



COUNTY OF SONOMA
DEPARTMENT OF HEALTH SERVICES

Mark A. Kostielney - Director

Sharon Aguilera - Assistant Director

Environmental Health Division

Jonathan J. Krug - Director

July 30, 2004

File of

COPY

Mr. Bill McMurtry
Darling International, Inc.
251 O'Conner Ridge Boulevard, Suite 370
Irving, TX 75038-6525

RECEIVED

AUG 9 REC'D

FIRE MARSHAL'S OFFICE

Re: 2592 Lakeville Highway, Petaluma
Site # 00001359, SFBRWQCB, #49-0142

Dear Mr. McMurtry:

This letter confirms the completion of site investigation and remedial action for the underground storage tanks formerly located at the above-described location. Thank you for your cooperation throughout this investigation. Your willingness and promptness in responding to our inquiries concerning the former underground storage tanks are greatly appreciated.

Based on information in the above-referenced file and with the provision that the information provided to this agency was accurate and representative of site conditions, this agency finds that the site investigation and corrective action carried out at your underground storage tank(s) site is in compliance with the requirements of subdivisions (a) and (b) of Section 25296.10 of the Health and Safety Code and with corrective action regulations adopted pursuant to Section 25299.3 of the Health and Safety Code and that no further action related to the petroleum release(s) at the site is required.

This notice is issued pursuant to subdivision (h) of Section 25296.10 of the Health and Safety Code. Please contact our office if you have any questions regarding this matter.

Sincerely,

JONATHAN J. KRUG, R.E.H.S.
Director of Environmental Health

Case Closure Summary
Leaking Underground Fuel Storage Tank Program

I. Agency Information

Date: July 18, 2003

Agency name: Sonoma County Dept. Health Services	Address: 3273 Airway Drive, Suite D
City/State/Zip: Santa Rosa, CA 95403	Phone: (707) 565-6573
Responsible staff person: Dale Radford	Title: Civil Engineer

II. Case Information

Site facility name: Royal Tallow & Soap Co.				
Site facility address: 2592 Lakeville Highway, Petaluma, CA 94952				
RB LUSTIS #49-0142	SWEEPS # NA	LOP #00001359	URF filing date: August 3, 1989	Local # NA
Responsible party		Address		Phone number
Darling International, Inc.		251 O'Conner Ridge Blvd., Suite 100, Irving, TX 75038		(214)717-0300
Tank #	Size in gal.	Contents	Closed-in-place/removed?	Date
1	1,000	Regular leaded gasoline	Removed	June 30, 1990
2	2,000	Regular leaded gasoline	Removed	June 30, 1990

III. Release and Site Characterization Information

Cause and type of release: holes in tanks, fuel hydrocarbons			
Site characterization complete? YES		Date approved by oversight agency: July 15, 2003	
MW installed? YES	Number: 10	Proper screened interval: YES, 2.5 to 13 ft. BGS, total well depth = 15 ft.	
Highest GW depth BGS: 0.64	Lowest depth: 7.52	Flow direction: south/southwest	
Most sensitive current use: Estuary			
Are drinking water wells affected? no		Aquifer name: Petaluma Valley (2-1)	
Is surface water affected? no		Nearest SW name: Petaluma River, 2000' sw/Adobe Creek 1300' east	
Off-site beneficial use impacts (addresses/locations): none			
Report(s) on file? YES		Where is report(s) filed: Sonoma County Department of Health Services	
Treatment and Disposal of Affected Material			
Material	Amount (include units)	Action (treatment or disposal w/ destination)	Date
Tanks	2	Erickson, Inc., Richmond, CA	7/5/89
Piping	Unknown	Erickson, Inc., Richmond, CA	7/5/89
Free product	Unknown	Present in excavation but no action taken	1988
Soil	2,400 cubic yards	Treated onsite and used for backfill	11/00 to 6/01
Groundwater	88,000 gal.	Storm and groundwater pumped to storm drain under permit	12/00 and 6/01
Barrels	2	Will be disposed after monitoring well destruction	

Case Closure Summary

Case and Site Characterization Information (continued)

Site Address: 2592 Lakeville Highway, Petaluma, CA

Maximum Documented Contaminant Concentrations Before and After Cleanup

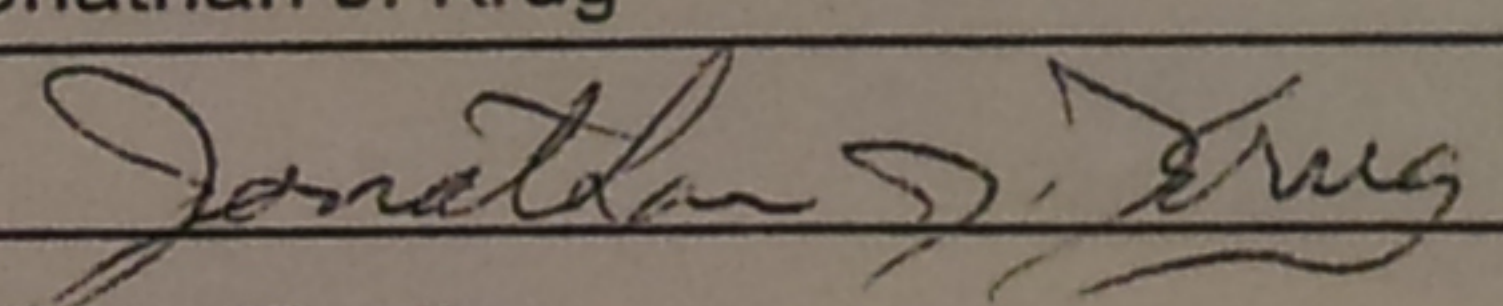
Contaminant	Soil (ppm)		Water (ppm)		Contaminant	Soil (ppm)		Water (ppm)	
	Before	After	Before	After		Before	After	Before	After
	TPH (gas)	2,900	438	125		<.05	Xylene	303	10.4
TPH (diesel)	NA	NA	NA	NA	Ethylbenzene	61.7	8.25	2.2	<.001
Benzene	19.7	.569	21.8	<.001	Oil & grease	NA	NA	NA	NA
Toluene	151	.609	16.0	<.001	Heavy metals	NA	NA	NA	NA
MTBE	NA	NA	<.005	<.001	1,2-DCA	NA	NA	.0067	.0016

Comments (depth of remediation, etc.): NA=not analyzed. Shallow soil remediation, <3 meters. Cleanup levels are equal to RBSLs
 Groundwater is not a potential source of drinking water. Excavated soil was treated with proprietary additive, biodegraded and used
 as backfill. Excavation naturally filled with groundwater and storm water while soil was being treated. Accumulated water was
 pumped to a storm drain under permit.

IV. Closure

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? YES		
Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? YES		
Does corrective action protect public health for current land use? YES		
Site management requirements: Future site development should address the presence of residual soil contamination, proper handling and disposal. Site Safety Plan needed if future development is planned.		
Should corrective action be reviewed if land use changes? YES		
Monitoring wells decommissioned? some	Number decommissioned: 6	Number retained: 4
List enforcement actions taken: NONE		
List enforcement actions rescinded: NONE		

V. Local Agency Representative Data

Name: Jonathan J. Krug	Title: Director of Environmental Health
Signature: 	Date: 7-21-03

VI. RWQCB Notification

Date submitted to RB: 7/28/03	RB Response: <i>Concerns with closure recommendation</i>
RWQCB staff name: <i>John Jung (John Jung)</i>	Title: <i>WRCE</i> Date: 8/5/03

VII. Additional Comments, Data, etc.

Six monitoring wells destroyed prior to over excavation of contaminated soil. Remaining four wells will be destroyed by RP after closure concurrence by SFBRWQCB. Analytical results of accumulated storm and ground water indicate TPHg, BTEX and MTBE were non-detect prior to discharge to storm drain.



COUNTY OF SONOMA
PUBLIC HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH SERVICES

MARK A. KOSTIELNEY
Director of Public Health
GEORGE R. FLORES, M.D.
Health Officer

1030 CENTER DRIVE, SUITE A • SANTA ROSA • CALIFORNIA 95403-2067 • TELEPHONE (707) 525-6500

June 12, 1991

Ms. Jennifer Barrett
City of Petaluma
Community Development
and Planning Department
P.O. Box 61
11 English Street
Petaluma, CA 94953

FIRE MARSHALS
office

JUN 17 1991

RECEIVED

Subject: Lakeville Highway Road Widening

Dear Ms. Barrett;

Petroleum hydrocarbon contamination of the soil and/or groundwater exists, and the extent of contamination has not been fully defined, at the following sites in or near the area of the proposed widening of Lakeville Highway:

950 Lakeville	Kaiser Sand & Gravel
1000 Lakeville	McPhails
1001 Lakeville *	Lakeville Shell
1004 Lakeville	Don's Plumbing
1051 Lakeville *	Courtesy Auto & Truck Repair
1731 Lakeville *	Big 4 Rents
2592 Lakeville	Royal Tallow & Soap ✓
2601 Lakeville *	Beacon Station
2700 Lakeville	Petaluma Poultry Processors
3200 Lakeville	Stero Dishwashing Machines

The addresses that are followed by the asterisk are the sites most critical to the road widening. These sites all involve groundwater contamination. Remediation of contaminated groundwater may not interfere with the project, but remediation of soil contamination existing at or above the water table could possibly involve the roadway. Further investigation is required at these sites.

Please contact me at (707) 525-6573 if you need any further information regarding these sites.

Sincerely,

MARY ANN METZLER
Geologist

cc: Charles Noyes, SFBRWQCB
Clyde Thomas, City of Petaluma Fire Department

CITY OF PETALUMA
Post and English Streets
Petaluma, California 94952

REQUEST FOR REVIEW AND COMMENTS

DATE: October 10, 1975

TO: Fire Chief
Asst. City Engineer
Chief Bldg. Inspector

In Reply Refer To:

Richard D. A. Anderson
Associate Planner

FROM: Planning Department

SUBJECT: MCR Inc., Site Design Review & Use Permit Application for
a Meat De-Boning Plant to be Located Adjacent to Royal Tallow
Meat Rendering at 2592 Lakeville Hwy.

The subject project has been submitted to this office for processing. It would be appreciated if your office would review the attached applicable materials, provide your comments or recommendations in the space provided below, and return one copy to this office.

This project has been tentatively scheduled for the Planning Commission meeting to be held on November 4, 1975. In order to meet this deadline, information should be received by this office not later than October 23, 1975.

COMMENTS OF REVIEWING DEPARTMENT/AGENCY:

10-21-75

WATER SUPPLY FOR THIS FACILITY IS PROVIDED
BY HOLDING PONDS AT SOUTH CORNER OF PROPERTY.

SITE DESIGN REQUIREMENTS FOR THIS PROJECT
ARE: 1. IMPROVE FIRE DEPARTMENT ACCESS
TO HOLDING PONDS, TO SUPPORT FIRE
APPARATUS.
2. MAINTAIN FIRE DEPARTMENT ACCESS TO
HOLDING PONDS.

C. Thomas
Fire Marshal



COUNTY OF SONOMA
PUBLIC HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH SERVICES

MARK A. KOSTIELNEY
Director of Public Health
GEORGE R. FLORES, M.D.
Health Officer

1030 CENTER DRIVE, SUITE A • SANTA ROSA • CALIFORNIA 95403-2067 • TELEPHONE (707) 525-6565

October 15, 1990

FIRE MARSHALS
office

OCT 18 1990

RECEIVED

Mel Roshanravan
Vice President of Environmental Affairs
Darling-Delaware Co., Inc.
8737 King George Drive, Ste. 200
Dallas, TX 75235

Subject: Site Investigation #1359 at 2592 Lakeville Highway, Petaluma, CA

On September 5, 1990, this Department received the Site Characterization Report from Ecology & Environment, Inc. (E & E). I would like to compliment you and your consultant on the quality and thoroughness of the report submitted for my review. In my August 27, 1990 letter, I stated that reports are due within 30 days of fieldwork. I would like to correct that statement, workplans are due within 30 days of a request, technical reports are generally submitted for review within 60 to 90 days. The six month delay for receipt of this report was not acceptable. However, if future in-depth reports similar to this require more than 60 days to complete, it is recommended that a written request for an extension be submitted prior to the deadline. I would also recommend submitting a copy of the analytical laboratory report as soon as it is available. Part of my responsibilities include informing the public on a monthly basis of the status of sites with contaminated groundwater.

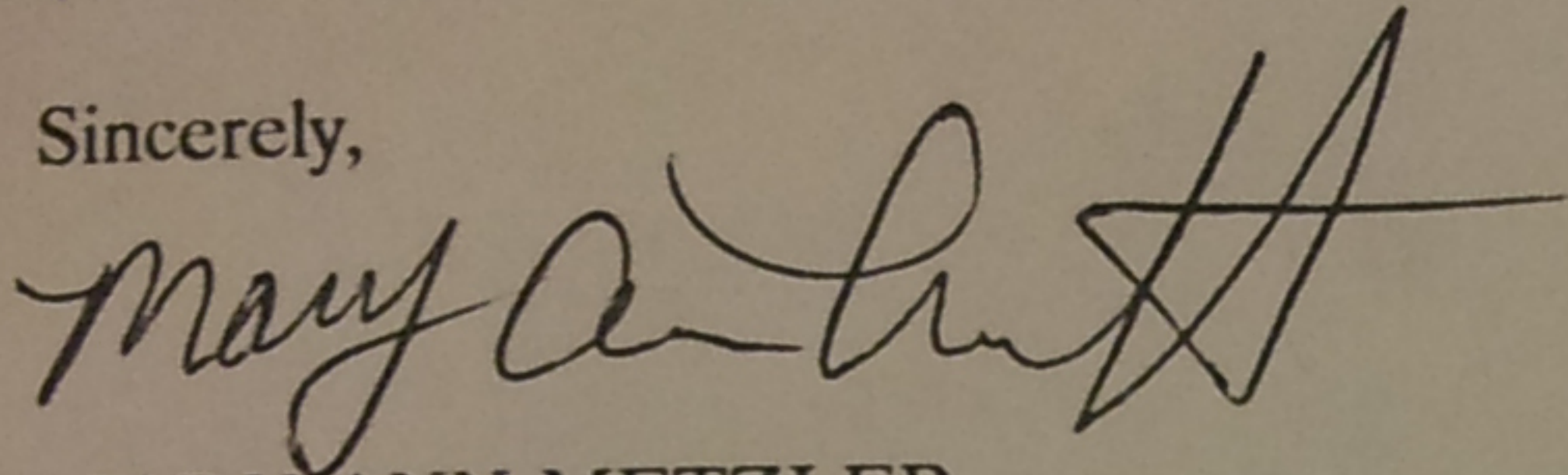
The following comments are based on review of the report:

1. Be advised that this Department has been told that electrical tape may cause toluene to be detected in samples.
2. Soil should be disposed prior to the rainy season.
3. Future reports should include all pH, conductivity, and temperature measurements taken prior to groundwater sampling.
4. A monitoring well is required within 10 feet of each tank excavation in the verified downgradient direction. Monitoring wells W-2 and W-3 appear to be directly downgradient on June 1, 1990. However, they do not appear to be downgradient on April 3, May 3 and July 10, 1990. Additional wells may be required on the west side of the excavations. Continue to measure water levels and the groundwater flow direction monthly.
5. Detection limits were higher than the minimum requirement in the Tri-Regional Guidelines (enclosed). Non-detectable results cannot be considered valid unless minimum detect limits are met.

6. Beneficial uses of water include more than domestic and agricultural uses. Groundwater remediation will be required to non-detectable levels, unless otherwise stated in writing by this Department or the San Francisco Regional Water Quality Control Board.

A workplan to further define the extent of contamination should be submitted by November 15, 1990. This office is to be notified at least 48 hours prior to any fieldwork at the site, and a tentative schedule for fieldwork should be submitted immediately. Please do not hesitate to contact me at (707) 525-6573 if you have any questions.

Sincerely,



MARY ANN METZLER
Geologist

MAM/ss

Enc: Tri-Regional Guidelines

cc: Charles Noyes, San Francisco Regional Water Quality Control Board
Clyde Thomas, Petaluma Fire Department
Ed Jenkins, Royal Tallow & Soap Company
Steve Morin, Ecology & Environment

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Sep
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Dec

PETALUMA FIRE MARSHAL'S OFFICE
INSTALLATION AND MAINTENANCE
PERMIT APPLICATION

(When signed and fees paid, Application becomes Permit)

Permit # 19/68 ► **POST IN A CONSPICUOUS PLACE** ◀ DATE 6-26-89
 24-Hour Notice is Required
 Acct. # 2267 for Inspection Service
FIRE **778-4389**
 Applicant ROCKWELL ENGINEERING Phone 545-6766
 Address 11 WEST NINTH ST., SUNNYvale, CA 95461
 Owner ROYAL TALLEW & SONS Phone _____
 Address P.O. BOX 85006, S.F., CA 94
 Location of Work 2542 LAKEVILLE HWY
 Project Name ROYAL TALLEW

INSTALLATION IS TO BE IN ACCORDANCE WITH FIRE PREVENTION CODE
AND OTHER FIRE PREVENTION REGULATIONS

FIRE ALARM SYSTEMS		SPRINKLER SYSTEMS	
# of Detectors	\$	# of Heads	\$
Communication Center		Fire Service Size	
Connection	\$	Inches	
Flammable Liquid		Special Fire	
Tanks Installed	\$	Protection System	
Tanks Removed <u>2</u>	\$ <u>50.00</u>	Type	\$
Flammable Liquid &			
Vapor Piping	\$		

Fee Received \$ 50.00 Cash Check # 15252
 Applicant Signature: [Signature] Date 6/26/89

INSPECTION RECORD

Date	Type	Init.	Date	Type	Init.
6-30-89	2TKS out		7-5-89	CK LEC LESS THAN	
	1, 2,000 GAC			20% ON TUSHP	<u>JA</u>
	1- 1,000 GAC				
	LEC of 80% FAIL				

Permit Issued By [Signature] Date: 6-27-89

Worker Compensation Insurance Certificate on file with City of Petaluma yes

PERMIT RECORD

STREET ADDRESS:

**COUNTY ASSESSOR'S
PARCEL NUMBER**

— *P. Casa Grande - AKA 2044 Lakemille Hwy*

LOT	SUBDIV.	ZONING DIST.	FIRE ZONE	OCCUP.	OTHER.
					<i>Royal Yellow</i>
TYPE OF PERMIT	PERMIT NO.	PLAN NO.	DATE ISSUED	OTHER	REMARKS
	<i>20080385</i>		<i>4/24/2008</i>		<i>STRUCTURAL PERMIT</i>
					<i>ALSO</i>

PERMIT DESIGNATION:
 B - BUILDING E - ELECTRICAL U - USE PERMIT HM - HOUSE MOVING
 P - PLUMBING V - VARIANCE
 T - TRAILER H - HEATING



CITY OF PETALUMA
COMMUNITY DEVELOPMENT DEPARTMENT
 11 ENGLISH STREET, PETALUMA, CA 94952
 (707) 778-4302 Fax (707) 778-4498

Permit to Perform Work

Permit Number: 20080389

Inspection Request: (707) 778-4479

LICENSED CONTRACTORS DECLARATION
 I hereby affirm under penalty of perjury that I am licensed under the provisions of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code and my license is in full force and effect.

License No. _____ Class _____ Exp. Date _____
WORKERS COMPENSATION DECLARATION
 I hereby affirm under penalty of perjury one of the following declarations:
 I have and will maintain a certificate of consent to self-insure for workers compensation as provided for by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued.

I have and will maintain workers compensation insurance, as required by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued. My workers compensation insurance carrier, policy number and expiration date are:

Carrier: _____ Policy No. _____ Exp. Date _____
 I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the workers compensation laws of California, and agree that if I should become subject to the workers compensation provisions of Section 3700 of the Labor Code, I shall forthwith comply with these provisions or this permit shall be deemed revoked.

WARNING: FAILURE TO SECURE WORKERS COMPENSATION COVERAGE IS UNLAWFUL, AN SHALL SUBJECT AND EMPLOYER TO CRIMINAL PENALTIES AND CIVIL CRIMES UP TO ONE HUNDRED THOUSAND DOLLARS (\$100,000) IN ADDITION TO THE COST OF COMPENSATION, DAMAGES AS PROVIDED FOR IN SECTION 3700 OF THE LABOR CODE, INTEREST, AND ATTORNEY'S FEES.

OWNER-BUILDER DECLARATION
 I hereby affirm under penalty of perjury that I am exempt from the Business and Professions Code, Chapter 9, Division 3, for the following reasons:
 I, as owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale.

I, as owner of the property, am exclusively contracting with licensed contractors to construct the project.
 I certify that I have read this application and state that the information given is true and correct. I agree to comply with all City ordinances and State laws relating to building construction and hereby authorize representatives of the City to enter upon the aforementioned property for inspection purposes at any time, and I make this statement under penalty of law.

HAZARDOUS MATERIALS
 Hazardous Materials: Indicate if the intended occupancy will use chemicals. Initialing Yes acknowledges that Health & Safety Code Sections 25505, 25533 & 25534 as well as filing directions were made available to you. YES _____ NO _____
CONSTRUCTION LENDING AGENCY
 I hereby affirm that there is a construction lending agency for the performance of the work for which this permit is issued (Section 3097, Civil Code)

Lenders Name: _____
 Lenders Address: _____

I certify that I have read this application and state that the above information is correct. I agree to comply with all City and County ordinances and State laws relating to building construction, and hereby authorize representatives of this agency to enter upon the above-mentioned property for inspection purposes. I further agree to save, indemnify and hold harmless the City of Petaluma against liabilities, judgments, costs and expenses, which may in any way accrue against the City in consequence of the granting of this permit and will pay all expenses including attorney's fees in connection therewith. All work performed by virtue of this permit must conform to plans and specifications filed by the owner or his/her authorized agent with the City. This permit does not constitute approval of any violation of the above-recited provisions, nor of any State or City ordinance.

Signature: _____ Date: _____

THIS PERMIT SHALL EXPIRE BY LIMITATION IF AUTHORIZED WORK IS NOT COMMENCED WITHIN 180 DAYS OF ISSUANCE OR IS ABANDONED FOR 180 DAYS OR MORE (PER CALIFORNIA BUILDING CODE AND PETALUMA MUNICIPAL CODE).

Description of Work:
 "ROYAL TALLOW" SITE - AKA 2044 LAKEVILLE & 2596 CASA GRANDE RD. DEMOLISH & REMOVE COMMERCIAL FACILITY BUILDINGS AND ASSOCIATED BUILDINGS DOWN TO CLEAN DIRT. CLEAR PROPERTY OF ANY DEBRIS.

Date Applied: 04/21/2008
Date Issued: May 16 2008 12:00AM

Permit Type: Building/Building/
 Demolition/NA

Job Address: 0 CASA GRANDE RD
 PETALUMA CA

Parcel No.: 005060041, 005060042

Owner: LANDS OF BAYWOOD LLC
 414 AVIATION BLVD
 SANTA ROSA, CA 95407
 578-5344

Applicant: DAVIS, DANIEL O INC
 1051 TODD RD
 SANTA ROSA, CA 95407
 585-1903

DAVIS, DANIEL O INC
 1051 TODD RD
CONTRACTOR: SANTA ROSA, CA 95407
 585-1903
 431984

Valuation: \$ 100,000.00
(Contractor)

Fee Information:

Fee Items	# of Each	Amount
Demolition Permit (enter 1)	1.00	\$1,446.57
Incremental Records Fee (enter 1)	1.00	\$610.00
Microfilm - 8.5x11 (each)	1.00	\$2.50
Microfilm - Lg. Plans / Blue Prints (each)	2.00	\$8.50
FirePlanCheckFee - Grading (Soil Remediation) (enter 1)	1.00	\$475.00
Demo Plan Check Fee (enter 1)	1.00	\$1,446.57
Total		\$3,989.14

Payment Information:

Date	Receipt No.	Amount
04/21/2008 15:54:22		\$1,446.57
05/16/2008 11:25:11	17829	\$2,542.57
Total		\$3,989.14

CITY OF PETALUMA
PLANNING/BUILDING
 MAY 16 2008

PAID

0 Casa Grande Rd

FILE COPY

131) SPECIAL INSPECTION REQUIRED YES NO IF YES, SEE ADDITIONAL SHEET

INSPECTION RECORD	DATE	NAME	REMARKS
103) FOUNDATION			
FORMS/SETBACK			
FOOTING			
WALLS			
106) UFER GROUND #			
104) CAISSONS/PIERS			
105) SLAB REINFORCING			
107) UNDERGROUND UTILITIES			
<input type="checkbox"/> SEWER <input type="checkbox"/> WATER <input type="checkbox"/> FIRE			
110) MASONRY			
109) RETAINING WALLS			
120) UNDERSLAB			
<input type="checkbox"/> PLUMBING <input type="checkbox"/> ELECTRICAL			
115) HYDRONICS			
116) U/F ELECTRICAL			
117) U/F MECHANICAL			
118) U/F PLUMBING			
119) U/F FRAMING			
139) U/F INSULATION			
126) SHEAR WALLS			
<input type="checkbox"/> INTERIOR <input type="checkbox"/> EXTERIOR			
127) DIAPHRAGMS			
<input type="checkbox"/> ROOF <input type="checkbox"/> FLOOR			
137) Roofing Progress			
134) SIDING/SHEATHING			
125) HOLD DOWNS			
132) CLOSE-IN			
122) ROUGH ELECTRICAL			
123) ROUGH MECHANICAL			
124) ROUGH PLUMBING			
128) ROUGH FRAME			
759) FIRE SPRINKLER/CLOSE-IN/HYDRO			
139) INSULATION			
<input type="checkbox"/> WALLS <input type="checkbox"/> CEILING			
142) WALLBOARD			
143) FIREWALLS			
135) STUCCO/PLASTER			
<input type="checkbox"/> LATH <input type="checkbox"/> SCRATCH			
130) TUB/SHOWER PAN			EXTERIOR WILDFIRE CONSTRUCTION
			DEFENSIBLE SPACE-(FIRE TO VERIFY)
			CLASS A ROOF
164) SUSPENDED CEILING			<ul style="list-style-type: none"> • VALLEY INTERWOVEN COMP SHINGLE (IF APPLICABLE) • METAL FLASHING OVER #72 ASTM CAP SHEET (IF APPLICABLE)
<input type="checkbox"/> ROUGH ELEC. <input type="checkbox"/> ROUGH MECH.			
171) TEMPORARY ELECTRICAL			ROOF GUTTER PROVIDED WITH MEANS TO PREVENT ACCUMULATION
172) TEMPORARY GAS			EAVE AND CORNICE VENTS NOT PERMITTED UNLESS PROVIDED WITH FLAME INTRUSION ASSEMBLY
174) ELECTRIC METER AUTHORIZATION			NON-COMBUSTIBLE EXTERIOR
175) GAS METER AUTHORIZATION			DOUBLE PANE WINDOWS W/ONE TEMPERED PANE
153) GAS PRESSURE TEST			NON-COMBUSTIBLE OR SOLID CORE EXTERIOR DOOR(S)
<input type="checkbox"/> HOUSE <input type="checkbox"/> YARD			FIRE INSPECTION REQUIRED
			<input type="checkbox"/> YES <input type="checkbox"/> NO
			FOR FIRE INSPECTION CALL 778-4399
194) PRE-GUNITE/POOL PIPING			772) FUEL TANK/DISPENSOR
195) PRE-DECK			776) FIRE HYDRANTS/UNDERGROUND
196) PRE-PLASTER/FENCE			770) FIRE SPRINKLER FINAL
197) PREFAB/POOL EXCAVATION/PIPING			779) ALARM SYSTEM
ANTI-ENTRAPMENT COVER			780) HOOD & DUCT SYSTEM
<input type="checkbox"/> VERIFIED <input type="checkbox"/> N/A			
			CLEARANCES/CERTIFICATE OF OCCUPANCY:
			FIRE
			HEALTH DEPARTMENT
			PLANNING
			PUBLIC WORKS
			WATER
			ROLLED PLANS <input type="checkbox"/> YES <input type="checkbox"/> NO
102) SIGN FINAL			
176) ELECTRICAL FINAL			
177) MECHANICAL FINAL			
178) PLUMBING FINAL			
199) BUILDING FINAL			
OCCUPANCY (OK TO OCCUPY)	09/12/30/09		



CITY OF PETALUMA

POST OFFICE BOX 61
PETALUMA, CA 94953-0061

October 28, 2009

Pamela Torliatt
Mayor

Teresa Barrett
David Glass
Mike Harris
Mike Healy
David Rabbitt
Tiffany Renée
Councilmembers

Lands of Baywood LLC or Current Owner
414 Aviation Blvd.
Santa Rosa, CA 95407

RE: Address: 0 Casa Grande Road Permit #: 20080389

Dear Sir or Madam,

Our records indicate that an outstanding building permit exists for your property. A review of the permit file verified that the work has not been inspected for over 180 days and per the 2007 California Building Code Sections 106.4.4 and 107.4, the permit has expired. We are giving you this last opportunity to final the following permit(s):

Project: Royal Tallow site – demolition of entire site
Date Issued: 5/16/08
Last Inspected: never

We would like to validate the work performed under the above permit(s). If no work has been performed, and you wish to keep the permit active, please respond in writing to request a one-time 180 day extension on the above permit(s). Please call (707) 778-4479 to schedule an inspection, or provide your records to us showing that inspections have been performed and the permit has been finalized. You may do this by:

- 1) Mailing a copy of the permit to the Building Division,
- 2) Faxing a copy of the permit to the Building Division at (707) 778-4498,
- 3) Bringing a copy of the permit to the Building Division office at City Hall.

This letter is formal notification that if we do not hear from you within **10 working days** from the date of this letter, the permit will be expired and become null and void. Our records will indicate that the work was done without a finalized permit, and that no further permits of any kind will be issued until this matter is resolved. Notification of this action will be recorded in our permit tracking system, and is public record. Please contact our office with any questions you may have, as we would like to assist you in this process. When calling this office, please make reference to this letter.

Sincerely,

Edward John Hamer
Chief Building Official
City of Petaluma



Community Development
Department
11 English Street
Petaluma, CA 94952
E-Mail
cdd@ci.petaluma.ca.us

Building
Phone (707) 778-4301
Fax (707) 778-4498
To Schedule Inspections:
Phone (707) 778-4479

Planning
Phone (707) 778-4301
Fax (707) 778-4498



CITY OF PETALUMA

11 English Street
Petaluma, CA 94952

Office: (707) 778-4302 Fax: (707) 778-4498

LM 5/14/09

CONTRACTOR ONLY PERMIT WORKSHEET

Permit # 20080389

BUILDING ADDRESS <u>2044 Lakeville Hwy</u> <i>of Case Grande Rd</i>		SUBDIVISION/LOT #		PARCEL # 005-060-075
OWNER NAME Lands of Baywood, LLC			(H) PHONE	(W) PHONE 707/578-5344
OWNER MAIL ADDRESS 414 Aviation Blvd.	CITY Santa Rosa	STATE Ca	ZIP 95403	
ARCHITECT/DESIGNER	LICENSE NO.	PHONE		
MAIL ADDRESS	CITY	STATE	ZIP	
ENGINEER	LICENSE NO.	PHONE		
MAIL ADDRESS	CITY	STATE	ZIP	
CONTRACTOR Daniel O. Davis Inc.	LICENSE NO. 431984	PHONE 707/585-1903		
MAIL ADDRESS 1051 Todd Rd	CITY Santa Rosa	STATE Ca	ZIP 95407	

Fund 001-400-0000

- BUILDING
- MECHANICAL
- GRADING
- BUILDING SURVEY
- DEMOLITION
- RE-ROOF
- ELECTRICAL
- PLUMBING
- SIGN
- MOVE BUILDING
- POOL
- FENCE

BUILDING	3321	<i>1446.57</i>
PLAN CHK	3322	<i>1446.57</i>
FIRE PLN CK	3371	<i>475.00</i>
INCREMENTAL	3323	<i>610.00</i>
CSIF/CSIFO	3324	

- NEW
- ALTERATION
- ACCESSORY BLD.
- ASF
- DUPLEX
- CONDO
- ADDITION
- REPAIR
- RESIDENTIAL
- DSF
- APARTMENT
- COMMERCIAL

ENERGY	3325	
ELECTRICAL	3326	
MECHANICAL	3327	
PLUMBING	3327	
MICROFILM	3312	<i>12.00</i>
MINEN/MINER	3329	

\$ 3,989.14
(1,446.57)

FLOOR AREA (Sq. ft.) <i>40,940</i>	REMODEL FLOOR AREA (Sq. ft.)	VALUATION <i>\$ 100,000</i>	<i>\$ 2,542.57</i>
GARAGE AREA (Sq. ft.)	REMODEL GARAGE AREA (Sq. ft.)	MAX OCC	STORIES
DECK AREA (Sq. ft.)	REMODEL DECK AREA (Sq. ft.)	GROUP	TYPE
BEDROOMS		CBC 2001	NEC 1999

PROPOSED WORK: *Demolish and remove commercial facility.*
Buildings and associated buildings to clean dirt.
Clear property of misc. debris.

(OVER)

CONSTRUCTION LENDING AGENCY. I hereby affirm that there is a construction lending agency for the performance of the work for which this permit is issued. (Sec. 3097, Civ. C)

LENDER NAME N/A
MAILING ADDRESS CITY STATE ZIP

I hereby affirm under penalty of perjury that I am licensed under the provisions of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code, and my license is in full force and effect.

LICENSE CLASS A, C21 STATE LICENSE NUMBER 431984 EXPIRE DATE 12/31/08

Hazardous Materials: Indicate if the intended occupancy will use chemicals. Initialing YES acknowledges that H & S Code Sections 25505, 25533 & 25534 as well as filing directions were made available to you. YES NO X

WORKERS' COMPENSATION DECLARATION I hereby affirm under penalty of perjury one of the following declarations: I have and will maintain a certificate of consent to self-insure for workers' compensation, as provided for by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued. X I have and will maintain workers' compensation insurance, as required by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued. My workers' compensation insurance carrier and policy number are:

Carrier Redwood Fire & Casualty

Policy Number: W-7A38098 Exp: 10/1/08

(*This section need not be completed if the permit is for one hundred dollars (\$100) or less.) I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the workers' compensation laws of California, and agree that if I should become subject to workers' compensation provisions of Section 3700 of the Labor Code, I shall forthwith comply with those provisions.

WARNING: FAILURE TO SECURE WORKERS' COMPENSATION COVERAGE IS UNLAWFUL, AND SHALL SUBJECT AN EMPLOYER TO CRIMINAL PENALTIES AND CIVIL FINES UP TO ONE HUNDRED THOUSAND DOLLARS (\$100,000), IN ADDITION TO THE COST OF COMPENSATION, DAMAGES AS PROVIDED FOR IN SECTION 3706 OF THE LABOR COE, INTEREST AND ATTORNEY'S FEES.

I certify that I have read this application and state that the above information is correct. I agree to comply with all city and county ordinances and state laws relating to building, construction, and hereby authorize representatives of this agency to enter upon the above-mentioned property for inspection purposes. I (we) further agree to save, indemnify and keep harmless the City of Petaluma against liabilities, judgments, costs and expenses which may in any way accrue against said city in consequence of the granting of this permit and will pay all expenses including attorney's fees in connection therewith. All work performed by virtue of this permit must conform to plans and specifications and application filed by the owner or his authorized agent with the Building Inspection Division. This permit does not constitute approval of any violation of the above recited provisions, nor of any state or city ordinance.

Signature X [Handwritten Signature] Print Name X Dustin D Davis Date 4-21-08



CITY OF PETALUMA

POST OFFICE BOX 61
PETALUMA, CA 94953-0061

ENVIRONMENTAL

OCT 21 2003

David Glass
Mayor

Keith Canavero
Mike Harris
Mike Henly
Bryant Moynihan
Mike O'Brien
Pamela Torfitt
Councilmembers

NOTICE AND ORDER

Per The Abatement of Dangerous Buildings Ch. 4

January 2, 2003

To: Darling Delaware Company, Inc.
251 O'Connor Ridge Blvd., Suite 370
Irving, TX 75038-6525

REGARDING ADDRESS: 2592 Lakeville Highway, Petaluma, CA

LOCATION DESCRIPTION: The property is located at the west end of Casa Grande Road. Buildings on the property consist of a Single Family Dwelling, an abandoned industrial tallow plant and several outbuildings, such as barns and garages.

ASSESSOR'S PARCEL NUMBER: 005-060-042

DATE OF INSPECTION: January 31, 2002

CONDUCTING INSPECTION: Clifford Kendall, Deputy Chief Building Official

THE BUILDING OFFICIAL HAS FOUND THE ABOVE BUILDING DANGEROUS AND UNINHABITABLE DUE TO THE BELOW CONDITIONS.

The above referenced structures are hereby declared dangerous and uninhabitable, as per Uniform Code For The Abatement Of Dangerous Buildings, Chapter 3, Section 302 Item # 15 and #18 for the following reasons:

The buildings on the property have been abandoned and because of lack of maintenance and faulty construction have caused dilapidation and deterioration to constitute a public nuisance.

Determination of Chief Building Official

RECEIVED

MAY 15 2008

BUILDING DIV.

10000589

FILE COPY

D1007441

Community Development
Department
11 English Street
Petaluma, CA 94952
E-Mail
cdd@ci.petaluma.ca.us

Code Enforcement
Phone (707) 778-4469
Fax (707) 778-4498
E-Mail
codeenforcement@
ci.petaluma.ca.us

Engineering
Phone (707) 778-4301
Fax (707) 778-4498

Inspection Services
Phone (707) 778-4301
Fax (707) 778-4498
To Schedule Inspections:
Phone (707) 778-4479

Permits
Phone (707) 778-4301
Fax (707) 778-4498

Planning
Phone (707) 778-4301
Fax (707) 778-4498

It is my determination as Chief Building Official that the buildings are to be demolished.

Corrective Action To Be Taken

You must see that the habitants are vacated and permits to demolish all structures on property are obtained and approved by the Building Official within sixty (60) days from the date of the order.

If the work is not commenced within the time specified, I will order the building vacated and posted to prevent further occupancy until the work is complete, and may proceed to cause the work to be done and charge the costs thereof against the property or its owner.

Any person having any record title or legal interest in the property may appeal from the notice and order or any action of the Building Official to the board of appeals, provided the appeal is made in writing as provided in this code and filed with the Building Official within 30 days from the date of service of this notice and order. Failure to appear will constitute a waiver of all right to an administrative hearing and determination of the matter.

CITY OF PETALUMA

ACTION REPORT

Inquiry
 Complaint

Date Received: August 4, 2003

Date Closed:

Name of Caller: Jodi Winters, Trammel Crow Residential
Caller's Address: 2682 Bishop Drive, Suite 101, San Ramon, CA 94583
Caller's Phone Number: 925.901.1896

City Employee/Department Receiving Call: Jane Thomson, Code Enforcement Officer

Address of Inquiry/Complaint: 2044 Casa Grande Road

Received Via: Telephone Letter In Person

Statement as to Nature of Call: Royal Tallow

1. Accessory structure next to property line fencing is disintegrating and falling onto the fence
2. Believes there to be hazardous materials on site that need to be removed/cleaned up
3. The main building is not secured and is an attractive nuisance
4. The property is not secured, and children are accessing it and the buildings

Route to:

<input type="checkbox"/> Animal Control	<input type="checkbox"/> Finance	<input type="checkbox"/> Recreation
<input checked="" type="checkbox"/> Building Division <i>CK/LJS</i>	<input checked="" type="checkbox"/> Fire	<input type="checkbox"/> Sonoma County Health
<input type="checkbox"/> City Attorney	<input type="checkbox"/> Parks	<input type="checkbox"/> Traffic Committee
<input type="checkbox"/> City Clerk	<input checked="" type="checkbox"/> Planning	<input type="checkbox"/> Transit
<input checked="" type="checkbox"/> City Manager	<input type="checkbox"/> Police	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Engineering	<input type="checkbox"/> Public Works	

REPORT OR ACTION TAKEN

(Attach Additional Documentation as Required)

Date: _____ By: _____

Complainant / Inquirer was notified of the outcome of complaint/inquiry by:
Mail / Phone / In Person on: _____ by: _____

H:\jkt\lab\actionreport\2044casagrande

D1007443

City Of Petaluma Parcel Information Report
 APN #005060042

APN	005060042
Address	CASA GRANDE RD
Use Code	0202
Tax Rate Area	003011
Land Size (Sq Ft)	811,523
Owner Name	DARLING DELAWARE COMPANY INC
In Care Of	
Owner Address	251 OCONNOR RIDGE BLVD STE 370
Owner City/State	IRVING TX
Owner Zip	750386525
Com/Ind Year Built	1942
Total Bldg Area (Sq Ft)	000020606
Single Family Res Year Built	1941
Living Area (Sq Ft)	000000962
Bedrooms	02
Bathrooms	01
Total Living Area (Sq Ft)	000000000
Multi Family Res Year Built	0000
Number of Units	000
Number of Structures	01
Sale Price	000000000
Recording Date	010175
Official Record Number	75R2185217

1/27/03

Darling Delaware Company Inc
251 O'Connor ridge Blvd Ste 370
Irving, TX 750386525

RE: Royal Tallow & Soap Co. Inc./ 2592 Lakeville Highway

Dear Sirs:

On June 8, 2001 a demolition permit was issued to Speelman Excavation for the partial demolition of a truck garage (Approx 1200 sq.ft. to be removed) and for the removal of contaminated soil beneath slab to a five-foot depth. As of this date the work has not been completed and no inspections have been requested.

As you may well know there is a large Apartment complex under construction on the adjacent parcel to yours. With this in mind the City of Petaluma is very concerned with the condition of your property. It is the City of Petaluma's desire that you as the legal property owner will acquire permits to remove the potential attractive nuisance that may exist due to the vacated and dilapidated condition of the buildings on your property.

Please contact me upon receipt of this letter to further discuss this matter.

Sincerely,

Clifford Kendall
Deputy Chief Building Official

c: Mike Moore

address file



COMPLIANCE & ENFORCEMENT DIVISION

Regulation 11, Rule 2

Acknowledgement of Notification and Payment of Fees

4/10/2008

Daniel O Davis Inc
1051 Todd Road
Santa Rosa, CA 95407

Job No: 2Y944

Invoice No: 1XN52

The Bay Area Air Quality Management District (BAAQMD) acknowledges receipt of your payment and your Asbestos Removal or Demolition Plan described as: **Demolition**

Site address 2044 Lakeville Hwy
 Petaluma, CA 94954

Start Date April 22, 2008
Completion Date July 22, 2008

Removal amounts of friable ACM linear feet square feet cubic feet

Should it become necessary to revise this plan, please do so in the spaces provided below and immediately copy the District by fax or by mail.

REGULATION 11-2 REVISION

BAAQMD J# 2Y944

REVISION #	START DATE	COMPLETION DATE
1	___/___/___	___/___/___
2	___/___/___	___/___/___
3	___/___/___	___/___/___
4	___/___/___	___/___/___
5	___/___/___	___/___/___

Handwritten signature/initials

NOTE: This form is not intended as a verification of either the completeness of your original notification or of its compliance with BAAQMD Regulation 11-2. If you have any questions about this acknowledgment please call our office at (415) 749-4762.

RECEIVED

APR 21 2008

FILE COPY

Plant number 1300 A1300
Business name Royal Tallow & Soap Co
Location address 2592 Lakeville Hwy
City Petaluma, CA 94952
Telephone 707-762-2731
Mailing address P O Box 738
City Petaluma, CA 94953
SIC
Contact Jake L Gray
Title Manager
Address 2592 Lakeville Hwy
City Petaluma, CA 94952
Telephone (707) 762-2731
Permit engineer Leonard R Clayton (144)
Ownership type Private
Inside city limits Yes
Ceased operation Oct 31, 1986, Closed

Plant #: 1300
Company name: Royal Tallow & Soap Co
Location: 2592 Lakeville Hwy, Petaluma, CA 94952

Application #: 26750
Project title: Not available
Engineer: Wayne E Yeager [295]
Received: 11/21/78
Final disposition: A/C granted, 07/27/79

Application #: 29297
Project title: Not available
Engineer: Leonard R Clayton [144]
Received: 04/05/83
Final disposition: Canceled, 07/01/83

Application #: 30448
Project title: Retro rendering plt
Engineer: Leonard R Clayton [144]
Received: 10/10/84
Final disposition: Waived A/C, 12/10/84



Matthew Rodriquez
Secretary for
Environmental Protection

Department of Toxic Substances Control

Deborah O. Raphael, Director
1001 "I" Street
P.O. Box 806
Sacramento, California 95812-0806



Edmund G. Brown Jr.
Governor

EPA ID PROFILE

ID Number: CAC000162333 **Name :** 1X ROYAL TALLOW AND SOAP
Status: INACTIVE **Inactive Date:** 01/01/1900 **Record Entered:** 03/30/1989 **Last Updated:** 05/02/2000
County: SONOMA **NAICS:** **SIC:**

	Name	Address	City	State	Zip Code	Phone
Location	1X ROYAL TALLOW AND SOAP	2592 LAKEVILLE HWY	PETALUMA	CA	949520000	
Mailing		--	SAN FRANCISCO	CA	941880000	
Owner	DARLING-DELAWARE CORP.	--	--	99	--	0000000000
Operator/ Contact	BARBARA GOMES, SECTY.	--	--	99	--	4156474890

Based ONLY upon ID Number **CAC000162333**

Calif. Manifests ?	Non Calif. Manifests ?	Transporter Registration ?
NO	NO	NO

[California and Non California Manifest Tonnage Total and Waste Code by Year Matrix by Entity Type \(if available\)](#)
are on the next page

The Department of Toxic Substances Control (DTSC) takes every precaution to ensure the accuracy of data in the Hazardous Waste Tracking System (HWTS). However, because of the large number of manifests handled, inaccuracies in the submitted data, limitations of the manifest system and the technical limitations of the database, DTSC cannot guarantee that the data accurately reflect what was actually transported or produced.



Matthew Rodriquez
Secretary for
Environmental Protection

Department of Toxic Substances Control

Deborah O. Raphael, Director
1001 "I" Street
P.O. Box 806
Sacramento, California 95812-0806



Edmund G. Brown Jr.
Governor

EPA ID PROFILE

ID Number: CAC002207113 **Name :** DARLING INTL INC
Status: INACTIVE **Inactive Date:** 06/11/2001 **Record Entered:** 05/02/2000 **Last Updated:** 06/11/2001
County: SONOMA **NAICS:** **SIC:**

	Name	Address	City	State	Zip Code	Phone
Location	DARLING INTL INC	2592 LAKEVILLE HWY	PETALUMA	CA	949520000	
Mailing		251 OCONNOR RIDGE BLVD STE 3	IRVING	TX	750380000	
Owner	DARLING INTERNATIONAL INC	251 OCONNOR RIDGE BLVD STE 3	IRVING	TX	750380000	0000000000
Operator/ Contact	BILL MCMURTRY	251 OCONNOR RIDGE BLVD STE 3	IRVING	TX	750380000	9722814409

Based ONLY upon ID Number **CAC002207113**

Calif. Manifests ?	Non Calif. Manifests ?	Transporter Registration ?
YES	NO	NO

[California and Non California Manifest Tonnage Total and Waste Code by Year Matrix by Entity Type \(if available\) are on the next page](#)

The Department of Toxics Substances Control (DTSC) takes every precaution to ensure the accuracy of data in the Hazardous Waste Tracking System (HWTS). However, because of the large number of manifests handled, inaccuracies in the submitted data, limitations of the manifest system and the technical limitations of the database, DTSC cannot guarantee that the data accurately reflect what was actually transported or produced.

Calif. Manifest Counts and Total Tonnage

Top line represents Manifest Count and Bottom line represents Total Tonnage

	GENERATOR
2000	7 14.3804

Non California Manifest Total Tonnage

**Waste Code By Year By Entity Matrix Report
(based on California Manifests only)**

Calif.	<u>Generator</u>	<u>Transporter 1</u>	<u>Transporter 2</u>	<u>TSDF</u>	<u>Alt. TSDF</u>
RCRA	<u>Generator</u>	<u>Transporter 1</u>	<u>Transporter 2</u>	<u>TSDF</u>	<u>Alt. TSDF</u>

California Waste Code By Year Matrix

ID Number: CAC002207113

Entity Type : GENERATOR

Weight (in Tons)

Ship Years

Calif. Code	Description	2000
181	OTHER INORGANIC SOLID WASTE	2.2500
213	HYDROCARBON SOLVENTS	0.0500
214	UNSPECIFIED SOLVENT MIXTURE	0.0050
221	WASTE OIL AND MIXED OIL	0.5014
222	OIL/WATER SEPARATION SLUDGE	9.1740
223	UNSPECIFIED OIL-CONTAINING WASTE	0.9000
331	OFF-SPEC, AGED, OR SURPLUS ORGANICS	1.3100
551	LABORATORY WASTE CHEMICALS	0.1900
Grand Total		14.3804

RCRA Waste Code By Year Matrix Report

ID Number: CAC002207113

Entity Type: GENERATOR

Weight (in Tons)

RCRA Code	Description	Ship Years
		2000
	Blank/Unknown	14.1354
D001	Ignitable	0.2050
D002	Corrosives	0.0400
Grand Total		14.3804



Matthew Rodriquez
Secretary for
Environmental Protection

Department of Toxic Substances Control

Deborah O. Raphael, Director
1001 "I" Street
P.O. Box 806
Sacramento, California 95812-0806



Edmund G. Brown Jr.
Governor

EPA ID PROFILE

ID Number: CAC002252793 **Name :** DARLING INTERNATIONAL
Status: INACTIVE **Inactive Date:** 09/11/2001 **Record Entered:** 11/01/2000 **Last Updated:** 09/11/2001
County: SONOMA **NAICS:** **SIC:**

	Name	Address	City	State	Zip Code	Phone
Location	DARLING INTERNATIONAL	2592 LAKEVILLE HWY	PETALUMA	CA	949520000	
Mailing		251 O'CONNOR RIDGE BLVD STE 3	IRVING	TX	750380000	
Owner	DARLING INTERNATIONAL INC	251 O'CONNOR RIDGE BLVD STE 3	IRVING	TX	750380000	9722814409
Operator/ Contact	BILL MCMURTRY-VP	251 O'CONNOR RIDGE BLVD STE 3	IRVING	TX	750380000	9722814409

Based ONLY upon ID Number **CAC002252793**

Calif. Manifests ?	Non Calif. Manifests ?	Transporter Registration ?
YES	NO	NO

[California and Non California Manifest Tonnage Total and Waste Code by Year Matrix by Entity Type \(if available\)](#)
are on the next page

The Department of Toxic Substances Control (DTSC) takes every precaution to ensure the accuracy of data in the Hazardous Waste Tracking System (HWTS). However, because of the large number of manifests handled, inaccuracies in the submitted data, limitations of the manifest system and the technical limitations of the database, DTSC cannot guarantee that the data accurately reflect what was actually transported or produced.

Calif. Manifest Counts and Total Tonnage

Top line represents Manifest Count and Bottom line represents Total Tonnage

	GENERATOR
2000	2 1.6956

Non California Manifest Total Tonnage

**Waste Code By Year By Entity Matrix Report
(based on California Manifests only)**

Calif.	<u>Generator</u>	<u>Transporter 1</u>	<u>Transporter 2</u>	<u>TSDF</u>	<u>Alt. TSDF</u>
RCRA	<u>Generator</u>	<u>Transporter 1</u>	<u>Transporter 2</u>	<u>TSDF</u>	<u>Alt. TSDF</u>

California Waste Code By Year Matrix

ID Number: CAC002252793

Entity Type : GENERATOR

Weight (in Tons)

Ship Years

Calif. Code	Description	2000
151	ASBESTOS-CONTAINING WASTE	1.6856
181	OTHER INORGANIC SOLID WASTE	0.0100
Grand Total		1.6956

RCRA Waste Code By Year Matrix Report

ID Number: CAC002252793

Entity Type: GENERATOR

Weight (in Tons)

RCRA Code	Description	Ship Years
		2000
	Blank/Unknown	1.6956
Grand Total		1.6956



Matthew Rodriquez
Secretary for
Environmental Protection

Department of Toxic Substances Control

Deborah O. Raphael, Director
1001 "I" Street
P.O. Box 806
Sacramento, California 95812-0806



Edmund G. Brown Jr.
Governor

EPA ID PROFILE

ID Number: CAC002368151 **Name :** DARLING INTERNATIONAL INC
Status: INACTIVE **Inactive Date:** 01/11/2002 **Record Entered:** 05/15/2001 **Last Updated:** 01/17/2002
County: SONOMA **NAICS:** **SIC:**

	Name	Address	City	State	Zip Code	Phone
Location	DARLING INTERNATIONAL INC	2592 LAKEVILLE HWY	PETALUMA	CA	949520000	
Mailing		251 O'CONNOR RIDGE BLVD STE 3	IRVING	TX	750380000	
Owner	DARLING INTERNATIONAL INC	251 O'CONNOR RIDGE BLVD STE 3	IRVING	TX	750380000	9722814409
Operator/ Contact	BILL MCMURTRY - VP	251 O'CONNOR RIDGE BLVD STE 3	IRVING	TX	750380000	9722814409

Based ONLY upon ID Number CAC002368151

Calif. Manifests ?	Non Calif. Manifests ?	Transporter Registration ?
YES	NO	NO

[California and Non California Manifest Tonnage Total and Waste Code by Year Matrix by Entity Type \(if available\)](#)
are on the next page

The Department of Toxic Substances Control (DTSC) takes every precaution to ensure the accuracy of data in the Hazardous Waste Tracking System (HWTS). However, because of the large number of manifests handled, inaccuracies in the submitted data, limitations of the manifest system and the technical limitations of the database, DTSC cannot guarantee that the data accurately reflect what was actually transported or produced.

Calif. Manifest Counts and Total Tonnage

Top line represents Manifest Count and Bottom line represents Total Tonnage

	GENERATOR
2001	1 0.4214

Non California Manifest Total Tonnage

**Waste Code By Year By Entity Matrix Report
(based on California Manifests only)**

Calif.	<u>Generator</u>	<u>Transporter 1</u>	<u>Transporter 2</u>	<u>TSDF</u>	<u>Alt. TSDF</u>
RCRA	<u>Generator</u>	<u>Transporter 1</u>	<u>Transporter 2</u>	<u>TSDF</u>	<u>Alt. TSDF</u>

California Waste Code By Year Matrix

ID Number: CAC002368151

Entity Type : GENERATOR

Weight (in Tons)

Ship Years

Calif. Code	Description	2001
151	ASBESTOS-CONTAINING WASTE	0.4214
Grand Total		0.4214

RCRA Waste Code By Year Matrix Report

ID Number: CAC002368151

Entity Type: GENERATOR

Weight (in Tons)

RCRA Code	Description	Ship Years
		2001
	Blank/Unknown	0.4214
Grand Total		0.4214



COUNTY of SONOMA
DEPARTMENT OF HEALTH SERVICES

Mark A. Kostielney - Director

Sharon Aguilera - Assistant Director

Environmental Health Division

Jonathan J. Krug - Director

July 30, 2004

Mr. Bill McMurtry
Darling International, Inc.
251 O'Conner Ridge Boulevard, Suite 370
Irving, TX 75038-6525

Re: 2592 Lakeville Highway, Petaluma
Site # 00001359, SFBRWQCB, #49-0142

Dear Mr. McMurtry:

This letter confirms the completion of site investigation and remedial action for the underground storage tanks formerly located at the above-described location. Thank you for your cooperation throughout this investigation. Your willingness and promptness in responding to our inquiries concerning the former underground storage tanks are greatly appreciated.

Based on information in the above-referenced file and with the provision that the information provided to this agency was accurate and representative of site conditions, this agency finds that the site investigation and corrective action carried out at your underground storage tank(s) site is in compliance with the requirements of subdivisions (a) and (b) of Section 25296.10 of the Health and Safety Code and with corrective action regulations adopted pursuant to Section 25299.3 of the Health and Safety Code and that no further action related to the petroleum release(s) at the site is required.

This notice is issued pursuant to subdivision (h) of Section 25296.10 of the Health and Safety Code. Please contact our office if you have any questions regarding this matter.

Sincerely,

JONATHAN J. KRUG, R.E.H.S.
Director of Environmental Health

Case Closure Summary

Leaking Underground Fuel Storage Tank Program

I. Agency Information

Date: July 18, 2003

Agency name: Sonoma County Dept. Health Services	Address: 3273 Airway Drive, Suite D
City/State/Zip: Santa Rosa, CA 95403	Phone: (707) 565-6573
Responsible staff person: Dale Radford	Title: Civil Engineer

II. Case Information

Site facility name: Royal Tallow & Soap Co.				
Site facility address: 2592 Lakeville Highway, Petaluma, CA 94952				
RB LUSTIS #49-0142	SWEEPS # NA	LOP #00001359	URF filing date: August 3, 1989	Local # NA
Responsible party		Address		Phone number
Darling International, Inc.		251 O'Conner Ridge Blvd., Suite 100, Irving, TX 75038		(214)717-0300
Tank #	Size in gal.	Contents	Closed-in-place/removed?	Date
1	1,000	Regular leaded gasoline	Removed	June 30, 1990
2	2,000	Regular leaded gasoline	Removed	June 30, 1990

III. Release and Site Characterization Information

Cause and type of release: holes in tanks, fuel hydrocarbons			
Site characterization complete? YES		Date approved by oversight agency: July 15, 2003	
MW installed? YES	Number: 10	Proper screened interval: YES, 2.5 to 13 ft. BGS, total well depth = 15 ft.	
Highest GW depth BGS: 0.64	Lowest depth: 7.52	Flow direction: south/southwest	
Most sensitive current use: Estuary			
Are drinking water wells affected? no		Aquifer name: Petaluma Valley (2-1)	
Is surface water affected? no		Nearest SW name: Petaluma River, 2000' sw/Adobe Creek 1300' east	
Off-site beneficial use impacts (addresses/locations): none			
Report(s) on file? YES		Where is report(s) filed: Sonoma County Department of Health Services	
Treatment and Disposal of Affected Material			
Material	Amount (include units)	Action (treatment or disposal w/ destination)	Date
Tanks	2	Erickson, Inc., Richmond, CA	7/5/89
Piping	Unknown	Erickson, Inc., Richmond, CA	7/5/89
Free product	Unknown	Present in excavation but no action taken	1988
Soil	2,400 cubic yards	Treated onsite and used for backfill	11/00 to 6/01
Groundwater	88,000 gal.	Storm and groundwater pumped to storm drain under permit	12/00 and 6/01
Barrels	2	Will be disposed after monitoring well destruction	

Case Closure Summary

III. Release and Site Characterization Information (continued) Site Address: 2592 Lakeville Highway, Petaluma, CA

Maximum Documented Contaminant Concentrations Before and After Cleanup

Contaminant	Soil (ppm)		Water (ppm)		Contaminant	Soil (ppm)		Water (ppm)	
	Before	After	Before	After		Before	After	Before	After
TPH (gas)	2,900	438	125	<.05	Xylene	303	10.4	9.52	<.001
TPH (diesel)	NA	NA	NA	NA	Ethylbenzene	61.7	8.25	2.2	<.001
Benzene	19.7	.569	21.8	<.001	Oil & grease	NA	NA	NA	NA
Toluene	151	.609	16.0	<.001	Heavy metals	NA	NA	NA	NA
MTBE	NA	NA	<.005	<.001	1,2-DCA	NA	NA	.0067	.0016

Comments (depth of remediation, etc.): NA=not analyzed. Shallow soil remediation, <3 meters. Cleanup levels are equal to RBSLs
 Groundwater is not a potential source of drinking water. Excavated soil was treated with proprietary additive, biodegraded and used as backfill. Excavation naturally filled with groundwater and storm water while soil was being treated. Accumulated water was pumped to a storm drain under permit.

IV. Closure

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? YES
 Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? YES
 Does corrective action protect public health for current land use? YES
 Site management requirements: Future site development should address the presence of residual soil contamination, proper handling and disposal. Site Safety Plan needed if future development is planned.
 Should corrective action be reviewed if land use changes? YES

Monitoring wells decommissioned? some Number decommissioned: 6 Number retained: 4

List enforcement actions taken: NONE

List enforcement actions rescinded: NONE

V. Local Agency Representative Data

Name: Jonathan J. Krug Title: Director of Environmental Health

Signature: *Jonathan J. Krug* Date: 7-21-03

VI. RWQCB Notification

Date submitted to RB: 7/28/03 RB Response: *Concerns with closure recommendation*

RWQCB staff name: *John Jung (John Jung)* Title: *WRSE* Date: 8/5/03

VII. Additional Comments, Data, etc.

Six monitoring wells destroyed prior to over excavation of contaminated soil. Remaining four wells will be destroyed by RP after closure concurrence by SFBRWQCB. Analytical results of accumulated storm and ground water indicate TPHg, BTEX and MTBE were non-detect prior to discharge to storm drain.

APPENDIX E

ASTM USER QUESTIONNAIRE



ASTM E 1527-05 User Questionnaire

In order to qualify for the protection offered under the EPA All Appropriate Inquiry (AAI) Standard, the **User** (entities seeking to use the ASTM E1527-05 Practice to complete an environmental site assessment of the property; i.e. Lenders and/or Borrowers) must provide the following information (if available) to the environmental professional. Failure to provide this information could result in a determination that AAI is not complete. This information should be the collective knowledge of the entities relying on the Phase I. **Please note that you are not being asked to evaluate the property, but rather to provide your knowledge of information on the property.**

Site Name/Address: Baywood - Casa Grande Rd, Petaluma

Person Interviewed/Title: Derek Pampe - Director of Land Acquisition Date: 3/18/20

If known, when was the property initially developed? unknown

If different, when were the current building(s) on the property constructed? _____

1. Environmental cleanup liens that are filed or recorded against the site (40 CFR 312.25).

Are you aware of any environmental cleanup liens against the *property* that are filed or recorded under federal, tribal, state or local law? (**Note:** If unknown, a review of title records or an environmental lien search is recommended)

Yes No If you answer yes, please include an explanation in the space provided below:

2. Activity and land use limitations that are in place on the site or that have been filed or recorded in a registry (40 CFR 312.26).

Are you aware of any AULs, such as *engineering controls*, land use restrictions or *institutional controls* that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law?

Engineering Controls are defined as physical modifications to a site or facility to reduce or eliminate the potential for exposure to hazardous substances or petroleum products in the soil or ground water on the property). *Institutional Controls* are defined as a legal or administrative restriction on the use of, or access to, a site or facility to 1) reduce or eliminate the potential for exposure to hazardous substances or petroleum products in the soil or ground water on the property, or 2) to prevent activities that could interfere with the effectiveness of a response action, in order to ensure maintenance of a condition of no significant risk to public health or the environment.

Yes No If you answer yes, please include an explanation in the space provided below:

3. Specialized knowledge or experience of the person seeking to qualify for the LLP (40 CFR 312.28).

As the *User* of this *ESA* do you have any specialized knowledge or experience related to the *property* or nearby properties? For example, are you involved in the same line of business as the current or former *occupants* of the *property* or an adjoining *property* so that you would have specialized knowledge of the chemicals and processes used by this type of business?

Yes No If you answer yes, please include an explanation in the space provided below:

4. Relationship of the purchase price to the fair market value of the *property* if it were not contaminated (40 CFR 312.29).

a) Does the purchase price being paid for this *property* reasonably reflect the fair market value of the *property*?

Yes No If you answer no, please include an explanation in the space provided below, including whether the lower purchase price is because contamination is known or believed to be present at the *property*?

5. Commonly known or *reasonably ascertainable* information about the *property* (40 CFR 312.30).

Are you aware of commonly known or *reasonably ascertainable* information about the *property* that would help the *environmental professional* to identify conditions indicative of releases or threatened releases? For example, as *User*:

a. Do you know the past uses of the *property*?

Yes No

b. Do you know of specific chemicals that are present or once were present at the *property*?

Yes No

c. Do you know of spills or other chemical releases that have taken place at the *property*?

Yes No

d. Do you know of any environmental cleanups that have taken place at the *property*?

Yes No

If you answered yes to any of the questions above, please include an explanation in the space provided below:

~~Based on my review of the documents provided by the property owner, a number of contaminants once existed. A copy of those documents have been provided. Namely, a summary of that history and the contaminants can be found in expert report by Dwight Hoenig~~

6. The degree of obviousness of the presence of likely presence of contamination at the *property*, and the ability to detect the contamination by appropriate investigation (40 CFR 312.31).

As the *User* of this *ESA*, based on your knowledge and experience related to the *property*, are there any *obvious* indicators that point to the presence or likely presence of contamination at the *property*?

Yes No If you answer yes, please include an explanation in the space provided below:

Please provide the following property contact information:

Property Owner: Baywood, LLC Phone Number: _____

Key Site Personnel: Patrick Imbimbo Phone Number: 707-578-5344

Past Owner: _____ Phone Number: _____

Signature:  _____

Date: 3/18/14

APPENDIX F
PREVIOUS REPORTS

ROYAL TALLOW AND SOAP COMPANY
UNDERGROUND STORAGE TANK
SITE CHARACTERIZATION REPORT
PETALUMA, CALIFORNIA

DEPOSITION EXHIBIT
PLF. / DEF. 325
WITNESS: _____
DATE: _____
TIFFANY D. DEUSEBIO, CSR #9086

 **ecology and environment, inc.**
International Specialists in the Environment

MFG03043

2946



ecology and environment, inc.

160 SPEAR STREET, SAN FRANCISCO, CALIFORNIA 94105, TEL. 415/777-2811

International Specialists in the Environment

August 17, 1990

Mr. Mel Roshanravan
Darling-Delaware Co., Inc.
8737 King George Dr., Ste. 200
Dallas, TX 75235

Dear Mr. Roshanravan:

Pursuant to your request, please find enclosed a copy of our report entitled Underground Storage Tank Site Characterization. This report covers the work completed to date by Ecology and Environment, Inc. at your Royal Tallow and Soap Co. facility in Petaluma, CA. Please note that some work still remains to be completed at the site including monthly water level measurements from September 1990 through February 1991, and two additional quarterly sampling rounds in October 1990 and January 1991, as required by the County of Sonoma and as outlined in our work plan dated December 19, 1990.

If you have any questions concerning this report or the remaining work items, please feel free to call either me or Ralph Lambert at (415) 777-2811.

Sincerely,
ecology and environment, inc.

Steven M. Morin

Steven M. Morin
Project Manager

cc: Mr. Subba Rao, Darling-Delaware, Cleveland

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EXECUTIVE SUMMARY

One or both underground gasoline storage tanks at the Royal Tallow and Soap Company property in Petaluma, California leaked prior to their removal in 1989. Groundwater onsite is shallow (three to five feet below ground surface) and generally flows south or southwest. The hydraulic conductivity of the soil is fairly low and the calculated groundwater flow velocities range from 10 to 31 feet per year. The shallow groundwater is brackish and is not used for any beneficial purpose.

Ten of 21 soil samples had total petroleum hydrocarbon (TPH) concentrations in excess of 100 mg/kg. The volatile aromatic compounds of benzene, toluene, xylene, and ethylbenzene were also found at elevated levels in some soil samples.

No measurable floating product was found on the shallow groundwater. However, groundwater analysis from the five monitoring wells yielded TPH concentrations up to 20 mg/l. The California drinking water standard for benzene was exceeded in water from four of the five wells, and in one well for xylene and ethylbenzene. Ethylene dibromide was not detected in any soil or groundwater sample, and organo lead was detected in only four of 21 soil samples (at a maximum concentration of 1.82 mg/kg) and was undetected in groundwater.

1. INTRODUCTION

This site characterization report has been prepared by Ecology and Environment, Inc., (E & E) under contract to Darling-Delaware Company, Inc. to document field activities and present the results of a preliminary assessment of petroleum hydrocarbons caused by one or more leaking underground storage tanks (USTs) at the Royal Tallow and Soap Company (RTSC) site in Petaluma, California.

1.1 OBJECTIVE

The objective of this preliminary site characterization was to determine the areal extent, nature, and concentration of petroleum hydrocarbons in the soil and groundwater near the location of the leaking gasoline tanks. The two gasoline tanks were removed prior to this site characterization.

1.2 SITE LOCATION AND HISTORY

The RTSC site is located in Petaluma, California, at 2592 Lakeville Highway (Figure 1-1). The site occupies approximately 18.8 acres and is located between the former location of the Northwestern Pacific Railroad tracks to the north and the Petaluma River to the south. The USTs in question were located in the northwest section of the RTSC property adjacent to a truck scale and approximately 2,000 feet northeast of the river (Figure 1-2).

RTSC operated a rendering plant at this site in which fats were converted into oils for the production of tallow and soap. Normal plant operations were discontinued in March of 1986, at which time the facility was used solely as a transfer station.

Darling Delaware Company, Inc., the parent company of RTSC, decided to sell the RTSC property in Petaluma and began measures to prepare the site. This preparation included the removal of the USTs. Based on

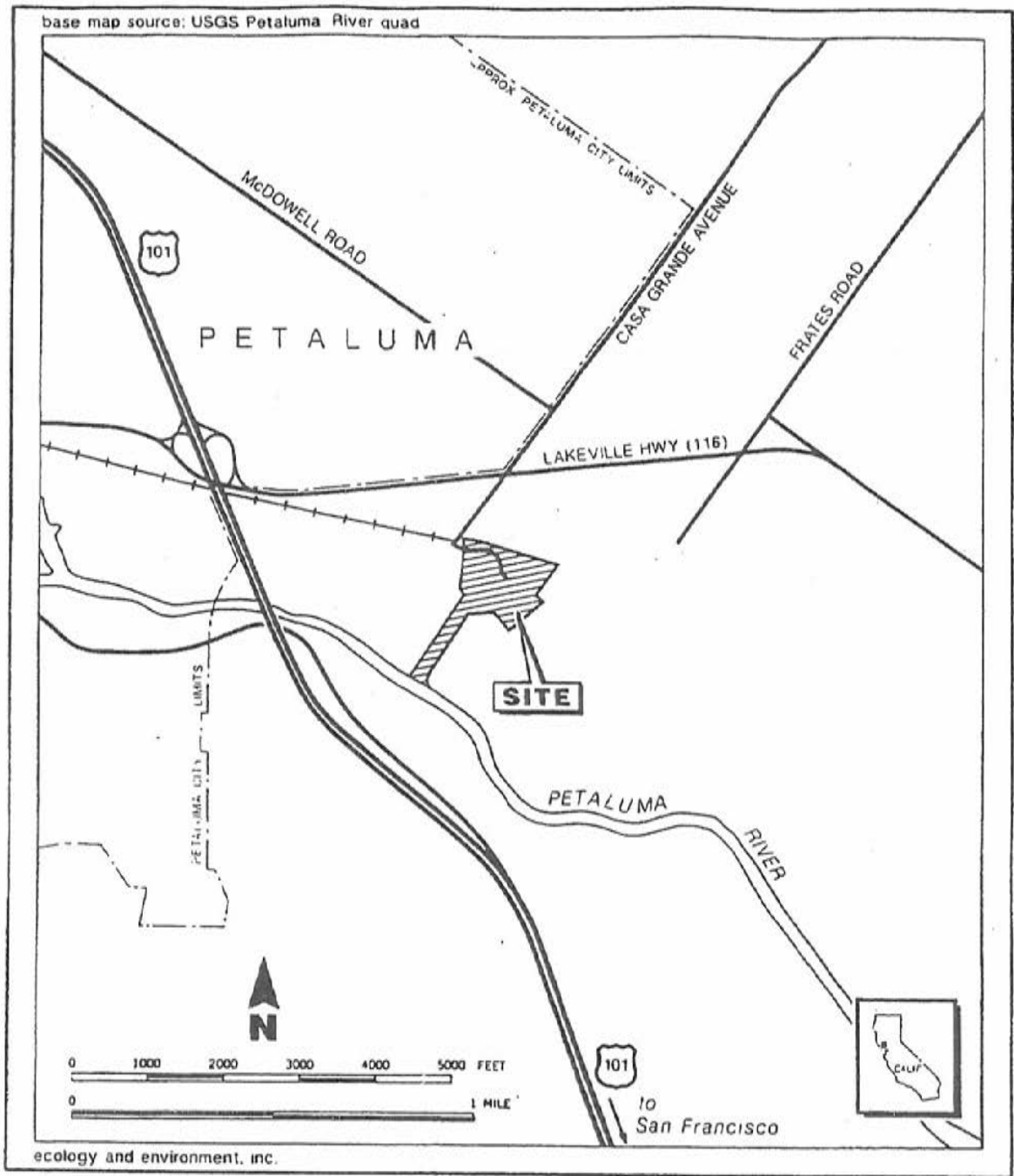


Figure 1-1

LOCATION MAP -- ROYAL TALLOW & SOAP COMPANY

Petaluma, California

1-2

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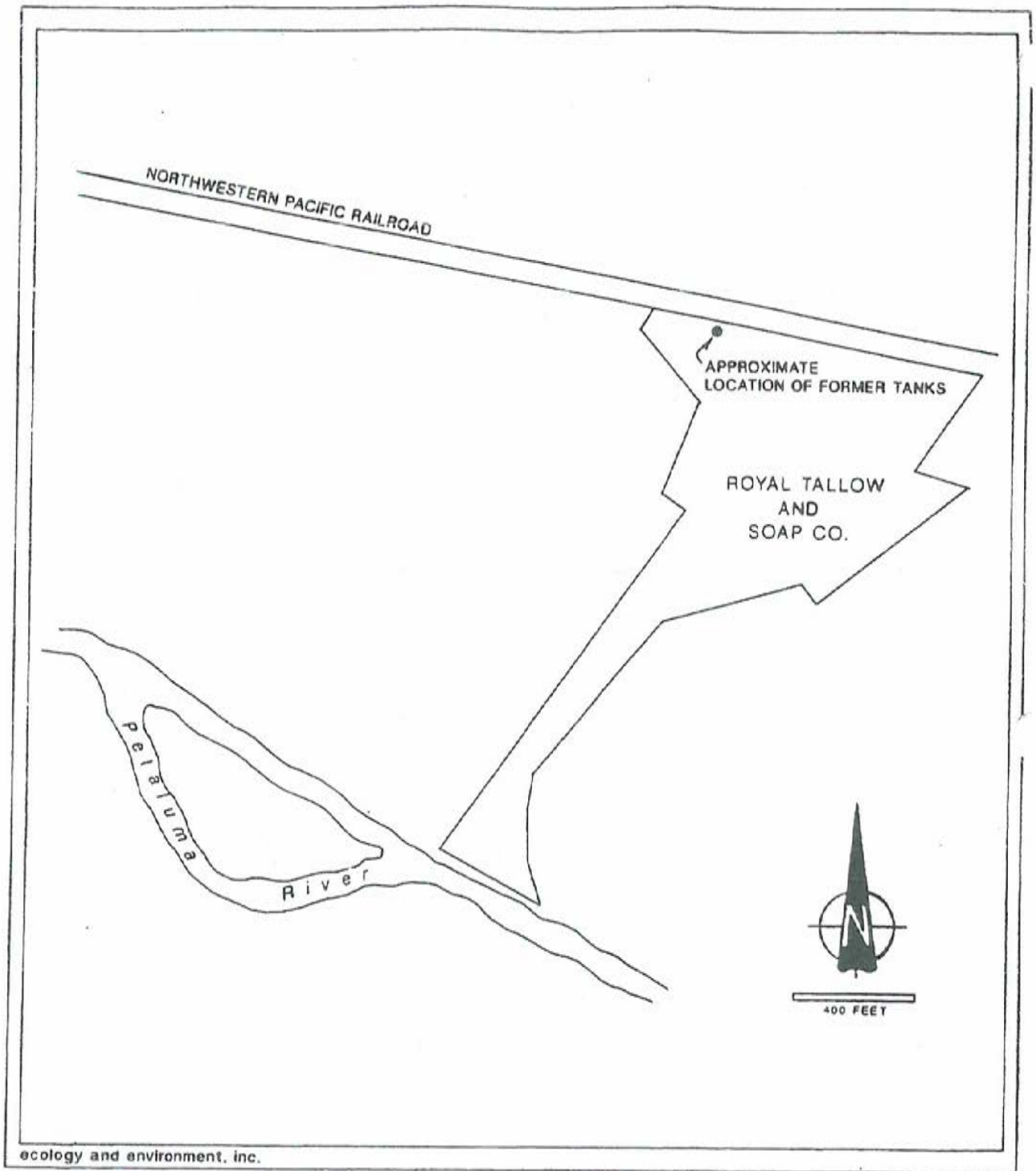


Figure 1-2 VICINITY MAP
ROYAL TALLOW AND SOAP CO.

1-3

available information, there were only two USTs known to have existed at the RTSC facility. Both of these steel tanks, one with a 500-gallon capacity and one with a 1,000- to 2,000-gallon capacity, contained regular leaded gasoline. The smaller of these two tanks was found to be leaking approximately 20 years ago and was immediately taken out of service and abandoned. The larger tank was replaced with a new tank approximately 14 years ago. After the decision was made to sell the property, this second tank was emptied in early 1987 and remained empty until its removal in 1989.

On June 30, 1989, both tanks were excavated and removed for disposal. At that time floating product was detected in the open excavation. Visual inspection of the tanks indicated the presence of small holes due to corrosion in at least one of the tanks.

The tanks were excavated by Petroleum Engineering, Inc. of Santa Rosa, California (General Contractor License No. 224358); the tanks were transported to an approved disposal site by H&H Environmental Services, Inc. (DHS Hazardous Waste Haulers No. 38-001-78); and the tanks were disassembled for scrap metal by Levin Metals Corporation. The excavations remain open and the excavated soil remains stockpiled on a concrete pad covered with visqueen.

The County of Sonoma Public Health Department submitted a letter to RTSC on July 29, 1989, requesting that an "Underground Storage Tank Unauthorized Release (Leak) Contamination Site Report" be completed and filed within five days. RTSC filed this form with the county on August 3, 1989.

As required, two soil samples were collected from the bottom of each tank excavation. These samples were analyzed for total petroleum hydrocarbons (TPH) as gasoline; the volatile organics benzene, toluene, xylene, and ethylbenzene (BTXE); and organic lead. No lead was detected but TPH ranged from 86 to 820 mg/kg and BTXE was detected. The specific levels are reported with the results of this investigation in Section 5.

2. WORK PLAN SUMMARY

E & E prepared a work plan for this site characterization which was approved by the Sonoma County Public Health Department and by the Darling-Delaware Company, Inc. (E & E 1989). The work plan states that E & E would perform a soil-gas survey to help define the boundary of a petroleum hydrocarbon plume; drill and install five groundwater monitoring wells; sample the wells on a quarterly basis; take water levels monthly; and do an aquifer test to help define the groundwater flow characteristics.

Of the five monitoring wells, one well was to be placed upgradient (north) of the tank locations, one well was to be within 10 feet of each UST excavation on the downgradient side, and two wells were to be downgradient of the tank locations.

3. FIELD ACTIVITIES AND PROCEDURES

To carry out the investigation of the RTSC UST site, the following field activities have been undertaken:

- o A soil-gas survey;
- o The drilling and installation of five monitoring wells;
- o The measurement of monthly water levels from the monitoring wells; and
- o Quarterly sampling of the groundwater.

3.1 SOIL-GAS SURVEY

E & E performed a soil-gas survey on February 28, 1990, to assess the relative concentration and extent of volatile organic compounds (VOCs) in the vadose zone of the site, to assist in defining the extent of the groundwater plume, and to help guide the subsequent placement of monitoring wells. A permit was filed for the soil gas survey with the Sonoma County Public Health Department and permission was received. A copy is attached in Appendix B. Two public health inspectors visited the site during the survey.

The survey consisted of installing 12 hollow steel probes into the soil at depths ranging from one to five feet using a rotor hammer. Due to the presence of a very shallow water table, the soil was too saturated to permit sample collection; i.e., when the vacuum sampling pump was attached, water entered the sampling port. The soil-gas survey instrumentation is designed for gas analysis only.

3.2 WELL DRILLING AND INSTALLATION

Five soil borings were drilled, the soil was sampled, and the groundwater monitoring wells were completed between March 27 and 30, 1990. Permission was obtained from Baywood Partners, Inc. to drill an

upgradient well on their property, and permits for the wells were obtained from the county (Appendix B).

3.2.1 Soil Borings and Soil Sampling

The primary objectives of the soil sampling program were to make a preliminary determination of the vertical and areal extent and concentrations of petroleum hydrocarbons in the soil surrounding the USTs, and to install wells. A secondary objective was to characterize the subsurface geology.

Borehole locations, as shown in Figure 3-1, were selected based on the expected location of encountering petroleum hydrocarbons. The boreholes ranged from 15 to 17.5 feet deep and the soil was lithologically logged by a California registered geologist using drill cuttings and samples. The lithologic logs are included in Appendix A. Cuttings were described in terms of color, grain size, composition, moisture content, degree of compactness, and the obvious evidence of petroleum hydrocarbons. As required, a water well drillers report was filed for each well with both the State Department of Water Resources and the County Public Health Department.

The soil borings were drilled on March 27 and 28, 1990, using a 10.6-inch-diameter hollow-stem auger drill rig provided by WESTEX Drilling of West Sacramento, California. The borings were drilled without the addition of drilling mud or water to preserve sample quality.

A clean hollow-stem auger was advanced to the desired sampling depth (approximately 4, 9, and 14 feet) and samples were collected by driving an 18-inch-long, split-spoon drive sampler ahead of the augers using a 140-pound hammer. The 2-inch inside-diameter split-spoon sampler was equipped with three 6-inch-long brass liners. The middle or bottom brass liner became the sample container. After drilling, each boring was immediately completed as a well.

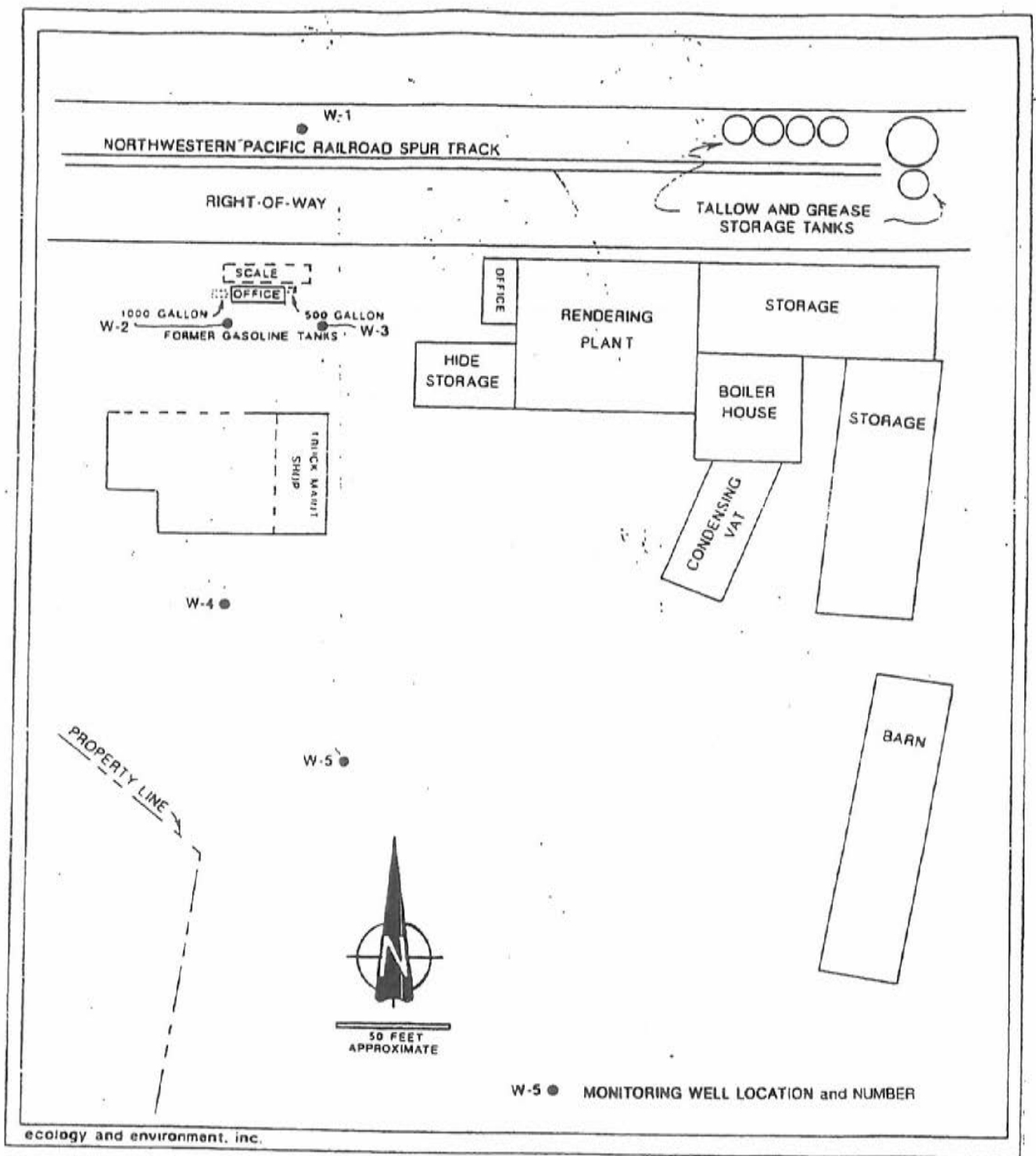


Figure 3-1 WELL LOCATION MAP
ROYAL TALLOW AND SOAP CO.

The ends of the brass liner selected as the sample were covered with aluminum foil, a tight fitting plastic cap, and sealed with electrical tape. The sample was then labeled and stored on ice at a temperature of 4°C for shipment.

E & E shipped a total of 17 soil samples, using strict chain-of-custody procedures, to Eureka Laboratories in Sacramento, California. Soil samples were analyzed for total petroleum hydrocarbons (TPH, using EPA method #8015 modified), VOCs (EPA method #8020), ethylene dibromide (EDB, EPA method #8010), and tetraethyl or organo lead (TEL, ASTM D3237-79 modified). VOCs specifically included benzene, toluene, xylene, and ethylbenzene (BTXE). These parameters satisfy the requirements of the State Water Resources Control Board for leaking underground storage tanks and closure monitoring (1989) and the Regional Board Staff Recommendations of the San Francisco Regional Water Quality Control Board (1988).

New sample liners were used and were decontaminated by steam cleaning and air drying prior to use. Samplers were decontaminated by washing in a nonphosphate detergent solution, rinsing with tap water, and air drying, or by steam cleaning. The augers used in drilling were steam-cleaned between boreholes.

Drill cuttings were added to the stockpiled soil that had been excavated from around the tanks. This soil is stored on a concrete apron and is covered with plastic.

3.2.2 Well Completion

Monitoring well casing depths ranged from 12.2 to 13.6 feet and were cased with 4-inch inside-diameter schedule 40 PVC pipe and screen (Table 3-1). The completion logs for these wells are contained in Appendix A. The screens are 10 feet approximately 10 feet long, and have 0.02-inch-wide slots.

Table 3-1

WELL CONSTRUCTION DETAILS
(All measurements in feet)

Well	Ground Elevation (above MSL)+	Elevation at Top of PVC Casing	Depth to Water (5/3/90) (below grade)	Screened Interval- (below grade)	Total Depth of Boring (below grade)	Relative Location*	
						North	East
V-1	8.2	9.90	3.97	2.8 - 12.4	17.5	1,159.4	948.2
V-2	8.36	7.62	4.12	3.2 - 12.8	17	1,069.9	915.8
V-3	8.78	8.44	4.43	4.1 - 13.6	15.5	1,068.0	958.2
V-4	7.6	9.51	3.55	3.7 - 13.5	15.5	942.8	918.2
V-5	6.7	8.72	2.75	2.6 - 12.2	15	872.6	966.1

+ MSL = mean sea level

* The location of the wells were surveyed relative to a point on-site, which was arbitrary location of 1,000 north, 1,000 east.

After the boreholes were drilled to the desired depth, flush-threaded PVC pipe and screen was installed. All casing and the bottom plugs were steam-cleaned prior to installation.

The wells were installed by lowering the well casing through the augers and pouring clean filter pack (Lapis Luster #3 sand) through the annular space as the augers were withdrawn. The filter pack was brought up to about 6 inches above the screen. At each well, E & E attempted to place the screen so that it extended above the top of the static water level to detect any floating product and allow for monitoring of tidal fluctuations. An approximately 1-foot-thick layer of bentonite clay was placed above the filter pack. Some tap water was added to the bentonite to hydrate the clay and form a good seal. After the hydration of the bentonite, the remaining annular space was filled using a cement-bentonite-sand slurry. Each well was completed with a locking well head. Wells W-2 and W-3 were completed in utility boxes at grade, while the remaining wells were completed above grade.

The monitoring wells were developed by pumping and bailing. Development took place two days after well installation and was designed to help make the produced water sand/silt-free and to increase well yield. Some tap water was added to each well to help surge the wells, but in each case five to eight more wetted casing volumes of water were removed than were added. The water from each well initially was very turbid due to the fine grained nature of the water-bearing material, but subsequent water samples were fairly clear.

Produced water was stored on-site in labeled drums pending results of the analytical data.

3.3 GROUNDWATER SAMPLING AND WATER LEVEL MEASUREMENTS

The objectives of sampling the groundwater were to assist in determining the areal extent and thickness of any petroleum hydrocarbons floating on the water table, and to make an initial determination of the areal extent and concentration of hydrocarbon contaminants in the groundwater.

Water levels were measured to determine groundwater flow direction and gradient.

Groundwater was first sampled on April 3, 1990, four days after development. The second round of water samples were collected on July 10, 1990. Before groundwater samples were collected, the water levels were measured in each well using a steel tape to the nearest 1/100th of a foot. Knowing the well construction details and the water levels enabled the calculation of the following wetted casing volumes for the April sampling: W-1, 6.6 gallons; W-2, 6.4 gallons; W-3, 6.7 gallons; W-4, 7.4 gallons; and W-5, 7.0 gallons. Water from the wells was purged using clean Teflon bailers and new rope, or a pump. While purging, the water quality parameters of temperature, electrical conductivity, and pH were monitored (Table 3-2). Three to nine casing volumes of water were purged from each well before sampling. After purging, the wells were allowed to recover prior to sampling.

Groundwater samples were collected using clean bailers. Each sample was transferred directly from the bailer to the sample containers. Duplicate samples were collected from W-1 and W-2 during the various sampling events. Equipment rinsate blanks were prepared using organic-free water for the volatile aromatics (BTXE) and EDB analyses, and deionized water for the TPH and TEL analyses. The blanks were prepared by pouring the blank water into a bailer which has been cleaned, and from the bailer into the sample containers. The rinsate blanks test the effectiveness of the decontamination procedures used on the bailers. The duplicate and blank samples were given separate identification numbers so that they could not be distinguished from the real samples. Samples were analyzed for TPH using the modified EPA Method 8015, for BTXE using EPA Method 602, for EDB using Method 601, and for TEL using a modified ASTM Method D-3237-79. Prior to purging, each bailer was decontaminated by washing in a TSP solution, rinsing with tap water, spraying with hexane, air drying, and rinsing with deionized water. Since no EDB and TEL was detected in any water sample after the first two sampling rounds, verbal permission was obtained from the County Health Department to omit these analyses during subsequent sampling.

Table 3-2

MONITORING WELL DEVELOPMENT AND PURGING SUMMARY

Well	Development Volume-Net Gallons+	April 3, 1990			July 10, 1990		
		Purge Volume (gallons)	Final pH	Final Temperature (°C)	Final EC* (µmhos/cm)	Purge Volume (gallons)	Final EC* (µmhos/cm)
V-1	60	22	7	16	2,160	45	2,560
V-2	47	25	7	18	10,000	32	10,400
V-3	47	20	7	17	±5,000	25	6,100
V-4	63	48	7	17.1	4,880	55	4,040
V-5	37	38	7.5	19	13,000	35	8,900

* This is volume of water withdrawn from the well in excess of any water added to aide development.

* EC is electrical conductance of the water. This is a reflection of the water salinity and the total dissolved solids.

Groundwater samples were packaged carefully to avoid breakage or contamination, and stored on ice for shipment. The samples were shipped to Eureka Laboratories via Federal Express using chain-of-custody procedures.

The relative location and the elevation of the wells were surveyed by Fitzgerald and Associates (a licensed surveyor) of Petaluma, California. The elevations relative to mean sea level and the relative locations of the wells were surveyed to the nearest 1/100 of a foot. Elevations are presented in Table 3-1 and on the individual well logs in Appendix A.

3.4 AQUIFER TESTING

The purpose of the slug-type aquifer tests was to determine the hydraulic conductivity (permeability) of the formation immediately surrounding the screened section of the subject well. This information was used in conjunction with the local hydraulic gradient, determined from the measured water levels, and an estimated porosity to calculate the groundwater flow velocity. Rising head slug tests were performed on wells W-1 and W-2.

Water levels were recorded using an In-Situ Hermit 1000 data logger and a pressure transducer. The transducer was placed near the bottom of the well prior to the slug test. This enabled the temperature-sensitive instrument to equalize and gather background data. The slug test was performed by lowering a large bailer into the well and allowing the water level to stabilize. After stabilization the bailer was rapidly withdrawn from the well, which caused the water level to drop and water to flow into the well from the surrounding formation. During the slug test at W-1 the water level was lowered 1.51 feet, and at W-2 the water level dropped 1.28 feet. Water level measurements were automatically collected by the data logger according to the following schedule:

Time Since Start

Interval Between Readings

0-5 seconds	0.5 seconds
5-20 seconds	1 second
20-120 seconds	5 seconds
2-10 minutes	30 seconds
10-100 minutes	2 minutes

Water level measurements were collected until the water table fully recovered to the pretest static level.

To monitor for tidal fluctuations in the well closest to the river, water levels were automatically measured every 20 minutes for approximately 19.5 hours in well W-5.

4. HYDROGEOLOGIC SETTING

4.1 SITE SETTING

The RTSC site near the UST location has an elevation of about 8 feet above mean sea level, and gently slopes toward the river 2,000 feet to the south. Both sides of the property, near the river, are bounded by shallow drainage ditches which drain to the river. The closest ditch drains a pond which is approximately 600 feet southwest of the tanks. The pond is adjacent to a debris landfill located off the RTSC property.

RTSC is located in an area of poorly drained silty clays that are formed from mixed bay deposits and stream alluvium, as are typically found in salt water marshes adjacent to the bay (U.S. Dept. of Agriculture 1972). Figure 4-1 is a cross-section of the shallow geology indicating the soil types which were encountered during drilling. The shallowest 8 to 17 feet are silty clays or clayey silts. Beneath this silt and clay zone is a thin sandy zone. The USTs were located mainly within the low permeability clayey zone as illustrated in the cross-section.

4.2 SITE HYDROGEOLOGY

In the vicinity of the former USTs groundwater is found at a depth of about 3.5 feet. Electrical conductivity measurements of discharged groundwater, with a range of about 2,500 to 10,500 μmhos (Table 3-2), indicate that the shallow groundwater is brackish. Brackish water is not suitable for most domestic or agricultural usage. The high salinity of the water is believed to be natural and due to salt water intrusion from the bay.

Figures 4-2 through 4-5 are water table elevation maps based on water level measurements over four months (Table 4-1). Figures 4-2 and 4-3 (representing April and May, 1990 water levels) are very similar and show groundwater flowing to the southwest. However, Figure 4-4 shows that groundwater was flowing to the south-southeast when measured in

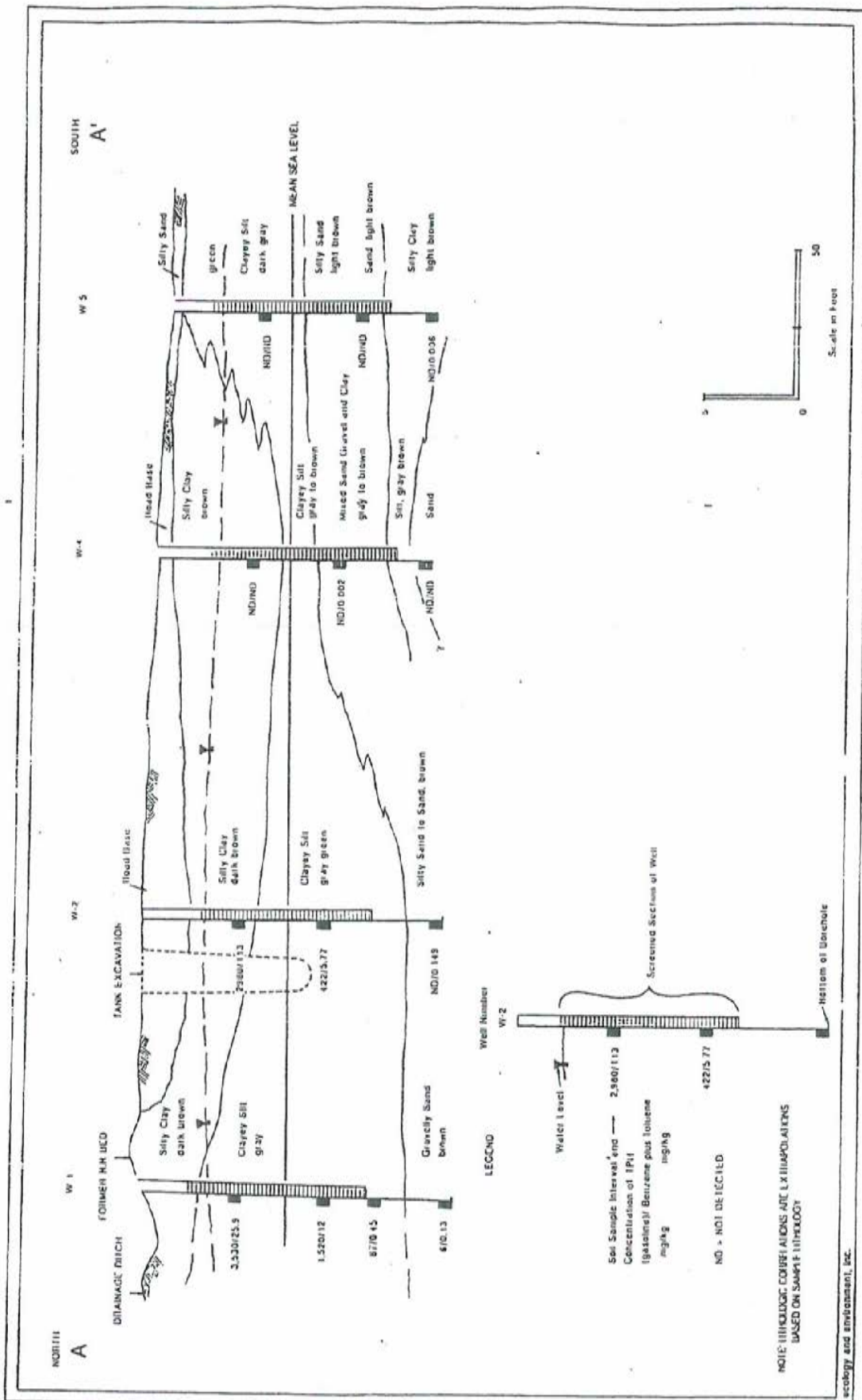


Figure 4-1. CROSS-SECTION A - A' ROYAL TALLOW & SOAP CO., PETALUMA

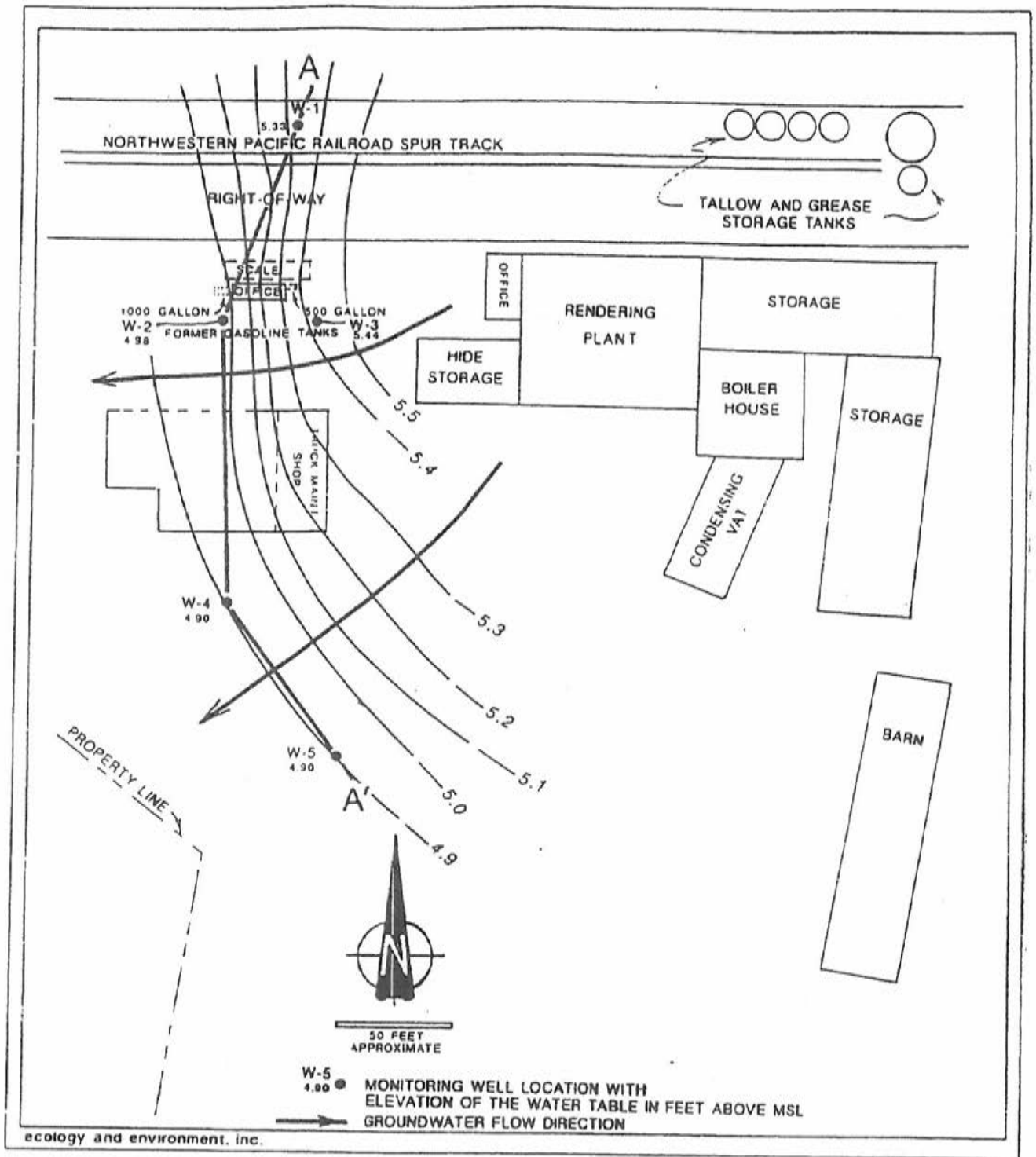


Figure 4-2 CROSS SECTION LOCATION AND WATER TABLE ELEVATION - APRIL 3, 1990 ROYAL TALLOW AND SOAP CO.

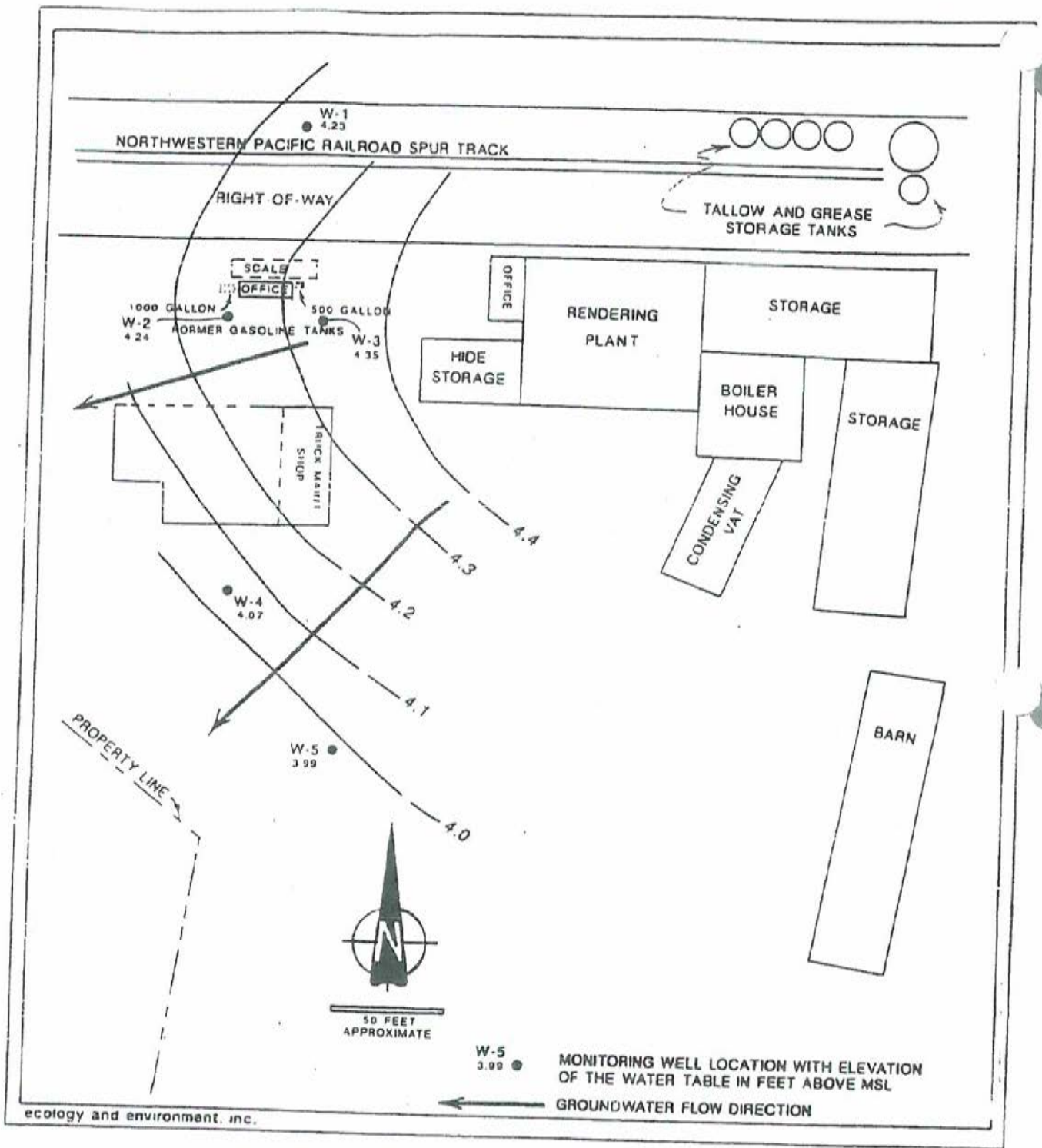


Figure 4-3 WATER TABLE ELEVATION - MAY 3, 1990
ROYAL TALLOW AND SOAP CO.

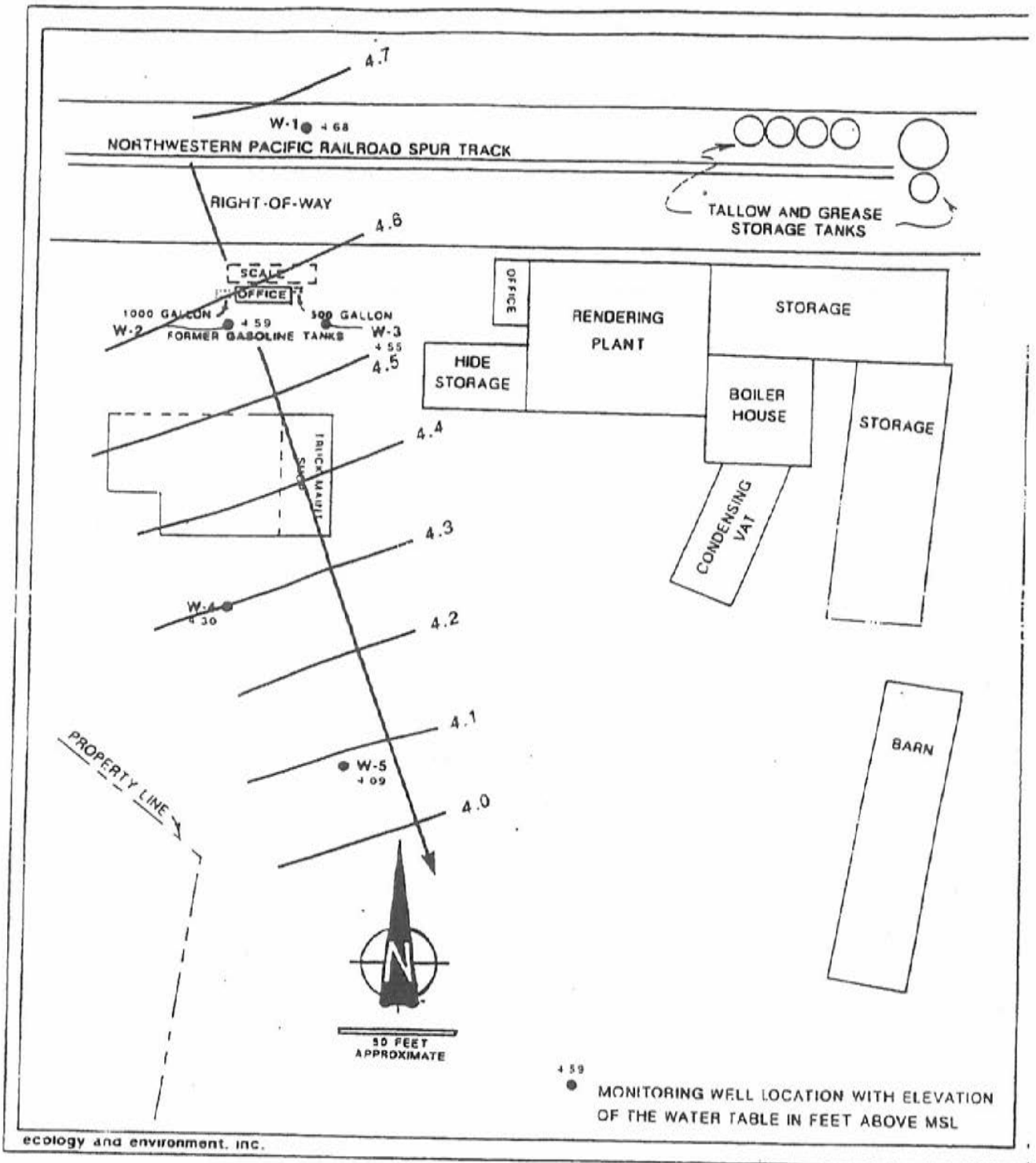


Figure 4-4 WATER TABLE ELEVATION - JUNE 1, 1990

ROYAL TALLOW AND SOAP CO.

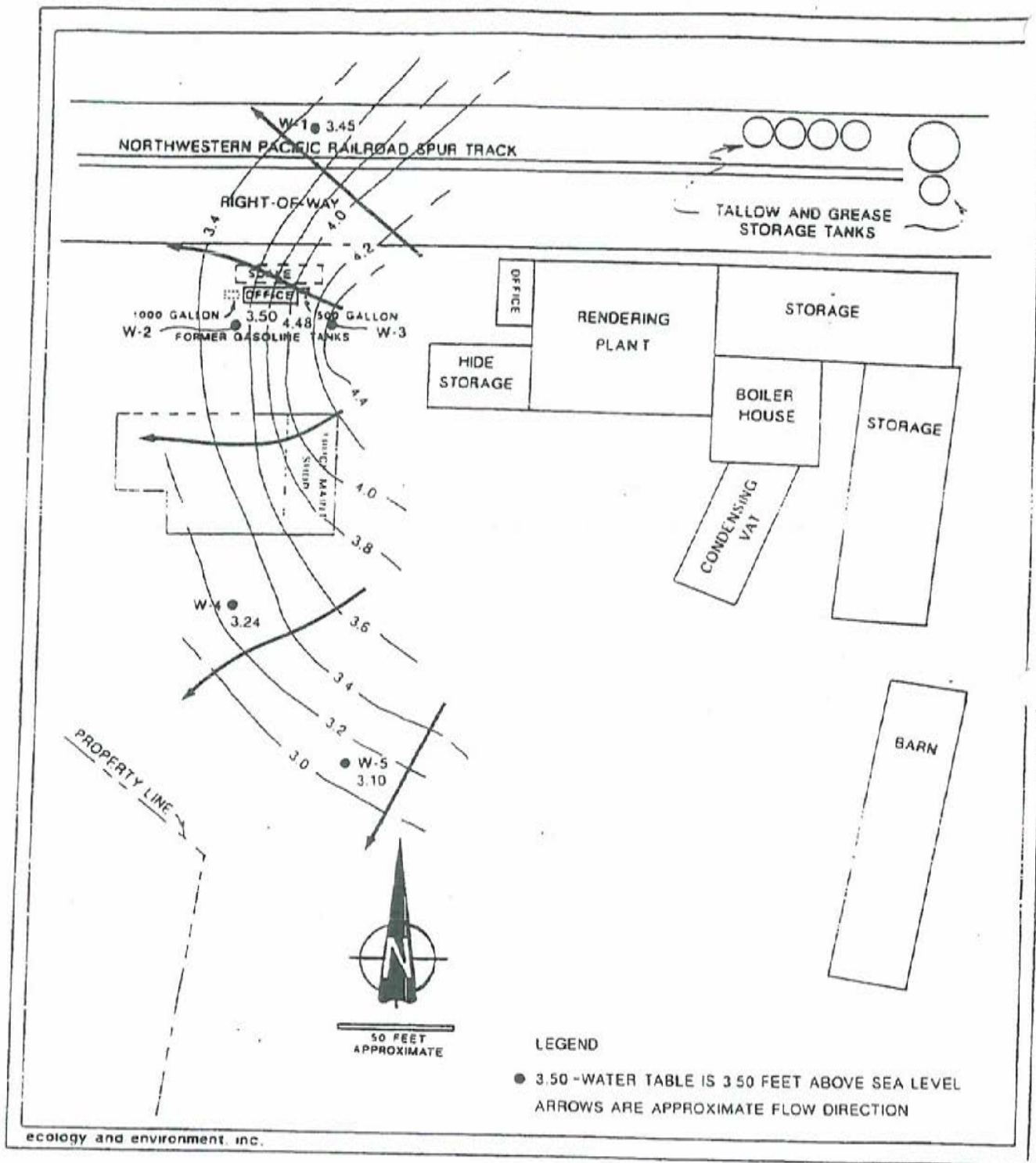


Figure 4-5: WATER TABLE ELEVATION - JULY 10, 1990
 ROYAL TALLOW AND SOAP CO.

June, 1990. Figure 4-5 shows that groundwater is flowing toward the northwest, west, and southwest away from a local groundwater high at well W-3 in July, 1990. August groundwater flow directions are similar to July's. The gradient, or slope, of the groundwater surface is much steeper in July than in other months. Table 4-1 shows that water levels in individual wells have fallen 1.60 to 2.34 feet over a four month period in response to the dry summer months.

Data from the first three months of water level measurements show that the gradient is fairly flat (approximately 0.006 feet per foot). Analysis of the slug type aquifer tests from wells W-1 and W-2 gives a hydraulic conductivity (k or permeability) of 1.3×10^{-3} cm/s and 4.0×10^{-4} cm/s, respectively. This k value is within the range expected for silty sand (Freeze and Cherry 1979). The results of the aquifer test and analysis of the data ~~may be~~ found in Appendix C. Assuming a formation porosity of 26% and a gradient of 0.006, groundwater flow velocities of 10 feet per year for W-2, and 31 feet per year for W-1 are calculated. It should be pointed out that k values vary from well to well, and that the gradient also varies with time. Tidal influence may decrease the overall velocity. Also, groundwater velocity in the clay or silt zone will be much less than in the sandy zone.

To investigate the influence of tides on the groundwater level the water level was measured every 20 minutes for 19.5 hours in well W-5. Well W-5 is the closest well to the river and canal and thus is expected to show the greatest tidal influence of any of the wells. Figure 4-6 is a plot of the water level and shows a 3 cm (1.2-inch) drop in the first two hours and then no measurable change for 13 hours, followed by a 1 cm (0.4-inch) rise. This period covers two low and two high tides with a maximum variation of 1.78m (5.9 feet) at Petaluma River drawbridge according to standard tide tables. Thus, over this time period there was little tidal influence on the groundwater level at W-5.

Table 4-1
 WATER TABLE ELEVATIONS
 ROYAL TALLOW AND SOAP CO., PETALUMA

(Elevation in feet above mean sea level)

Well	Casing Elevation	Water Elevation (1990) (Feet above mean sea level)					
		March 30	April 3	May 3	June 1	July 10	August 3
W-1	9.90	5.45	5.33	4.23	4.68	3.45	3.11
W-2	7.62	5.05	4.98	4.24	4.59	3.50	3.14
W-3	8.78	4.82	5.44	4.35	4.55	4.48	3.22
W-4	9.51	4.81	4.90	4.07	4.30	3.24	2.90
W-5	8.72	4.82	4.90	3.99	4.09	3.10	2.72

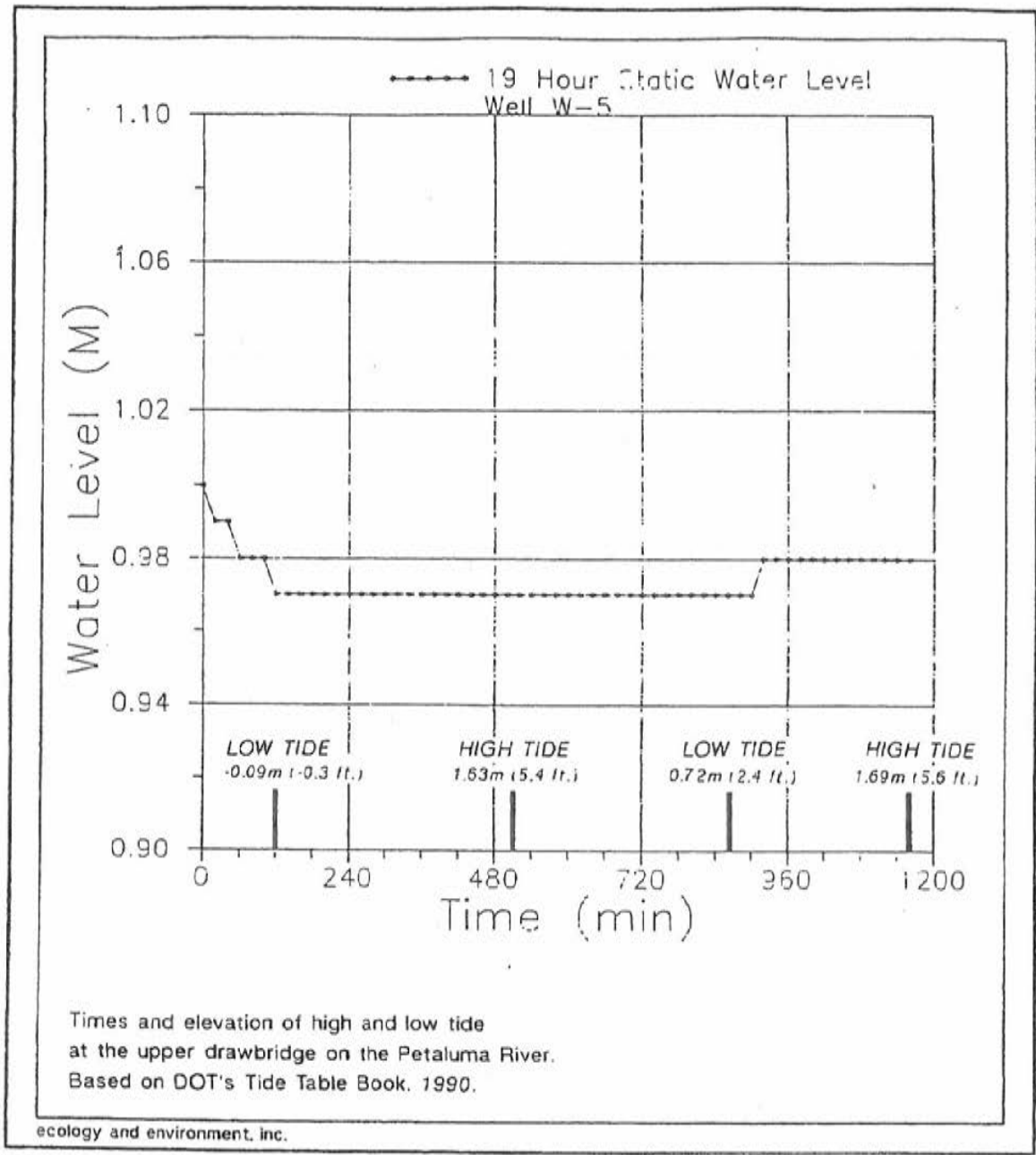


Figure 4-6

STATIC WATER LEVELS IN WELL W-5

In summary, groundwater flows in a generally south westerly direction, though this varies, and there is little tidal influence. The hydraulic conductivity of the soils is moderately low and calculations show flow velocities of 10 to 31 feet per year in the two wells tested.

5. CHEMICAL ASSESSMENT

Analytical results of the soils and groundwater investigation are presented in this section.

5.1 SOILS ASSESSMENT

Laboratory results of the soil samples are presented in Table 5-1, the actual laboratory sheets are found in Appendix D. Of the four soil samples collected from the tank excavation during removal in June 1989 by RTSC, samples #630-1 and #630-2 were taken from the western-most excavation (where the largest tank was located), nearest monitoring well W-2, and from a depth of about 10.5 feet. Samples #630-3 and #630-4 were collected from below the 500 gallon tank located closer to well W-3, from a depth of about eight feet. The concentration of total petroleum hydrocarbons (TPH) in the depth interval of 8 to 10.5 feet are presented in Figure 5-1, and can also be seen in the cross-section (Figure 4-1). The table and figures show that elevated levels (above 100 mg/kg or ppm) of gasoline range TPH are found in soil samples collected from borings W-1, W-2, and W-3 at depths shallower than 10 feet. Reference to Figure 4-1 and Table 5-1 also show a rapid decrease in TPH concentrations with depth. One soil sample had TPH in the diesel range (sample W1-3 at 330 mg/kg). There is no evidence to suggest that this diesel is related to the USTs or that diesel is widespread. TPH was not detected in any soil samples from borings W-4 and W-5.

Ethylene dibromide was not detected in any soil samples and tetraethyl (or organo) lead was detected in four of the 21 samples at concentrations ranging from 0.30 to 1.82 mg/kg (Table 5-1). The volatile organics benzene, toluene, xylene, and ethylbenzene (BTXE) were detected in all samples from borings W-1, W-2, and W-3 and from the soil samples collected from the excavations. However, benzene was not detected in soil from W-4 or W-5, and the other volatile organics were below detection limits or at very low levels. Of the BTXE compounds,

Table 5-1

SOIL SAMPLE RESULTS

Sample No.	Depth (ft)	Soil Type	TPH Gas (a)	TPH Diesel (a)	B	BTXE(b)		E	EDB(c)	TEL(d)
						T	X			
W1-1	4.5	silt	3,530	ND(e)	4.19	21.7	150	26.2	<.25	1.82
W1-2	9.5	silt	1,520	ND	4.56	7.40	53.8	9.71	<.25	0.55
W1-3	12.5	silt	87	330	0.36	0.09	1.03	0.81	<.005	ND
W1-4	16	sand	6	ND	0.056	0.071	0.70	0.128	<.001	ND
W2-1	4.5	clay	2,980	ND	11.2	102	141	24.7	<.25	0.30
W2-2	9.5	silt	422	ND	4.88	0.89	12.7	6.79	<.05	ND
W2-3	16	sand	ND	ND	0.029	0.120	0.172	0.032	<.001	ND
W3-1	4.5	clay	1,270	ND	3.19	59.4	146	23.4	<.125	0.57
W3-2	9.5	silt	204	ND	1.78	0.22	14.4	2.13	<.025	ND
W3-3	10	silt	705	ND	2.70	1.09	32.2	2.51	<.05	ND
W3-4	15	sand	47	ND	0.682	0.148	1.53	0.426	<.005	ND
W4-1	5	clay	ND	ND	ND	ND	ND	ND	<.001	ND
W4-2	10	sand	ND	ND	ND	0.002	0.025	0.007	<.001	ND
W4-3	14.5	sand	ND	ND	ND	ND	ND	ND	<.001	ND
W5-1	4.5	silt	ND	ND	ND	ND	ND	ND	<.001	ND
W5-2	10	sand	ND	ND	ND	ND	ND	ND	<.001	ND
W5-3	14.5	clay	ND	ND	ND	0.006	ND	ND	<.001	ND

(a) TPH: Total petroleum hydrocarbons in the gasoline and diesel range.

(b) BTXE = Benzene, toluene, xylene, and ethylbenzene.

(c) EDB = Ethylene Dibromide. EDB was not detected, but the detection limits vary. For example, <.25 means that EDB was not detected at the detection limit of .25 ppm.

(d) TEL = Tetraethyl lead or organo-lead.

(e) ND = not detected. The detection limit for TPH (gas) was 5 ppm; for TPH (diesel) it was 10 ppm; for BTXE it was 0.001 ppm for each compound; and for TEL it was 0.05 ppm.

r1/petaluma/t5-1

Table 5-1 (continued)

SOIL SAMPLE RESULTS

Sample No.	Depth (ft)	Soil Type	TPH Gas (a)	TPH Diesel (a)	B	BTXE(b)		EDB(c)	TEL(d)	
						T	X			
630-1	10.5	NR	170	ND	1.20	1.10	18	2.8	NA	ND
630-2	10.5	NR	86	ND	0.68	0.57	8.5	1.4	NA	ND
630-3	8	HR	820	ND	9.30	32.0	110	18	NA	ND
630-4	8	HR	670	ND	2.90	19	69	12	NA	ND

NR = Soil type was not reported.

NA = Compound not analyzed for.

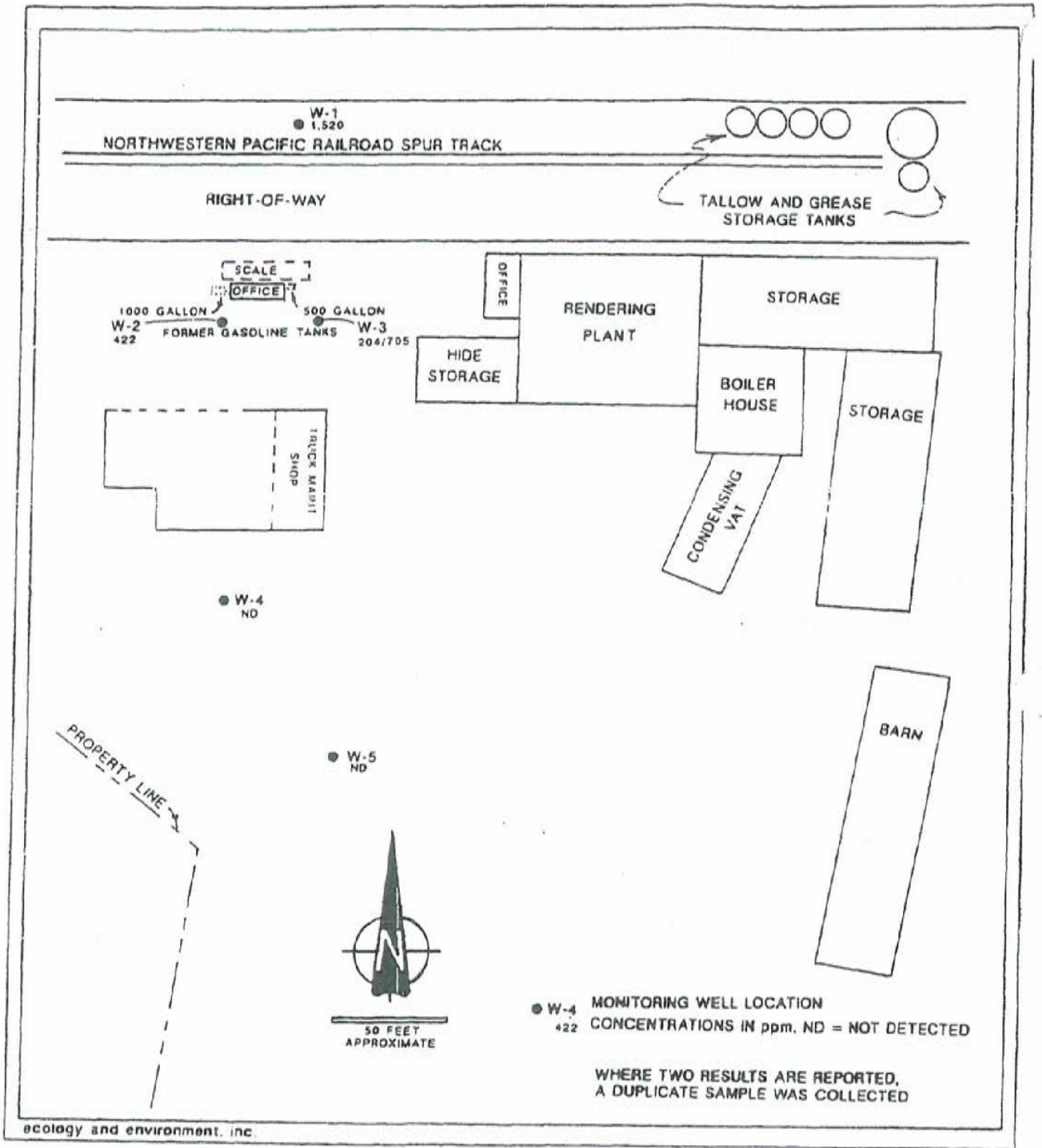


Figure 5-1 TPH (GAS) IN SOIL AT 9.5 TO 10-FOOT DEPTH
ROYAL TALLOW AND SOAP CO.

benzene and toluene have the lowest standards in drinking water, so, the concentration of these two compounds were added together and the sum is presented on the cross-section (Figure 4-1) as an indication of the volatiles in the soil. The distribution pattern of benzene and toluene are similar to TPH in borings W-1, W-2 and W-3; the concentration of each compound decreases substantially with depth.

5.2 GROUNDWATER ASSESSMENT

Analytical results of the two rounds of groundwater samples are presented in Table 5-2. TPH results for the April, 1990 sampling event are depicted in Figure 5-2. Both equipment rinsate blanks were undetected for all compounds, thus indicating satisfactory decontamination of the bailers, and an absence of cross-contamination from the other samples during shipment. The laboratory QA/QC is good based upon the results of their method blanks, spike recovery, and laboratory duplicates. A review of the field duplicates submitted to the laboratory show good correlation, in general, with the original sample. One exception to this good correlation is well W-1; toluene in the original sample was reported as 0.056 mg/l (ppm) while in the duplicate sample it was 0.009 mg/l. The other compounds, TPH, benzene, xylene and ethylbenzene all matched closely (Table 5-2). The second largest discrepancy between duplicate samples was for benzene in water from well W-2 (1.720 vs. 0.693 mg/l).

The chemical compounds EDB and TEL were not detected in any sample, and no trace of petroleum compounds were detected in groundwater from well W-5. However, TPH and BTXE have been found in the water from each of the other four wells. For both sampling events, and for each chemical compound, the water from W-3 has the highest levels (up to 20 mg/l TPH). A comparison of the April and July, 1990 sample results show that the concentrations of TPH and BTXE in groundwater increased in wells W-2, W-3, and W-4. However, the concentrations of TPH and BXE decreased in well W-1 (toluene concentration increased).

Table 5-2

GROUNDWATER ANALYSES - APRIL AND JULY 1990, PETALUMA

(All concentrations in mg/l (ppm))

Location	Date	TPH (a)	Benzene	Toluene	Xylene	Ethyl- benzene	EDB(b)	TEL(c)
W-1	4/90	2.9	0.609	0.056	0.986	<.005	<.005	ND
Duplicate	4/90	2.6	0.670	0.009	0.975	0.007	<.005	ND
	7/90	1.4	0.304	0.0496	0.602	<.0025	<.0025	ND
W-2	4/90	1.7	1.23	0.121	0.555	0.012	<.0025	ND
	7/90	5.6	1.72	0.305	0.616	0.351	<.010	ND
Duplicate	7/90	4.4	0.693	0.368	0.699	0.399	ND	ND
W-3	4/90	5.6	1.79	0.518	2.33	0.035	<.010	ND
	7/90	20	6.84	6.88	6.23	1.26	<.250	ND
W-4	4/90	0.7	0.0244	0.0095	0.195	0.0064	ND	ND
	7/90	4.4	0.0893	0.0194	0.490	0.0493	<.0025	ND
W-5	4/90	ND(d)	ND	ND	ND	ND	ND	ND
	7/90	ND	ND	ND	ND	ND	ND	ND
Equipment Blanks	4/90	ND	ND	ND	ND	ND	ND	ND
	7/90	ND	ND	ND	ND	ND	ND	ND
California (e) Standard		NA	.001	0.1	1.75	0.68	.00002	NA

- (a) TPH is total petroleum hydrocarbons. All TPH was in the gasoline range. Detection limit is 0.1 ppm (gas), and 0.2 ppm (diesel).
- (b) Ethylene Dibromide, the detection limit is 0.0005 unless otherwise noted.
- (c) TEL - Tetraethyl lead or organo lead, the detection limit is 0.05 ppm.
- (d) ND = Not detected at the detection limit specified. The detection limit for BTXE is 0.0005 ppm for each unless otherwise noted.
- (e) California maximum contaminant levels (MCL) for drinking water. Toluene has a action level of 0.1 but no MCL. NA = not applicable, there is no MCL standard for this compound.

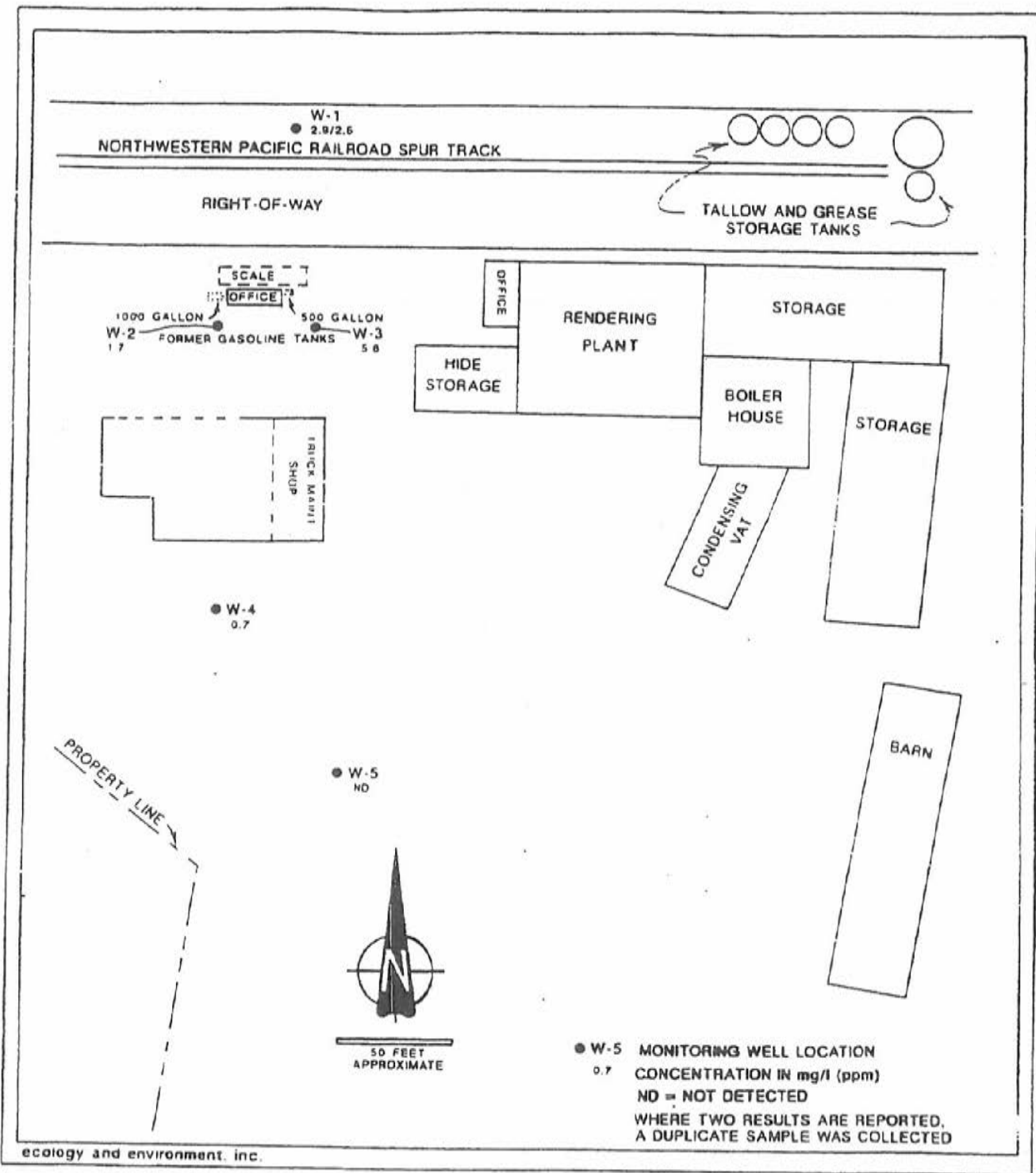


Figure 5-2 TPH IN GROUNDWATER - APRIL 3, 1990
ROYAL TALLOW AND SOAP CO.

The concentration of benzene in water from wells W-1, W-2, W-3, and W-4 all exceed the California maximum contaminant level (MCL) of 0.001 mg/l for drinking water. The MCL for xylene and ethylbenzene is exceeded by groundwater from well W-3. The MCL for xylene is 1.75 mg/l and 0.68 mg/l for ethylbenzene. Toluene has a state action level of 0.1 mg/l, and the water from W-2 and W-3 exceeds this amount. TPH does not have a state or federal level for drinking water. The brackish, shallow water at this location is not used for any beneficial purpose.

A sheen of floating product has been observed on the groundwater but there is no measurable thickness.

6. SUMMARY AND CONCLUSIONS

One or both USTs at the RTSC leaked gasoline prior to their removal. The concentration of TPH and of BTXE compounds in soil are generally higher from W-2, which is closest to the location of the westernmost tank, but concentrations of TPH and BTXE are higher in groundwater from W-3.

Some gasoline products (TPH and BTXE) were found in soil samples from W-1, W-2, and W-3, and at low concentrations in one soil sample each from W-4 and W-5. Ten of 21 soil samples had TPH concentrations in excess of 100 mg/kg. Petroleum products in the soil are mainly above a depth of 15 feet. TPH (at concentrations up to 20 mg/l) and some aromatic compounds are also found in the groundwater from wells W-1, W-2, W-3, and W-4. Of the volatile aromatic compounds in groundwater, benzene was found in concentrations as high as 6.84 mg/l (ppm), toluene was found at up to 6.88 mg/l, xylene at up to 6.23 mg/l, and ethylbenzene at up to 1.26 mg/l. EDB was not detected in any soil or groundwater sample, but TEL (lead) was detected at low levels in four soil samples.

The shallow groundwater flow direction and gradient varies, but is generally to the south or southwest. Groundwater is found onsite at a depth of approximately 3 to 5 feet. It is not clear how the petroleum products found in the soil and groundwater at W-1 got there, since this location typically is not downgradient of the USTs. The boundary of the groundwater-gasoline plume is not well defined. Groundwater onsite is shallow, brackish, and shows little or no tidal influence. The hydraulic conductivity of the soils is low, and the corresponding groundwater flow velocities which were calculated range from 10 to 31 feet per year.

rl/petaluma/6

MFG03083

7. REFERENCES

Ecology and Environment, Inc., 1989, Work Plan, Characterization and Remediation of an Underground Storage Tank Site, at Royal Tallow and Soap Company, Petaluma, California, prepared for Darling-Delaware Co., Inc. of Dallas, Texas.

Freeze and Cherry, 1979, Groundwater, Englewood Cliffs, N.J.: Prentice-Hall, Inc.

North Coast, San Francisco Bay and Central Valley Regional Water Quality Control Boards, June, 1988, Regional Board Staff Recommendations for Initial Evaluation and Investigation of Underground Tanks.

State Water Resources Control Board, October 1989, LUFT Field Manual Revision.

U.S. Department of Agriculture, May 1972, Soil Survey of Sonoma County, California.

Expert Report of Dwight R. Hoenig

Darling International V. Baywood Partners, Inc. et al.
U.S.D.C. of California, N. District, Case No. C05-3758 EMC

March 2, 2007

Prepared for
Miller Starr & Regalia
Walnut Creek, California



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EXPERT REPORT OF DWIGHT R. HOENIG

DARLING INTERNATIONAL V. BAYWOOD PARTNERS INC. et al.

U.S.D.C. of California, N. District, Case No. C05-3758 EMC

The following is the report of Dwight R. Hoenig, who has been retained as an expert by Baywood Partners in the litigation captioned Darling International Inc. v. Baywood Partners, Inc.

1.0 BIOGRAPHY

I, Dwight Hoenig, am a consultant with the environmental engineering firm of Bureau Veritas North America, Inc. (formerly known as Clayton Group Services). I serve as the Regional Chief Executive for the office located in Pleasanton, California. In this capacity I oversee an office of approximately 70 professional staff engaged in environmental services and health and safety consulting. I have been employed by Bureau Veritas (or a predecessor company) since December of 1989.

Prior to becoming a consultant I served as the Regional Administrator for the Toxic Substances Control Division (TSCD) now reorganized as the Department of Toxic Substances Control, (DTSC) of the California Department of Health Services from 1983 to 1989. In that capacity I directed the regional programs authorized under the Federal Resource Conservation and Recovery Act (RCRA), Comprehensive Environmental Response Compensation and Liability Act (CERCLA), and California State programs authorized by the Hazardous Substances Account Act and Hazardous Waste Control Act. These programs included permitting, surveillance and enforcement, and site remediation for sites which either managed, or were impacted by hazardous waste.

Prior to my employment with the State of California I was employed for eight years by the U.S Environmental Protection Agency (EPA) in the Dallas Regional Office. While there I served in several positions including Chief of Groundwater Protection Programs (1979-1981) and Chief of the Superfund Operations Section (1981-1983).

I have been deposed as an expert witness on numerous occasions and have been qualified as an expert witness in the California State Superior Court, Counties of Alameda, and San Mateo, the United States District Court for the State of California, Central District, and the United States District Court for the State of California, Eastern District. (See resume, Appendix 1)

2.0 RELEVANT EXPERIENCE

The primary focus of my consulting career has been in the service of real estate developers, property management firms, financial institutions, and major and independent oil companies. In this capacity I have been directly involved in the investigation and/or remediation of over a hundred contaminated properties. For the majority of these, the goal was regulatory closure in the form of either a "Case Closure" or "No Further Action" (NFA) letter from the relevant regulatory agency. As a consultant, I have had the opportunity to work at the direction of numerous Federal, State and local environmental

regulatory agencies including the U.S. EPA, the DTSC, several of the Regional Water Quality Control Boards, including the San Francisco Regional Water Quality Control Board and numerous city and county agencies.

As Regional Administrator of the TSCD, I was in charge of the site remediation program for the North Coast California Region. This program included management of Federal and State Superfund projects as well as oversight of privately funded, enforcement actions and voluntary remediation projects. As the Regional Administrator I was a Signatory Official for virtually all of the Site Certifications and No Further Action Letters issued by the North Coast California Office of the TSCD from December of 1983 through January of 1989. The universe of sites which our Department worked on ranged from simple Leaking Underground Storage Tanks to complex State and Federal Superfund Sites.

During my tenure at the U.S. EPA I managed the Superfund Operations Section for the Region VI office in Dallas Texas. In that capacity I directed a staff of 13 engineers, geologists and contractors engaged in investigation, remediation and removal actions at 19 sites that were listed on the National Priority List (NPL) as authorized under CERCLA.

PREVIOUS EXPERT WITNESS DESIGNATIONS OF DWIGHT HOENIG

- 1) Costco V. Bay Area Rapid Transit: Extent of Contamination and Need for Remedial Action. (Deposition and Testimony at Trial) Retained by Deborah Sturmer, Esq. Lurch Sturmer LLC. Superior Court, State of California, County of San Mateo. Case No. CIV435478. Dates of engagement, May – December 2004,
- 2) City of Los Angeles v. San Pedro Boat Works (Coca Cola Bottling Co.) Provided declarations regarding causes of contamination related to heavy metals in Los Angeles Harbor. The matter is still pending in the United States District Court, Central District. Case No. 02-7986 ABC (JWJx) Retained by Joe Armao, Esq. Heller Ehrman, White & McAuliffe. Dates of Engagement: January 2004 to present.

Publications

In the past 10 years I authored the following publication:

- Dwight R. Hoenig, 2000, Dry Cleaning Tenants: Understanding and Minimizing the Risks. The Risk Management Newsletter, Volume 21, Issue 1
- Dwight R. Hoenig, 2001, An Overview of the Environmental Impacts of Metal Plating Facility Operations, Proceedings of the Environmental Bankers Association Conference, Scottsdale Az. March 9, 2001.
- Dwight R. Hoenig, 2005, Electrical Resistive Heating – A Presumptive Remedy for the Remediation of Chlorinated Solvent Releases, Proceedings of the California Groundwater Resources Association Symposium on Dry Cleaner Contamination, Sacramento Ca. April 7, 2004.

Compensation

Compensation to be paid is \$210/ hour for consulting time and \$300/ hour for deposition testimony and court appearances.

3.0 SITE BACKGROUND

The subject site is an 18.8 acre property which was the site of a former animal rendering plant operated by Royal Tallow and Soap Company and Darling International. (See attached map, MFG Figure #2) The facility ceased operation in approximately 1986. In 1989 two on-site underground storage tanks (UST) were removed. During UST removal, floating product was observed in the open excavation. On July 29, 1989, the Sonoma County Public Health Department directed Royal Tallow to undertake a preliminary assessment of the leakage. Darling was directed to follow the investigation procedures outlined in the "Tri-Regional Board Staff Recommendations for Initial Evaluation and Investigation of Underground Tanks" (Appendix 3) which was issued jointly by the staff of three Northern California Regional Water Quality Control Boards.

In August of 1990 the environmental consulting firm of Ecology and Environment was retained to conduct a subsurface investigation in the vicinity of the former underground storage tanks. That investigation identified gasoline contamination in both shallow soil and groundwater. (Appendix 4) In that investigation the maximum concentrations of Total Petroleum Hydrocarbons, as gasoline, (TPH-g) were found at concentrations of 20,000 ug/L in groundwater. The maximum concentrations found in soil were 3,530,000 ug/kg. The maximum concentration of benzene was reported at 11,200 ug/kg. Additional monitoring wells at this site were installed by Ecology and Environment in 1991.

In February of 1993, a second environmental consulting firm, Dames & Moore, was retained to complete a feasibility study of remedial alternatives which apparently considered only groundwater contamination. (Appendix 5) In the Executive Summary of that study, Dames and Moore mistakenly reported that "The impacted soil has also been removed from the ground and is awaiting disposal." It is apparent that the soil which was referred to in this document only included the soil which was removed during tank excavation and did not include the contaminated soil which was identified in the Ecology and Environment investigation of 1990.

In the feasibility study itself, Dames and Moore evaluated several alternatives to remove, treat or contain the contaminated groundwater. The report concluded that treatment of the groundwater by In-Situ Biodegradation through the use of air sparging technology, with the possible addition of nutrients, was the preferred alternative for groundwater cleanup. In the Executive Summary the report stated: "Further laboratory tests will be need to be conducted prior to installation of a full scale bioremediation system for the site. If these tests confirm preliminary laboratory results, an in-situ bioremediation system will be installed. If these tests indicate that bioremediation would not be effective, an extraction and treatment system will be installed at the site."

The record indicates that this study was submitted to the County but it does not appear that Darling implemented any of the remedial actions that were identified by Dames & Moore. Darling essentially chose a "no-action" alternative by attempting to demonstrate through additional studies that no actual remediation was necessary.

In June of 1995 Dames & Moore prepared a Request for Classification As Non-Attainment Zone for this site. (Appendix 6) This approach was considered to be appropriate for sites where there is "...residual soil pollution with limited water quality, environmental and human health risks. The Request For Non-Attainment Zone Classification contained language indicating that a deed notification would need to be placed on the site for future owners to properly manage the hazards associated with the remaining soil

contamination which was going to be left on-site. My review of the file does not indicate that this Request was ever sent to the regulatory agencies.

In January of 1996 the consulting firm of Risk Based Decisions prepared a Risk Based Corrective Action Report (Appendix 7) which contained the following conclusions:

- The fuel tank leak had stopped and ongoing sources including free product had been removed or remediated.
- The site had been adequately characterized.
- The dissolved hydrocarbon plume was not migrating.
- No Water wells or sensitive receptors were likely to be impacted.
- The site presented no significant risk to human health.
- The site presented no significant risk to the environment.

The report made a recommendation to install one additional monitoring well on site, and further, that future actions at the site be limited to groundwater monitoring.

It is important to note that this report did not include the quantified soil data first identified by Ecology and Environment in 1990. If identified, that data would have shown the hazardous conditions associated with the potentially ignitable shallow soil, and the high benzene concentrations which the agencies later determined were a health risk to future on-site construction workers.

On March 11, 1997 the Sonoma County Department of Health Services, Environmental Health Division issued a letter stating in part that "...no further remedial action will be needed at this site if after two years of annual monitoring there is no evidence of adverse pollutant migration. At the end of the two year monitoring period the site will be evaluated for closure." (Appendix 8)

Ultimately in March of 2000, a fourth consulting firm, Delta Environmental Consultants, submitted the required Appendix B Closure Report (Appendix 9) which provided a summary of the current site conditions describing the residual groundwater contamination and the gasoline contamination in the shallow soil horizon.

Upon reviewing this data in this report the County Department of Health Services requested further evaluation of the site due to the health hazards posed by benzene in the soil and the potential for fire or explosion due to the high concentrations of residual gasoline which remained in the shallow soil.

As a result, Darling hired a fifth consulting firm, MFG, to excavate treat and reuse a volume of 2,390 cubic yards of gasoline impacted soil to eliminate the hazards posed by residual gasoline/benzene contamination. The cleanup criteria specified for commercial/industrial development for this project was 400 mg/kg as gasoline with benzene concentrations not to exceed 0.39 mg/kg.

The soil remediation project was finished in August of 2002. (Appendix 10) However Darling did not receive the requested "No Further Action" (NFA) letter until August 3, 2004. (Appendix 11) The County File Log indicates that prior to drafting the NFA letter, the County went through an extensive series of technical and administrative reviews before signing off on the NFA. The process included: obtaining concurrence from the Regional Water Quality Control Board; properly abandoning all monitoring wells;

updating the data points on the GeoTracker Data Base; conducting file reviews; preparing the Case Closure Summary (CCS); preparing a Draft Closure Recommendation Letter to the RWQCB; conducting a site visit; preparing a Notice of Pending Action form; obtaining signatures on the Case Closure Letter from the Director of Health and the RWQCB etc. The exhaustive steps that the County went through to finally issue the NFA letter are a clear indication of the level of scrutiny a site must go through before receiving any form of official NFA Determination or "Closure" for a County administered clean up project.

Other environmental assessments completed on this property focused on other environmental issues in addition to the underground storage tanks. The consulting firm of REA (later name changed to "pH7") completed one such assessment in May of 1990. (Appendix 12) That assessment identified and documented the locations of hazardous materials on site and identified several environmental concerns including the following:

- Materials which were found or presumed to be Friable Asbestos Insulation was identified in several locations throughout the property including "cookers" located both inside and outside the remaining structures, lagging materials found in the laundry room, pig barn, mill room, garage and boiler room.
- Miscellaneous wastes including "numerous 55 gallon drums" "Jerry cans" of gasoline, Waste oil drums, point cans etc.
- "Uncharacterized sludge's" in the sewer building

A recent evaluation of environmental issues at the Site was completed by pH7 in May of 2005. (Appendix 13) That evaluation cited an inspection done by IHI Environmental in 2002. Those reports indicated that significant quantities of Hazardous Materials remained on the Site. The Hazardous Materials noted included asbestos, which was found at 9 separate locations, various deposits of "loose and peeling" lead based paint which exceeded Federal RCRA hazardous Waste standards of 5,000 mg/kg. The reports also discussed the presence of significant quantities of non-hazardous biologic waste sludge. This report also provided a cost: "...estimate for abatement and biologic waste disposal...is \$192,323.00."

My review of the files and Site inspection indicates that the majority of these Hazardous Materials and animal wastes are still located on the Site today.

4.0 SCOPE OF ASSIGNMENT AND SPECIFIC OPINIONS RELATED TO DARLING INTERNATIONAL, PETALUMA CALIFORNIA

The scope of my assignment is described in the February 9, 2007 letter to me from counsel for Baywood, (Appendix 2). The following sets forth my opinions on the issues raised in my assignment.

- 4.1 *As of May 1, 1997, Darling International had not removed, treated, remediated, and/or contained Hazardous Materials as that term is defined in section 4.2 of the April 30, 1990 Purchase and Sale Agreement, (contract, Appendix 14) including asbestos and animal waste products, from the property. The regulatory agencies had not accepted Darling's removal of Hazardous Materials from the property as complete.***

The basis of this opinion is further developed in the responses to the following sub issues.

- 4.2 *The Sonoma County Department of Health Services, Environmental Health Division letter dated March 11, 1997, did not constitute acknowledgment of completion of the removal,***

treatment, remediation, or containment of Hazardous Materials at the Property in the manner required by any remediation work plan submitted by Darling and approved by the relevant public agencies.

The March 11, 1997 letter does not acknowledge "completion" of the removal, treatment, remediation or containment of hazardous materials. The letter constitutes a request for additional information and not an acknowledgment of completion or closure. This letter requests an additional 2 years of monitoring well data and states that "if...there is no evidence of adverse pollutant migration...the site will be evaluated for closure." Further based on my reading of the file, there had been no attempt to accomplish actual removal, treatment, remediation or containment of these contaminants by the date of this letter.

- At times prior to this date, Darling did consider various schemes to actively remediate the groundwater contamination related to the leaking underground storage tanks, (Dames & Moore, Feasibility Study Report, February 8, 1993); however it appears that none of these active remediation schemes were ever implemented.
- The Sonoma County Leaking Underground Storage Tank (LUST) File Log (Appendix 15) indicates that neither the County, nor Darling, considered the site work to be complete in 1997.
- As of the date of the letter, Darling had not submitted the necessary documentation, in the form of an Appendix B Report, or other report, which was a required submittal for an agency to make a determination as to the acceptability or completeness of a remedial action. Without the opportunity to review this report, the Agency would not make findings as to the completion of site remediation.
 - The Appendix B Closure Report was submitted on April 3, 2000, and it was rejected by the County. The report, submitted by Delta Consultants on behalf of Darling International, was rejected by Sonoma County because gasoline and benzene contaminated soil which was considered to be a Hazardous Waste, due to the potential for the soil to ignite, was still present in shallow soil on the site.
 - Darling International was required to undertake the previously described soil removal project which delayed an agency determination on this property until August of 2004.
- The fact that Darling had not completed the required actions on this property is further documented in a journal entry made on March 16, 1998 to the Underground Storage Tank File Log from the Sonoma County Environmental Health Department. In this entry Mary Allen reports a voice mail received from Subba Rao of Darling which states in part "...Subba's not sure if site is complete."
 - A journal entry in that same log made on April 28, 1998, reports a voice mail received from Mike Berrington of Delta Environmental Consultants. The voice mail posed the question "When are they finished?" Ms. Allen's response is recorded as "...I haven't had time to research it yet."
- A journal entry dated November 30, 1999 indicates a telephone call received by Mary Allen from Bill McMurtry of Darling. The entry reads in part "We discussed closure process. He (McMurtry) will have Delta write a site summary."

- A journal entry dated February 3, 2000 reports a voice mail message from Bill McMurtry regarding the "...status of closure" and "...procedure for closure." The entry goes on to say the "He [McMurtry] feels Delta is stalling. We should receive [site summary] by the end of the month."
 - Additional entries in this file log indicate that the Site Summary Report (Appendix B Report) was ultimately received by the County on April 3, 2000.
- The State Water Resources Control Board Geo Tracker Database, which tracks the progress of the remediation of LUST sites throughout the State, indicates that remediation of soil and groundwater took place from February through December of 2000. Verification monitoring was completed in January of 2003, and Case Closure was granted on July 30, 2004. (Appendix 16)
- Additional documentation demonstrating that Darling had not completed remediation of the UST related Hazardous Materials, as of May 1, 1997, is found in an e-mail from Bill McMurtry to Al Gaither dated December 23, 1999 which states "We are still waiting for a response from the agency. All the work is complete and we have requested closure. We are probably a couple of months away from official closure..."

In summary, it is my opinion that The March 11, 1997 letter did not constitute completion of the removal, treatment, remediation or containment of Hazardous Materials at this property.

4.3 *As of March 11, 1997 Darling's efforts to remove, treat, remediate, and/or contain Hazardous Materials from the Property were not accepted by the relevant public agencies as having been completed to a level below action levels for commercial use and development.*

My review of the record indicates that the agencies did not make a finding regarding the suitability of the site for commercial use and development. The agencies did consider Darlings data relative to groundwater contamination and in the March 11 letter, gave a preliminary indication that following an additional two years of groundwater monitoring, assuming there was no evidence of adverse pollutant migration, "...the site will be evaluated for closure."

When that evaluation was undertaken in April of 2000, the site was found to be unacceptable due to the continuing presence of potentially ignitable soil and the presence of benzene at concentrations which were thought to pose a hazard to future construction workers at the site. (SCDHS Letter, Appendix 17)

In terms of the ability to redevelop the property, it was pointed out in the Draft Non-Attainment Zone Application by Dames and Moore that Federal OSHA regulations would have applied to the exposure of onsite workers who would come into contact with the gasoline contaminated soil which remained on the site in May of 1997.

- In June of 1995, Dames and Moore prepared the Draft Request for Classification As Non-Attainment Zone. That document was prepared in accordance with the relevant guidelines issued by the San Francisco RWQCB. In section 5.0 of that document Dames and Moore describes the need for a permanent notification to be placed on the deed to serve as a warning to future owners, construction workers, utility workers etc. such that future workers will know the nature, location and extent of contamination in soil and groundwater. This

section further states that "...these parties will be indemnified by Darling...so that their liability for future cleanup is limited." According to Dames and Moore, the areas which would have been subject to these requirements are shown on figures 6 and 7 of this draft report.

- Section 5.1 of the Dames & Moore draft provides a notification plan to protect future site workers; the plan instructs future workers to become knowledgeable of the health hazards of contaminants known to be left in soil by reviewing Material Safety Data Sheets related, specifically, to gasoline, diesel fuel, motor oil, benzene, toluene, ethyl benzene, xylene. This section also specifies the minimum Personnel Protective Equipment (PPE) to be worn by all workers in the areas of residual contamination consisting of: steel-toed shoes, safety goggles, hard hats, surgical latex inner gloves and Nitrile outer gloves.
- Section 5.1 also states that any trenching or excavating activities in the affected areas should be continuously monitored for gasoline vapors by use of a photo ionization detector, (PID) and that if readings exceed 1 part per million (PPM) in the breathing zone, workers be required to wear air purifying respirators. I have noted that during the soil remediation project undertaken by MFG in 2001, that PID readings were taken from the soil piles which had been excavated and partially treated for several months to reduce hydrocarbon content. The Headspace PID readings which are reported in Table 6 of that report (MFG, October 31, 2002) showed a high reading of 87 PPM. Approximately 38% of the readings reported in this table were above the threshold value of 1.0 PPM. This indicates to me that there is a high likelihood that on-site construction workers who were doing in-ground construction activities in the vicinity of these soils would have been required to wear the OSHA prescribed personnel protective equipment, including air purifying respirators.
- Section 5.1 properly indicates that work done in these areas shall be done consistent with the requirements of 29 CFR 1910 and 1926 (equivalent to Cal OSHA regulations found in Title 8 of the California Code of Regulations. Relevant sections include 8CCR 5192 (1)C). These regulations describe the Training, Health and Safety programs, Hazard Communication Programs, Medical Surveillance, Work Practices, Engineering Controls, Personnel Protective Equipment and Monitoring Programs that must be in place when working in and around contaminated soil,

It is my opinion that, based on the analytical data which describes the gasoline contaminated soil at Darling that on-site construction workers would have been subject to the OSHA regulations as prescribed in the Dames and Moore Non-Attainment Zone Petition. It is also my opinion that the extensive training and medical surveillance monitoring prescribed by the regulations is not provided to the employees of typical construction companies.

In conclusion, there is no indication of any "acceptance" or "completion" of the remedial action in 1997 to a level below action levels for commercial use and development of the property. Furthermore, I believe that if the sale of the Site had gone forward with these contaminants remaining in place, the ultimate redevelopment project would have been compromised by the exposure of construction workers to high concentrations of gasoline and benzene, and the need to halt and disrupt the redevelopment project by undertaking the same remediation project which MFG undertook in the year 2000.

4.4 *As of May 1, 1997, Darling had not removed, treated, remediated, or contained all Hazardous Materials as that term is defined in Section 4.2 of the Contract. Section 4.2 of the contract provides a broad and inclusive definition of what are to be included as hazardous materials. The definition includes "...all substances chemicals, wastes, sewage or other materials which are...regulated, controlled, or prohibited by any local, state or federal law or regulation requiring removal, containment, warning, or restrictions on use, disposal or transportation..." A review of the file indicates that the only substantive removal or treatment of hazardous materials accomplished by Darling, other than the excavation of the underground storage tanks and removal of the associated soil, was related to the excavation and treatment of the residual gasoline contaminated soil. Darling did not finish the remediation of these contaminants until August of 2002. Other Hazardous Materials as defined in Section 4.2 of the Contract apparently remain on site to this date.*

The file documentation indicates that the following hazardous substances and regulated materials were present on site as of May 1, 1997.

- **Asbestos Containing Materials: (ACM)**

- Materials containing more than 1% friable asbestos (by weight) are listed as a "Hazardous Materials" in Title 22 of the California Code of Regulations.
- Section 4.2 of the contract also specifically states, "The term Hazardous Materials also includes, without limitation asbestos..." etc.
- The presence of ACM is documented in several reports and file documents relevant to this site, including REA, June 2, 1990, (Appendix 12) pH7, March 8, 1998, and March 28, 2001, IHI Environmental, April 25, 2001, Sterling Environmental Corporation, May 12, 2001 and July 1, 2002, Van Brunt Associates March 10, 2005. (Appendix 18)
- The IHI hazardous Material Survey in April 2001 documented the finding of Asbestos Cement Pipe which was found in the excavation debris pile which was associated with the soil excavation project undertaken by MFG. (See Photo # 1 attached) Additional documentation indicates that there was 30 lineal feet of Asbestos Pipe which was apparently removed by a licensed contractor. (Sterling Environmental, May 12, 2001.) Based on the deposition of Mr. Chris White of MFG it would appear that Asbestos Cement Pipe associated with abandoned storm drains is still located in the subsurface of the property beyond the area of the soil excavation project. Asbestos is a Hazardous Material per section 4.2 of the Contract.
- During my own inspection of the site on November 9, 2006 I observed suspect ACM in several areas of the site where the previous inspections had confirmed that ACM was present. During that inspection Mr. Chris White, Senior Hydrogeologist with the consulting firm MFG verbally confirmed the presence of ACM at several locations around the site including the insulation materials found on the "cookers" (Photo #2) and the insulation found in the Boiler Room. (Photo #3)
- During the November 9 inspection I examined the underground cisterns (Photo #4) to evaluate the possible presence of ACM. I found no indications of ACM in this area with the exception of roofing tile debris which was lying on the ground throughout the area. That material appeared to have the potential to be an ACM.

- In terms of the suspect use of ACM, I know of no practical application or reason to suspect that asbestos would have been used in the construction or operation of in-ground concrete cisterns such as those in use at this facility. I did not observe any physical structure, (other than the roof) construction material, or process piping or other equipment which would cause me to believe that ACM would have ever been associated with these cisterns.

- **Hydrocarbon Contaminated Soil**

- Darling did not remove treat or contain hydrocarbon contaminated soil as of May 1, 1997. The hydrocarbon contaminated soil is regulated by several California agencies and therefore is captured in the definition of Hazardous Materials in Section 4.2 of the contract.
- The hazardous constituents (gasoline) contained in the soil subjected the soil to a variety of regulations under the authority of both State and Federal agencies:

The subject soil was considered to be a "Hazardous Waste." Appendix G of the Leaking Underground Fuel Tank Manual, (Appendix 19) issued by the California State Water Resources Control Board, (October 18, 1989) recommends that soil containing greater than 1,000 mg/kg of Total Petroleum Hydrocarbons (TPH) be classified as Hazardous Waste for purposes of storage, transportation manifesting and treatment. This determination was stated in the Sonoma County Department of Health Services April 20, 2000 review of Darling International's March, 2000 Appendix B Closure Report. Sonoma County noted that shallow soil containing gasoline-range TPH remained at the site at concentrations reported to be as high as 3,530 mg/kg. For this reason the gasoline contaminated soil meets the definition of Hazardous Material as stated in Section 4.2 of the contract.

In addition, the State of California Water Quality Control Board regulates soil containing significant concentrations of petroleum hydrocarbons as "Designated Waste" which is also known as Class II Waste. California Water Code Section 13173 defines the term Designated Waste, (also referred to as Class II waste) The classification includes "...non-hazardous waste that consists of or contains pollutants that...could be released in concentrations that exceed applicable water quality objectives or that could be expected to affect beneficial uses of water of the state..."

The fact that this soil was a Designated Waste, with the ability to contaminate water resources, was further demonstrated by the MFG Soil Remediation Report of October 31, 2002. In Section 3.2 of that report MFG reports the analytical results for rainwater which had accumulated in a soil excavation and had subsequently come into contact with the contaminated soil in the excavation. Their analysis reported contamination of the contact water with petroleum hydrocarbons at concentrations in excess of 1,000 ug/L. Therefore it is my opinion that this soil would be regulated as a Designated Waste under the authority of the RWQCB.

The water which came into contact with this soil was also regulated under the Federal Clean Water Act. A total of 88,000 gallons of hydrocarbon contaminated water was

required to be discharged to the Petaluma Sanitary Sewer under a Special Discharge Permit (MFG, Section 2.1.4) between December 2000 and June of 2001.

The Delta Environmental Consultants proposal of August 23, 2000 identifies and confirms that the contaminated soil is considered to be a Class II Designated Waste. In that proposal Delta proposes to excavate and dispose of 1,200 tons of hydrocarbon contaminated soil. The proposal anticipated disposal at an offsite landfill permitted to accept Class II regulated waste. The operating permit issued by the RWQCB for that facility specifies that waste [soil] in excess of .050 mg/kg of TPH-Gasoline must be managed in the permitted Class II Waste landfill cell.

It is my opinion that the disposal of gasoline contaminated soil at this facility is captured by the regulations of the State of California and therefore is considered a Hazardous material as defined in Section 4.2 of the contract.

- The Bay Area Air Quality Management District (BAAQMD) also regulates the excavation, storage and treatment of petroleum contaminated soil under Regulation 8, Rule 40, which applies to soil contaminated with hydrocarbons in excess of 50 mg/kg. The prescriptive regulations cover the following activities:

- Rule 8-40-301: Soil Aeration Restrictions
- Rule 8-40-402: Reporting Excavation of Contaminated Soil.
- Rule 8-40-403: Reporting Aeration of Soil
- Rule 8-40-601: Contaminated Soil Sampling

For this reason the gasoline contaminated soil is also "controlled" by the BAAQMD and therefore meets the definition of "Hazardous Materials" as defined in Section 4.2 of the contract.

- **Fuel Pipeline Containing Bunker C Fuel**
 - Based on the deposition of Chris White and my own inspection of the Site on November 9, 2006 a fuel oil pipeline containing Bunker C Fuel Oil (or similar product) remains on site. (See photo # 5) The pipeline appears to be one of a series of pipelines which extend from the former tallow above ground storage tanks in the direction of the rendering plant. I found no documentation to indicate that the length of this pipeline run had been investigated for possible leakage or contamination. The Bunker C Fuel is regulated as a as a Hazardous Material under 49 CFR 172.101, and is similarly captured under the California Health and Safety Code, Section 25501.

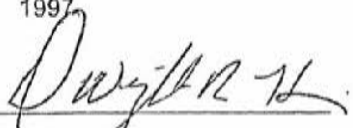
Based on the above findings, Darling had not removed, treated, remediated or contained all Hazardous Materials at the property as of May 1, 1997.

4.5 As of May 1, 1997, Darling had not removed all animal waste products from the underground cisterns at the property.

- During the inspection of November 9, 2006, I noted the presence of large volumes of biological waste (animal fats and waste water) in the in-ground cisterns. The observation was confirmed by sampling of the floating residue found in the cisterns. Samples of floating sludge materials were analyzed and found by laboratory analytical analysis to contain 200,000 mg/kg of total hydrocarbons which I have concluded were derived from residual animal fats. (Photo # 6) (Lab analysis, Appendix 20)

- As a confirmation, an additional sample of what appeared to be waste animal fat and grease was taken from one of the approximately 40 above ground storage tanks found on site. The analytical results from those containers reported 95,000 mg/kg of total hydrocarbons suggesting that these two materials had a common origin as animal fat. (Photo # 7)

Based on the above findings, Darling had not removed all animal waste products as of May 1, 1997.



Dwight R. Hoeng

March 2, 2007

DARLING INTERNATIONAL, INC..

V.

BAYWOOD PARTNERS, INC.

U.S. NORTHERN DISTRICT COURT OF CALIFORNIA
SAN FRANCISCO DIVISION
CASE No. C05-3758 EMC

**BAYWOOD PARTNERS INC.'S
TRIAL EXHIBITS**

**VOLUME 3 OF 4
EXHIBIT B520 – B522**

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Baywood Trial Exhibits
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MILLER STARR REGALIA

IN THE UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

Darling International, Inc.,
Plaintiff

v.


Baywood Partners, Inc., et al.,
Defendants.

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:
:

Case No: CV05-03758 EMC

EXPERT REPORT OF
JEFFREY ZELIKSON

March 5, 2007



Jeffrey Zelikson
Director
LECG, LLC
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Section 1

Expert Opinion

I. Qualifications

I am a Director with LECG, LLC, a global consulting services firm that provides consulting, expert analysis and testimony in a wide variety of disciplines including economics, finance, accounting, environmental matters and health care amongst other areas of specialty. LECG was founded in 1988 and provides its services to Fortune 500 companies, global businesses, legal firms, public sector industries and both foreign and domestic governments. LECG has a staff of over 1,000 professionals in offices on four continents. My consulting practice focuses on strategic and management consulting and expert analysis related to environmental matters, especially for matters related to management and remediation of hazardous substances.

Prior to joining LECG, I was with the environmental consulting practice of the PA Consulting Group, PHB Hagler Bailly and before that Putnam, Hayes & Bartlett, Inc. (PHB). The environmental consulting practice of the PA Consulting Group moved to LECG in April, 2001. PHB and PHB Hagler Bailly were both predecessor companies to the PA Consulting Group.

Prior to joining PHB in 1995, I served at the U.S. Environmental Protection Agency (US EPA) for nearly 25 years. I held executive level positions at EPA regional offices in New York and San Francisco. I also served as the state of New Jersey's chief water resource official in the 1970s. From 1987 through 1995, I was Director of the Hazardous Waste Management Division for the EPA's Western Regional Office in San Francisco. Among other matters, my responsibilities included the direction of EPA Region IX's hazardous waste regulatory, site cleanup (Superfund) programs and the underground storage tank (UST) and clean-up (LUST) programs and oversight of similar programs for the states of California, Arizona, Nevada and Hawaii.

Expert Report of Jeffrey Zelikson

I have had extensive experience across a range of environmental matters, with particular focus on the remediation of hazardous waste sites. I have over 25 years of experience in this particular environmental specialty, dating back to the identification of the first hazardous waste sites in the country in the late 1970s.

While Director of the Hazardous Waste Management Division for EPA Region IX, I oversaw the investigation and cleanup of more than 125 Superfund sites on the National Priorities List (NPL). For these sites, I was responsible for making hundreds of decisions that were governed by the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), and I was ultimately responsible for assuring that compliance was achieved with the NCP in investigating and cleaning up the Superfund sites under my direction. In addition, I was responsible for the oversight of other government agencies' efforts to remediate Superfund sites consistent with the requirements of the NCP.

I also directed the implementation of the underground storage tank program including oversight of states' efforts to regulate and clean-up leaks from thousands of underground tanks in Region IX.

Since 1995, I have been retained on a number of matters involving expert testimony on recovery of remediation costs. My expert analysis and testimony has focused on consistency with the NCP, on matters related to the necessity, appropriateness and reasonableness of remediation costs and related issues. I have been retained to provide expert testimony in more than 50 private party Superfund cost recovery actions, for both plaintiffs and defendants.

I have also been retained on several matters to provide expert analysis and testimony regarding environmental regulatory activities and implications of those activities, including agency determinations regarding completion of remedial activities.

I received a Bachelor of Science degree in mechanical engineering from the City University of New York and completed graduate courses in mechanical engineering at the Stevens Institute of Technology. I am a registered professional engineer in New York and New Jersey. Before joining the EPA in 1971, I designed petrochemical facilities for the foreign affiliates of the Exxon Corporation for five years.

A copy of my Prior Expert Testimony and my Curriculum Vitae is provided in Sections 3 and 4 of this report.

My fee for professional services, including trial testimony, is \$425 per hour.

II. Assignment

Counsel asked me to evaluate and to provide an expert opinion regarding whether Darling International, Inc. (Darling)¹ fulfilled its remedial obligations set forth in section 4.7 of the Agreement of Purchase and Sale (Sale Agreement) entered with Baywood Partners, Inc. (Baywood) on April 30, 1990 for the former Royal Tallow property located in Petaluma, California (Site or Darling facility). Specifically, counsel asked me to evaluate whether a letter received from Sonoma County Department of Health Services (SCDHS) dated March 11, 1997 fulfilled the requirement of Sale Agreement Section 4.7 on Definition of Completion of Remedial Work.

Counsel also asked me to evaluate and provide an expert opinion regarding whether the Royal Tallow and Soap Company Underground Storage Tank Site Characterization Report, prepared by Ecology & Environment, Inc. (E&E) dated August 14, 1990 (1990 E&E Report) fulfilled the requirement of Section 4.4.1 the Sale Agreement regarding the completion of a Tank Report.

¹ Darling is the successor to Royal Tallow and Soap Company, Inc. In this report, I use Darling to refer to both Darling International, Inc. and its predecessors associated with the former Royal Tallow facility in Petaluma, California.

In addition, counsel asked me to evaluate and provide an expert opinion regarding whether the Feasibility Study Report for the Royal Tallow and Soap Company, prepared by Dames & Moore (D&M) dated February 8, 1993 (1993 D&M FS) contains information on site conditions at least equivalent to the information contained in the 1990 E&E Report.

My opinions are summarized below in Paragraph III of this report, and the bases for my opinions are presented in Paragraph VII below.

I. Summary of Opinions

- A. Darling fulfilled its remedial obligations pursuant to Section 4.7 of the Sale Agreement with the issuance of the March 11, 1997 letter from SCDHS.
- B. The 1990 E&E Report meets the requirement for a Tank Report as described by Section 4.4.1 of the Sale Agreement.
- C. The 1993 D&M FS contains the same information on site conditions as the 1990 E&E Report and is more comprehensive.

III. Work Performed

In forming my opinions in this matter, I reviewed and supervised my staff's review of documents including correspondence among Darling, Baywood, their consultants and regulatory agencies, including the San Francisco Bay Regional Water Quality Control Board (Regional Board) and the SCDHS. I also reviewed and supervised my staff's review of reports that describe the response actions taken at the Site. A complete list of documents that I have considered and relied upon in forming my opinions is shown in Section 2 of this report.

IV. Additional Work to Be Performed

Based on direction from counsel, I may be asked to provide a rebuttal opinion to expert opinions from Baywood. In addition, I expect to provide deposition and trial testimony in this matter, as necessary and as directed by counsel.

II. Background and History of Response at the Site

The Regional Board issued a Tentative Order for Site Closure Requirements to Darling dated May 19, 1986. [REDACTED]

[REDACTED]

Darling had two gasoline Underground Storage Tanks (USTs) removed in June 1989, and, upon removal, the USTs were found to have leaked. SCDHS required Darling to conduct a preliminary assessment of the leaking USTs in accordance with Regional Board guidance. Darling retained E&E to conduct the investigation of the contamination. E&E prepared a Work Plan for the Characterization and Remediation of an Underground Storage Tank Site, dated September 15, 1989, that was submitted to SCDHS. After receiving comments from SCDHS on the work plan, E&E prepared a revised Work Plan for the Characterization and Remediation of the Royal Tallow and Soap Company Site dated December 13, 1989 (1989 E&E Work Plan). SCDHS approved the 1989 E&E Work Plan in a letter sent to Darling dated December 26, 1989. Pursuant to the work plan, E&E installed five groundwater monitoring wells and

conducted soil and groundwater sampling. Upon completion of the work, E&E prepared the Underground Storage Tank Site Characterization Report, dated August 14, 1990 (1990 E&E Report), which was received by SCDHS in September 1990. In an October 15, 1990 letter, SCDHS required Darling to conduct additional characterization activities. Pursuant to this request, E&E installed four additional groundwater monitoring wells to further delineate the areal extent of the contamination. E&E summarized the additional study results in the August 1991 Supplemental Site Characterization Report. The report concluded that gasoline and related compounds in the soil were generally found at shallow depth in the saturated zone at low concentrations.

E&E continued to conduct quarterly groundwater sampling, and results showed exceedences of levels of BTEX² compounds in some wells located downgradient of the former UST area. In response to these findings, by letter dated August 25, 1992, SCDHS requested that Darling submit a workplan for soil and groundwater remediation at the site. Darling engaged Dames & Moore (D&M) to conduct a feasibility study (FS) to address the remediation needed at the Site. Darling submitted the Feasibility Study Report for the Royal Tallow and Soap Company (1993 D&M FS) to SCDHS on February 8, 1993. The report recommended in-situ biodegradation as the preferred remedy for contaminated groundwater, pending the outcome of treatability studies. In the 1993 D&M FS, the high levels of total dissolved solids in groundwater at the Site were highlighted as an indication that the source would not be appropriate for domestic or municipal use, and furthermore, that the presence of elevated levels of gasoline contaminants upgradient of the UST area should be factored into the cleanup standard. On June 15, 1995, Delta Environmental Consultants (Delta), acting on behalf of Darling, submitted a request to the Regional Board to designate groundwater at the site a non-attainment zone, which would allow

² BTEX compounds are associated with petroleum compounds and include benzene, toluene, ethyl benzene, and xylenes.

for alternative cleanup standards because of factors that render the groundwater supply unsuitable as a future drinking water source.³

On September 5, 1995, Darling submitted a Workplan for Risk-Based Corrective Action (RBCA) Report that provided a plan to evaluate whether site conditions would pose risks to human health or the environment.⁴ SCDHS approved the proposed workplan for RBCA in a November 17, 1995 letter. The Regional Board approved the RBCA Report by letter dated May 8, 1996.

Pursuant to the Regional Board-approved RBCA Report, on July 12, 1996, Darling requested approval from SCDHS to install a groundwater monitoring well and conduct soil and groundwater sampling activities to determine the extent of residual petroleum constituents beneath the eastern portion of the site. In February 1997, Delta requested approval from SCDHS to change from quarterly to semi-annual reporting.

In a March 6, 1997 letter, Delta requested approval to destroy four monitoring wells. By a March 11, 1997 letter reply, SCDHS approved the abandonment of the four wells with submittal of an abbreviated workplan with site operating procedures for the well closures. In the March 11, 1997 letter SCDHS also stated that:

...no further remedial action will be needed at this site if after two years of semi-annual monitoring there is no evidence of adverse pollutant migration. At the end of the two year monitoring period, the site will be evaluated for closure.

³ The Regional Board issued a memorandum on October 21, 1994 on Implementation of Ground Water Non-Attainment Areas. According to the memorandum, non-attainment areas are "limited ground water pollution zones where concentrations are above water quality objectives." The Regional Board may designate such areas, or zones, in recognition that "in some cases cleanup to levels which comply with all water quality objectives may not be technologically or economically achievable within a reasonable period of time."

⁴ Risk-based corrective action is a process in which remedy decisions are made about sites contaminated by releases according to the *actual* risk the site poses to human health and the environment. The evaluation is site-specific, as each site has different potential routes of exposure to releases. This approach to site clean-up can allow for less stringent clean-up requirements than may be allowed by strict application of established clean-up criteria. In this case, the regulatory agencies agreed that RBCA was appropriate at the Darling facility, allowing Darling to meet regulatory requirements without engaging in active groundwater remediation.

After a period of continued monitoring, Delta submitted a request to SCDHS for a site closure determination by letter dated March 30, 2000. In a letter dated April 20, 2000, SCDHS requested "further discussion and evaluation on this site due to potential fire hazard and possible construction worker exposure to benzene." SCDHS requested "more information on the development of the property, so that a realistic assessment of risks can be made." SCDHS cited concern that elevated levels of benzene resulting from UST releases may be present in soil at depths that would pose a risk to workers excavating trenches for utilities or other purposes. In response, Delta proposed additional soil sampling to address SCDHS concerns.

In response to SCDHS concerns, Darling retained MFG, Inc. (MFG) to conduct soil remediation in the area of the UST releases. On October 25, 2000, MFG submitted a workplan to SCDHS to excavate contaminated soils identified in an investigation conducted by Delta in May and June 2000 for soils located in the former location of the UST excavation. The workplan proposed excavation of impacted soil to risk-based screening levels (established by the Regional Board in a September 20, 2000 memorandum) and on-site enhanced bioremediation of the excavated soil. After successful treatment of the soil, the treated soil would be used as engineered backfill for the excavation. SCDHS approved the workplan by letter dated October 30, 2000.

During 2001, Darling retained IHI Environmental to conduct a site Hazardous Materials Survey which was documented in a report dated February 1, 2002. The survey was required because demolition of two building structures at the site was needed to facilitate the excavation of impacted soil. During this time, MFG completed the soil excavation work and submitted the Soil Remediation Report to SCDHS on October 31, 2002. The report documented the removal of 2,390 cubic yards of soils, demolition of two building structures, and decommissioning of a monitoring well (to facilitate excavation). SCDHS reviewed the report and Darling's request for a no further action determination, and, again, required a period of additional confirmatory groundwater monitoring.

On May 22, 2003, MFG submitted the results of the additional groundwater monitoring activities to SCDHS and requested a no further action determination again. SCDHS replied July 15, 2003, by concurring with the recommendation for no further action and agreeing to begin process of site closure with the Regional Board. Upon completion of well destruction activities required by the Regional Board, Darling received a July 30, 2004 letter from SCDHS for final completion of remedial actions for the underground storage tanks and a determination "that no further action related to the petroleum release(s) at the site is required."

III. Bases for Opinions

- A. Darling fulfilled its remedial obligations pursuant to Section 4.7 of the Sale Agreement with the issuance of the March 11, 1997 letter from SCDHS.

Section 4.7 of the Sale Agreement sets forth various requirements for determining the completion of remedial work at the Site. Among those requirements are that the remediation work:

...has been accepted and approved by the Supervising Consultant and all Public Agencies ... as having been completed in the manner required by the remediation work plan approved by the Public Agencies...

And,

...the Remediation Work shall be deemed to be complete even if Purchaser must maintain monitoring wells after the completion and acceptance of the balance of the Remediation Work.

I understand that a Supervising Consultant, as defined by the Sale Agreement, was not designated for the Site. Facts that are relevant to my analysis include the involvement and oversight of appropriate regulatory agencies at the Site, and the extent to which the regulatory agencies required investigation and remedial action at the Site.

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED] SCDHS has jurisdiction over tank closure programs, so oversight of the UST releases at the Site was conducted by SCDHS as the lead agency, with Regional Board involvement focused on impacted groundwater and corrective action at the Site. Acting under the direction of SCDHS and the Regional Board, Darling undertook several actions to address UST releases at the Site, including conducting investigations, a feasibility study, and implementing a risk-based corrective action program.

SCDHS issued its March 11, 1997 letter to Darling after completion of work pursuant to the RBCA Report, including groundwater monitoring. SCDHS based its conditional no further action determination upon both the information it received from Darling and the information provided to the Regional Board. The provision in the March 11, 1997 letter for two years of continued groundwater monitoring is consistent with the Sale Agreement Section 4.7 allowance for the maintenance of monitoring wells after completion of remedial work. Based upon the above information, and the role of SCDHS as the lead agency, the March 11, 1997 letter meets the Sale Agreement Section 4.7 requirement that remedial actions be "completed in the manner required by the remediation work plan approved by the Public Agencies" and the letter is consistent with the Sale Agreement provision that remedial work "shall be deemed to be complete even if Purchaser must maintain monitoring wells."

The fact that SCDHS later required Darling to conduct additional investigation and remediation of soils in the UST area does not affect my opinion that the conditions in Section 4.7 of the Sale Agreement were fulfilled with the March 11, 1997 letter. Typically, the process of site clean-up occurs in multiple phases. First, remedial work is conducted pursuant to agency requirements. Next, the regulatory agency issues a letter acknowledging the completion of remedial action and requires a period of

monitoring. After completion of monitoring, the regulatory agency may agree to proceed with site closure. At the time the March 11, 1997 letter was issued, work at the Darling facility was in the post-remedial action monitoring phase of the process, and this was the phase of the process required by Section 4.7 of the Sale Agreement, not site closure.

Eventually, site closure was achieved and documented in the July 30, 2004 letter from SCDHS as described above. In my opinion, site closure was not required by Section 4.7 of the Sale Agreement.

In conclusion, it is my opinion that Darling fulfilled its remedial obligations pursuant to Section 4.7 of the Sale Agreement with the issuance of the March 11, 1997 letter from SCDHS.

- B. The 1990 E&E Report meets the requirement for a Tank Report as described by Section 4.4.1 of the Sale Agreement.

Section 4.4.1 of the Sale Agreement refers to the fact that Darling had engaged E&E to "prepare an environmental investigation of the Tanks and the soils, surface water and groundwater in proximity thereto," and that "the results of the environmental investigation of the Tanks shall hereinafter be referred to as the 'Tank Report.'"

Prior to the date of the Sale Agreement, Darling retained E&E to investigate the UST releases at the Site, and E&E prepared the draft work plan for the investigation dated September 15, 1989. This document is referenced in Section 4.3 of the Sale Agreement on Delivery of Existing Studies. As described above, E&E revised the September 1989 work plan based upon SCDHS feedback and prepared the final 1989 E&E Work Plan dated December 13, 1989, which was approved by SCDHS. The work plan called for conducting a soil gas survey, installation of monitoring wells, performing hydrogeologic studies, and sampling and analysis of groundwater samples. The site investigation work conducted by E&E was subjected to regular

oversight by SCDHS to ensure that it met the requirements of the approved 1989 E&E Work Plan and that adjustments to the work scope were made as needed.

Based upon my review of the 1990 E&E Report and the 1989 E&E Work Plan, and based upon the knowledge that the work was conducted under SCDHS oversight, it is my opinion that the 1990 E&E Report fulfilled the requirements set forth in the 1989 E&E Work Plan and fulfilled the requirement for a Tank Report per Section 4.4.1 of the Sale Agreement.

- C. The 1993 D&M FS contains the same information on site conditions as the 1990 E&E Report and is more comprehensive.

As stated above, SCDHS continued to provide oversight of site investigation activities at the Darling facility and to request modification of the scope of the investigation as needed. After submittal of the 1990 E&E Report, SCDHS required Darling to conduct additional characterization work to further define the extent of contamination, and, as a result, E&E installed additional groundwater monitoring wells, conducted monitoring, and issued the additional study results in the August 1991 Supplemental Site Characterization Report. Darling retained D&M in response to SCDHS's request for remedial action at the Site.

The 1993 D&M FS not only incorporates the results of prior site investigations, including the information presented in the 1990 E&E Report and subsequent Supplemental Site Characterization Report in 1991, it also provides an evaluation of proposed remedial alternatives.

Based upon my review of the 1993 D&M FS, it is my opinion that this document contains the same information that was provided in the 1990 E&E Report and that the 1993 D&M FS is more comprehensive.

W-9

ALEXAN PARK CENTRAL APARTMENT COMPLEX

EXPLANATION:

W-S LOCATION AND DESIGNATION OF DECOMMISSIONED MONITORING WELL

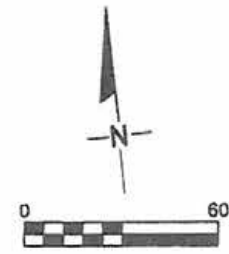
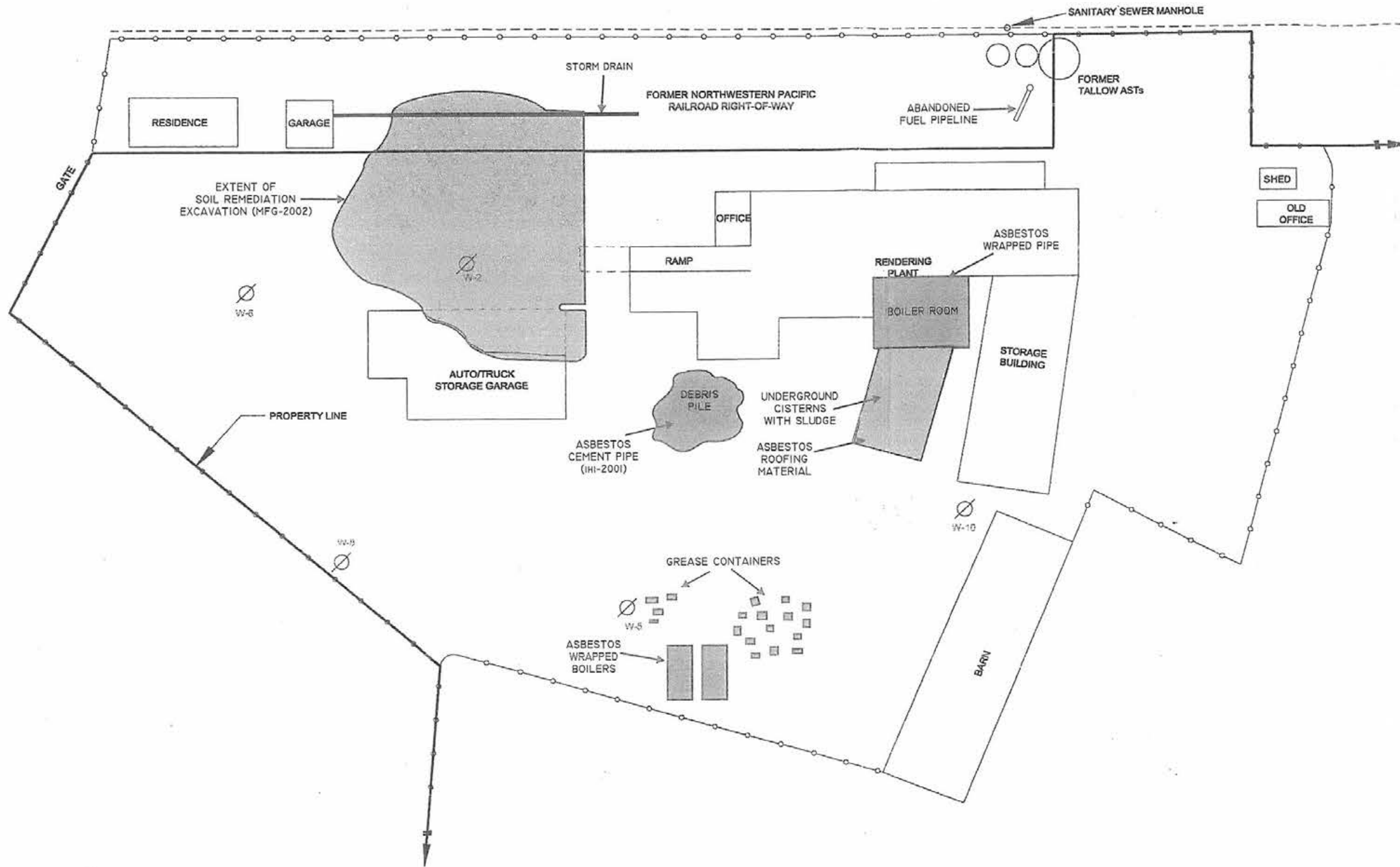
PROPERTY LINE

FENCE

AST ABOVEGROUND STORAGE TANK

NOTE:

1. LOCATIONS ARE APPROXIMATE



SITE PLAN		
Darling International, Inc. 2592 Lakeville Highway Petaluma, California		
Project No. 030070	By: M. Lee	Figure 2
Date: 11/08/06	Checked: CBW	
MFG, Inc. consulting scientists and engineers		

APPENDIX G

OTHER SUPPORTING DOCUMENTATION

Prepared for

Mr. Marty Skoff
Skoff Trucking
P.O. Box 658
Petaluma, CA 94952

**REPORT OF EXCAVATION AND
MONITORING WELL INSTALLATION**

1 CASA GRANDE ROAD

PETALUMA, CALIFORNIA

EBA Project No. 99-723(8)

FEBRUARY 2007

Prepared by



Paul Nelson, P.G.
Project Geologist



Supervised by



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Senior Hydrogeologist

EBA ENGINEERING



Printed on Recycled Paper

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1.0 INTRODUCTION

Skoff Trucking (Client) contracted with EBA Engineering (EBA) to prepare this Report of Excavation and Monitoring Well Installation (Report) for the site located at 1 Casa Grande Road in Petaluma, California, hereinafter referred to as the "project site" (Figure 1, Appendix A). The purpose of this Report is to provide details of soil excavation and monitoring well installation activities that were implemented to remove petroleum hydrocarbon impacted soil and monitor the effects of the excavation on groundwater contaminant concentrations in the vicinity of an underground storage tank (UST) formerly located at the project site. The work was conducted as a corrective action measure in accordance with the July 28, 2004 *Feasibility Study and Corrective Action Plan* (FS/CAP [EBA, 2004]). The proposed scope of work detailed in the FS/CAP was approved by the County of Sonoma Department of Health Services – Environmental Health Division (CSDHS – EHD) in a letter dated November 15, 2004.

2.0 BACKGROUND

2.1 Project Site Location and Description

The project site is located on the northwestern side of Casa Grande Road in Petaluma, California (Figure 1, Appendix A). The project site is trapezoidal in shape and relatively flat with numerous outbuildings, including an old scalehouse, maintenance shop, office, and shed (Figure 2, Appendix A). The project site is bounded to the east by Casa Grande Road, to the south by Northwest Pacific Railroad property, and to the north and west by commercial properties. The ground elevation of the project site is approximately 8 feet above mean sea level (MSL). The project site was purchased by Mr. Gerald Skoff in the early 1970's and has operated as a trucking facility since that time.

2.2 Project Site Hydrogeology

Quaternary alluvial fan deposits consisting of fine-grained sands, silts, and clays underlie the project site. The shallow alluvial materials are likely underlain by early Holocene intertidal peaty muds (fine grained clays) that are prominent to the south. Underlying these shallow sediments is the Petaluma, Wilson Grove, and/or Franciscan Formations. The northwest trending Tolay fault is located approximately 3 miles east of the project site.

2.3 Project Site History

Previous site characterization and excavation activities have encompassed three locations in proximity of the maintenance shop, office and shed (Figure 2, Appendix A). These areas were identified in the FS/CAP as Excavations A, B, and C. Excavation A was located immediately to the north of the maintenance shop. Excavation B, in turn, was located northwest of the maintenance shop. Excavation C was located in the vicinity of the office and shed. Further details regarding the respective scopes of work associated with these excavations are presented in the following subsections.

Excavation A

It is EBA's understanding that prior to 1990, one 500-gallon UST and one 1,000-gallon waste oil UST were removed from Excavation A. This was followed by the installation of five monitoring wells (MW-1 through MW-5) between October 1990 and June 1991 by Great Pacific Associates (GPA), formerly Reay Environmental Services. The monitoring wells were installed for the purpose of evaluating potential groundwater impacts in proximity of Excavation A (GPA, 1991). Findings from the monitoring well installation revealed low concentrations of petroleum hydrocarbon constituents.

Excavation B

In 1994, it is EBA's understanding that two 1,000-gallon gasoline USTs were removed from Excavation B. No documentation regarding the removal activities is currently available. This was later followed by the removal of three additional USTs from Excavation B on November 27, 1998 under the direct supervision of EBA. The USTs, which were 12,000 gallons in size, were removed by John's Excavating of Santa Rosa, California, in the presence of Mr. Donald Zedrich, Environmental Resource Council representative, and Ms. Katie Hassler of the City of Petaluma Fire Department. Soil samples were collected from the sidewalls of the excavation, and a groundwater grab sample was collected from the excavation at a depth of approximately four feet below ground surface (BGS). Laboratory analytical results from the collected soil samples indicated that concentrations of Total Petroleum Hydrocarbons as gasoline (TPH-g) and Total Petroleum Hydrocarbons as diesel (TPH-d) ranged from below the laboratory Practical Quantitation Limits (PQLs) to 10 milligrams per kilogram (mg/kg) and 300 mg/kg, respectively. It should be noted that trace amounts of methyl tert-butyl ether (MtBE) were also detected in the soil samples. Further information from the 1998 UST removal activities can be found in EBA's January 1999 *Letter Report – Removal of Underground Storage Tanks* (EBA, 1999a).

Excavation C

On October 27, 1999, EBA personnel supervised the removal of two USTs by John's Excavating near the administration office and shed. The presence of these USTs was discovered during the installation of a subsurface telecommunications cable. The USTs were 500 gallons and 1,000 gallons in capacity and were reportedly used for the storage of gasoline. Following the removal of all liquids and confirmation that the USTs were inert, they were removed under supervision of the City of Petaluma Fire Marshall.

Following the removal of the USTs, one soil sample was obtained from beneath the fill end of the 500-gallon UST and two soil samples were collected from beneath the 1,000-gallon UST. The soil sample collected from beneath the 500-gallon UST did not contain concentrations of any constituents analyzed at levels at or above laboratory PQLs. The analytical results for the two soil samples obtained from beneath the 1,000-gallon UST, in turn, indicated concentrations of TPH-g at 240 and 500 mg/kg and total xylenes at 1.7 and 5.7 mg/kg. All remaining petroleum hydrocarbon constituents were below the laboratory PQLs.

Additional Work

On April 18, 2000, EBA submitted a *Quarterly Monitoring Report and Sensitive Receptor Survey* (SRS) for the project site (EBA, 2000a). Findings in this report included the presence of a water supply well immediately south of the project site. This water supply well was sampled in December 1999 and contained detectable levels of TPH-g (64 micrograms per liter [$\mu\text{g/L}$]) and

toluene (0.60 µg/L). On May 24, 2001, EBA personnel oversaw the abandonment of the water supply well by Weeks Drilling and Pump. The well casing was perforated at one foot increments to a total depth of 117 feet BGS. The well casing was then pressure grouted to grade.

In a letter dated September 28, 2000, the CSDHS-EHD requested further investigation in the areas of Excavations B and C. A *Subsurface Investigation Work Plan* for further investigation was prepared by EBA in December 2000 (EBA, 2000b). Following approval of the Work Plan by the CSDHS-EHD in a letter dated January 3, 2001, EBA supervised the drilling of eight soil borings (EBA-1 through EBA-8) in the vicinity of Excavations B and C (see Figure 2, Appendix A). Soil borings EBA-1 and EBA-2 were subsequently converted into monitoring wells MW-6 and MW-7, respectively. Analytical results from these activities indicated that additional characterization was needed in the areas of Excavations B and C. Further information on the 2001 investigation can be found in EBA's *Soil and Groundwater Investigation* report dated July 2001 (EBA, 2001a).

At the request of the CSDHS-EHD, EBA prepared a *Work Plan Addendum* dated November 21, 2001 (EBA, 2001b) that described further investigative procedures, including eight additional soil borings (EBA-9 through EBA-16). The Work Plan was implemented in April 2002 when EBA supervised Clear Heart Drilling (Clear Heart) of Santa Rosa, California in the advancement of EBA-9 through EBA-14 in the vicinity of Excavation C and EBA-14 through EBA-16 in the vicinity of Excavation B. Analytical results from this investigation indicated that the extent of groundwater impacts had been defined in the area of Excavation B, and in the downgradient direction from the former 1,000-gallon gasoline UST in Excavation C. However, analytical results indicated elevated levels of petroleum hydrocarbon impacts in groundwater in the upgradient direction from this gasoline UST. In a letter dated June 11, 2002, the CSDHS-EHD requested a Work Plan to identify any potential sources of groundwater impacts in the upgradient direction and to monitor the plume in the upgradient and downgradient directions from the former 1,000-gallon UST associated with Excavation C.

In response to CSDHS-EHD request, a *Work Plan for Additional Soil and Groundwater Investigation* was prepared and submitted in July 2002 (EBA, 2002). This Work Plan included a geophysical survey component to identify potential upgradient sources (i.e., unidentified USTs) of the observed soil and groundwater impacts. The Work Plan was approved by the CSDHS-EHD in a letter dated October 3, 2002. The geophysical portion of the Work Plan was implemented in February 2003. An 8,000 square foot area was explored using magnetometer and ground penetrating radar techniques. Whereas the results of the geophysical survey identified anomalies, there was no conclusive evidence to indicate the presence of additional unidentified USTs in the area of the geophysical investigation (EBA, 2003).

In a letter dated October 20, 2003, the CSDHS-EHD requested that a FS/CAP be prepared for the project site. In response to this request, EBA prepared and submitted an FS/CAP for regulatory approval on July 28, 2004 (EBA, 2004). Included in the FS/CAP was a presentation of the estimated soil and groundwater contaminant mass, an evaluation of the effectiveness of previous remedial activities, and a technical evaluation of various treatment methodologies. As part of the evaluation of technically viable treatment methodologies, the estimated future contaminant mass removal rates, estimated duration of remediation, a full assessment of possible impacts, and associated capital and operations and maintenance (O&M) costs was presented. The CSDHS-

EHD approved the FS/CAP in a letter dated November 15, 2004.

Quarterly monitoring and sampling have been ongoing since 1999. In general, findings from this monitoring have revealed groundwater flow directions consistently to the south, in the direction of the San Francisco Bay. In regards to groundwater quality, residual concentrations of petroleum hydrocarbon constituents have been detected in MW-3, MW-6 and MW-7. Please refer to Tables 1 through 4, Appendix B, for tabulated analytical results and groundwater elevations from past investigations and groundwater monitoring events.

3.0 FIELD INVESTIGATION

The scope of work detailed below was conducted in accordance with the approved FS/CAP. In general, the scope of work included the destruction of four monitoring wells, the excavation of petroleum hydrocarbon impacted soil in the vicinity of Excavation C, and the installation of three monitoring wells in the vicinity of the excavation. Prior to field activities, EBA obtained a grading permit from the City of Petaluma and drilling permits from the CSDHS-EHD. Additionally, Underground Service Alert (USA) was notified prior to the implementation of work.

3.1 Monitoring Well Abandonment

On June 26, 2006, EBA personnel supervised the abandonment of four monitoring wells (MW-1, MW-2, MW-4 and MW-6) at the project site by Gregg Drilling and Testing of Martinez, California. Monitoring wells MW-1 and MW-2 were destroyed by over-drilling the casing and annulus materials with 10-inch diameter hollow stem augers, whereas MW-4 and MW-6 were destroyed using 8-inch diameter hollow-stem augers. The over-drilled monitoring wells were then backfilled to grade with cement grout. The materials generated during the well abandonment activities were containerized and are currently stored on-site in properly labeled DOT-17H 55-gallon drums pending chemical characterization and subsequent disposal.

3.2 Soil Characterization

Prior to implementing the proposed excavation activities, waste characterization soil sampling was performed on June 26, 2006 in order to pre-profile the soil to be excavated for disposal at the Keller Canyon Landfill located in Pittsburg, California. In this regard, EBA supervised Gregg Drilling and Testing in the advancement of one direct push soil boring (SB-1) at the location shown in Figures 2 and 3, Appendix A. A composite soil sample (COMP@4',6',8',10') was collected from SB-1 between the depths of four and ten feet BGS. The analytical results were forwarded to Allied Waste Industries Inc. (Allied), owner and operator of Keller Canyon Landfill, in order to obtain disposal authorization. Analytical results from SB-1 and the corresponding Certified Analytical Report (CAR) are presented in Table 5, (Appendix B) and Appendix G-1, respectively. The soil boring log for SB-1 is enclosed in Appendix C.

3.3 Excavation Activities

On July 5 and 6, 2006, EBA supervised John's Excavating of Santa Rosa, California in the

excavation of petroleum hydrocarbon impacted soil from the southeastern portion of the project site in the vicinity of Excavation C (see Figures 2 and 3, Appendix A). The excavation limits measured approximately 50 feet by 34 feet by 13 feet deep. During the excavation activities, field screening using a MiniRae 2000[®] photoionization detector (PID) and visual inspection provided the primary basis for identifying petroleum hydrocarbon impacts. Confirmation soil samples were collected from the excavation sidewalls and bottom when observation and field screening procedures indicated that the excavation limits had been achieved. Soil samples were also collected where limits of the excavation were dictated by site constraints (i.e., maintenance shop or property line). One soil sample was collected for approximately every 250 square feet of surface area on the bottom and sidewalls of the excavation to confirm the removal of impacted soil. Additionally, an initial soil sample (Initial-1@8') was collected to document the removal of petroleum hydrocarbon impacted soil. All soil samples were collected in 2-inch diameter by 6-inch long stainless steel tubes. The sample containers were capped, labeled, and placed under refrigerated conditions pending transport under chain-of-custody procedures to Alpha Analytical Laboratories, Inc. (Alpha), a State-certified analytical laboratory located in Ukiah, California, for chemical analysis. Please refer to Figure 3, Appendix A for the soil sample locations and identifications. Analytical results from the confirmation soil sampling and the corresponding CAR are presented in Table 5, (Appendix B) and Appendix G-2, respectively.

Upon completion of the excavation activities, the excavation was backfilled to within 12 inches below grade with clean import fill. The backfill material was compacted to a minimum 90 percent relative compaction. Compaction test results are presented in Appendix E. The excavated area was capped with gravel and/or asphalt to match the surrounding surface grades.

Approximately 990 tons (700 to 800 cubic yards) of impacted soil was removed as part of the excavation activities. This material was either temporarily stockpiled on-site (on and covered with plastic sheeting) or directly loaded into trucks and hauled under manifest to Keller Canyon Landfill. Soil disposal documentation is presented in Appendix F. In addition, approximately 5,500 gallons of water was pumped from the excavation pit during excavation activities and was temporarily stored in an aboveground storage tank. This water was subsequently disposed to the sanitary sewer on August 1, 2006, under permit from the City of Petaluma. Tabulated analytical results and disposal documentation for this water are included in Table 6, (Appendix B) and Appendix F, respectively. The corresponding CAR documenting the analytical testing of this water is enclosed in Appendix G-3.

3.4 Monitoring Well Installation

On August 8, 2006, EBA supervised Clear Heart (a licensed C-57 well driller) during the installation of MW-10 through MW-12 at the locations shown on Figure 3, Appendix A. The following subsections detail the monitoring well installation and sampling procedures.

3.4.1 Drilling and Soil Sample Collection

The monitoring wells were installed using a rotary auger drill rig equipped with 8-inch diameter hollow-stem augers. Soil samples were collected in 2-inch diameter by 6-inch long brass tubes at 5-foot intervals. Soil samples were screened in the field for the presence of volatile organic compounds (VOCs) using a MiniRae 2000[®] PID. Soil samples selected for analytical purposes

were retained in the 2-inch diameter by 6-inch long brass tubes and sealed, capped, labeled, and placed under refrigerated conditions pending transport under chain-of-custody procedures to Alpha for chemical analysis. The collected soil samples were logged in accordance with the Unified Soil Classification System (USCS). The soil cuttings that were generated as part of the monitoring well installation activities is currently stored on-site in properly labeled DOT-17H 55-gallon drums pending chemical characterization and subsequent disposal.

3.4.2 Monitoring Well Construction

The monitoring wells were constructed of 2-inch diameter, Schedule 40 polyvinyl chloride (PVC) casing with a 0.010-inch machine-slotted screen. Monitoring wells MW-10, MW-11, and MW-12 were completed to depths of 18, 16, and 16 feet BGS, respectively. Monitoring well MW-10 was constructed with a screen interval from eight to 18 feet BGS, whereas MW-11 and MW-12 were each constructed with screen intervals from six to 16 feet BGS. When the desired boring depth was attained, the PVC casing and screen were lowered to the base of the borehole through the inside of the hollow-stem auger. A filter pack consisting of #2/12 sand was slowly poured around the well casing to approximately one foot above the upper extent of the screen interval. A 2-foot-thick section of bentonite was added above the filter pack interval. The remaining portion of annular space was backfilled with cement grout to approximately six inches below grade. The tops of the well casings were completed below grade inside sealed traffic rated well boxes and secured by locking caps. The tops of the well boxes were completed approximately one inch above project site grade. Please refer to Appendix C for copies of soil boring logs and associated monitoring well construction details.

3.4.3 Equipment Decontamination

The drill augers, tools, and sampling equipment were cleaned before advancing each soil boring to minimize the possibility of cross contamination. The equipment was steam cleaned with a power sprayer at high temperature and/or washed with a tri-sodium phosphate (TSP) solution and rinsed with potable water. Water generated during the decontamination activities was collected and is currently stored on-site in properly labeled DOT-17H 55-gallon drums pending chemical characterization and subsequent disposal.

3.4.4 Monitoring Well Development

On August 14, 2006, EBA personnel developed MW-10 through MW-12 with a surge block and bailers to remove residual silts and clays that remained from the drilling process and to improve the hydraulic communication between the filter pack and the natural formation. Groundwater quality parameters pH, electrical conductivity, and temperature were monitored during the development process. The groundwater that was purged during well development was collected and placed in properly labeled DOT 17H 55-gallon drums and left on-site pending disposal. The well development logs are included in Appendix D.

3.4.5 Monitoring Well Survey

On August 16, 2006, the locations and top of casing (TOC) elevations of MW-10 through MW-12 were surveyed to mean sea level by a licensed surveyor. The corresponding data will be

uploaded to the State of California's Geotracker website in accordance with Assembly Bill 2886 (AB2886).

3.5 Groundwater Monitoring and Sampling

On August 16, 2006, EBA personnel collected groundwater samples and recorded depth to groundwater from TOC measurements from MW-3 and MW-7 through MW-12. Monitoring well MW-5 was inaccessible during this sampling event. The depth to groundwater from TOC measurements, which were used to calculate groundwater flow direction and hydraulic gradient, were conducted using an electronic sounder.

Prior to sampling, the monitoring wells were purged of standing water to aid in collecting groundwater samples that are representative of formation water. Monitoring wells MW-8 and MW-9 were also monitored for dissolved oxygen (DO) and oxidation-reduction potential (ORP) prior to the purging process. Field data sheets detailing the monitoring of groundwater pH, electrical conductivity and temperature during well purging are included in Appendix D. The field data sheets for MW-8 and MW-9 also include DO and ORP measurements. Each monitoring well was purged until the water quality parameters had stabilized and a minimum of three well volumes was removed. Purge water generated as part of the sampling activities was retained and is stored on-site in properly labeled 55-gallon DOT 17H drums pending disposal.

Groundwater samples were collected from each monitoring well using a single sample disposable bailer fitted with a bottom-emptying device to minimize water degassing. Groundwater samples collected from the monitoring wells were transferred into properly labeled, laboratory supplied sterile sample containers. The groundwater samples were logged on a chain-of-custody form and placed under refrigerated conditions pending transport to Alpha for chemical testing.

3.6 Analytical Testing

The soil samples collected from SB-1 and the excavation were analyzed for TPH-g and TPH-d using EPA Methods 8015GRO and 8015DRO, respectively. The soil samples were also analyzed for benzene, toluene, ethylbenzene, xylenes (BTEX) and MtBE using EPA Method 8260B, and total lead using EPA Method 6010.

Groundwater samples collected during the August 16, 2006 sampling event were analyzed for TPH-g and TPH-d using EPA Methods 80260GRO and 8015 DRO, respectively, as well as for BTEX and MtBE using EPA Method 8260B. Due to their proximity to a sewer line at the project site, groundwater samples collected from MW-10 through MW-12 were also analyzed for nitrates using EPA Method 300.0 as a condition of the CSDHS-EHD monitoring well installation permit. Finally, groundwater samples collected from MW-8 and MW-9 were also analyzed for total dissolved solids (TDS) using EPA Method 160.1 for the purpose of determining the usability of the aquifer as a drinking water source and to help determine an appropriate groundwater cleanup goal.

4.0 FINDINGS

4.1 Geology and Hydrogeology

The geology encountered during this investigation generally consisted of a mixture of clay, clayey sand, gravelly sand and sandy clays in the upper 10 feet BGS, underlain by clayey and gravelly sands. First encountered groundwater was observed during the monitoring well installations at approximately 6.5 to 13 feet BGS, with static groundwater levels in MW-10 through MW-12 measured to be between 1.8 and 2.2 feet BGS.

The groundwater flow direction at the time of the August 16, 2006 sampling event was calculated to be approximately South 51° West with a hydraulic gradient ranging from approximately 0.002 to 0.004 foot/foot. A Potentiometric Surface Map illustrating these conditions is presented as Figure 4 (Appendix A). Table 3, Appendix B, in turn, presents monitoring well construction specifications and historical groundwater elevations.

4.2 Analytical Results

Tabulated summaries of the soil and groundwater sample analytical results are presented in Tables 4 through 6 enclosed in Appendix B. The corresponding CARs, including chain-of-custody records, quality assurance/quality control (QA/QC) documentation, and laboratory PQLs, are enclosed in Appendices G-1 through G-5. Pertinent findings associated with the laboratory testing are summarized below.

Soil

- The initial soil sample (Initial-1@8') collected to document the removal of petroleum hydrocarbon impacted soil revealed the presence of TPH-g, TPH-d, ethylbenzene, xylenes and total lead at concentrations of 360, 40, 1.9, 3.9 and 17 mg/kg, respectively.
- Analytical results of the excavation sidewall soil samples indicated the presence of TPH-g and TPH-d at concentrations ranging from 10 to 960 mg/kg and 2.2 to 200 mg/kg, respectively. Please note that several of the TPH-d detections were flagged by the laboratory as closely resembling kerosene. Ethylbenzene and total xylenes were detected in sidewall soil samples at concentrations ranging from 1.1 to 7.1 mg/kg and 4.1 to 18 mg/kg, respectively.
- Analytical results of the soil samples collected from the bottom of the excavation indicated low levels of TPH-g ranging from 2.2 to 2.4 mg/kg. In addition, benzene was detected in bottom soil sample Bottom-S@12' at a concentration of 0.045 mg/kg, whereas MtBE was detected in bottom soil sample Bottom-W @13' at a concentration of 0.045 mg/kg.
- Analytical results of the soil samples collected during monitoring well installation activities indicate that concentrations of TPH-g and TPH-d were present in the MW-11 soil sample (MW-11@9') at concentrations of 35 and 53 mg/kg, respectively. TPH-d was also detected in the soil sample collected from MW-12 (MW-12@8.5') at a concentration

of 1.6 mg/kg. Both of these TPH-d detections were flagged in the CAR as being indicative of "hydrocarbons lower in molecular weight than diesel". With respect to the VOC components, benzene, ethylbenzene and total xylenes were detected in the MW-11@9' soil sample at concentrations of 0.43, 3.6 and 4.2 mg/kg, respectively.

- PID readings that were measured during the monitoring well installation activities indicate the presence of volatile organic vapors up to 1,382 parts per million (PPM) in soil samples collected from MW-11 and MW-12 at depths between seven and eight feet BGS. The PID readings of soil samples collected from MW-10, in turn, did not indicate the presence of volatile organic vapors above 0.0 PPM.
- Total lead was detected in the various excavation and monitoring well installation soil samples at concentrations ranging from 5.1 to 19 mg/kg.

Groundwater

- The analytical results for the groundwater that was pumped from the excavation pit and subsequently containerized did not indicate the presence of any petroleum hydrocarbon constituents analyzed above their respective PQLs.
- TPH-g and TPH-d were detected in the groundwater sample collected from MW-11 at concentrations of 2,300 and 300 micrograms per liter ($\mu\text{g/L}$), respectively. BTEX constituents were also detected in the groundwater sample collected from MW-11 at concentrations of 180, 2.5, 35 and 63 $\mu\text{g/L}$, respectively.
- No petroleum hydrocarbons were detected in the groundwater samples collected from MW-10 and MW-12.
- Nitrate was detected in the groundwater samples collected from MW-10 through MW-12 at concentrations ranging from 2.3 to 18 milligrams per liter (mg/L). TDS was measured in the groundwater samples collected from MW-8 and MW-9 at concentrations of 960 and 1,000 mg/L, respectively.
- The groundwater chemistry characteristics in the remaining monitoring wells were generally consistent with historical trends, with petroleum hydrocarbon detections being limited to MW-3 (MtBE) and MW-7 (MtBE and TPH-d). Both of these monitoring wells are located in proximity of the former Excavation B.

5.0 CONCLUSIONS

Geology and Hydrogeology

As previously noted, the geology encountered during this investigation generally consisted of a mixture of clay, clayey sand, gravelly sand and sandy clays in the upper 10 feet BGS, underlain by clayey and gravelly sands. A notable coarse grained unit was observed between six and 16

feet BGS in MW-10 through MW-12. First encountered groundwater was observed in this coarse grained unit. The subsequent rise in groundwater elevations from first encountered (6.5 to 13 feet BGS) after well completion (1.8 to 2.2 feet BGS) suggests that semi-confining groundwater conditions may exist beneath project site.

It should be noted that the PID readings of soil samples collected from MW-11 and MW-12 (1,382 and 210 PPM, respectively) were measured at the 7- to 8-foot BGS depths. The lithology recorded from these depths corresponds to a sandy clay and clayey sand, respectively. PID readings measured at the depths of 12 to 13 feet BGS indicated 0.0 PPM of volatile organic vapors. These data, combined with the analytical data from soil samples collected from MW-11 and MW-12, appear to indicate that the lithology in the approximate 7- to 12-foot BGS depth interval represents the zone of primary impact and transport.

Analytical Results – Soil

Analytical results indicate that residual concentrations of TPH-g, TPH-d, BTEX and MtBE remain in soil at the project site at concentrations that exceed the San Francisco Regional Water Quality Control Board (SFRWQCB) Environmental Screening Levels (ESLs). Please note that the majority of the detections that exceed the ESLs occur in excavation sidewall samples at the project site constraints (i.e., property and building boundaries). Soil sample concentrations that exceed the ESLs for TPH-g, TPH-d, BTEX, and MtBE are presented below in Table A.

TABLE A

SFRWQCB ENVIRONMENTAL SCREENING LEVELS AND SOIL SAMPLE CONCENTRATIONS									
Constituent	ESL (mg/kg)	SOIL SAMPLE NUMBERS[^]							
		2	4	5	6	8	9	12	16
<i>TPH-g</i>	100	2.2	220	630	<1.0	57	960	110	35
<i>TPH-d</i>	100	<1.0	42	48	<1.0	200	170	30	53
<i>Benzene</i>	0.044	0.045	<0.17	<0.87	<0.0050	<0.17	<1.7	<0.17	0.43
<i>Toluene</i>	2.9	<0.0050	<0.17	<0.87	<0.0050	<0.17	<1.7	<0.17	<0.17
<i>Ethylbenzene</i>	3.3	0.013	1.1	4.7	<0.0050	4.3	7.1	<0.17	3.6
<i>Xylenes</i>	2.3	0.0074	4.1	10	<0.0050	9.4	18	<0.17	4.2
<i>MtBE</i>	0.023	<0.0050	<0.17	<0.87	0.045	<0.17	<1.7	<0.17	<0.17

Notes:

SFRWQCB = San Francisco Regional Water Quality Control Board.

ESL = Environmental Screening Level

mg/kg = Milligrams per kilogram.

TPH-g = Total Petroleum Hydrocarbons as gasoline.

TPH-d = Total Petroleum Hydrocarbons as diesel.

MtBE = Methyl tert-Butyl Ether.

Results in bold exceed applicable ESLs.

All soil sample concentrations reported in milligrams per kilogram.

[^] Denotes sample numbering in Figure 3, Appendix A and Table 3, Appendix B.

Soil Sample Numbers 2 and 6 correspond to bottom samples that were collected from the south and west portions of the excavation, respectively. The low concentrations of benzene in Soil Sample Number 2 and MtBE in Soil Sample Number 6 represent the only two excavation bottom sample results that exceed the ESLs. The remaining excavation soil samples presented in Table

A, with the exception of Soil Sample Number 16, correspond to sidewall samples that were collected from the limits of the excavation imposed by project site constraints. Soil Sample Number 16 corresponds to a soil sample that was collected during the installation of MW-11 at a depth of 9 feet BGS (MW-11@9'). The remaining nine soil samples collected during excavation and monitoring well installation activities indicated analytical results that were either below the laboratory PQLs or low concentrations of petroleum hydrocarbon constituents below the ESLs. It should be noted that the concentrations of lead detected in the soil samples collected during this investigation were all well below the ESL of 150 mg/kg.

A contaminant mass removal estimate was performed for the excavation activities described herein for the purpose of comparing the mass estimate (700 pounds) presented in the FS/CAP for the area of Excavation C. The estimate for this investigation used an average concentration of 460 mg/kg for the approximate 990 tons of soil removed as part of the excavation activities. The average concentration corresponds to the concentration of TPH-g detected in the composite soil sample collected from SB-1. The corresponding result of this estimate indicates that approximately 910 pounds of petroleum hydrocarbons were removed from the excavation, which represents a significant mass from a remedial perspective.

Analytical Results – Groundwater

Analytical results from the August 16, 2006 sampling event indicate that petroleum hydrocarbon constituents were not detected in the groundwater samples collected from MW-10 and MW-12. Analytical results of groundwater samples collected from MW-11, in turn, indicated concentrations of TPH-g, TPH-d and BTEX consistent with the former monitoring well MW-6, which was located approximately 18 feet towards the west. The TPH results from MW-11 are above the SFRWQCB ESLs of 100 µg/L. The benzene and ethylbenzene concentrations, in turn, are above the ESLs of 1 and 20 µg/L, respectively. In regards to the nitrate component, the concentrations detected in groundwater samples collected from MW-10 through MW-12 do not exceed the Primary Maximum Contaminant Level (PMCL) of 45 mg/L as outlined in California Code of Regulations, Title 22, Article 4, Section 64431. The Nitrate concentrations in MW-10 through MW-12 do not appear to be elevated and will continue to be analyzed in these monitoring wells on a biannual basis as a condition of the monitoring well installation permit.

Petroleum hydrocarbon concentrations, or absence thereof, in groundwater samples collected from MW-3 and MW-7 through MW-9 are generally consistent with past sampling events, with TPH-d in MW-7 (680 µg/L) being the only constituent above the corresponding ESL (100 µg/L).

The TDS results reported in MW-8 (960 mg/L) and MW-9 (1,000 mg/L) were at or below the Secondary Upper MCL of 1,000 mg/L as outlined in California Code of Regulations, Title 22, Article 16, Section 64449. As previously outlined in Section 3.6 of this Report, TDS was analyzed for the purpose of determining the appropriate groundwater ESL application (i.e., viable source of drinking water versus not a viable source of drinking water) in order to establish groundwater cleanup goals. Given the borderline TDS results as compared to the Secondary Upper MCL, this determination is inconclusive at this time. However, in light of the elevated nature of the petroleum hydrocarbon concentrations present in MW-11, some degree of corrective action may be required regardless of which ESL criteria is applied.

The analytical results from MW-10 through MW-12, as well as MW-3 and MW-7 through MW-9, indicate that the extent of petroleum hydrocarbon impacts in groundwater are defined as a whole towards the north, south and west at the project site. Conversely, further characterization

is necessary east of Excavation C (i.e., MW-11) to verify the extent of petroleum hydrocarbon impacts in this direction.

6.0 RECOMMENDATIONS

Based on the analytical results from the field work presented herein, as well as the conclusions and recommendations detailed in the FS/CAP, EBA recommends the following;

- Install two additional monitoring wells east of MW-11 to further define the extent of groundwater impacts in this direction. The two new monitoring wells should be constructed with the additional intent of possible future use as dual-phase extraction wells and/or observation wells. Analysis of soil samples that are collected during the installation of the proposed monitoring wells should also include physical properties (i.e., permeability, total organic carbon, etc.) to assist in evaluating future corrective action measures.
- Monitor petroleum hydrocarbon concentrations in groundwater for one year with testing of additional constituents in selected monitoring wells. Constituents added to the sampling schedule would include DO, ORP, dissolved iron and manganese, sulfate, and nitrate. Data collection and analysis of these parameters should be sufficient to determine whether aerobic or anaerobic conditions exist. Furthermore, comparisons will be made of these constituents between monitoring wells with detectable concentrations of petroleum hydrocarbons and those without to determine if passive bioremediation processes are occurring.

7.0 LIMITATIONS

This report was prepared in accordance with generally accepted standards of environmental geological practice at the place and time this investigation was performed. This warranty is in lieu of all other warranties, either expressed or implied. This report was prepared solely for the purpose of evaluating applicable remedial technologies based on environmental conditions of the soil and groundwater to hydrocarbons previously detected at the site. No soil engineering or geotechnical references are implied or should be inferred. Evaluation of the geologic conditions at the site for the purpose of this investigation is made from a limited number of observation points. Subsurface conditions may vary away from the data points available. Additional work, including further subsurface investigation, can reduce the inherent uncertainties associated with this type of investigation. This report has been prepared solely for the Client and any reliance on this report by third parties shall be at such party's sole risk.

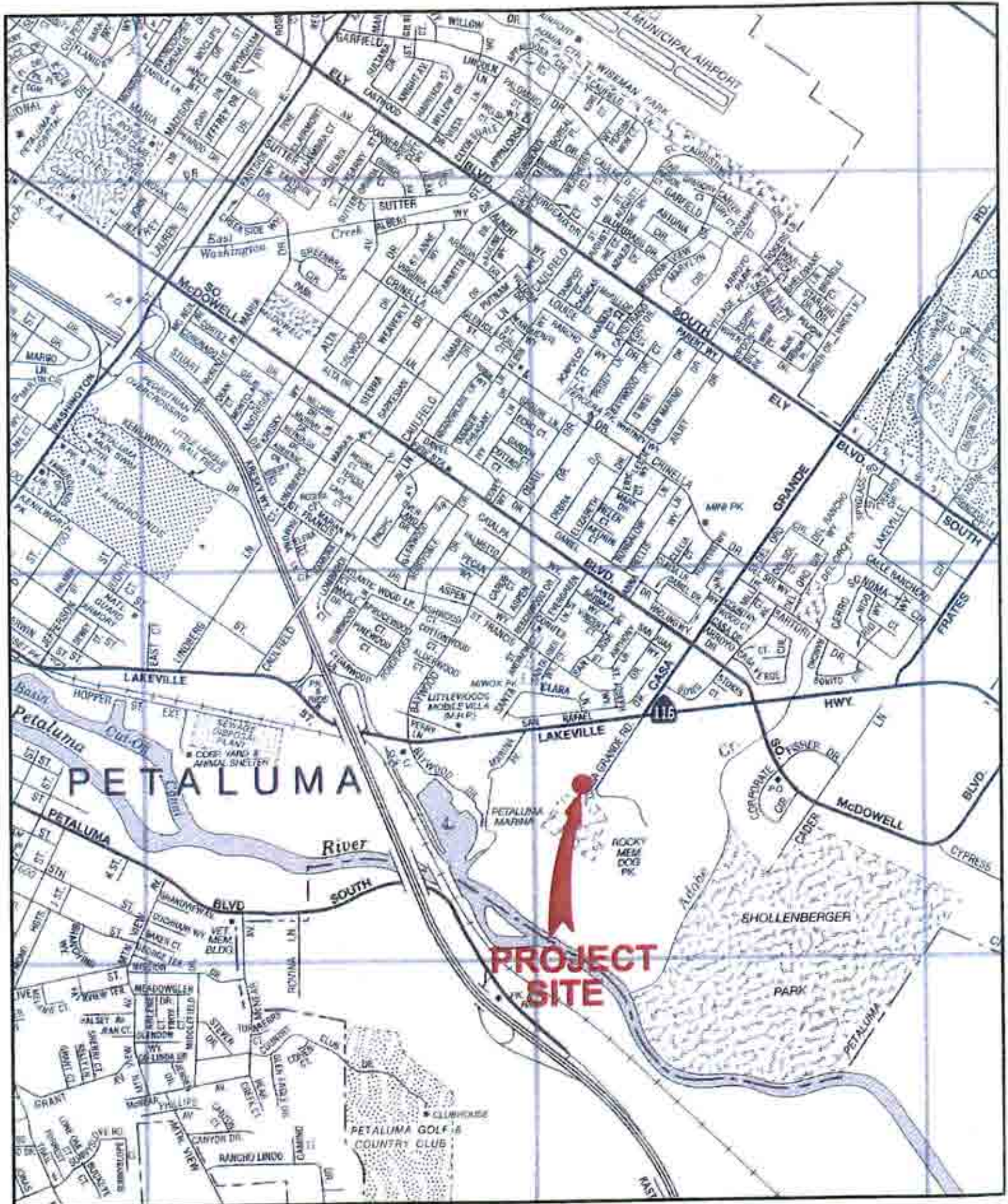
8.0 REFERENCES

EBA Engineering, Letter Report – Removal of Underground Storage Tanks, Skoff Trucking, 1 Casa Grande Avenue, Petaluma, California, January 10, 1999a.

- EBA Engineering, Quarterly Monitoring Report and Sensitive Receptor Survey, Skoff Trucking, 1 Casa Grande Avenue, Petaluma, California, April 18, 2000a.
- EBA Engineering, Subsurface Investigation Workplan, Skoff Trucking, 1 Casa Grande Road, Petaluma, California, December 11, 2000b.
- EBA Engineering, Soil and Groundwater Investigation, Skoff Trucking Facility, 1 Casa Grande Road, Petaluma, California, July 16, 2001a.
- EBA Engineering, Work Plan Addendum for Soil and Groundwater Investigation, Skoff Trucking Facility, 1 Casa Grande Road, Petaluma, California, November 21, 2001b.
- EBA Engineering, Work Plan for Additional Soil and Groundwater Investigation, Skoff Trucking Facility, 1 Casa Grande Road, Petaluma, California, July 2002.
- EBA Engineering, Feasibility Study/Corrective Action Plan, Skoff Trucking Facility, 1 Casa Grande Road, Petaluma, California, July 28, 2004.
- Great Pacific Associates, Results of Second Groundwater Investigation at Skoff Trucking Company, 1 Casa Grande Road, Petaluma, California, September 20, 1991
- NORCAL Geophysical Consultants, Inc., Geophysical Survey-UST Search, 1 Casa Grande Road, Petaluma, California. March 6, 2003.

APPENDIX A

FIGURES



VICINITY MAP
 SKOFF TRUCKING
 1 CASA GRANDE ROAD
 PETALUMA, CALIFORNIA

FIGURE
1
 99-723

005-040-014

**EXCAVATION "JULY 2006"
(AREA OF CURRENT INVESTIGATION)**

EXCAVATION "C"

SHED

OFFICE

SHOP

OFFICE

CONTAINER

EXCAVATION "A"

FORMER UST (gallons, contents)	
1	1,000 GASOLINE
2	1,000 WASTE OIL
3	12,000 DIESEL
4	12,000 GASOLINE
5	500 GASOLINE
6	1,000 UNKNOWN

EXCAVATION "B"

FORMER EXCAVATION
(TYP)

APPROXIMATE PROPERTY LINE

NORTHWESTERN PACIFIC RAILROAD

CASA GRANDE ROAD



LEGEND

- MW-10 NEW MONITORING WELL
- MW-3 EXISTING MONITORING WELL
- MW-4 GROUNDWATER MONITORING WELL DESTROYED
- EBA-4 FORMER SOIL BORING
- SB-1 NEW SOIL BORING
- 1 FORMER UST (SEE TABLE HEREON)
- UST UNDERGROUND STORAGE TANK



SCALE : 1" = 40'

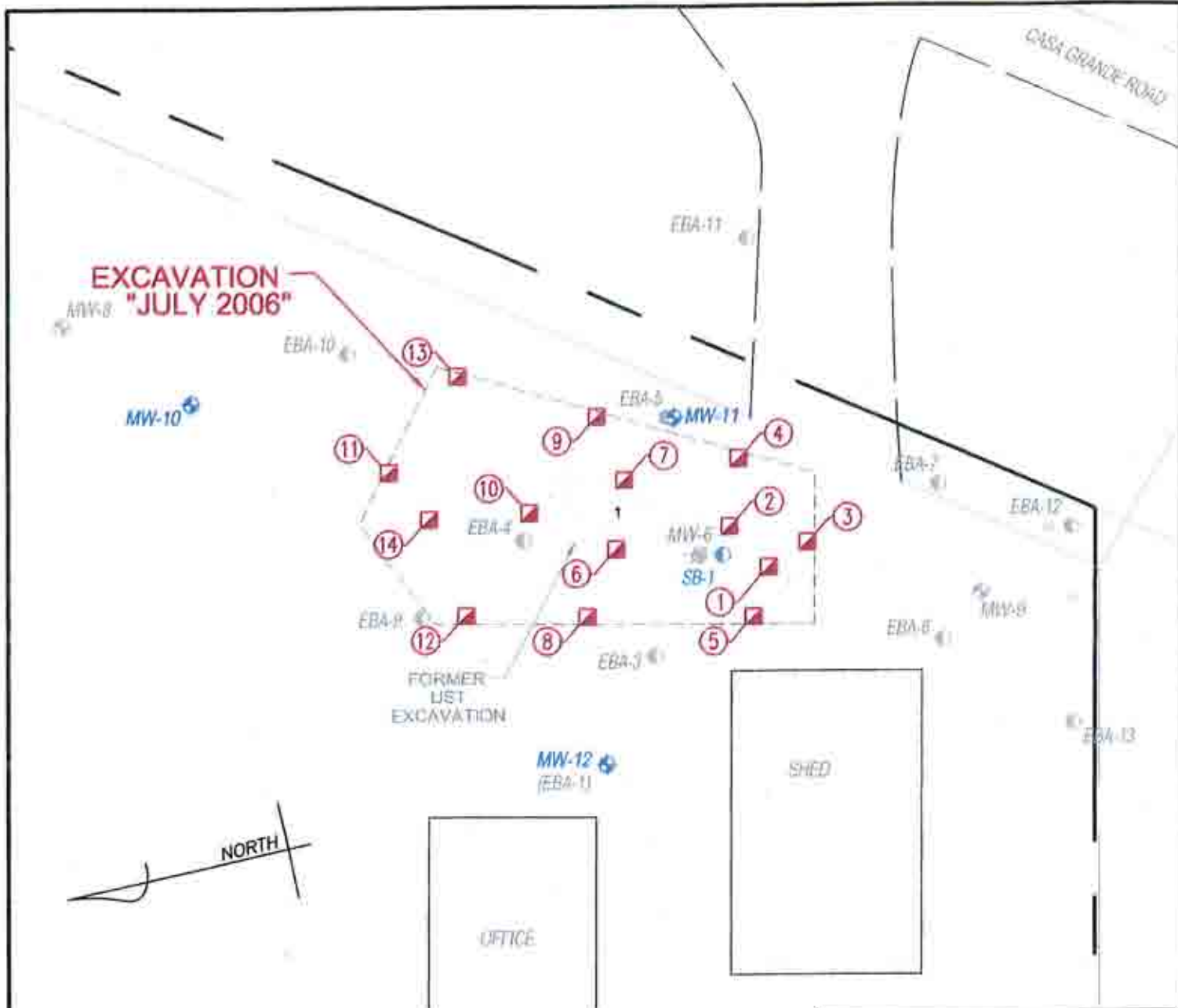


SITE MAP

SKOFF TRUCKING
1 CASA GRANDE ROAD
PETALUMA, CALIFORNIA

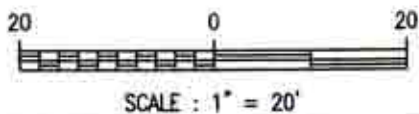
FIGURE 2

FEB 2007
99-723



LEGEND

- MW-3 NEW MONITORING WELL
- MW-3 EXISTING MONITORING WELL
- MW-4 GROUNDWATER MONITORING WELL DESTROYED
- EBA-4 FORMER SOIL BORING
- SB-1 NEW SOIL BORING
- 1 FORMER UST (SEE TABLE)
- 10 UST UNDERGROUND STORAGE TANK
- SOIL SAMPLE (SEE TABLE)



SOIL SAMPLES

1.	INITIAL-1 @ 8'
2.	BOTTOM-S @ 12'
3.	SIDEWALL-S @ 10'
4.	SIDEWALL-SE @ 9'
5.	SIDEWALL-SW @ 10'
6.	BOTTOM-W @ 13'
7.	BOTTOM-E @ 13'
8.	SIDEWALL-NW @ 10'
9.	SIDEWALL-NE @ 10'
10.	BOTTOM-N @ 13'
11.	SIDEWALL-N @ 10'
12.	SIDEWALL-NW2 @ 10'
13.	SIDEWALL-NE2 @ 10'
14.	BOTTOM-N2 @ 13'



CONFIRMATION SOIL SAMPLE LOCATION MAP

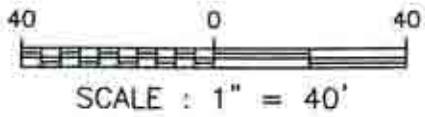
SKOFF TRUCKING
1 CASA GRANDE ROAD
PETALUMA, CALIFORNIA

FIGURE

3

99-723

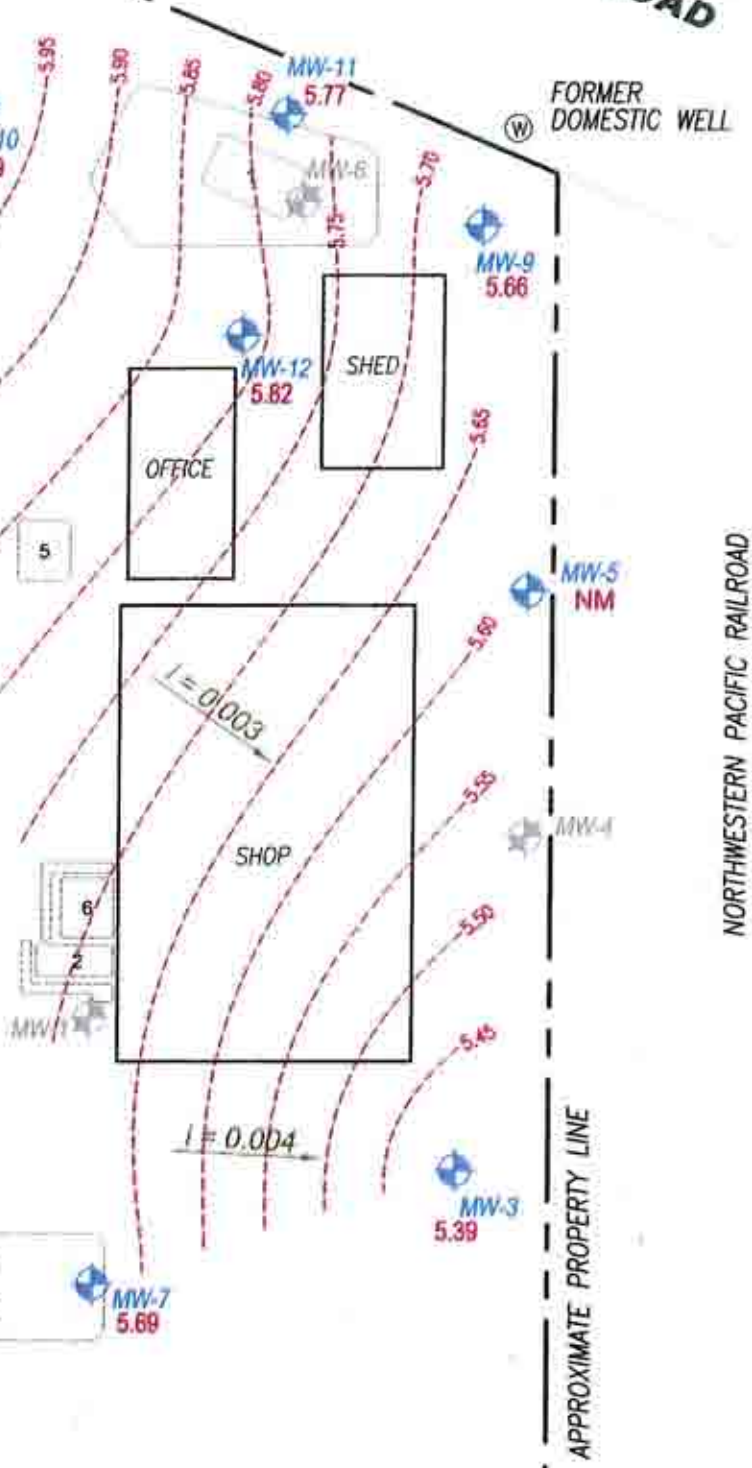
CASA GRANDE ROAD



LEGEND

- MW-9 5.66 MONITORING WELL WITH GROUNDWATER ELEVATION (FEET MSL)
- MW-1 MONITORING WELL DESTROYED
- 1 FORMER UST (SEE TABLE)
- - 5.80 - - POTENTIOMETRIC SURFACE CONTOUR (FEET MSL)
- NM** NOT MEASURED
- $i = 0.003$ GROUNDWATER HYDRAULIC GRADIENT IN FOOT PER FOOT
- MSL** MEAN SEA LEVEL

FORMER UST (gallons, contents)	
1	1,000 GASOLINE
2	1,000 WASTE OIL
3	12,000 DIESEL
4	12,000 GASOLINE
5	500 GASOLINE
6	1,000 UNKNOWN



FORMER DOMESTIC WELL

NORTHWESTERN PACIFIC RAILROAD

APPROXIMATE PROPERTY LINE

NOT TO SCALE

POTENTIOMETRIC SURFACE MAP
AUGUST 16, 2006
 SKOFF TRUCKING
 1 CASA GRANDE ROAD
 PETALUMA, CALIFORNIA

FIGURE
4





January 8, 2014

Ms. Darcy Bering
County of Sonoma Department of Health Services
Environmental Health Division
625 Fifth Street
Santa Rosa, CA 95404

**RE: REPORT OF SOIL VAPOR INVESTIGATION
SKOFF TRUCKING
1 CASA GRANDE ROAD, PETALUMA, CALIFORNIA
EBA Project No. 99-723 (50)
*CSDHS-EHD CASE # 2147***

Dear Ms. Bering:

EBA Engineering (EBA) has prepared this *Report of Soil Vapor Investigation* (Report) for the site located at 1 Casa Grande Road in Petaluma, California, referred to herein as the "project site" (Figure 1, Appendix A). The work presented in this Report was proposed in EBA's *Soil Vapor Investigation Work Plan* (Work Plan) dated November 7, 2013 and approved by the County of Sonoma Department of Health Services – Environmental Health Division (CSDHS-EHD) in a letter dated November 19, 2013.

The proposed work scope was conducted in general accordance with the State Water Resource Control Board's (SWRCB's) *Low Threat Underground Storage Tank Case Closure Policy* (LTCP; SWRCB, 2012) and California Department of Toxic Substances Control/California Environmental Protection Agency's (DTSC/CalEPA's) *Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air* (DTSC/CalEPA, 2011) and *Advisory – Active Soil Gas Investigations* (DTSC/CalEPA, 2012).

SOIL VAPOR PROBE INSTALLATION AND SAMPLING

On December 5, 2013 EBA installed two soil vapor probes (SV-1 and SV-2) at the locations shown on Figure 2, Appendix A. These locations were chosen to characterize soil vapor conditions adjacent to an existing building in an area of impacted soil and groundwater.

As proposed in the Work Plan, soil vapor probe SV-1 was installed to the depth recommended by the LCTP (i.e., five feet below ground surface [BGS]), and SV-2 was installed to a depth of 2.5 feet BGS.

Please refer to the following table (Table A) for the soil vapor probe construction details.

TABLE A - SOIL VAPOR PROBE CONSTRUCTION DETAILS					
Probe ID	Approximate Borehole Diameter (Inches)	Total Depth of Probe (Inches BGS)	Sand Interval (Inches BGS)	Dry Bentonite Interval (Inches BGS)	Bentonite Grout Interval (Inches BGS)
SV-1	4.0	60.0	48.0 - 60.0	42.0 - 48.0	0.0 - 42.0
SV-2	4.0	30.0	22.0 - 30.0	16.0 - 22.0	0.0 - 16.0

BGS = Below Ground Surface

Installation of the vapor probes was accomplished using hand-auger drilling techniques. The soils encountered during the hand auger drilling consisted of fill to approximately 1.5 to two feet BGS underlain by clay to five feet BGS, the maximum depth explored. Each soil vapor probe was constructed with a stainless steel vapor tip connected to ¼ inch-diameter Teflon[®]-type tubing. The vapor tip was enclosed within the sand interval presented above in Table A. The probe annulus was sealed using non-shrink cement grout and the sampling end of the tubing was equipped with a recessed compression fitting and protected by a cover plate assembly.

On December 6, 2013, an attempt was made to collect a soil vapor sample from SV-1. During the purging procedure, water immediately entered the tubing upon application of vacuum to the probe. Consequently, EBA collected a soil vapor sample from SV-2.

SV-2 was sampled according to the procedures and components described in the following bulleted list:

- To facilitate sampling, the recessed compression fitting was connected directly to a sample train provided by K Prime, Inc., (K Prime), a State-certified air testing laboratory located in Santa Rosa, California. The sample train consisted of a ball valve, particulate filter, a 125 milliliter per minute (ml/min) flow regulator, a pressure/vacuum gauge, a 1-liter Summa[®] canister (sample Summa[®]), and a 6-liter Summa[®] canister (purge Summa[®]). The sample train components utilized Swagelok[®]-type stainless steel compression fittings. An individual clean sample train was used at the SV-2 sample point.
- With the ball valve and the sample Summa[®] canister closed, integrity testing of the sample train was performed by opening and closing the purge Summa[®] canister in order to place the sample train under vacuum, then the vacuum was monitored for a 10-minute period to verify that it remained constant. This procedure was employed to confirm that the sample train held a vacuum (not leak) and was suitable for sampling.
- The soil vapor probe was purged before sampling by removing two liters of existing air to ensure the soil vapor being sampled was representative of the investigative area. The purge event was accomplished using the purge Summa[®] canister.

- The entire sample train was then placed under a protective clear shroud, along with a second 1-liter Summa[®] canister (leak Summa[®]) equipped with a 125-ml/min flow regulator, to facilitate leak testing.
- Sampling was initiated by opening the sample Summa[®] and leak Summa[®] at the same time. During sampling, the sample train was exposed to a leak check compound to facilitate leak testing by spraying 1,1,1,1-tetrafluoroethane (TFA) propellant intermittently into the shroud. The leak Summa[®] canister thus recorded the concentrations within the shroud over the entire duration of the test in order to correlate any concentrations of TFA potentially found in the sample Summa[®] canister.
- When the vacuum gauge indicated that approximately zero inches of mercury (Hg) (vacuum) remained in the sample Summa[®] canister, both the sample and leak Summa[®] canisters were closed, removed, capped and labeled. The sample start and end times were recorded in the field notes included in Appendix B.
- The soil vapor samples were transported under Chain-of-Custody (C-O-C) procedures to K Prime for the chemical analyses performed as part of this investigation.

SOIL SAMPLE COLLECTION

To address the LTCP requirement to characterize the “bioattenuation zone” at the project site, two soil samples were collected from the SV-1 borehole for chemical analysis. Soil samples were collected at depths of 2.5 and five feet BGS. The soil samples were collected in 2-inch diameter by 6-inch long stainless steel sleeves, sealed, capped, labeled, and placed under refrigerated conditions pending transport under C-O-C procedures to K Prime for chemical analysis. Soil samples collected for the analysis of volatile organic compounds were prepared in accordance with EPA Method 5035.

ANALYTICAL METHODS

The soil vapor samples collected as part of this investigation were analyzed for the following:

- Benzene, toluene, ethylbenzene, total xylenes (BTEX), methyl-tert butyl ether (MtBE) and naphthalene using EPA Method TO 15;
- Total volatile hydrocarbons as hexane (TVH-hexane) and TFA using EPA Method TO 3; and,
- Oxygen using ASTM D 1946.

The soil samples collected as part of this investigation were analyzed for the following:

- BTEX and naphthalene using EPA Method 5035/8260; and

- Gasoline Range Organics and Diesel Range Organics using EPA Method 8015B.

ANALYTICAL RESULTS

Soil Vapor

No petroleum hydrocarbon constituents were detected at or above the laboratory reporting limits (RLs) in the soil vapor sample collected from SV-2. Oxygen was measured in the soil vapor sample at 17.5 percent by volume. The leak check compound, TFA, was detected in the leak Summa[®] at a concentration of 1,070 parts per million by volume. TFA was not detected in the sample Summa[®] at, or above, the RL.

Soil

The soil sample analytical results indicated a detection of DRO at a concentration of 25.3 milligrams per kilogram (mg/kg) in the sample SV-1-5. Please note that the laboratory flagged this detection as having heavier hydrocarbons contributing to the diesel range quantitation. No other petroleum hydrocarbons were detected in the soil samples at or above the RLs.

DISCUSSION AND CONCLUSIONS

The following points are presented as discussion related to the LTCP's criteria for the determination of the bioattenuation zone at the project site:

- The *LCTP* establishes threshold soil vapor concentrations based on whether or not a bioattenuation zone exists at a given site. In general, the threshold soil vapor concentrations of petroleum hydrocarbons are 1,000 times higher at a site with a bioattenuation zone, as compared to a site without a bioattenuation zone. The presence of a bioattenuation zone is established, among other factors, using the following criteria:
 - Vertical distance between groundwater table and ground surface;
 - Total petroleum hydrocarbon (GRO and DRO) concentrations in soil in the upper five feet BGS;
 - Benzene concentration in groundwater; and
 - Oxygen concentrations in soil vapor at five feet BGS.
- Given the benzene concentration and depth to groundwater data collected as part of previous subsurface investigations at the project site, it appears that the following parameters should be met in order to determine the presence of a bioattenuation zone at the project site:
 - The vertical distance between the groundwater table and the ground surface must be at least five feet; and
 - The oxygen concentration in soil vapor at a depth of five feet BGS must be above four percent by volume.

As noted previously, a soil vapor sample could not be collected at five feet BGS due to the presence of water in the soil vapor probe during purging activities. Given the semi-confined nature of the aquifer at the project site, it is unknown if the water encountered is groundwater or pore water from

the surrounding fine grained soils during probe installation and sampling. Therefore, it cannot be determined whether the LTCP requirement for five feet between ground surface and groundwater has been satisfied.

With regard to the oxygen concentration in soil vapor at five feet BGS, soil vapor could not be sampled at this depth. At 2.5 BGS, however, oxygen was present at a concentration above four percent. Furthermore, although TFA was not detected in this sample, SV-2 was constructed just beneath a 1.5-foot thick fill layer, which may account for the 17.5 percent oxygen level.

Based on the conditions presented above, it is unclear whether a bioattenuation zone exists at the project site. Nevertheless, given the low GRO and DRO concentrations detected in shallow soil, and the nondetectable petroleum hydrocarbon concentrations detected in soil vapor at 2.5 feet BGS, it appears that the residual petroleum hydrocarbons at the project site represent a low risk for vapor intrusion.

It should also be noted that given the age of the release and that approximately 1,000 tons of petroleum hydrocarbon source soil was removed during the July, 2006 excavation (EBA, 2006), the soil vapor conditions documented during this investigation are not expected to get worse with time (i.e., increase in petroleum hydrocarbon vapor concentrations).

RECOMMENDATIONS

As a result of this investigation, EBA recommends that the project site be considered for no further action. Because of the documented petroleum hydrocarbon impacts to both soil and groundwater, EBA further recommends that a Soil and Groundwater Management Plan (SGMP) be prepared for the project site for use and reference during any future construction activities. The SGMP would specify the proper handling and disposal procedures for petroleum hydrocarbon impacted soil and groundwater in the event that the project site is redeveloped in the future. The SGMP would be retained in CSDHS-EHD, Petaluma Fire Department and other applicable agency files.

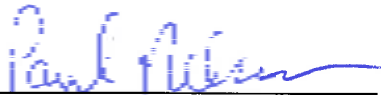
LIMITATIONS

This Report was prepared in accordance with generally accepted standards of environmental geological practice at the place and time this investigation was performed. This warranty is in lieu of all other warranties, either expressed or implied. This investigation was conducted solely for the purpose of evaluating environmental conditions of the soil and soil vapor with respect to petroleum hydrocarbons previously detected at the site. No soil engineering or geotechnical references are implied or should be inferred. Evaluation of the geologic conditions at the site for the purpose of this investigation is made from a limited number of observation points. Subsurface conditions may vary away from the data points available. Additional work, including further subsurface investigation, can reduce the inherent uncertainties associated with this type of investigation. This report has been prepared solely for the Client and any reliance on this report by third parties shall be at such party's sole risk.

CLOSING

If you have any questions regarding this Report, please contact EBA at (707) 544-0784.

Sincerely,
EBA ENGINEERING



Paul Nelson, P.G.
Project Geologist



APPENDICES

Appendix A – Figures
Appendix B – Tabulated Analytical Results and Field Data Sheet
Appendix C – Certified Analytical Reports

REFERENCES

- DTSC/CalEPA, *Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air*, October 2011.
- DTSC/CalEPA, *Advisory – Active Soil Gas Investigations*, April 2012.
- EBA Engineering, *Report of Excavation and Monitoring Well Installation, Skoff Trucking Facility, 1 Casa Grande Road, Petaluma, California*, February 2007a.
- EBA Engineering, *Soil Vapor Investigation Work Plan, Skoff Trucking Facility, 1 Casa Grande Road, Petaluma, California*, November 2013.
- State Water Resource Control Board, *Low Threat Underground Storage Tank Case Closure*, Resolution Number 2012-0016 dated August 17, 2012

cc: Skoff Trucking - P.O. Box 750996, Petaluma, CA 94975



on

Leaking Underground Storage Tank Site

Date: February 19, 2014
Site Address: 1 Casa Grande Road, Petaluma, CA
LOP #: 00002147
Regional Board #: 49-0161

The referenced site is under the oversight of the Department of Health Services (DHS), Environmental Health and Safety Section (EHS), Local Oversight Program (LOP) for investigation and cleanup of a petroleum release from underground storage tank(s). Pursuant to California Code of Regulations Title 23, Division 3, Chapter 16, Article 11, Section 2728, the State Water Resources Control Board's Low-Threat Underground Storage Tank Case Closure Policy and Department policy, public participation notice is hereby made of the following pending action on the referenced site:

Site Closure

This Department intends to close the investigation and cleanup of the referenced site, which was entered into the LOP in 1988, upon State Regional Board closure concurrence.

The above noted action may be taken after 60 days of the date of this notice unless this Department receives significant comments or new information is presented regarding this site giving cause to not proceed. You are advised to contact the site caseworker noted below of any reason or reasons the action noted above should not be taken. This Department will review the merits of all comments received within 60 days of this notification and take measures to halt or modify the proposed action if warranted.

Detailed information regarding the subject site can be found on the Geotracker website, a State Database at <http://geotracker.waterboards.ca.gov/>

Also, Sonoma County DHS, EHS maintains a file of all documents submitted for this site. The file can be reviewed at the EHS office, 625 5th Street, Santa Rosa, from 7:30 a.m. to 4:30 p.m. Monday through Friday. Appointments are recommended and can be arranged by calling 707-565-6565.

Notification is made by Darcy Bering (caseworker)

Telephone: (707) 565-6571

- c: San Francisco Bay Regional Water Control Board
- State Water Resources Control Board Cleanup Fund
- Sonoma County Permit and Resource Management Department (Well & Septic)
- Sonoma County Water Agency
- City of Petaluma (Building, Utilities, and CUPA)
- Adjacent/affected Property Owners
- Responsible Party
- Consultant