US EPA RECORDS CENTER REGION 5
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ecology and environment, inc.

SITE SAFETY PLAN

Version 988

A. GENERAL INFORMATION

Project Title: TEXACO INC. SALES TERM 33083 Project No.: N/A

TDD/Pan No.: F05-8903-010 / FIL0602SA

Project Manager: DAN SULLIVAN Project Dir.:

Location(s): W. WASHINGTON AND ILLINOIS RIVER EAST PEORIA, IL

Prepared by: DAN SULLIVAN Date Prepared: 6-19-90

Approval by: Sherrie Stevenson Date Approved: 6/25/90

Site Safety Officer Review: Sherrie Stevenson Date Reviewed: 6/25/90

Scope/Objective of Work: SITE INTERVIEW, RECONNAISSANCE INSPECTION, COLLECTION OF SIX (6) SOIL SAMPLES AT A DEPTH OF 4-6 FEET AND 3 MONITORING WELL SAMPLES.

Proposed Date of Field Activities: 6-26-90

Background Info: Complete [ ] Preliminary (No analytical data available) [✓]

Documentation/Summary:

Overall Chemical Hazard: Serious [ ] Moderate [ ] Low [✓] Unknown [ ]

Overall Physical Hazard: Serious [ ] Moderate [ ] Low [✓] Unknown [ ]

B. SITE/WASTE CHARACTERISTICS

Waste Type(s):

Liquid [✓] Solid [✓] Sludge [ ] Gas/Vapor [ ]

Characteristic(s):

Flammable/Ignitable [✓] Volatile [ ] Corrosive [ ] Acutely Toxic [ ]

Explosive [ ] Reactive [ ] Carcinogen [✓] Radioactive* [ ]

Other: TOXIC, TERATOGEN

Physical Hazards:

Overhead [ ] Confined* Space [ ] Below Grade [ ] Trip/Fall [✓]

Puncture [ ] Burn [ ] Cut [ ] Splash [✓]

Noise [✓] Heat/Cold Stress [✓] Other:

*Requires completion of additional form and special approval from the Corporate Health/Safety Group. Contact RSC or HQ.

Site Name TEXACO INC. SALES TERM 33083

Job No. FT 1305

TDD/PAN F05-8903-010 / FIL0602SA

SITE HISTORY (Continued)

Texaco, Inc. Sales Terminal, 33083 W. Washington Street and Illinois River, East Peoria, Illinois 61601, Tazewell County. This site is listed in (Peoria Co.) Lat. 40°-41'-30", Long. 089°-35'-30", East Peoria-108-A, owner address: P. O. Box 52332, Houston, Texas 77052. Person to contact: Mr. Mark H. Virshbo (312)920-9850.

Texaco, Inc. no longer owns or operates this gasoline terminal as of October 1980. Caterpillar Tractor Company purchased the terminal and all the storage tanks were emptied, inspected and repaired. The storage tanks are used to store diesel fuel, lubrication oil, hydraulic oil and machine cutting oil.

This Agency recommends a low priority inspection for this Texaco facility.

There were no hazardous wastes stored at this Texaco facility.

Site History/Description and Unusual Features (see Sampling Plan for detailed description):

SEE NEXT PAGE

Locations of Chemicals/Wastes: ASSUME ENTIRE SITE CONTAMINATED.

Estimated Volume of Chemicals/Wastes: UNKNOWN

Site Currently in Operation Yes [✓] No [ ]

C. HAZARD EVALUATION

List Hazards by Task (i.e., drum sampling, drilling, etc.) and number them. (Task numbers are cross-referenced in Section D)

Physical Hazard Evaluation: 1. SITE RECONNAISSANCE INSPECTION / TRIP/FALL, NOISE

2. ON-SITE SOIL SAMPLING / TRIP/FALL, NOISE

3. MONITORING WELL VEMING / SPLASH

4. MONITORING WELL SAMPLING / SPLASH

5.

6.

7.

8.

Chemical Hazard Evaluation:

Compound	(PPM) PEL/TWA	Route of Exposure	Acute Symptoms	Odor Threshold	Odor Description
DIESEL FUEL	—	INHALATION, EYE, SKIN, INGESTION	INCREASED BOWEL MOVEMENTS	—	—
LUBRICATING OIL	—	INHALATION, EYE, SKIN, INGESTION	GASTROINTESTINAL IRR., PULMONARY IRR.	—	—
HYDRAULIC OIL	—	INHALATION, EYE, SKIN, INGESTION	SLIGHT ANESTHETIC EFFECTS	—	—
MACHINE CUTTING OIL	—	INHALATION, EYE, SKIN, INGESTION	VERY LOOSE BOWEL MOVEMENTS	—	—
LEAD	50 / 0.01	INGESTION, OCULAR, SKIN CONTACT, INHALATION	NAUSEA ANEMIA, NERVOUS SYSTEM EFFECTS	—	—
ETHYLENE GLYCOL	50 / 50	INGESTION, EYE, DERMAL ABSORPTION, INHALATION	SKIN/EYE IRRITATION, INGESTION RESULTS IN UNCONSCIOUSNESS	—	SWEET
BENZENE	10 / 10	INGESTION, EYE, DERMAL ABSORPTION, INHALATION, SKIN	TIGHT CHEST SCALING/CRACKING	5 PPM	SWEET

Note: Complete and attach a Hazard Evaluation Sheet for major known contaminant.

D. SITE SAFETY WORK PLAN

Site Control: Attach map, or sketch of site showing hot zone, contamination reduction, zone, etc.

Perimeter identified? Yes [✓] No [ ] Site secured? Yes [ ] No [✓]

Work Areas Designated? Yes [✓] No [ ] Zone(s) of Contamination Identified? Yes [ ] No [✓]

Personnel Protection: TLD badges required for all field personnel.

Anticipated Level of Protection (Cross-reference task numbers to Section C):

	TASK DESCRIPTION	A	B	C	D
Task 1	SITE RECONNAISSANCE			←	X
Task 2	ON-SITE SOIL SAMPLING			←	X
Task 3	MONITORING WELL VENTING			X	
Task 4	MONITORING WELL SAMPLING			←	X
Task 5					
Task 6					
Task 7					
Task 8					

ALL SITE SAFETY PROCEDURES ARE TO BE FOLLOWED AS A MINIMUM

Modifications: Rad-Mini >0.1 mR/hr (alarm sounds) and/or Monitox readings >0 ppm, evacuate work zone and then call Health and Safety Staff. UPGRADE TO LEVEL "C" IF DRY AND DUSTY CONDITIONS EXIST OR IF MONITORING EQUIPMENT WARRANTS.

Action Levels for Evacuation of Work Zone Pending Reassessment of Conditions: CONTACT HEALTH AND SAFETY STAFF IF EVACUATION OCCURS.

- Level D: O_2 <19.5% or >25%, explosive atmosphere >10% LEL, organic vapors above background levels, particulates > N/A mg/m^3, other N/A.
- Level C: O_2 <19.5% or >25%, explosive atmosphere >25% LEL (California-20%), unknown organic vapor (in breathing zone) >5 ppm, particulates > N/A mg/m^3, other N/A.
- Level B: O_2 <19.5% or >25%, explosive atmosphere >25% LEL (California-20%), unknown organic vapors (in breathing zone) >500 ppm, particulates > N/A mg/m^3, other N/A.
- Level A: O_2 <19.5% or >25%, explosive atmosphere >25% LEL (California-20%), unknown organic vapors >500 ppm, particulates > N/A mg/m^3, other N/A.

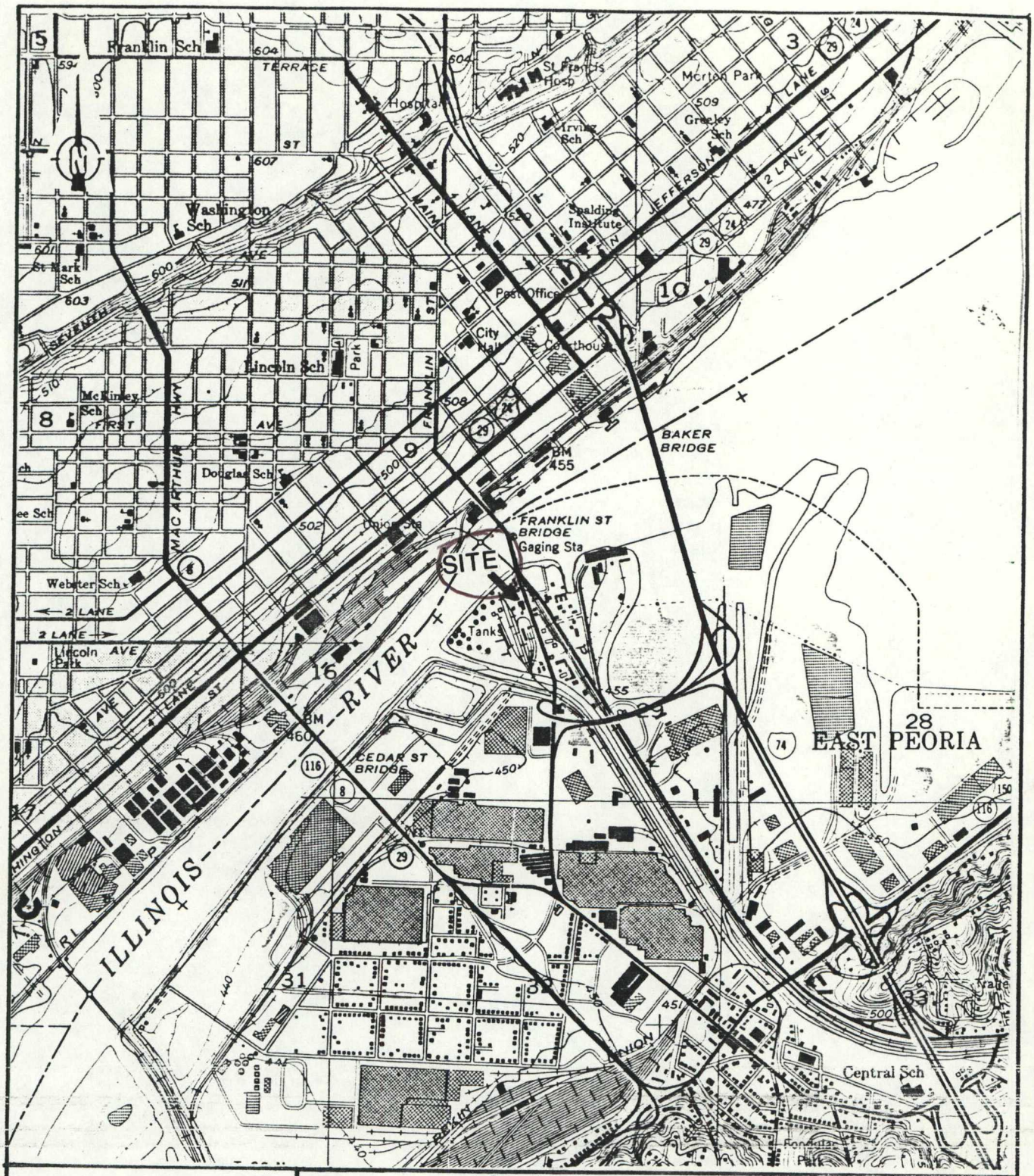
Air Monitoring (daily calibration unless otherwise noted):

N/A

Contaminant of Interest	Type of Sample (area, personal)	Monitoring Equipment	Frequency of Sampling
ORGANICS	AREA	OVA	CONTINUOUS
HCN	AREA	MONITOX OR DRAEGER PUMP	CONTINUOUS

Decontamination Solutions and Procedures for Equipment, Sampling Gear, etc.:

ALL CONTAMINATED EQUIPMENT WILL BE WASHED IN ALCONOX SOLUTION AND TRIPLE RINSED WITH DISTILLED WATER. ALL WASH AND RINSE WATER WILL BE LEFT ON-SITE WITH PRIOR PERMISSION OF THE SITE OWNER / OPERATOR.



QUADRANGLE LOCATION

ecology and environment, inc.

111 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60604, TEL. 312-663-9415

TITLE: SITE LOCATION MAP	FIGURE #: 1
SITE: TEXACO INC. SALES TERM 33083	SCALE: 1:24000
CITY: EAST PEORIA STATE: IL	P.A.N.: FIL0602GA
SOURCE: USGS PEORIA EAST QUADRANGLE	DATE: 1949 REVISED: 1979

Personnel Decon Protocol: A two wash tub system will be used. The first tub will be used to decontaminate clothing (gloves, boots, & suits) in Alconox solution. The second wash tub will be the rinse tub using water.

Decon Solution Monitoring Procedures, if Applicable: N/A

Special Site Equipment, Facilities, or Procedures (Sanitary Facilities and Lighting Must Meet 29 CFR 1910.120):

Hearing protection will be worn as needed. Safety instuments will be used when samples are collected.

LOCATION OF LINES WILL BE NOTED BEFORE COLLECTION OF DEEP SOILS.

Site Entry Procedures and Special Considerations: Permission will be obtained prior to site entry. Stay upwind of contamination when possible. The buddy system will be maintained at all times.

Work Limitations (time of day, weather conditions, etc.) and Heat/Cold Stress Requirements:

Work is restricted to daylight hours only and workers are to be monitored for heat/cold stress.

When vermiculite is used to pack samples, dust masks will be worn.

General Spill Control, if applicable:

Investigation-Derived Material Disposal (i.e., expendables, decon waste, cuttings):

Investigative-derived materials will be decontaminated in accordance with procedures listed above. The decontaminated material will be bagged and left on-site in appropriate waste containers with prior permission of site owner/operator.

Sample Handling Procedures Including Protective Wear:

After samples have been collected, the outside of the sample bottles will be decontaminated by washing (not submerging) the bottles in an Alconox solution and rinsing in distilled water. The protective clothing level (i.e. suits, gloves, boots) worn during on-site job activities will be maintained while decontaminating the bottles. Respiratory protection will be worn based on professional judgment. Latex gloves, at a minimum, will be worn, while handling the bottles after decontamination.

Team Member*	Responsibility
DAN SULLIVAN	Team Leader
SHERRIE STEVENSON	Site Safety Officer
MIKE PHILLIPS	SAMPLER
STAN SENGER	TEAM MEMBER
RON BUGG	TEAM MEMBER

*All entries into exclusion zone require Buddy System use. All E & E field staff participate in medical monitoring program and have completed applicable training per 29 CFR 1910.120. Respiratory protection program meets requirements of 29 CFR 1910.134, and ANSI Z88.2 (1980).

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E. EMERGENCY INFORMATION

(Use supplemental sheets, if necessary)

LOCAL RESOURCES

(Obtain a local telephone book from your hotel, if possible)

Ambulance MOBILE MEDIC AMBULANCE "911" OR 674-3322

Hospital Emergency Room ST. FRANCIS MEDICAL CENTER (309) 655-2109

Poison Control Center ST. FRANCIS HOSPITAL AND MEDICAL CENTER (309) 655-2109

Police (include local, county sheriff, state) E. PEORIA POLICE DEPT. (911 OR (309)694-6251), TAZEWELL COUNTY SHERIFF: (309) 1 346-4141, STATE POLICE (GERMANTOWN HILLS): (309) 676-2116

Fire Department E. PEORIA FIRE DEPT. (911 OR (309)694-6251)

Airport MT. HAWLEY AIRPORT (309) 693-1908

Agency Contact (EPA, State, Local USCG, etc.) DON JOSIF, US EPA (312) 886-0393

Local Laboratory N/A

UPS/Fed. Express FED EX 1-800-526-3940 8 A.M. – 8 P.M.

Client (EPA Contact) DON JOSIF, US EPA, (312) 886-0393

Site Contact JACK TALCOTT (309) 675-4130 / ESTELLA VALLEJO (309) 675-4620

SITE RESOURCES

Site Emergency Evacuation Alarm Method VERBAL

Water Supply Source FIT WILL SUPPLY ITS OWN WATER

Telephone Location, Number TO BE DETERMINED PRIOR TO SITE ENTRY

Cellular Phone, if available N/A

Radio N/A

Other N/A

EMERGENCY CONTACTS

1. Dr. Raymond Harbison (Univ. of Florida) ..... (501) 221-0465 or (904) 462-3277, 3281
   Alachua, Florida [redacted]

2. Ecology and Environment, Inc., Safety Director
   Paul Jonmaire ..... (716) 684-8060 (office)
   [redacted]

3. Regional Office Contact ..... LAURA EVANS [redacted]
   (312) 663-9415 (office)

4. Office Manager .....Jerry Oskvarek..... [redacted] (home)
   (312) 663-9415 (office)

MEDTOX HOTLINE

1. Twenty-four hour answering service: (501) 370-8263

   What to report:

   - State: "this is an emergency."
   - Your name, region, and site.
   - Telephone number to reach you.
   - Your location.
   - Name of person injured or exposed.
   - Nature of emergency.
   - Action taken.

2. A toxicologist, (Drs. Raymond Harbison or associate) will contact you. Repeat the information given to the answering service.

3. If a toxicologist does not return your call within 15 minutes, call the following persons in order until contact is made:

   a. 24 hour hotline - (716) 684-8940
   b. Corporate Safety Director - Paul Jonnaire - home # [redacted]
   c. Assistant Corp. Safety Officer - Steven Sherman - home # [redacted]

EMERGENCY ROUTES

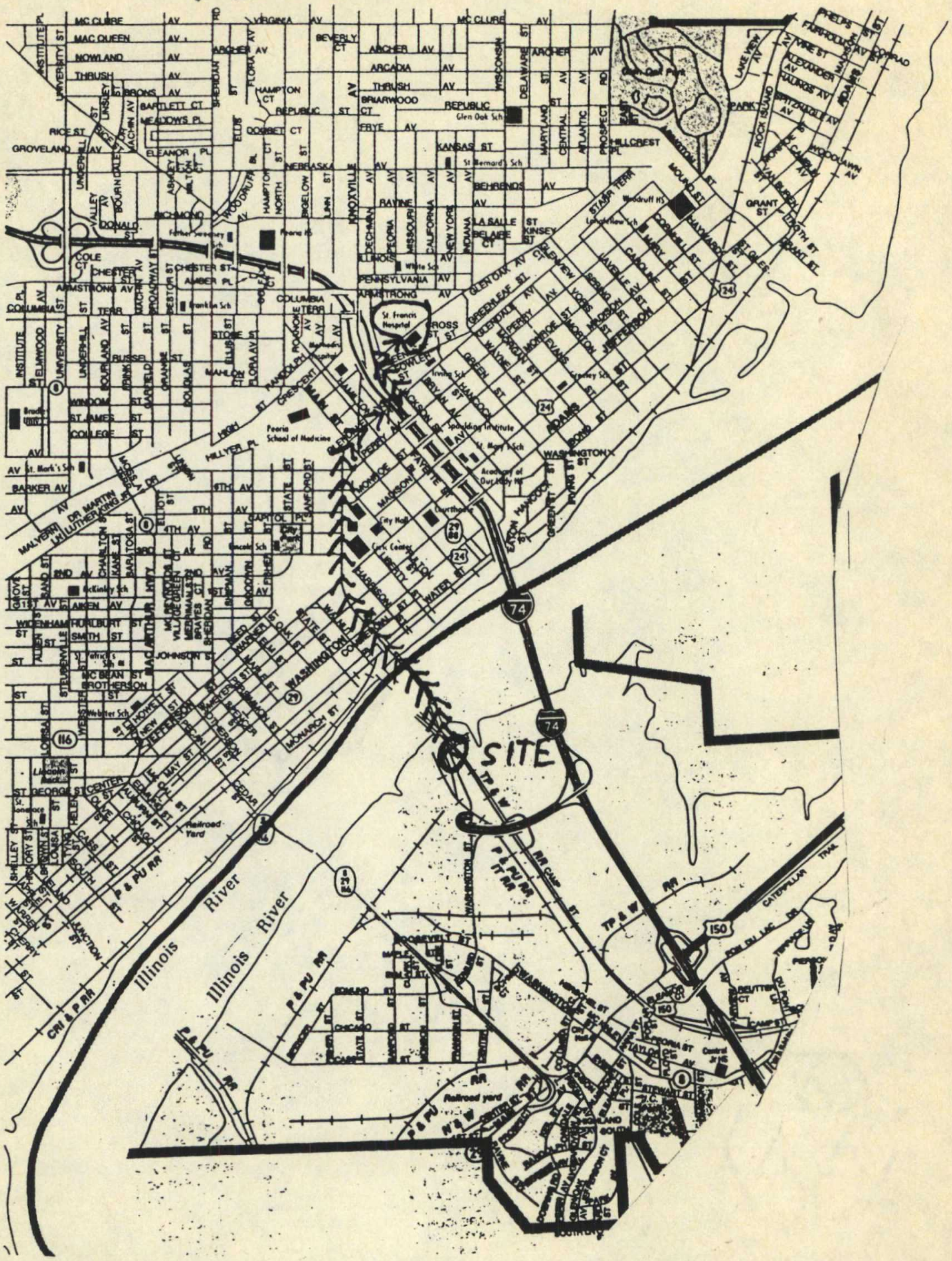
(NOTE: Field Team must Know Route(s) Prior to Start of Work)

Directions to hospital (include map) EXIT SITE, DRIVE NORTH ON WASHINGTON STREET ACROSS FRANKLIN STREET BRIDGE. FOLLOW FRANKLIN TO ITS END AND TURN RIGHT ONTO GLENDALE AV. TAKE GLENDALE NE UNDER INTERSTATE 74 AND TURN LEFT ONTO JACKSON STREET. TAKE JACKSON NW TO GLEN OAK AV. TURN RIGHT ON GLEN OAK AV. ST. FRANCIS MED CENTER ON RIGHT SIDE OF STREET. TOTAL DISTANCE ~2.5 MILES

Emergency Egress Routes to Get Off-Site EXIT SITE TO WASHINGTON STREET

ST. FRANCIS MEDICAL CENTER
519 NE GLEN OAK AV.
PEORIA, IL
NON-EMERGENCY PHONE #
(309) 655-2000

FIL0602GA



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TITLE HOSPITAL ROUTE MAP	FIGURE # #1
SITE TEXACO, INC SALES TERM. 33083	SCALE NOT TO SCALE
CITY: EAST PEORIA, STATE: IL	P.A.N. FIL0602GA
SOURCE ILL. BELL PHONE BOOK	DATE 1988 REVISED

Ecology and Environment, Inc.
Hazard Evaluation of Chemicals
Region V - Chicago

DATE : 6/19/90
JOB NO: FT 1305

CHEMICAL NAME: Benzene

SYN : Benzol, Benzole, Benzolene, Coal Tar Naptha
CAS NO: 71-43-2 FORMULA: C6H6
DOT CLASS: 1114

CHEMICAL PROPERTIES

Phys St: Liquid | Boil Pt: 176.00°F | Ionz Pot : 9.25ev | Fl Pt: 12.00°F
Mol Wt : 78.11 | Melt Pt: 41.00°F | Vap Press: 75.00000mmHg | LFL : 1.3%
Sp Gr : 0.88 | Frz Pt : 42.00°F | Odr Thr : 5.00ppm | UFL : 7.1%
Odor : aromatic, pleasant, sweet
INCOMPAT/REACT: nitric acid, oxidizing agents, chlorine, bromine
SOLUBILITY : Water-slightly, soluble in organic solvents

TOXICOLOGICAL PROPERTIES

Exposure Limits: TLV-TWA (ACGIH): 10.00000ppm PEL (OSHA): 10.00000ppm
STEL: -- IDLH: 2000.00000ppm
OTHER PROPERTIES : CEILING: 25PPM/15MIN. ACGIH MAX PEAK ABOVE CEIL
Tox Data: INHAL : rat LC50: 10000ppm/7hr
DERMAL : skn rbt 500mg/24H MODERAT
ORAL : rat LD50: 4894mg/kg
CARCIN : human positive
MUTAGEN : exper
REPRO TOX: exper
AQUATIC : 5ppm/6hr/minnow/lethal/distilled water
OTHER TOX: TARGET ORGANS: Blood, CNS, Skin, Bone Marrow, Eyes, Resp Sys
ROUTES OF EXP: Ingestion, Eye(Ocular), Dermal Absorption, Skin Contact, Inhalation

PERSONAL PROTECTIVE MEASURES

RESPIRATORS : AFR: dusty/windy condit or known high concent or >1 but <5ppm; SCBA: >5ppm
CARTRIDGE TYPE : GMC-H or AFS (DACAL)
PROTECTIVE CLOTHING: Coverall: Saranex Gloves: Silvershield-8hr, PVA-6hr, Viton-6hr (PVA degrade in water)
SPEC PRECAUTIONS : OSHA REGULATED CARCINOGEN.

FIRST AID

INHALATION: move to fresh air, give O2/CPR if nec, SEEK MEDICAL ATTENTION
EYE/SKIN : remove contaminated clothes, flush areas w/water for 15 min, SEEK MEDICAL ATTENTION
INGESTION : Treat for shock, CPR if nec., SEEK MEDICAL ATTENTION

SYMPTOMS

ACUTE : dizziness,weakness,euphoria,headache,nau/vomt,tight chest,staggering, visual blurring,tremors,skin irritation/scaling/cracking
CHRONIC: loss of appetite, drowsy, nervous, pallor, anemia, petechiae, abnml bleeding, aplasia of bone marrow, leukemia, encephalopathy w/ataxia, tremulousness, emotional lability, diffuse cerebral atrophy

DISPOSAL, FIRE, SPILLS (see attached sheet)

DISPOSAL: D FIRE: 6,7 LEAKS & SPILLS: 3,4,5,6,9
DECOMPOSITION PRODUCTS: carbon monoxide, carbon dioxide

REFERENCES CONSULTED

NIOSH/OSHA Pocket Guide, Chris(vol. (II), ACGIH TLV Booklet, RTECS
OTHER REFERENCES: Sigma-Aldrich, Handbook of Poisoning, OSHA

LAST REVISION DATE: 10/18/89

CHEMICAL CLASSIFICATION: Aromatic Hydrocarbon

Ecology and Environment, Inc.
Hazard Evaluation of Chemicals
Region V - Chicago

DATE : 6/1/90
JOB NO: FT1305

CHEMICAL NAME: Ethylene Glycol

SYN : 1,2-ethanediol, Ethylene Alcohol, Glycol
CAS NO: 107-21-1 FORMULA: C2-H6-O2
DOT CLASS:

CHEMICAL PROPERTIES

Phys St: Liquid	Boil Pt: 386.96°F	Ionz Pot : --	Fl Pt: 240.80°F
Mol Wt : 62.00	Melt Pt: 8.60°F	Vap Press: 0.05 mmHg	LFL : 3.20%
Sp Gr : 1.15	Frz Pt : 7.70°F	Odr Thr : --	UFL : --

Odor : sweet
INCOMPAT/REACT: strong oxidizing agents and bases
SOLUBILITY : in water, alcohol, acetone

TOXICOLOGICAL PROPERTIES

Exposure Limits: TLV-TWA (ACGIH): 50.00 ppm PEL (OSHA): 50.00 ppm
STEL: -- IDLH: --
OTHER PROPERTIES : EXPOSURE LIMITS ARE CEILING CONC. IRRITANT.
Tox Data: INHAL : hum TCLo: 10,000mg/m3
DERMAL : eye rbt: 12mg/m3/30
ORAL : hum LDLo: 398 mg/kg
CARCIN :
MUTAGEN : DNA inhibition
REPRO TOX: animal positive
AQUATIC :
OTHER TOX: LETHAL DOSE IN HUMANS: 1.4 ml/kg
ROUTES OF EXP: Ingestion, Eye(Ocular), Dermal Absorption, Inhalation

PERSONAL PROTECTIVE MEASURES

RESPIRATORS : APR: dusty/windy condit or known high concent or >1 but <5ppm; SCBA: >5ppm
CARTRIDGE TYPE : GMC-H or AP3 (RACAL)
PROTECTIVE CLOTHING: Coverall: PE Tyvek Gloves: Nitrile, Neoprene/Latex
SPEC PRECAUTIONS :

FIRST AID

INHALATION: move to fresh air, artf resp if nec, SEEK MEDICAL ATTENTION
EYE/SKIN : flush w/water, SEEK MEDICAL ATTENTION
INGESTION : induce vomiting, SEEK MEDICAL ATTENTION

SYMPTOMS

ACUTE : skin/eye irritation, ingestion results in unconsciousness

CHRONIC: brain & kidney damage, anorexia, oliguria, nystagmus, lymphocytosis, profound acidosis

DISPOSAL, FIRE, SPILLS (see attached sheet)

DISPOSAL: A FIRE: 3,7 LEAKS & SPILLS: 1,6,10
DECOMPOSITION PRODUCTS: CO, CO2

REFERENCES CONSULTED

ACGIH TLV Booklet, Aldrich, RTECS
OTHER REFERENCES: Poison Handbk, Sittig (1981), CAMEO Resp Info, OSHA PEL, Hawleys (11th)

LAST REVISION DATE:
10/25/89

CHEMICAL CLASSIFICATION: Glycol; Hydroxy Cmpd, Aliphatic & Alicyclic, Polyols

Ecology and Environment, Inc.
Hazard Evaluation of Chemicals
Region V - Chicago

DATE : 6/29/90
JOB NO: F11305

CHEMICAL NAME: Lead

SYN : White lead, Plumbum, Inorganic Lead
CAS NO: 7439-92-1 FORMULA: Pb
DOT CLASS:

CHEMICAL PROPERTIES

Phys St: Solid | Boil Pt: 3164.00°F | Ionz Pot : -- | Fl Pt: --
Mol Wt : 207.00 | Melt Pt: 620.00°F | Vap Press: -- | LFL : --
Sp Gr : 11.30 | Frz Pt : -- | Odr Thr : -- | UFL : --
Odor : none
INCOMPAT/REACT: strong oxidizers, peroxides, active metals
SOLUBILITY :

TOXICOLOGICAL PROPERTIES

Exposure Limits: TLV-TWA (ACGIH): 0.01 ppm PEL (OSHA): --
STEL: -- IDLH: --
OTHER PROPERTIES : PEL - 50ug/m3
Tox Data: INHAL : -
DERMAL : -
ORAL : rat TDLo: 790mg/kg
CARCIN : indefinite
MUTAGEN : -
REPRO TOX: exper teratogen
AQUATIC : -
OTHER TOX: TARGT ORGNS: GI Trct,CNS,Kid,Bld,Gingival Tissue
ROUTES OF EXP: Ingestion, Eye(Ocular), Skin Contact, Inhalation

PERSONAL PROTECTIVE MEASURES

RESPIRATORS : APR: dusty/windy condit or known high concent or >1 but <5ppm; SCBA: >5ppm
CARTRIDGE TYPE : GMC-H, AP3 (RACAL)
PROTECTIVE CLOTHING: Coverall: Saranex Gloves: Nitrile
SPEC PRECAUTIONS :

FIRST AID

INHALATION: move to fresh air, artf resp if nec, SEEK MEDICAL ATTENTION
EYE/SKIN : flush w/water 15 minutes, wash skin with soap/water, SEEK MEDICAL ATTENTION
INGESTION : give water, induce vomiting, SEEK MEDICAL ATTENTION IMMEDIATELY

SYMPTOMS

ACUTE : cumulative neurotoxin (prolong expos), stomach distress, vomtg, diarrhea, black stools, anemia, nervous system effects
CHRONIC: alimentary: abdm pain/discomf,constptn,diarrh neuromusc: musc weaknss,joint/musc pain,dizzy,insom, encephalic: brain involvment, stupor, coma,death-rare reprod: poison to m/f germ cells

DISPOSAL, FIRE, SPILLS (see attached sheet)

DISPOSAL: P FIRE: 13 LEAKS & SPILLS: 7,8,10
DECOMPOSITION PRODUCTS: toxic fumes of lead

REFERENCES CONSULTED

NIOSH/OSHA Pocket Guide, ACGIH TLV Booklet, RTECS
OTHER REFERENCES: Sigma-Aldrich, OSHA 1910., Handbook of Poisoning

CHEMICAL CLASSIFICATION: Heavy Metal

LAST REVISION DATE:
04/18/89

OILS: DIESEL

6-14-90
FIC 0602 GA

ODS

Common Synonyms	Oily liquid	Yellow-brown	Lube or fuel oil odor
Fuel oil 1-D Fuel oil 2-D	Floats on water.		

Stop discharge if possible.
Call fire department.
Avoid contact with liquid.
Isolate and remove discharged material.
Notify local health and pollution control agencies.

Fire

Combustible.
Extinguish with dry chemical, foam, or carbon dioxide.
Water may be ineffective on fire.
Cool exposed containers with water.

Exposure

CALL FOR MEDICAL AID.

LIQUID
Irritating to skin and eyes.
Harmful if swallowed.
Remove contaminated clothing and shoes.
Flush affected areas with plenty of water.
IF IN EYES, hold eyelids open and flush with plenty of water.
IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk.
DO NOT INDUCE VOMITING.

Water Pollution

Dangerous to aquatic life in high concentrations.
Fouling to shoreline.
May be dangerous if it enters water intakes.

Notify local health and wildlife officials.
Notify operators of nearby water intakes.

1. RESPONSE TO DISCHARGE

(See Response Methods Handbook)

Mechanical containment
Should be removed
Chemical and physical treatment

2. LABEL

2.1 Category: None
2.2 Class: Not pertinent

3. CHEMICAL DESIGNATIONS

3.1 CG Compatibility Class: Miscellaneous Hydrocarbon Mixtures
3.2 Formula: Not applicable
3.3 IMO/UN Designation: 3.1/1270
3.4 DOT ID No.: 1270
3.5 CAS Registry No.: Data not available

4. OBSERVABLE CHARACTERISTICS

4.1 Physical State (as shipped): Liquid
4.2 Color: Light brown
4.3 Odor: Like fuel oil

5. HEALTH HAZARDS

5.1 Personal Protective Equipment: Goggles or face shield.
5.2 Symptoms Following Exposure: If liquid is ingested, an increased frequency of bowel movements will occur.
5.3 Treatment of Exposure: INGESTION: do NOT induce vomiting. SKIN: wipe off, wash with soap and water. EYES: wash with copious amounts of water for at least 15 min.
5.4 Threshold Limit Value: No single TLV applicable.
5.5 Short Term Inhalation Limits: Data not available
5.6 Toxicity by Ingestion: Grade 1; LD_{50} = 5 to 15 g/kg
5.7 Late Toxicity: Data not available
5.8 Vapor (Gas) Irritant Characteristics: Vapors cause a slight smarting of the eyes or respiratory system if present in high concentrations. The effect is temporary.
5.9 Liquid or Solid Irritant Characteristics: Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of the skin.
5.10 Odor Threshold: Data not available
5.11 IDLH Value: Data not available

6. FIRE HAZARDS

6.1 Flash Point: (1-D) 100°F C.C.; (2-D) 125°F C.C.
6.2 Flammable Limits in Air: 1.3-6.0 vol.%
6.3 Fire Extinguishing Agents: Dry chemical, foam, or carbon dioxide
6.4 Fire Extinguishing Agents Not to be Used: Water may be ineffective
6.5 Special Hazards of Combustion Products: Not pertinent
6.6 Behavior in Fire: Not pertinent
6.7 Ignition Temperature: (1-D) 350-625°F (2-D) 490-545°F
6.8 Electrical Hazard: Not pertinent
6.9 Burning Rate: 4 mm/min.
6.10 Adiabatic Flame Temperature: Data not available
6.11 Stoichiometric Air to Fuel Ratio: Data not available
6.12 Flame Temperature: Data not available

7. CHEMICAL REACTIVITY

7.1 Reactivity With Water: No reaction
7.2 Reactivity with Common Materials: No reaction
7.3 Stability During Transport: Stable
7.4 Neutralizing Agents for Acids and Caustics: Not pertinent
7.5 Polymerization: Not pertinent
7.6 Inhibitor of Polymerization: Not pertinent
7.7 Molar Ratio (Reactant to Product): Data not available
7.8 Reactivity Group: 33

8. WATER POLLUTION

8.1 Aquatic Toxicity: 204 mg/l/24 hr/juvenile American shad/TL_m/salt water
8.2 Waterfowl Toxicity: >20 ml/kg /LD_{50}/mallards
8.3 Biological Oxygen Demand (BOD): Data not available
8.4 Food Chain Concentration Potential: None

9. SHIPPING INFORMATION

9.1 Grades of Purity: Diesel Fuel 1-D (ASTM); Diesel Fuel 2-D (ASTM)
9.2 Storage Temperature: Ambient
9.3 Inert Atmosphere: No requirement
9.4 Venting: Open (flame arrester)

10. HAZARD ASSESSMENT CODE

(See Hazard Assessment Handbook)

A-T-U

11. HAZARD CLASSIFICATIONS

11.1 Code of Federal Regulations: Combustible liquid
11.2 NAS Hazard Rating for Bulk Water Transportation: Not listed
11.3 NFPA Hazard Classification:

Category	Classification
Health Hazard (Blue)	0
Flammability (Red)	2
Reactivity (Yellow)	0

12. PHYSICAL AND CHEMICAL PROPERTIES

12.1 Physical State at 15°C and 1 atm: Liquid
12.2 Molecular Weight: Not pertinent
12.3 Boiling Point at 1 atm: 550—640°F = 288—338°C = 561—612°K
12.4 Freezing Point: 0 to —30°F = —18 to —34°C = 255 to 239°K
12.5 Critical Temperature: Not pertinent
12.6 Critical Pressure: Not pertinent
12.7 Specific Gravity: 0.841 at 16°C (liquid)
12.8 Liquid Surface Tension: (est.) 25 dynes/cm = 0.025 N/m at 20°C
12.9 Liquid Water Interfacial Tension: (est.) 50 dynes/cm = 0.05 N/m at 20°C
12.10 Vapor (Gas) Specific Gravity: Not pertinent
12.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent
12.12 Latent Heat of Vaporization: Not pertinent
12.13 Heat of Combustion: —18,400 Btu/lb = —10,200 cal/g = 429 X 10^3 J/kg
12.14 Heat of Decomposition: Not pertinent
12.15 Heat of Solution: Not pertinent
12.16 Heat of Polymerization: Not pertinent
12.25 Heat of Fusion: Data not available
12.26 Limiting Value: Data not available
12.27 Reid Vapor Pressure: Varies

NOTES

CHRIS VOL. III

OILS, MISCELLANEOUS: LUBRICATING

6-19-90 FIC 0602 S4

OLB

Common Synonyms
Crankcase oil
Transmission oil
Motor oil

Oily liquid — Yellow-brown — Lube oil odor

Floats on water.

Stop discharge if possible.
Call fire department.
Avoid contact with liquid.
Isolate and remove discharged material.
Notify local health and pollution control agencies.

Fire

Combustible.
Extinguish with dry chemical, foam or carbon dioxide.
Water may be ineffective on fire.
Cool exposed containers with water.

Exposure

CALL FOR MEDICAL AID.

LIQUID
Irritating to skin and eyes.
Harmful if swallowed.
Remove contaminated clothing and shoes.
Flush affected areas with plenty of water.
IF IN EYES, hold eyelids open and flush with plenty of water.
IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk.
DO NOT INDUCE VOMITING.

Water Pollution

Effect of low concentrations on aquatic life is unknown.
Fouling to shoreline.
May be dangerous if it enters water intakes.

Notify local health and wildlife officials.
Notify operators of nearby water intakes.

1. RESPONSE TO DISCHARGE

(See Response Methods Handbook)
Mechanical containment
Should be removed
Chemical and physical treatment

2. LABEL

2.1 **Category:** None
2.2 **Class:** Not pertinent

3. CHEMICAL DESIGNATIONS

3.1 **CG Compatibility Class:** Miscellaneous Hydrocarbon Mixtures
3.2 **Formula:** Not applicable
3.3 **IMO/UN Designation:** 3.3/1270
3.4 **DOT ID No.:** 1270
3.5 **CAS Registry No.:** Data not available

4. OBSERVABLE CHARACTERISTICS

4.1 **Physical State (as shipped):** Liquid
4.2 **Color:** Yellow fluorescent
4.3 **Odor:** Characteristic

5. HEALTH HAZARDS

5.1 **Personal Protective Equipment:** Protective gloves; goggles or face shield.
5.2 **Symptoms Following Exposure:** INGESTION: minimal gastrointestinal tract irritation; increased frequency of bowel passage may occur. ASPIRATION: pulmonary irritation is normally minimal, but may become more severe several hours after exposure.
5.3 **Treatment of Exposure:** INGESTION: do NOT lavage or induce vomiting. ASPIRATION: treatment probably not required; delayed development of pulmonary irritation can be detected by serial chest x-rays. EYES: wash with copious quantity of water. SKIN: wipe off and wash with soap and water.
5.4 **Threshold Limit Value:** Data not available
5.5 **Short Term Inhalation Limits:** Data not available
5.6 **Toxicity by Ingestion:** Grade 1; LD_{50} = 5 to 15 g/kg
5.7 **Late Toxicity:** Data not available
5.8 **Vapor (Gas) Irritant Characteristics:** Vapors cause a slight smarting of the eyes or respiratory system if present in high concentrations. The effect is temporary.
5.9 **Liquid or Solid Irritant Characteristics:** Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of the skin.
5.10 **Odor Threshold:** Data not available
5.11 **IDLH Value:** Data not available

6. FIRE HAZARDS

6.1 **Flash Point:** 300°F C.C.
6.2 **Flammable Limits in Air:** Data not available
6.3 **Fire Extinguishing Agents:** Dry chemical, foam, or carbon dioxide
6.4 **Fire Extinguishing Agents Not to be Used:** Water of foam may cause frothing.
6.5 **Special Hazards of Combustion Products:** Not pertinent
6.6 **Behavior in Fire:** Not pertinent
6.7 **Ignition Temperature:** 500°F-700°F
6.8 **Electrical Hazard:** Not pertinent
6.9 **Burning Rate:** 4 mm/min.
6.10 **Adiabatic Flame Temperature:** Data not available
6.11 **Stoichiometric Air to Fuel Ratio:** Data not available
6.12 **Flame Temperature:** Data not available

7. CHEMICAL REACTIVITY

7.1 **Reactivity With Water:** No reaction
7.2 **Reactivity with Common Materials:** No reaction
7.3 **Stability During Transport:** Stable
7.4 **Neutralizing Agents for Acids and Caustics:** Not pertinent
7.5 **Polymerization:** Not pertinent
7.6 **Inhibitor of Polymerization:** Not pertinent
7.7 **Molar Ratio (Reactant to Product):** Data not available
7.8 **Reactivity Group:** 33

8. WATER POLLUTION

8.1 **Aquatic Toxicity:** Data not available
8.2 **Waterfowl Toxicity:** Data not available
8.3 **Biological Oxygen Demand (BOD):** Data not available
8.4 **Food Chain Concentration Potential:** None

9. SHIPPING INFORMATION

9.1 **Grades of Purity:** Various viscosities
9.2 **Storage Temperature:** Ambient
9.3 **Inert Atmosphere:** No requirement
9.4 **Venting:** Open (flame arrester)

10. HAZARD ASSESSMENT CODE

(See Hazard Assessment Handbook)
A-T-U

11. HAZARD CLASSIFICATIONS

11.1 **Code of Federal Regulations:** Not listed
11.2 **NAS Hazard Rating for Bulk Water Transportation:** Not listed
11.3 **NFPA Hazard Classification:**

Category	Classification
Health Hazard (Blue)	0
Flammability (Red)	1
Reactivity (Yellow)	0

12. PHYSICAL AND CHEMICAL PROPERTIES

12.1 **Physical State at 15°C and 1 atm:** Liquid
12.2 **Molecular Weight:** Not pertinent
12.3 **Boiling Point at 1 atm:** Very high
12.4 **Freezing Point:** Not pertinent
12.5 **Critical Temperature:** Not pertinent
12.6 **Critical Pressure:** Not pertinent
12.7 **Specific Gravity:** (est.) 0.902 at 20°C (liquid)
12.8 **Liquid Surface Tension:** 36-37.5 dynes/cm = 0.036—0.0375 N/m at 20°C
12.9 **Liquid Water Interfacial Tension:** 33—54 dynes/cm = 0.033—0.054 N/m at 20°C
12.10 **Vapor (Gas) Specific Gravity:** Not pertinent
12.11 **Ratio of Specific Heats of Vapor (Gas):** Not pertinent
12.12 **Latent Heat of Vaporization:** Not pertinent
12.13 **Heat of Combustion:** —18,466 Btu/lb = —10,270 cal/g = —429.98 X 10^4 J/kg
12.14 **Heat of Decomposition:** Not pertinent
12.15 **Heat of Solution:** Not pertinent
12.16 **Heat of Polymerization:** Not pertinent
12.25 **Heat of Fusion:** Data not available
12.26 **Limiting Value:** Data not available
12.27 **Reid Vapor Pressure:** Data not available

NOTES

CHRIS VOL. III

PARADIONE

CAS RN: 115673 NIOSH #: RP 9800000
mf: $C_7H_{11}NO_3$; mw: 157.19

SYNS:
5-ETHYL-3,5-DIMETHYLOXAZOLIDINE-2,4-DIONE
PARAMETHADIONE

TOXICITY DATA: 2	CODEN:
orl-mus LD50:1000 mg/kg	27ZQAG -,280,72
ipr-mus LD50:750 mg/kg	27ZQAG -,280,72

Toxicology Review: AJMEAZ 38,409,65.
THR: MOD orl, ipr.
Disaster Hazard: When heated to decomp it emits tox fumes of NO_x.

PARAFFIN in hydraulic oil

CAS RN: 8002742 NIOSH #: RV 0350000

Colorless or white, translucent odorless mass. d: approx 0.90; mp: 50°-57°. Insol in water, alc; sol in benzene, chloroform, ether, carbon disulfide, oils; misc with fats.

TOXICITY DATA: 3	CODEN:
imp-mus TDLo:480 mg/kg:ETA	85DAAC 5,170,66
imp-mus TD:640 mg/kg:ETA	BJCAAI 17,127,66
imp-mus TD:660 mg/kg:ETA	CALEDQ 6,21,79

TLV: Air: 2 mg/m3 (fume) DTLVS* 4,319,80. *Toxicology Review:* JNCIAM 52,1685,74; ADCSAJ 13,271,70. Reported in EPA TSCA Inventory, 1980.
THR: The effects of the paraffin hydrocarbons vary with the volatility. The gaseous hydrocarbons, such as methane, ethane, etc., have but slight anesthetic effects and are hazardous only when present in sufficient conc to dilute the oxygen to a point below that which is necessary to sustain life. With the volatile liquid hydrocarbons, or with the next higher fraction, the anesthetic action predominates, and with the higher molecular weights or with the less volatile compounds, the anesthetic increases, but at the same time an irr action becomes more pronounced. For information concerning toxic and hazardous properties of these materials, see the individual compounds. The semi-refined, fully refined and the crude paraffins are exper ETA. See also paraffin waxes and petroleum waxes. Paraffins are common air contaminants.
For further information see Vol. 1, No. 7 of *DPIM Report.*

PARAFORMALDEHYDE

CAS RN: 30525-89-4
mf: $(CH_2O)_n$

White crystals, odor of formaldehyde. Slightly sol in cold water, mod sol in hot water yielding formaldehyde; flash p: 158°F; autoign temp: 572°F.

THR: MOD orl; LOW dermal. See formaldehyde.
Fire Hazard: Mod, when exposed to heat or flame.
Spontaneous Heating: No.
Disaster Hazard: Mod dangerous; when heated, it emits formaldehyde gas and oxides of carbon; can react with oxidizing materials.
To Fight Fire: Alcohol foam, CO_2, dry chemical.
Incomp: O_2 liquid.
For further information see Vol. 3, No. 3 of *DPIM Report.*

PARALDEHYDE

CAS RN: 123637 NIOSH #: YK 0525000
mf: $C_6H_{12}O_3$; mw: 132.18

Colorless liquid, disagreeable taste, aromatic odor. mp: 12.6°, lel = 1.3%, bp: 124.4° @ 752 mm, flash p: 62.6°F, d: 0.9943 @ 20°/4°, autoign. temp.: 460°F, vap. d: 4.55. Sol in water; misc with alc, chloroform, ether, oils.

SYNS:
ELALDEHYDE
PARACETALDEHYDE
PARALDEHYD (GERMAN)
PARALDEIDE (ITALIAN)
TRIACETALDEHYDE (FRENCH)
2,4,6-TRIMETHYL-1,3,5-TRIOXAAN (DUTCH)
2,4,6-TRIMETHYL-S-TRIOXANE
2,4,6-TRIMETHYL-1,3,5-TRIOXANE
S-TRIMETHYLTRIOXYMETHYLENE

TOXICITY DATA: 3-2	CODEN:
skn-rbt 500 mg open MLD	UCDS** 3/24/70
eye-rbt 5 mg SEV	UCDS** 3/24/70
orl-hmn TDLo:14 mg/kg TFX:PSY	12VXA5 8,783,68
ivn-hmn TDLo:14 mg/kg TFX:PSY	12VXA5 8,783,68
ims-hmn TDLo:71 mg/kg TFX:PSY	12VXA5 8,783,68
unk-man LDLo:1462 mg/kg	85DCAI 2,73,70
rec-hmn TDLo:14 mg/kg TFX:PSY	12VXA5 8,783,68
orl-rat LD50:1530 mg/kg	UCDS** 24MAR70
ihl-rat LCLo:2000 ppm/4H	UCDS** 24MAR70
ipr-rat LDLo:2100 mg/kg	TXAPA9 1,156,59
scu-rat LDLo:1650 mg/kg	AEPPAE 182,348,36
orl-dog LD50:3500 mg/kg	12VXA5 8,783,68
orl-cat LDLo:3300 mg/kg	HBAMAK 4,1289,35
orl-rbt LD50:3304 mg/kg	PSEBAA 29,730,32
skn-rbt LD50:14 gm/kg	UCDS** 24MAR70
cyt-smc 50 mmol/tube	HEREAY 33,457,47

Toxicology Review: CLCHAU 19,361,73; FNSCA6 2, 67,73. DOT: Flammable Liquid, Label: Flammable Liquid FEREAC 41,57018,76. Reported in EPA TSCA Inventory, 1980. EPA TSCA 8(a) Preliminary Assessment Information Proposed Rule FERREAC 45, 13646,80.
THR: A skn, eye irr. A hmn PSY. MOD hmn unk; MOD orl, scu, ipr, ihl; LOW skn. See also aldehydes. Psychotropic effects on humans. Paraldehyde has hypnotic and analgesic properties. However, poisoning due to it is very rare. There is a wide range between the hypnotic dose and the toxic dose; 2-5 grains produces a soporific effect; recovery has been observed following the ingestion of 50 g. Continued use of the drug has been known to result in habituation. There have been no cases reported of industrial poisoning.

Signs and symptoms are incoordination and drowsiness, followed by sleep. With larger doses, the pupils dilate, reflexes are lost, and patient lapses into coma. Weak pulse and shallow respiration are followed by cyanosis. Death results from respiratory paralysis. The symptoms of chronic intoxication from this material are disturbances of the digestion, continual thirst, general emaciation, muscular weakness and mental fatigue,

From: SAX

OILS, MISCELLANEOUS: MINERAL

in cutting oil

6-19-90 FIC 0602 SA

OMN

Common Synonyms	Oily liquid	Colorless	Odorless
White oil Liquid Petrolatum	Floats on water.		

Stop discharge if possible.
Call fire department.
Avoid contact with liquid.
Isolate and remove discharged material.
Notify local health and pollution control agencies.

Fire

Combustible.
Extinguish with dry chemical, foam or carbon dioxide.
Water may be ineffective on fire.
Cool exposed containers with water.

Exposure

CALL FOR MEDICAL AID.

LIQUID
Irritating to skin and eyes.
Remove contaminated clothing and shoes.
Flush affected areas with plenty of water.
IF IN EYES, hold eyelids open and flush with plenty of water.
IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk.
DO NOT INDUCE VOMITING.

Water Pollution

Effect of low concentrations on aquatic life is unknown.
Fouling to shoreline.
May be dangerous if it enters water intakes.

Notify local health and wildlife officials.
Notify operators of nearby water intakes.

1. RESPONSE TO DISCHARGE

(See Response Methods Handbook)

Mechanical containment
Should be removed
Chemical and physical treatment

2. LABEL

2.1 **Category:** None
2.2 **Class:** Not pertinent

3. CHEMICAL DESIGNATIONS

3.1 **CG Compatibility Class:** Miscellaneous Hydrocarbon Mixtures
3.2 **Formula:** Not applicable
3.3 **IMO/UN Designation:** 3.3/1270
3.4 **DOT ID No.:** 1270
3.5 **CAS Registry No.:** Data not available

4. OBSERVABLE CHARACTERISTICS

4.1 **Physical State (as shipped):** Liquid
4.2 **Color:** Colorless
4.3 **Odor:** Very faint

5. HEALTH HAZARDS

5.1 **Personal Protective Equipment:** Goggles or face shield.
5.2 **Symptoms Following Exposure:** Ingestion of liquid can cause very loose bowel movements.
5.3 **Treatment of Exposure:** EYES: wash with water.
5.4 **Threshold Limit Value:** 5 mg/m³ (mist)
5.5 **Short Term Inhalation Limits:** Not pertinent
5.6 **Toxicity by Ingestion:** Grade 1; LD_{50} = 5 to 15 g/kg
5.7 **Late Toxicity:** None
5.8 **Vapor (Gas) Irritant Characteristics:** None
5.9 **Liquid or Solid Irritant Characteristics:** None
5.10 **Odor Threshold:** Not pertinent
5.11 **IDLH Value:** Data not available

6. FIRE HAZARDS

6.1 **Flash Point:** 380°F O.C.
6.2 **Flammable Limits in Air:** Data not available
6.3 **Fire Extinguishing Agents:** Dry chemical, foam, or carbon dioxide
6.4 **Fire Extinguishing Agents Not to be Used:** Water or foam may cause frothing.
6.5 **Special Hazards of Combustion Products:** Not pertinent
6.6 **Behavior in Fire:** Not pertinent
6.7 **Ignition Temperature:** 500—700°F
6.8 **Electrical Hazard:** Not pertinent
6.9 **Burning Rate:** 4 mm/min.
6.10 **Adiabatic Flame Temperature:** Data not available
6.11 **Stoichiometric Air to Fuel Ratio:** Data not available
6.12 **Flame Temperature:** Data not available

7. CHEMICAL REACTIVITY

7.1 **Reactivity With Water:** No reaction
7.2 **Reactivity with Common Materials:** No reaction
7.3 **Stability During Transport:** Stable
7.4 **Neutralizing Agents for Acids and Caustics:** Not pertinent
7.5 **Polymerization:** Not pertinent
7.6 **Inhibitor of Polymerization:** Not pertinent
7.7 **Molar Ratio (Reactant to Product):** Data not available
7.8 **Reactivity Group:** 33

8. WATER POLLUTION

8.1 **Aquatic Toxicity:** Data not available
8.2 **Waterfowl Toxicity:** Data not available
8.3 **Biological Oxygen Demand (BOD):** Data not available
8.4 **Food Chain Concentration Potential:** None

9. SHIPPING INFORMATION

9.1 **Grades of Purity:** Commercial; refined
9.2 **Storage Temperature:** Ambient
9.3 **Inert Atmosphere:** No requirement
9.4 **Venting:** Open (flame arrester)

10. HAZARD ASSESSMENT CODE

(See Hazard Assessment Handbook)

A-T-U

11. HAZARD CLASSIFICATIONS

11.1 **Code of Federal Regulations:** Not listed
11.2 **NAS Hazard Rating for Bulk Water Transportation:** Not listed
11.3 **NFPA Hazard Classification:**

Category	Classification
Health Hazard (Blue)	0
Flammability (Red)	1
Reactivity (Yellow)	0

12. PHYSICAL AND CHEMICAL PROPERTIES

12.1 **Physical State at 15°C and 1 atm:** Liquid
12.2 **Molecular Weight:** Not pertinent
12.3 **Boiling Point at 1 atm:** Very high
12.4 **Freezing Point:** Not pertinent
12.5 **Critical Temperature:** Not pertinent
12.6 **Critical Pressure:** Not pertinent
12.7 **Specific Gravity:** 0.822 at 20°C (liquid)
12.8 **Liquid Surface Tension:** 27 dynes/cm = 0.027 N/m at 20°C
12.9 **Liquid Water Interfacial Tension:** 47 dynes/cm = 0.047 N/m at 70°C
12.10 **Vapor (Gas) Specific Gravity:** Not pertinent
12.11 **Ratio of Specific Heats of Vapor (Gas):** Not pertinent
12.12 **Latent Heat of Vaporization:** Not pertinent
12.13 **Heat of Combustion:** Data not available
12.14 **Heat of Decomposition:** Not pertinent
12.15 **Heat of Solution:** Not pertinent
12.16 **Heat of Polymerization:** Not pertinent
12.25 **Heat of Fusion:** Data not available
12.26 **Limiting Value:** Data not available
12.27 **Reid Vapor Pressure:** Data not available

NOTES

in cutting oil

CHRIS VOL. III

WASTE-DISPOSAL METHODS

The disposal methods outlined below are intended only as guides. We do not assume responsibility for their use. Careful consideration must be given to the chemical and physical properties of the substance. In addition, local laws and regulations may preclude the use of these methods which are primarily designed for small quantities. Observe all federal, state, and local laws.

The disposal of some chemicals may require deactivation or modification of the material by chemical means. Chemical waste-disposal reactions must be handled with the same care and consideration used with synthetic procedures. Appropriate consideration must be given to reaction conditions, *i.e.*, stoichiometry, order and rate of addition, heat of reaction, evolution of gaseous products, pH, efficiency of stirring, rate of reaction, atmospheric sensitivity, etc.

Chemical waste-disposal reactions should be carried out in a chemical fume hood and in appropriate laboratory glassware. Because these reactions are often vigorous, protective safety equipment such as safety goggles, respirator, gloves, face and/or safety shield and other protective equipment must be used.

Initial reactions in a disposal sequence should be carried out on a small scale (5-10g). The reactant concentrations should not exceed 10% of the reaction volume and the final reaction volume should not exceed 50% of the working capacity of the reaction vessel, regardless of the reaction scale. Larger quantities of the material should be handled in several small-size reactions. To ensure completion of reaction, the waste disposal procedure should be run for at least an additional 4 to 8 hours after all materials have been mixed.

All reactions should be run by technically qualified persons familiar with the potential hazards of the chemical reactions.

A Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

B The material should be ignited in the presence of sodium carbonate and slaked lime (calcium hydroxide). The substance should be mixed with vermiculite and then with the dry caustics, wrapped in paper and burned in a chemical incinerator equipped with an afterburner and scrubber.

C This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber.

D Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable.

E To a solution of the product in water, add an excess of dilute sulfuric acid. Let stand overnight. Remove any insolubles and bury in a landfill site approved for hazardous-waste disposal.

F Cautiously dissolve the material in water. Neutralize immediately with sodium carbonate or, if the material does not dissolve completely, add a little hydrochloric acid followed by sodium carbonate. Add calcium chloride in excess of the amount needed to precipitate the fluoride and/or carbonate. Separate the insolubles and bury in a landfill site approved for hazardous-waste disposal.

G Under an inert atmosphere, cautiously add the material to dry butanol in an appropriate solvent. The chemical reaction may be vigorous and/or exothermic. Provisions must be made for venting of large volumes of highly flammable hydrogen and/or hydrocarbon gases. Neutralize the solution with aqueous acid. Filter off any solid residues for disposal as hazardous waste. Burn the liquid portion in a chemical incinerator equipped with an afterburner and scrubber.

H Neutralize the solution and add filtering agent (10g per 100ml). Evaporate the liquid and bag the residual solid for burial in a landfill site approved for hazardous-waste disposal.

I Dissolve the solid in (or dilute the solution with) a large volume of water. Carefully add a dilute solution of acetic acid or acetone to the mixture in a well ventilated area. Provisions should be made to vent safely the hydrogen gas given off during the decomposition. Check acidity of the solution and adjust to pH 1 if necessary. Let stand overnight. Neutralize the solution (pH 7). Evaporate the solution and bury the residue in a landfill site approved for hazardous-waste disposal.

J Cautiously acidify a 3% solution or a suspension of the material to pH 2 with sulfuric acid. Gradually add a 50% excess of aqueous sodium bisulfite with stirring at room temperature. An increase in temperature indicates that a reaction is taking place. If no reaction is observed on the addition of 10% of the sodium bisulfite solution, initiate it by cautiously adding more acid. If manganese, chromium, or molybdenum is present, adjust the pH of the solution to 7 and treat with sulfide to precipitate for burial as hazardous waste. Destroy excess sulfide, neutralize and flush solution down the drain.

K Please contact the Technical Services Department. Be sure to mention name, catalog number and quantity of the material.

L The material should be dissolved in 1) water; 2) acid solution or 3) oxidized to a water-soluble state. Precipitate the material as the sulfide, adjusting the pH of the solution to 7 to complete precipitation. Filter the insolubles and dispose of them in a hazardous-waste site. Destroy any excess sulfide with sodium hypochlorite. Neutralize the solution before flushing down the drain.

M A slurry of the arenediazonium salt with water can be disposed of by adding it gradually to a stirred solution of 5-10% excess 2-naphthol in 3% aqueous sodium hydroxide at 0-20°C. After 12 hours, the resulting azo dye is filtered and either incinerated or buried in a landfill site approved for hazardous-waste disposal. Neutralize the remaining solution before disposal.

N For small quantities: cautiously add to a large stirred excess of water. Adust the pH to neutral, separate any insoluble solids or liquids and package them for hazardous-waste disposal. Flush the aqueous solution down the drain with plenty of water. The hydrolysis and neutralization reactions may generate heat and fumes which can be controlled by the rate of addition.

O Bury in a landfill site approved for the disposal of chemical and hazardous waste.

P Material in the elemental state should be recovered for reuse or recycling.

Q Cautiously make a 5% solution of the material in water or dilute acid. There may be a vigorous, exothermic reaction and fumes may be generated due to the hydrolysis of the material. Control any reaction by cooling and by the rate of addition of the material. Gradually add dilute ammonium hydroxide to pH 10. Filter off any precipitate for disposal in a chemical landfill. If there is no precipitation, gradually adjust the pH from 10 to 6, stopping when precipitation occurs.

R Catalysts and expensive metals should be recovered for reuse or recycling.

S Treat a dilute basic solution (pH 10-11) of the material with a 50% excess of commercial laundry bleach. Control the temperature by the addition rate of bleach and adjust pH if necessary. Let stand overnight. Cautiously adjust solution to pH 7. Vigorous evolution of gas may occur. Filter any solids for burial in a chemical landfill. Precipitate any heavy metals by addition of sulfide and isolate for burial. Additional equivalents of hypochlorite may be needed if the metal can be oxidized to a higher valence state. For metal carbonyls, the reaction should be carried out under nitrogen.

T Cautiously make a 5% solution of the product in water; vent because of possible vigorous evolution of flammable hydrogen gas. Acidify the solution to pH 1 by adding 1*M* sulfuric acid dropwise. Acidification will cause vigorous evolution of hydrogen gas. Allow the solution to stand overnight. Evaporate the solution to dryness and bury the residue in a landfill site approved for hazardous-waste disposal.

U Take the material (or a solution) and make a 5% solution in tetrahydrofuran. Cautiously add the solution dropwise to an ice-cooled, stirred basic solution of commercial bleach. Oxidation may release flammable hydrocarbon gases which must be vented. Let stand overnight. Adjust the pH to 7 and destroy excess hypochlorite with sodium bisulfite before disposal of the solution.

V Under an inert atmosphere cautiously add dry butanol or a mixture of dry butanol in an appropriate solvent, to a solution of the material in tetrahydrofuran. The chemical reaction may be vigorous and/or exothermic. Provisions must be made for the venting of a large volume of flammable hydrogen gas. When gas evolution ceases, cautiously add a basic hypochlorite solution dropwise to the reaction solution. Let stand overnight. Neutralize the solution and treat with sodium bisulfite to destroy any excess hypochlorite. Filter any solids for burial in a landfill site approved for hazardous-waste disposal.

These recommendations are intended only as guides. Sigma-Aldrich shall not be held liable for any damage resulting

THE SIGMA-ALDRICH LIBRARY OF CHEMICAL SAFETY DATA

Explanation of Codes

PROCEDURES FOR SPILLS OR LEAKS

1 Absorb on sand or vermiculite and place in closed container for disposal.
2 Cover with dry lime, sand, or soda ash. Place in covered containers using nonsparking tools and transport outdoors.
3 Shut off all sources of ignition.
4 Evacuate area.
5 Cover with an activated carbon adsorbent, take up and place in closed container. Transport outdoors.
6 Ventilate area and wash spill site after material pickup is complete.
7 Sweep up, place in a bag and hold for waste disposal.
8 Avoid raising dust.
9 Wear self-contained breathing apparatus, rubber boots and heavy rubber gloves.
10 Wear respirator, chemical safety goggles, rubber boots and heavy rubber gloves.
11 Cover with dry lime or soda ash, pick up, keep in a closed container and hold for waste disposal.
12 Carefully sweep up and remove.
13 Flush spill area with copious amounts of water.
14 Mix with solid sodium bicarbonate.
15 Place in appropriate container.
16 Wear protective equipment.
17 Wash spill site with soap solution.
18 Please contact the Technical Services Department. Be sure to mention the name and catalog number of the material.

FIRE-EXTINGUISHING MEDIA

1 Carbon dioxide.
2 Dry chemical powder.
3 Water spray.
4 Alcohol or polymer foam.
5 Class D fire-extinguishing material only.
6 Water may be effective for cooling, but may not effect extinguishment.
7 Carbon dioxide, dry chemical powder, alcohol or polymer foam.
8 Foam and water spray are effective but may cause frothing.
9 Do not use dry chemical powder extinguisher on this material.
10 Do not use carbon dioxide extinguisher on this material.
11 Noncombustible.
12 Do not use water.
13 Use extinguishing media appropriate to surrounding fire conditions

Z14,866-0

Sigma-Aldrich Corporation, P.O. Box 355, Milwaukee, Wisconsin 53201 USA
(Sigma: 314-771-5765; Aldrich: 414-273-3850)

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SITE DOSIMETER LOG

PROJECT/PAN # FIL06025A SITE NAME TEXACO INC. SALES TERM 33083

SITE SAFETY OFFICER S. STEVENSON WEEK OF 6-25-90

NAME AND DOSIM. #	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
M. PHILLIPS # 236							
D. SULLIVAN # 207							
S. SENGER # 217							
S. STEVENSON # 270							
R. BUGG # 128							

To the nearest half-hour, record time spent downrange as "S" (e.g., S:2.5hrs), time spent in active PDS operation as "P", and any time spent downrange in rescue activity as "R".

HS005(2/24/89)

Warehouse Phone (312) 775-7763

F. EQUIPMENT CHECKLIST

Job/PAN FT1305/ FIL06025A

Team Leader SULLIVAN

PROTECTIVE GEAR

Level A	No.	Level B	No.
SCBA		SCBA	1
SPARE AIR TANKS		SPARE AIR TANKS	
ENCAPSULATING SUIT (Type _____)		PROTECTIVE COVERALL: Type _____ SM _____ M _____ L _____	
SURGICAL GLOVES (Latex)		BUTYL APRON	
NEOPRENE SAFETY BOOTS		SURGICAL GLOVES (LATEX)	
BOOTIES (Latex)		GLOVES: Type _____ SM _____ M _____ L _____	
GLOVES: Type _____ SM _____ M _____ L _____		NEOPRENE SAFETY BOOTS	
OUTER WORK GLOVES		BOOTIES (LATEX)	
CASCADE SYSTEM		HARD HAT	
5-MINUTE ESCAPE MASK		FACE SHIELD	
COOLING VEST		MANIFOLD SYSTEM WITH AIRLINE	
HARD HAT		CASCADE SYSTEM	
		RAIN SUIT	
Level C		OUTER WORK GLOVES	
ULTRA-TWIN RESPIRATOR	✓		
POWER AIR PURIFYING RESPIRATOR		**Level D**	
CARTRIDGES (Type GMC H)	2 BOXES	ULTRA-TWIN RESPIRATOR (Available)	✓
PROTECTIVE COVERALL: Type SARANEX SM _____ L 6 XL 6		CARTRIDGES (Type GMC-H)	
BUTYL APRON		5-MINUTE ESCAPE MASK (Available)	2
SURGICAL GLOVES (LATEX)	1 BOX	PROTECTIVE COVERALL: Type TYVEX SM _____ M _____ L 6 XL 6	
GLOVES: Type NITRILE SM _____ M _____ L 8 PAIR		OUTER WORK GLOVES nitrile	✓
OUTER WORK GLOVES		HARD HAT * neoprene gloves for sampler.	✓
HARD HAT	✓	FACE SHIELD	
FACE SHIELD		RAIN SUIT	✓
HARDHAT		WINTER BOOTS	
RAIN SUIT	✓	BOOTIES (LATEX)	✓
NEOPRENE SAFETY BOOTS		NEOPRENE SAFETY BOOTS	
BOOTIES (LATEX) XL	8 PAIR	STEEL TOED BOOTS	✓
STEEL TOED BOOTS	✓	SAFETY GLASSES	✓

Pe TYVEK for M.W. Sampling

HS017(03/07/89)

INSTRUMENTATION	No.
OVA	1
THERMAL DESORBER	
O2/EXPLOSIMETER W/CAL. KIT	1
PHOTOVAC TIP	
HNu (Probe 10.2 OR 11.7)	
MAGNETOMETER	
PIPE LOCATOR	
WEATHER STATION	
DRAEGER PUMP, TUBES HCN	* IF MONITOX UNAVAILABLE
BRUNTON COMPASS	
MONITOX CYANIDE	1
HEAT STRESS MONITOR	
NOISE EQUIPMENT _____	
PERSONAL SAMPLING PUMPS (Type _____)	
DUST MONITOR (MDA OR GCA System)	
RADIATION EQUIPMENT	
TLD BADGES	✓
DOCUMENTATION FORMS	1
PORTABLE RATEMETER	
SCALER/RATEMETER	
NaI Probe	
ZnS Probe	
GM Pancake Probe	
GM Side Window Probe	
MICRO R METER / RAD-MINI	1
ION CHAMBER	
ALERT DOSIMETER	
POCKET DOSIMETER	
FIRST AID EQUIPMENT	
FIRST AID KIT	1
OXYGEN ADMINISTRATOR	
STRETCHER	
PORTABLE EYE WASH	1
BLOOD PRESSURE MONITOR	
FIRE EXTINGUISHER	1

DECON EQUIPMENT	No.
WASH TUBS	1
BUCKETS	1
SCRUB BRUSHES	2
PRESSURIZED SPRAYER	
DETERGENT (Type ALCONOX)	1
SOLVENT (Type _____)	
PLASTIC SHEETING	
TARPS AND POLES	
TRASH BAGS	✓
TRASH CANS	
MASKING TAPE	
DUCT TAPE	
PAPER TOWELS	
DUST MASK	10
FACE MASK SANITIZER	✓
FOLDING CHAIRS	
STEP LADDERS	
DISTILLED WATER	✓
SAMPLING EQUIPMENT	
80 OZ. AMBER GLASS BOTTLES	18
1 L. AMBER GLASS BOTTLES	
40 ML. VIALS	24
1 L. PLASTIC	24
8 OZ. GLASS	16
120 ML. GLASS	16
SPOONS	3
KNIVES	
FILTER PAPER	✓
PERSONAL SAMPLING PUMP SUPPLIES	
BUCK CALIBRATOR	
HAND BAILERS	✓
THIEVING RODS WITH BULBS	
DIOXIN SAMPLE KIT	
PRESERVATIVES: HNO3 6 NaOH 6 other ___	✓
STRING	✓

HS017(03/07/89)

VAN EQUIPMENT	No.
TOOL KIT	1
HYDRAULIC JACK	1
LUG WRENCH	1
TOW CHAIN	
VAN CHECK OUT	
Gas	
Oil	
Antifreeze	
Battery	
Windshield Wash	
Tire Pressure	
MISCELLANEOUS	
CHALK	✓
LEVEL/TRIPOD AND ROD	
BOWLS	3
PITCHER PUMP	
SURVEYOR'S TAPE	✓
100 FIBERGLASS TAPE	
300 NYLON ROPE	✓
NYLON STRING	
SURVEYING FLAGS	
FILM	1 ROLL
WHEEL BARROW	
BUNG WRENCH	1
SOIL AUGER	
PICK	✓
SHOVEL	✓
CATALYTIC HEATER	
PROPANE GAS	
BANNER TAPE	
SURVEYING METER STICK	
CHAINING PINS & RING	
TABLES	
WEATHER RADIO	
BINOCULARS	
MEGAPHONE	

MISCELLANEOUS (Cont.)	No.
HEARING PROTECTION	✓
LIFE VESTS	
WALKIE-TALKIE	
CONDUCTIVITY METER	✓
PH METER	✓
CAMERA	✓
WATER-LEVEL INDICATOR	✓
SPLIT SPOON SAMPLERS	
PVC HAND PUMP	
RESISTIVITY METER	
WELL POINT SAMPLER	
ROBAIR PUMP SYSTEM	
THERMOMETER	✓
MASTERFLEX PUMP & FILTER APPARATUS	✓
SHIPPING EQUIPMENT	
COOLERS	6
PAINT CANS WITH LIDS, 7 CLIPS EACH	
VERMICULITE	✓
SHIPPING LABELS	
DOT LABELS: "DANGER"	
"UP"	
"INSIDE CONTAINER COMPLIES ..."	
"HAZARD GROUP"	
STRAPPING TAPE	
BOTTLE LABELS	
BAGGIES	
CUSTODY SEALS	
CHAIN-OF-CUSTODY FORMS	
FEDERAL EXPRESS FORMS	✓
CLEAR PACKING TAPE	
POWER AUGER MAY BE USED	✓

ecology and environment, inc.

ON-SITE SAFETY MEETING

Project TEXACO INC. SALES TERM. 33086 TDD/Plan F05-8903-010/FIL06025A

Date 6-26-90 Time _____ Job No. FT 1305

Address _____

Specific Location _____

Type of Work COLLECTION OF SIX (6) SOIL SAMPLES AT DEPTH OF 4-6 FEET

SAFETY TOPICS PRESENTED

Protective Clothing/Equipment _____

Chemical Hazards _____

Radiation Hazards _____

Physical Hazards _____

Emergency Procedures _____

Hospital/Clinic _____ Telephone _____

Hospital Address _____

Special Equipment _____

Other _____

Checklist

1. Emergency information reviewed? _____ and made familiar to all team members? _____
2. Route to nearest hospital driven? _____ and its location known to all team members? _____
3. Site safety plan readily available and its location known to all team members? _____

Meeting shall be attended by all personnel who will be working within the exclusion area. Daily informal update meetings will be held when site tasks and/or conditions change.

ATTENDEES

(Expand on back of sheet if necessary)

Name Printed	Signature
RON BUGG	
MICHAEL PHILLIPS	
STANLEY SENGER	
SHERRIE STEVENSON	
DANIEL SULLIVAN	

Meeting Conducted by: _____ (Print) _____ (Signature)

_____ (Site Safety Coordinator) _____ (Team Leader)

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ECOLOGY AND ENVIRONMENT, INC. - CHICAGO
ON-SITE SAFETY LOG

Name: TEXACO INC. SALES TERM. 33083 PAN #/Job #: FIL0602SA / FT1305
Date: 6-26-90 Weather

	Equipment (Circle All Used)	ID#	Calibration/ Operation Check	Initials and Date	Background Readings	On-Site Readings
1.	OVA					
	HNu					
	Photovac Tip					
2.	O_2 Meter					
	Explosimeter					
	Combo Meter					
3.	Rad-Mini					
	Monitor 4					
4.	HCN Draeger					
	Monitox					
5.	Other:					

Attendees At Site:

Protective Clothing Worn:

Comments on Monitoring or Protective Clothing:

Team Leader DANIEL SULLIVAN
Name Signature/Date

Site Safety Officer SHERRIE STEVENSON
Name Signature/Date

Please submit original to Laura Evans, and a copy to the project file.

HS018E(6/11/90)

Vehicle Safety Checklist
Ecology & Environment, Inc.
Chicago Office

Date: _____ Time: _____ Odometer: _____

Vehicle Model: _____ Color: _____ License Plate No. _____

INTERIOR:
____ All Safety Belts-Proper Locking
____ Parking Brake

START ENGINE:
____ Oil Pressure
____ Instrument Panel (Warning Lights or Buzzers)
____ Horn
____ Windshield Wiper & Washer
____ Heater/Defroster
____ Mirrors
____ Steering (Loose)
____ Interior Lights
____ Emergency Flashers
____ Starts Properly

FRONT:
____ Headlights (Dim/Bright)
____ Turn Signals
____ Emergency Flashers

REAR:
____ Tail Lights
____ Brake Lights
____ Back up Lights
____ Turn Signals
____ Emergency Flashers

MECHANICAL OPERATION:
____ Engine (misses, knocks, etc.)
____ Check Oil
____ Water/Anti-freeze
____ Wiper Fluid
____ Brake Fluid

OUTSIDE:
____ Tires (properly inflated)
____ Gas Tank Cap

EMERGENCY EQUIPMENT:
____ Fire Extinguisher
____ First Aid Kit
____ Flags, Flares,
____ Spare tire (properly inflated)
____ Tire Changing Kit (jack, tools, etc.)

REMARKS:
_____
_____
_____
_____
_____
_____
_____
_____

TEAM MEMBER/OPERATOR: _____ / _____
(print name) signature

SITE NAME/ADDRESS: TEXACO INC. SALES TERM 33083

PAN/JOB NUMBER: FIL0602

RETURN OF VEHICLE TO DUTY STATION

Vehicle Cleanliness: _____
Remarks: _____
_____
_____
_____

Corrections Necessary: _____
_____

TEAM MEMBER/OPERATOR: _____ / _____
(print name) signature

Date: _____ Time: _____ Odometer: _____

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ON-SITE SAFETY MEETING

Project: TEXACO INC. SALES TERM. 33086 TOD/PAN: F05-8903-010/FIL06025A

Date: 6-26-90 Time: 9:45 am Job No.: FT 1305

Address:

Specific Location:

Type of Work: COLLECTION OF SIX (6) SOIL SAMPLES AT DEPTH OF 4-6 FEET monitoring well samples.

SAFETY TOPICS PRESENTED

Protective Clothing/Equipment: 1. Safety glasses 2. Tyvek for M.W.'s as well as other tasks Sun Screen 3. Saranex for Monitoring Wells - APR for Venting. Nitrile gloves for Sampling, Neoprene for Sampler Steel toe boot (Booties)

Chemical Hazards: Suspect: Diesel fuel, Lubricating oils Hydraulic oil Machine Cutting oil, Ethylene Glycol, Benzene Flammable, combustible liquids Lead

Radiation Hazards: None expected

Physical Hazards: Splash from monitoring wells, Heat stress Noise - ear plugs if necessary. River, Berms

Emergency Procedures: First aid kit on cooler. Fire extinguisher in back of Bulwagon. Exit site R on Washington across Franklin St Bridge take it to Glendale turn (left) to Jackson to Glen Oak - R on Glen Oak to hospital

Hospital/Clinic: St Frances Medical Center Telephone: (309) - 655-2000

Hospital Address: 519 N.E. Glen Oak Ave. Peoria, Ill.

Special Equipment: Heat stress monitor - Heat stress will be monitored by everyone as well as by the equipment

Other: thermometers

Checklist

1. Emergency information reviewed? ✓ and made familiar to all team members? ✓
2. Route to nearest hospital driven? ✓ and its location known to all team members? ✓
3. Site safety plan readily available and its location known to all team members? ✓

Meeting shall be attended by all personnel who will be working within the exclusion area. Daily informal update meetings will be held when site tasks and/or conditions change.

ATTENDERS
(Expand on back of sheet if necessary)

Name Printed	Signature
RON BUGG	Ron Bugg
MICHAEL PHILLIPS	Mac Phillips
STANLEY SENGER	Stanley A Senger
SHERRIE STEVENSON	Sherrie Stevenson
DANIEL SULLIVAN	Daniel Sullivan

Meeting Conducted by: SHERRIE STEVENSON (Print) Sherrie M Stevenson (Signature)

Sherrie M Stevenson (Site Safety Coordinator) Daniel Sullivan (Team Leader)

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ECOLOGY AND ENVIRONMENT, INC. - CHICAGO

ON-SITE SAFETY LOG

Name: TEXACO INC. SALES TERM. 33083 PAN #/Job #: FIL0602SA / F71305

Date: 6-26-90 Weather Sunny, Dry - 90°F.

	Equipment (Circle All Used)	ID#	Calibration/ Operation Check	Initials and Date	Background Readings	On-Site Readings
1.	OVA	A	OK Marker	SMS 6/26/90	1 ppm	* None above except 1.4 ppm (M.W)
	HNu					
	Photovac Tip					
2.	O_2 Meter	A	OK 21% O2	SMS 6/26/90	21% O2	21%
	Explosimeter	B	OK 40% LEL methane	SMS 6/26/90	0% LEL	0% LEL
	Combo Meter					
3.	Rad-Mini Monitor 4	G	OK-marker	SMS 6/26/90	13 ppm	None above Background
4.	HCN Draeger Monitox	A/D	OK 10 ppm alarm	SMS 6/26/90	0 ppm	0 PPM
5.	Other: Heat Stress Monitor	1116	OK Battery check	SMS 6/26/90	DBT - 81.8F Wet - 70.8F Globe - 89.7F WBGT - 75.6F	See Report.

Attendees At Site: Sherrie Stevenson, Dan Sullivan, Ron Bugg, Mike Phillips, Stan Senger

Protective Clothing Worn: Tyvek for ucon, booties taping. APR for M.W Venting, Saranex for M.W Sampling. Tyvek for soil Samples Saran glasses for M.W. Sampling.

Comments on Monitoring or Protective Clothing: * Readings in bore hole - 8-10 ppm. None in Breathing zone (Vapors Vented)

Team Leader DANIEL SULLIVAN — Daniel Sullivan

Name — Signature/Date

Site Safety Officer SHERRIE STEVENSON — Sherrie Stevenson

Name — Signature/Date

Please submit original to Laura Evans, and a copy to the project file.

HS018E(6/11/90)