



RIEDEL ENVIRONMENTAL  
SERVICES, INC.

June 27, 1989

Mr. Larry Setow  
Alameda County Department  
of Environmental Health  
80 Swan Way, Room 200  
Oakland, California 94621

Reference: Tank Removal Project  
2801 MacArthur Blvd.  
Oakland, California  
RES Project 4004

Dear Mr. Setow:

It was a pleasure speaking with you today. We appreciate your efforts to expedite this project. The following items are attached to this letter for your information file and for the permit:

- o One copy of June 9, 1989 Tank Removal Report
- o Outline of proposed tasks
- o Permit for removal of one waste oil tank
- o Permit fee for tank removal

Once again we very much appreciate your efforts. If you have any question, please do not hesitate to contact us.

Sincerely,

RIEDEL ENVIRONMENTAL SERVICES, INC.

A handwritten signature in black ink, appearing to read "Michael G. Burns", written over a horizontal line.

Michael G. Burns  
Project Manager

MGB:hav

Attachments

## OUTLINE OF PROPOSED TASKS

1. Excavate additional 2 feet from entire excavation pit; resample to see if all BTXE containing soils are gone. *Six samples will be taken in same area that samples were taken previously.*
2. Excavate as deep as possible in northwestern corner of excavation in area of 480 ppm sample.
3. Remove waste oil tank; sample beneath tank for Total Oil & Grease, Total Petroleum Hydrocarbons, and Volatile Organic Compounds. *8015* *8015-5010* *-5030E*
4. Backfill both excavations pending analytical results.

*Accepted on 6/28/89*

**REPORT**

**TANK REMOVAL  
2801 MACARTHUR BOULEVARD  
OAKLAND, CALIFORNIA**

**Prepared for**

**CALI FRANCE CORPORATION  
1904 FRANKLIN STREET, SUITE 501  
OAKLAND, CALIFORNIA 93940**

**Riedel Environmental Services, Inc.  
4138 Lakeside Drive  
Richmond, California 94806**

**RES Project No. 4004  
June 9, 1989**



RIEDEL ENVIRONMENTAL  
SERVICES, INC.

San Francisco Region  
4138 Lakeside Drive  
Richmond, California 94806  
(415) 222-7810  
FAX: (415) 222-6868

June 9, 1989

Mr. Nicholas Molnar  
Cali France Corporation  
1904 Franklin Street, Suite 501  
Oakland, California 94612

Fuel

Reference:

Tank Removal and Soil Sample Collection  
2801 MacArthur Boulevard in Oakland, California  
RES Project No. 4004

Dear Mr. Molnar:

Riedel Environmental Services, Inc. (RES) is pleased to present this letter report documenting the removal of three underground storage tanks (UST) and collection of soil samples collection performed on May 3, 1989 at 2801 MacArthur Boulevard in Oakland, California. Included herein are copies of the manifests for tank disposal, copies of the laboratory analytical results and chain of custody documentation, Attachment A summarizing sampling results for the soil samples per Alameda County requirements, and a copy of the completed unauthorized release form. A site map is presented as Figure 1.

On May 3, 1989, RES excavated and removed one 7,500 gallon unleaded gasoline UST, one 3,500 gallon unleaded gasoline UST, and one 3,500 gallon leaded gasoline UST. The tanks were visually inspected at the time of removal, and no holes were noted in the tanks other than those produced at the time of their removal. The tanks were loaded onto an Erickson, Inc. (EI) trailer for disposal. EI is a California registered waste hauler. Soil samples were collected by RES personnel from below both ends of each tank. Soil sample collection locations are shown in Figure 1. Copies of the uniform hazardous waste manifest for the UST's are attached.

Soil for soil sample 1771A was excavated into the bucket of a backhoe from beneath the 7,500 gallon unleaded gasoline tank approximately 2 feet beneath the tank in native material at a depth of 11 feet. The soil was then collected into a 6 inch long, 2 inch diameter brass sleeve that had been washed with non-phosphate cleaning solution followed by a distilled water rinse. The brass sleeves were sealed with aluminum foil and plastic end caps. The brass sleeve was then labeled, placed in a cooler with ice packs, and delivered directly to a State-certified hazardous materials testing laboratory, along with the appropriate chain of custody documentation.

Soil samples 1771B, 1772A and B, and 1773A and B were collected in a manner identical to the collection of soil sample 1771A. Gasoline petroleum hydrocarbon odors were noted in sample 1773A at the time of sample collection.

40041001.wp

Laboratory analyses were performed on all soil samples for total petroleum hydrocarbons (TPH) as gasoline, and benzene, toluene, ethyl benzene and xylene (BTEX) using EPA Methods 5030, 8015, and 8020. Laboratory analysis was performed on soil samples 1773A and B for total lead using EPA Method 7420. The results are summarized in Table 1.

Various concentrations of TPH and BTEX compounds were detected in the samples collected at this site. Guidance for the interpretation of analytical results is drawn from the State Water Resources Control Board's Leaking Underground Fuel Tank (LUFT) Manual, dated April 1989.

The LUFT Manual provides action levels for gasoline (100 milligrams per kilogram (mg/kg)), benzene and toluene (0.3 mg/kg), and ethyl benzene and xylenes (1 mg/kg) that assume the depth to groundwater to range from 51 to 100 feet. The concentration of gasoline, toluene, and xylenes in sample 1773A exceed action levels. Based on the analytical results, the regulatory agencies will require additional work.

The lead concentrations (11 and 10 mg/kg) are below the hazardous waste level of 1,000 mg/kg as set by the State Department of Health Services in Title 26, California Code of Regulations, Section 66699.


A proposal to address additional investigation and remediation of the detected petroleum hydrocarbons has been submitted under RES Proposal No. R9-5083, dated May 31, 1989.

) The chain of custody record and laboratory analytical results are presented with this report. Copies of the unauthorized release form have already been forwarded to the RWQCB, Alameda County Department of Environmental Health, and the State Water Resources Quality Control Board. A copy of the unauthorized release form is presented with this report. Also enclosed is a copy of Attachment A, summarizing sampling results as required by the Alameda County Department of Environmental Health.

If you have any question concerning this report, please do not hesitate to contact me at our Richmond office.

Sincerely,

RIEDEL ENVIRONMENTAL SERVICES, INC.

 for PK  
Paul H. King  
Hydrogeologist

PHK:hav

Enclosures

)

UNIFORM HAZARDOUS WASTE MANIFESTS

4609

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No. <b>CAC1010165391</b>		Manifest Document No. <b>D10191</b>		2. Page 1 of 1		Information in the shaded areas is not required by Federal law.		
3. Generator's Name and Mailing Address <b>Calli Travel Corp 2801 MacArthur Blvd</b>						A. State Manifest Document Number <b>87403443</b>				
4. Generator's Phone (915) 452-4711						B. State Generator's ID				
5. Transporter 1 Company Name <b>Erickson</b>			6. US EPA ID Number <b>ICAD1010191613912</b>			C. State Transporter's ID <b>101460</b>		D. Transporter's Phone <b>915-235-1393</b>		
7. Transporter 2 Company Name			8. US EPA ID Number			E. State Transporter's ID		F. Transporter's Phone		
9. Designated Facility Name and Site Address <b>Erickson 235 Parr Blvd Richmond, CA 94801</b>						10. US EPA ID Number <b>ICAD1010191613912</b>				
						G. State Facility's ID		H. Facility's Phone <b>915-235-1393</b>		
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)					12. Containers		13. Total Quantity		14. Unit	
					No. Type		Quantity		Wt/Vol	
a. <b>WASTE EMPTY STORAGE TANKS California regulated waste</b>					<b>902 TP</b>		<b>010100</b>		<b>P</b>	
b.									I. Waste No. State <b>512</b>	
c.									EPA/Other <b>NONE</b>	
d.									State	
									EPA/Other	
Additional Descriptions for Material(s) Listed Above <b>Empty unleaded gasoline tanks #1771 inerted with CO2 (125 lbs) #1772 inerted with CO2 (58.3 lbs)</b>						K. Handling Codes for Wastes Listed Above				
						a. <b>01</b>		b.		
						c.		d.		
15. Special Handling Instructions and Additional Information										
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.  If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.										
Printed/Typed Name <b>NICHOLAS D. MOLNAR</b>				Signature <i>Nicholas D. Molnar</i>				Month Day Year <b>10 15 1989</b>		
17. Transporter 1 Acknowledgement of Receipt of Materials										
Printed/Typed Name <b>THOMAS J. ROTHSTEIN</b>				Signature <i>Thomas J. Rothstein</i>				Month Day Year <b>10 10 1989</b>		
18. Transporter 2 Acknowledgement of Receipt of Materials										
Printed/Typed Name				Signature				Month Day Year		
19. Discrepancy Indication Space										
20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.										
Printed/Typed Name <b>Shannan Lowry</b>				Signature <i>Shannan Lowry</i>				Month Day Year <b>10 15 1989</b>		

1009

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No. CA100901653991		Manifest Document No. 101012		2. Page 1 of 1		Information in the shaded areas is not required by Federal law.		
3. Generator's Name and Mailing Address Celli Travel Corp 2801 MacArthur Blvd 4. Generator's Phone (415) 952-4711						A. State Manifest Document Number 88122147				
5. Transporter 1 Company Name Ericsson						6. US EPA ID Number CA100914663912		C. State Transporter's ID 901460		
7. Transporter 2 Company Name						8. US EPA ID Number		D. Transporter's Phone		
9. Designated Facility Name and Site Address Ericsson 235 Parr Ave Richmond, CA						10. US EPA ID Number		E. State Transporter's ID		
								F. Transporter's Phone		
								G. State Facility's ID		
								H. Facility's Phone		
11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)					12. Containers		13. Total Quantity		14. Unit	1. Waste No.
a. EMPTY WASTE FUEL TANK California regulated waste					No. Type 0102 TIP		100100		59	State 512 EPA/Other NONE
b.										State
c.										EPA/Other
d.										State
										EPA/Other
Additional Descriptions for Materials Listed Above #1772 incinerated with CO2 #1773 incinerated with CO2						K. Handling Codes for Wastes Listed Above a. 01				
15. Special Handling Instructions and Additional Information										
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.										
Printed/Typed Name NICHOLAS D. MOLNAR			Signature <i>Nicholas D. Molnar</i>			Month Day Year 05 10 89				
17. Transporter 1 Acknowledgement of Receipt of Materials										
Printed/Typed Name Thomas J. Rothstein			Signature <i>Thomas J. Rothstein</i>			Month Day Year 05 10 89				
18. Transporter 2 Acknowledgement of Receipt of Materials										
Printed/Typed Name			Signature			Month Day Year				
19. Discrepancy Indication Space										
20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.										
Printed/Typed Name Shannan Lavy			Signature <i>Shannan Lavy</i>			Month Day Year 10 30 89				

TRANSPORTER

TRANSPORTER

RECEIVER



**LABORATORY ANALYTICAL RESULTS  
AND CHAIN OF CUSTODY  
DOCUMENTATION**

**TABLE 1**  
**SUMMARY OF ANALYTICAL RESULTS**  
**CALI FRANCE CORPORATION**

Sample	TPH	Benzene	Toluene	Ethyl Benzene	Xylene	Lead
1771A	ND	0.005	ND	ND	ND	NA
1771B	ND	0.011	0.008	ND	0.007	NA
1772A	ND	0.004	ND	ND	0.010	NA
1772B	ND	0.021	0.012	0.003	0.014	NA
1773A	480	0.120	1.200	0.910	5.200	11
1773B	ND	ND	ND	ND	ND	10
Action Levels	100	0.300	0.300	1	1	1,000

All concentrations are in milligrams per kilogram or parts per million.

TPH = Total petroleum hydrocarbons as gasoline

ND = Not detected; for detection limits see analytical results

NA = Not analyzed

Action Levels for TPH, benzene, toluene, ethyl benzene, xylenes from LUFT Manual, April 1989; Action Level for lead from Title 26, California Code of Regulations, Section 22-66699.

9000 -  
Pott 80245

Regular Sday Turnaround

San Francisco Division



RIEDEL  
ENVIRONMENTAL SERVICES, INC.

230 Cutting Blvd.  
Richmond, CA. 94804  
(415) 234-7400

CHAIN OF CUSTODY RECORD

Project No: <u>4000-2202</u>				SAMPLERS: (Signature) <u>Peter Rasco</u>				
Project Name: <u>Calli France</u>								
STATION NUMBER	STATION NAME	DATE	TIME	Sample Type		SEQ. NO.	NO. OF SAMPLES	ANALYSIS REQUIRED
				Water Comp	Grab			
	1771 A	5/7/89	1213		X		1	TPH/BTEX
	1771 B	"	1220		X		1	TPH/BTEX
	1772 A	"	1237		X		1	TPH/BTEX
	1772 B	"	1245		X		1	TPH/BTEX
	1773 A	"	1330		X		1	TPH/BTEX/Lead
	1773 B	"	1346		X		1	TPH/BTEX/Lead
Relinquished By: <u>Peter Rasco</u>				Received By: <u>John H... 5-3</u>		Date/Time: <u>2<sup>00</sup></u>		
Relinquished By:				Received By:		Date/Time:		
Relinquished By:				Received By: Laboratory:		Date/Time:		

RIEDEL RICHMOND

**SUPERIOR ANALYTICAL LABORATORY, INC.**

1385 FAIRFAX ST., STE D • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

## C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 50838

DATE RECEIVED: 05/03/89

CLIENT: Riedel Environmental Services, Inc.

DATE REPORTED: 05/10/89

CLIENT JOB NO.: 4000-2202

ANALYSIS FOR TOTAL PERTROLEUM HYDROCARBONS  
by Modified EPA SW-846 Method 8015

LAB #	Sample Identification	Concentration (mg/kg) Gasoline Range
1	1771A; 5/3/89; 12:13	ND<10
2	1771B; 5/3/89; 12:20	ND<10
3	1772A; 5/3/89; 12:37	ND<10
4	1772B; 5/3/89; 12:45	ND<10
5	1773A; 5/3/89; 13:30	480
6	1773B; 5/3/89; 13:45	ND<10

mg/kg - parts per million (ppm)

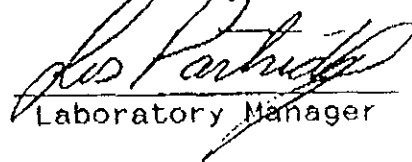
Minimum Detection Limit for Gasoline in Soil: 10mg/kg

## QAQC Summary:

Daily Standard run at 200mg/L: RPD Gasoline = 5.

Matrix Spike/Matrix Spike Duplicate: Average Recovery = 84%  
Duplicate RPD = 11.

Les Partridge, Ph.D.

  
Laboratory Manager

OUTSTANDING QUALITY AND SERVICE

**SUPERIOR ANALYTICAL LABORATORY, INC.**

1385 FAIRFAX ST., STE D • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 50838

DATE RECEIVED: 05/03/89

CLIENT: Riedel Environmental Services, Inc.

DATE REPORTED: 05/10/89

CLIENT JOB NO.: 4000-2202

ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES  
by EPA SW-846 Methods 5030 and 8020

LAB #	Sample Identification	Concentration (ug/kg)			
		Benzene	Toluene	Ethyl Benzene	Xylenes
1	1771A; 5/3/89; 12:13	5	ND<3	ND<3	ND<3
2	1771B; 5/3/89; 12:20	11	8	ND<3	7
3	1772A; 5/3/89; 12:37	4	ND<3	ND<3	10
4	1772B; 5/3/89; 12:45	21	12	3	14
5	1773A; 5/3/89; 13:30	120	1200	910	5200
6	1773B; 5/3/89; 13:45	ND<3	ND<3	ND<3	ND<3

ug/kg - parts per billion (ppb)

Minimum Detection Limit in Soil: 3.0ug/kg

QAQC Summary:

Daily Standard run at 20ug/L: RPD = <15.

MS/MSD Average Recovery =99%: Duplicate RPD = <1.

Les Partridge, Ph.D.

*Les Partridge*  
Laboratory Manager

OUTSTANDING QUALITY AND SERVICE

**SUPERIOR ANALYTICAL LABORATORY, INC.**

1385 FAIRFAX ST., STE D • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

C E R T I F I C A T E   O F   A N A L Y S I S

LABORATORY NO.: 50838  
CLIENT: Riedel Environmental  
Services, Inc.

DATE RECEIVED: 5/3/89  
DATE REPORTED: 5/15/89  
JOB NO.: 4000-2202

ANALYSIS FOR TOTAL LEAD  
by EPA SW-846 Method 7420

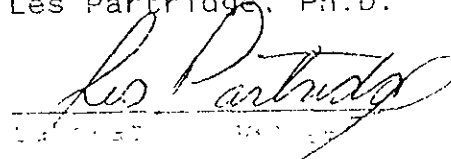
LAB ID	Customer Identification	Concentration (mg/kg)
5	1773A 5/3/89 13:30	11
6	1773B 5/3/89 13:45	10

QA/QC SUMMARY:

MS/MSD RECOVERY: 100%.  
DUPLICATE RPD: 10.

Analysis Subcontracted to Curtis and Tompkins LTD DHS #159.

Les Partridge, Ph.D.



RECEIVED MAY 16 1989

OUTSTANDING QUALITY AND SERVICE

ALAMEDA COUNTY  
ATTACHMENT A  
SAMPLING RESULTS SUMMARY

UNDERGROUND TANK CLOSURE/MODIFICATION PLANS

ATTACHMENT A  
SAMPLING RESULTS

Tank or Area	Contaminant	Location & Depth	Results (specify units)
3500 gallon leaded gasoline tank	leaded gasoline	1773A, 11 ft.	480 mg/kg
7500 gallon unleaded gasoline tank	benzene benzene toluene xylenes	1771 A, 11 ft. 1771 B, 11 ft. 1771 B, 11 ft. 1771 B, 11 ft.	5 ug/kg 11 ug/kg 8 ug/kg 7 ug/kg
3500 gallon leaded gasoline tank	benzene xylenes benzene toluene ethyl benzene xylenes	1772 A, 11 ft. 1772 A, 11 ft. 1772 B, 11 ft. 1772 B, 11 ft. 1772 B, 11 ft. 1772 B, 11 ft.	4 ug/kg 10 ug/kg 21 ug/kg 12 ug/kg 3 ug/kg 14 ug/kg
3500 gallon leaded gasoline tank	benzene toluene ethyl benzene xylenes	1773 A, 11 ft. 1773 A, 11 ft. 1773 A, 11 ft. 1773 A, 11 ft.	120 ug/kg 1200 ug/kg 910 ug/kg 5200 ug/kg
3500 gallon leaded gasoline tank	total lead total lead	1773 A, 11 ft. 1773 B, 11 ft.	11 mg/kg 10 mg/kg



UNAUTHORIZED RELEASE FORM

# UNDERGROUND STORAGE TANK UNAUTHORIZED RELEASE (LEAK) / CONTAMINATION SITE REPORT

<b>EMERGENCY</b> <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<b>HAS STATE OFFICE OF EMERGENCY SERVICES REPORT BEEN FILED?</b> <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<b>FOR LOCAL AGENCY USE ONLY</b> I HEREBY CERTIFY THAT I AM A DESIGNATED GOVERNMENT EMPLOYEE AND THAT I HAVE REPORTED THIS INFORMATION TO LOCAL OFFICIALS PURSUANT TO SECTION 25180.7 OF THE HEALTH AND SAFETY CODE.
<b>REPORT DATE</b> 05/25/89	<b>CASE #</b> _____	<b>SIGNED</b> _____ <b>DATE</b> _____

<b>REPORTED BY</b>	<b>NAME OF INDIVIDUAL FILING REPORT</b> PETER PASCO	<b>PHONE</b> (415) 222-7810	<b>SIGNATURE</b> <i>Peter Pasco</i>	
	<b>REPRESENTING</b> <input type="checkbox"/> LOCAL AGENCY <input checked="" type="checkbox"/> OWNER/OPERATOR <input type="checkbox"/> REGIONAL BOARD <input type="checkbox"/> OTHER	<b>COMPANY OR AGENCY NAME</b> Riedel Environmental Services		
	<b>ADDRESS</b> 4133 STREET LAKESIDE CITY Richmond STATE CA ZIP 94806			

<b>RESPONSIBLE PARTY</b>	<b>NAME</b> Calli France Corp. <input type="checkbox"/> UNKNOWN	<b>CONTACT PERSON</b> Nicholas Molnar	<b>PHONE</b> (415) 452-4711
	<b>ADDRESS</b> 1904 FRANKLIN STREET OAKLAND CITY CA STATE 94612 ZIP		

<b>SITE LOCATION</b>	<b>FACILITY NAME (IF APPLICABLE)</b> NONE (GAS STATION)	<b>OPERATOR</b> NONE	<b>PHONE</b> ( ) NONE	
	<b>ADDRESS</b> 2801 STREET MacArthur Blvd CITY Oakland COUNTY Alameda ZIP 94602			
	<b>CROSS STREET</b> Coolidge		<b>TYPE OF AREA</b> <input checked="" type="checkbox"/> COMMERCIAL <input type="checkbox"/> INDUSTRIAL <input type="checkbox"/> RURAL <input type="checkbox"/> RESIDENTIAL <input type="checkbox"/> OTHER	<b>TYPE OF BUSINESS</b> <input checked="" type="checkbox"/> RETAIL FUEL STATION <input type="checkbox"/> FARM <input type="checkbox"/> OTHER

<b>IMPLEMENTING AGENCIES</b>	<b>LOCAL AGENCY</b> Alameda County Dept of Env. Health	<b>AGENCY NAME</b> _____	<b>CONTACT PERSON</b> Larry Seto	<b>PHONE</b> (415) 271-4320
	<b>REGIONAL BOARD</b> _____			

<b>SUBSTANCE INVOLVED</b>	<b>(1) NAME</b> _____	<b>QUANTITY LOST (GALLONS)</b> <input type="checkbox"/> UNKNOWN
	<b>(2)</b> _____	<input type="checkbox"/> UNKNOWN

<b>DISCOVERY/ABATEMENT</b>	<b>DATE DISCOVERED</b> 05/19/89	<b>HOW DISCOVERED</b> <input type="checkbox"/> INVENTORY CONTROL <input type="checkbox"/> SUBSURFACE MONITORING <input type="checkbox"/> NUISANCE CONDITIONS <input checked="" type="checkbox"/> TANK TEST <input checked="" type="checkbox"/> TANK REMOVAL <input type="checkbox"/> OTHER		
	<b>DATE DISCHARGE BEGAN</b> _____ <input checked="" type="checkbox"/> UNKNOWN	<b>METHOD USED TO STOP DISCHARGE (CHECK ALL THAT APPLY)</b> <input checked="" type="checkbox"/> REMOVE CONTENTS <input type="checkbox"/> REPLACE TANK <input type="checkbox"/> CLOSE TANK <input type="checkbox"/> REPAIR TANK <input type="checkbox"/> REPAIR PIPING <input type="checkbox"/> CHANGE PROCEDURE <input checked="" type="checkbox"/> OTHER REMOVE TANK		
	<b>HAS DISCHARGE BEEN STOPPED?</b> <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF YES, DATE 05/03/89			

<b>SOURCE/CAUSE</b>	<b>SOURCE OF DISCHARGE</b> <input checked="" type="checkbox"/> TANK LEAK <input type="checkbox"/> UNKNOWN <input type="checkbox"/> PIPING LEAK <input type="checkbox"/> OTHER	<b>TANKS ONLY: CAPACITY</b> 3500 GAL	<b>MATERIAL</b> <input type="checkbox"/> FIBERGLASS <input checked="" type="checkbox"/> STEEL <input type="checkbox"/> OTHER	<b>CAUSE(S)</b> <input type="checkbox"/> OVERFILL <input type="checkbox"/> RUPTURE/FAILURE <input type="checkbox"/> CORROSION <input checked="" type="checkbox"/> UNKNOWN <input type="checkbox"/> SPILL <input type="checkbox"/> OTHER
	<b>AGE</b> _____ YRS <input checked="" type="checkbox"/> UNKNOWN			

<b>CASE TYPE</b>	<b>CHECK ONE ONLY</b> <input checked="" type="checkbox"/> UNDETERMINED <input type="checkbox"/> SOIL ONLY <input type="checkbox"/> GROUNDWATER <input type="checkbox"/> DRINKING WATER - (CHECK ONLY IF WATER WELLS HAVE ACTUALLY BEEN AFFECTED)			

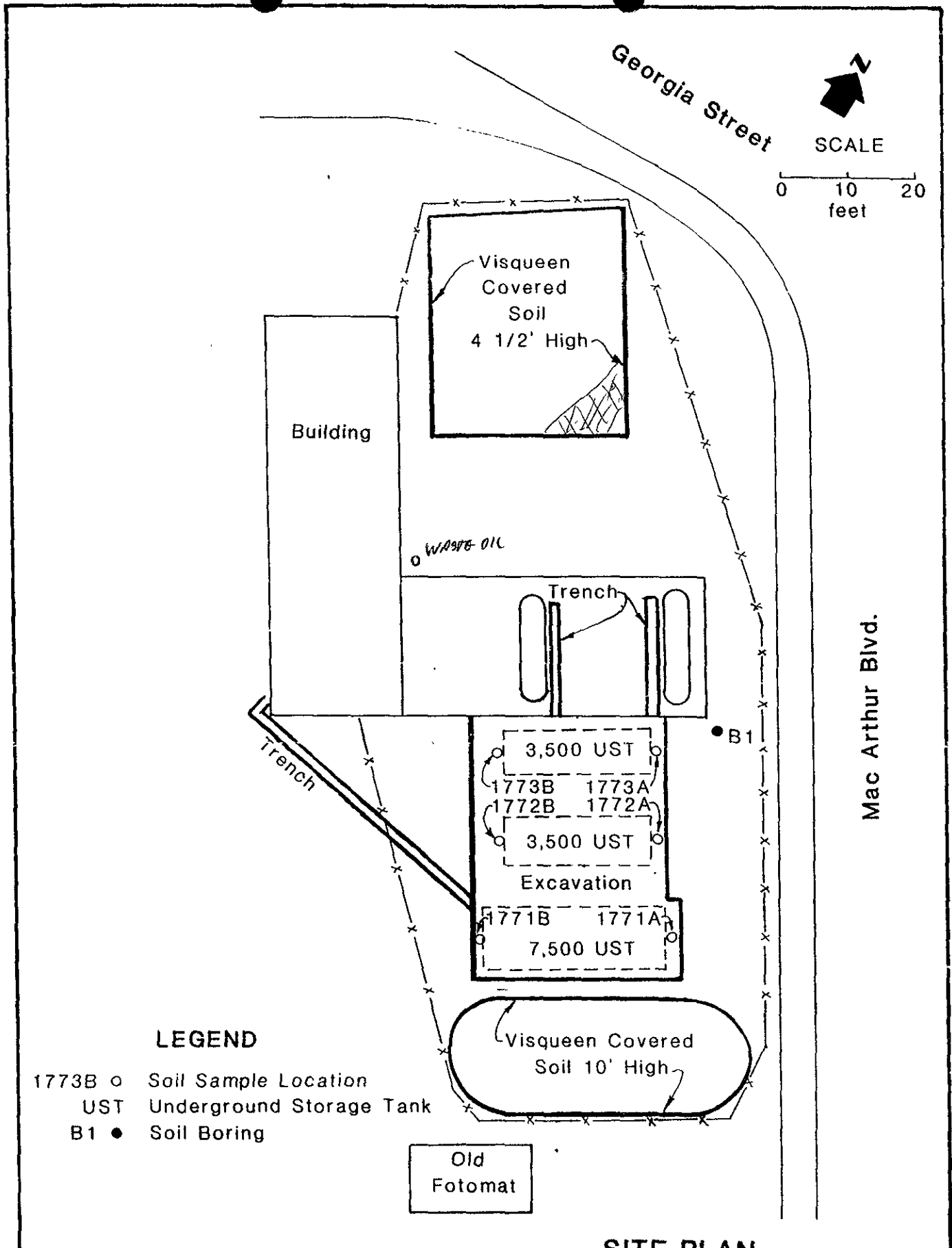
<b>CURRENT STATUS</b>	<b>CHECK ONE ONLY</b> <input checked="" type="checkbox"/> SITE INVESTIGATION IN PROGRESS (DEFINING EXTENT OF PROBLEM) <input type="checkbox"/> CLEANUP IN PROGRESS <input type="checkbox"/> SIGNED OFF (CLEANUP COMPLETED OR UNNECESSARY) <input type="checkbox"/> NO ACTION TAKEN <input type="checkbox"/> POST CLEANUP MONITORING IN PROGRESS <input type="checkbox"/> NO FUNDS AVAILABLE TO PROCEED <input type="checkbox"/> EVALUATING CLEANUP ALTERNATIVES			

<b>REMEDIAL ACTION</b>	<b>CHECK APPROPRIATE ACTION(S) (SEE BACK FOR DETAILS)</b>			
	<input type="checkbox"/> CAP SITE (CD)	<input type="checkbox"/> EXCAVATE & DISPOSE (ED)	<input type="checkbox"/> REMOVE FREE PRODUCT (FP)	<input type="checkbox"/> ENHANCED BIO DEGRADATION (IT)
	<input type="checkbox"/> CONTAINMENT BARRIER (CB)	<input checked="" type="checkbox"/> EXCAVATE & TREAT (ET)	<input type="checkbox"/> PUMP & TREAT GROUNDWATER (GT)	<input type="checkbox"/> REPLACE SUPPLY (RS)

<b>COMMENTS</b>	<input type="checkbox"/> TREATMENT AT HOOKUP (HU) <input type="checkbox"/> NO ACTION REQUIRED (NA) <input type="checkbox"/> OTHER (OT) _____			
	_____ _____ _____			

# UNDERGROUND STORAGE TANK UNAUTHORIZED RELEASE (LEAK) / CONTAMINATION SITE REPORT

EMERGENCY <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		HAS STATE OFFICE OF EMERGENCY SERVICES REPORT BEEN FILED? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		FOR LOCAL AGENCY USE ONLY I HEREBY CERTIFY THAT I AM A DESIGNATED GOVERNMENT EMPLOYEE AND THAT I HAVE REPORTED THIS INFORMATION TO LOCAL OFFICIALS PURSUANT TO SECTION 25180.7 OF THE HEALTH AND SAFETY CODE.		
REPORT DATE 05/25/89		CASE #		SIGNED _____ DATE _____		
REPORTED BY	NAME OF INDIVIDUAL FILING REPORT PETER PASCO		PHONE (415) 222-7810		SIGNATURE Peter Pasco	
	REPRESENTING <input type="checkbox"/> LOCAL AGENCY <input checked="" type="checkbox"/> OWNER/OPERATOR <input type="checkbox"/> REGIONAL BOARD <input type="checkbox"/> OTHER		COMPANY OR AGENCY NAME Riedel Environmental Services			
ADDRESS 4133 STREET LAKESIDE CITY Richmond STATE CA ZIP 94806						
RESPONSIBLE PARTY	NAME Calli Franck Corp. <input type="checkbox"/> UNKNOWN		CONTACT PERSON Nicholas Molnar		PHONE (415) 452-4711	
	ADDRESS 1904 FRANKLIN STREET OAKLAND CITY CA STATE 94612 ZIP					
SITE LOCATION	FACILITY NAME (IF APPLICABLE) NONE (GAS STATION)		OPERATOR NONE		PHONE ( ) NONE	
	ADDRESS 2801 STREET MacArthur Blvd city Oakland Alameda 94602 COUNTY ZIP					
	CROSS STREET Coolidge		TYPE OF AREA <input checked="" type="checkbox"/> COMMERCIAL <input type="checkbox"/> INDUSTRIAL <input type="checkbox"/> RURAL <input type="checkbox"/> RESIDENTIAL <input type="checkbox"/> OTHER		TYPE OF BUSINESS <input checked="" type="checkbox"/> RETAIL FUEL STATION <input type="checkbox"/> FARM <input type="checkbox"/> OTHER	
IMPLEMENTING AGENCIES	LOCAL AGENCY Alameda County Dept. of Env. Health		AGENCY NAME Alameda County Dept. of Env. Health		CONTACT PERSON Larry Seto	
	REGIONAL BOARD		PHONE ( )		PHONE ( )	
SUBSTANCE INVOLVED	(1) NAME		QUANTITY LOST (GALLONS)			
	(2) NAME		QUANTITY LOST (GALLONS)			
DISCOVERY/ABATEMENT	DATE DISCOVERED 05/19/89		HOW DISCOVERED <input checked="" type="checkbox"/> TANK TEST <input checked="" type="checkbox"/> TANK REMOVAL <input type="checkbox"/> INVENTORY CONTROL <input type="checkbox"/> SUBSURFACE MONITORING <input type="checkbox"/> NUISANCE CONDITIONS <input type="checkbox"/> OTHER			
	DATE DISCHARGE BEGAN UNKNOWN		METHOD USED TO STOP DISCHARGE (CHECK ALL THAT APPLY) <input checked="" type="checkbox"/> REMOVE CONTENTS <input type="checkbox"/> REPLACE TANK <input type="checkbox"/> CLOSE TANK <input type="checkbox"/> REPAIR TANK <input type="checkbox"/> REPAIR PIPING <input type="checkbox"/> CHANGE PROCEDURE <input checked="" type="checkbox"/> OTHER REMOVE TANK			
	HAS DISCHARGE BEEN STOPPED? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF YES, DATE 05/03/89					
SOURCE/CAUSE	SOURCE OF DISCHARGE <input checked="" type="checkbox"/> TANK LEAK <input type="checkbox"/> UNKNOWN <input type="checkbox"/> PIPING LEAK <input type="checkbox"/> OTHER		TANKS ONLY/CAPACITY 3500 GAL. AGE _____ YRS <input checked="" type="checkbox"/> UNKNOWN		MATERIAL <input type="checkbox"/> FIBERGLASS <input checked="" type="checkbox"/> STEEL <input type="checkbox"/> OTHER	
	CAUSE(S) <input type="checkbox"/> OVERFILL <input type="checkbox"/> RUPTURE/FAILURE <input type="checkbox"/> CORROSION <input checked="" type="checkbox"/> UNKNOWN <input type="checkbox"/> SPILL <input type="checkbox"/> OTHER					
CASE TYPE	CHECK ONE ONLY <input checked="" type="checkbox"/> UNDETERMINED <input type="checkbox"/> SOIL ONLY <input type="checkbox"/> GROUNDWATER <input type="checkbox"/> DRINKING WATER - (CHECK ONLY IF WATER WELLS HAVE ACTUALLY BEEN AFFECTED)					
CURRENT STATUS	CHECK ONE ONLY <input checked="" type="checkbox"/> SITE INVESTIGATION IN PROGRESS (DEFINING EXTENT OF PROBLEM) <input type="checkbox"/> CLEANUP IN PROGRESS <input type="checkbox"/> SIGNED OFF (CLEANUP COMPLETED OR UNNECESSARY) <input type="checkbox"/> NO ACTION TAKEN <input type="checkbox"/> POST CLEANUP MONITORING IN PROGRESS <input type="checkbox"/> NO FUNDS AVAILABLE TO PROCEED <input type="checkbox"/> EVALUATING CLEANUP ALTERNATIVES					
REMEDIAL ACTION	CHECK APPROPRIATE ACTION(S) (SEE BACK FOR DETAILS) <input type="checkbox"/> CAP SITE (CO) <input type="checkbox"/> EXCAVATE & DISPOSE (ED) <input type="checkbox"/> REMOVE FREE PRODUCT (FP) <input type="checkbox"/> ENHANCED BIO DEGRADATION (IT) <input type="checkbox"/> CONTAINMENT BARRIER (CB) <input checked="" type="checkbox"/> EXCAVATE & TREAT (ET) <input type="checkbox"/> PUMP & TREAT GROUNDWATER (GT) <input type="checkbox"/> REPLACE SUPPLY (RS) <input type="checkbox"/> TREATMENT AT HOOKUP (HU) <input type="checkbox"/> NO ACTION REQUIRED (NA) <input type="checkbox"/> OTHER (OT)					
COMMENTS	_____					



6/19/89



**RIEDEL ENVIRONMENTAL SERVICES, INC.** Richmond, California

**SITE PLAN**  
**Cali France Corporation**  
 Proj. No. 4004

FIGURE  
 1



# CERTIFICATE OF INSURANCE

ISSUE DATE (MM/DD/YY)

4c10c89shg

**PRODUCER**  
 Corroon & Black of Oregon  
 PO Box 8699  
 Portland, Or 97207  
 503-224-4155

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

## COMPANIES AFFORDING COVERAGE

COMPANY LETTER <b>A</b>	National Union Fire Insurance Co., of Pittsburgh
COMPANY LETTER <b>B</b>	
COMPANY LETTER <b>C</b>	
COMPANY LETTER <b>D</b>	Certificate no. R157
COMPANY LETTER <b>E</b>	

**INSURED**  
 Kiedel Environmental Services, Inc  
 PO Box 5007  
 Portland, Or 97208

## COVERAGES

THIS IS TO CERTIFY THAT POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS, AND CONDITIONS OF SUCH POLICIES.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIABILITY LIMITS IN THOUSANDS		
						EACH OCCURRENCE	AGGREGATE
	<b>GENERAL LIABILITY</b>						
<input type="checkbox"/>	COMPREHENSIVE FORM				BODILY INJURY	\$	\$
<input type="checkbox"/>	PREMISES/OPERATIONS				PROPERTY DAMAGE	\$	\$
<input type="checkbox"/>	UNDERGROUND EXPLOSION & COLLAPSE HAZARD				BI & PD COMBINED	\$	\$
<input type="checkbox"/>	PRODUCTS/COMPLETED OPERATIONS				PERSONAL INJURY		\$
<input type="checkbox"/>	CONTRACTUAL						
<input type="checkbox"/>	INDEPENDENT CONTRACTORS						
<input type="checkbox"/>	BROAD FORM PROPERTY DAMAGE						
<input type="checkbox"/>	PERSONAL INJURY						
	<b>AUTOMOBILE LIABILITY</b>						
<input type="checkbox"/>	ANY AUTO				BODILY INJURY (PER PERSON)	\$	
<input type="checkbox"/>	ALL OWNED AUTOS (PRIV PASS)				BODILY INJURY (PER ACCIDENT)	\$	
<input type="checkbox"/>	ALL OWNED AUTOS (OTHER THAN PRIV PASS)				PROPERTY DAMAGE	\$	
<input type="checkbox"/>	HIRE AUTOS				BI & PD COMBINED	\$	
<input type="checkbox"/>	NON OWNED AUTOS						
<input type="checkbox"/>	GARAGE LIABILITY						
	<b>EXCESS LIABILITY</b>						
<input type="checkbox"/>	UMBRELLA FORM				BI & PD COMBINED	\$	\$
<input type="checkbox"/>	OTHER THAN UMBRELLA FORM						
<b>A</b>	<b>WORKERS' COMPENSATION AND EMPLOYERS' LIABILITY</b>	WC 5246553RA	4-1-89	4-1-90	STATUTORY		
					\$ 1,000	(EACH ACCIDENT)	
					\$ 1,000	(DISEASE-POLICY LIMIT)	
					\$ 1,000	(DISEASE EACH EMPLOYEE)	
	<b>OTHER</b>						

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS  
 Permit for Calli French, Oakland

## CERTIFICATE HOLDER

Dept. of Environmental Health  
 County of Alameda  
 80 Swan Way, Room 200  
 Oakland, CA 94621

## CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE

SITE SAFETY PLAN

JOB NUMBER: 4004  
JOB NAME: Cali French Corporation

A. SITE DESCRIPTION

Date 3/28/89 Location Oakland, California

Hazards:

Chemical(s) possible BTXE  
Confined Space N/A  
Flammability possibly  
Reactivity N/A  
Topography N/A  
Weather clear - rain  
Noise possible  
Radiation N/A  
Ergonomic N/A

B. ENTRY OBJECTIVES - The objective of the initial entry to the contaminated area is to (describe actions, tasks to be accomplished; i.e., identify contaminated soil; monitor conditions, etc.) Monitor LEL

C. ONSITE ORGANIZATION AND COORDINATION - The following:

personnel are designated to carry out the stated job functions on site. (Note: one person may carry out more than one job function.)

PROJECT TEAM MANAGER Mike Falk pager # 741-9213 work 222-7810 mobile  
SITE SAFETY OFFICER Angela D. Wade 222-7810 (w)  
FOREMAN  
FIELD TEAM MEMBERS

All personnel arriving or departing the site should log in and out with the Recordkeeper. All activities on site must be cleared through the Project Manager.

COMPANY OR AGENCY Cali French Corporation  
Name Nicholas Molnar 452 411 (w)  
547-553 (H)

D. ONSITE CONTROL

Control boundaries have been established, and the Exclusion Zone (the contaminated area), hotline, Contamination Reduction Zone, and Support Zone (clean area) have been identified and designated as follows: (describe boundaries and/or attach map of controlled area) Immediate tank excavation is Exclusion zone. No unauthorized personnel, food, beverage or tobacco products. Site manager will define boundaries of Contamination Reduction and Support zones. Food, Beverages, Cosmetics allowed only in support zone. These boundaries are identified by (marking of zones, i.e., red boundary tape - hotline; traffic cones - Support Zone; etc.) Site Manager will select boundary markings appropriate for site.

E. HAZARD EVALUATION

The following substance(s) are known or suspected to be on site. The primary hazards of each are identified.

Substances Involved      Route(s) of Entry      Symptoms of Exposure

Chemical Name & Concentration	Route(s) of Entry	Symptoms of Exposure
<u>diesel</u>		i.e., toxic or inhalation
<u>possible benzene [ ] unknown</u>	<u>skin, respiratory tract</u>	<u>skin itch or irritation, absorption inhaled mucosal linings</u>
<u>" toluene "</u>	<u>skin, respiratory tract</u>	<u>" " "</u>
<u>" xylene "</u>	<u>skin, respiratory tract</u>	<u>" " "</u>
<u>" ethyl benzene "</u>	<u>" " "</u>	<u>" " "</u>

Hazardous substance information form(s) for the involved substances have been completed and are attached. Information from Dose Hazardous Chemicals Desk reference

F. PERSONAL PROTECTIVE EQUIPMENT

Based on evaluation of potential hazards, the following levels of personal protection have been designated for the applicable work areas or tasks:

Location	Job Function	Levels of Protection				
		A	B	C	D	Other
Exclusion Zone	<u>Excavation</u>	A	B	C	<u>D</u>	Other
	<u>Tank removal</u>	A	B	C	<u>D</u>	Other
	<u>Backfilling</u>	A	B	C	<u>D</u>	Other
	<u>Decontaminating tank interior</u>	A	B	C	<u>D</u>	Other
Contamination Reduction Zone	<u>equipment preparation</u>	A	B	C	<u>D</u>	Other
	<u>" "</u>	A	B	C	<u>D</u>	Other
	<u>" "</u>	A	B	C	<u>D</u>	Other
	<u>" "</u>	A	B	C	<u>D</u>	Other

Specific protective equipment for each level of protection is as follows:

Level A \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Level C \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Level B \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Level D Hard hat, goggles/safety glasses, coveralls, chemical gloves, chemical boots, steel shoes & hats, disposable tarp for heavy equipment operation.

Other All employees carry ready Daps. Should an emergency implicate an in case in level of protection, site manager will make decision.

NO CHANGES TO THE SPECIFIED LEVELS OF PROTECTION SHALL BE MADE WITHOUT THE APPROVAL OF THE SITE SAFETY OFFICER AND THE PROJECT TEAM LEADER.

G. ONSITE WORK PLANS

Work party(s) consisting of \_\_\_\_\_ persons will perform the following tasks:

Project Team Leader \_\_\_\_\_ (name) \_\_\_\_\_ (function):

Work Party #1 \_\_\_\_\_

Work Party #2 \_\_\_\_\_

Rescue Team N/A  
(required for entries to IDIH environments)

Decontamination \_\_\_\_\_

Each team individual is responsible for decontamination of personal equipment. Responsible for decontamination of machinery.



H. COMMUNICATION PROCEDURES

Channel          has been designated as the radio frequency for personnel in the Exclusion Zone. All other onsite communications will use channel         .

Personnel in the Exclusion Zone should remain in constant radio communication or within sight of the Project Team Leader. Any failure of radio communication requires an evaluation of whether personnel should leave the Exclusion Zone.

(Horn blast, siren, etc.) is the emergency signal to indicate that all personnel should leave the Exclusion Zone. In addition, a loud hailer is available if required.

The following standard hand signals will be used in case of failure of radio communications:

- Hand gripping throat -----Out of air, can't breathe
- Grip partner's wrist or  
both hands around waist -----Leave area immediately
- Hands on top of head-----Need Assistance
- Thumbs up-----OK, I am all right,  
I understand
- Thumbs down-----No, negative.

Telephone communication to the Command Post should be established as soon as practicable. The phone number is         

I. DECONTAMINATION PROCEDURES

Personnel and equipment leaving the Exclusion Zone shall be thoroughly decontaminated. The standard level D decontamination protocol shall be used with the following decontamination stations: (1) contamination Reduction Zone  
 (2) \_\_\_\_\_ (3) \_\_\_\_\_ (4) \_\_\_\_\_  
 (5) \_\_\_\_\_ (6) \_\_\_\_\_ (7) \_\_\_\_\_  
 (8) \_\_\_\_\_ (9) \_\_\_\_\_ (10) \_\_\_\_\_

Other           
 Emergency decontamination will include the following stations: Emergency eye wash, emergency shower, first aid station, contamination reduction or support zones.

The following decontamination equipment is required:  
High flow with spray nozzle eye wash, eye protection eye wash, portable 1st Aid Kit

(Normally detergent and water) ISP will be used as the decontamination solution.

J. EMERGENCY MEDICAL CARE

Closest Hospital:

Address \_\_\_\_\_ Phone \_\_\_\_\_

Distance \_\_\_\_\_

Ambulance \_\_\_\_\_ Phone 911

First-aid equipment is available on site at the following locations:

First-aid Kit Command center / pre-designated location  
 Emergency eye wash \_\_\_\_\_  
 Emergency shower \_\_\_\_\_  
 Other \_\_\_\_\_

Emergency medical information for substances present:

Substance	Exposure	Symptoms	First-Aid Instructions
<u>All Section</u>	<u>irritated skin</u>	<u>itching, redness</u>	<u>Wash with water</u>
<u>R Hazards</u>	<u>wash with water</u>	<u>sneezing, coughing</u>	<u>eyes hold open &amp; flush for 15 min</u>
		<u>difficulty breathing</u>	<u>inhalation fresh air space, emergency room</u>

List of emergency phone numbers:

Agency/Facility	Phone #	Contact
Police _____	_____	_____
Fire _____	_____	_____

K. ENVIRONMENTAL MONITORING

The following environmental monitoring instruments shall be used on site (cross out if not applicable) at the specified intervals.

Combustible Gas Indicator	- continuous/hourly/daily/other
before and after <u>insertion</u>	<u>LFH when enter new phase of work involving</u>
02 Monitor <u>excavation</u>	<u>continuous/hourly/daily/other</u>
Colorimetric Tubes	- continuous/hourly/daily/other
(type) <u>N/A</u>	_____
HNU/OVA <u>N/A</u>	- continuous/hourly/daily/other
Other	- continuous/hourly/daily/other
	- continuous/hourly/daily/other

- L. **Emergency Procedures** (should be modified as required for incident). The following standard emergency procedures will be used by onsite personnel. The Site Safety Officer shall be notified of any onsite emergencies and be responsible for ensuring that the appropriate procedures are followed.

Personnel Injury in the Exclusion Zone: Upon notification of an injury in the Exclusion Zone, the designated emergency signal of 3 horn blasts shall be sounded. All site personnel shall assemble at the decontamination line. The rescue team will enter the Exclusion Zone (if required) to remove the injured person to the hotline. The Site Safety Officer and Project Team Leader should evaluate the nature of the injury, and the affected person should be decontaminated to the extent possible prior to movement to the Support Zone. The onsite EMT shall initiate the appropriate first aid, and contact should be made for an ambulance and with the designated medical facility (if required). No persons shall re-enter the Exclusion Zone until the cause of the injury or symptoms is determined.

Personnel Injury in the Support Zone: Upon notification of an injury in the Support Zone, the Project Team Leader and Site Safety Officer will assess the nature of the injury. If the cause of the injury or loss of the injured person does not affect the performance of site personnel, operations may continue, with the onsite EMT initiating the appropriate first aid necessary follow-up as stated above. If the injury increases the risk to others, the designated emergency signal of 3 horn blasts shall be sounded and all site personnel shall move to the decontamination line for further instructions. Activities on site will stop until the added risk is removed or minimized.

Fire/Explosion: Upon notification of a fire or explosion on site, the designated emergency signal of 3 horn blasts shall be sounded and all site personnel assembled at the decontamination line. The fire department shall be alerted and all personnel moved to a safe distance from the involved area.

Personal Protective Equipment Failure: If any site worker experiences a failure or alteration of protective equipment that affects the protection factor, that person and his/her buddy shall immediately leave the Exclusion Zone. Re-entry shall not be permitted until the equipment has been repaired or replaced.

Other Equipment Failure: If any other equipment on site fails to operate properly, the Project Team Leader and Site Safety Officer shall be notified and then determine the effect of this failure on continuing operations on site. If the failure affects the safety of personnel or prevents completion of the Work Plan tasks, all personnel shall leave the Exclusion Zone until the situation is evaluated and appropriate actions taken.

The following emergency escape routes are designated for use in those situations where egress from the Exclusion zone cannot occur through the decontamination line:

(describe alternate routes to leave area in emergencies) Brief crews and any sub-contractors on evacuation plan

In all situations, when an onsite emergency results in evacuation of the Exclusion Zone, personnel shall not re-enter until:

1. The conditions resulting in the emergency have been corrected.
2. The hazards have been reassessed.
3. The Site Safety Plan has been reviewed.
4. Site personnel have been briefed on any changes in the Site Safety Plan.

M. Personal Monitoring

The following personal monitoring will be in effect on site: Personal exposure sampling: (describe any personal sampling programs being carried out on site personnel. This would include use of sampling pumps, air monitors, etc.)

N/A possible dosimeter monitoring for heavy equipment operations

Medical monitoring: The expected air temperature will be ( ) °F. If it is determined that heat stress monitoring is required (mandatory if over 70°F) the following procedures shall be followed: (describe procedures in effect, i.e., monitoring body temperature, body weight, pulse rate) excessively

Warm temperatures are not anticipated. If hot, take frequent cool down breaks during which Gatorade, water or fruit juice are appropriate beverages.

If extreme cold: wear cotton glove liners & boot liners for insulation. Drink decaffeinated coffee and low sugar hot chocolate as warming beverages.

N. Daily toolbox meetings will occur. Topics discussed will be recorded in writing, and all site workers will attend.

N. All site personnel have read the above plan and are familiar with its provisions.

	(name)	(signature)	(date)
Site Safety Officer	Angela Wade		/ /
Project Manager	Mike Falk		/ /
Other Site Personnel			/ /
			/ /
			/ /
			/ /
			/ /

(-)-BENZEDRINE  
 XYNOREPHEDRINE  
 METHYLAMINE  
 \* PRO-  
 MPATEDRINE

blanccous, intra-  
 ss. A stimulant.  
 restlessness, in-  
 creased blood pressure, di-  
 lat. A slight fire  
 me or oxidizers.  
 1, it emits NO<sub>x</sub>  
 chemical, alcohol

HR: 3  
 IOSH: SI 1225000  
 mw: 368.54

HAMETHYL-, SUL-  
 FATE  
 YLAMINE SULFATE  
 . SULFATE

neal and subcuta-  
 tes. When heated  
 dry toxic fumes of  
 edrine.

E HR: 3  
 IOSH: SI 1400000  
 mw: 368.54

PEREX \* (+)  
 D-AMPHETAMINE  
 INE SULFATE  
 \* DEXEDRINE  
 ALPHA-METHYLPHENE-  
 ESEDRIN \* FAST-  
 PROAMPHETAMINE  
 1-METHYLPHENETHY-  
 LES \* PHENEDRINE  
 HENYL-2-AMINOPRO-  
 -1-PHENYL-2-AMINO-  
 ETA-PHENYLISOPROPY-  
 CO-BETA-PHENYLISO-

intrapertoneal, sub-  
 cutaneous routes. An experi-  
 ment-forming stimulant.  
 heated to decompo-  
 sic fumes of SO<sub>x</sub> and

I-BENZEDRINE SULFATE HR: 3  
 CAS: 51-62-7 NIOSH: SI 1575000  
 mf: C<sub>18</sub>H<sub>26</sub>N<sub>2</sub> · H<sub>2</sub>O<sub>4</sub>S mw: 368.54

SYNS: (-)-AMPHETAMINE SULFATE \* L-AM-  
 PHETAMINE SULFATE \* LEVEDRINE \* L-1-  
 PHENYL-2-AMINOPROPANE SULFATE

THR: A poison via subcutaneous and intraperito-  
 neal routes. See also sulfates. When heated to  
 decomposition, it emits very toxic fumes of SO<sub>x</sub>  
 and NO<sub>x</sub>.

BENZENAMINE HYDROCHLO-  
 RIDE HR: 3  
 CAS: 142-04-1 NIOSH: CY 0875000  
 mf: C<sub>6</sub>H<sub>7</sub>N · ClH mw: 129.60

PROP: Crystals; vap d: 4.46, d: 1.22, mp: 198°  
 bp: 245°, flash p: 380°F (OC).

SYNS: ANILINE HYDROCHLORIDE \* "ANILINE  
 SALT" \* CHLORHYDRATE D'ANILINE (FRENCH)  
 \* CHLORID ANILINU (CZECH) \* NCI-CO3736  
 \* USAF EK-442

THR: Poison by intraperitoneal route. An ex-  
 perimental carcinogen. Moderate skin irritant,  
 severe eye irritant. See also aniline. Slight fire  
 hazard when exposed to heat or flame. When  
 heated to decomposition or on contact with acid  
 or acid fumes, it emits highly toxic fumes of  
 aniline and chlorine compounds; can react vigor-  
 ously with oxidizing materials. To fight fire,  
 use water, CO<sub>2</sub>, water mist or spray, dry chemi-  
 cal.

\* BENZENE HR: 3  
 CAS: 71-43-2 NIOSH: CY 1400000  
 DOT: 1114  
 mf: C<sub>6</sub>H<sub>6</sub> mw: 78.12

PROP: Clear colorless liquid. mp: 5.51°, bp:  
 80.093°-80.094°, flash p: 12°F (CC), d: 0.8794  
 @ 20°, autoign temp: 1044°F, lel: 1.4%, uel:  
 8.0%, vap press: 100 mm @ 26.1°, vap d:  
 2.77, ulc: 95-100.

SYNS: (6)ANNULENE \* BENZEEN (DUTCH)  
 \* BENZEN (POLISH) \* BENZOL \* BENZOLENE  
 \* BENZOLO (ITALIAN) \* BICARBURET OF HY-  
 DROGEN \* CARBON OIL \* COAL NAPHTHA  
 \* DIPHENATRIUM \* BENZOL (CZECH)  
 \* MINERAL NAPHTHA \* MOTOR BENZOL  
 \* NCI-55276 \* PHENYL HYDRIDE \* PYRO-  
 BENZOL

OSHA PEL: TWA 10 ppm; CL 25 ppm; Pk  
 50 ppm/10M/8H

ACGIH TLV: TWA 10 ppm; BEI (total phenol  
 in urine) 50 mg/L  
 TRK: 8 ppm; 26 mg/m<sup>3</sup>  
 DOT Classification: Label: Flammable  
 Liquid

THR: Poison by intravenous and possibly other  
 routes. Moderately toxic by inhalation, inges-  
 tion, subcutaneous, and intraperitoneal routes.  
 A strong eye and mild skin irritant. Central  
 nervous system and blood system effects by  
 inhalation and ingestion. A human carcinogen  
 (myeloid leukemia). An experimental teratogen  
 and tumorigen. Mutagenic data. A narcotic.  
 Chronic benzene poisoning by inhalation is im-  
 portant in industry, although poisoning by skin  
 contact has been reported. Elimination is chiefly  
 through the lungs. A common air contami-  
 nant.

Poisoning occurs most commonly via inhala-  
 tion of the vapor, though benzene can pene-  
 trate the skin and poison in that way. Locally,  
 benzene has a comparatively strong irritating  
 effect, producing erythema and burning, and,  
 in more severe cases, edema and even blistering.  
 Exposure to high concentrations of the vapor  
 (3000 ppm or higher) may result from failure  
 of equipment or spillage. Such exposure, while  
 rare in industry, may result in acute poisoning,  
 characterized by the narcotic action of benzene  
 on the central nervous system. The anesthetic  
 action of benzene is similar to that of other  
 anesthetic gases, consisting of a preliminary  
 stage of excitation followed by depression and,  
 if exposure is continued, death through respira-  
 tory failure. The chronic, rather than the acute  
 form, of benzene poisoning is important in in-  
 dustry. It is a recognized leukemogen. There  
 is no specific blood picture occurring in cases  
 of chronic benzol poisoning. The bone marrow  
 may be hypoplastic, normal, or hyperplastic,  
 the changes reflected in the peripheral blood.  
 Anemia, leucopenia, macrocytosis, reticulocy-  
 tosis, thrombocytopenia, high color index, and  
 prolonged bleeding time may be present. Cases  
 of myeloid leukemia have been reported. For  
 the supervision of the worker, repeated blood  
 examinations are necessary, including hemoglob-  
 in determinations, white and red cell counts,  
 and differential smears. Where a worker shows  
 a progressive drop in either red or white cells  
 or where the white count remains low, 5,000  
 per cu mm or the red count <4.0 million per  
 cu mm, on two successive monthly examina-

\* tions, he should be immediately removed from exposure. Elimination is chiefly through the lungs, when fresh air is breathed. The portion absorbed is oxidized, and the oxidation products are combined with sulfuric and glycuronic acids and eliminated in the urine. This may be used as a diagnostic sign. Benzene has a definite cumulative action, and exposure to relatively high concentration is not serious from the point of view of causing damage to the blood-forming system, provided the exposure is not repeated. On the other hand, daily exposure to concentrations of 100 ppm or less will usually cause damage if continued over a protracted period of time. In acute poisoning, the worker becomes confused and dizzy, complains of tightening of the leg muscles and of pressure over the forehead, then passes into a stage of excitement if allowed to remain in exposure, he quickly becomes stupefied and lapses into coma. In non-fatal cases, recovery is usually complete and no permanent disability occurs. In chronic poisoning the onset is slow, with the symptoms vague; fatigue, headache, dizziness, nausea and loss of appetite, loss of weight and weakness are common complaints in early cases. Later, pallor, nosebleeds, bleeding gums, menorrhagia, petechiae and purpura may develop. There is great individual variation in the signs and symptoms of chronic benzene poisoning. Benzene is a common air contaminant. It is an experimental mutagen, carcinogen, teratogen. A dangerous fire hazard when exposed to heat or flame; can react vigorously with oxidizing materials, such as  $\text{BrF}_5$ ;  $\text{Cl}_2$ ;  $\text{CrO}_3$ ;  $\text{O}_2\text{N}$ ;  $\text{ClO}_4$ ;  $\text{O}_2$ ;  $\text{O}_3$ ; perchlorates; ( $\text{AlCl}_3 + \text{FCIO}_4$ ); ( $\text{H}_2\text{SO}_4 + \text{permanganates}$ );  $\text{K}_2\text{O}_2$ ; ( $\text{AgClO}_2 + \text{acetic acid}$ );  $\text{Na}_2\text{O}_2$ . Moderate explosion hazard when exposed to heat or flame. Use with adequate ventilation. Highly flammable. To Fight Fire: Foam,  $\text{CO}_2$ , dry chemical. Incompatible with diborane. For further information see Vol. 2, No. 4 and Vol. 3, No. 3 of *DPIM Report*.

**BENZENEARSONIC ACID** HR: 3  
CAS: 98-05-5 NIOSH: CU 3150000  
mf:  $\text{C}_6\text{H}_7\text{AsO}_4$  mw: 202.05

PROP: Colorless crystals, water-sol; d: 1.760, mp: 160° decomp.

SYNS: PHENYL ARSENIC ACID \* PHENYLARSONIC ACID

THR: A deadly poison by ingestion and intravenous routes. See also arsenic compounds. When heated to decomposition, it emits toxic fumes of As.

**BENZENECARBOXALDEHYDE** HR: 3  
CAS: 63021-32-9 NIOSH: CU 3750000  
mf:  $\text{C}_{10}\text{H}_8\text{O}$  mw: 252.27

SYNS: 7-ETHYLBENZ(C)ACRIDINE \* 9-ETHYL-3,4-BENZACRIDINE \* PHENYLMETHANAL

THR: An experimental carcinogen. See also aldehydes. When heated to decomposition, it emits toxic fumes of  $\text{NO}_x$ .

**BENZENE CHLORIDE** HR: 2  
CAS: 108-90-7 NIOSH: CZ 0175000  
DOT: 1134  
mf:  $\text{C}_6\text{H}_5\text{Cl}$  mw: 112.56

PROP: Clear, colorless liquid. bp: 131.7°,  $l_e = 1.3\%$ ,  $u_e = 7.1\%$ , @ 150°, mp: -45°, flash p: 85°F (CC), d: 1.113 @ 15.5°/15.5°, autoign temp: 1180°F, vap press: 10 mm @ 22.2°, vap d: 3.88.

SYNS: CHLOORBENZEEN (DUTCH) \* CHLOR-BENZENE \* CHLORBENZOL \* CHLOROBENZEN (POLISH) \* CHLOROBENZENE \* CLOROBENZENE (ITALIAN) \* MONOCHLOORBENZEEN (DUTCH) \* MONOCHLORBENZENE \* MONOCHLORBENZOL (GERMAN) \* MONOCHLOROBENZENE \* MONOCHLOROBENZENE (ITALIAN) \* NCI-C54886 \* PHENYL CHLORIDE

OSHA PEL: TWA 75 ppm  
DOT Classification: Label: Flammable Liquid

THR: Moderately toxic by ingestion. Strong narcotic with slight irritant qualities. Dichlorobenzols are strongly narcotic. Little is known of the effects of repeated exposures at lower concentrations, but it may cause kidney and liver damage. The industrial illnesses reported may possibly be due to nitrobenzol. Dangerous fire hazard when exposed to heat or flame. Also violent reaction with  $\text{AgClO}_4$ , dimethyl sulfoxide. Moderate explosion hazard when exposed to heat or flame. Reacts vigorously with oxidizers. See also chlorine compounds. To fight fire, use foam,  $\text{CO}_2$ , dry chemical, water to blanket fire. For further information, see Chlorobenzene, Vol. 2, No. 4 of *DPIM Report*.

1,000 ppm causing narcosis in guinea pigs followed by death after 20 H exposure. Some

of the symptoms described (mia) suggest that other substances, such as nitrobenzol, may have been present. In a few cases of industrial poisoning, it is possible that prolonged exposure to nitrobenzol may cause kidney damage. Also somnolence, loss of consciousness, tingling of the extremities, decreased respirations and a small, rapid pulse are the chief symptoms occurring. The urine may be burgundy in color. Blood cells show degenerative changes. Fire Hazard: 1. Exposed to heat or flame. Reacts with  $\text{AgClO}_4$ , dimethyl sulfoxide.

**1,3-BENZENEDICARBONAMIDE**  
CAS: 626-17-5  
mf:  $\text{C}_8\text{H}_4\text{N}_2$  mw: 124.12

PROP: Colorless crystals, insoluble in benzene, acetone; vap c: 1.25.

SYNS: M-PHTHALODINITRILE \* 1,3-DICYANOBENZENE \* 1,3-DICYANOBENZENE (POLISH) \* ISOPHTHALONITRILE \* ISOFTALOVE (CZECH)

THR: Poison by ingestion. When heated to decomposition, it emits toxic fumes of  $\text{NO}_x$  and  $\text{CN}^*$ .

**p-BENZENEDINITRILE**  
CAS: 623-26-7  
mf:  $\text{C}_8\text{H}_6\text{N}_2$  mw: 126.14

PROP: Crystals, vap c: 1.25.

SYNS: 4-CYANOBENZONITRILE \* 1,4-DICYANOBENZENE \* 1,4-DICYANOBENZENE (POLISH) \* TEREPHTHALONITRILE \* TEREPHTHALONITRILE (POLISH) \* TEREPHTHALONITRILE (CZECH)

THR: Moderately toxic by ingestion. Slightly toxic by inhalation. A moderate skin and eye irritant.  $\text{NO}_x$ .

**BENZENE HEXACHLORIDE**  
CAS: 698-73-1  
mf:  $\text{C}_6\text{H}_2\text{Cl}_6$  mw: 289.14

PROP: Technical grade, 65% beta- $\beta$ -

**2-ETHYLAMINO-1,3,4-THIADIAZOLE**

CAS: 13275-68-8      NIOSH: XI 3900000  
 mf: C<sub>4</sub>H<sub>7</sub>N<sub>3</sub>S      mw: 129.20

SYN: nsc 4730

THR: A poison by intraperitoneal and subcutaneous routes. An experimental teratogen. When heated to decomposition it emits very toxic fumes of NO<sub>x</sub> and SO<sub>x</sub>.

**N-ETHYL ANILINE**      HR: 3  
 CAS: 103-69-5      NIOSH: BX 9780000  
 mf: C<sub>8</sub>H<sub>11</sub>N      mw: 121.20

PROP: Clear, yellow-brown oil, mp: -63.5°, bp: 204°, d: 0.958 @ 25°/25°, vap press: 1 mm @ 38.5°, vap d: 4.18, flash p: 185°F (OC).

SYNS: AETHYLANILIN (GERMAN) \* ANILINOETHANE \* N-ETHYLAMINO BENZENE \* ETHYLANILINE \* N-ETHYLBENZENAMINO \* ETHYLPHENYLAMINE

THR: A poison by ingestion and intraperitoneal routes. Slightly toxic by skin contact. An allergen. Flammable by heat, flame, oxidizers. Highly dangerous; on decomposition or on contact with acid or acid fumes it emits highly toxic fumes of aniline and NO<sub>x</sub>; can react with oxidizing materials. To fight fire, use dry chemical, CO<sub>2</sub>, foam. Incompatible with nitric acid.

**2-ETHYL ANILINE**      HR: 2  
 CAS: 578-54-1      NIOSH: BX 9800000  
 mf: C<sub>8</sub>H<sub>11</sub>N      mw: 121.20

PROP: Yellow liquid, darkens upon standing, mp: -63.5°, bp: 215°, flash p: 185°F (OC), d: 0.98 @ 25°/25°, vap d: 4.17.

SYNS: O-AMINOETHYLBENZENE \* O-ETHYLANILINE \* 2-ETHYLBENZENAMINE

THR: Moderate toxicity by ingestion. See also N-ethylaniline. Flammable when exposed to heat or flame. Dangerous; when heated to decomposition it emits highly toxic fumes of aniline and NO<sub>x</sub>; can react with oxidizing materials. To fight fire, use foam, CO<sub>2</sub>, dry chemical.

**4-ETHYL ANILINE**      HR: 3  
 CAS: 589-16-2      NIOSH: BX 9900000  
 mf: C<sub>8</sub>H<sub>11</sub>N      mw: 121.20

PROP: d: 0.963, mp: 65.8°, bp: 205°, insol in water; misc in alc and eth

SYNS: 1-AMINO-4-ETHYLBENZENE \* P-ETHYLANILINE

THR: A poison by intravenous and other routes. See also o-ethylaniline. When heated to decomposition it emits toxic fumes of NO<sub>x</sub>.

**ETHYL BENZENE**      HR: 2  
 CAS: 100-41-4      NIOSH: DA 0700000  
 DOT: 1175  
 mf: C<sub>8</sub>H<sub>10</sub>      mw: 106.18

PROP: Colorless liquid, aromatic odor. Misc in alcohol and ether, insol in NH<sub>3</sub>; sol in SO<sub>2</sub>, bp: 136.2°, sp: -94.9°, flash p: 59°F, d: 0.8669 @ 20°/4°, autoign temp: 810°F, vap press: 10 mm @ 25.9°, vap d: 3.66, lel = 1.2%, uel = 6.8%.

SYNS: AETHYLBENZOL (GERMAN) \* ETHYLBENZEEN (DUTCH) \* ETHYLBENZOL \* ETILBENZENE (ITALIAN) \* ETYLOBENZENE (POLISH) \* NCI-C56393 \* PHENYLETHANE

OSHA PEL: TWA 100 ppm (skin)  
 ACGIH TLV: TWA 100 ppm; STEL 125 ppm;  
 BEI 2 g/L (mandelic acid in urine at end of shift)

DFG MAK: 100 ppm (440 mg/m<sup>3</sup>)  
 DOT Classification: Label: Flammable Liquid

THR: Moderate toxicity by irritation to skin, eyes, mucous membranes and by ingestion and inhalation routes. The liquid is an irritant to the skin and mucous membranes. A concentration of 0.1% of the vapor in air is an irritant to human eyes, and a concentration of 0.2% is extremely irritating at first, then causes dizziness, irritation of the nose and throat and a sense of constriction in the chest. Exposure of guinea pigs to 1% concentration has been reported as causing ataxia, loss of consciousness, tremor of the extremities and finally death through respiratory failure. The pathological findings were congestion of the brain and lungs, with edema. No data are available regarding the effect of chronic exposure. An experimental teratogen. Dangerous fire hazard when exposed to heat or flame; can react vigorously with oxidizing materials. To fight fire, use foam, CO<sub>2</sub>, dry chemical. For further information see Vol 2, No. 6 of *DPIIM Report*

**ETHYL BENZOATE**      HR: 2  
 CAS: 93-89-0      NIOSH: DH 0200000  
 mf: C<sub>9</sub>H<sub>10</sub>O<sub>2</sub>      mw: 150.19

PROP: Colorless, aromatic liquid, mp: -34.6°, bp: 213.4°, flash p: >204°F, d: 1.048 @ 20°



DFG MAK: (all isomers) 100 ppm (440 mg/m<sup>3</sup>);BAT. blood end of shift, 150 ug/dL;urine 2 g/L.

DOT Classification: Flammable Liquid

THR: Poison by intraperitoneal route. Moderately toxic by inhalation, ingestion, and subcutaneous routes. A severe human eye irritant. Some temporary corneal effects are noted, as well as some conjunctival irritation by instillation. Irritation can start @ 200 ppm. A moderate skin irritant. Human irritant (systemic) effects. Flammable in the presence of heat or flame; can react with oxidizing materials. To fight fire, use foam, CO<sub>2</sub>, dry chemical. When heated to decomposition it emits acrid smoke and fumes. For further information see Vol. 6, No. 4 of DPIM Report.

m-XYLENE

HR: 3

CAS: 108-38-3

NIOSH: ZE 2275000

mf: C<sub>8</sub>H<sub>10</sub>

mw: 106.18

PROP: Colorless liquid; mp: -47.9°; bp: 139°; lel = 1.1%; uel = 7.0%; flash p: 77°F; d: 0.864 @ 20°/4°; vap press: 10 mm @ 28.3°; vap d: 3.66; autoign temp: 986°F. Insol in water; misc with alc, ether and some organic solvents.

SYNS: M-DIMETHYLBENZENE \* 1,3-XYLENE \* 1,3-DIMETHYLBENZENE \* M-XYLOL

THR: Poison by ingestion and inhalation. A common air contaminant. An eye irritant. Severe skin irritant. Dangerous fire hazard when exposed to heat or flame, can react with oxidizing materials. Moderately explosive in the form of vapor when exposed to heat or flame. Dangerous; keep away from open flame. When heated to decomposition it emits acrid smoke. To fight fire, use foam, CO<sub>2</sub>, dry chemical. For further information see Vol. 1, No. 7 of DPIM Report.

o-XYLENE

HR: 3

CAS: 95-47-6

NIOSH: ZE 2150000

mf: C<sub>8</sub>H<sub>10</sub>

mw: 106.18

PROP: Colorless liquid, d 0.880 @ 20°/4°, mp: -25.2°, bp: 144.4°; flash p: 62.6°F; lel = 1.0%; uel = 6.0%. Insol in water; misc in absolute alc, ether

SYNS: O-DIMETHYLBENZENE \* O-METHYLTOLUENE \* 1,2-XYLENE \* 1,2-DIMETHYLBENZENE \* O-XYLOL

THR: Poison by ingestion and inhalation. An eye irritant. A common air contaminant Dan-

gerous fire hazard when exposed to heat or flame. Slight explosion hazard in the form of vapor, when exposed to heat or flame. When heated to decomposition it emits acrid smoke and fumes. To fight fire, use foam, CO<sub>2</sub>, dry chemical. Incompatible with oxidizing materials. For further information see Vol. 4, No. 5 of DPIM Report.

p-XYLENE

HR: 2

CAS: 106-42-3

NIOSH: ZE 2625000

mf: C<sub>8</sub>H<sub>10</sub>

mw: 106.18

PROP: Clear plates; bp: 138.3°; lel: 1.1%; uel = 7.0%; flash p: 77°F (CC); d: 0.8611 @ 20°/4°; vap press: 10 mm @ 27.3°; vap d: 3.66; autoign temp: 986°F. Mp: 13°-14°. Insol in water; sol in alc, ether, organic solvents.

SYNS: P-DIMETHYLBENZENE \* P-METHYLTOLUENE \* 1,4-XYLENE \* 1,4-DIMETHYLBENZENE \* P-XYLOL

THR: Mildly toxic by ingestion and inhalation. An eye irritant. May be narcotic in high concentrations. Chronic toxicity not established; but is less toxic than benzene. Dangerous fire hazard when exposed to heat or flame; can react with oxidizing materials. Moderately explosive in the form of vapor, when exposed to heat or flame. When heated to decomposition it emits acrid smoke and fumes. To fight fire, use foam, CO<sub>2</sub>, dry chemical. Incompatible with acetic acid + air; HNO<sub>3</sub>; 1,3-dichloro-5,5-dimethyl-2,4-imidazolidindione. For further information see Vol. 4, No. 5 of DPIM Report.

3,5-XYLENOL

HR: 3

CAS: 108-68-9

NIOSH: ZE 6475000

mf: C<sub>8</sub>H<sub>10</sub>O

mw: 122.18

PROP: White crystals; mp: 64°; bp: 219.5°; d: 1.0362; vap press: 1 mm @ 62°; sltly sol in water, sol in alc

SYN: 2,5-DIMETHYLPHENOL

THR: An experimental carcinogen. Moderately toxic by ingestion. An eye irritant. When heated to decomposition it emits acrid smoke and fumes. For further information see Vol. 4, No. 1 of DPIM Report

XYLIDINE

HR: 3

CAS: 1300-73-8

NIOSH: ZE 8575000

DOT: 1711

mf: C<sub>8</sub>H<sub>11</sub>N

mw: 121.20

OP: Usually liquid (excep  
p: 213°-226°, flash p: 206°  
p d: 4.17. Sltly sol in w:

SYNS: AMINODIMETHYLBEN  
ANILINE \* DIMETHYLPH  
OLIDINE (ITALIAN) \* X

SHA PEL: TWA 5 ppm

CGIH TLV: TWA 2 ppm

DFG MAK: (all isomers) 5 ppm (25 mg/m<sup>3</sup>)

DOT Classification: Poiso

THR: Poison by inhalation

intravenous routes. Moder

ly toxic. This material, which

is similar in its toxic effects,

is more toxic than aniline. It can cau

se damage to the liver. It does not

cause a severe form of warning, such as

nausea and dizziness which char

acterize poisoning. Thus it may be con

sidered more poisonous than aniline, an

d. Intoxication may con

sist in absorption. Combustible

and flammable. Dangerous; whe

n heated it emits highly to

xic fumes. Vigorously with oxidizin

g agents. When heated to decomposition

it emits highly toxic fumes of NO<sub>2</sub>.

NO<sub>2</sub>: To fight fire, use foar

2,5-XYLIDINE

CAS: 95-78-3

mf: C<sub>8</sub>H<sub>11</sub>N

mw: 121

PROP: Colorless oil; bp: 217°/4°; mp: 155°; very slt

SYNS: 2,5-DIMETHYLPHEN

AMINO-2,5-DIMETHYLBENZ

ENE \* 2,5-DIMETHYLBENZENE \* 2,5-

DIMETHYLANILINE

\* 2,5-DIMETHYLBENZENAMINE \* 5-METH

YLIDINE \* 6-METHYLBENZYLIDINE

THR: An experimental a

carcinogen. Moderately toxic by

ingestion. No data. When heated to d

ecomposition it emits toxic fumes of NO<sub>2</sub>.

NO<sub>2</sub>: To fight fire, use foar

2,6-XYLIDINE

CAS: 87-62-7

mf: C<sub>8</sub>H<sub>11</sub>N

mw: 121

PROP: Liquid; d: 0.980 @ 20°/4°; bp: 216°-217°.

## TL 1217

CAS: 60398-22-3

mf: C<sub>13</sub>H<sub>21</sub>N<sub>2</sub>O<sub>2</sub> · I

NIOSH: BR 1840000

mw: 364.26

HR: 3

SYN: METHYL CARBAMIC ESTER OF OXYMIENYLMETHYLDIETHYLAMMONIUM IODIDE

THR: Poison by ingestion, intravenous, and subcutaneous routes. See also esters and carbamates. When heated to decomposition it emits very toxic fumes of NO<sub>x</sub> and I<sup>-</sup>.

## TOBACCO LEAF, NICOTIANA GLAUCA

HR: 3

NIOSH: XR 7357000

THR: A nicotine-containing dried leaf of the tobacco plant. The smoke produced by burning tobacco contains the highly toxic alkaloid, nicotine, tars and phenols, carbon monoxide, cyanides, nitrates, nitrites, carcinogen, co-carcinogen and perhaps 100 other chemicals, α-emitters, etc. Habitual inhalation of tobacco smoke is considered a leading cause of lung cancer and circulatory problems, cardiac problems, etc. See also nicotine. An experimental teratogen. Combustible when exposed to heat or flame.

## TOFRANIL

CAS: 50-49-7

mf: C<sub>19</sub>H<sub>24</sub>N<sub>2</sub>

mw: 280.45

HR: 3

NIOSH: HO 1575000

SYNS: 1-(3-DIMETHYLAMINOPROPYL)-4,5-DIHYDRO-2,3,6,7-DIBENZAZEPINE \* 5-(3-(DIMETHYLAMINO)PROPYL)-10,11-DIHYDRO-5H-DIBENZ(B,F)AZEPINE \* 5-(3-DIMETHYLAMINOPROPYL)-10,11-DIHYDRO-5H-DIBENZO(B,F)AZEPINE \* 2,2'-(3-DIMETHYLAMINOPROPYLIMINO)DIBENZYL \* N-(GAMMA-DIMETHYLAMINOPROPYL)IMINO-DIBENZYL \* 2,2'-(3-DIMETHYLAMINOPROPYLAMINO)BIBENZYL \* 5,6-DIHYDRO-N-(3-(DIMETHYLAMINO)PROPYL)-11H-DIBENZ(B,F)AZEPINE

THR: Poison by ingestion, subcutaneous, intravenous, and intraperitoneal routes. Central nervous system effects by ingestion. An experimental teratogen by ingestion. When heated to decomposition it emits toxic fumes of NO<sub>x</sub>.

## 3,3'-TOLIDINE

CAS: 119-93-7

mf: C<sub>14</sub>H<sub>16</sub>N<sub>2</sub>

mw: 212.32

HR: 3

NIOSH: DD 1225000

PROP: White to reddish crystals. Mp: 129°-131°C. Very sltly sol in water; sol in alc. ether, acetic acid.

SYNS: DIANISIDINE \* 4,4'-BI-O-TOLUIDINE \* 4,4'-DIAMINO-3,3'-DIMETHYLBIPHENYL \* 4,4'-DIAMINO-3,3'-DIMETHYLDIPHENYL \* 3,3'-DIMETHYLBENZIDINE \* 3,3'-DIMETHYL-4,4'-BIPHENYLDIAMINE \* 3,3'-DIMETHYLBIPHENYL-4,4'-DIAMINE \* 3,3'-DIMETHYL-4,4'-DIPHENYLDIAMINE \* 3,3'-DIMETHYLDIPHENYL-4,4'-DIAMINE \* 4,4'-DI-O-TOLUIDINE \* 2-TOLIDINA (ITALIAN) \* 2-TOLIDIN (GERMAN) \* O-TOLIDINE \* O,O'-TOLIDINE

THR: Poison by ingestion. An experimental carcinogen and tumorigen. Mutagenic data. When heated to decomposition it emits toxic fumes of NO<sub>x</sub>. For further information see Vol. 5, No. 3 of DPIM Report.

## TOLUENE

CAS: 108-88-3

DOT: 1294

mf: C<sub>7</sub>H<sub>8</sub>

mw: 92.15

HR: 3

NIOSH: XS 5250000

PROP: Colorless liquid, benzol-like odor. Flammable. Mp: -95° to -94.5°, bp: 110.4°, flash p: 40°F (CC), ulc: 75-80, lei = 1.27%, uel = 7%, d: 0.866 @ 20°/4°, autoign temp: 896°F, vap press: 36.7 mm @ 30°, vap d: 3.14. Insol in water; sol in acetone; misc in absolute alc, ether, chloroform.

SYNS: METHYLBENZENE \* METHYLBENZOL \* NCI-C07272 \* PHENYLMETHANE \* TOLUEN (DUTCH) \* TOLUEN (CZECH) \* TOLUOL \* TOLUOLO (ITALIAN)

OSHA PEL: TWA 200 ppm; CL 300; Pk 500/10M

ACGIH TLV: TWA 100 ppm; STEL 150 ppm; BEL: toluene in venous blood end of shift 1 mg/L

DFG MAK: 100 ppm (375 mg/m<sup>3</sup>); BAT: blood end of shift 340 ug/dl

DOT Classification: Label: Flammable Liquid

THR: Poison by intraperitoneal route. Moderately toxic by inhalation and subcutaneous routes. Mutagenic data. A skin and eye irritant. Human central nervous system and psychotropic effects. Toluene is derived from coal tar, and commercial grades usually contain small amounts of benzene as an impurity. Inhalation

Yellow liquid, fumes  
bp: 136.4°, d: 1.772  
mm @ 21.3°.

TITANE (FRENCH)  
TITAN (DUTCH) \* TITANIO  
(GERMAN) \* TITANIUM  
TETRACHLORID (GER-  
MAN)

Corrosive

See also titanium  
to skin, eyes, and  
irritation. Severely cor-  
rosive and hydrochloric  
acid mixture. If spilled on  
skin before applying  
with K, HF. When  
heated it emits toxic fumes

considered to be physio-  
logically active. No  
reported cases in  
man as such has caused  
toxicity. Titanium or titanium  
oxide may be  
irritant. Titanium tetra-  
chloride is a strong  
irritant and corrosive  
when exposed to moisture  
in air. See also  
titanium.

HR: 3

NIOSH: XR 2275000

bp: 1860° (decomp), d:

PIGMENT WHITE 6  
TITANIUM DIOXIDE (SWEDEN)  
RUTILE \* TRIOX-  
IDE  
TITANIUM DIOXIDE  
g/m<sup>3</sup>

carcinogen and can-  
cer. See also titanium  
as a contaminant and  
in combination with Li and other  
metals. For further infor-  
mation see titanium in  
DPIM Report.

of 200 ppm of toluene for 8 hours may cause impairment of coordination and reaction time; with higher concentrations (up to 800 ppm) these effects are increased and are observed in a shorter time. In the few cases of acute toluene poisoning reported, the effect has been that of a narcotic, the victim passing through a stage of intoxication into one of coma. Recovery following removal from exposure has been the rule. An occasional report of chronic poisoning describes an anemia and leucopenia, with biopsy showing a bone marrow hypoplasia. These effects, however, are less common in people working with toluene, and they are not as severe. At 200-500 ppm, headache, nausea, eye irritation, loss of appetite, a bad taste, lassitude, impairment of coordination and reaction time are reported, but are not usually accompanied by any laboratory or physical findings of significance. With higher concentrations, the above complaints are increased and in addition, anemia, leucopenia and enlarged liver may be found in rare cases. A common air contaminant. Combustible when exposed to heat, flame or oxidizers. Moderately explosive when exposed to flame or reacted with (H<sub>2</sub>SO<sub>4</sub> + HNO<sub>3</sub>), N<sub>2</sub>O<sub>4</sub>, AgClO<sub>4</sub>, BrF<sub>3</sub>, UF<sub>6</sub>. Moderately dangerous; when heated it emits irritating fumes; can react vigorously with oxidizing materials. To fight fire, use foam, CO<sub>2</sub>, dry chemical. For further information see Vol. 5, No. 5 of *DPIM Report*.

**TOLUENE-2,4-DIAMINE** HR: 3  
CAS: 95-80-7 NIOSH: XS 9625000  
mf: C<sub>7</sub>H<sub>10</sub>N<sub>2</sub> mw: 122.19

PROP: Prisms. Mp: 99°, bp: 280°, vap press: 1 mm @ 106.5°.

SYNS: C.I. OXIDATION BASE \* M-TOLYLENE-DIAMINE \* 3-AMINO-P-TOLUIDINE \* 5-AMINO-O-TOLUIDINE \* C.I. 76035 \* 1,3-DIAMINO-4-METHYLBENZENE \* 2,4-DIAMINO-1-METHYLBENZENE \* 2,4-DIAMINOTOLUENE (CZECH) \* DIAMINOTOLUENE \* 2,4-DIAMINOTOLUENE \* 2,4-DIAMINO-1-TOLUENE \* 2,4-DIAMINOTOLUOL \* 4-METHYL-1,3-BENZENEDIAMINE \* 4-METHYL-M-PHENYLENEDIAMINE \* NCI-C02302 \* 2,4-TOLAMINE \* M-TOLYLENEDIAMINE \* 2,4-TOLYLENEDIAMINE \* M-TOLYLENEDIAMINE (CZECH) \* M-TOLYLENEDIAMINE \* 2,4-TOLUYLENEDIAMINE \* M-TOLYLENEDIAMINE \* TOLYLENE-2,4-DIAMINE \* 2,4-TOLYLENEDIAMINE \* 4-M-TOLYLENEDIAMINE

THR: Poison by ingestion and subcutaneous route. Mutagenic data. A skin and eye irritant. An experimental carcinogen. This material has a marked toxic action upon the liver and can cause fatty degeneration of that organ. Moderately dangerous; when heated it emits toxic fumes of NO<sub>x</sub>. For further information see Vol 5, No. 5 of *DPIM Report*.

**TOLUENE-2,5-DIAMINE** HR: 3  
CAS: 95-70-5 NIOSH: XS 9700000  
mf: C<sub>7</sub>H<sub>10</sub>N<sub>2</sub> mw: 122.19

PROP: Colorless, crystalline tablets. Mp: 64°, bp: 274°.

SYNS: 4-AMINO-2-METHYLANILINE \* C.I. 76042 \* 2,5-DIAMINOTOLUENE \* 2-METHYL-1,4-BENZENEDIAMINE \* 2-METHYL-P-PHENYLENEDIAMINE \* P-TOLUENEDIAMINE \* P-TOLUYLENDIAMINE \* TOLUYLENE-2,5-DIAMINE \* P,M-TOLYLENEDIAMINE

THR: Poison by ingestion and subcutaneous routes. Mutagenic data. A skin irritant. An experimental carcinogen. Has a toxic action upon the liver and can cause fatty degeneration of that organ. Its total effect upon the body seems to take place three different ways. It is toxic to the central nervous system. It produces jaundice by action on the liver and spleen, and it produces anemia by destruction of the red blood cells. In this action it is quite similar to aniline, although by no means identical with it. Its high boiling point and the fact that the material is solid at room temperature makes it somewhat less hazardous than aniline, particularly at ordinary working temperatures. The literature contains a reference to a permanent injury to an eye due to the use of this material as an eyelash dye. It is considered to be an irritating dye material. Moderately dangerous; when heated it emits toxic fumes of NO<sub>x</sub>. For further information see Vol. 5, No. 5 of *DPIM Report*.

**TOLUENE DIISOCYANATE** HR: 3  
CAS: 584-84-9 NIOSH: CZ 6300000  
mf: C<sub>9</sub>H<sub>6</sub>N<sub>2</sub>O<sub>2</sub> mw: 174.17

PROP: Liquid at room temp, sharp, pungent odor. Mp: 19.5°-21.5°; d (liq): 1.2244 @ 20° 4°; bp: 251°; flash p: 270°F (OC); vap d: 6.0, lcl = 0.9%; uel = 9.5%. Misc with alc (decomp), ether, acetone, carbon tetrachloride, benzene, chlorobenzene, kerosene, olive oil.

SYNS: 2,4-DIISOCYANATO-  
DI-ISOCYANATE DE TOLU  
DIISOCYANATOTOLUENE  
NATO-1-METHYL BENZENE (GERMAN) \*  
METHYLPHENYLENE ESTER  
TOLUENE-DIISOCYANATE  
DIEN-DISOCIANATO (ITALIAN)  
WUJOCYANIAN (POLISH)

OSHA PEL: TWA CL 0.  
DOT Classification: Pois

THR: Poison by inhalat routes. A skin and eye irri. Capable of producing s bronchial spasm. A com Combustible when expos. When heated to decomp toxic fumes of CN<sup>-</sup> and dry chemical, CO<sub>2</sub>.

**TOLUENESULFONAMIDE**  
CAS: 88-19-7  
mf: C<sub>7</sub>H<sub>9</sub>NO<sub>2</sub>S mw:

PROP: Tetragonal prism; alc.

SYNS: TOLUENE-2-SULFO  
M-BENZENESULFONAMIDE  
ZENESULFONAMIDE \* OR  
AMID (GERMAN)

THR: An experimental c data. An eye irritant. See heated to decomposition fumes of NO<sub>x</sub> and SO<sub>x</sub>.

**alpha-TOLUENETHIO**  
CAS: 100-53-8  
mf: C<sub>7</sub>H<sub>8</sub>S mw: 124

PROP: A water white, odor. Bp: 193.8°, flash p @ 20°, vap d: 4.28.

SYNS: (MERCAPTO)METHY  
MERCAPTOTOLUENE \* P  
PHENYLMETHYL MERC  
TOLUOLTHIOL \* ALPHA  
BENZYL MERCAPTAN  
THIOBENZYL ALCOHOL

THR: Poison by intrape ately toxic by ingestion. An eye irrita. Flammable when expo

# X

use siderosis. Metal  
action. It is character-  
ing, and leucocytosis  
ter exposure. Recov-  
4-48 hours and there  
ects. Safety goggles  
ainst spatter. Light-  
red to shield the eyes  
ght from the welding

HR: 2  
er liquid. Pleasant to  
35 @ 15.56°; 47%  
ume; flash p: 80.0°F  
n of fermented malted  
barley. After distilla-  
wooden containers for  
aging extracts from  
ts as acids, esters; pro-  
ponents of raw whiskey  
ca organic components

ie equivalent of 1 ounce  
a per day is often cited  
relieve stress and pro-  
ver, it is often abused  
uation with consequent  
icn and a wide variety  
ntal problems. See also  
zard. To fight fire, use  
cohol foam, CO<sub>2</sub>, dry

HR: 2  
verage made from the  
es, other fruits or plants  
thanol by volume. Con-  
higher than those pro-  
tained by fortifying with  
ctive colors, tastes, bot-  
ally produced by adding  
r, acetic acid, salts

See also whiskey. Some  
nes have been known to  
is in humans.

## XANTHACRIDINE

CAS: 86-40-8 NIOSH: AR 9625000  
mf: C<sub>14</sub>H<sub>14</sub>N<sub>3</sub>•Cl mw: 259.76

HR: 3

## XANTHOTOXIN

CAS: 298-81-7 NIOSH: LV 1400000  
mf: C<sub>12</sub>H<sub>8</sub>O<sub>4</sub> mw: 216.20

HR: 3

SYNS: 3,6-DIAMINO-10-METHYLACRIDINIUM  
CHLORIDE \* C.I. 46000 \* 2,8-DIAMINO-10-  
METHYLACRIDINIUM CHLORIDE \* ACRIFLAVINE  
NEUTRAL

SYNS: MELADININ \* 8-METHOXY-(FURANO-  
3',2':6,7-COUMARIN) \* 8-METHOXY-2',3',6,  
7-FUROCOUMARIN \* 8-METHOXY-4',5',6,7-FU-  
ROCOUMARIN \* 8-METHOXYPSORALEN  
\* NCI-C55903

THR: Poison to humans by intravenous route.  
Poison by intraperitoneal, intravenous, and sub-  
cutaneous routes. Mutagenic data. When heated  
to decomposition it emits very toxic fumes of  
NO<sub>x</sub> and Cl<sup>-</sup>.

THR: An experimental carcinogen. Moderately  
toxic by ingestion, intraperitoneal, and subcuta-  
neous routes. Mutagenic data. When heated to  
decomposition it emits acrid smoke and fumes.

## XANTHINE

CAS: 69-89-6 NIOSH: ZD 7700000  
mf: C<sub>5</sub>H<sub>4</sub>N<sub>4</sub>O<sub>2</sub> mw: 152.13

HR: 3

## XENON

CAS: 7440-63-3 NIOSH: ZE 1280000  
DOT: 2036/2591  
af: Xe mw: 131.30

HR: 1

PROP: Scales or plates. Decomp on heating  
without melting, partial sublimation. Sol in wa-  
ter; less sol in alc; sol in mineral acids, very  
sol in NH<sub>4</sub>OH and NaOH solns.

PROP: Colorless, gaseous nearly inert (noble)  
element; d (gas): 5.8878 g/L; d (liq): 3.57 @  
-109°; mp: -112°; bp: -107°.

SYNS: PSEUDOXANTHINE \* 2,6-DIOXOPURINE  
\* ISOXANTHINE \* PURINE-2,6-DIOL \* 9H-  
PURINE-2,6-DIOL \* 2,6(1,3)-PURINEDION  
\* PURINE-2,6-(1H,3H)-DIONE \* USAF CB-17  
\* XANTHIC OXIDE

DOT Classification: Label: Nonflammable  
Gas

THR: An experimental neoplastigen. Moder-  
ately toxic by intraperitoneal route. When heated  
to decomposition it emits toxic fumes of NO<sub>x</sub>.  
For further information see Vol. 2, No. 2 of  
DPIM Report.

THR: A simple asphyxiant. For a discussion  
of toxicity effects see argon. A common air  
contaminant. For further information see Vol.  
2, No. 2 of DPIM Report.

## XANTHINE BROMIDE

CAS: 53-46-3 NIOSH: BP 7632500  
mf: C<sub>21</sub>H<sub>26</sub>NO<sub>3</sub>•Br mw: 420.39

HR: 3

## XYLENE

CAS: 1330-20-7 NIOSH: ZE 2100000  
DOT: 1307 (NIOSH: ZE 2190000)  
mf: C<sub>8</sub>H<sub>10</sub> mw: 106.18

HR: 3

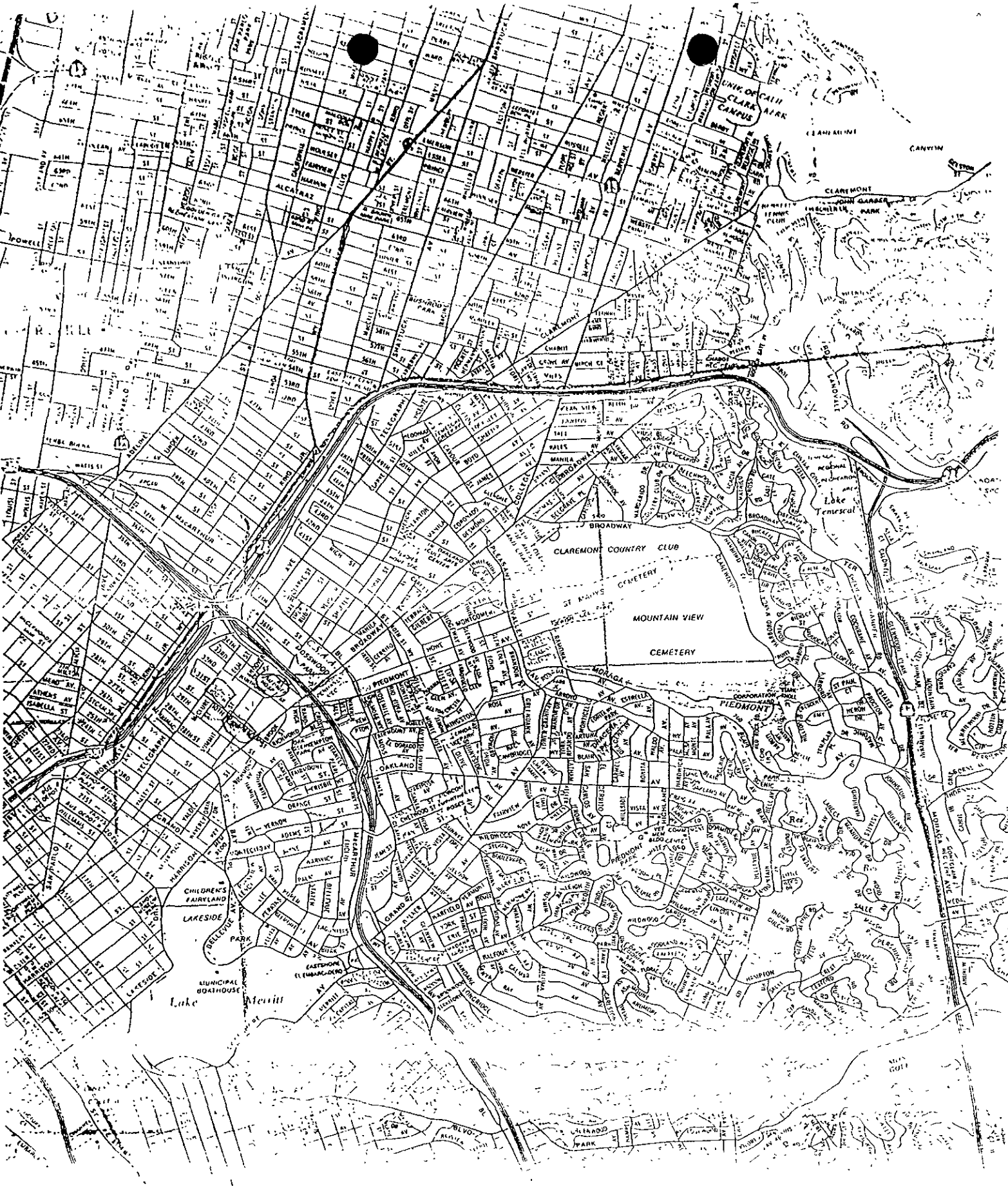
SYNS: XANTHENE-9-CARBOXYLIC ACID, ESTER  
WITH DIETHYL(2-HYDROXYETHYL) METHYL AM-  
MONIUM BROMIDE \* BETA-DIETHYLAMINO-  
ETHYL XANTHENE-9-CARBOXYLATE METHOBRO-  
MIDE \* BETA-DIETHYLAMINOETHYL  
9-XANTHENECARBOXYLATE METHOBROMIDE  
\* DIETHYL(2-HYDROXYETHYL)METHYLAMMO-  
NIUM BROMIDE XANTHENE-9-CARBOXYLATE

PROP: A clear liquid; bp: 138.5°, flash p: 100°F  
(TOC), d: 0.864 @ 20°/4°, vap press: 6.72 mm  
@ 21°. Composition: as nonaromatics 0.07%,  
toluene 14%, ethyl benzene 19.27%, p-xylene  
7.84%, m-xylene 65.01%, o-xylene 7.63%, C9  
and aromatics 0.04%.

SYNS: AROMATIC HYDROCARBONS, MIXED  
\* NCI-C55232 \* DIMETHYLBENZENE  
\* XYLENE (POLISH) \* XYL (ITALIAN)  
\* XYLENES (DUTCH) \* XYLLOL \* XYLLOE  
(GERMAN)

THR: Poison by intraperitoneal and intravenous  
routes. Moderately toxic by ingestion and subcu-  
taneous routes. When heated to decomposition  
it emits very toxic fumes of NO<sub>x</sub> and Br<sup>-</sup>.

OSHA PEL TWA 100 ppm  
ACGIH TLV: TWA (all isomers) 100 ppm;  
STEL 150 ppm; BEI: methyl hippuric acids  
in urine end of shift, 1.5 g/g creatinine



Franklin to Broadway  
 Section R. 100 to 300  
 lot 100 to 1000

3.00 summed  
 835-4500