IL-0153-04A
RS-8303-1B

ECOLOGY AND ENVIRONMENT, INC.
FIELD INVESTIGATION TEAM
SITE SAFETY PLAN

EPA Region 5 Records Ctr.

959039

A. GENERAL INFORMATION

SITE: Mobil Chemical Co. (Phos. Div) TDD NO: RS-8303-1B

WSTS NO: 05-IL-015 3

LOCATION: Depot & Marquette Streets DePue IL

PLAN PREPARED BY: Mike McCarrin DATE: 3/19/84

APPROVED BY: [signature] (4-24-84) DATE: 4-24-84

OBJECTIVE(include description of work to be performed):
On-site inspection with possible sampling to confirm information for HRS. (Sample type - soil, groundwater, and surface.)

PROPOSED DATE OF INVESTIGATION: May, 1984

BACKGROUND REVIEW: Complete: ____ Preliminary: X

DOCUMENTATION/SUMMARY: OVERALL HAZARD: Serious: ____ Moderate: ____
Low: X Unknown: ____

B. SITE/WASTE CHARACTERISTICS

WASTE TYPES(S): Liquid X Solid X Sludge ____ Gas ____

CHARACTERISTIC(S): Corrosive X Ignitable ____ Radioactive X
Volatile ____ Toxic X Reactive ____ Unknown ____ Other (Name) ____

FACILITY DESCRIPTION: An operating fertilizer manufacturing plant used to make sulfuric acid, phosphoric acid, and diammonium phosphate

Principal Disposal Method (type and location): Lagoon and landfill on site

Unusual Features (dike integrity, power lines, terrain, etc.) Possible dikes around lagoons and undoubtedly overhead power lines

Status: (active, inactive, unknown) Site has been used as a process facility of some sort or another since prior to 1900's.

History: (Worker or non-worker injury; complaints from public; previous agency action): Numerous acid releases have been reported throughout its history. At least one fish kill has been reported and 1 person died and 2 others were injured allegedly as a result from an acid release from this plant.

C. HAZARD EVALUATION

(Use Hazard Evaluation of Chemicals sheets for specific or representative chemicals present.): Specific process areas may pose a hazard however most of our work will be in areas removed from the process plant. If we need to be in these areas, protection equivalent to the site's operators will be used. The most immediate hazards involve coming in contact w/ the process acids. Radioactive ores are often associated with the process ores used @ this plant. No specific discharges are handled or disposed as "radioactive".

D. SITE SAFETY WORK PLAN

PERIMETER ESTABLISHMENT: Map/Sketch Attached Yes Site Secured? Yes

Perimeter Identified? Yes Zone(s) of Contamination Identified? No

On site personnel will be contacted to ascertain best access routes to inspection areas.

PERSONAL PROTECTION

Level of Protection: A ___ B ___ C ___ D X

Modifications: Possible use of acid suits if necessary. Rubber boots.

Surveillance Equipment and Materials: Ph test will be conducted on water samples

Radiation Limits - to be monitored w/ mini-rad

If any radiation is detected, site will be evacuated, and RSC contacted.

DECONTAMINATION PROCEDURES: Wash all outside clothes + boots. Wash solutions will be disposed on location.

Special Equipment, Facilities, or Procedures: detergent, brush paper towels, garbage bags, water containers

SITE ENTRY PROCEDURES: Owner/operator will be contacted prior to inspection by letter. Onsite personnel will be interviewed @ time of inspection. Access to onsite areas will be as designated by company personnel

Team Member	Responsibility
(1) McCarrin	Crew
(2) Nelson	Crew
(3) Ventura	Crew
(5) Pachowitz	Sampler
(6) Longo	Site Safety Officer

WORK LIMITATIONS (Time of day, etc.): Usual precautions regarding heat stroke, frostbite, or sun stroke will be in effect.

INVESTIGATION-DERIVED MATERIAL DISPOSAL: All disposable items will be left at site. Wash solutions will be left on site in location @ plant managers choosing. Waste items will be double bagged and labeled "Potentially Hazardous"

E. EMERGENCY INFORMATION

LOCAL RESOURCES

Ambulance Spring Valley 663-0033
Hospital Emergency Room St. Margarets - 815-664-5311
Poison Control Center 800-322-5330
Police Department DePue 815-447-2137
Fire Department DePue 815-447-2112
Airport N/A
Explosives Unit N/A
EPA Contact Don Josephs (886-0393) (312)

SITE RESOURCES

Water Supply Water will be supplied by FIT
Telephone Onsite @ main office
Radio None

Other

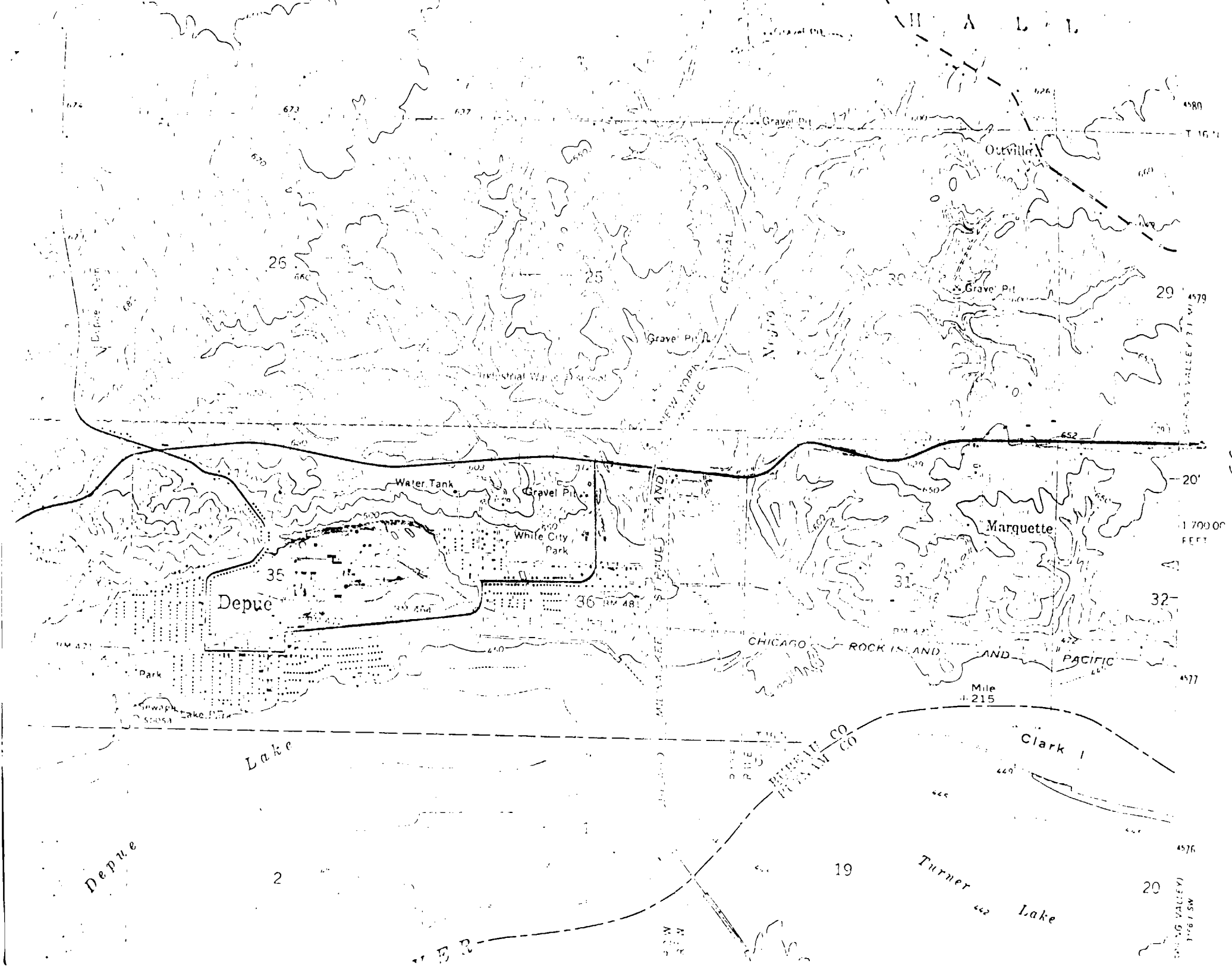
EMERGENCY CONTACTS

1. Dr. Raymond Harbison (Univ. of Arkansas)....(501) 661-5766 or (501) 661-5767
   MED-TOX.....(501) 370-8263 (24 Hours)
2. Regional Safety Coodinator - Paul Moss .....(312) 663-9415 (office) (312) 358-9342 (home)
3. FIT Leader - Joseph Petrilli.....(312) 561-7639
4. FIT Office.....(312) 663-9415
5. E & E 24 Hour Call Line.....(716) 882-2804 (24 Hours; Call Forwarding)
6. Regional Health Maintenance Program Contact.PMI - (312) 832-8820
   8:00 a.m. - 5:00 p.m.
7. E & E Emergency Paging System.....(716) 882-2804
8. 24 Hour Hot Line for Corporate Response Team (716) 631-9531
9. Dave Dahlstrom.....(716) 741-2384 (home)
   Corporate Safety Director (716) 632-4491 (office)
10. Ecology and Environment, Inc. NPMO .....(703) 522-6065

F. EMERGENCY ROUTES

(Give road or other directions; attach map)

Hospital: St. Margaret's Hospital (600 E. 1st Str., Spring Valley) Marquette St. east to Rt. 29 east to Spring Valley.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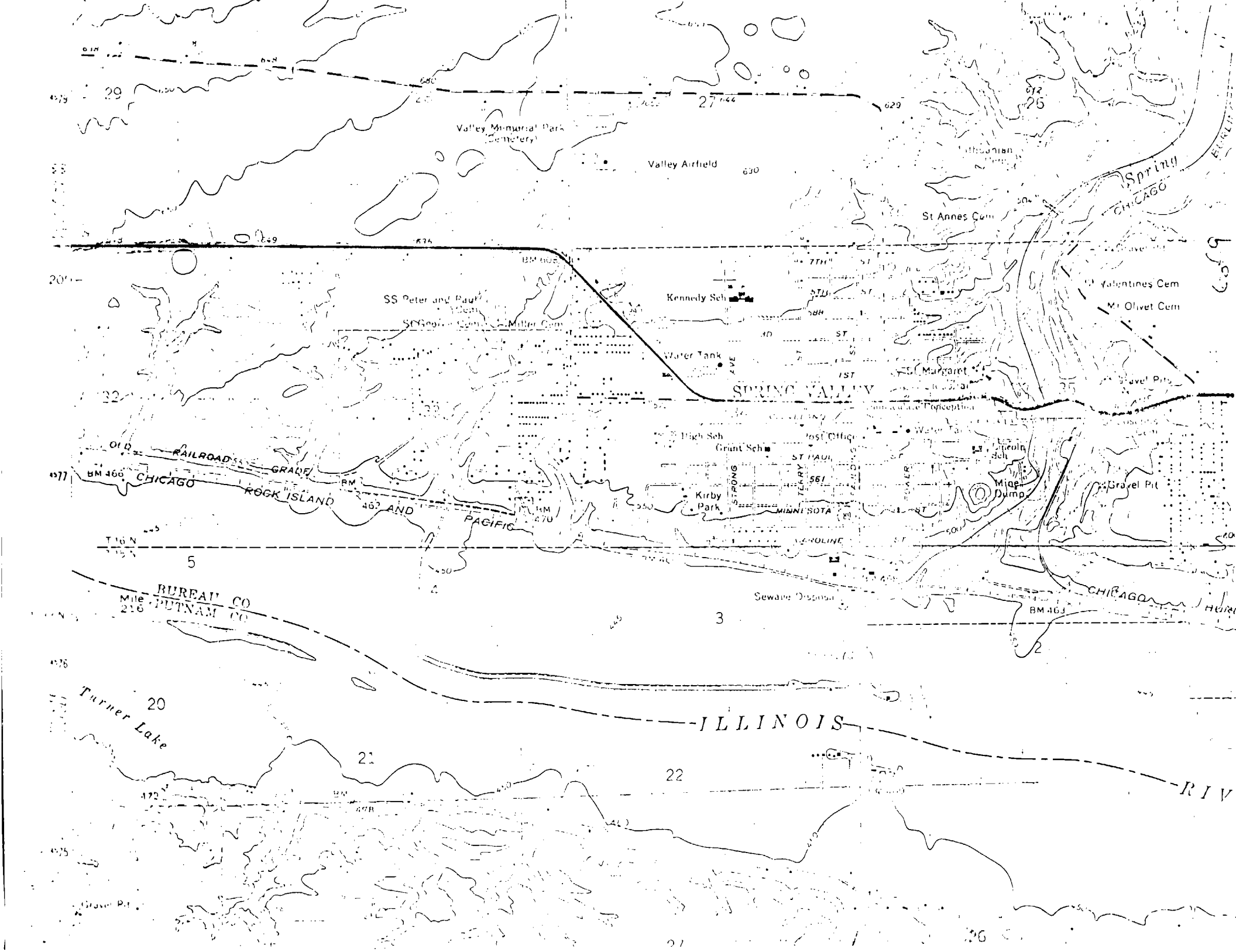
Valley Memorial Park Cemetery
Valley Airfield
St Annes Cem
Spring
CHICAGO
Valentines Cem
Mt Olivet Cem
SS Peter and Paul Cem
Kennedy Sch
Water Tank
St Margaret
SPRING VALLEY
High Sch
Post Office
Grant Sch
Lincoln Sch
Mine Dump
Gravel Pit
Kirby Park
MINNESOTA
CAROLINE
Sewage Disposal
BM 463
OLD RAILROAD GRADE
CHICAGO ROCK ISLAND AND PACIFIC
BM 466
BM 463
BM 470
T16N
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PUTNAM CO
Mile 216
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HAZARD EVALUATION OF CHEMICALS

Chemical Name Lead Date 4-22-84.

DOT Name Lead TDD Number 8303-10-153

CAS Number 7439-921

References Consulted (circle):

NIOSH/OSHA Pocket Guide Verschueren (Merck Index) Hazardline Chris (Vol. II)

(Toxic and Hazardous Safety Manual) ACGIH Other: Sax, Chemical Dictionary

Chemical Properties: (Synonyms: Plumbus)

Chemical Formula Pb Molecular Weight 207.21

Physical State Solid Solubility (H_2O) not soluble Boiling Point 1620°

Flash Point N/A Vapor Pressure/Density 1 mm @ 973° Freezing Point 327.43°

Specific Gravity 11.35 Odor/Odor Threshold Flammable Limits N/A

Incompatabilities soluble in weak acids, strong oxidizers

Biological Properties:

TLV-~~TWA~~ Fumes & Dust .2 mg/m³ / TWA = .15 mg/m³ PEL

IBLH variable Human Aquatic (Rat)/Mouse LD_{50} 1000 mg/kg

Route of Exposure Ingestion or inhalation of dust or fumes

Carcinogen suspected poison Teratogen Mutagen

Handling Recommendations: (Personal protective measures)

Adequate ventilation - no smoking or eating in the work area

Disposal/Waste Treatment:

Sort, classify and put in properly labeled box. Best disposal method is to salvage profitably for recycling

Health Hazards and First Aid:

Consult physician at Poison Control Center. Irrigate eyes immediately. Wash skin with soap. Induce vomiting if swallowed

Symptoms: Acute: Anorexia, Vomiting, Convulsions

Chronic: Weakness, loss of weight, metallic taste, anorexia, headache, dizziness, insomnia

375103

(12/83, DLD)

OIL

OILS: CRUDE

Common Synonyms
Petroleum

Oily liquid | Dark | Acrid odor

Floats on water. Flammable vapor may be produced.

Stop discharge if possible. Keep people away.
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.

VAPOR
Not irritating to eyes, nose, or throat.

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.

Water Pollution

HARMFUL TO AQUATIC LIFE IN VERY LOW 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 CG 446-4)

Mechanical containment
Should be removed
Chemical and physical treatment

2. LABELS

No hazard label required by
Code of Federal Regulations

3. CHEMICAL DESIGNATIONS

3.1 **Synonyms:** Petroleum
3.2 **Coast Guard Compatibility Classification:** Miscellaneous hydrocarbon mixtures
3.3 **Chemical Formula:** Not applicable
3.4 **IMCO/United Nations Numerical Designation:** 3.1/1267

4. OBSERVABLE CHARACTERISTICS

4.1 **Physical State (as shipped):** Liquid
4.2 **Color:** Dark
4.3 **Odor:** *Offensive; tarry*

5. HEALTH HAZARDS

5.1 ***Personal Protective Equipment:*** *Goggles or face shield, rubber gloves and boots*
5.2 **Symptoms Following Exposure:** May irritate eyes and skin
5.3 **Treatment for Exposure:** EYES: flush with water for at least 15 min. SKIN: wipe off and wash with soap and water
5.4 **Toxicity by Inhalation (Threshold Limit Value):** Data not available
5.5 **Short-Term Inhalation Limits:** Data not available
5.6 **Toxicity by Ingestion:** Data not available
5.7 **Late Toxicity:** Data not available
5.8 **Vapor (Gas) Irritant Characteristics:** Vapors are nonirritating to the eyes and throat
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

6. FIRE HAZARDS

6.1 **Flash Point:** Data not available
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 may be ineffective
6.5 **Special Hazards of Combustion Products:** Not pertinent
6.6 **Behavior in Fire:** Not pertinent
6.7 **Ignition Temperature:** Data not available
6.8 **Electrical Hazard:** Not pertinent
6.9 **Burning Rate:** 4 mm/min

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

8. WATER POLLUTION

8.1 **Aquatic Toxicity:** 3 ppm/*/fresh water fish/toxic/fresh water
200 ppm/24 hr/corals porites/20-90% normal response/salt water
*Time period not specified
8.2 **Waterfowl Toxicity:** Data not available
8.3 **Biological Oxygen Demand (BOD):** Data not available
8.4 **Food Chain Concentration Potential:** None

9. SELECTED MANUFACTURERS

1. Exxon Co
   Houston, Tex 77001
2. Shell Oil Co.
   1 Shell Plaza
   Houston, Tex 77001
3. Sun Oil Co
   St. Davids, Pa 19087

10. SHIPPING INFORMATION

10.1 **Grades or Purity:** Wide variety, depending on oil field where produced
10.2 **Storage Temperature:** Ambient
10.3 **Inert Atmosphere:** No requirement
10.4 **Venting:** Open (flame arrester)

11. HAZARD ASSESSMENT CODE

(See Hazard Assessment Handbook CG 446-3)

A-T-U

12. HAZARD CLASSIFICATIONS

12.1 **Code of Federal Regulations:** Combustible liquid
12.2 **NAS Hazard Rating for Bulk Water Transportation:**

Category	Rating
Fire	1-3
Health	
Vapor Irritant	0
Liquid or Solid Irritant	1
Poisons	1
Water Pollution	
Human Toxicity	1
Aquatic Toxicity	2
Aesthetic Effect	4
Reactivity	
Other Chemicals	0
Water	0
Self Reaction	0

12.3 **NFPA Hazard Classifications:**

Category	Classification
Health Hazard (Blue)	1
Flammability (Red)	3
Reactivity (Yellow)	0

13. PHYSICAL AND CHEMICAL PROPERTIES

13.1 **Physical State at 15°C and 1 atm:** Liquid
13.2 **Molecular Weight:** Not pertinent
13.3 **Boiling Point at 1 atm:** 90–>750°F = 32–>400°C = 305–>673°K
13.4 **Freezing Point:** Not pertinent
13.5 **Critical Temperature:** Not pertinent
13.6 **Critical Pressure:** Not pertinent
13.7 **Specific Gravity:** 0.70–0.98 at 15°C (liquid)
13.8 **Liquid Surface Tension:** 24–38 dynes/cm = 0.024–0.038 N/m at 20°C
13.9 **Liquid-Water Interfacial Tension:** Data not available
13.10 **Vapor (Gas) Specific Gravity:** Not pertinent
13.11 **Ratio of Specific Heats of Vapor (Gas):** Not pertinent
13.12 **Latent Heat of Vaporization:** 140–150 Btu/lb = 76–86 cal/g = 3.2–3.6 × 10³ J/kg
13.13 **Heat of Combustion:** −18,252 Btu/lb = −10,140 cal/g = −424.54 × 10³ J/kg
13.14 **Heat of Decomposition:** Not pertinent
13.15 **Heat of Solution:** Not pertinent
13.16 **Heat of Polymerization:** Not pertinent

(Continued on pages 5 and 6)

NOTES

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HAZARD EVALUATION OF CHEMICALS

Chemical Name Sulfuric Acid Date 3-21-84

DOT Name SFA TDD Number 8303-01B-153

CAS Number 7664-93-9

References Consulted (circle):

(NIOSH/OSHA Pocket Guide) (Verschueren) (Merck Index) Hazardline (Chris (Vol. II))

(Toxic and Hazardous Safety Manual) (ACGIH) Other: Sax

Chemical Properties: (Synonyms: Oil of Vitriol)

Chemical Formula H_2SO_4 Molecular Weight 98.08

Physical State Liquid Solubility (H_2O) Boiling Point 330°

Flash Point Not Flamm. Vapor Pressure/Density 1mm@146.8° 1.834 Freezing Point

Specific Gravity 1.84 Odor/Odor Threshold >1 mg/m³ Flammable Limits Not Flamm

Incompatabilities Water, metals, combustibles, organics, chlorates, carbides, fulminates, picrates,

Biological Properties:

(TLV) 1 mg/m³ TWA 1mg/m³ PEL 1 mg/m³ STEL –

IDLH 80 mg/m³ Human Aquatic 24.5ppm/24hr Rat/Mouse 50mg/kg

Route of Exposure Skin Inhal.

Carcinogen Teratogen Mutagen

Handling Recommendations: (Personal protective measures)

Goggles Faceshield respirator Rubber boots & Suit

Disposal/Waste Treatment:

Add large amounts of soda ash & slaked lime. Discharge solution into sink w/ protective matting & marble chips

Health Hazards and First Aid:

Wash affected areas immediately, treat for shock. If ingested - drink milk w/ egg whites Eyes/Skin - Flush w/ H_2O

Symptoms: Acute: Extreme irritant, corrosive & toxic to skin, shock,

Chronic: Dermatitis, inflammation of upper respirat. tract.

375103

(12/83, DLD)

SFA

SULFURIC ACID

Common Synonyms
Oil of vitriol
Battery acid
Fertilizer acid

Oily liquid | Colorless | Odorless

Sinks and mixes violently with water. Irritating mist is produced.

AVOID CONTACT WITH LIQUID. *Keep people away.*
Wear goggles, self-contained breathing apparatus, and rubber overclothing.
Stop discharge if possible.
Isolate and remove discharged material.
Notify local health and pollution control agencies.

Fire

Not flammable.
May cause fire on contact with combustibles.
Flammable gas may be produced on contact with metals.
POISONOUS GAS MAY BE PRODUCED IN FIRE.
Wear goggles, self-contained breathing apparatus, and rubber overclothing.
DO NOT USE WATER ON ADJACENT FIRES.
Extinguish with dry chemical or carbon dioxide.

Exposure

CALL FOR MEDICAL AID.

MIST
Irritating to eyes, nose and throat.
If inhaled, will cause coughing, difficult breathing, or loss of consciousness.
Move to fresh air.
IF IN EYES, hold eyelids open and flush with plenty of water.
If breathing has stopped, give artificial respiration.
If breathing is difficult, give oxygen.

LIQUID
Will burn 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

HARMFUL TO AQUATIC LIFE IN VERY LOW CONCENTRATIONS.
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 CG 446-4)

Issue warning: corrosive
Restrict access
Disperse and flush with care

2. LABEL

3. CHEMICAL DESIGNATIONS

3.1 **Synonyms:** Battery acid, Chamber acid, Fertilizer acid, Oil of vitriol

3.2 **Coast Guard Compatibility Classification:** Sulfuric acid

3.3 **Chemical Formula:** H_2SO_4

3.4 **IMCO-United Nations Numerical Designation:** 8.0/1830

4. OBSERVABLE CHARACTERISTICS

4.1 **Physical State (as shipped):** Liquid

4.2 **Color:** Colorless (pure) to dark brown

4.3 **Odor:** Odorless unless hot, then choking

5. HEALTH HAZARDS

5.1 **Personal Protective Equipment:** Safety shower, eyewash fountain, safety goggles, face shield, approved respirator (self-contained or air line), rubber safety shoes; rubber apron

5.2 **Symptoms Following Exposure:** Inhalation of vapor from hot, concentrated acid may injure lungs. Swallowing may cause severe injury or death. Contact with skin or eyes causes severe burns.

5.3 **Treatment for Exposure:** Call a doctor. INHALATION: observe victim for delayed pulmonary reaction. INGESTION: have victim drink water if possible, do NOT induce vomiting. EYES AND SKIN: wash with large amounts of water for at least 15 min.; do not use oils or ointments in eyes. Treat skin burns.

5.4 **Toxicity by Inhalation (Threshold Limit Value):** 1 mg/m³

5.5 **Short-Term Inhalation Limits:** 10 mg/m³ for 5 min.; 5 mg/m³ for 10 min.; 2 mg/m³ for 30 min; 1 mg/m³ for 60 min.

5.6 **Toxicity by Ingestion:** No effects except those secondary to tissue damage.

5.7 **Late Toxicity:** None

5.8 **Vapor (Gas) Irritant Characteristics:** Vapors from hot acid (77-98%) cause moderate irritation of eyes and respiratory system. Effect is temporary.

5.9 **Liquid or Solid Irritant Characteristics:** 77-98% acid causes severe second- and third-degree burns of skin on short contact and is very injurious to the eyes.

5.10 **Odor Threshold:** Greater than 1 mg/m³

6. FIRE HAZARDS

6.1 **Flash Point:** Not flammable

6.2 **Flammable Limits in Air:** Not flammable

6.3 **Fire Extinguishing Agents:** Not pertinent

6.4 **Fire Extinguishing Agents Not to be Used:** Water used on adjacent fires should be carefully handled.

6.5 **Special Hazards of Combustion Products:** Not pertinent

6.6 **Behavior in Fire:** Not flammable

6.7 **Ignition Temperature:** Not flammable

6.8 **Electrical Hazard:** None

6.9 **Burning Rate:** Not flammable

7. CHEMICAL REACTIVITY

7.1 **Reactivity with Water:** Reacts violently with evolution of heat. Spattering occurs when water is added to the compound.

7.2 **Reactivity with Common Materials:** Extremely hazardous in contact with many materials, particularly metals and combustibles. Dilute acid reacts with most metals, releasing hydrogen which can form explosive mixtures with air in confined spaces.

7.3 **Stability During Transport:** Stable

7.4 **Neutralizing Agents for Acids and Caustics:** Dilute with water, then neutralize with lime, limestone, or soda ash.

7.5 ***Polymerization:*** Not pertinent

7.6 **Inhibitor of Polymerization:** Not pertinent

8. WATER POLLUTION

8.1 **Aquatic Toxicity:**
24.5 ppm/24 hr/bluegill/lethal/fresh water
42.5 ppm/48 hr/prawn/LC_m/salt water

8.2 **Waterfowl Toxicity:** Data not available

8.3 **Biological Oxygen Demand (BOD):** None

8.4 **Food Chain Concentration Potential:** None

9. SELECTED MANUFACTURERS

1. *Allied Chemical Corp*
Industrial Chemicals Division
P. O. Box 1139R
Morristown, N. J. 07960

2. Cities Service Co., Inc
North American Chemicals and Metals Group
60 Wall St.
New York, N. Y. 10005

3. E. I. duPont de Nemours & Co., Inc
Explosives Dept.
Wilmington, Del. 19898

10. SHIPPING INFORMATION

10.1 **Grades or Purity:** C.P., U.S.P., Technical, at 33% to 98% (50° Be to 66° Be)

10.2 **Storage Temperature:** Ambient

10.3 **Inert Atmosphere:** No requirement

10.4 ***Venting:*** *Open*

11. HAZARD ASSESSMENT CODE

(See Hazard Assessment Handbook CG 446-3)

A-P-O

12. HAZARD CLASSIFICATIONS

12.1 **Code of Federal Regulations:** Corrosive Material

12.2 **NAS Hazard Rating for Bulk Water Transportation:**

Category	Rating
Fire	0
Health	
Vapor Irritant	2
Liquid or Solid Irritant	4
Poisons	2
Water Pollution	
Human Toxicity	2
Aquatic Toxicity	3
Aesthetic Effect	2
Reactivity	
Other Chemicals	4
Water	3
Self-Reaction	0

12.3 **NFPA Hazard Classifications:**

Category	Classification
Health Hazard (Blue)	3
Flammability (Red)	0
Reactivity (Yellow)	2
	W

13. PHYSICAL AND CHEMICAL PROPERTIES

13.1 **Physical State at 15°C and 1 atm:** Liquid

13.2 **Molecular Weight:** 98.08

13.3 **Boiling Point at 1 atm:** 644°F = 340°C = 613°K

13.4 **Freezing Point:** Not pertinent

13.5 **Critical Temperature:** Not pertinent

13.6 **Critical Pressure:** Not pertinent

13.7 **Specific Gravity:** 1.84 at 20°C (liquid)

13.8 **Liquid Surface Tension:** Not pertinent

13.9 **Liquid-Water Interfacial Tension:** Not pertinent

13.10 **Vapor (Gas) Specific Gravity:** Not pertinent

13.11 **Ratio of Specific Heats of Vapor (Gas):** Not pertinent

13.12 **Latent Heat of Vaporization:** Not pertinent

13.13 **Heat of Combustion:** Not pertinent

13.14 **Heat of Decomposition:** Not pertinent

13.15 **Heat of Solution:** −418.0 Btu/lb = −232.2 cal/g = -9.715×10^5 J/kg

13.16 **Heat of Polymerization:** Not pertinent

*Physical properties apply to concentrated (98%) acid unless otherwise stated. More dilute acid is more water like.

(Continued on pages 3 and 8)

NOTES

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HAZARD EVALUATION OF CHEMICALS

Chemical Name Phosphoric Acid Date 3-21-84

DOT Name PAC TDD Number 8303-1B-13

CAS Number 7664-38-2

References Consulted (circle):

NIOSH/OSHA Pocket Guide, Verschueren, Merck Index, Hazardline, Chris (Vol. II), Toxic and Hazardous Safety Manual, ACGIH, Other: SAX TLV

Chemical Properties: (Synonyms: Orthophosphoric Acid)

Chemical Formula H_3PO_4 Molecular Weight 98.04

Physical State Liquid Solubility (H_2O) Boiling Point >266°F

Flash Point Not Flamm. Vapor Pressure/Density 1.864 @ 20° .0215 mm @ 20° Freezing Point 42.4°

Specific Gravity 1.892 @ 25°C Odor/Odor Threshold Odorless Flammable Limits Not Flamm.

Incompatabilities Mild Reaction w/ H_2O. Reacts w/ metals.

Biological Properties:

TLV 1.0 mg/m³ TWA 1 mg/m³ PEL 1 mg/m³ STEL - 3 mg/m³

IDLH NA Human Aquatic 138 ppm/24hr Rat/Mouse 1530 mg/kg

Route of Exposure Inhalation, Dermal

Carcinogen Teratogen Mutagen

Handling Recommendations: (Personal protective measures)

Goggles or Face shield. Rubber gloves protective clothing.

Disposal/Waste Treatment:

Add Soda Ash & Slaked Lime. Discharge solution to a sink lined w/ protect. matting & chipped marble w/ copius H_2O

Health Hazards and First Aid:

Do not induce vomiting. Give H_2O milk or vegetable oil. Skin/Eye - Flush w/ water

Symptoms: Acute: burns on mouth or lips, sour acrid taste gastrointestinal irrit, nausea, vomiting, diarrhea, difficult

~~Chronic~~: swallowing, severe abdominal pain, thirst, acidosis difficult breathing, convulsions collapse shock

375103

(12/83, DLD)

PAC

PHOSPHORIC ACID

Common Synonyms
Orthophosphoric acid

Thick liquid Colorless **Odorless**

Sinks and mixes with water

AVOID CONTACT WITH LIQUID. Keep people away.
Wear chemical protective suit.
Stop discharge if possible.
Isolate and remove discharged material.
Notify local health and pollution control agencies.

Fire

Not flammable.
Flammable gas is formed on contact with metals.
Wear chemical protective suit with self-contained breathing apparatus.

Exposure

CALL FOR MEDICAL AID.

LIQUID
Will burn skin and eyes.
If swallowed, will cause nausea, vomiting, or loss of consciousness.
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.
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, CG 446-4)

Issue warning - corrosive
Restrict access
Disperse and flush

2. LABEL

3. CHEMICAL DESIGNATIONS

3.1 **Synonyms:** Orthophosphoric acid
3.2 **Coast Guard Compatibility Classification:** Non-oxidizing mineral acid
3.3 **Chemical Formula:** H_3PO_4
3.4 ***IMCO/United Nations Numerical* Designation:** 9.0/1805

4. OBSERVABLE CHARACTERISTICS

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

5. HEALTH HAZARDS

5.1 **Personal Protective Equipment:** Goggles or face shield, rubber gloves and protective clothing.
5.2 **Symptoms Following Exposure:** Burns on mouth and lips, sour acrid taste, severe gastrointestinal irritation, nausea, vomiting, bloody diarrhea, difficult swallowing, severe abdominal pains, thirst, acidemia, difficult breathing, convulsions, collapse, shock, death
5.3 **Treatment for Exposure:** INGESTION: do NOT induce vomiting, give water, milk, or vegetable oil. SKIN OR EYE CONTACT: flush with water for at least 15 min
5.4 **Toxicity by Inhalation (Threshold Limit Value):** 1.0 mg/m³
5.5 **Short-Term Inhalation Limits:** Not pertinent
5.6 **Toxicity by Ingestion:** Grade 3, LD_{50} 50 to 500 mg/kg
5.7 **Late Toxicity:** None
5.8 **Vapor (Gas) Irritant Characteristics:** Not volatile
5.9 ***Liquid or Solid Irritant Characteristics:*** Fairly severe skin irritant, may cause pain and second-degree burns after a few minutes' contact
5.10 **Odor Threshold:** Not pertinent

6. FIRE HAZARDS

6.1 **Flash Point:** Not flammable
6.2 **Flammable Limits in Air:** Not flammable
6.3 **Fire Extinguishing Agents:** Not pertinent
6.4 **Fire Extinguishing Agents Not to be Used:** Not pertinent
6.5 **Special Hazards of Combustion Products:** Not pertinent
6.6 **Behavior in Fire:** Not pertinent
6.7 **Ignition Temperature:** Not flammable
6.8 **Electrical Hazard:** Not pertinent
6.9 **Burning Rate:** Not flammable

7. CHEMICAL REACTIVITY

7.1 **Reactivity with Water:** Mild evolution of heat.
7.2 **Reactivity with Common Materials:** Reacts with metals to liberate flammable hydrogen gas
7.3 **Stability During Transport:** Stable
7.4 **Neutralizing Agents for Acids and Caustics:** Flush with water, neutralize with lime
7.5 **Polymerization:** Not pertinent
7.6 **Inhibitor of Polymerization:** Not pertinent

8. WATER POLLUTION

8.1 **Aquatic Toxicity:** 138 ppm/24 hr/mosquito fish/TL_m/fresh water
8.2 ***Waterfowl Toxicity:*** *Data not available*
8.3 **Biological Oxygen Demand (BOD):** None
8.4 **Food Chain Concentration Potential:** None

9. SELECTED MANUFACTURERS

1 C F Industries Inc
Bartow Phosphate Complex
Bartow, Fla 33830

2 Cities Service Co., Inc
North American Chemicals & Metals Group
60 Wall St.
New York, N Y 10005

3 Freeport Minerals Co
Freeport Chemical Co Division
161 East 42 St.
New York, N Y 10017

10. SHIPPING INFORMATION

10.1 **Grades or Purity:** NF, food, fertilizer, *commercial*, all 75-85%, the balance being water
10.2 **Storage Temperature:** Ambient
10.3 **Inert Atmosphere:** No requirement
10.4 **Venting:** Open

11. HAZARD ASSESSMENT CODE

(See Hazard Assessment Handbook, CG 446-3)

A-P

12. HAZARD CLASSIFICATIONS

12.1 **Code of Federal Regulations:** Corrosive liquid
12.2 **NAS Hazard Rating for Bulk Water Transportation:**

Category	Rating
Fire	0
Health	
Vapor Irritant	0
Liquid or Solid Irritant	3
Poisons	1
Water Pollution	
Human Toxicity	2
Aquatic Toxicity	3
Aesthetic Effect	2
Reactivity	
Other Chemicals	3
Water	0
Self-Reaction	0

12.3 **NFPA Hazard Classifications:**

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

13. PHYSICAL AND CHEMICAL PROPERTIES

13.1 **Physical State at 15°C and 1 atm:** Liquid
13.2 **Molecular Weight:** 98.00
13.3 **Boiling Point at 1 atm:** >266°F = >130°C = >403°K
13.4 **Freezing Point:** Not pertinent
13.5 **Critical Temperature:** Not pertinent
13.6 **Critical Pressure:** Not pertinent
13.7 **Specific Gravity:** 1.892 at 25°C (liquid)
13.8 **Liquid Surface Tension:** Not pertinent
13.9 **Liquid-Water Interfacial Tension:** Not pertinent
13.10 **Vapor (Gas) Specific Gravity:** Not pertinent
13.11 **Ratio of Specific Heats of Vapor (Gas):** Not pertinent
13.12 **Latent Heat of Vaporization:** Not pertinent
13.13 **Heat of Combustion:** Not pertinent
13.14 **Heat of Decomposition:** Not pertinent
13.15 **Heat of Solution:** -52 Btu/lb = -29 cal/g = -1.2×10^5 J/kg
13.16 **Heat of Polymerization:** Not pertinent

(Continued on pages 5 and 6)

NOTES

ANP	AMMONIUM NITRATE-PHOSPHATE MIXTURE

Common Synonyms	Solid	Grayish-white	Odorless
	Sinks and mixes with water.		

Stop discharge if possible. Keep people away.
Call fire department.
Avoid contact with solid and dust.
Isolate and remove discharged material.

Fire

Not flammable.
Will increase the intensity of a fire.
POISONOUS GASES MAY BE PRODUCED IN FIRE.
Irritating gases may be produced when heated.
Containers may explode in fire.
Wear goggles and self-contained breathing apparatus.
Flood discharge area with water.

Exposure

CALL FOR MEDICAL AID.

DUST
Irritating to eyes, nose and throat.
If inhaled will cause coughing or difficult breathing.
If in eyes, hold eyelids open and flush with plenty of water.
If breathing has stopped, give artificial respiration.
If breathing is difficult, give oxygen.

SOLID
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.
IF SWALLOWED and victim is UNCONSCIOUS OR HAVING CONVULSIONS, do nothing except keep victim warm.

Water Pollution

Effect of low concentrations on aquatic life is unknown.
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 CG 446-4)

Issue warning—oxidizing material
Disperse and flush

2. LABEL

3. CHEMICAL DESIGNATIONS

3.1 **Synonyms:** No common synonyms
3.2 **Coast Guard Compatibility Classification:** Not listed
3.3 **Chemical Formula:** NH_4NO_3–$(NH_4)_2HPO_4$–$NH_4H_2PO_4$, $CaHPO_4$, KCl–K_2SO_4
3.4 **IMCO/United Nations Numerical Designation:** 9/—

4. OBSERVABLE CHARACTERISTICS

4.1 **Physical State (as shipped):** Solid
4.2 **Color:** Grayish-white
4.3 **Odor:** Characteristic

5. HEALTH HAZARDS

5.1 **Personal Protective Equipment:** Self-contained breathing apparatus must be used when fighting fires. At other times a dust mask is adequate.
5.2 **Symptoms Following Exposure:** Inhalation causes irritation of nose and throat. Contact with eyes causes irritation.
5.3 **Treatment for Exposure:** INHALATION move to fresh air. EYES flush with water for 15 min.
5.4 **Toxicity by Inhalation (Threshold Limit Value):** Data not available
5.5 **Short-Term Inhalation Limits:** Data not available
5.6 **Toxicity by Ingestion:** Data not available
5.7 **Late Toxicity:** Data not available
5.8 **Vapor (Gas) Irritant Characteristics:** Data not available
5.9 **Liquid or Solid Irritant Characteristics:** Data not available
5.10 **Odor Threshold:** Odorless

6. FIRE HAZARDS

6.1 **Flash Point:** Not pertinent
6.2 **Flammable Limits in Air:** Not pertinent
6.3 **Fire Extinguishing Agents:** Water
6.4 ***Fire Extinguishing Agents Not to be Used:*** Steam, inert gases, foam, dry chemical
6.5 **Special Hazards of Combustion Products:** Toxic and irritating oxides of nitrogen may form in fires.
6.6 **Behavior in Fire:** Will increase intensity of fire when in contact with combustible material. Containers may explode
6.7 **Ignition Temperature:** Not pertinent
6.8 **Electrical Hazard:** Not pertinent
6.9 **Burning Rate:** Not pertinent

7. CHEMICAL REACTIVITY

7.1 **Reactivity with Water:** No reaction
7.2 **Reactivity with Common Materials:** Corrodes metals to same degree as ordinary fertilizer, the reaction is not hazardous
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

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. SELECTED MANUFACTURERS

Chevron Chemical Co
940 Hensley Street
Richmond, Calif. 94804

10. SHIPPING INFORMATION

10.1 **Grades or Purity:** Several grades of varying composition, all of which contain less than 70% of ammonium nitrate, the only hazardous ingredient
10.2 **Storage Temperature:** Ambient
10.3 **Inert Atmosphere:** Ventilated (natural)
10.4 **Venting:** Open

11. HAZARD ASSESSMENT CODE

(See Hazard Assessment Handbook CG 446-3)

SS

12. HAZARD CLASSIFICATIONS

12.1 **Code of Federal Regulations:** Oxidizing material
12.2 **NAS Hazard Rating for Bulk Water Transportation:** Not listed
12.3 **NFPA Hazard Classifications:** Not listed

13. PHYSICAL AND CHEMICAL PROPERTIES

13.1 **Physical State at 15°C and 1 atm:** Solid
13.2 **Molecular Weight:** Not pertinent (mixture)
13.3 **Boiling Point at 1 atm:** Not pertinent
13.4 **Freezing Point:** Not pertinent
13.5 **Critical Temperature:** Not pertinent
13.6 **Critical Pressure:** Not pertinent
13.7 **Specific Gravity:** 1.8 at 20°C (solid)
13.8 **Liquid Surface Tension:** Not pertinent
13.9 **Liquid-Water Interfacial Tension:** Not pertinent
13.10 **Vapor (Gas) Specific Gravity:** Not pertinent
13.11 **Ratio of Specific Heats of Vapor (Gas):** Not pertinent
13.12 **Latent Heat of Vaporization:** Not pertinent
13.13 **Heat of Combustion:** Not pertinent
13.14 **Heat of Decomposition:** Data not available
13.15 **Heat of Solution:** Data not available
13.16 **Heat of Polymerization:** Not pertinent

(Continued on pages 1 and 6)

NOTES

ATO — ARSENIC TRIOXIDE

Common Synonyms

Arsenous acid
Arsenous acid anhydride
Arsenous oxide
Arsenic sesquioxide
White arsenic

Solid crystals or powder — White — Odorless

Sinks and mixes slowly with water.

AVOID CONTACT WITH SOLID AND DUST. KEEP PEOPLE AWAY.
Stay upwind. Use water spray to "knock down" dust.
Isolate and remove discharged material.
Notify local health and pollution control agencies.

Fire

Not flammable.
POISONOUS GASES MAY BE PRODUCED WHEN HEATED.

Exposure

CALL FOR MEDICAL AID.

DUST
POISONOUS IF INHALED.
Irritating to eyes, nose and throat.
Move victim to fresh air.
If in eyes, hold eyelids open and flush with plenty of water.
If breathing is difficult, give oxygen.

SOLID
POISONOUS IF SWALLOWED.
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 and have victim induce vomiting.
IF SWALLOWED and victim is UNCONSCIOUS OR HAVING CONVULSIONS, do nothing except keep victim warm.

Water Pollution

HARMFUL TO AQUATIC LIFE IN VERY LOW CONCENTRATIONS.
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 CG 446-4)

Issue warning – poison, water contaminant
Restrict access
Should be removed
Chemical and physical treatment

2. LABEL

3. CHEMICAL DESIGNATIONS

3.1 **Synonyms:** Arsenous acid, Arsenous acid anhydride, Arsenous oxide, Arsenic sesquioxide, White arsenic

3.2 **Coast Guard Compatibility Classification:** Not applicable

3.3 **Chemical Formula:** As_2O_3

3.4 **IMCO/United Nations Numerical Designation:** 6.1/1561

4. OBSERVABLE CHARACTERISTICS

4.1 **Physical State (as shipped):** Solid

4.2 **Color:** White

4.3 **Odor:** Like garlic; none

5. HEALTH HAZARDS

5.1 **Personal Protective Equipment:** Bureau of Mines approved respirator, protective gloves, eye protection, full protective coveralls

5.2 **Symptoms Following Exposure:** Ingestion causes irritation of mucous membrane, weakness, loss of appetite, gastrointestinal disturbances. Overdose can cause arsenic poisoning, but symptoms are delayed.

5.3 **Treatment for Exposure:** Get medical attention after all exposures to this compound. Be alert for arsenic poisoning symptoms. SKIN: wash thoroughly with soap and water, remove contaminated clothing and shower with soap and water, irritations, except for milder cases which disappear in a day or two, should have medical attention. INGESTION: vomiting should be induced and a physician should be called at once; drink freely of lime water, sweet milk, or raw eggs, followed by castor oil or any brisk cathartic.

5.4 **Toxicity by Inhalation (Threshold Limit Value):** 0.5 mg/m³ as arsenic

5.5 **Short-Term Inhalation Limits:** Data not available

5.6 **Toxicity by Ingestion:** Grade 4, oral mouse LD_{50} = 45 mg/kg

5.7 **Late Toxicity:** Arsenic compounds may be carcinogenic

5.8 **Vapor (Gas) Irritant Characteristics:** Data not available

5.9 **Liquid or Solid Irritant Characteristics:** Data not available

5.10 **Odor Threshold:** Odorless

6. FIRE HAZARDS

6.1 **Flash Point:** Not flammable

6.2 **Flammable Limits in Air:** Not flammable

6.3 **Fire Extinguishing Agents:** Not pertinent

6.4 **Fire Extinguishing Agents Not to be Used:** Not pertinent

6.5 **Special Hazards of Combustion Products:** Toxic fumes of arsenic trioxide and arsine may be formed in fire situations.

6.6 **Behavior in Fire:** May sublimize and form toxic fumes of arsenic trioxide.

6.7 **Ignition Temperature:** Not pertinent

6.8 **Electrical Hazard:** Not pertinent

6.9 **Burning Rate:** Not pertinent

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:** Flush with water

7.5 **Polymerization:** Not pertinent

7.6 **Inhibitor of Polymerization:** Not pertinent

8. WATER POLLUTION

8.1 **Aquatic Toxicity:** 5.3 mg/l /48 days/salmon/harmful/*
*Type of water not specified

8.2 **Waterfowl Toxicity:** Data not available

8.3 **Biological Oxygen Demand (BOD):** Data not available

8.4 **Food Chain Concentration Potential:** None

9. SELECTED MANUFACTURERS

1. American Smelting and Refining Company
   120 Broadway
   New York, N. Y. 10005
2. Gallard Schlesinger Chemical Manufacturing Co
   584 Mineola Avenue
   Carle Place, N. Y. 11514
3. Ventron Corp
   Alfa Products
   P. O. Box 159
   Beverly, Mass. 01915

10. SHIPPING INFORMATION

10.1 **Grades or Purity:** Refined 99%, Crude 95%

10.2 **Storage Temperature:** Ambient

10.3 **Inert Atmosphere:** No requirement

10.4 **Venting:** Pressure-vacuum

11. HAZARD ASSESSMENT CODE

(See Hazard Assessment Handbook CG 446-3)

II-SS

12. HAZARD CLASSIFICATIONS

12.1 **Code of Federal Regulations:** Poisonous, Class B

12.2 **NAS Hazard Rating for Bulk Water Transportation:** Not listed

12.3 **NFPA Hazard Classifications:** Not listed

13. PHYSICAL AND CHEMICAL PROPERTIES

13.1 **Physical State at 15°C and 1 atm:** Solid

13.2 **Molecular Weight:** 197.8

13.3 **Boiling Point at 1 atm:** 855°F = 457°C = 730°K

13.4 **Freezing Point:** 599°F = 315°C = 588°K

13.5 **Critical Temperature:** Not pertinent

13.6 **Critical Pressure:** Not pertinent

13.7 **Specific Gravity:** 3.7 at 20°C (solid)

13.8 **Liquid Surface Tension:** Not pertinent

13.9 **Liquid-Water Interfacial Tension:** Not pertinent

13.10 **Vapor (Gas) Specific Gravity:** Not pertinent

13.11 **Ratio of Specific Heats of Vapor (Gas):** Not pertinent

13.12 **Latent Heat of Vaporization:** Not pertinent

13.13 **Heat of Combustion:** Not pertinent

13.14 **Heat of Decomposition:** Not pertinent

13.15 **Heat of Solution:** Data not available

13.16 **Heat of Polymerization:** Not pertinent

(Continued on pages 5 and 6)

NOTES

REM/FIT EMERGENCY MED-TOX PLAN

FOREWORD

The purpose of this document is to explain the response mechanism within E & E for dealing with accidental injuries or chemical exposures which may occur in the course of REM/FIT work. All REM/FIT personnel are responsible for following the provisions of this plan as part of the Corporate Health and Safety Program. In addition, each regional FIT office will draw up emergency telephone contact lists where indicated in this plan and disseminate them to their team members. A copy of this plan should accompany each team when working in the field.

EMERGENCY MED-TOX SYSTEM

The emergency MED-TOX system consists of the following response elements:

(1) Field Team

(2) Local REM/FIT Office

(3) REM/FIT ZPMO

(4) E & E Corporate Headquarters

(5) MED-TOX Hotline

(6) Health and Safety Advisory Committee

Figure 1 summarizes the activation process for this system.

EMERGENCY ACTIONS

A. Types of Emergencies

Emergencies that may occur during REM/FIT work include physical injury caused by motor vehicle accidents, falls, fires, etc. and chemical exposures caused by splashes, reactions, etc. Such incidents may involve one person or many on the REM/FIT team and could potentially involve the public offsite. For example, a fire could generate a sudden cloud or toxic vapors or gases.

The level of mobilization of the corporate-wide MED-TOX system will depend on the severity of the injury or exposure. For example, a sprained ankle does not have to be reported to the respective ZPMO until it is convenient during normal business hours. Traumatic physical injuries are considered severe and thereby require immediate reporting when they result in:

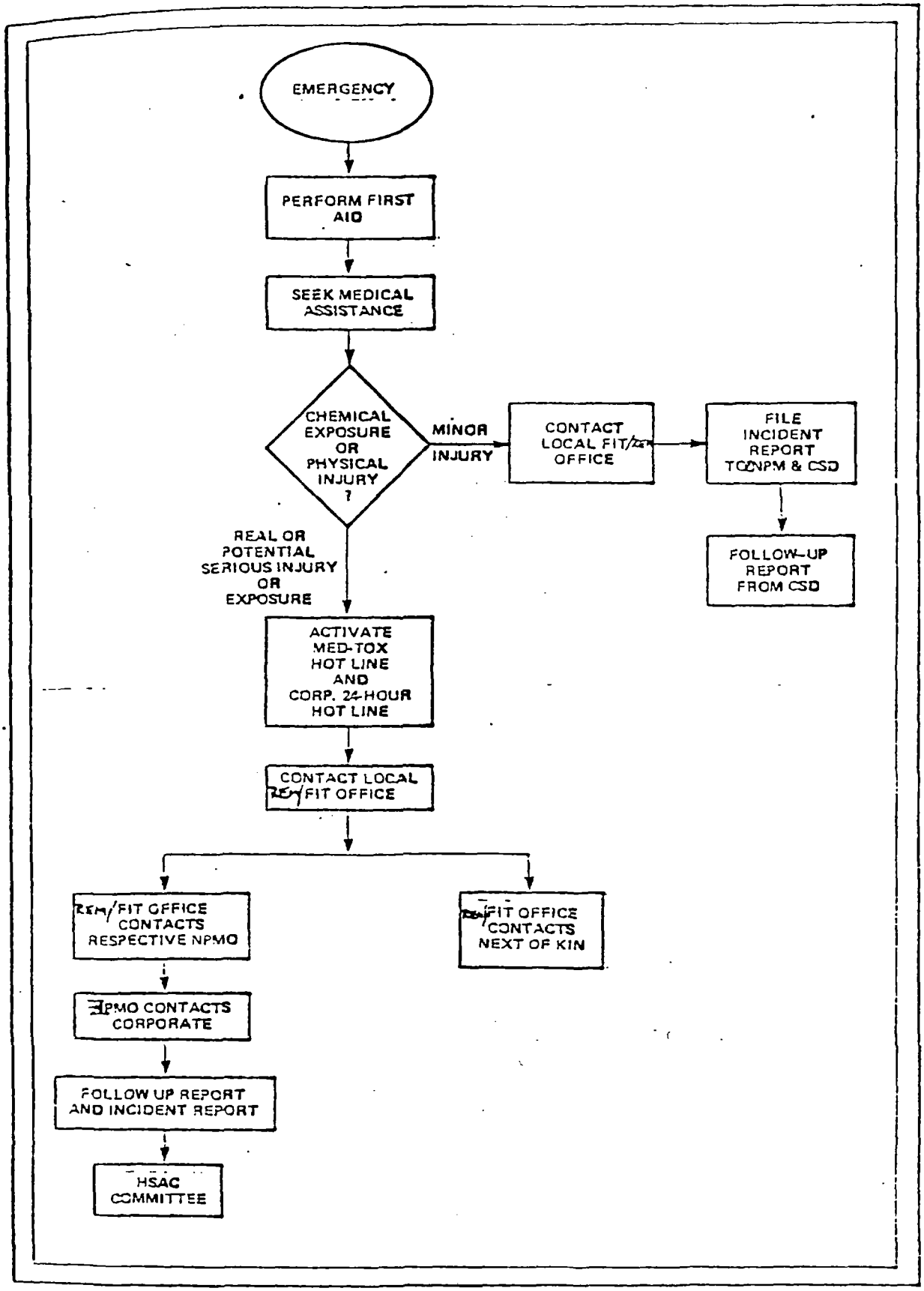

Figure 1 EMERGENCY MED–TOX SYSTEM

- Death
- Loss of consciousness
- Medical treatment other than first aid

All Chemical exposures should be reported through the emergency system. However, any chemical exposure will be reported to the ZPMO as soon as possible after it occurs. The ZPMO will then decide whether it is necessary to pass the report on to corporate as an emergency or handle it through routine reporting procedures.

Responsibilities

B. (1) The REM/FIT project site leader at the work site has prime responsibility for activating the emergency MED-TOX system onsite. If he or she is unable to do so, the responsibiity will follow the order predetermined in the Site Safety Plan beginning with the Site Safety Officer. This person is responsible for:

(a) Initiating first aid (It may first be necessary to evacuate the person from the site if he is in imminent danger. Follow standard first aid procedure.) Normally the Site Safety Coordinator will be available to begin emergency first aid.

(b) Obtaining medical assistance by either transporting the victim to a hospital or medical center as determined under the Site Safety Plan, or obtaining an ambulance. The problem of contaminating medical assistance personnel must be considered.

(c) Activating the MED-TOX System in case of a chemical exposure or potential exposure.

(d) Contacting the local REM/FIT office

If no one is available to help, the project team leader will carry out the first two responsibilities first with the remaining two to be completed as soon as practical. All four actions may be carried out simultaneously if help is available.

(2) The REM/FIT Leader at the local office is the prime contact for the project team leader. If he is unavailable, the responsibility follows the following line:

(a) Assistant REM/FIT Leader

(c) Regional Safety Coordinator

The office contact is responsible for:

(a) Contacting the injured/exposed party's designated next-of-kin, with programmed information.

(b) Contacting the respective ZPMO with information updates.

(c) Setting up a command post in the office if necessary to monitor the situation and provide assistance as needed to the field team. The severity of the accident will indicate the degree to which the command post is operated.

(d) Acting as a clearing center for information on the accident, status of individual, background on site both to EPA and within the project.

(3) The respective ZPMO will provide any assistance required by the Regional office such as information on chemicals. The line of responsibility in the ZPMO follows this line:

(a) FIT

i) Assistant Zone Project Manager for Health and Safety (For FIT) D. Dahlstrom (Corp. Safety Director)

ii) Assistant Zone Project Manager for Technical Performance (For FIT) L. Welzel

(b) Remedial Programs (CH_2m Hill)

i) Corporate Safety Director (M. Chillingsworth)

ii) Assistant Zone Project Manager (REM) B. Agesteno

The ZPMO is responsible for:

(a) Contacting corporate headquarters

(b) Contacting EPA headquarters as necessary

(c) Serving as a clearinghouse for information for the regional office

(4) (d) Coordinating preparation of followup reports

E & E corporate headquarters will monitor incidents and bring the resources of the corporation to bear as needed. The callout line is:

(a) 24-hr call line

(b) Corporate Safety Director

(c) Assistant Corporate Safety Director (P. Gorton)

MED-TOX Hot-Line

A. The purpose of the MED-TOX Hot-Line is to provide the physician attending an E & E Ch_2M Hill employee who is exposed or injured:

(1) Toxicological information on the chemicals that may be involved

(2) Quick access to the individual's medical records for use in treating the person.

(3) A Communications Channel to Corporate Headquarters for further assistance.

B. The MED-TOX System is activated by the project site leader or other senior team member at the site of the exposure or injury A.S.A.P. This person calls

(501) 370-8263

which is a 24-hour line to an answering service. The answering service will contact one of three toxicologists in the MED-TOX System. (Drs. Raymond Harbison, Richard Freeman, or Morris Cramer.) One of these Toxicologists will contact you.

C. When the first call is made to MED-TOX, give the person answering the following information:

(1) State: This is an emergency

(2) Your name and region

(3) Telephone number to reach you

(4) Your location

(5) Name of person injured or exposed

(6) Nature of emergency

Give the same information to the toxicologist calling back, and answer any questions he has.

D. If the toxicologist does not return your call within 15 minutes, call the Corporate 24-hour pager for assistance and then go to the following callout list for toxicological information at E & E headquarters in Buffalo. Start with the first and continue calling them in order until contact is made:

		Office	Home
		(EST to 8:30-5:30)	
(1)	David Dahlstrom	(716) 632-4491	Non-responsive
(2)	Dr. Edward Carr	(716) 831-2803	Non-responsive
(3)	Dr. James Nolan	(716) 898-4814	Non-responsive

WHAT TO REPORT

In all cases of contact made in the chain of reporting within E & E, the following information will be the minimum provided:

1. Name and REM/FIT region of person making call
2. Telephone number and location of person making call
3. Name of person(s) exposed or injured
4. Nature of emergency
5. Actions taken

DEALING WITH THE PRESS

If an accident attracts the attention of the media, and if EPA has an OSC,direct all media contact to him. If an OSC is not present, direct all media contact to the respective REM/FIT ZPMO. Nothing is to be said about the cause of the incident, the people involved, or the extent of injury or exposure.

INCIDENT REPORTS

Any exposure or injury to REM/FIT personnel will require that an incident report be filed by the affected individual. In addition, the person in charge at each reporting level will prepare a report on the actions taken at his/her location during the emergency and followup. This report will be submitted to E & E Corporate Safety Director for collection and preparation of the final report on the incident.

LIST OF TELEPHONE NUMBERS

Regional Office

Office Phone Number: (312) 663-9415

	Name	Home
Team Leader	Joe Petrilli	Non- [redacted]
Assistant Team Leader	Bill Goode	Non- [redacted]
Regional Safety Coordinator	Paul Moss	Non-responsive

REM/FIT NATIONAL ZONE MANAGEMENT OFFICES

Office Phone Number: (703) 522-6055 - FIT (303) 620-5200 - REM

	Name	Home	Office
Assistant Zone Project Manager for Health and Safety	David Dahlstrom	Non-resp [redacted]	(716) 632-4491
CH_2M Hill's Corporate Safety Director	Mary Anne Chillinsworth		
Assistant Zone Project Manager (FIT)	Roger Gray	Non-resp [redacted]	
Assistant Zone Project Manager (REM)	Bob D'Agastero		

E & E's CORPORATE HEADQUARTERS

Office Phone Number: (716) 632-4491

	Name	Home
Corporate Safety Director	David Dahlstrom	Non- [redacted]
Assistant Corporate Safety Director	Peter Gorton	Non-responsive
Vice President for Special Projects	Gerry Gallagher	Non-resp [redacted]
24-hour call line	(716) 882-2804	

SITE DOSIMETER LOG

TDD# _____ SITE NAME _____

SITE SAFETY OFFICER _____ WEEK OF _____

NAME AND DOSIM. #	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY

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

NAME: McCARRIN TDD: R5 6303-1b DATES 4/23-25/84

1. Place a check in front of each item taken, and circle the letter that corresponds to the letter affixed to the instrument taken.

____	Airdrive Pump (Geofilter)	A
____	Air powered Respiration	A B C D E
____	Canon AEL Camera	A B C
____	Conductivity Meter	A B C D
____	Drager Pump	A B C
____	Ear Plugs	
X	Eyewash Bottle	
____	Explosimeter	A B C
X	First Aid Kit	
____	HCN Detector	A
____	HNU	A B
____	Lamp type	
____	Level/Tripod and Rod	A B
____	Lifevests	
X	Masterflex Pump ~~and Filter~~	A B
____	Metal Detector	A B C
____	O_2 Indicator	A B C
____	Organic Vapor Analyses	A B
X	pH Meter	A B C D
____	Polaroid 1-step	A B C D
X	Radiation Det. - Mini	A B C D
____	Radiation - Survey Meter	A B C
____	Radiation - Tad.	A B C
X	Radiation - Thyac III/Probe	A B C
____	Resistivity Meter	A
____	Resuscitator	A B C
____	Robair Pump system	A
X	Safety Glasses	
X	VAN	A B C
____	Walkie-Talkie	A B C
X	Water-Level Indicator	A B C

2. Indicate the quantity of each item taken.

SAMPLE BOTTLES:

1/2 gallon ____
1 Liter ____
8 oz. Jar ____
VOA ____
Metal cans, lids and clips ____

PRESERVATIVES:

NaOH ____
HN_3 X
H_2SO_4 ____
Other ____

BAILERS:

Stainless 4
Copper ____
PVC ____

DECONTAMINATION EQUIPMENT (LIST ALL ITEMS TAKEN)

tubs
brush
(2) 5 Cal H_2O cont

3. Indicate the quantity and type of each item taken.

OUTERWARE (INCLUDE TYVEK, APRONS, etc.)

Type:

Gloves Qty.____

Type:

Boots Qty.____

Type:

TLD Badges Qty. 5

Drager Tubes Qty.____

Type:

Respirator Cartridges Qty. Lots

Type: Acid mist

Fully-Encapsulated Suits Qty.____

I.D. Letters:

Air-Cylinders Qty.____

I.D. Letters:

S.C.B.A.'s Qty.____

I.D. Letters:

Rohert Shaws Qty. 6

I.D. Letters:

KS:4W

4. List all other equipment taken into the field. Include generators, pumps, shovels, etc.

KEM

I NEED 4 ACID SUITS. WE HAD 2 AROUND. IF YOU CAN FIND THEM WE ONLY NEED 2 MORE. OTHERWISE WE NEED TO GET 4.