

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

November 21, 1997  
StID # 561

REMEDIAL ACTION COMPLETION CERTIFICATION

Mr. Kevin Stibach  
Longview Fibre Company  
8511 Blaine St.  
Oakland CA 94621

RE: Longview Fibre Company, 8511 Blaine St., Oakland CA 94621

Dear Mr. Stibach:

This letter confirms the completion of site investigation and remedial action for the two 10,000 and one 3,000 gallon diesel, and the one 150 and one 7,500 gallon gasoline underground tanks removed from 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  
Kevin Graves, RWQCB  
Mr. Dave Deaner, SWRCB Cleanup Fund  
Mr. Leroy Griffin, City of Oakland OES, 505 14th St., Suite  
702, Oakland CA 94612

RACC8511

ALAMEDA COUNTY  
HEALTH CARE SERVICES



AGENCY  
DAVID J. KEARS, Agency Director

January 27, 1998  
StID# 561

ENVIRONMENTAL HEALTH SERVICES  
ENVIRONMENTAL PROTECTION (LOP)  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577

Mr. Kevin Stibich  
Longview Fibre Co.  
8511 Blaine St.  
Oakland CA 94621

Mr. Dave Mendenhall  
Longview Fibre Co.  
End of Fibre Way, P.O. Box 639  
Longview, WA 98632

**RE: Fuel Leak Site Case Closure- 8511 Blaine St., Oakland CA  
94621**

Dear Mssrs. Stibach and Mendenhall:

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:**

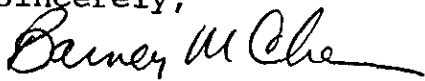
Please be advised that the following conditions exist at the site:

\* 920 parts per million (ppm) Total Petroleum Hydrocarbons as gasoline (TPHg), 210 ppm TPHd, 0.6, 6, 11 ppm BEX, respectively and 0.27 ppm MTBE remain in the soil at the site.

\* 14,000 parts per billion (ppb) TPHg, 450, 12, 460, 32 ppb BTEX and 12 ppb MTBE remain in the groundwater beneath 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. Please note this letter supersedes my November 24, 1997 letter which had an incorrect address.

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)

tr1t8511

ALAMEDA COUNTY  
HEALTH CARE SERVICES



AGENCY

DAVID J. KEARS, Agency Director

November 24, 1997  
STID# 561

Mr. Kevin Stibich  
Longview Fibre Co.  
8511 Blaine St.  
Oakland CA 94621

Mr. Dave Mendenhall  
Longview Fibre Co.  
End of Fibre Way, P.O. Box 639  
Longview, WA 98632

ENVIRONMENTAL HEALTH SERVICES

ENVIRONMENTAL PROTECTION (LOP)

1131 Harbor Bay Parkway, Suite 250

Alameda, CA 94502-6577

(510) 567-6700

FAX (510) 637-9335

RE: Fuel Leak Site Case Closure- 3132 E. 12th St., Oakland CA  
94601

Dear Mssrs. Stibach and Mendenhall:

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:

\* 920 parts per million (ppm) Total Petroleum Hydrocarbons as gasoline (TPHg), 210 ppm TPHd, 0.6, 6, 11 ppm BEX, respectively and 0.27 ppm MTBE remain in the soil at the site.

\* 14,000 parts per billion (ppb) TPHg, 450, 12, 460, 32 ppb BTEX and 12 ppb MTBE remain in the groundwater beneath 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)  
trlt8511

01-0125  
ENVIRONMENTAL  
PROTECTION  
97 OCT -7 AM 10:01

**CASE CLOSURE SUMMARY**  
**Leaking Underground Fuel Storage Tank Program**

**I. AGENCY INFORMATION**

**Date:** 08/27/97

**Agency name:** Alameda County-HazMat **Address:** 1131 Harbor Bay Parkway  
Room 250

**City/State/Zip:** Alameda, CA 94502-6577 **Phone:** (510) 567-6700

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

**II. CASE INFORMATION**

**Site facility name:** Longview Fibre Company

**Site facility address:** 8511 Blaine St., Oakland CA 94621

**RB LUSTIS Case No:** N/A **Local Case No./LOP Case No.:** 561

**ULR filing date:** 4/15/87 **SWEEPS No:** N/A

**Responsible Parties:** **Addresses:** **Phone Numbers:**

- |  |  |                |
|--|--|----------------|
| 1) Mr. Kevin Stibich                         | 8511 Blaine St., Oakland<br>CA 94621                 | (510) 569-2616 |
| 2) Mr. Dave Mendenhall<br>Longview Fiber Co. | End of Fibre Way, P.O. Box 639<br>Longview, WA 98632 |                |

<u>Tank No:</u>	<u>Size in gal.:</u>	<u>Contents:</u>	<u>Closed in-place or removed?:</u>	<u>Date:</u>
T1	10,000	diesel	Removed	12/24/87
T2	10,000	diesel	Removed	12/24/87
T3	3,000	diesel	Removed	1/12/88
T4	150	gasoline	Removed	1/12/88
T5	7,500	gasoline	Removed	5/14/87

**III. RELEASE AND SITE CHARACTERIZATION INFORMATION**

**Cause and type of release:** possibly from holes in tank #3 and overfilling

**Site characterization complete?** Yes

**Date approved by oversight agency:**

**Monitoring Wells installed?** YES **Number:** 3

**Proper screened interval?** Yes, approximately 5-depth of well

Leaking Underground Fuel Storage Program

Highest GW depth: 5.0'      Lowest depth: 8.2'

Flow direction: westerly

Most sensitive current use: commercial

Are drinking water wells affected? no      Aquifer 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  
 Rm 250, Alameda CA 94502-6577

**Treatment and Disposal of Affected Material:**

<u>Material</u>	<u>Amount (include units)</u>	<u>Action (Treatment of Disposal w/destination)</u>	<u>Date</u>
Tanks & Piping	2-10000 gallon	Disposed by H&H Shipping	12/24/87
	1-3000 gallon	Disposed by H&H Shipping	1/12/88
	1- 150 gallon	Disposed by H&H Shipping	1/12/88
	1-7500 gallon	Disposed by H&H Shipping	5/14/87
Soil	107cy	Disposed at Casmalia Landfill	1/14-1/20/88
	Soil from the 7500 gallon UST was reused along with clean fill to backfill the pit.		
Water	1000 gallons	Disposed by H&H Shipping	1/12/88
	250 gallons	Disposed by H&H Shipping	5/8/87

**Maximum Documented Contaminant Concentrations - - Before and After Cleanup**

Contaminant	Soil (ppm)		Water (ppb)	
	Before <sup>6</sup>	After	Before <sup>5</sup>	After <sup>6</sup>
TPH (Gas)	920 <sup>2</sup>	920 <sup>2</sup>	30,000	14,000
TPH (Diesel)	4900 <sup>1</sup>	210 <sup>3</sup>	170,000 <sup>4</sup>	ND
Benzene	0.6	0.6	5000	450
Toluene	ND	ND	670	12
Ethylbenzene	6.0	6.0	940 <sup>5</sup>	460
Xylenes	11	11	600	32
MTBE	0.27	0.27	ND	12

Comments (Depth of Remediation, etc.): \* grab sample from diesel tank pit  
 1 Soil sample LVF-SS-4, east end of Tank T-2  
 2 5/8/97 SW wall@ 9' from 7500 gallon gas tank, T-5  
 3 Soil sample LVF-E2-T3-S-2, South wall at east end of tank T-3  
 4 Grab groundwater sample, LVF-E2-T3-GW-1, from diesel tank pit  
 5 Boring B-3, grab groundwater sample  
 6 2/19/97, MW2 results and MW2 (13.5-14.5') boring

**Leaking Underground Fuel Storage Tank Program**

**IV. CLOSURE**

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

Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? unknown

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

Site management requirements: A health and safety plan must be provided for workers who will perform subsurface work near and downgradient of the former 7500 gallon gasoline tank.

Should corrective action be reviewed if land use changes? Yes

Monitoring wells Decommissioned: NO

Number Decommissioned: 0

Number Retained: 3

List enforcement actions taken: None

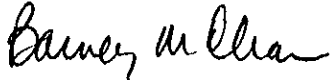
List enforcement actions rescinded: None

**V. LOCAL AGENCY REPRESENTATIVE DATA**

Name: Barney M. Chan

Title: Hazardous Materials Specialist

Signature:



Date:

8-27-97

**Reviewed by**

Name: Tom Peacock

Title: Manager

Signature:



Date:

9-11-97

Name: Eva Chu

Title: Haz. Mat. Specialist

Signature:



Date:

8/28/97

**VI. RWQCB NOTIFICATION**

Date Submitted to RB:

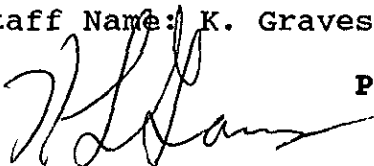
RB Response:

Approved

RWQCB Staff Name: K. Graves

Title: AWRCE

Date:



**Leaking Underground Fuel Storage Tank Program**

**VII. ADDITIONAL COMMENTS, DATA, ETC.**

see site summary

Site Summary for 8511 Blaine St., Oakland 94621  
Longview Fibre Company, StID # 561

**May 1987-** A 7500 gallon gasoline tank, T5, located north of the 3 existing diesel tanks removed on 12/87 and 1/88, was removed. Two soil samples taken from the ends of this tank detected 600, 440 and 920 ppm TPHg. An URF was filled out on 4/15/87. This date suggests that a release was identified approximately one month prior to the tank's removal. The spoils from this tank removal were aerated and returned to the tank pit without confirmation analysis. Though records are sketchy, the contractor, Mr. Dave Cottle of Cottle Engineering, wrote a letter explaining the circumstances of the tank removal. He presumed no further work was required.

**From 12/22/87 to 1/26/88-** 4 USTs were removed from this site, 2-10k diesel (T1 and T2), 1-3K diesel (T3) and 1-150 gallon gasoline (T4). The three diesel tanks were within the same pit while the gasoline tank was on the south side of the main building, over 100 feet from the other tanks.

**12/24/87-** A. Levi of the County witnessed the removal of tanks, T1 and T2. On 1/12/88, A. Levi and M. Jo Meyers from ACDEH witnessed the removal of tanks T3 and T4. In addition, a concrete sump located near T1 and T2 was excavated and removed in January of 1988. Groundwater was encountered in the pit and 1000 gallons of water was eventually pumped from the pit by H& H. Soil samples taken from the sidewalls of the pit detected up to 4900 ppm diesel. As high as 170,000 ppm (17%) diesel was detected in a grab water sample indicating the presence of free product. BTEX was not run on samples taken from the diesel or the gasoline tank excavation. Apparently, these analytes were not requested.

Two (2) soil samples were taken from beneath the gasoline tank and both were ND for TPHg. A soil sample taken beneath the concrete sump was ND for diesel and below the TTLC and 10x the STLC for the 13 priority pollutant heavy metals. These 2 areas were determined not to be a problem.

Overexcavation was performed in the southeast corner of the diesel tank pit. The concentration of diesel was reduced from 4900 ppm to 1600 ppm and eventually to less than 5 ppm diesel. Overexcavation was successful except for the south side of the excavation where 210 ppm diesel was left in place. The proximity to the main building prevented any further excavation.



**May 2, 1988-** One monitoring well, MW-1, was installed approximately five feet west of the diesel tank excavation, between the excavation and above ground tank containing starch. The soil sample taken at approximately 8' depth was ND for diesel.

Groundwater gradient was assumed to be westerly, towards the bay, and is supported by the site specific gradient later determined after the installation of MW-2 and MW-3.

Four monitoring events were performed from 1988 to 1989 and an additional four events performed from 1993 to 1994. With the exception of one event which detected 98 ppb diesel, all samplings detected ND for diesel and BTEX. Monitoring results are attached.

To further investigate the former 7500 gasoline tank (T-5), on 4/24/95, a monitoring well (MW-2) was installed within the former tank pit. The soil samples taken represent the "remediated" spoils from the initial tank removal. The soil samples from the borings of MW-2 exhibited as high as 0.6 mg/kg benzene and 330 mg/kg TPHg.

To delineate the gasoline plume and determine the site specific gradient, in November of 1995, three borings (B-1 through B-3) and one additional monitoring well (MW-3) were advanced at the site. See Figure 3. Results indicate that the soil concentration within the capillary fringe has attenuated from T-5, though groundwater contamination is present further downgradient of the tank. The grab groundwater samples from borings B-2 and B-3 detected 3,600 and 5,000 ppb benzene, respectively and 29,000 and 30,000 ppb TPHG, respectively.

RBCA evaluation for GW vapor intrusion from GW to buildings indicates a risk of approx.  $4 \times 10^{-5}$  for benzene. The risk for the highest concentration of benzene in soil from MW-2 is approximately  $1.2 \times 10^{-4}$ . This is likely an overestimate since the benzene concentrations in the B-1 through B-3 area is only as high as 0.097ppm benzene, which is a risk of  $2 \times 10^{-5}$ . It was determined that in order to better estimate the potential risk to workers at the site and to delineate the extent of contamination, additional borings should be advanced within the building.

**February 22, 1997-** Four borings, B-4 through B-7, were drilled to 15' bgs within the Main Building. These borings were located approximately 100-180 feet downgradient of former tank T-5. Soil samples from B-4 and B-6 were taken and analyzed for TOC (total organic carbon) for input into the Tier 2 RBCA model. Grab

groundwater samples were taken from the borings. Only sample B-4, the closest downgradient boring to T5, detected benzene. It exhibited 73 ppb benzene. All other samples were ND for benzene. In addition, the concentration of TPHg was highest in B-4 at 4.7 mg/l. The two furthest borings, B-6 and B-7 were ND for TPHg.

A site specific Tier 2 RBCA was submitted to evaluate the risk to indoor air exposure for commercial workers and the risk to outdoor air exposure due to volatilization of groundwater. Along with the site specific parameters (air mixing height of building, depth to groundwater, fraction organic carbon, floor thickness, crack factor and soil porosity) the groundwater concentration was determined using Thiessen polygons. The SSTL values were not exceeded. Madhulla Logan reviewed the risk assessment and concurred that there is no human health risk.

This site is recommended for closure based upon:

1. Adequate site characterization;
2. Adequate source removal;
3. Verification of a stable or shrinking plume; and
4. No anticipated risk to human health based upon a Tier 2 Human Health Risk Assessment.

Due to the presence of shallow contaminated groundwater, a risk management plan must be provided to insure the safety of subsurface workers within the contaminant plume.

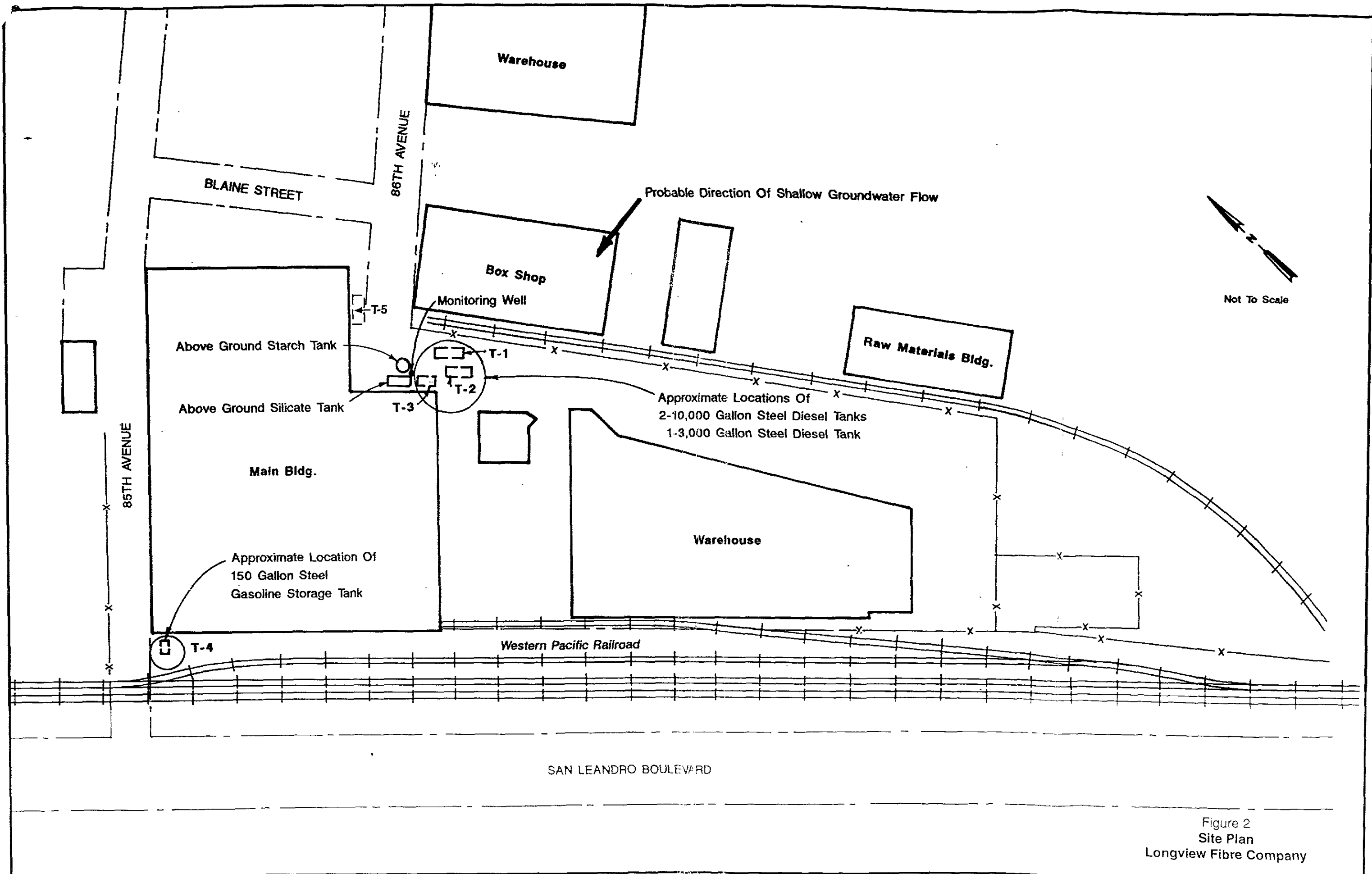


Figure 2  
 Site Plan  
 Longview Fibre Company

LONGVIEW FIBRE COMPANY  
OAKLAND, CALIFORNIA  
SAMPLE ANALYTICAL RESULTS

SOIL AND GROUNDWATER RESULTS FROM REMOVAL  
OF TANKS T1-T4

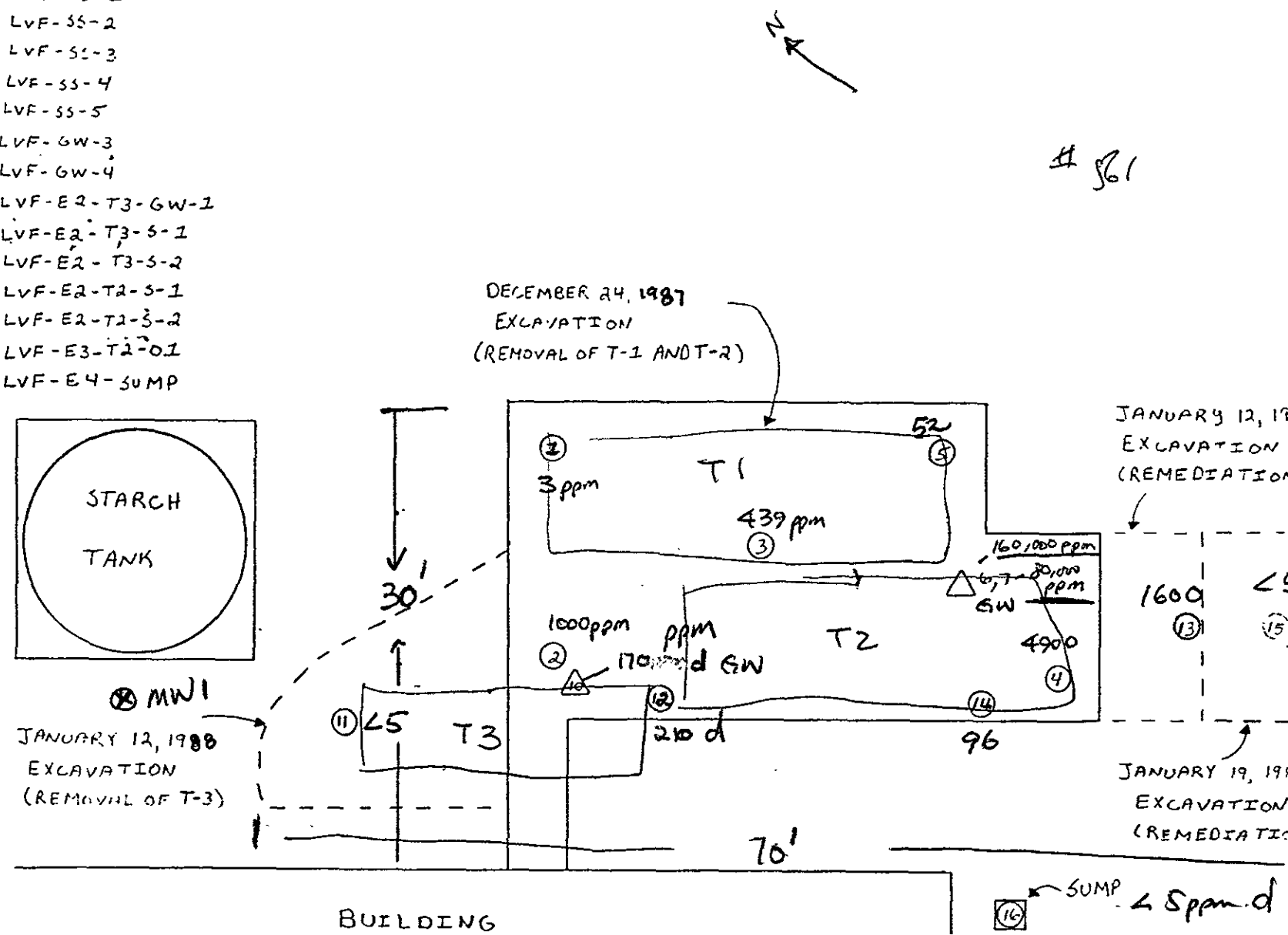
Sample I.D.	Date	Type	Location	Analysis	Results (ppm)
LVF-SS-1	12/24/87	Soil	West end of T-1	TPH*, Diesel	3
LVF-SS-2	12/24/87	Soil	West end of T-2	TPH, Diesel	1,000
LVF-SS-3	12/24/87	Soil	Between Tanks T-1 and T-2	TPH, Diesel	439
LVF-SS-4	12/24/87	Soil	East end of T-2	TPH, Diesel	4,900
LVF-SS-5	12/24/87	Soil	East end of T-1	TPH, Diesel	52
LVF-STOCKPILE-1	12/24/87	Soil	Stockpile excavated/T-1 and T-2	TPH, Diesel	1,200
LVF-STOCKPILE-2			Composited with LVF-Stockpile 1		
LVF-GW-1	12/24/87	Groundwater	T-1/T-2 excavation, VOA	Not analyzed	--
LVF-GW-2	12/24/87	Groundwater	T-1/T-2 excavation, VOA	Not analyzed	--
LVF-GW-3	12/24/87	Groundwater	T-1/T-2 excavation, 2-1/2 litre	TPH, Diesel	160,000
LVF-GW-4	12/24/87	Groundwater	T-1/T-2 excavation, 2-1/2 litre	TPH, Diesel	80,000
LVF-E2-T4-S-1	01/12/88	Soil	Under fill pipe location on T-4	TPH, Gasoline	<5
LVF-E2-T4-S-2	01/12/88	Soil	Under supply pipe location on T-4	TPH, Gasoline	<5
LVF-E2-T3-GW-1	01/12/88	Groundwater	T-3 excavation, 2-1/2 litre	TPH, Diesel	170,000
LVF-E2-T3-S-1	01/13/88	Soil	Wall at west end of T-3	TPH, Diesel	<5
LVF-E2-T3-S-2	01/13/88	Soil	South wall at east end of T-3	TPH, Diesel	210
LVF-E2-T2-S-1	01/13/88	Soil	Excavated southeast wall	TPH, Diesel	1,600
LVF-E2-T2-S-2	01/13/88	Soil	South wall at east end of T-3	TPH, Diesel	96
LVF-E2-STOCKPILE-1	01/13/88	Soil	Stockpile excavated/T-3	TPH, Diesel	<5
LVF-E2-STOCKPILE-2	01/13/88	Soil	Stockpile excavated/T-3	TPH, Diesel	<5
LVF-E3-T2-01	01/19/88	Soil	Excavated southeast wall	TPH, Diesel	<5
LVF-E4-SUMP	01/20/88	Soil	Under sump	TPH, Diesel	<5
				Heavy metals	Below TTLCs

} T4 no prob.

\*Total Petroleum Hydrocarbon

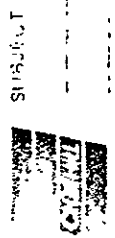
1. LVF-SS-1
2. LVF-SS-2
3. LVF-SS-3
4. LVF-SS-4
5. LVF-SS-5
6. LVF-GW-3
7. LVF-GW-4
- ⑩ LVF-E2-T3-GW-1
11. LVF-E2-T3-S-1
12. LVF-E2-T3-S-2
13. LVF-E2-T2-S-1
14. LVF-E2-T2-S-2
15. LVF-E3-T2-O1
16. LVF-E4-SUMP

# 561



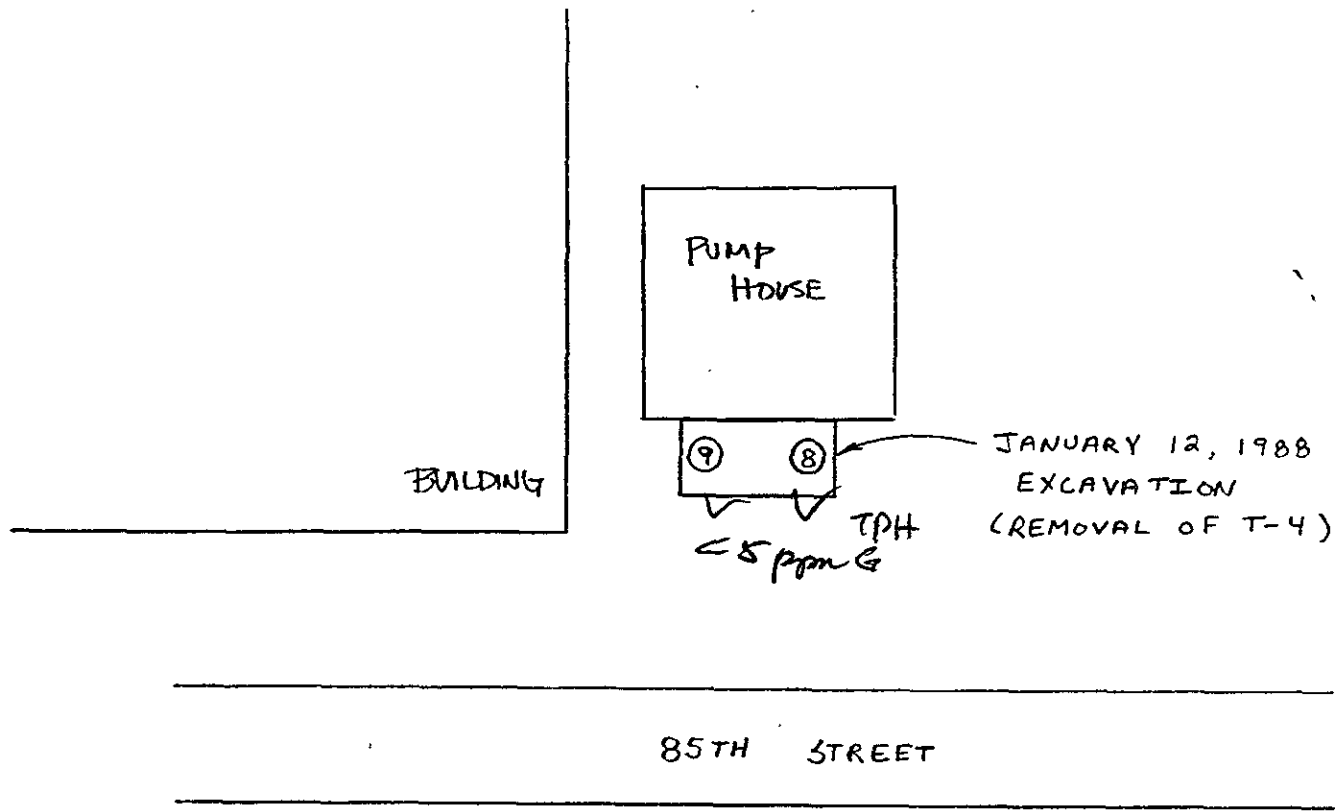
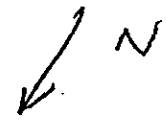
LONGVIEW FIBRE COMPANY  
OAKLAND CALIFORNIA  
SAMPLE LOCATIONS  
(TANKS T-1, T-2 & T-3)

Fig 2



8. LVF-E2-T4-S-1

9. LVF-E2-T4-S-2



BUILDING

PUMP HOUSE

9 8

JANUARY 12, 1988  
EXCAVATION  
(REMOVAL OF T-4)

TPH  
< 5 ppm G

85TH STREET

LONGVIEW FIBRE COMPANY  
OAKLAND CALIFORNIA

SAMPLE LOCATIONS  
(TANK T-4)

SHEET OF PROJECT NO.



**Table 1**  
**Quarterly Monitoring Results for Monitoring Well MW-1**  
**Longview Fibre Company**  
**Oakland, California**

Sample Date	TPH-Diesel	Benzene	Ethylbenzene	Toluene	Xylenes	Chlorinated Hydrocarbons <sup>1</sup>
May 9, 1988	NA	<1 ug/l	<1 ug/l	<1 ug/l	<1 ug/l	NA
January 13, 1989	<50 ug/l	<1 ug/l	<1 ug/l	<1 ug/l	<1 ug/l	NA
May 12, 1989	<50 ug/l	<1 ug/l	<1 ug/l	<1 ug/l	<1 ug/l	<1 ug/l
November 21, 1989	<50 ug/l	<1 ug/l	<1 ug/l	<1 ug/l	<1 ug/l	<1 ug/l
May 25, 1993	98 ug/l <sup>2</sup>	<1 ug/l	<1 ug/l	<1 ug/l	<1 ug/l	NA
August 26, 1993	<50 ug/l	<1 ug/l	<1 ug/l	<1 ug/l	<1 ug/l	NA
November 30, 1993	<50 ug/l	<1 ug/l	<1 ug/l	<1 ug/l	<1 ug/l	NA
March 4, 1994	<50 ug/l	<1 ug/l	<1 ug/l	<1 ug/l	<1 ug/l	NA

TPH - Total petroleum hydrocarbons.

NA - Not analyzed.

ug/l - micrograms per liter.

<sup>1</sup> Chlorobenzene

1,4-dichlorobenzene

1,3-dichlorobenzene

1,2-dichlorobenzene

<sup>2</sup> The pattern of peaks for this sample did not match those expected from diesel fuel.

Note:

A "<" sign indicates that the compound was analyzed for but not detected above the detection limit.

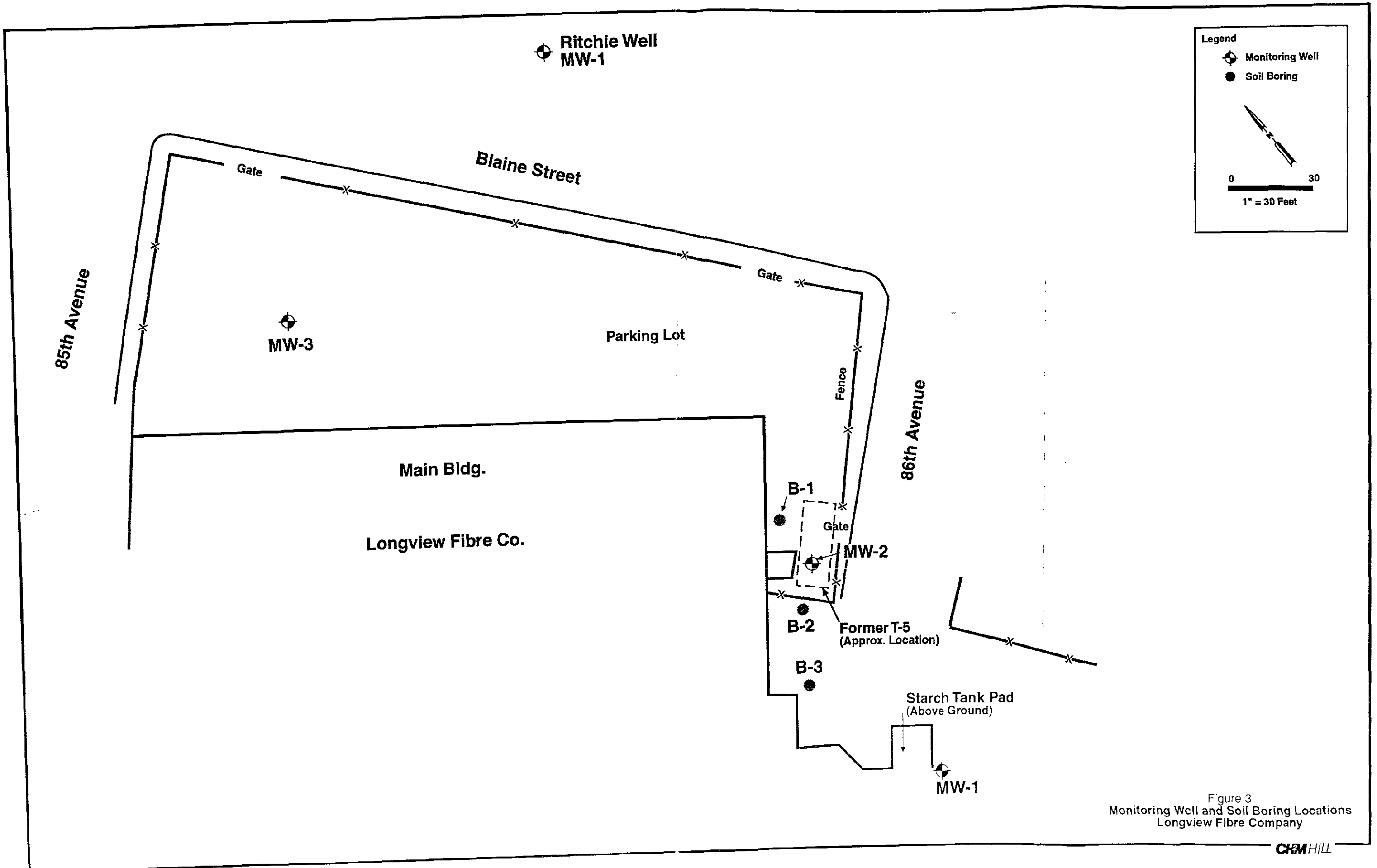


Figure 3  
Monitoring Well and Soil Boring Locations  
Longview Fibre Company



METHOD: 8020/8015 (MOD)  
TFH GASOLINE/PURGEABLE AROMATICS

Boring from MW-2

Client: CH2M Hill/SFO  
Project: Longview Fibre  
Client Sample ID: MW2-8.5-9.5  
Sample Matrix: Soil  
% Moisture: N/A  
Dilution Factor: 10

Lab Sample ID: R9816001  
Date Sampled: 04/24/95  
Date Received: 04/26/95  
Date Extracted: 05/05/95  
Date Analyzed: 05/05/95

<u>Compound</u>	<u>Reporting Limit</u>	<u>Sample Result</u>	<u>Units</u>
tert-Butyl methyl ether	0.050	0.14	mg/Kg
Benzene	0.050	0.11	mg/Kg
Toluene	0.050	U	mg/Kg
Ethylbenzene	0.050	2.0	mg/Kg
Xylenes (total)	0.050	0.26	mg/Kg
TFH Gas	10	150	mg/Kg
Fluorobenzene-SS		101	% rec.
1,4-Difluorobenzene-SS		ND	% rec.

U = Compound analyzed for but not detected above reporting limit.  
SS = Surrogate Standard reported as percent recovery.

Comments: ND = Not determined due to required dilution.

Approved by:



FORM I

kdh.026

Quality Analytical  
Laboratories Inc.

5090 Caterpillar Road,  
Redding, CA 96003-1412

916 244-5227  
Fax No. 916 244-4109

000005

METHOD: 8020/8015 (MOD)  
TFH GASOLINE/PURGEABLE AROMATICS

Boring from MW2

Client: CH2M Hill/SFO  
Project: Longview Fibre  
Client Sample ID: MW2-13.5-14.5  
Sample Matrix: Soil  
% Moisture: N/A  
Dilution Factor: 10

Lab Sample ID: R9816002  
Date Sampled: 04/24/95  
Date Received: 04/26/95  
Date Extracted: 05/05/95  
Date Analyzed: 05/05/95

Compound	Reporting Limit	Sample Result	Units
tert-Butyl methyl ether	0.050	0.27	mg/Kg
Benzene	0.050	0.60	mg/Kg
Toluene	0.050	U	mg/Kg
Ethylbenzene	0.050	6.0	mg/Kg
Xylenes (total)	0.050	11	mg/Kg
TFH Gas	10	330	mg/Kg
Fluorobenzene-SS		101	% rec.
1,4-Difluorobenzene-SS		ND	% rec.

U = Compound analyzed for but not detected above reporting limit.  
SS = Surrogate Standard reported as percent recovery.

Comments: ND = Not determined due to required dilution.

Approved by:

*Brian Gears*

FORM I

kdh.026

Quality Analytical  
Laboratories Inc.

5090 Caterpillar Road,  
Redding, CA 96003-1412

916 244-5227  
Fax No. 916 244-4109

000006

**Table 3**  
**1995 Soil Analytical Results**  
**(mg/kg)**

	<b>MW-2</b>		<b>MW-3</b>		<b>B-1</b>		<b>B-2</b>		<b>B-3</b>	
	<b>4/24/95</b>		<b>11/27/95</b>		<b>11/27/95</b>		<b>11/28/95</b>		<b>11/28/95</b>	
	<b>8.5-9.5'</b>	<b>13.5-14.5'</b>	<b>4.5-5'</b>	<b>12-12.5'</b>	<b>5-6.5'</b>	<b>13-14.5'</b>	<b>5-6.5'</b>	<b>13-14.5'</b>	<b>5-6.5'</b>	<b>13-14.5'</b>
<b>Benzene</b>	0.11	0.6	ND	ND	0.013	ND	ND	0.097	ND	0.0085
<b>TPH-gasoline</b>	150	330	ND	ND	32	ND	ND	2.0	80	1.4
<b>TCLP-Lead</b>	NT	NT	NT	NT	ND	ND	NT	NT	NT	NT
<b>TCLP-VOA</b>	NT	NT	NT	NT	ND	ND	NT	NT	NT	NT

NT = Not Tested

ND = Not Detected

Mr. Barney Chan  
 March 13, 1996  
 102478.AA.ZZ

During the fourth quarter of 1995, three soil borings were drilled and sampled downgradient of the former T5 tank location and monitoring well MW-3 was installed in the Longview Fibre parking lot downgradient of the Ritchie property (located at 8522 Blaine Street) tank location and monitoring well. This work was described in the "Quarterly Monitoring Report, Longview Fibre Company, Fourth Quarter 1995, CH2M HILL, January 1996". Table 3 presents the soil concentrations found in borings MW-2, MW-3, B-1, B-2, and B-3. Soil samples collected from the borings indicate low concentrations of benzene and TPH-gasoline at 5 feet in boring B-1 and at 13 feet in borings B-2 and B-3. These concentrations were an order of magnitude lower than those found in the MW-2 borehole and the benzene concentrations detected in B-1 and B-3 were lower than the ASTM level for soil (0.017 mg/Kg). Soil from the MW-3 borehole was non-detect for BTEX and TPH-gasoline.

### 3.2 Groundwater Monitoring

Grab groundwater samples were collected from borings B-2 and B-3 and groundwater was purged and sampled from monitoring wells MW-2 and MW-3. Grab groundwater samples collected from borings B-2 and B-3 exhibited concentrations of 3,600 and 5,000 µg/L, respectively of benzene and 29,000 and 30,000 µg/L of TPH-gasoline. Table 4 presents all groundwater analytical results for MW-2, MW-3, and for grab groundwater samples from B-2 and B-3.

Table 4 1995/1996 Groundwater Analytical Results (µg/L) Longview Fibre Company				
	MW-2	MW-3	B-2*	B-3*
<b>Benzene</b>				
4/25/95	1,500	NT	NT	NT
8/21/95-A**	1,100	NT	NT	NT
8/21/95-B**	1,400	NT	NT	NT
11/20; 11/27, & 11/28/95	1,100	ND	3,600	5,000
2/5/96	850 (D)	ND	NT	NT
<b>TPH-Gasoline</b>				
4/25/95	16,000	NT	NT	NT
8/21/95-A**	12,000	NT	NT	NT
8/21/95-B**	13,000	NT	NT	NT
11/27/95 & 11/28/95	13,000	ND	29,000	30,000
2/5/96	15,000	ND	NT	NT
* Grab groundwater samples collected from soil boring borehole				
** Sample A collected prior to and sample B collected after removal of 90 gallons of groundwater from monitoring well MW-2				
ND = Not detected, NT = Not tested				
(D) Compound identified for accurate quantification during diluted reanalysis				

*~B-1 to 5  
 note*

B-1

NT\*

*\* soil in area of B-1 flooded from a water leak ∴ grab Gw sample not taken*

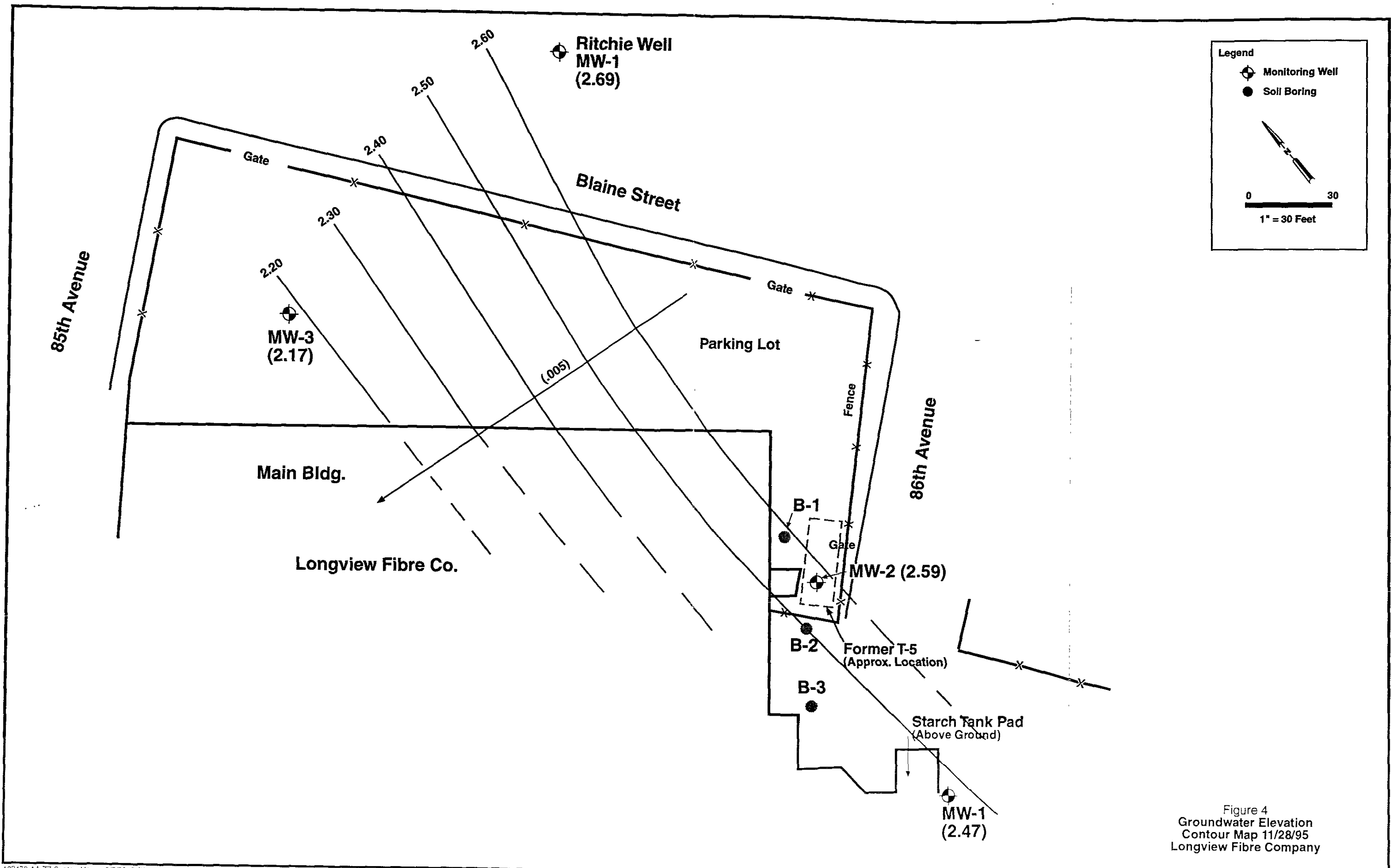


Figure 4  
Groundwater Elevation  
Contour Map 11/28/95  
Longview Fibre Company

**Table 3**  
**Groundwater Analytical Results**  
**Longview Fibre Company**  
**(EPA Methods 8020 and 5030)**  
**Units in µg/L**

	MW-2	MW-3
<b>Benzene (µg/L)</b>		
4/25/95	1500	NT
8/21/95-A	1100	NT
8/21/95-B	1400	NT
11/20/95	1,100	ND
2/5/96	850 (D)	ND
4/26/96	530 (E)	ND
7/29/96	840	ND
10/28/96	1,100	ND
2/19/97	450	ND
<b>TPH-Gasoline (mg/L)</b>		
4/25/95	16.0	NT
8/21/95-A	12.0	NT
8/21/95-B	13.0	NT
11/20/97	13.0	ND
2/5/96	15.0	ND
4/26/96	5.0	ND
7/29/96	15.0	ND
10/28/96	18.0	ND
2/19/97	14.0	ND

ND = Not detected  
 NT = Not tested  
 (D) = Compound identified for accurate quantification during diluted reanalysis  
 (E) = Initial value exceeded linear calibration range, the reported value in this table was from a reanalyzed sample at the appropriate dilution.

**Table 4**  
**Grab Groundwater Sample\* Analytical Results**  
**Longview Fibre Company**  
**(EPA Methods 8020 and 5030)**

	B-2	B-3	B-4	B-5	B-6	B-7
<b>Date Sampled</b>	11/95	11/95	2/22/97	2/22/97	2/22/97	2/22/97
<b>Benzene (µg/L)</b>	3,600	5,000	73	<1	<1	<0.5
<b>TPH-Gasoline (mg/L)</b>	29.0	30.0	4.7	1.0	1.2	<0.015

\* Grab groundwater samples collected from soil boring borehole

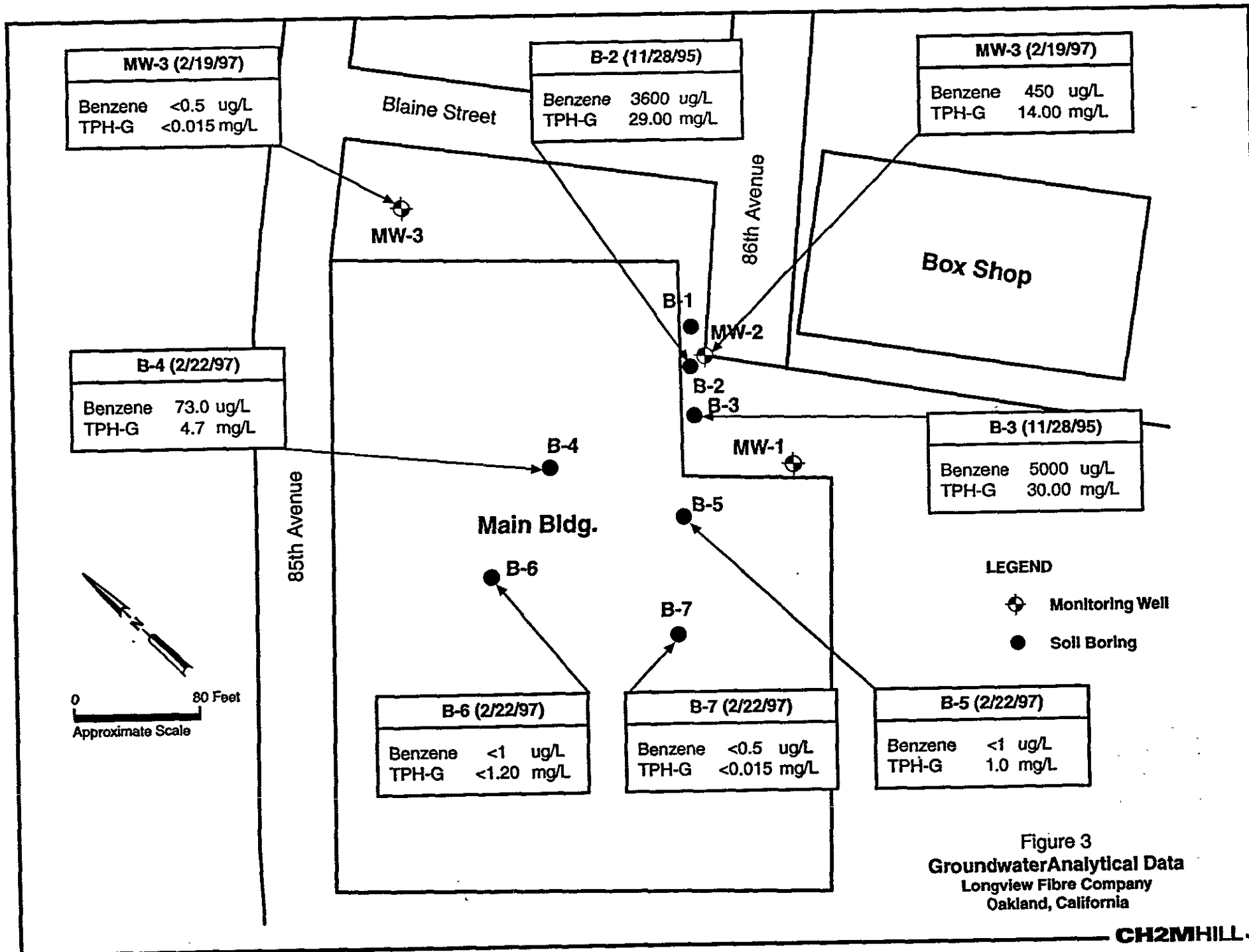


Figure 3  
Groundwater Analytical Data  
Longview Fibre Company  
Oakland, California





**RBCA SITE ASSESSMENT**

Tier 2 Worksheet 9.3

Site Name: Longview Fibre  
Site Location: Oakland

Completed By: Gayle Lytle  
Date Completed: 2/12/1997

1 OF 1

**GROUNDWATER SSTL VALUES**

Target Risk (Class A & B) 1.0E-5       MCL exposure limit?  
Target Risk (Class C) 1.0E-5             PEL exposure limit?  
Target Hazard Quotient 1.0E+0

Calculation Option: 2

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

CONSTITUENTS OF CONCERN		Representative Concentration	Groundwater Ingestion			<input checked="" type="checkbox"/> Groundwater Volatilization to Indoor Air	Groundwater Volatilization to Outdoor Air		Applicable SSTL	Exceeded ?	Required CPF	
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)	* If yes	Only if "yes" left
71-43-2	Benzene	2.6E-1	NA	NA	NA	NA	1.4E+0	NA	NA	1.4E+0	<input type="checkbox"/>	<1

**RBCA SITE ASSESSMENT**

Tier 2 Worksheet 9.3

Site Name: Longview Fibre  
Site Location: Oakland

Completed By: Gayle Lytle  
Date Completed: 2/12/1997

1 OF 1

**GROUNDWATER SSTL VALUES**

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

MCL exposure limit?  
 PEL exposure limit?

Calculation Option: 2

**SSTL Results For Complete Exposure Pathways ("x" if Complete)**

CONSTITUENTS OF CONCERN		Representative Concentration (mg/L)	Groundwater Ingestion			Groundwater Volatilization to Indoor Air		Groundwater Volatilization to Outdoor Air		Applicable SSTL (mg/L)	Exceeded ? *■* if yes	Required CRF Only if "yes" left
CAS No.	Name		Residential (on-site)	Commercial (on-site)	Regulatory (MCL) (on-site)	Residential (on-site)	Commercial (on-site)	Residential (on-site)	Commercial (on-site)			
71-43-2	Benzene	5.0E+0	NA	NA	NA	NA	NA	NA	1.1E+3	1.1E+3	<input type="checkbox"/>	<1

by Chan  
1997

ing. The area weighted average was calculated to be 260 µg/L after the building plan is divided into Thiessen polygons as shown in Figure 6. The detection limit was used for those samples that were non-detect. A groundwater concentrations was assigned to each polygon based on the concentration found in the boring/well within that polygon. The area of each polygon was multiplied by the corresponding concentration and divided by the area of all of the polygons as shown in Table 6.

The 450 - 5000 µg/L benzene represent the range of benzene detected in groundwater collected from borings outside of the building.

Table 7 presents the results of the RBCA Tier 2 site specific target levels for benzene in groundwater. This table presents the concentration at which  $1 \times 10^{-5}$  risk for benzene would occur for the two exposure pathways in a commercial scenario. The results indicate that both worst case concentrations for groundwater beneath the building as well as groundwater outside of the building pose less than a  $1 \times 10^{-5}$  risk for potential exposure.

Table 7 RBCA Tier 2 Calculated Target levels		
Pathway	Groundwater benzene concentrations (µg/L)	SSTL ( $1 \times 10^{-5}$ ) Site Specific Target Levels) µg/L
Groundwater volatilization to indoor air	< 0.5 - 260	1,400
Groundwater volatilization to outdoor air	450 - 5,000	1,100,000

## 5.0 RECOMMENDATION

Longview Fibre has demonstrated that closure may take place of former tanks T-1 through T-5. The extent of benzene in groundwater from former tank T-5 has been defined, groundwater concentrations have shown to be stable and decreasing and the potential cancer risk from inhalation of benzene in groundwater has been calculated and shown to be less than  $10^{-5}$ . Therefore, CH2M HILL recommends, on behalf of Longview Fibre Company that closure take place for this site. If you have any questions or comments regarding this closure request, please call me at (510) 251-2888 ext. 2248.

Sincerely,

CH2M HILL



Paula Bolio  
Project Manager  
pab/closure97.doc

cc: David Mendenhall  
Don Armstrong  
Vera Carter