benzene	ND	5.0
Styrene	ND	5.0
Total xylenes	ND	5.0

ND = Not detected at or above reporting limit

QA/QC SUMMARY: SURROGATE RECOVERIES

1,2-Dichloroethane-d4	111 %
Toluene-d8	107 %
Bromofluorobenzene	97 %