ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION (LOP)
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

December 8, 1998
StID# 3953

Mr. Nick Mehta c/o
R.W. Thayer Food Products
962 87th Ave.
Oakland, CA 94621

RE: Fuel Leak Site Case Closure, 962 87th Ave., Oakland CA 94621

Dear Mr. Mehta:

This letter transmits the enclosed underground storage tank (UST) case closure letter in accordance with the Health and Safety Code, Chapter 6.75 (Article 4, Section 25299.37 h). The State Water Resources Control Board adopted this letter on February 20, 1997. As of March 1, 1997, the Alameda County Health Services, Local Oversight Program (LOP) is required to use this case closure letter. We are also enclosing the case closure summary. These documents confirm the completion of the investigation and cleanup of the reported release at the subject site.

Site Investigation and Cleanup Summary:

Please be advised that the following conditions exist at the site:

- 2300 parts per billion (ppb) Total Petroleum Hydrocarbons as gasoline, 130,13,87 and 290 ppb, BTEX (benzene, toluene, ethyl benzene and xylenes), respectively remain in groundwater at the site.
- 450 parts per million (ppm) Total Petroleum Hydrocarbons as gasoline, 3.1,3.8,12 and 57 ppm, BTEX, respectively remain in soil at the site.

This site should be included in the City's permit tracking system. Please contact me at (510) 567-6765 if you have any questions.

Sincerely,

Barney M. Chan
Hazardous Materials Specialist

enclosures: Case Closure Letter, Case Closure Summary

c: Mr. L. Griffin, City of Oakland OES, 505 14th St., Suite 702, Oakland CA 94612
B. Chan, files (letter only)
TrLt962-87

R0697

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December 8, 1998
StID # 3953

REMEDIAL ACTION COMPLETION CERTIFICATION

Mr. Nick Mehta c/o
Thayer Food Products
962 87th Ave.
Oakland CA 94621

RE: R.W. Thayer Food Products, 962 87th Ave., Oakland 94621

Dear Mr. Mehta:

This letter confirms the completion of site investigation and remedial action for the one (1) 1,000 gallon UL gasoline tank 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 tank is greatly appreciated.

Based upon the available information and with provision that the information provided to this agency was accurate and representative of site conditions, no further action related to the underground tank releases is required.

This notice is issued pursuant to a regulation contained in Title 23, Division 3, Chapter 16, Section 2721 (e) of the California Code of Regulations.

Please contact Barney Chan at (510) 567-6765 if you have any questions regarding this matter.

Sincerely,

Mee Ling Tung
Director, Environmental Health

c: B. Chan, Hazardous Materials Division-files
Chuck Headlee, RWQCB
Mr. Dave Deaner, SWRCB Cleanup Fund
Mr. Leroy Griffin, City of Oakland OES, 505 14th St., Suite 702, Oakland CA 94612

RACC962-87

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December 8, 1998
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962 87th Ave.
Oakland, CA 94621

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- 450 parts per million (ppm) Total Petroleum Hydrocarbons as gasoline, 3.1,3.8,12 and 57 ppm, BTEX, respectively remain in soil at the site.

This site should be included in the City's permit tracking system. Please contact me at (510) 567-6765 if you have any questions.

Sincerely,

Barney M. Chan
Hazardous Materials Specialist

enclosures: Case Closure Letter, Case Closure Summary

c: Mr. L. Griffin, City of Oakland OES, 505 14th St., Suite 702, Oakland CA 94612
B. Chan, files (letter only)

TrLt962-87

RB File # 01-2185

CASE CLOSURE SUMMARY
Leaking Underground Fuel Storage Tank Program

I. AGENCY INFORMATION Date: June 22, 1998

Agency name: **Alameda County-HazMat** Address: **1131 Harbor Bay Parkway Rm 250, Alameda CA 94502**

City/State/Zip: **Alameda** Phone: **(510) 567-6700**

Responsible staff person: Barney Chan Title: **Hazardous Materials Spec.**

II. CASE INFORMATION

Site facility name: R. W. Thayer Food Products

Site facility address: 962 87th Ave., Oakland CA 94621

RB LUSTIS Case No: **N/A** Local Case No./LOP Case No.: 3953

ULR filing date: not filed SWEEPS No: **N/A**

Responsible Parties:	Addresses:	Phone Numbers:
R.W. Thayer Food Products c/o Mr. Nick Mehta	962 87th Ave. Oakland CA 94621	510-569-7943

Tank No:	Size in gal.:	Contents:	Closed in-place or removed?:	Date:
1	1000	UL gasoline	Removed	2/9/96

III RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and type of release: possibly from the holes observed in tank

Site characterization complete? Yes

Date approved by oversight agency:

Monitoring Wells installed? Yes Number: 3

Proper screened interval? Yes, approximately 5-20' bgs

Leaking Underground Fuel Storage Program

Highest GW depth: 6.65' bgs Lowest depth: 8.52' bgs

Flow direction: south-southwesterly

Most sensitive current use: commercial/industrial

Are drinking water wells affected? No Aquifer name: NA

Is surface water affected? No Nearest affected SW name: NA

Off-site beneficial use impacts (addresses/locations): NA

Report(s) on file? **Yes** Where is report(s)? Alameda County
1131 Harbor Bay Parkway,
Room 250, Alameda CA 94502-6577

Treatment and Disposal of Affected Material:

Material	Amount (include units)	Action (Treatment of Disposal w/destination)	Date
Tank	1-1000 gallon	Disposed @ Erickson, Richmond	2/9/96
Product/Rinsate	150 gallon	Recycled @ Alviso Oil Facility Alviso, CA	2/9/96
Soil	35 tons	Disposed @ Forward Landfill Stockton, CA	2/9/96

Maximum Documented Contaminant Concentrations - - Before and After Cleanup

Contaminant	Soil (ppm) 1Before	Soil (ppm) After	Water (ppb) 2Before	Water (ppb) After
TPH (Gas)	450	450	57,000	2300
Benzene	3.1	3.1	1100	130
Toluene	3.8	3.8	1700	13
Ethylbenzene	12	12	3100	87
Xylenes	57	57	12,000	290
MTBE	ND	ND	620	ND
Organic Lead	ND			

Comments (Depth of Remediation, etc.):
1 soil sample results from boring BH-C (7/94)
2 water samples from BH-C, BH-D (7/96) and BH-F (4/98)

IV. **CLOSURE**

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? Undetermined

Does corrective action protect public health for current land use? YES

Site management requirements: site should be included in the City of Oakland Permit Tracking System. A site health and safety plan will be required for any subsurface work.

Should corrective action be reviewed if land use changes? Yes

Monitoring wells Decommisioned: No

Number Decommisioned: 0 Number Retained: 3

List enforcement actions taken: none

List enforcement actions rescinded: NA

V. LOCAL AGENCY REPRESENTATIVE DATA

Name: Barney M. Chan Title: Hazardous Materials Specialist

Signature: Barney M Chan Date: 9/17/98

Reviewed by

Name: Tom Peacock Title: Manager

Signature: Tom Peacock Date: 9-15-98

Name: Madhulla Logan Title: Hazardous Materials Specialist

Signature: Madhulla Logan Date: 9/29/98

VI. RWQCB NOTIFICATION

Date Submitted to RB: RB Response: Chuck Headlee

RWQCB Staff Name: C. Headlee Title: EG Date: 10/1/98

Leaking Underground Fuel Storage Tank Program

VII. ADDITIONAL COMMENTS, DATA, ETC.

See attached site summary.

Site summary for R.W. Thayer Food Products, 962 87th Ave., Oakland CA 94621

On **June 17, 1994**, prior to the removal of the 1000 gallon gasoline tank, a subsurface investigation was performed to determine if there had been any releases from the tank. Four soil borings (BH-A through BH-D) were advanced around the immediate vicinity of the tank and soil samples were collected at a depth of 7.5' bgs. Up to 450 ppm TPHg and 3.1, 3.8, 12, 57 ppm BTEX, respectively was found in these soil samples. Due to the moisture observed in these samples and the anticipated shallow groundwater, groundwater impact was assumed. **See Figure 1 and Tables 1 & 2.**

On **February 9, 1996**, the 1000 gallon steel tank was removed from the site. One hundred-fifty gallons of residual product and rinsate was removed and disposed from the tank. Due to physical constraints, over-excavation was limited to a total of 34.79 tons of soil. Four soil samples were taken from the ends and sidewalls of the excavation at a depth of 7 and 8' bgs. The dispenser, located approximately 10' south of the tank within the production area building, was removed as was the piping leading to the tank. Up to 490 ppm TPHg and 4.8, 7.4, 29.4 TEX was exhibited in these samples. Benzene and MTBE was not found in any of the soil samples. It is noted that during the removal of the tank, three of the four sides of the tank were over-excavated. Only the south end where boring BH-C was located was not over-excavated. **See Figure 2 and Table 3.**

On **July 22, 1996**, a subsurface investigation was performed to determine the limits of both soil and groundwater contamination. One boring was advanced within the former tank pit and the other four on the east, west, north and south sides of the tank. The soil samples were collected at a depth of 7.5'. Up to 220 ppm TPHg and 0.5, 2.0, 4.3 and 19 ppm, BTEX , respectively was found in these samples. Grab groundwater samples were also collected from each of the borings. Up to 57,000 ppb TPHg and 940, 1700, 3100, 12000 ppb BTEX was exhibited in the grab groundwater samples from the borings. No MTBE was detected in any of the water samples which were analyzed via EPA Method 8020. **See Figure 3 and Tables 4 and 5.**

Based upon the results of the July 1996 investigation, our office requested the installation of monitoring wells.

On **September 19, 1996** soil borings MW-1, MW-2 and MW-3 were drilled at the site. Subsurface soils encountered were silty clay to 8' bgs and silty sand from 8-20' bgs. Monitoring well MW-1 was located up-gradient while MW-2 and MW-3 were located down-gradient. Soil samples from these borings were taken at a depth of 6'. Up to 130 ppm TPHg, and 0.82,0.45, 2.6. 5.9 ppm BTEX, respectively was exhibited in these samples. MTBE was not detected in any of the soil samples. **See Table 6 , Figure 4 and the accompanying boring logs.**

Quarterly groundwater monitoring was performed for the next three quarters after which the consultant requested site closure based upon a cursory Tier 1 Risk Evaluation. However, our office had a number of concerns with the risk assessment. Groundwater contamination did not appear to have stabilized in MW-2 and not all viable exposure pathways were examined. Groundwater gradient was southwesterly and the petroleum release appeared to have migrated within the production area and beyond to off-site residential properties.

After the next quarter's monitoring event in October of 1997, a revised risk assessment was submitted. Upon review of this risk assessment, it was determined that there was inadequate sampling near the former dispenser, which was located inside the production area building. Other specific comments from our risk assessor pertained to the exact samples to be included in the risk assessment and other items.

To address this Department's concerns, an additional geoprobe boring was proposed within the production area building, just down-gradient of the former pump. Both soil and groundwater samples were to be taken from the boring. This work occurred on April 1, 1998. The soil sample taken from 7.5' from this boring (BH-F) exhibited 2.6 and 15 ppm ethyl benzene and xylenes, respectively. TPHg, B,T and MTBE were all ND, however, the detection limits for these analytes were very high due to unidentified material eluting in the gasoline range. The grab groundwater sample exhibited 1100, 450, 690 and 3000 ppb, BTEX, respectively. TPHg was ND, <2500 ppb and MTBE was 620 ppb detected via EPA Method 8020. **See Figure 5 and Tables 7 and 8.**

Using this data, a revised risk assessment was prepared and reviewed by Madhulla Logan, County Risk Assessor. The results of the evaluation of this risk assessment were as follows:

- Scenario 1- Construction Worker Exposure: Using the average soil concentration of samples from all three wells, the five borings done in July 1996 and the April 98 boring, the surface soil SSTL was not exceeded. This assumes a 1E-5 excess cancer risk and a hazard quotient of 1.
- Scenario 2- Vapor Intrusion from Subsurface Soil to On-site Industrial Building. The consultant proposed to use the average soil concentration from all three monitoring wells, the five borings of July 96 and the April 98 boring. Doing this, the SSTL was not exceeded. However, the more appropriate sample locations for this exposure pathway should include only those samples within the production building
- Scenario 3- Vapor Intrusion from Groundwater to an On-site Building. The consultant proposed to use the average groundwater concentration from all three wells during the five sampling events as well as the sample from the April 1998 boring. However, to best represent the groundwater concentration from on-site exposure, you should take the groundwater concentration from MW-2 and that from borings BH-E and BH-F.
- Scenario 4- Vapor Intrusion from Groundwater to an Off-site Residence. Groundwater concentrations from monitoring wells MW-2, MW-3 and boring BH-F were averaged to estimate the potential average source benzene concentration. The nearest off-site residence was determined by site inspection to be 125' away. The groundwater concentration 125' down-gradient was determined using the Domenico fate and transport model and the GSI program. This concentration was then compared with the SSTL for on-site residential indoor and outdoor exposure scenario.

Upon review of this risk assessment, a few changes were made by our office to represent more representative soil and groundwater samples. The following changes were made:

Revised risk assessment prepared by Alameda County:
Assumes an acceptable risk of 1E-5 and commercial exposure except when noted as residential.

Scenario 1- Construction worker exposure:
Total benzene concentration from borings BH-A through BH-F and borings from MW-1 through MW-3 yielded 3.265/9= 0.363 ppm which is less than the SSTL for the construction worker or 840 ppm benzene. See Tier 2 worksheet.

Scenario 2- Vapor Intrusion from subsurface soil to on-site industrial building. The average benzene soil concentration of borings BH-F, BH-E and MW-2 is 2.35/3 = 0.78 ppm which is lower than the SSTL of 1.1ppm. Note ½ the detection limit is used when ND is reported for the concentration of benzene. See Tier 2 worksheet.

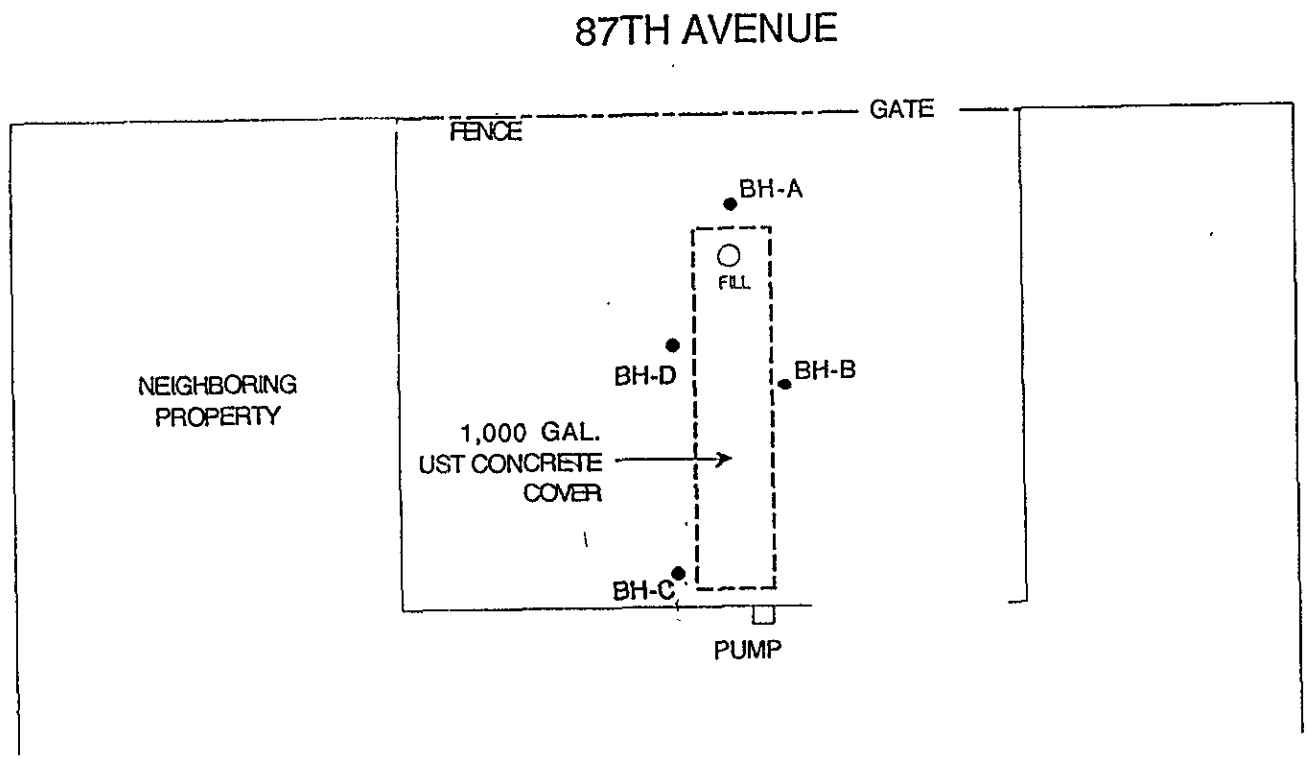
Scenario 3- Vapor intrusion from groundwater to on-site building. The benzene groundwater concentration from MW-2 for the past four quarters plus that from borings BH-E and BH-F is 1634/6= 272 ppb which is less than the SSTL of 720 ppb. See Tier 2 worksheet.

Scenario 4- Vapor intrusion from groundwater to an off-site residence. Benzene groundwater concentrations from monitoring wells MW-2, MW-3 and boring BH-F were averaged to yield 1712/11= 156 ppb. Since the GSI model does not directly calculate risk from vapor intrusion to indoor air for off-site receptors, the Domenico model was used to determine the off-site residence groundwater concentration using the above initial concentration (1.6E-1). This point of exposure concentration was determined to be 2.1E-2 ppm. This concentration was then compared to the groundwater volatilization to indoor and outdoor air SSTL values. The 2.1E-2 ppm concentration was less than the both SSTL values (2.3E-2 and 1.7E+1) at a 1.0E-6 risk.

Based on this risk evaluation, site closure is recommended as a "low risk groundwater site".

- The underground tank and as much of the affected soil as possible has been removed.
- The site has been adequately characterized through the advancement of soil borings and monitoring wells.
- Groundwater concentration has apparently stabilized.
- From the HHRA, no health risk is expected to human health.

The presence of 640 ppb MTBE in the grab groundwater sample from boring BH-F should be discounted since no MTBE was ever detected in any soil samples nor any other grab or monitoring well water sample. Although, EPA Method 8240 or 8260 has not been run on any of the groundwater samples, MTBE was not detected in any other sample other than that from BH-F. When boring BH-F was advanced there was no policy requiring GC/MS confirmation analysis. In addition, monitoring well MW-2 is downgradient of BH-F and has never detected MTBE in any of the monitoring events.



LEGEND

BH-C • Soil Boring Location

NORTH

SCALE: 1" = 10'

SITE PLAN

R.W. Thayer Food Products, Inc.
962 87th Avenue
Oakland, California

AQUA SCIENCE ENGINEERS, INC. | Figure 1

TABLE ONE
Summary of Chemical Analyses of
SOIL SAMPLES

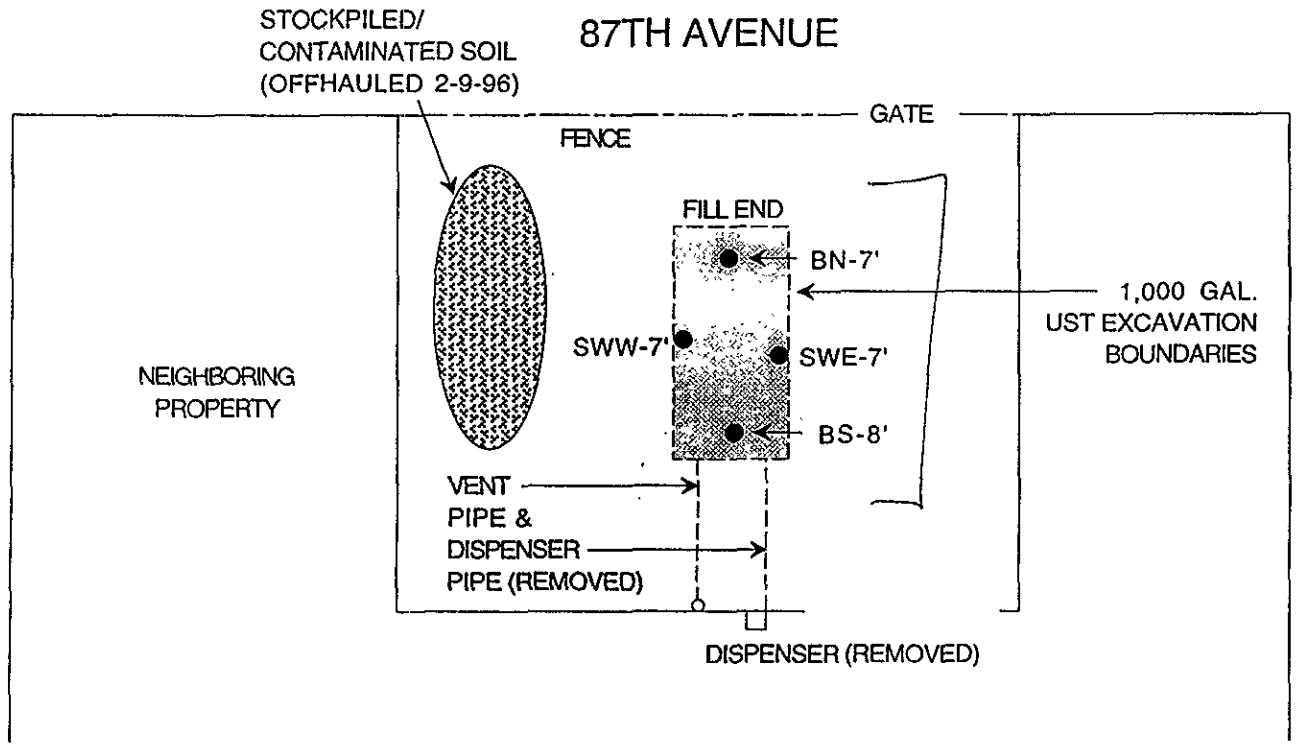
Sample I.D.	TPH Gasoline (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl Benzene (ppm)	Total Xylenes (ppm)
BH-A	220	0.68	1.0	3.4	7.5
BH-B	3.3	0.23	0.007	0.03	0.04
BH-C	450	3.1	3.8	12	57
BH-D	170	1.2	1.2	4.1	4.4
DETECTION LIMIT	0.2	0.005	0.005	0.005	0.005
EPA METHOD	8015M	8020	8020	8020	8020

ppm parts per million

TABLE TWO
Summary of Chemical Analyses of
SOIL SAMPLES

TPH Sample I.D.	Organic Lead (ppm)	Diesel (ppm)	Oil & Grease (ppm)	Paint Thinner (ppm)
BH-A	N.D.	---	---	---
BH-B	---	---	---	---
BH-C	---	---	---	---
BH-D	---	N.D.	N.D.	10
DETECTION LIMIT	0.5	1.0	5.0	1.0
EPA METHOD	DOHS-LUFT	3550	3550	3550

ppm parts per million
N.D. not detected above detection limit
--- not analyzed



LEGEND

SWW-7' ● SOIL SAMPLE LOCATION

NORTH

SCALE: 1" = 10'

SITE & SAMPLING PLAN

R.W. Thayer Food Products, Inc.
962 87th Avenue
Oakland, California

AQUA SCIENCE ENGINEERS, INC. | Figure 2

TABLE 3

SOIL SAMPLE RESULTS

All Results in **Parts Per Million**

There all are not acceptable NO levels

Sample Name	TPH Gasoline	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE
BN-7'	26	< 0.013	< 0.013	0.340	0.380	< 0.050
BS-8'	260	< 0.035	2.9	2.4	12	< 0.14
SWE-7'	130	< 0.02	< 0.02	0.49	0.78	< 0.08
SWW-7'	490	< 0.1	4.8	7.4	29.4	< 0.4
EPA METHOD	8015M	8020	8020	8020	8020	8020

11.0 EXCAVATION BACKFILLING AND RESURFACING

On February 9, 1996, ASE backfilled and compacted the entire excavation with 49.15 tons of clean, imported, granular backfill material. On February 10, 1996, the excavation was resurfaced with rebar-reinforced concrete to match the existing surroundings.

12.0 CONCLUSIONS AND RECOMMENDATIONS

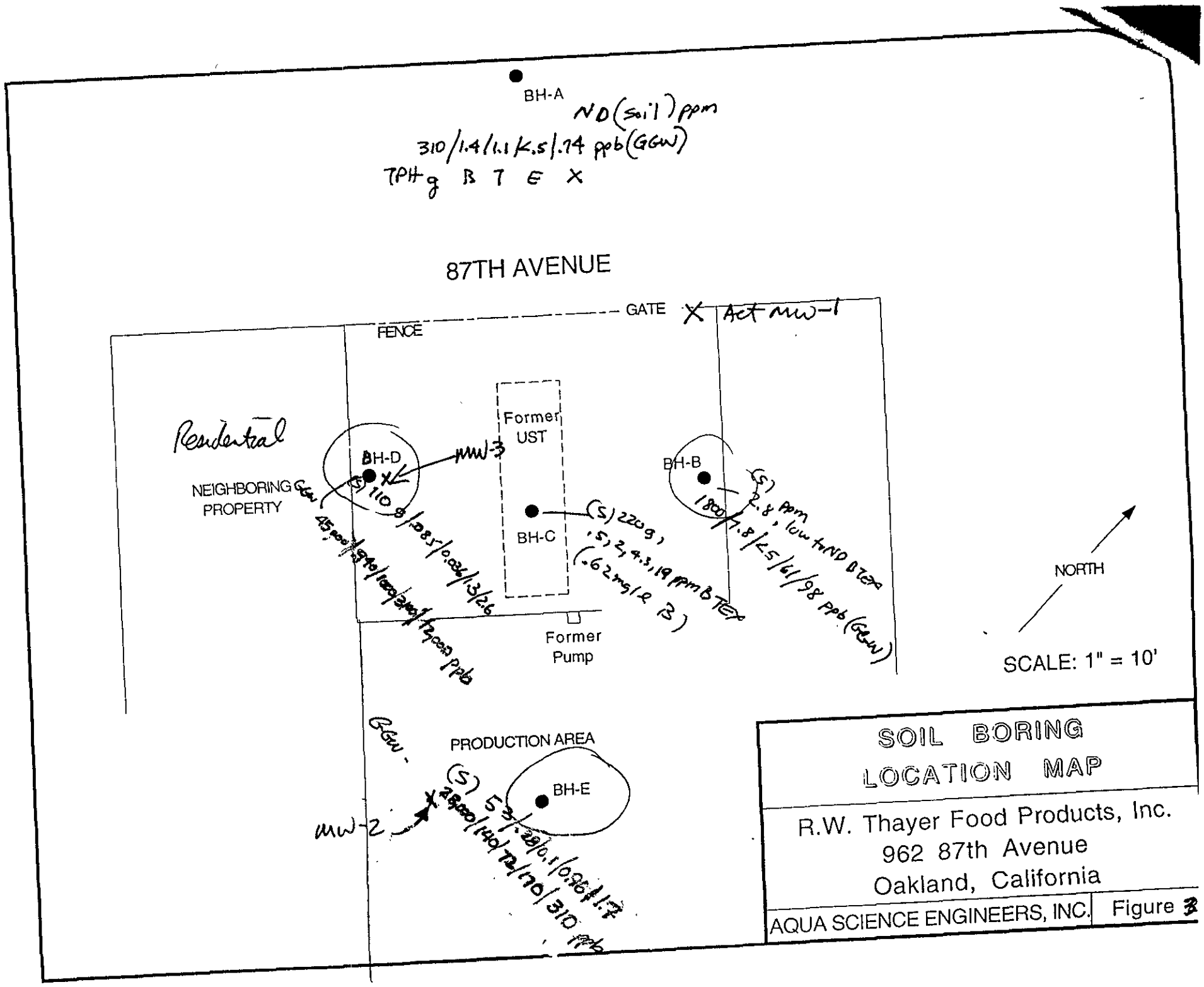
* On February 9, 1996, one (1) 1,000 gallon gasoline UST was removed from the Thayer Food Products, Inc. facility in Oakland, CA and disposed of off site.

* Contaminated soil beneath the UST was overexcavated and immediately hauled from the property and disposed of at the Forward, Inc. facility in Manteca, CA where it was remediated then disposed of as Class II cover material.

* The entire excavation was then backfilled with imported fill material, compacted and resurfaced.

* Elevated concentrations of petroleum hydrocarbons as gasoline and BTEX exist in the soil below the former UST. These concentrations typically warrant additional assessment activities per the guidelines set by the ACHCSA.

ASE recommends no further soil excavation or remedial activities related to the former underground storage tank. We recommend that a copy of this report be mailed to Mr. Barney Chan of the ACHCSA for further guidance from that agency.



SOIL BORING LOCATION MAP

R.W. Thayer Food Products, Inc.
962 87th Avenue
Oakland, California

AQUA SCIENCE ENGINEERS, INC. | Figure 3

TABLE 4

Summary of Chemical Analysis of **SOIL** Samples
All results are in **parts per million**

Boring	Depth Sampled	TPH Gasoline	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE
BH-A	7.5'	<1	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
BH-B	7.5'	2.8	0.0050	0.0080	0.018	0.0057	< 0.0050
BH-C	7.5'	220	0.50	2.0	4.3	19	< 0.017 beneath UST
BH-D	7.5'	110	0.085	0.036	1.3	2.6	< 0.022
BH-E	7.5'	53	0.28	0.10	0.96	1.7	< 0.25

Notes:
Non-detectable concentrations noted by the less than symbol (<) followed by the detection limit

Soil samples collected from borings BH-A and BH-B northwest and northeast of the former UST contained TPH-G concentrations between non-detectable and 2.8 parts per million (ppm). Soil samples from borings BH-C and BH-D beneath and to the southwest of the former UST contained 220 and 110 ppm TPH-G, respectivily. Soil samples from boring BH-E southeast of the former UST and beneath the site building contained 53 ppm TPH-G. Up to 0.5 ppm benzene, 2.0 ppm toluene, 4.3 ppm ethylbenzene and 19 ppm total xylenes were detected in soil beneath the the former UST. These were the highest hydrocarbon concentrations detected during this assessment. None of these concentrations exceeded the United States Environmental Protection Agency (US EPA) Region IX Preliminary Remediation Goals (PRGs) for residential soil.

6.0 ANALYTICAL RESULTS FOR GROUNDWATER

The groundwater samples were analyzed by Chromalab for TPH-G by modified EPA Method 5030/8015 and BTEX and MTBE by EPA Method 8020. The analytical results are tabulated in Table Two, and the certified analytical report and chain of custody forms are included in Appendix D.

TABLE 5

Summary of Chemical Analysis of **GROUNDWATER** Samples
All results are in **parts per billion**

Well or Boring	TPH Gasoline	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE
BH-A	310	1.4	1.1	<0.5	0.74	<5.0
BH-B	1,800	7.8	<5.0	61	98	<50
BH-C	57,000	620	1,700	2,200	11,000	<1,000
BH-D	45,000	940	1,000	3,100	12,000	<1,000
BH-E	28,000	140	72	170	310	<250
DTSC MCL	NE	1.0	100*	680	1,750	NE

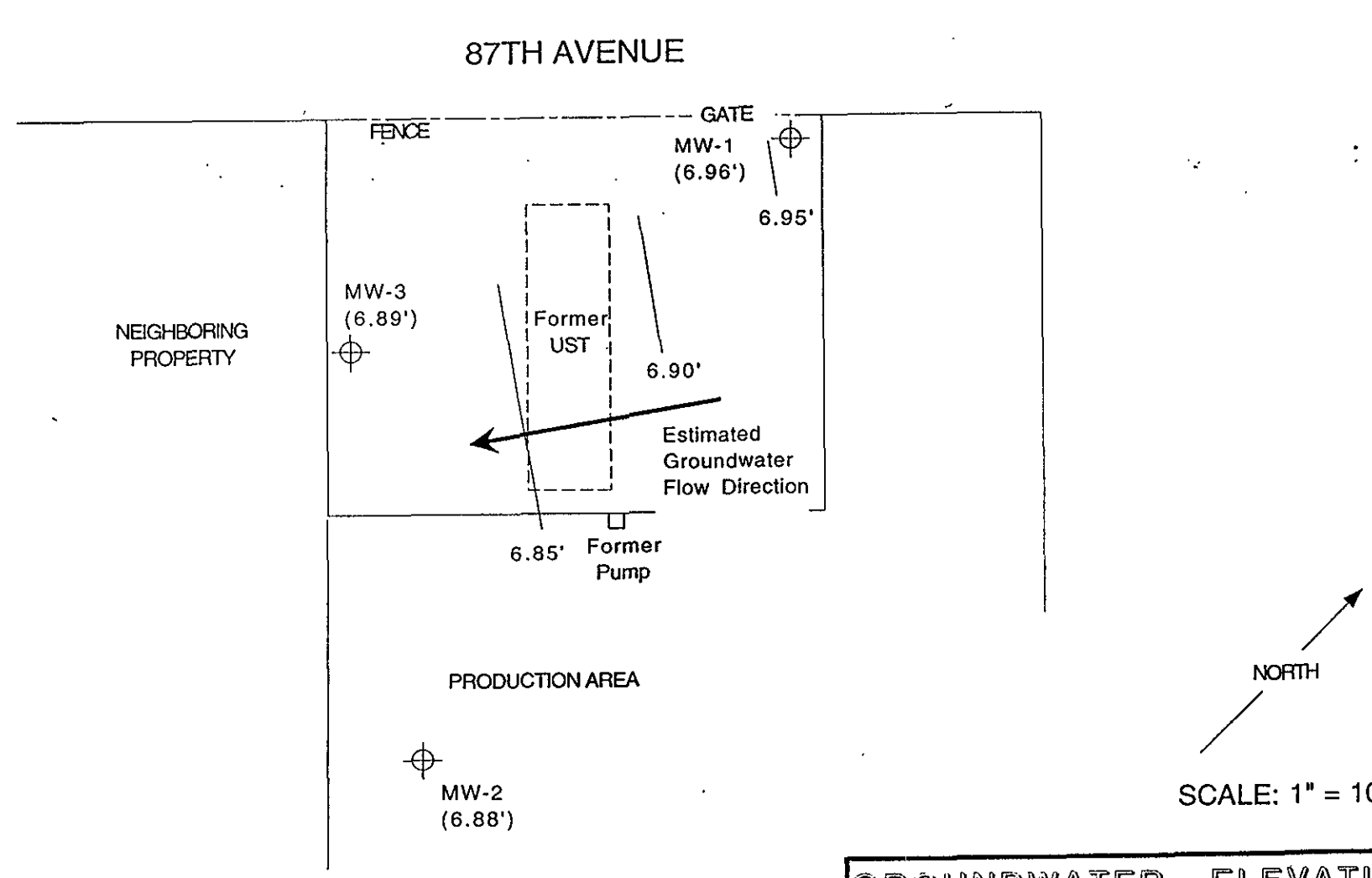
Notes:
Non-detectable concentrations noted by the less than symbol (<) followed by the detection limit.

DTSC MCL is the California Department of Toxic Substances Control maximum contaminant level for drinking water.

NE = DTSC MCLs are not established.

* = DTSC recommended action level for drinking water; MCL is not established.

Groundwater samples collected from all five soil borings contained benzene concentrations exceeding the California Department of Toxic Substances Control (DTSC) maximum contaminant level (MCL) for drinking water. Groundwater samples collected from borings BH-C, BH-D and BH-E contained ethylbenzene and total xylenes concentrations exceeding the DTSC MCLs and toluene concentrations exceeding the DTSC recommended action level (RAL) for drinking water. The highest hydrocarbon concentrations were in borings beneath and southwest of the former UST followed by boring BH-E, southeast of the former UST in the site building. No MTBE was detected in any of the groundwater samples collected during this assessment.



EXPLANATION

MW-1 (6.96') — Well Location (Groundwater Elevation in Parenthesis)

Groundwater Elevation Contour

GROUNDWATER ELEVATION CONTOUR MAP

R.W. Thayer Food Products, Inc.
962 87th Avenue
Oakland, California

AQUA SCIENCE ENGINEERS, INC. Figure 4

5.0 ANALYTICAL RESULTS FOR SOIL

The soil samples collected from 6-feet bgs in each boring were analyzed by Chromalab, Inc. for TPH-G by modified EPA Method 5030/8015 and BTEX and MTBE by EPA Method 8020. The analytical results are tabulated in Table One, and a copy of the certified analytical report and chain of custody form are included in Appendix D.

TABLE 6

Summary of Chemical Analysis of **SOIL** Samples
All results are in **parts per million**

Boring	Depth Sampled	TPH Gasoline	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE
MW-1	6.0'	1.2	< 0.0050	< 0.0050	< 0.0050	0.0061	< 0.0050
MW-2	6.0'	130	0.82	0.45	2.6	5.9	< 0.75
MW-3	6.0'	94	0.32	0.30	1.1	1.6	< 0.74

Notes:
Non-detectable concentrations noted by the less than symbol (<) followed by the detection limit

6.0 MONITORING WELL INSTALLATION, DEVELOPMENT AND SAMPLING

Groundwater monitoring wells MW-1, MW-2 and MW-3 were installed in borings MW-1, MW-2 and MW-3, respectively. The wells were constructed with 2-inch diameter, 0.020-inch slotted, flush-threaded, Schedule 40 PVC well screen and blank casing. Each well is screened between 5-feet bgs and 20-feet bgs (the total depth of each boring) to monitor the first water bearing zone encountered. Lonestar #3 Monterey sand occupies the annular space between the borehole and the casing from the bottom of the boring to approximately 1-foot above the well screen. A 0.5-foot thick hydrated bentonite layer separates the sand from the overlying cement surface seal. The wellheads are secured with locking wellplugs beneath at-grade traffic-rated vaults.

BORING LOG AND WELL COMPLETION DETAILS

Monitoring Well: MW-1

ct Name: R. W. Thayer Food Products	Project Location: 962 - 87th Avenue, Oakland, CA	Page 1 of 1
riller: Soils Exploration Services	Type of Rig: Access II	Size of Drill: 7" O.D. Hollow-Stem Augers
Logged By: Robert E. Kitay	Date Drilled: September 19, 1996	Checked By: David M. Schultz, P.E.

WATER AND WELL DATA

Depth of Water First Encountered: 8'

Static Depth of Water in Well: 8'

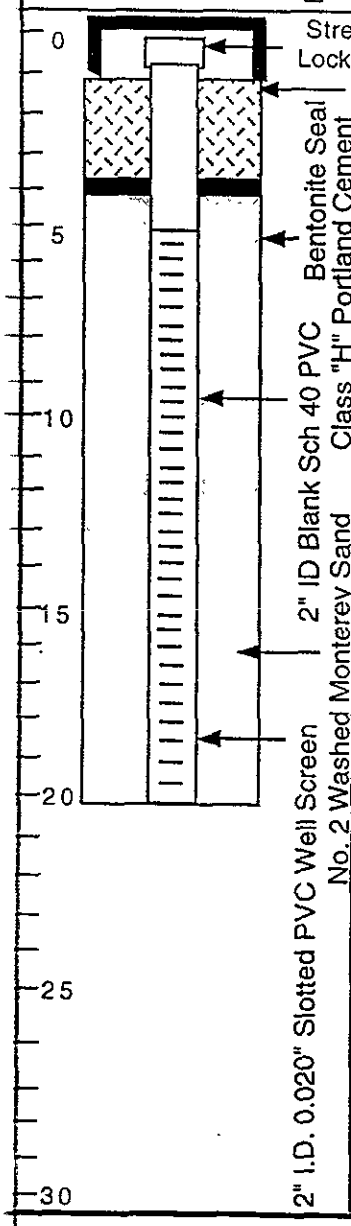
Total Depth of Boring: 20.0'

Total Depth of Well Completed: 20.0'

Well Screen Type and Diameter: 2" Diameter PVC

Well Screen Slot Size: 0.020"

Type and Size of Soil Sampler: 2.0" I.D. California Sampler



SOIL/ROCK SAMPLE DATA

Interval	Blow Ct.	OVM (ppmv)	Graphic Log
	6 6 6	0	
	6 8 10	359	
	6 7 9		

Depth in Feet	DESCRIPTION OF LITHOLOGY standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
0	Concrete
	Silty CLAY (CH); black; stiff; damp; 80% clay; 20% silt; high plasticity; very low estimated K; no odor
5	moderate hydrocarbon odor at 7'
	▼ *Groundwater First Encountered*
10	Silty SAND (SM); grey; medium dense; wet; 85% fine to medium sand; 15% silt; non-plastic; medium estimated K; moderate hydrocarbon odor
15	
20	End of boring at 20'
25	
30	

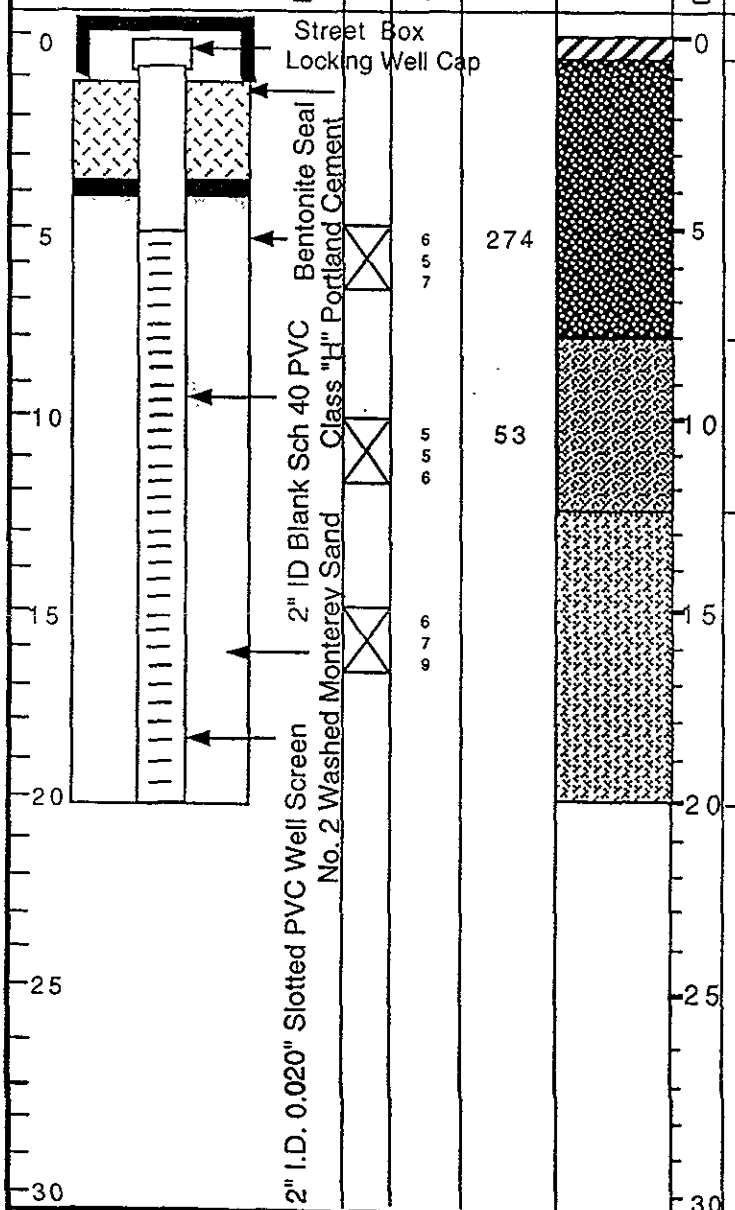
BORING LOG AND WELL COMPLETION DETAILS

Monitoring Well: MW-2

Project Name: R. W. Thayer Food Products	Project Location: 962 - 87th Avenue, Oakland, CA	Page 1 of 1
Driller: Soils Exploration Services	Type of Rig: Access II	Size of Drill: 7" O.D. Hollow-Stem Augers
Logged By: Robert E. Kitay	Date Drilled: September 19, 1996	Checked By: David M. Schultz, P.E.

WATER AND WELL DATA

Depth of Water First Encountered: 8'	Total Depth of Well Completed: 20.0'
Static Depth of Water in Well: 8'	Well Screen Type and Diameter: 2" Diameter PVC
Total Depth of Boring: 20.0'	Well Screen Slot Size: 0.020"
	Type and Size of Soil Sampler: 2.0" I.D. California Sampler



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

Concrete

Silty CLAY (CH); black; stiff; damp; 80% clay; 20% silt; high plasticity; very low estimated K; no odor

moderate hydrocarbon odor at 7'

▼ *Groundwater First Encountered*

SILT (ML); grey; medium stiff; wet; 100% silt; non-plastic; low estimated K; very strong hydrocarbon odor

Silty SAND (SM); grey; medium dense; wet; 85% fine to medium sand; 15% silt; non-plastic; medium estimated K; strong hydrocarbon odor

End of boring at 20'

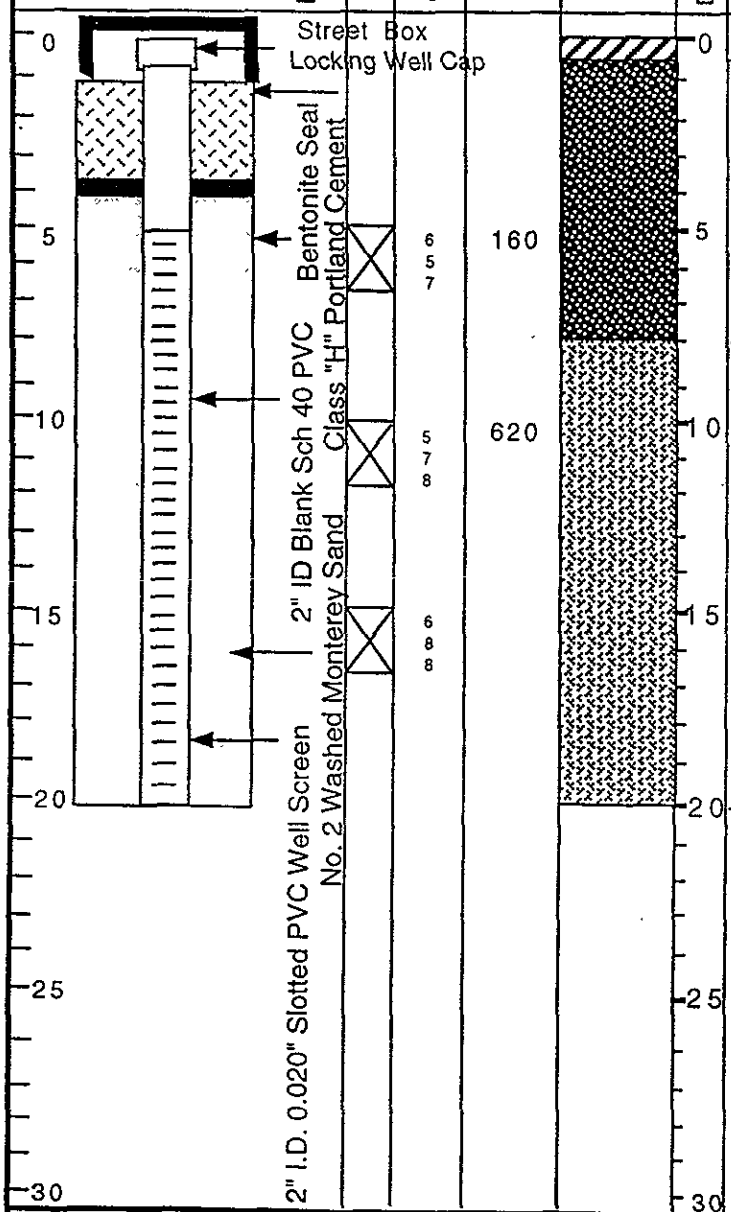
BORING LOG AND WELL COMPLETION DETAILS

Monitoring Well: MW-3

Project Name: R. W. Thayer Food Products	Project Location: 962 - 87th Avenue, Oakland, CA	Page 1 of 1
Driller: Soils Exploration Services	Type of Rig: Access II	Size of Drill: 7" O.D. Hollow-Stem Augers
Logged By: Robert E. Kitay	Date Drilled: September 19, 1996	Checked By: David M. Schultz, P.E.

WATER AND WELL DATA

Depth of Water First Encountered: 8'	Total Depth of Well Completed: 20.0'
Static Depth of Water in Well: 8'	Well Screen Type and Diameter: 2" Diameter PVC
Total Depth of Boring: 20.0'	Well Screen Slot Size: 0.020"
	Type and Size of Soil Sampler: 2.0" I.D. California Sampler



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

Concrete

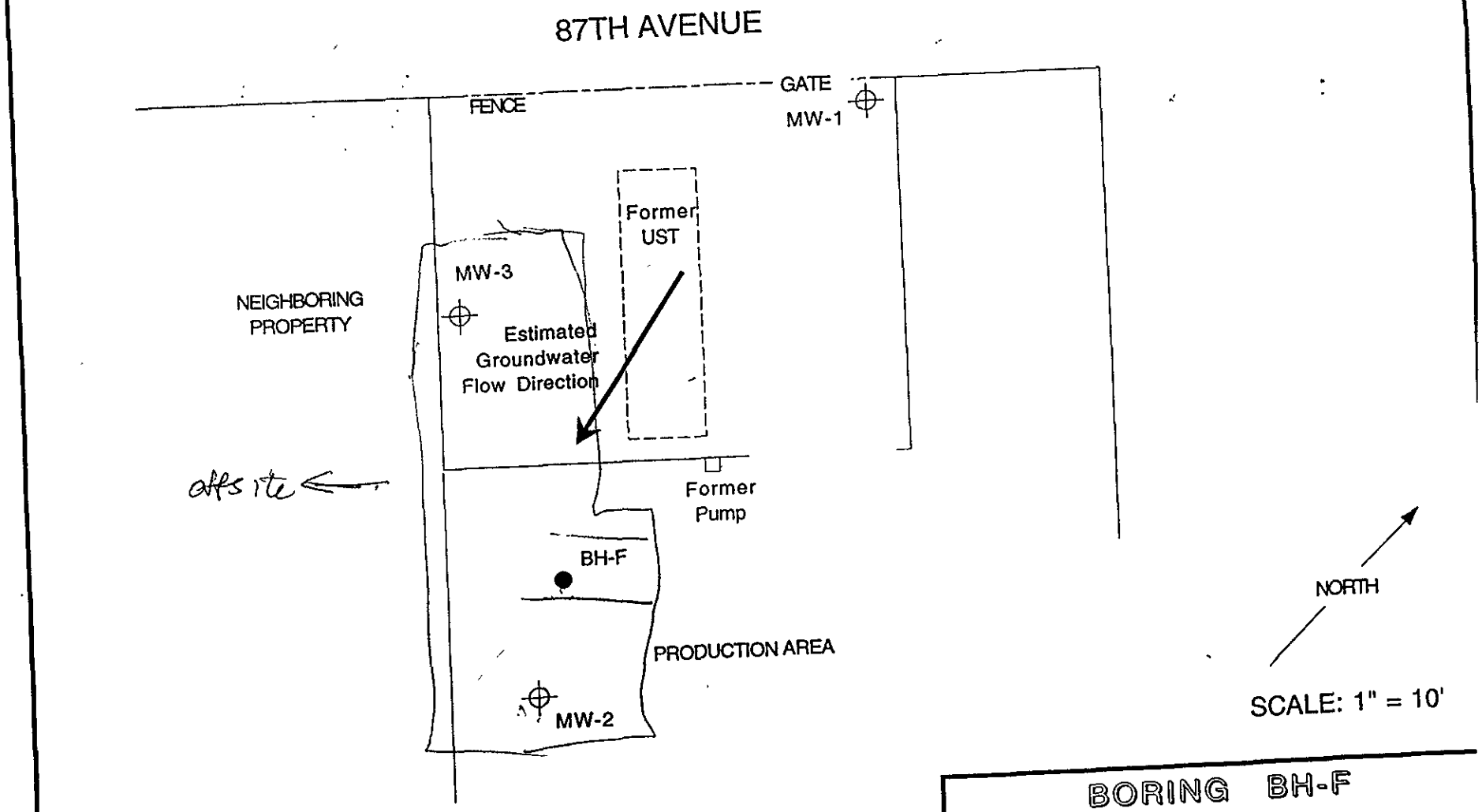
Silty CLAY (CH); black; stiff; damp; 80% clay; 20% silt; high plasticity; very low estimated K; no odor

moderate hydrocarbon odor at 7'

▼ *Groundwater First Encountered*

Silty SAND (SM); olive; dense; wet; 60-80% fine to medium sand; 20-40% silt; non-plastic; medium estimated K; strong hydrocarbon odor

End of boring at 20'



EXPLANATION

⊕	MW-1	Well Location
●	BH-F	Soil Boring Drilled 4/1/98

BORING BH-F
LOCATION MAP

R.W. Thayer Food Products, Inc.
962 87th Avenue
Oakland, California

AQUA SCIENCE ENGINEERS, INC. Figure 5

TABLE 7

Summary of Chemical Analysis of **SOIL** Samples
All results are in **parts per million**

Boring	Depth Sampled	TPH Gasoline	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE
BH-A	7.5'	<1	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
BH-B	7.5'	**2.8**	**0.0050**	**0.0080**	**0.018**	**0.0057**	< 0.0050
BH-C	7.5'	**220**	**0.50** ✓	**2.0**	**4.3**	**19**	< 0.017
BH-D	7.5'	**110**	**0.085**	**0.036**	**1.3**	**2.6**	< 0.022
BH-E	7.5'	**53**	**0.28**	**0.10**	**0.96**	**1.7**	< 0.25
BH-F	7.5'	< 40*	< 2.5 ✓	< 2.5	**2.6**	**15**	< 40
MW-1	6.0'	**1.2**	< 0.0050	< 0.0050	< 0.0050	**0.0061**	< 0.0050
MW-2	6.0'	**130**	**0.82** ✓	**0.45**	**2.6**	**5.9**	< 0.75
MW-3	6.0'	**94**	**0.32**	**0.30**	**1.1**	**1.6**	< 0.74

we have enough!

Notes:
Non-detectable concentrations noted by the less than symbol (<) followed by the detection limit.

Detectable concentrations are in **bold**.

* = Hydrocarbons uncharacteristic of gasoline found in gasoline range at 330 parts per million.

TABLE 8

Groundwater Analytical Results

All results are in **parts per billion**

Well & Date Sampled	TPH Gasoline	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE
MW-1						
09-26-96	**4,200**	**14**	**4.5**	**120**	**570**	<25
01-16-97	**85**	<0.5	<0.5	<0.5	<0.5	<5.0
04-07-97	**120**	**0.89**	<0.5	**1.1**	<0.5	<5.0
07-15-97	**99**	<0.5	<0.5	**0.72**	<0.5	<5.0
10-20-97	<50	<0.5	<0.5	<0.5	<0.5	<5.0
MW-2						
09-26-96	**730**	**18**	**2.1**	**11**	**65**	<5.0
01-16-97	**780**	**87**	**1.2**	**0.94**	**7.5**	<5.0
04-07-97	**380**	**27**	<0.5	**2.0**	**9.4**	<5.0
07-15-97	**3,600**	**150**	**11**	**87**	**370**	<5.0
10-20-97	**2,300**	**130**	**13**	**87**	**290**	<50
MW-3						
09-26-96	**15,000**	**120**	**8.0**	**320**	**1,800**	<25
01-16-97	**1,400**	**49**	**1.5**	**17**	**40**	<5.0
04-07-97	**300**	**12**	**0.64**	**4.3**	**5.1**	**5.8**
07-15-97	**330**	**9.3**	<0.5	**4.1**	**1.6**	**12**
10-20-97	**190**	**9.7**	**0.64**	**5.1**	**2.0**	<5.0
BH-F						
04-01-98	<2,500	**1,100**	**450**	**690**	**3,000**	**620**

does this need to be defined further? (done by 8020)

Notes:

Non-detectable concentrations noted by the less than symbol (<) followed by the detection limit.

Detectable concentrations are in **bold**.

1728/16 ≈ 110 ppb

RBCA SITE ASSESSMENT — Tier 2 Worksheet 9.1

1 OF 1

Site Name: Thayer Food Products
Site Location: Oakland, CA

Completed By: Robert Kitay
Date Completed: 4/14/1998

Scenario 1

Target Risk (Class A & B) 1.0E-5
Target Risk (Class C) 1.0E-5
Target Hazard Quotient 1.0E+0

o MCL exposure limit?
o PEL exposure limit?

Calculation Option: 2

SURFACE SOIL SSTL VALUES (< 3.3 FT BGS)

CONSTITUENTS OF CONCERN		Representative Concentration	SSTL Results For Complete Exposure Pathways ("x" If Complete)								
			Soil Leaching to Groundwater			Ingestion, Inhalation and Dermal Contact		X			
CAS No.	Name	(mg/kg)	Residential: (on-site)	Commercial: (on-site)	Regulatory(MCL): (on-site)	Residential: (on-site)	Commercial. (on-site)		Construction Worker Commercial: (on-site)	Applicable SSTL (mg/kg)	SSTL Exceeded ? "n" If yes	Required CRF Only If "yes" left
71-43-2	Benzene	3.6 E-1	NA	NA	NA	NA	NA		8.4E+2	8.4E+2	o	<1
100-41-4	Ethylbenzene	2.2E-1	NA	NA	NA	NA	NA		>Res	>Res	o	<1
1634-04-4	Methyl t-Butyl Ether	1.4E+0	NA	NA	NA	NA	NA		2.4E+2	2.4E+2	o	<1
108-88-3	Toluene	0.0E+0	NA	NA	NA	NA	NA		>Res	>Res	o	<1
1330-20-7	Xylene (mixed Isomers)	3.2E-1	NA	NA	NA	NA	NA		>Res	>Res	o	<1
		5.1E+0										

>Res Indicates risk-based target concentration greater than constituent residual saturation value

Software: GSI RBCA Spreadsheet
Version: 1.0.1

Serial: G-477-BLX-264

RBCA SITE ASSESSMENT — Tier 2 Worksheet 9.2

Site Name: Thayer Food Products
Site Location: Oakland, CA

Completed By: Robert Kitay
Date Completed: 4/14/1998

Scenario 2

Target Risk (Class A & B) 1.0E-5
Target Risk (Class C) 1.0E-5
Target Hazard Quotient 1.0E+0

o MCL exposure limit?
o PEL exposure limit?

Calculation Option: 2

SUBSURFACE SOIL SSTL VALUES (> 3.3 FT BGS)

CONSTITUENTS OF CONCERN		Representative Concentration	SSTL Results For Complete Exposure Pathways ("x" If Complete)									
			Soil Leaching to Groundwater			X	Soil Volatilization to Indoor Air		Soil Volatilization to Outdoor Air		Applicable SSTL	SSTL Exceeded ?	Required CRF Only If "yes" left
CAS No.	Name	(mg/kg)	Residential: (on-site)	Commercial: (on-site)	Regulatory(MCL): (on-site)		Residential: (on-site)	Commercial: (on-site)	Residential: (on-site)	Commercial: (on-site)	(mg/kg)	"n" If yes	
71-43-2	Benzene	7.8E-1 ~~2.2E-1~~	NA	NA	NA		NA	1.1E+0	NA	NA	1.1E+0	o	<1
100-41-4	Ethylbenzene	1.4E+0	NA	NA	NA		NA	>Res	NA	NA	>Res	o	<1
1634-04-4	Methyl t-Butyl Ether	0.0E+0	NA	NA	NA		NA	1.0E+3	NA	NA	1.0E+3	o	<1
108-88-3	Toluene	3.2E-1	NA	NA	NA		NA	1.3E+2	NA	NA	1.3E+2	o	<1
1330-20-7	Xylene (mixed isomers)	5.1E+0	NA	NA	NA		NA	>Res	NA	NA	>Res	o	<1

>Res Indicates risk-based target concentration greater than constituent residual saturation value

1.78 ppm 1.7

Software: GSI RBCA Spreadsheet Version: 1.0.1

Serial: G-477-BLX-264

Site Name: Thayer Food Products
Site Location: Oakland, CA

Completed By: Robert Kitay
Date Completed: 4/14/1998

Scenario 3

GROUNDWATER SSTL VALUES

Target Risk (Class A & B) 1.0E-5
Target Risk (Class C) 1.0E-5
Target Hazard Quotient 1.0E+0

o MCL exposure limit?
o PEL exposure limit?

Calculation Option: 2

SSTL Results For Complete Exposure Pathways ("x" If Complete)

CONSTITUENTS OF CONCERN		Representative Concentration	Groundwater Ingestion			X Groundwater Volatilization to Indoor Air		Groundwater Volatilization to Outdoor Air		Applicable SSTL	SSTL Exceeded ?	Required CRF
CAS No.	Name	(mg/L)	Residential: (on-site)	Commercial: (on-site)	Regulatory(MCL): (on-site)	Residential: (on-site)	Commercial: (on-site)	Residential (on-site)	Commercial: (on-site)	(mg/L	"1" If yes	Only if "yes" left
71-43-2	Benzene	2.7E-1 ~~1.1E-1~~	NA	NA	NA	NA	7.2E-1	NA	NA	7.2E-1	0	<1
100-41-4	Ethylbenzene	~~8.4E-2~~	NA	NA	NA	NA	>Sol	NA	NA	>Sol	0	<1
1634-04-4	Methyl t-Butyl Ether	4.0E-2	NA	NA	NA	NA	3.6E+3	NA	NA	3.6E+3	0	<1
108-88-3	Toluene	3.1E-2	NA	NA	NA	NA	8.3E+1	NA	NA	8.3E+1	0	<1
1330-20-7	Xylene (mixed isomers)	3.9E-1	NA	NA	NA	NA	>Sol	NA	NA	>Sol	0	<1

>Sol indicates risk-based target concentration greater than constituent solubility

Software: GSI RBCA Spreadsheet
Version: 1.0.1

Serial: G-477-BLX-264

Site Name: Thayer Food Products
Site Location: Oakland, CA

Completed By: Robert Kitay
Date Completed: 4/14/1998

Scenario 4

GROUNDWATER SSTL VALUES

Target Risk (Class A & B) 1.0E-6
Target Risk (Class C) 1.0E-6
Target Hazard Quotient 1.0E+0

O MCL exposure limit?
O PEL exposure limit?

Calculation Option: 2
Groundwater DAF Option: Domenico - No Decay (Two-directional vert. dispersion)

SSTL Results For Complete Exposure Pathways ("x" If Complete)

CONSTITUENTS OF CONCERN		Representative Concentration	X Groundwater Ingestion			Groundwater Volatilization to Indoor Air		Groundwater Volatilization to Outdoor Air		Applicable SSTL	SSTL Exceeded ?	Required CRF
CAS No.	Name	(mg/L)	Residential: 125 feet	Commercial: (on-site)	Regulatory(MCL): 125 feet	Residential: (on-site)	Commercial: (on-site)	Residential (on-site)	Commercial: (on-site)	(mg/L	"n" If yes	Only if "yes" left
71-43-2	Benzene	1.6E-1	2.3E-2	NA	NA	NA	NA	NA	NA	2.3E-2	n	7.0E+00
100-41-4	Ethylbenzene	1.1E-1	2.8E+1	NA	NA	NA	NA	NA	NA	2.8E+1	o	<1
1634-04-4	Methyl t-Butyl Ether	5.8E-2	1.4E+0	NA	NA	NA	NA	NA	NA	1.4E+0	o	<1
108-88-3	Toluene	4.4E-2	5.7E+1	NA	NA	NA	NA	NA	NA	5.7E+1	o	<1
1330-20-7	Xylene (mixed isomers)	5.1E-1	>Sol	NA	NA	NA	NA	NA	NA	>Sol	o	<1

>Sol indicates risk-based target concentration greater than constituent solubility

RBCA SITE ASSESSMENT

Tier 2 Worksheet 9.3

Site Name: Thayer Food Products
Site Location: Oakland, CA

Completed By: Robert Kitay
Date Completed: 4/14/1998

Scenario 4

GROUNDWATER SSTL VALUES

Target Risk (Class A & B) 1.0E-6
Target Risk (Class C) 1.0E-6
Target Hazard Quotient 1.0E+0

o MCL exposure limit?
o PEL exposure limit?

Calculation Option: 2

(Two-directional vert. dispersion)

CONSTITUENTS OF CONCERN		Representative Concentration	SSTL Results For Complete Exposure Pathways ("x" If Complete)									
			Groundwater Ingestion			X Groundwater Volatilization to Indoor Air		X Groundwater Volatilization to Outdoor Air		Applicable SSTL	SSTL Exceeded ?	Required CRF
CAS No.	Name	(mg/L)	Residential: (on-site)	Commercial: (on-site)	Regulatory(MCL): (on-site)	Residential: (on-site)	Commercial. (on-site)	Residential (on-site)	Commercial: (on-site)	(mg/L	"O" If yes	Only if "yes" left
71-43-2	Benzene	2.1E-2	NA	NA	NA	2.3E-2	NA	1.7E+1	NA	2.3E-2	o	<1
100-41-4	Ethylbenzene	1.4E-2	NA	NA	NA	7.5E+1	NA	>Sol	NA	7.5E+1	o	<1
1634-04-4	Methyl t-Butyl Ether	7.5E-3	NA	NA	NA	1.4E+3	NA	>Sol	NA	1.4E+3	o	<1
108-88-3	Toluene	5.7E-3	NA	NA	NA	3.2E+1	NA	>Sol	NA	3.2E+1	o	<1
1330-20-7	Xylene (mixed isomers)	6.5E-2	NA	NA	NA	>Sol	NA	>Sol	NA	>Sol	o	<1

>Sol indicates risk-based target concentration greater than constituent solubility

Software: GSI RBCA Spreadsheet
Version: 1.0 1

Serial: G-477-BLX-264