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## TABLE OF ACRONYMS

CFR- Code of Federal Regulations

COLIWASA- Containerized Liquid Waste Sampler

DOT- Department of Transportation

DOE- Department of Energy

EPA- Environmental Protection Administration

HRMB- Hazardous and Radioactive Materials Bureau

HAZCAT- Hazard Categorization

KOP- Knowledge of Process

LDR- Land Disposal Restriction

MSDS- Material Safety Data Sheet

NMED- New Mexico Environmental Department

NM- New Mexico

OSHA- Occupational safety and Health Administation

PCB- Polychlorinated Biphynels

PCE- Perchloroethyne

PID- Photoionization Detector

PPE- Personal Protection Equipment

PAIS- Pre Acceptance Inspection Sheet

QA/QC- Quality Assurance/ Quality Control

RCRA- Resource Conservation Recovery Act

RCI- Rinchem Company Inc. and

SOP- Standard Operating Procedure

SWMU- Solid Waste Management Unit

SCBA- Self Contained Breathing Apperatus

TCLP- Total Conentration Leaching Procedure

TSCA- Toxic Substance Control Act

TSDF- Treatment Storage Disposal Facility

UN- United Nations

WAP- Waste Analysis Plan

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RINCHEM COMPANY, INC.
6133 EDITH BOULEVARD NE
ALBUQUERQUE, NM 87107
PHONE (505) 345-3655

# NATURE OF BUSINESS STATEMENT

Rinchem Company, Inc. will use the facility to store and treat hazardous wastes under RCRA's regulations. We will also transport waste from generator's sites to disposal facilities under RCRA and other regulations using the facility as a transfer station. Rinchem plans to store, treat and transport waste from foreign and domestic generators.

The wastes manifested to Rinchem Company, Inc. may be stored at the facility until economic quantity loads can be transported to disposal facilities. Some wastes will be bulked for transportation in tankers and other bulk containers.

The services Rinchem will provide its customers outside of the RCRA permit include elementary neutralization, crushing of fluorescent bulbs and segregation of recyclable components, shredding and compaction of solid RCRA and non-RCRA regulated waste for volume reduction prior to shipment for disposal and bioremediation treatability studies.

In addition to RCRA regulated activities, Rinchem will also be managing non-RCRA regulated wastes at the facility and storing various chemicals for its chemical distribution and warehousing operations.

EPA I.D. Number - NMD002208627

| EPA Hazardous Waste Number | Estimated Annual Quantity of Waste | Unit of Measure | Process Codes |
|---|---|---|---|
| D001 | 2200 | T | S01 |
| D002 | 500 | T | S01 |
| D003 | 500 | T | S01 |
| D004 | 25 | T | S01 |
| D005 | 25 | T | S01 |
| D006 | 25 | T | S01 |
| D007 | 25 | T | S01 |
| D008 | 25 | T | S01 |
| D009 | 25 | T | S01 |
| D010 | 25 | T | S01 |
| D011 | 25 | T | S01 |
| D012 | 25 | T | S01 |
| D013 | 25 | T | S01 |
| D014 | 25 | T | S01 |
| D015 | 25 | T | S01 |
| D016 | 25 | T | S01 |
| D017 | 25 | T | S01 |
| D018 | 25 | T | S01 |
| D019 | 25 | T | S01 |
| D020 | 25 | T | S01 |
| D021 | 25 | T | S01 |
| D022 | 25 | T | S01 |
| D023 | 25 | T | S01 |
| D024 | 25 | T | S01 |
| D025 | 25 | T | S01 |
| D026 | 25 | T | S01 |
| D027 | 25 | T | S01 |
| D028 | 25 | T | S01 |
| D029 | 25 | T | S01 |
| D030 | 25 | T | S01 |
| D031 | 25 | T | S01 |
| D032 | 25 | T | S01 |
| D033 | 25 | T | S01 |
| D034 | 25 | T | S01 |
| D035 | 25 | T | S01 |
| D036 | 25 | T | S01 |
| D037 | 25 | T | S01 |
| D038 | 25 | T | S01 |

EPA I.D. Number - NMD002208627

| EPA Hazardous Waste Number | Estimated Annual Quantity of Waste | Unit of Measure | Process Codes |
|---|---|---|---|
| D039 | 25 | T | S01 |
| D040 | 25 | T | S01 |
| D041 | 25 | T | S01 |
| D042 | 25 | T | S01 |
| D043 | 25 | T | S01 |
| F001 | 1100 | T | S01 |
| F002 | 1100 | T | S01 |
| F003 | 1100 | T | S01 |
| F004 | 500 | T | S01 |
| F005 | 500 | T | S01 |
| F006 | 25 | T | S01 |
| F007 | 25 | T | S01 |
| F008 | 25 | T | S01 |
| F009 | 25 | T | S01 |
| F010 | 25 | T | S01 |
| F011 | 25 | T | S01 |
| F012 | 25 | T | S01 |
| F013 | 25 | T | S01 |
| F014 | 25 | T | S01 |
| F015 | 25 | T | S01 |
| F016 | 25 | T | S01 |
| F017 | 25 | T | S01 |
| F018 | 25 | T | S01 |
| F019 | 25 | T | S01 |
| F020 | 25 | T | S01 |
| F021 | 25 | T | S01 |
| F022 | 25 | T | S01 |
| F023 | 25 | T | S01 |
| F024 | 25 | T | S01 |
| F025 | 25 | T | S01 |
| F026 | 25 | T | S01 |
| F027 | 25 | T | S01 |
| F028 | 25 | T | S01 |
| F029 | 25 | T | S01 |
| F030 | 25 | T | S01 |

EPA I.D. Number - NMD002208627

| EPA Hazardous Waste Number | Estimated Annual Quantity of Waste | Unit of Measure | Process Codes |
|---|---|---|---|
| F031 | 25 | T | S01 |
| F032 | 25 | T | S01 |
| F033 | 25 | T | S01 |
| F034 | 25 | T | S01 |
| F035 | 25 | T | S01 |
| F036 | 25 | T | S01 |
| F037 | 25 | T | S01 |
| F038 | 25 | T | S01 |
| F039 | 25 | T | S01 |
| K001 | 25 | T | S01 |
| K002 | 25 | T | S01 |
| K003 | 25 | T | S01 |
| K004 | 25 | T | S01 |
| K005 | 25 | T | S01 |
| K006 | 25 | T | S01 |
| K007 | 25 | T | S01 |
| K008 | 25 | T | S01 |
| K009 | 25 | T | S01 |
| K010 | 25 | T | S01 |
| K011 | 25 | T | S01 |
| K012 | 25 | T | S01 |
| K013 | 25 | T | S01 |
| K014 | 25 | T | S01 |
| K015 | 25 | T | S01 |
| K016 | 25 | T | S01 |
| K017 | 25 | T | S01 |
| K018 | 25 | T | S01 |
| K019 | 25 | T | S01 |
| K020 | 25 | T | S01 |
| K021 | 25 | T | S01 |
| K022 | 25 | T | S01 |
| K023 | 25 | T | S01 |
| K024 | 25 | T | S01 |
| K025 | 25 | T | S01 |
| K026 | 25 | T | S01 |
| K027 | 25 | T | S01 |

EPA I.D. Number NMD002208627

| EPA Hazardous Waste Number | Estimated Annual Quantity of Waste | Unit of Measure | Process Codes |
|---|---|---|---|
| K028 | 25 | T | S01 |
| K029 | 25 | T | S01 |
| K030 | 25 | T | S01 |
| K031 | 25 | T | S01 |
| K032 | 25 | T | S01 |
| K033 | 25 | T | S01 |
| K034 | 25 | T | S01 |
| K035 | 25 | T | S01 |
| K036 | 25 | T | S01 |
| K037 | 25 | T | S01 |
| K038 | 25 | T | S01 |
| K039 | 25 | T | S01 |
| K040 | 25 | T | S01 |
| K041 | 25 | T | S01 |
| K042 | 25 | T | S01 |
| K043 | 25 | T | S01 |
| K044 | 25 | T | S01 |
| K045 | 25 | T | S01 |
| K046 | 25 | T | S01 |
| K047 | 25 | T | S01 |
| K048 | 25 | T | S01 |
| K049 | 25 | T | S01 |
| K050 | 25 | T | S01 |
| K051 | 25 | T | S01 |
| K052 | 25 | T | S01 |
| K053 | 25 | T | S01 |
| K054 | 25 | T | S01 |
| K055 | 25 | T | S01 |
| K056 | 25 | T | S01 |
| K057 | 25 | T | S01 |
| K058 | 25 | T | S01 |
| K059 | 25 | T | S01 |
| K060 | 25 | T | S01 |
| K061 | 25 | T | S01 |
| K062 | 25 | T | S01 |
| K063 | 25 | T | S01 |
| K064 | 25 | T | S01 |
| K065 | 25 | T | S01 |

EPA I.D. Number NMD002208627

| EPA Hazardous Waste Number | Estimated Annual Quantity of Waste | Unit of Measure | Process Codes |
|---|---|---|---|
| K066 | 25 | T | S01 |
| K067 | 25 | T | S01 |
| K068 | 25 | T | S01 |
| K069 | 25 | T | S01 |
| K070 | 25 | T | S01 |
| K071 | 25 | T | S01 |
| K072 | 25 | T | S01 |
| K073 | 25 | T | S01 |
| K074 | 25 | T | S01 |
| K075 | 25 | T | S01 |
| K076 | 25 | T | S01 |
| K077 | 25 | T | S01 |
| K078 | 25 | T | S01 |
| K079 | 25 | T | S01 |
| K080 | 25 | T | S01 |
| K081 | 25 | T | S01 |
| K082 | 25 | T | S01 |
| K083 | 25 | T | S01 |
| K084 | 25 | T | S01 |
| K085 | 25 | T | S01 |
| K086 | 25 | T | S01 |
| K087 | 25 | T | S01 |
| K088 | 25 | T | S01 |
| K089 | 25 | T | S01 |
| K090 | 25 | T | S01 |
| K091 | 25 | T | S01 |
| K092 | 25 | T | S01 |
| K093 | 25 | T | S01 |
| K094 | 25 | T | S01 |
| K095 | 25 | T | S01 |
| K096 | 25 | T | S01 |
| K097 | 25 | T | S01 |
| K098 | 25 | T | S01 |
| K099 | 25 | T | S01 |
| K100 | 25 | T | S01 |
| K101 | 25 | T | S01 |
| K102 | 25 | T | S01 |
| K103 | 25 | T | S01 |

EPA I.D. Number NMD002208627

| EPA Hazardous Waste Number | Estimated Annual Quantity of Waste | Unit of Measure | Process Codes |
|---|---|---|---|
| K104 | 25 | T | S01 |
| K105 | 25 | T | S01 |
| K106 | 25 | T | S01 |
| K107 | 25 | T | S01 |
| K108 | 25 | T | S01 |
| K109 | 25 | T | S01 |
| K110 | 25 | T | S01 |
| K111 | 25 | T | S01 |
| K112 | 25 | T | S01 |
| K113 | 25 | T | S01 |
| K114 | 25 | T | S01 |
| K115 | 25 | T | S01 |
| K116 | 25 | T | S01 |
| K117 | 25 | T | S01 |
| K118 | 25 | T | S01 |
| K119 | 25 | T | S01 |
| K120 | 25 | T | S01 |
| K121 | 25 | T | S01 |
| K122 | 25 | T | S01 |
| K123 | 25 | T | S01 |
| K124 | 25 | T | S01 |
| K125 | 25 | T | S01 |
| K126 | 25 | T | S01 |
| K127 | 25 | T | S01 |
| K128 | 25 | T | S01 |
| K129 | 25 | T | S01 |
| K130 | 25 | T | S01 |
| K131 | 25 | T | S01 |
| K132 | 25 | T | S01 |
| K133 | 25 | T | S01 |
| K134 | 25 | T | S01 |
| K135 | 25 | T | S01 |
| K136 | 25 | T | S01 |
| P001 | 2 | T | S01 |
| P002 | 2 | T | S01 |
| P003 | 2 | T | S01 |

EPA I.D. Number NMD002208627

| EPA Hazardous Waste Number | Estimated Annual Quantity of Waste | Process Codes of Measure | Unit |
|---|---|---|---|
| P004 | 2 | T | S01 |
| P005 | 2 | T | S01 |
| P006 | 2 | T | S01 |
| P007 | 2 | T | S01 |
| P008 | 2 | T | S01 |
| P009 | 2 | T | S01 |
| P010 | 2 | T | S01 |
| P011 | 2 | T | S01 |
| P012 | 2 | T | S01 |
| P013 | 2 | T | S01 |
| P014 | 2 | T | S01 |
| P015 | 2 | T | S01 |
| P016 | 2 | T | S01 |
| P017 | 2 | T | S01 |
| P018 | 2 | T | S01 |
| P019 | 2 | T | S01 |
| P020 | 2 | T | S01 |
| P021 | 2 | T | S01 |
| P022 | 2 | T | S01 |
| P023 | 2 | T | S01 |
| P024 | 2 | T | S01 |
| P025 | 2 | T | S01 |
| P026 | 2 | T | S01 |
| P027 | 2 | T | S01 |
| P028 | 2 | T | S01 |
| P029 | 2 | T | S01 |
| P030 | 2 | T | S01 |
| P031 | 2 | T | S01 |
| P032 | 2 | T | S01 |
| P033 | 2 | T | S01 |
| P034 | 2 | T | S01 |
| P035 | 2 | T | S01 |
| P036 | 2 | T | S01 |
| P037 | 2 | T | S01 |
| P038 | 2 | T | S01 |
| P039 | 2 | T | S01 |
| P040 | 2 | T | S01 |

EPA I.D. Number NMD002208627

| EPA Hazardous Waste Number | Estimated Annual Quantity of Waste | Unit of Measure | Process Codes |
|---|---|---|---|
| P041 | 2 | T | S01 |
| P042 | 2 | T | S01 |
| P043 | 2 | T | S01 |
| P044 | 2 | T | S01 |
| P045 | 2 | T | S01 |
| P046 | 2 | T | S01 |
| P047 | 2 | T | S01 |
| P048 | 2 | T | S01 |
| P049 | 2 | T | S01 |
| P050 | 2 | T | S01 |
| P051 | 2 | T | S01 |
| P052 | 2 | T | S01 |
| P053 | 2 | T | S01 |
| P054 | 2 | T | S01 |
| P055 | 2 | T | S01 |
| P056 | 2 | T | S01 |
| P057 | 2 | T | S01 |
| P058 | 2 | T | S01 |
| P059 | 2 | T | S01 |
| P060 | 2 | T | S01 |
| P061 | 2 | T | S01 |
| P062 | 2 | T | S01 |
| P063 | 2 | T | S01 |
| P064 | 2 | T | S01 |
| P065 | 2 | T | S01 |
| P066 | 2 | T | S01 |
| P067 | 2 | T | S01 |
| P068 | 2 | T | S01 |
| P069 | 2 | T | S01 |
| P070 | 2 | T | S01 |
| P071 | 2 | T | S01 |
| P072 | 2 | T | S01 |
| P073 | 2 | T | S01 |
| P074 | 2 | T | S01 |
| P075 | 2 | T | S01 |
| P076 | 2 | T | S01 |
| P077 | 2 | T | S01 |
| P078 | 2 | T | S01 |

EPA I.D. Number NMD002208627

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|---|---|---|---|
| P079 | 2 | T | S01 |
| P080 | 2 | T | S01 |
| P081 | 2 | T | S01 |
| P082 | 2 | T | S01 |
| P083 | 2 | T | S01 |
| P084 | 2 | T | S01 |
| P085 | 2 | T | S01 |
| P086 | 2 | T | S01 |
| P087 | 2 | T | S01 |
| P088 | 2 | T | S01 |
| P089 | 2 | T | S01 |
| P090 | 2 | T | S01 |
| P091 | 2 | T | S01 |
| P092 | 2 | T | S01 |
| P093 | 2 | T | S01 |
| P094 | 2 | T | S01 |
| P095 | 2 | T | S01 |
| P096 | 2 | T | S01 |
| P097 | 2 | T | S01 |
| P098 | 2 | T | S01 |
| P099 | 2 | T | S01 |
| P100 | 2 | T | S01 |
| P101 | 2 | T | S01 |
| P102 | 2 | T | S01 |
| P103 | 2 | T | S01 |
| P104 | 2 | T | S01 |
| P105 | 2 | T | S01 |
| P106 | 2 | T | S01 |
| P107 | 2 | T | S01 |
| P108 | 2 | T | S01 |
| P109 | 2 | T | S01 |
| P110 | 2 | T | S01 |
| P111 | 2 | T | S01 |
| P112 | 2 | T | S01 |
| P113 | 2 | T | S01 |
| P114 | 2 | T | S01 |
| P115 | 2 | T | S01 |
| P116 | 2 | T | S01 |

EPA I.D. Number NMD002208627

| EPA Hazardous Waste Number | Estimated Annual Quantity of Waste | Unit of Measure | Process Codes |
|---|---|---|---|
| P117 | 2 | T | S01 |
| P118 | 2 | T | S01 |
| P119 | 2 | T | S01 |
| P120 | 2 | T | S01 |
| P121 | 2 | T | S01 |
| P122 | 2 | T | S01 |
| P123 | 2 | T | |
| S01 | | | |
| U001 | 2 | T | S01 |
| U002 | 2 | T | S01 |
| U003 | 2 | T | S01 |
| U004 | 2 | T | S01 |
| U005 | 2 | T | S01 |
| U006 | 2 | T | S01 |
| U007 | 2 | T | S01 |
| U008 | 2 | T | S01 |
| U009 | 2 | T | S01 |
| U010 | 2 | T | S01 |
| U011 | 2 | T | S01 |
| U012 | 2 | T | S01 |
| U013 | 2 | T | S01 |
| U014 | 2 | T | S01 |
| U015 | 2 | T | S01 |
| U016 | 2 | T | S01 |
| U017 | 2 | T | S01 |
| U018 | 2 | T | S01 |
| U019 | 2 | T | S01 |
| U020 | 2 | T | S01 |
| U021 | 2 | T | S01 |
| U022 | 2 | T | S01 |
| U023 | 2 | T | S01 |
| U024 | 2 | T | S01 |
| U025 | 2 | T | S01 |
| U026 | 2 | T | S01 |
| U027 | 2 | T | S01 |
| U028 | 2 | T | S01 |
| U029 | 2 | T | S01 |

EPA I.D. Number NMD002208627

| EPA Hazardous Waste Number | Estimated Annual Quantity of Waste | Unit of Measure | Process Codes |
|---|---|---|---|
| U030 | 2 | T | S01 |
| U031 | 2 | T | S01 |
| U032 | 2 | T | S01 |
| U033 | 2 | T | S01 |
| U034 | 2 | T | S01 |
| U035 | 2 | T | S01 |
| U036 | 2 | T | S01 |
| U037 | 2 | T | S01 |
| U038 | 2 | T | S01 |
| U039 | 2 | T | S01 |
| U040 | 2 | T | S01 |
| U041 | 2 | T | S01 |
| U042 | 2 | T | S01 |
| U043 | 2 | T | S01 |
| U044 | 2 | T | S01 |
| U045 | 2 | T | S01 |
| U046 | 2 | T | S01 |
| U047 | 2 | T | S01 |
| U048 | 2 | T | S01 |
| U049 | 2 | T | S01 |
| U050 | 2 | T | S01 |
| U051 | 2 | T | S01 |
| U052 | 2 | T | S01 |
| U053 | 2 | T | S01 |
| U054 | 2 | T | S01 |
| U055 | 2 | T | S01 |
| U056 | 2 | T | S01 |
| U057 | 2 | T | S01 |
| U058 | 2 | T | S01 |
| U059 | 2 | T | S01 |
| U060 | 2 | T | S01 |
| U061 | 2 | T | S01 |
| U062 | 2 | T | S01 |
| U063 | 2 | T | S01 |
| U064 | 2 | T | S01 |
| U065 | 2 | T | S01 |
| U066 | 2 | T | S01 |
| U067 | 2 | T | S01 |

EPA I.D. Number NMD002208627

| EPA Hazardous Waste Number | Estimated Annual Quantity of Waste | Unit of Measure | Process Codes |
|---|---|---|---|
| U068 | 2 | T | S01 |
| U069 | 2 | T | S01 |
| U070 | 2 | T | S01 |
| U071 | 2 | T | S01 |
| U072 | 2 | T | S01 |
| U073 | 2 | T | S01 |
| U074 | 2 | T | S01 |
| U075 | 2 | T | S01 |
| U076 | 2 | T | S01 |
| U077 | 2 | T | S01 |
| U078 | 2 | T | S01 |
| U079 | 2 | T | S01 |
| U080 | 2 | T | S01 |
| U081 | 2 | T | S01 |
| U082 | 2 | T | S01 |
| U083 | 2 | T | S01 |
| U084 | 2 | T | S01 |
| U085 | 2 | T | S01 |
| U086 | 2 | T | S01 |
| U087 | 2 | T | S01 |
| U088 | 2 | T | S01 |
| U089 | 2 | T | S01 |
| U090 | 2 | T | S01 |
| U091 | 2 | T | S01 |
| U092 | 2 | T | S01 |
| U093 | 2 | T | S01 |
| U094 | 2 | T | S01 |
| U095 | 2 | T | S01 |
| U096 | 2 | T | S01 |
| U097 | 2 | T | S01 |
| U098 | 2 | T | S01 |
| U099 | 2 | T | S01 |
| U100 | 2 | T | S01 |
| U101 | 2 | T | S01 |
| U102 | 2 | T | S01 |
| U103 | 2 | T | S01 |
| U104 | 2 | T | S01 |
| U105 | 2 | T | S01 |

EPA I.D. Number NMD002208627

| EPA Hazardous Waste Number | Estimated Annual Quantity of Waste | Unit of Measure | Process Codes |
|---|---|---|---|
| U106 | 2 | T | S01 |
| U107 | 2 | T | S01 |
| U108 | 2 | T | S01 |
| U109 | 2 | T | S01 |
| U110 | 2 | T | S01 |
| U111 | 2 | T | S01 |
| U112 | 2 | T | S01 |
| U113 | 2 | T | S01 |
| U114 | 2 | T | S01 |
| U115 | 2 | T | S01 |
| U116 | 2 | T | S01 |
| U117 | 2 | T | S01 |
| U118 | 2 | T | S01 |
| U119 | 2 | T | S01 |
| U120 | 2 | T | S01 |
| U121 | 2 | T | S01 |
| U122 | 2 | T | S01 |
| U123 | 2 | T | S01 |
| U124 | 2 | T | S01 |
| U125 | 2 | T | S01 |
| U126 | 2 | T | S01 |
| U127 | 2 | T | S01 |
| U128 | 2 | T | S01 |
| U129 | 2 | T | S01 |
| U130 | 2 | T | S01 |
| U131 | 2 | T | S01 |
| U132 | 2 | T | S01 |
| U133 | 2 | T | S01 |
| U134 | 2 | T | S01 |
| U135 | 2 | T | S01 |
| U136 | 2 | T | S01 |
| U137 | 2 | T | S01 |
| U138 | 2 | T | S01 |
| U139 | 2 | T | S01 |
| U140 | 2 | T | S01 |
| U141 | 2 | T | S01 |
| U142 | 2 | T | S01 |
| U143 | 2 | T | S01 |

EPA I.D. Number NMD002208627

| EPA Hazardous Waste Number | Estimated Annual Quantity of Waste | Unit of Measure | Process Codes |
|---|---|---|---|
| U144 | 2 | T | S01 |
| U145 | 2 | T | S01 |
| U146 | 2 | T | S01 |
| U147 | 2 | T | S01 |
| U148 | 2 | T | S01 |
| U149 | 2 | T | S01 |
| U150 | 2 | T | S01 |
| U151 | 2 | T | S01 |
| U152 | 2 | T | S01 |
| U153 | 2 | T | S01 |
| U154 | 2 | T | S01 |
| U155 | 2 | T | S01 |
| U156 | 2 | T | S01 |
| U157 | 2 | T | S01 |
| U158 | 2 | T | S01 |
| U159 | 2 | T | S01 |
| U160 | 2 | T | S01 |
| U161 | 2 | T | S01 |
| U162 | 2 | T | S01 |
| U163 | 2 | T | S01 |
| U164 | 2 | T | S01 |
| U165 | 2 | T | S01 |
| U166 | 2 | T | S01 |
| U167 | 2 | T | S01 |
| U168 | 2 | T | S01 |
| U169 | 2 | T | S01 |
| U170 | 2 | T | S01 |
| U171 | 2 | T | S01 |
| U172 | 2 | T | S01 |
| U173 | 2 | T | S01 |
| U174 | 2 | T | S01 |
| U175 | 2 | T | S01 |
| U176 | 2 | T | S01 |
| U177 | 2 | T | S01 |
| U178 | 2 | T | S01 |
| U179 | 2 | T | S01 |
| U180 | 2 | T | S01 |
| U181 | 2 | T | S01 |

EPA I.D. Number NMD002208627

| EPA Hazardous Waste Number | Estimated Annual Quantity of Waste | Unit of Measure | Process Codes |
|---|---|---|---|
| U182 | 2 | T | S01 |
| U183 | 2 | T | S01 |
| U184 | 2 | T | S01 |
| U185 | 2 | T | S01 |
| U186 | 2 | T | S01 |
| U187 | 2 | T | S01 |
| U188 | 2 | T | S01 |
| U189 | 2 | T | S01 |
| U190 | 2 | T | S01 |
| U191 | 2 | T | S01 |
| U192 | 2 | T | S01 |
| U193 | 2 | T | S01 |
| U194 | 2 | T | S01 |
| U195 | 2 | T | S01 |
| U196 | 2 | T | S01 |
| U197 | 2 | T | S01 |
| U198 | 2 | T | S01 |
| U199 | 2 | T | S01 |
| U200 | 2 | T | S01 |
| U201 | 2 | T | S01 |
| U202 | 2 | T | S01 |
| U203 | 2 | T | S01 |
| U204 | 2 | T | S01 |
| U205 | 2 | T | S01 |
| U206 | 2 | T | S01 |
| U207 | 2 | T | S01 |
| U208 | 2 | T | S01 |
| U209 | 2 | T | S01 |
| U210 | 2 | T | S01 |
| U211 | 2 | T | S01 |
| U212 | 2 | T | S01 |
| U213 | 2 | T | S01 |
| U214 | 2 | T | S01 |
| U215 | 2 | T | S01 |
| U216 | 2 | T | S01 |
| U217 | 2 | T | S01 |
| U218 | 2 | T | S01 |
| U219 | 2 | T | S01 |

EPA I.D. Number NMD002208627

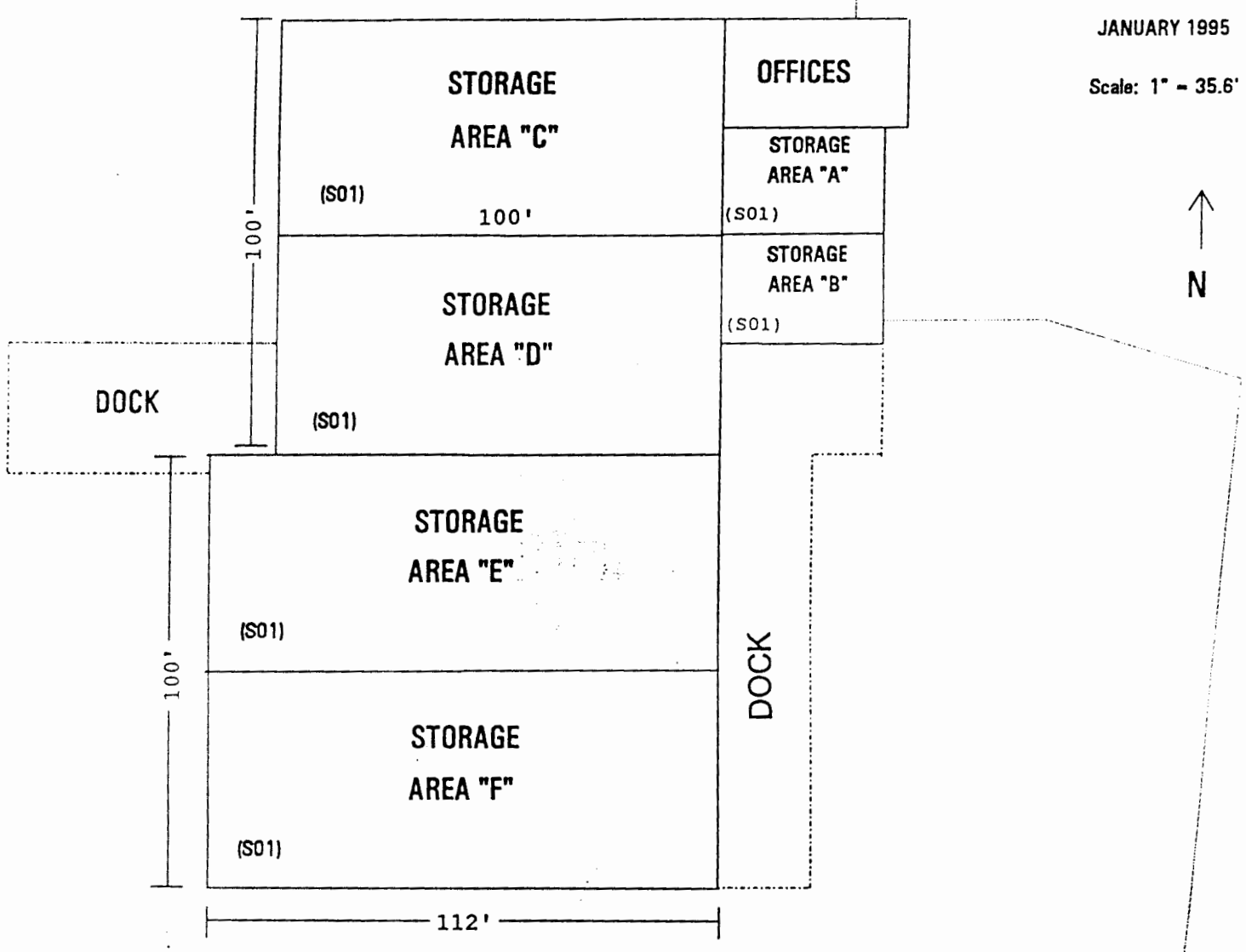
| EPA Hazardous Waste Number | Estimated Annual Quantity of Waste | Unit of Measure | Process Codes |
|---|---|---|---|
| U220 | 2 | T | S01 |
| U221 | 2 | T | S01 |
| U222 | 2 | T | S01 |
| U223 | 2 | T | S01 |
| U224 | 2 | T | S01 |
| U225 | 2 | T | S01 |
| U226 | 2 | T | S01 |
| U227 | 2 | T | S01 |
| U228 | 2 | T | S01 |
| U229 | 2 | T | S01 |
| U230 | 2 | T | S01 |
| U231 | 2 | T | S01 |
| U232 | 2 | T | S01 |
| U233 | 2 | T | S01 |
| U234 | 2 | T | S01 |
| U235 | 2 | T | S01 |
| U236 | 2 | T | S01 |
| U237 | 2 | T | S01 |
| U238 | 2 | T | S01 |
| U239 | 2 | T | S01 |
| U240 | 2 | T | S01 |
| U241 | 2 | T | S01 |
| U242 | 2 | T | S01 |
| U243 | 2 | T | S01 |
| U244 | 2 | T | S01 |
| U245 | 2 | T | S01 |
| U246 | 2 | T | S01 |
| U247 | 2 | T | S01 |
| U248 | 2 | T | S01 |
| U249 | 2 | T | S01 |

FIGURE 2

# Rinchem Company, Inc. Facility

JANUARY 1995

Scale: 1" = 35.6'



## GENERAL FACILITY DESCRIPTION [40 CFR 270.14(b)(1)]

The Rinchem Company, Inc. (Rinchem) Albuquerque facility is located at 6133 Edith Blvd N.E., Bernalillo County, New Mexico. The two-acre site is zoned M-1. The facility is 600 feet west of Edith Blvd. and just east of the Santa Fe Railroad mainline.

The legal description of the property as recorded in book C21 on page 80 filed in the office of the Bernalillo County Clerk is as follows:

> Lot 4A-1 Subdivision of Lot 4A Edith Land Company, as the same is shown and designated on the Replat of Lot 4A, Edith Land Company, now comprising Lots 4A-1, 4A-2, filed in the Office of the County Clerk, New Mexico, on May 20, 1983.

The facility consists of an approximately 23,000 square foot warehouse and office, loading/unloading dock, a back dock and two rainwater containment areas.

go to p93 thro' 97 where detailed description is given

## CHEMICAL AND PHYSICAL ANALYSIS [40 CFR 270.14(b)(2)]

Before accepting a generator's waste at the facility, Rinchem requires the generator to provide data defining the chemical and physical characteristics of the waste stream. Profiles of each waste accepted at the facility are maintained in office files at the facility. Profiling and waste analysis procedures used at the Rinchem facility are given in the Waste Analysis Plan.

Rinchem will accept wastes for storage under this permit that have any of the listed EPA waste codes (F001-F039, K001-K136, P001-P123 and U001-U249) and wastes that exhibit any of the characteristics of ignitability, corrosivity, toxicity and/or reactivity (waste codes D001-D043). Rinchem will also accept combinations of listed wastes and/or characteristic wastes.

# WASTE ANALYSIS PLAN [40 CFR 270.14(b)(3)]

Attached is a copy of the Rinchem Company Inc.'s waste analysis plan.

# RINCHEM COMPANY INC.'S WASTE ANALYSIS PLAN

## Introduction

This plan will be maintained as part of the permit and at the facility as a separate document in order to ensure that wastes can be handled, stored and disposed of in accordance with RCRA requirements. The waste analysis plan will be included as part of the operating record which will be kept in the office of the waste facility. The procedures in the waste analysis plan will pertain to wastes from domestic and foreign sources. The only procedure that will be different for the acceptance of foreign waste will be that Rinchem will notify the Regional Administrator in writing at least four weeks in advance of the date the first shipment of waste from a new waste stream is expected to arrive at the facility. See the following page for an example of the form to be used. The notification will be made for each different waste stream from each foreign source.

## Waste Characterization

In order to safely handle and store hazardous wastes and ensure that land disposal restrictions are met, the wastes must be correctly characterized. Four types of characterization that will be used are

- Knowledge of process (KOP) and published information
- Detailed chemical analysis
- Hazardous Materials Categorization (HazCat) procedures
- Chemical fingerprint checks

Knowledge of process(KOP) is the knowledge that a generator has about the waste such as the content of the waste and the process that produced the waste. This knowledge helps with the determination of the waste characterization and is many times sufficient to determine both the hazards associated with handling and storage and the requirements and restrictions for disposal. Existing published or documented data such as Material Safety Data Sheets (MSDS) on the hazardous waste or waste produced from similar processes can also be used. An example of the form used by Rinchem follows.

When KOP is not adequate to determine the safe handling, storage and/or treatment procedures, a detailed chemical analysis of a sample of the waste stream will be performed by a qualified laboratory with proper QA/QC procedures in place when submitting the waste stream profile. The containers and preservatives used for the sample will be specified by the lab doing the analysis, and the sample will be sent to the lab with a chain of custody form. Testing parameters are chosen based on the knowledge of the process from which the waste was produced and the information that the analysis yields about the waste, for example, Btu values, flashpoint, etc. The test methods that will be used are described in the most current version of EPA's "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846" or comparable methods.

HazCat procedures - the processes and tests described in "HAZCAT™ CHEMICAL IDENTIFICATION SYSTEM" (Turkington, 1988, or most current) to identify unknowns - or a comparable method are followed to help characterize solid and liquid wastes that can not be positively identified by the generator or from labeling information. Our HazCat system has

over a hundred tests which allow us to identify the hazardous characteristics of the waste material. The properties that can be tested for include:

- flammability levels
- oxidizer characteristics
- corrosive charactersitics
- reactivity
- cyanides
- halides
- PCB presence
- pesticides
- herbicides

Specific parameters will be selected by using Knowledge of Process information from the generator or any other applicable information about the characteristics of the waste.

To verify that the characteristics of the waste stream are consistent with the information provided by the generator and with the parameters listed on the profile for that waste stream, a chemical fingerprint check will be performed on each incoming waste stream excluding labpacks and highly reactive wastes. Fingerprint procedures will be conducted according to published methods such as Turkington, 1988, or equivalent. The fingerprint parameters that may be tested or observed include:

- Physical state
- Physical description

- pH
- Color
- Ignitible screen (ignitibility)
- Specific gravity

The above parameters will be selected not only for the fact that they will indicate that the waste is actually what the generator claims that it is, but they will provide sufficient information about the waste so that is can be properly stored, treated and disposed of.

**Pre-acceptance of a Waste Stream**

For each new hazardous waste stream that is a candidate for storage at the facility, the following procedures will be followed prior to notifying a generator that a waste stream can be accepted at the Rinchem facility:

1) The generator will provide pertinent chemical and physical data requested on the waste profile sheet. A sample waste profile sheet is included to show the contents of the form rather than the exact format of the form. The profile includes a certification that any samples of waste submitted as part of the waste acceptance process are representative and that the generator will notify Rinchem of known changes in the waste stream.

2) The generator will provide pertinent chemical and physical data and certifications requested to satisfy land disposal restriction requirements in 40 CFR 268.

3) The data on the waste profile will be verified as necessary through HazCat, chemical

fingerprint checks or detailed analysis of a representative sample of the waste.

4) After comparing the data supplied by the generator with that obtained by verification and assuring that our analysis contains all the information which must be known to store, treat and dispose of the waste in accordance with Parts 264 and 268, Rinchem will determine the acceptability of the waste based on the permit conditions.

**Physical Acceptance of Waste at the Facility**

Except in the case of labpacks and highly reactive wastes, upon arrival of a waste shipment at Rinchem, a determination will be made to insure that the customer did send what was profiled and accepted. First, a verification will be made that a PRE-ACCEPTANCE INSPECTION SHEET (PAIS) has been filled out for the generator's shipment of waste. An example of what a PAIS might contain is attached. Second, the manifest and LDR form will be compared with the profile (which is kept in the facility office) to make sure they match. Some of the items that will be compared include the waste description and DOT shipping information. Next, a fingerprint analysis (see the **Waste Characterization** section) will be performed which will provide reasonable assurance that the waste shipped from the generator agrees with the accompanying manifest. The results of the fingerprint testing of a given waste stream will be compared to the values obtained from previous shipments of the waste stream and the waste profile sheet and will be required to fall within an established tolerance limit.

The minimum number of containers that will be sampled from each shipment of a waste

stream will be determined according to the cube root procedure, Method D 140-70, of the American Society for Testing and Materials. For a typical load, the formula provides the following:

| # DRUMS RECEIVED | # DRUMS SAMPLED |
|---|---|
| 1 | 1 |
| 2-8 | 2 |
| 9-27 | 3 |
| 28-64 | 4 |
| 65-125 | 5 |

The drums to be sampled will be chosen at random by the person taking the samples. The sampling will take place in a well ventilated area of the facility such as the dock.

One of the methods referred to in 40 CFR 261, Appendix I, or an equivalent procedure will be used to obtain representative samples of the waste by employees wearing personal protective equipment (PPE) as described in the PREVENTATIVE MEASURES section.

Typically, the employee's PPE will include goggles or safety glasses, gloves and an apron or coveralls. Rinchem's Health and Safety Plan will be followed.

The method of sampling that will most frequently used - unless the technology changes - will be sampling of containerized liquid waste with a COLIWASA. COLIWASA stands for "containerized liquid waste sampler." See the following page for a schematic of a type of COLIWASA. The COLIWASA is an effective representative sampler for homogeneous and multilayer liquids. Disposable glass COLIWASAs will be used except when sampling hydrofluoric acid and strong alkali solutions - in which case a teflon one will be used. A separate COLIWASA will be used to sample each container.

Some of the hazardous wastes received at the facility are labpacks of small quantity chemical wastes which can be categorized into several types:

- Excess or residual reagent chemicals
- Off-specification or expired chemicals
- Relatively small quantities of chemical solutions or mixtures of known composition
- Solid waste laboratory material

In most cases, knowledge of process is sufficient to determine both the hazards associated with the handling and storage of labpack wastes and the requirements and restrictions for its disposal; therefore, analytical testing is not usually conducted on these wastes. The cube root procedure mentioned above will be used to determine the number of containers in each labpack waste stream which will be inspected for conformity of the paperwork with the

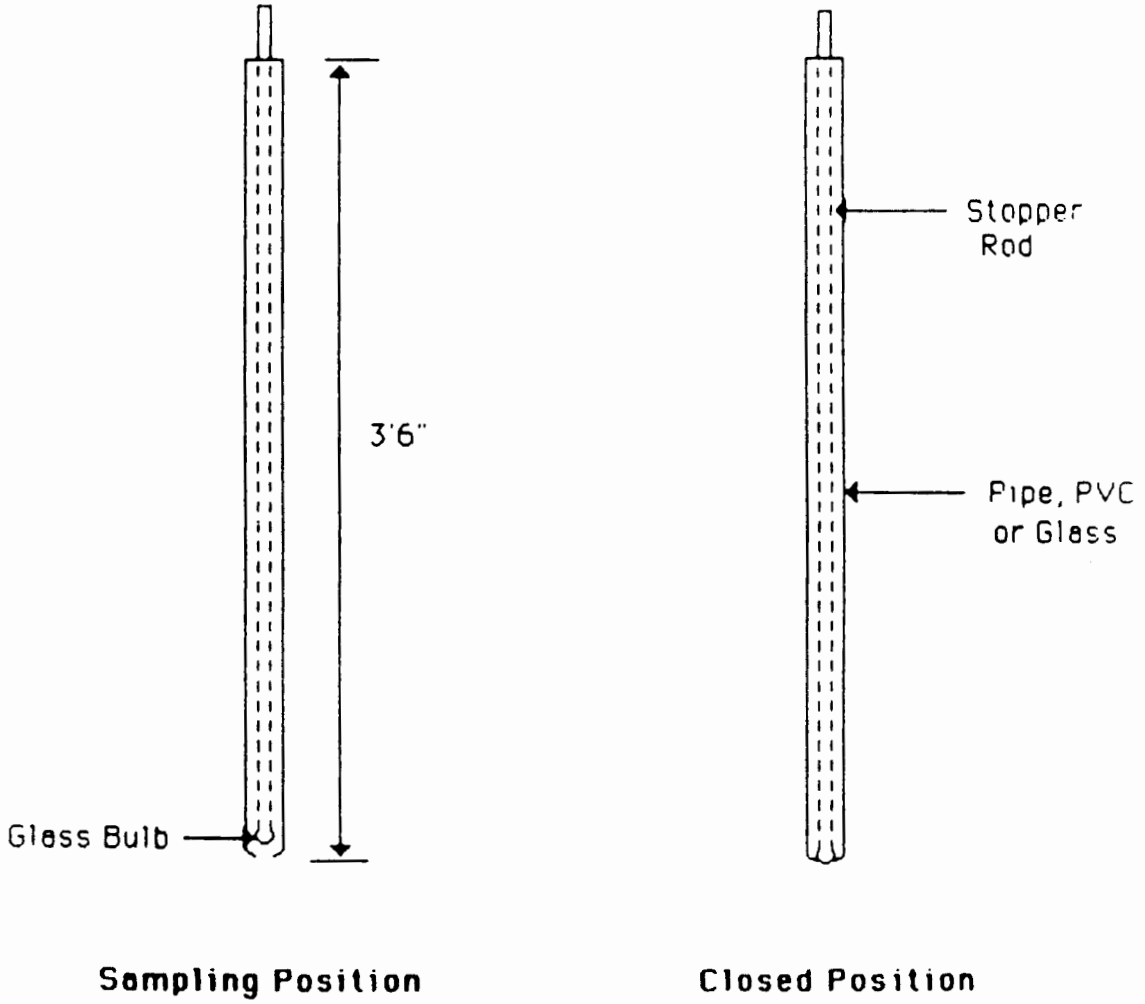



Figure WAP-2 Schematic of a Coliwasa Type Sampler

container contents.

In the case of highly reactive wastes being shipped for treatment at other off-site TSDF's, the inspection process may entail no more than inspecting the container for proper packaging and labeling in order to protect the employees.

**Unacceptable Waste Shipments**

The Hazardous Waste Coordinator (or his designee) will qualify a waste shipment as unacceptable if any of the following conditions exist:

- Failure of the generator to pre-qualify the waste stream or provide appropriate data
- Waste shipments that contain components for which Rinchem is not permitted such as radioactive and/or explosive wastes
- Improper or inappropriate packaging, labeling, or manifesting
- Characteristic quantity or composition discrepancy between the waste and the waste manifest or profile
- Values for fingerprint analysis parameters that are out of the tolerance levels set by the Rinchem
- Lack of generator credit approval

The Hazardous Waste Coordinator (or designee) must also classify the waste as unacceptable for the Rinchem facility if it is significantly different in composition or volume from the

information shown on the waste profile sheet, the pre-acceptance analysis of the representative sample, or on the manifest. Containers are counted to determine any quantity discrepancies.

Waste found to be in non-conformance may be rejected on the spot or they may be reevaluated for possible acceptance by the facility despite the variance. Rinchem's reevaluation procedure is designed to determine whether a waste material can be handled at the facility and whether the generator concurs with the characterization conducted by Rinchem. The Hazardous Waste Coordinator evaluates the shipment according to the following criteria:

- Rinchem facility requirements
- discussions with the generator
- facility parameters for storage
- the need for additional supplemental analysis

If all of the above parameters including supplemental analysis indicate the waste can be accepted and the generator concurs, new manifests or profiles may be created as necessary to ensure compliance. If a discrepancy cannot be resolved within 10 days of the shipment receipt, the waste will be returned to the generator or the appropriate regulatory agencies will be notified, in writing, of the discrepancy and of attempts to reconcile it.

**Waste Tracking/Operating Record**

As per CFR 264.73, Rinchem Company Inc. maintains a written record and a computerized system of all manifested wastes that enter the facility. This ongoing log contains a listing of all manifested wastes being received and shipped, location of waste within the facility, quantity and description of wastes, generator and the final TSDF Destination. The operating record will also contain all profiles to Rinchem, waste acceptances and QA/QC forms. Once a waste shipment has been analyzed and accepted, the containers in the shipment will be appropriately marked so that they can be tracked within the facility. The containers will be moved to the appropriate storage area based on the hazard class and compatibility of the material.

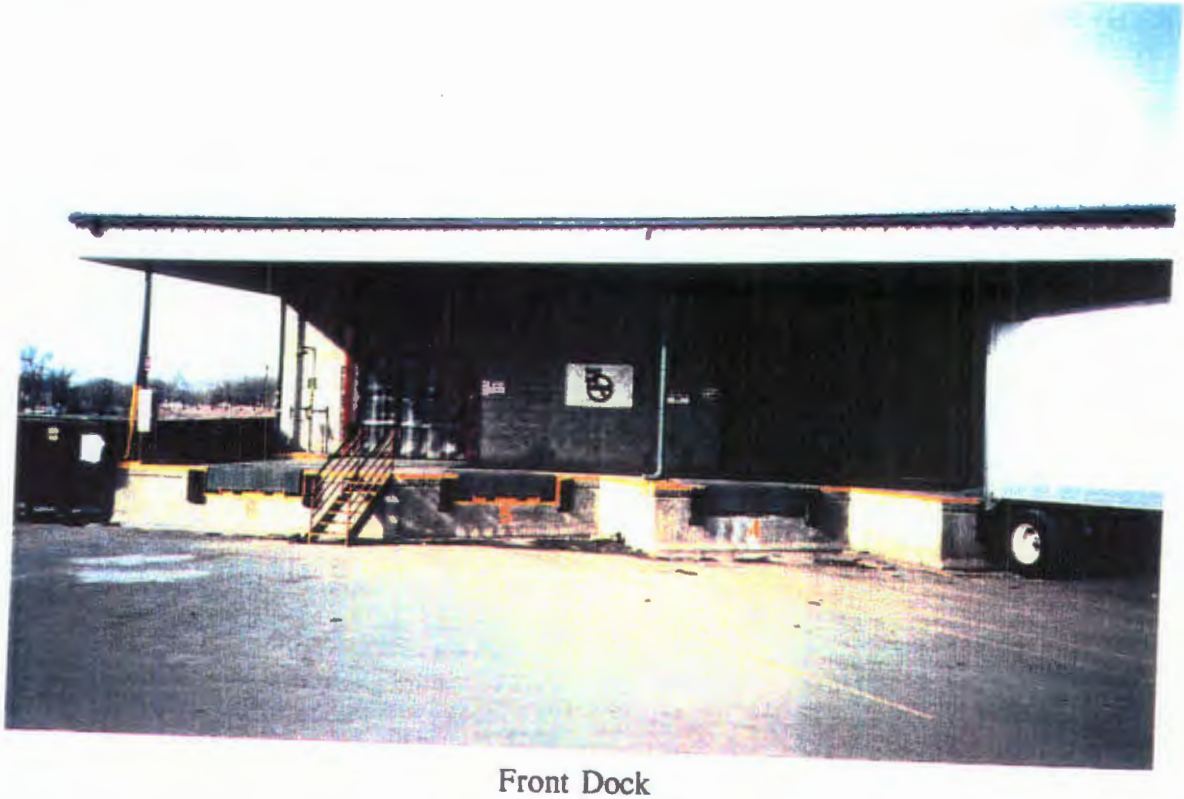
**Analysis Review**

The pre-acceptance evaluation of a hazardous waste stream will be repeated when a generator notifies Rinchem that the process generating the waste has changed or if Rinchem has reason to suspect that the waste is in non-conformance with available pre-acceptance documentation. In the case of a change in the process generating the waste, the generator must submit a new waste profile sheet and sample. The waste stream will also be reanalyzed if a waste shipment received at the facility does not match the waste designated on the accompanying manifest or shipping paper.

Rinchem Company, Inc. Warehouse and Office Building
January 24, 1995


Warehouse Gate and Front Dock
January 24, 1995

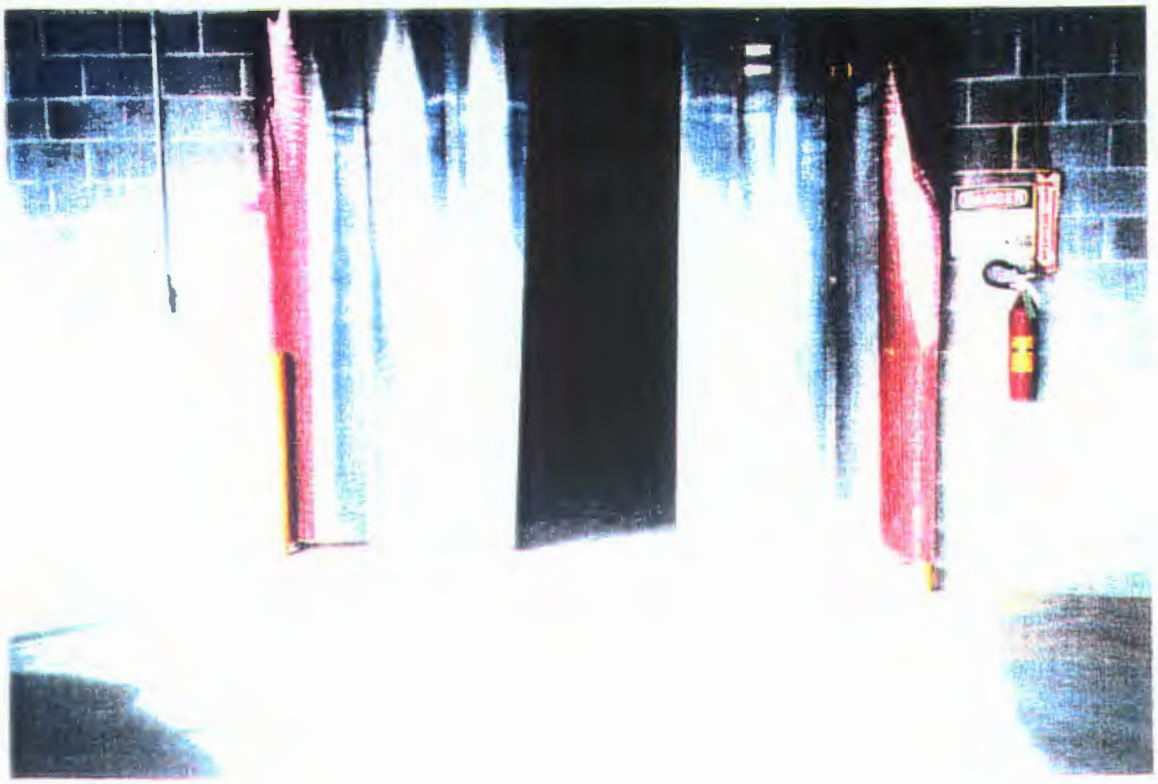
Item XVII



Front Dock
January 24, 1995

South Containment Pond
January 24, 1995

Item XVII



Ramp from Dock into Storage Room D
January 24 1995

Storage Room F
January 24, 1995

Storage Room E
January 24, 1995

Storage Room C
January 24, 1995

**Item XVII**

**Storage Room D**
**January 24, 1995**

**Item XVII**


**Storage Room A**
**January 24, 1995**

**Item XVII**


**Storage Room B**
**January 24, 1995**

# SECURITY [40 CFR 270.14(b)(4)]

**Description of 24-hour Surveillance System and/or Artificial or Natural Barriers**

The Rinchem Company, Inc. facility employs a number of measures to ensure adequate security in order to assure the protection of the facility and to comply with government regulations.

The facility has an alarm system that is connected to each window and door, the fire sprinkler system, the temperature control systems and the pull stations. This monitoring system is manned 24 hours a day by an outside security company. A list of employee names and phone numbers to contact is kept at this monitoring company should an emergency occur.

The entire facility, including the outside area around the building, is maintained in a secure manner. A fence encompasses the entire facility. The fencing is constructed of 6 foot high, light gauge fabric, 2" mesh chain link fence.

All gates are maintained in a closed and locked condition during all periods of facility non-working hours. All critical locks and the alarm code are changed when a facility employee leaves the company or when a key is lost. During working hours, the gates are kept closed or are observed by facility personnel. Access through the main truck loading/unloading gate is blocked by a barrier with a sign informing the truck drivers to check in with the office

before entering. The customer service representatives seated immediately inside the office entrance door confirm identification of all visitors and the purpose of their visit. Visitors are not allowed in the warehouse without an employee accompanying them.

**Description of Warning Signs**

Warning signs are posted at all of the gates and several other fence locations around the facility in such a manner as to be visible from all angles of approach and bear the legend in English "Danger - Unauthorized Persons Keep Out." Warning signs in Spanish are posted next to or below the English warning signs and bear the legend "PELIGRO - Personas Sin Autorizacion NO ENTRADA." All signs are legible from a distance of 25 feet.

## INSPECTION SCHEDULES [40 CFR 270.14(b)(5)]

Attached are the general inspection schedule forms that are used at the Rinchem facility. There are forms for the regular 5 day work week, quarterly, semiannual and annual schedules. The criteria to be inspected are placed on the schedule that is appropriate for the frequency of inspection to be performed. There is a section on each form for recording the date and nature of repairs performed and/or remedial action taken. The schedules are maintained and kept at the Rinchem Company, Inc. facility.

# Rinchem General Inspection Sheet

**PLEASE FILL OUT IN INK**

Inspector _____ Date of Inspection _____ Time of Inspection _____

Inspector Signature _____

| ITEM | CRITERIA/OBSERVATIONS | STATUS (A) Acceptable (U) Unacceptable | DATE AND NATURE OF REPAIRS/ REMEDIAL ACTION AND COMMENTS |
|---|---|---|---|
| Container Loading/ Unloading Area | - Check that no containers of hazardous waste are left open or exposed overnight | _____ | |
| | - Check for evidence of spilled material on concrete below truck and on dock | _____ | |
| | - Check for debris and refuse | _____ | _____ |

Container Storage - Check for evidence of spilled material on _____

Area concrete floor & drains

- Check for debris and refuse _____

- Check for adequacy of aisle space _____

# Rinchem Daily Inspection Sheet

**PLEASE FILL OUT IN INK**

Inspector _____ Date of Inspection _____ Time of Inspection

_____

Inspector Signature _____

| ITEM | CRITERIA/OBSERVATIONS | STATUS | DATE AND NATURE OF REPAIRS/ REMEDIAL ACTION AND COMMENTS |
|---|---|---|---|
| | | (A) Acceptable (U) Unacceptable | |
| Stored Containers | - Check for container leaks or swelling | _____ | |
| | - Check that containers are not open | _____ | |
| | - Check for proper placement | _____ | _____ |

Security Equipment

- Check that alarm is working _____

_____

- Check that gates close properly and locks _____

_____

are in working order

**PLEASE FILL OUT IN INK**

Inspector _____ Date of Inspection _____ Time of Inspection

_____

Inspector Signature _____

---

| ITEM | CRITERIA/OBSERVATIONS | STATUS | DATE AND |
|---|---|---|---|
| NATURE OF REPAIRS/ | | | |
| | | (A) Acceptable | REMEDIAL |
| ACTION AND COMMENTS | | | |
| | | (U) Unacceptable | |

---

Communication Equipment

Telephones - Check that access is not blocked _____

_____

Pull Stations - Check that access is not blocked _____

_____

Emergency Equipment

Fire Extinguishers - Check that access is not blocked _____

EyeWash/Showers - Check that access is not blocked _____

Exits - Check that access is not blocked _____

**PLEASE FILL OUT IN INK**

Inspector _____ Date of Inspection _____ Time of Inspection

_____

Inspector Signature _____

---

| ITEM | CRITERIA/OBSERVATIONS | STATUS | DATE AND |
|---|---|---|---|
| NATURE OF REPAIRS/ | | | |
| | | (A) Acceptable | REMEDIAL |
| ACTION AND COMMENTS | | | |
| | | (U) Unacceptable | |

---

Safety Equipment

Emergency Shower/ - Check water pressure _____

_____

Eyewash

- Check for leaks _____

_____

I certify that the above recommended action has been taken on items mentioned and/or defective items are now satisfactory.

Supervisor_____ Date_____

**PLEASE FILL OUT IN INK**

Inspector _____ Date of Inspection _____ Time of Inspection

_____

Inspector Signature _____

---

ITEM CRITERIA/OBSERVATIONS STATUS DATE AND

NATURE OF REPAIRS/

(A) Acceptable REMEDIAL

ACTION AND COMMENTS

(U) Unacceptable

---

Safety Equipment

Protective glasses - Check if broken _____

_____

- Check for adequate supply for _____

_____

employees & visitors

Hard Hats - Check if broken _____

| | | |
|---|---|---|
| | - Check for adequate supply for | |
| | employees & visitors | |
| First Aid Equipment | - Check that all necessary items are | |
| and Kit | present | |

# Rinchem Quarterly Inspection Sheet

**PLEASE FILL OUT IN INK**

Inspector _____ Date of Inspection _____ Time of Inspection _____

Inspector Signature _____

| ITEM | CRITERIA/OBSERVATIONS | STATUS | DATE AND NATURE OF REPAIRS/ ACTION AND COMMENTS |
|---|---|---|---|
| | | (A) Acceptable (U) Unacceptable | REMEDIAL |
| Protective Clothing | - Check clothes for holes, wear and tear | _____ | |
| | - Check for adequate number of sets of protective clothing | _____ | |
| Respirator | - Check for adequate number of | _____ | |

cartridges for respirators

- Check that all respirators are in good _____

_____

working condition

**PLEASE FILL OUT IN INK**

Inspector _____ Date of Inspection _____ Time of Inspection _____

Inspector Signature _____

| ITEM | CRITERIA/OBSERVATIONS | STATUS | DATE AND NATURE OF REPAIRS/ REMEDIAL ACTION AND COMMENTS |
|---|---|---|---|
| | | (A) Acceptable (U) Unacceptable | |
| Container Loading/ Unloading Area | - Check dock leveler for proper adjustment, operation and corrosion | _____ | |
| | - Check for condition and availability of overpack and openhead drums | _____ | |
| Security Equipment | | | |

| | | |
|---|---|---|
| Gates | - Check for damage or corrosion | _____ |
| Facility Fence | - Check for corrosion | _____ |
| | - Check fence for broken areas | _____ |

# Rinchem Quarterly Inspection Sheet

**PLEASE FILL OUT IN INK**

Inspector _____ Date of Inspection _____ Time of Inspection _____

Inspector Signature _____

| ITEM | CRITERIA/OBSERVATIONS | STATUS (A) Acceptable (U) Unacceptable | DATE AND NATURE OF REPAIRS/ REMEDIAL ACTION AND COMMENTS |
|---|---|---|---|
| Signs | - Check that signs are present (English and Spanish) | _____ | |
| | - Check that signs are legible (not defective, readable at 25 feet) | _____ | |
| Lighting | - Check to see all lights work (no defective bulbs or bad connections) | _____ | |

Emergency Equipment

Fire Extinguishers - Check pressure gauge for full charge _____

_____

indication

**PLEASE FILL OUT IN INK**

Inspector _____ Date of Inspection _____ Time of Inspection _____

Inspector Signature _____

| ITEM | CRITERIA/OBSERVATIONS | STATUS | DATE AND NATURE OF REPAIRS/ REMEDIAL ACTION AND COMMENTS |
|---|---|---|---|
| | | (A) Acceptable (U) Unacceptable | |
| Emergency Equipment | | | |
| | - Check inspection tag to ensure that monthly inspections by outside service are current | _____ | |
| | - Check seal to ensure no one has used extinguisher | _____ | |
| Absorbents | - Check for accessibility | _____ | |

| | | |
|---|---|---|
| | - Check for adequate supply | |
| Self-Contained | - Check if tanks are charged | |
| Breathing Apparatus | | |
| | - Check if spare tanks are present | |

**PLEASE FILL OUT IN INK**

Inspector _____ Date of Inspection _____ Time of Inspection _____

Inspector Signature _____

| ITEM | CRITERIA/OBSERVATIONS | STATUS | DATE AND NATURE OF REPAIRS/ ACTION AND COMMENTS |
|---|---|---|---|
| | | (A) Acceptable (U) Unacceptable | REMEDIAL |
| | - Check to see if supplied air respirators _____ are being inspected monthly | | |
| Spill Cart | - Check if all necessary items are present in accordance with the inventory checklist _____ | | |

I certify that the above recommended action has been taken on items mentioned and/or defective items are now satisfactory.

Supervisor_____ Date_____

**PLEASE FILL OUT IN INK**

Inspector _____ Date of Inspection _____ Time of Inspection _____

Inspector Signature _____

| ITEM | CRITERIA/OBSERVATIONS | STATUS (A) Acceptable (U) Unacceptable | DATE AND NATURE OF REPAIRS/ REMEDIAL ACTION AND COMMENTS |
|---|---|---|---|
| Forklift | - Check logbook to see if complete<br>safety checkup done by outside service company is complete | _____ | |
| Ground Water | - Sample and analyze the ground water | _____ | |
| Monitoring System | for the following data: total dissolved solids, pH, and total organic carbon | | |
| Spill Collection | - Check for presence of material in tank | _____ | |

Tank

- Check soundness of tank _____

I certify that the above recommended action has been taken on items mentioned and/or defective items are now satisfactory.

Supervisor_____ Date_____

# Rinchem Annual Inspection Sheet

**PLEASE FILL OUT IN INK**

Inspector _____ Date of Inspection _____ Time of Inspection

_____

Inspector Signature _____

| ITEM | CRITERIA/OBSERVATIONS | STATUS | DATE AND NATURE OF REPAIRS/ REMEDIAL ACTION AND COMMENTS |
|---|---|---|---|
| | | (A) Acceptable (U) Unacceptable | |
| Overhead Door | - Check logbook to see if complete | _____ | |
| | safety checkup done by outside service company is complete | | |
| Fire Suppression | - Check logbook to see if complete | _____ | |
| System | safety checkup done by outside service | | |

I certify that the above recommended action has been taken on items mentioned and/or defective items are now satisfactory.

Supervisor_____ Date_____

# CONTINGENCY PLAN [40 CFR 270.14(b)(7)]

Following is a copy of Rinchem Company Inc.'s contingency plan.

# RINCHEM COMPANY INC.'S CONTINGENCY PLAN

This contingency plan is designed to minimize hazards from fires, explosions or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil or surface water. The provisions of the plan will be carried out immediately whenever there is a threat to human health or the environment.

**Distribution and Amendment of the Plan**

The most current version of the contingency plan is maintained at the facility and copies are distributed to:

- Bernalillo County Sheriff's Department
- Bernalillo County Fire Department
- State Emergency Response Team
- St. Joseph's Northeast Heights General Hospital

This plan is subject to review and amendment, if necessary, if any of the following occur:

- The plan fails in an emergency
- The facility's permit is revised
- Changes in the facility increase the potential for fires, explosions, or releases of hazardous waste or alter the response necessary in an emergency

- The list of emergency coordinators changes
- The list of emergency equipment changes

**Arrangements with Local Authorities**

Appropriate local authorities have toured the facility and are familiar with the facility layout, possible evacuation routes, the general operations of the facility and the properties and hazards of the waste handled at the facility. In the case of an emergency at Rinchem such as a major fire or hazardous material disaster, an agreement designating primary emergency authority has been made with the local authorities. The Senior Operating Fire Department personnel will assume command of the field Incident Command and provide direct assistance, planning and information control to the scene. The City of Albuquerque and Bernalillo County Fire Departments will coordinate joint use of all fire protection services.

Arrangements have been made with St. Joseph's Northeast Hospital to familiarize them with the properties of hazardous waste handled at the facility and the types of injuries or illnesses which could result from fires, explosions or releases at the facility. Employees of Rinchem are registered with the hospital to provide for immediate admittance without pre-registration delay. If a Rinchem employee needs to be treated, the hospital and the ambulance service, if any is being used, should be notified ahead of time, as much as possible, of the employee's name, the nature of the injury and any contamination involved.

## Emergency Coordinator

The Emergency Coordinator and appointed alternates at the Rinchem facility are thoroughly familiar with all aspects of the contingency plan, all operations and activities at the facility, the location and characteristics of the wastes handled, the location of all records within the facility and the facility layout. The Emergency Coordinator and the alternates also have the authority to commit the resources needed to carry out the contingency plan.

The Emergency Coordinator or one of his alternates will always be on the premises or on-call and available to respond to an emergency by reaching the facility within a short period of time. In the event all of them will be out of reach on the same day, a surrogate is designated for that period of absence. Table CP-1 shows the Emergency Coordinator and his alternates in order of priority.

A dated revised copy of Table CP-1 will be supplied to the New Mexico Environmental Department, RCRA Permit Program, Hazardous and Radioactive Materials Bureau (HRMB), on the effective date of a change to the names, addresses or phone numbers on the emergency coordinator list. Any updated Table CP-1 sent to the HRMB will be accompanied by a letter from Rinchem requesting replacement of the previous table in the permit. Periodic updates to Table CP-1 may be made outside of the formal permit procedures.

# Table CP-1

## Rinchem Company, Inc.'s Emergency Coordinator & Alternates List

| Emergency Coordinator | Address | Phone Numbers |
|---|---|---|
| **John Fitzsimons** | 1217 Spur Rd<br>Rio Rancho,NM 87124 | Home: 891-4180<br>Mobile: 269-0918 |
| *1st Alternate:*<br>**Paul Levesque** | 7409 Derickson NE<br>Albuquerque, NM 87109 | Home: 823-0180<br>Pager: 766-0939 |
| *2nd Alternate:*<br>**Bob Edgar** | 7510 Los Arboles NE<br>Albuquerque,nm 87110 | Home: 889-0561<br>Mobile: |

## Facility Emergency Equipment

Table CP-2 is a list of the emergency equipment maintained at the facility including the equipment's description/capabilities and location in the facility. A dated revised copy of Table CP-2 will be supplied to the New Mexico Environmental Department, RCRA Permit Program, Hazardous and Radioactive Materials Bureau (HRMB), on the effective date of a change to the list. Any updated Table CP-2 sent to the HRMB will be accompanied by a letter from Rinchem requesting replacement of the previous table in the permit. Table CP-2 Rinchem Company's Emergency Equipment List

| EQUIPMENT | DESCRIPTION/ CAPABILITIES | LOCATION |
|---|---|---|
| FIRE CONTROL | | |
| Fire extinguishers | ABC fires | All fire extinguishers are located within 50 feet of flammable materials throughout the warehouse and on the fork lifts. |
| Dry pipe foam | Foam sprinkler system | Under roof of whole warehouse |
| Sprinkler | Double fireman's hookup | Warehouse rooms for extra foam injection if necessary |
| PERSONAL PROTECTION | | |
| Protective eyeglasses or goggles | Protect eyes from splashes | Office for visitors, employees keep own glasses |
| Face shields | Protect eyes and face | In metal storage cabinet in warehouse |
| SCBA's | 30-minute air supply | Within 100 ft of outside boundary of warehouse |

| EQUIPMENT | DESCRIPTION/ CAPABILITIES | LOCATION |
|---|---|---|
| Aprons, chemical resistant | Protect skin and clothing | In metal storage cabinet in warehouse |
| Gloves, assorted chemical and physical damage resistant | Protect skin from splashes and free liquids | Part of Hazmat spill cart inventory located within the warehouse |
| Protective coveralls | Protect skin and clothing from hazardous waste | Part of the Hazmat spill cart inventory located within the warehouse |
| Boot shields | Protect skin from splashes and free liquids | Part of the Hazmat spill cart inventory located within the warehouse |
| SPILL CONTROL | | |
| Absorbent | Spill containment | Part of the Hazmat spill cart inventory located within the warehouse |
| Forklift | Moving/loading containers and heavy equipment | Warehouse area |
| Salvage drums | Overpacking of damaged drums | South side of the warehouse and on the dock area |
| Plastic (polyethylene) | Containment of hazardous spills | Part of the Hazmat spill cart inventory located within the warehouse |
| Shovels | Used in cleaning up debris | Part of the Hazmat spill cart inventory located within the warehouse |
| Broom | Used in cleaning up debris | Part of the Hazmat spill cart inventory located within the warehouse |
| Duct tape | Used for temporary plugging of leaks | Part of the Hazmat spill cart inventory located within the warehouse |

| | | |
|---|---|---|
| Container plug kit | Used for temporary plugging of leaks | Part of the Hazmat spill cart inventory located within the warehouse |

| EQUIPMENT | DESCRIPTION/ CAPABILITIES | LOCATION |
|---|---|---|
| EMERGENCY DECONTAMINATION AND FIRST AID | | |
| Emergency shower/eyewash stations | Decontamination of skin, eyes, and/or clothing | There is 1 shower/eyewash in every room throughout the warehouse |
| First Aid station | First aid medical supplies | Located within the office |
| EMERGENCY COMMUNICATION AND ALARM SYSTEMS | | |
| Pull stations | Sounds the alarm and is connected to outside monitoring system | Office, dock |
| Intercom | To communicate with personnel during an emergency | Accessible from all phones. Can be heard throughout the warehouse and office. |
| Alarm siren | To alert personnel of an emergency | Can be heard throughout warehouse |

**Evacuation Plan**

The Emergency Coordinator, or his alternate, is the only person authorized to call for complete evacuation of the site in response to an emergency situation which threatens the health and safety of the facility personnel. He takes this action based on his analysis of the emergency situation. The following actions will be taken when the Emergency Coordinator orders a site evacuation:

1) The Emergency Coordinator will pull the alarm and announce the evacuation over the intercom or by shouting.

2) Each individual will determine which route he or she will take depending on the location of the incident and his or her location at the time the alarm is sounded. The evacuation routes are shown on Figure CP-1.

3) All personnel and visitors will quickly leave the facility in a safe manner. Customer service or administrative employees will direct visitors off-site.

4) Personnel will regroup at the intersection of the road easement and Edith Blvd. east of the facility.

5) A person designated by the Emergency Coordinator will initiate a head count of all the people at the regroup area. This information will be given to the emergency coordinator.

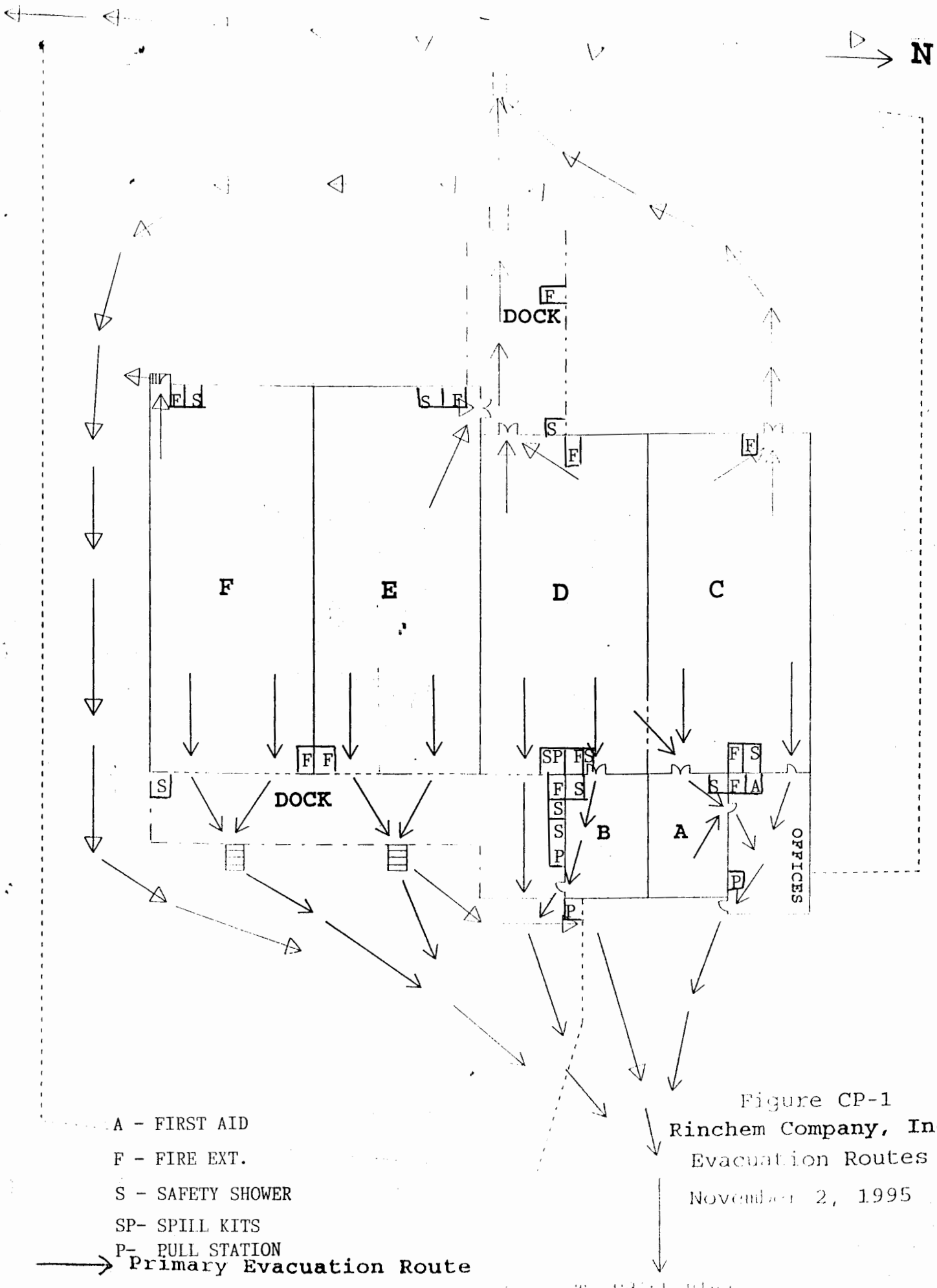



Figure CP-1
Rinchem Company, Inc.
Evacuation Routes
November 2, 1995

## Notification of Situations Which Could Threaten Human Health or the Environment Outside the Facility

If the facility has had a release, fire or explosion which could threaten human health or the environment outside the facility, the emergency coordinator will immediately notify the appropriate local authorities if his assessment indicates that evacuation of local areas may be advisable. He will also be available to help appropriate officials decide whether the local areas should be evacuated.

The emergency coordinator will immediately notify either the government official designated as the on-scene coordinator for Rinchem's geographical area or the National Response Center if the facility has had a release of a reportable quantity, fire or explosion which could threaten human health or the environment outside the facility. The report must include:

- Name and telephone number of reporter
- Name and address of the facility
- Time and type of incident
- Name and quantity of material(s) involved, to the extent known
- The extent of injuries, if any
- The possible hazards to human health or the environment outside the facility

## Emergency Procedures

One of the first tasks performed by the emergency coordinator in an actual or imminent emergency situation is to notify facility personnel and to activate the evacuation plan if he deems it necessary. The emergency coordinator will also notify State or local agencies who have designated response roles if their help is needed.

Whenever there is a fire, explosion or release, the emergency coordinator will identify the

extent of any released materials as well as the character, source and amount. The determination will be made by observation, information gathered by other facility personnel, review of facility records or manifests and, if necessary, by chemical analysis.

The emergency coordinator will also assess the situation for possible hazards to human health and the environment that may result from a fire, explosion or release. Both direct and indirect effects such as a release of fumes, release of residues from fire-fighting activities, heat-induced explosions and contamination of soil or surface water will be considered.

**Prevention of Recurrence or Spreading of an Incident**

During an emergency, the Emergency Coordinator will take reasonable measures necessary to ensure that a release, fire, or explosion does not occur, recur or spread to other hazardous waste at the facility. Procedures that will be carried out, when necessary, include:

- Stopping processes or operations
- Collecting and containing released wastes
- Isolating or removing containers
- Inspecting for any leaks or cracks in containers
- Ventilation of building

**Post-Emergency Procedures**

Once the emergency situation is under control, the emergency coordinator will initiate activities to store and prepare for treatment/disposal the recovered waste, contaminated soil or surface water or any other material that results from a release, fire or explosion.

The emergency coordinator will ensure that no waste that may be incompatible with the released material is treated, stored, or disposed of until cleanup procedures are completed in

the affected area(s) of the facility. He will also ensure that all emergency equipment is cleaned, examined for fitness of reuse and readied for future use. When a release of a reportable quantity has occurred, the owner or operator will notify the Regional Administrator and appropriate State and local authorities that the facility has completed the above tasks before operations are resumed in the affected area(s) of the facility.

**Recording of an Incident**

It will be noted in the operating record the time, date, and details of any incident that requires implementing the contingency plan. Within 15 days after the incident, a written report on the incident will be submitted to the Regional Administrator and the appropriate state organization which will include:

- Name, address and telephone number of the owner or operator
- Name, address and telephone number of the facility
- Date, time and type of incident (e.g., release, fire)
- Name and quantity of material(s) involved
- The extent of injuries, if any
- An assessment of actual or potential hazards to human health or the environment, where this is applicable
- Estimated quantity and disposition of recovered material that resulted from the incident

# PREVENTATIVE MEASURES [40 CFR 270.14 (b)(8)]

The Rinchem Company, Inc. is operated using a variety of procedures and equipment that minimize the potential for various hazards. The number one priority at Rinchem is the protection of the employees and the environment.

**Prevention of Hazards During Unloading**

Unloading hazards are reduced through procedures, structural features and equipment used at the Rinchem facility. Containerized wastes are unloaded and loaded only at the truck dock which is equipped with mechanical dock levelers. All wastes that enter or leave the Rinchem Company, Inc. facility are handled over the sloped and drained concrete of the loading dock. Small trucks drive over the berm onto the dock from the east. Longer trucks back up to the dock, parking on the sloped and bermed concrete apron to the south. Both areas can contain a 1000-gallon spill.

Rinchem maintains hand trucks and safety-rated forklifts specifically designed for hazardous waste container carrying. Containers need not be lifted more than a few inches above the bed of a trailer before the forklift can back away and lower the containers to a few inches above the floor of the loading dock. In this way, if a container were to be dropped, the distance of the fall would be minimized so that the structural integrity of the container would not be threatened.

**Prevention of Flooding and Run-Off from Waste Handling Areas**

Flooding of the hazardous waste storage building is prevented by the land under the building being elevated five feet above the surrounding land. This allows any rain that might land near the building to flow away from, instead of towards, the building. Also, the building's

roof is sloped and is equipped with a gutter system which allows the rainwater to flow from the facility in a southwesterly direction into the catchment ponds.

Prevention of runoff from the waste handling areas is accomplished in several ways. The storage area for the hazardous waste is situated inside the building over sealed concrete floors that are sloped and bermed so in the event of a spill or other release the material is contained inside the building. Floors in storage area D of the building are sloped and drained to a waste containment tank located under the dock. All other waste handling areas such as the docks are paved with concrete and built with swails which provide secondary containment.

**Prevention of Water Supply Contamination**

All the measures discussed in the section above help to decrease the chance of contamination of the water supply. All waste handling is performed over concrete and any spills or leaks that do occur are cleaned up immediately. Also, the road around the building slopes to the west so that rainwater flows into the drainage ponds in the back of the building. This prevents the mixing of rainwater and any potential contamination from trucks at the dock.

**Mitigation of Effects of Equipment Failures and/or Power Outage**

Power outages and equipment failures do not create problems in the Rinchem facility for the following reasons:

- The storage section of the Rinchem facility is lighted only by skylights. The docks are equipped with explosion-proof electrical lighting. The forklifts have been equipped with floodlights which allow for their safe use in the dark.

- In an emergency, pull stations would be operable since the electronic alarm system is battery powered. Shouting would be the most effective means of warning employees to

evacuate since the intercom will not work during a power outage.

- Emergency exit signs are self-illuminating and visible without electric power.

**Prevention of Undue Exposure of Personnel to Hazardous Waste**

Training is the key to the prevention of employee exposure. All personnel at the Rinchem facility are trained in procedures for properly performing facility operations including handling hazardous wastes and responding to emergency situations. Included in the training is instruction in the use and care of personal protective equipment and the location and use of safety showers and eyewash units which are located at strategic points throughout the warehouse.

All employees are provided with protective equipment which includes, but is not limited to, hardhats, eye protection, steeled-toed boots, respirators, protective overalls and chemically resistant aprons. Employees and visitors are required to wear eye protection in the warehouse, on the docks and in the yard at all times. Hardhats are required to be worn in the warehouse. When transferring wastes or cleaning up hazardous waste spills is required, the worker(s) must wear the appropriate personal protective equipment.

**Prevention of Releases to Atmosphere**

In addition to the precautions taken at the facility to prevent releases, procedures are implemented before the waste is transported to the facility. Before loading the containers of waste at a generator's facility, the containers are checked for soundness, proper closure and labeling, and compliance with DOT standards. Any damaged containers that might leak or burst during transporting or unloading are not accepted for transportation.

In the event of a leak or spill in the combustible storage area, storage area D, the waste would be drained from the warehouse through cast-iron pipe that leads to a water tight concrete-lined tank. This 500-gallon concrete tank is housed in a larger water tight concrete tank. Drainage into the tank allows very few vapors to be emitted into the atmosphere.

## PREVENTION OF ACCIDENTAL IGNITION OR REACTION OF IGNITABLE, REACTIVE OR INCOMPATIBLE WASTES [40 CFR 270.14(b)(9)]

The Rinchem facility has a combination of building design and procedural measures to prevent accidental ignition or reaction of ignitable, reactive or incompatible wastes. The first precaution taken is to insure that the hazardous waste received is what is described on the generator's profile and the manifest accompanying the waste so that it can be stored properly. The procedures to accomplish this are described in the waste analysis plan.

Containerized waste materials are stored only in closed DOT approved containers. These containers are not opened unless sampling or repackaging is necessary. Opening of containers is strictly prohibited in the storage areas. Sampling and transfer operations are prohibited inside the warehouse building unless there is positive local ventilation to the outside. Generally these operations are conducted on the docks.

The storage areas for the containers are inside the building. This allows protection of the waste from extreme heat, cold, and sunlight.

In order to decrease hazards caused by storing incompatible wastes, the building is designed to allow physical separation and secondary containment of incompatible materials. The storage portion of the facility is separated into six sections by stemwalls and cinderblock walls. Each area has sloped floors to contain any material within that area should a spill or leak occur. There are also ramps in between the storage areas to keep any spilled or leaked

a six inch gravel base course which translates into a load-bearing capacity of fifty 18,000-pound single-axle loads per day over twenty years. The trucks proceed on this easement until they reach the gate of the Rinchem facility.

A stop sign and a sign informing the drivers that they must report to the office before proceeding further is at the gate to the loading/unloading dock. After receiving permission from the office, the gate is opened and the driver is escorted to the dock.

After leaving the facility by way of the easement, the trucks stop at a stop sign that is located at the end of the easement immediately before turning onto Edith Blvd.

The Rinchem facility not only receives wastes, it warehouses and distributes chemicals. Tractor/trailers are used to receive chemicals as well as transport wastes. These trailers can be tank, flat or van trailers. The maximum axle weight for any of these rigs is 16,250 pounds and maximum gross weight is 80,000 pounds. Approximately 85 tractor/trailers per month enter and leave the Rinchem Company, Inc. facility.

Smaller trucks are also used to distribute chemicals to customers and to transport wastes. These trucks vary in weight but generally gross up to 32,000 pounds. Approximately 75 smaller trucks each month enter and leave the Rinchem Company, Inc. facility.

## FACILITY LOCATION INFORMATION [40 CFR 270.14(b)(11)]

**Political Jurisdiction**

The political jurisdiction of the Rinchem Company Inc. is the county of Bernalillo in the state of New Mexico. Because Bernalillo County is listed in Appendix VI of 40 CFR 264, Rinchem must demonstrate compliance with the seismic standard found in the regulations.

## Seismic Compliance

No faults having had displacement in Holocene time are present within 3,000 feet of the facility. Figure 1 is a color copy of a section of a published geologic map of Albuquerque and Bernalillo County entitled, "Geology of Albuquerque Basin" by Vincent C. Kelly, 1977. It shows the different bedrock found in the geology of the Albuquerque basin. This map also shows the faults that are present in the basin. The facility is identified on the map. As one can see, there is not a fault within 3-4 miles of the facility. This coincides with the type of geology found under the facility. The facility is located over alluvium which is a type of geology that is more common in a valley rather than an area where faults would be prevalent.

## Floodplain Standard

Using a Flood Insurance Rate Map of the city of Albuquerque, one can see that the facility is not located in an area subject to a 100-year flood. A copy of the map used for this determination is shown in Figure 2. The facility is identified on the map and one can see that the lot which encompasses the facility touches the boundary for the 100-year floodplain but is not part of it. The nearest floodplain is an area of 100-year shallow flooding where depths are from one to three feet. Prior to construction, the land on which the building is located was elevated five feet above the surrounding land to alleviate any problems that could be caused by a flood. Even if a 100-year flood occurred, the building would be high enough above the nearby floodplain to prevent damage or water contamination. In this way, the possible hazard caused by bordering a 100-year floodplain is eliminated.

waste within the storage area. Routine inspections of containers and container storage areas allow site personnel to detect a spill or leak quickly and to identify potential problems before they occur.

All storage containers holding hazardous waste that is incompatible with other materials will be separated and protected from these materials by cinderblock walls, stemwalls and ramps in between the storage areas.

Sources of ignition are eliminated by several means. First, containers of flammable and combustible materials are stored in designated areas, away from electrical equipment. Second, electrical outlets are not located in the areas where these wastes are stored. The rooms are lit by sunlight coming through skylights in the roof and there are no heating systems in the rooms. Third, all wiring and electrical equipment used around the waste storage areas (such as in the temperature control rooms and on the docks) is explosion proof. Rinchem's forklifts are designed and rated to prevent ignition of flammable vapors.

Smoking, and use of matches or lighters are not permitted anywhere in the facility. "NO SMOKING" signs are posted at all entrances to waste storage and handling areas, on facility perimeter fencing and other prominent places throughout the facility. Welding, cutting and other high temperature operations are not allowed near the vicinity of the waste storage and handling areas unless proper precautions and planning are done and the work is approved by Rinchem.

## TRAFFIC [40 CFR 270.14(b)(10)]

There is only one street approach to the Rinchem facility. This entrance is located 600 feet west of Edith Blvd. All the trucks accessing the facility approach from Edith Blvd. The trucks turn west onto a road and utility easement. This paved road is a private easement that is owned by Rinchem Company, Inc. The access road surface is three inches of asphalt over

FIGURE 1.
GEOLOGIC MAP

MEMOIR 33 GEOLOGIC MA

EXPLANATION

Qa | Qfa
Alluvium
Qa: *Arroyos;* Qfa: *Fans*

Qf
Alluvium
*Floodplains*

Ql
Landslide

Qe | Qed
Eolian sand
Qe: *Blankets;* Qed: *Dunes*

Qt
Gravel terraces

Qc
Caliche

Qp
Gravel pediments

Qo
Ortiz pediment gravel and surface
*Fanglomerate ranging from large boulders to pebbles*

Santa Fe Formation
Ts: *Undivided: pinkish, light-olive-drab and white sandstor*
*gray and brown mudstone; arkose, conglomerate, and fa*
*glomerate.* Tsc: *Ceja Member, "Upper buff" of Bryan a*

# GEOLOGY OF ALBUQUERQUE BASIN

by Vincent C Kelley, 1977

0 1 2 3 4 5

# TRAINING PROGRAM [40 CFR 270.14(b)(12)]

The primary objective of Rinchem's training program is to instruct employees in the practices, procedures and rules regarding safe operation and maintenance of the facility in accordance with applicable state and federal regulations. The training program requires at least 24 hours training in safety, proper transport and response to hazardous waste emergencies. These classes can be conducted by Rinchem's training department, governmental agencies such as the EPA or DOE and/or outside training providers. The instruction is in the form of classroom instruction and on-the-job training. The training classes and program will be updated as necessary to meet the regulations.

All new employees who handle hazardous waste will complete the initial training courses within six months of their date of hire or transfer of job assignment. Personnel will not work unsupervised in their positions until they have completed 24 hours of training. Annually, all personnel must participate in a minimum of eight hours of review of the initial training.

Some examples of training courses which will satisfy all or part of the training include:

Initial Facility Orientation
OSHA 40-hr Emergency Response Technician
OSHA 8-hr Refresher
DOT Hazardous Materials Transportation Training

Some examples of course contents follow.

# EXAMPLE OF INITIAL FACILITY ORIENTATION COURSE CONTENTS

The key elements of the program include:

Discussion of Emergency Preparedness Plan for Rinchem Facility

Hazard Identification and Discussion

Storage and Segregation

Contingency Plan and Emergency Procedures

Facility Tour

Identify Safety Features

Identify Communications and Alarm Systems

Discuss Evacuation Routes

Standard Operating Procedures

Review of Procedures to Perform Operations at Facility

Safety Practices

The training will consist of lectures, discussions, exercises, examinations and on-the-job training.

# EXAMPLE OF OSHA 40-HOUR EMERGENCY RESPONSE TECHNICIAN [29 CFR 1910.120(q)] COURSE CONTENTS

The key elements of the program include:

Emergency Response to Hazardous Materials Incidents

Characteristics of Hazardous Materials

Information Resources

Identifying Hazardous Materials

Levels of Protection

Chemical Protective Clothing

Response Operations: Safety Plans and SOP's

Response Operations: Size-up

Response Operations: Strategy and Tactics

Site Entry

Incident Control: Confinement and Containment

Direct-Reading Instruments

Response Organization /Incident Command

Level A Demonstration

Decontamination

Establish Incident Command for Transportation Incident

Organize for Transportation Incident

The training will consist of lectures, discussions, exercises and examinations.

# EXAMPLE OF OSHA 8-HOUR REFRESHER [29 CFR 1910.120] COURSE CONTENTS

The key elements of the program include:

Hazardous Waste Management and Regulations

Sources of Information

Compatibility of Hazardous Wastes

Personal Protection

Principles of Safety

Emergency Procedures

The training will consist of lectures, discussions, exercises and examinations.

# EXAMPLE OF DOT HAZARDOUS MATERIALS TRANSPORTATION TRAINING [49 CFR 172.700]COURSE CONTENTS

The key elements of the program include:

General Awareness/Familiarization

Identification of Hazardous Materials

Packaging

Marking

Labeling

Shipping Papers

Placarding

Separation and Segregation

Unique Moves

Safety

Hazardous Waste Transportation Issues

The training will consist of lectures, discussions, exercises and examinations.

# CLOSURE PLAN [40 CFR 270.14(b)(13)]

Following is a copy of Rinchem Company Inc.'s closure plan.

## CLOSURE PLAN FOR THE RINCHEM FACILITY

The Rinchem facility will continue to be operated as long as it is deemed economically viable, therefore, we do not have an expected date of closure. However, when the facility is closed, we anticipate that there will be no partial closures only a final closure.

The facility will not store more than 55,000 gallons of hazardous waste on-site at any one time. The waste may be stored up to a year until economic quantity loads can be transported. Some of the wastes will be bulked and transported in tankers. At final closure, or before, the waste will be removed and transported to disposal facilities using the same procedures and practices that are employed in Rinchem's day-to-day business. A sampling plan listing the areas and procedures to be used for testing the facility is included . It must be noted that this is only an example because as operations within the facility and testing procedures and requirements change so would RCI's sampling plan to reflect these changes.

Once all of the wastes are removed from the building, a soil gas survey or the technology being used at the time to detect organic substances will be conducted. The survey will be performed in storage areas C and D, on the docks, in the sumps and any other areas where there is known to have been a spill of any organic solvent or waste.

In the rooms where corrosives have been stored, concrete corings will be done at several places in each storage area. A pH test will be conducted on each concrete sample and the soil beneath to determine if further investigation is warranted. The pH will be obtained by adding deionized water to the sample and the result will be taken from the liquid. If a more current method of detecting corrosives is available at the time of closure, that method will be used instead of the one described above.

Random samples obtained for background levels from the surrounding area during the closure process will be done in order to determine the action levels for pH. Sample procedures will

comply with SW846 protocal. If the pH levels from the facility are out of the background skreening action range further investigation is warranted.

All survey samples would be sent to Hall Environmental or another qualified lab with proper QA/QC procedures in place availible at time of closing.

Because of its operational history and the Rinchem policy that requires all leaks and spills to be cleaned up at the time of the incident, it is expected that very little, if any, cleanup will have to be done at final closure. However, in case the analysis described above reveals any areas of suspect contamination, concrete and soil will be excavated in the area of concern, analyzed and disposed of in the appropriate manner.

When Rinchem decides to close the facility, notices will be sent to generators employing Rinchem's services to inform them of the pending discontinuation of receiving their waste materials. The Regional Administrator will be notified at least 45 days prior to the date that final closure is expected to begin. All hazardous wastes would be removed from the site within 90 days of receipt of the final volume of waste and the closure activities will be completed within 180 days.

**Closure Schedule**

The following schedule is proposed for final closure of the Rinchem Company, Inc. facility after receiving the final volume of hazardous wastes:

| Activity | Dates Performed |
|---|---|
| Removal of all remaining wastes to TSD facility | Days 0 - 90 |
| Soil gas survey, concrete coring, sampling and analysis performed | Days 90 - 120 |
| Contingency for excavating, sampling, analyzing and removal of contaminated soil and concrete from site | Days 120 - 170 |
| Site closure complete | Day 180 |

A certification that the facility has been closed will be sent by registered mail to the Regional Administrator within 60 days of the completion of final closure. The certification will be signed by the owner and an independent registered professional engineer.

Rinchem will provide a survey plat of the facility to all local zoning authorities acknowledging closure of the hazardous waste facility.

If an amendment needs to be made to the plan, Rinchem will submit a written notification or request to the Regional Administrator for a permit modification.

**POST CLOSURE CARE PLAN [20 NMAC 4.1.500]**

Again because of Rinchems procedures, continuous monitoring and policies that are in place, including that any spills or leaks be cleaned up at the time of the incident, there will be a very minimal post closure care period. Upon closure completion of the hazardous waste facility located at 6133 Edith Blvd., Rinchem will show to the Regional Administrator that there is not and will not be any harm to human health and environment. After complete closure the facility, subsequent use of the property would be for non hazardous waste warehouse operations.

**CLOSURE COST ESTIMATE [40 CFR 270.14(b)(15)]**

Attached is a copy of the most recent closure cost estimate for the Rinchem facility and a copy of the trust agreement which demonstrates financial assurance. The cost estimate is based on hiring a third party to close the facility at a point in the facility's active life when the extent and manner of its operation would make closure most expensive.

# SCHEDULE A

EPA Identification Number: NMD002208627

Name: Rinchem Company, Inc.

Address: 6133 Edith Blvd. NE
Albuquerque, NM 87107

## Summary of Closure Costs

| | |
|---|---|
| Transport of 500 drums to TSD Facility | $112,994 |
| Soil gas survey | $ 12,000 |
| Concrete coring and sampling in corrosive room | $ 3,150 |
| Contingency for excavating, sampling and disposal of soil | $ 26,370 |
| Certification of complete closure by Professional Engineer | $ 6,000 |
| Closure Report to NMED | $ 6,000 |
| **Total Estimated Closure Cost (1995 dollars)** | **$166,514** |

# SAMPLING PLAN [40 CFR 264.112(b)(4) and (5)]

The following is a copy of the Rinchem Co., Inc. Sampling Plan.

All sampling procedures follow EPA and NMED protocol incorporating SW-846 methods to assure proper handling of samples including proper QA/QC methods.

# Rinchem Co., Inc.
# Sampling Plan

**Sampling Objectives (be specific):** To identify Hot spots in warehouse areas A, B,E and F. These four areas were used to store corrosive material and non regulated materials. Sampling will determine if there is any contamination in the soil of the RCRA eight metals (TCLP results), and if the pH level is within the background standards. Backgrounds levels will be determined by pulling samples from near by areas.

**Background Information:** Warehouse areas A,B,E and F were used to store corrosive liquids and non-regulated material.

**Safety equipment:** Safety glasses, boots and gloves.

**Sampling Equipment:** Coring machine for concrete, sampling jars, ice packs and cooler

**Containers, volumes, preservation methods and holding time:** 4oz wide mouth jar and no preservative, holding time 6 months.

**Number of Samples to Collect and Sampling Points:** The number samples will be determined on a grid sampling plan. Rinchem will follow the EPA protocol for systematic random grid sampling.

**Comments:**

Sampler (signature)DateTime

# Rinchem Co., Inc.
# Sampling Plan

**Sampling Objectives (be specific):** To survey for organics and halogenated organics in warehouse C, D and E along with dock areas. Please see attached map. Areas are highlighted.

**Background Information:** Warehouse C, D and E were used to store industrial solvents such as Acetone, Toluene, Xylene, etc. It is where flammable wastes are stored. The front dock and rear dock areas are where flammable solvents are packaged.

**Safety Equipment:** Safety boots, gloves and safety glasses.

**Sampling Equipment:** Survey will be accomplished by using the Petrex soil–gas survey, unless technology at the time determines a better method. (See Appendix A, page 97).

**Containers, volumes, preservation methods and holding time:** Commercially available glass culture tubes measuring 25mm X 12mm and having a screw cap closure, and prepare by hand washing, then run through a wash cycle in a commercial dishwasher, then rinsed in methanol and baked in an oven at 180 C for one hour.

**Number of samples to collect and sampling points:** There will be 12 sample points for warehouse D on 25 foot centers. Rear dock area 4 samples on 25 foot centers and warehouse B 4 samples on 25 foot centers. Samples along the walls of warehouse D and B will be done on the outside of the walls.

**Comments:**

Sampler (signature)DateTime

**Building structure:**

Rinchem will wipe down all walls, doors, pipeworks and all other structures to remove dust that might have collected during storage of materials at the facility. Decontamination equipment ( sponges, rags, brushes, etc.) will be placed into UN approved containers for hazardous materials. Individual discrete samples will be retrieved from the container for analytical. The sample(s) will be analyzed for the following: 1) Total Metals Methods EPA 1311, 200 and 6000, 2) Volatiles Method EPA 624 3) Semi-Volatile for Acid Extractables Method EPA 625 and Base Neutral Organics Methods EPA 8270 and 4) PCB's EPA 8080A. If the analytical reveals that the decontamination equipment possesses contamination above RCRA/TSCA regulatory limits, the decontamination equipment will then be disposed of at an appropriate TSDF. If the material is non-RCRA/TSCA regulated material will then be disposed of at a local landfill.

**Concrete Floors:**

Any concrete stainage that appears to possess surface contamination will be removed utilizing the best available technology at the time ( bioremediation , scraping, or washing the floor). If the contamination is not able to removed, the concrete will be analyzed for the following: 1) Total Metals Methods EPA 1311, 200 series and 6000 series, 2) Volatiles Method EPA 624 3) Semi-Volatile for Acid Extractables Method EPA 625 and Base Neutral Organics Methods EPA 8270 4) PCB's EPA 8080A and 5) pH Method EPA 150.1 and 9045. If analytical reveals portions of the concrete to be contaminated, the concrete will be removed utilizing the best available technology at the time. The concrete will disposed of at an appropriate TSDF. The amount of concrete to removed will be determined by the grid sampling performed. If the sample in a certain grid is contaminated, then all the concrete in that grid will be removed.

**Soils under concrete flooring:**

Soils that are determined to be RCRA/TSCA contaminated will be removed by the best available technology. The amount of soil to be removed will be determined utilizing on-site field instruments ( such as a photoionization detector (PID), Hnu and field screening for metals). A "hit", utilizing a PID, would be any amount in excess of 15% of background levels. If no background levels are detectable, then levels would be considered a "hit" when the levels, after conversion for the PID, would equal the lowest of the suspected contaminants' levels from the EPA's Clean Air Act Standards. Final samples will be retrieved from each excavated area and be sent to a laboratory for final clean closure. The sample(s) will be analyzed for 1) Total Metals Methods EPA 1311, 200 series and 6000 series, 2) Volatiles Method EPA 624 3) Semi-Volatile for Acid Extractables Method EPA 625 and Base Neutral Organics Methods EPA 8270 4) PCB's EPA 8080A and 5) pH Method EPA 150.1 and 9045. Soils that are determined to be contaminated will be removed and disposed of at an appropriate TSDF or utilizing the best available on site technology such as bioremediation, soil-washing or soil burning.

**Surrounding soils**

Rinchem will obtain background samples from the surrounding area to establish screening action levels for selected contaminants. If during closure the samples from the facility are out of the ranges established, futher investigation will be done. During closure, Rinchem will perform a gas survey on the remaining propriety located at 6133 Edith Blvd. The area within the fence line will be divided into grids. The gas survey will show any volatile and semi-volatile contamination. Rinchem will retrieve several composite samples to perform analytical for 1) Total Metals Methods EPA 1311, 200 series and 6000 series, 2) Volatiles Method EPA 624 3) Semi-Volatile for Acid Extractables Method EPA 625 and Base Neutral Organics Methods EPA 8270 4) PCB's EPA 8080A and 5) pH Method EPA 150.1 and 9045.

**Ground water monitoring**:

Rinchem will continue to monitor the ground water at its existing well. If the direction of ground water has changed then Rinchem will establish a down gradient well. The information pretaining to the change of groundwater flow will be obtained from the United States Geological Service data. By using the down gradient well and the gas survey this will help establish if Rinchem would be responsible for any ground water contamination. Rinchem's calculation of groundwater flow at time of closure will be performed using the current/timal water flow from the United States Geological Service data.

**Water run-on and run-off:**

Rinchem property is designed to allow 0 run-on from near by street or property. Run-off is limited, because the propriety is sloped so that rain water remains on the property. All the water that does enter the propriety is collected into containment areas. The two containment areas will be sampled and a full TCLP analysis will be performed.

**Analytical Results:**

Rinchem will submit the preliminary results of all analytical performed with this sample closure plan to the New Mexico Environmental Department for consultation.

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**Analytical Results:**

Rinchem will submit the preliminary results of all analytical performed with this sample closure plan to the New Mexico Environmental Department for consultation.

# INSURANCE COVERAGE [40 CFR 270.14 (b)(17)]

Following is a copy of Rinchem Company, Inc.'s insurance documentation.

# HAZARDOUS WASTE FACILITY CERTIFICATE OF LIABILITY INSURANCE

1. Commerce & Industry Insurance Company (the "Insurer"), 70 Pine Street, 11th Floor, New York, NY 10270, hereby certifies that it has issued liability insurance covering bodily injury and property damage to RINCHEM COMPANY, INC., (the "Insured"), of 6133-37 EDITH BOULEVARD, N.E., ALBUQUERQUE, NM 87107, in connection with the insured's obligation to demonstrate financial responsibility under 40 CFR 264.147 or 265.147. The coverage applies at 6133 EDITH BOULEVARD, N.E., ALBUQUERQUE, NM 87107, EPA #NMD002208627 for sudden accidental occurrences, The limits of liability are $1,000,000 each occurrence and $2,000,000 annual aggregate, exclusive of legal defense costs. The coverage is provided under policy number PLL-5293708, issued on April 30, 1996. The effective date of said policy is April 30, 1996.

2. The insurer further certifies the following with respect to the insurance described in Paragraph 1:

(a) Bankruptcy or insolvency of the insured shall not relieve the insurer of its obligations under the policy.

(b) The Insurer is liable for the payment of amounts within any deductible applicable to the policy, with a right of reimbursement by the insured for any such payment made by the Insurer. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated as specified in 40 CFR 264.147 (f) or 265.147 (f).

(c) Whenever requested by a Regional Administrator of the U.S. Environmental Protection Agency (EPA), the Insurer agrees to furnish to the Regional Administrator a signed duplicate original of the policy and all endorsements.

(d) Cancellation of the insurance, whether by the insurer, the insured, a parent corporation providing insurance coverage for its subsidiary, or by a firm having an insurable interest in and obtaining liability insurance on behalf of the owner or operator of the hazardous waste management facility, will be effective only upon written notice and only after the expiration of 60 days after a copy of such written notice is received by the Regional Administrator(s) of the EPA Region(s) in which the facility(ies) is (are) located.

(e) Any other termination of the insurance will be effective only upon written notice and only after the expiration of thirty (30) days after a copy of such written notice is received by the regional Administrator(s) of the EPA Region(s) in which the facility (ies) is (are) located.

I hereby certify that the wording of this instrument is identical to the wording specified in 40 CFR 264.151(j) as such regulation was constituted on the date first above written, and that the Insurer is licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more States

(Signature of Authorized Representative of Insurer)

Camilla Mok, Pollution Underwriter
Authorized Representative of Commerce & Industry Insurance Company

c/o Commerce & Industry Insurance Company
777 So Figueroa Street 17th Floor
Los Angeles, CA 90017

# TOPOGRAPHIC MAP [40 CFR 270.14(b)(19)]

Figures 3 and 4 are used to meet the requirements of this section. Figure 3 is the wind rose data for Bernalillo in 1993 which, according to the Albuquerque Environmental Health Department's monitoring section of the Air Pollution Control Division, has a wind rose pattern similar to the pattern in the area where the facility is located. The other map, Figure 4, is a topographic map with contours in two-feet intervals which shows a distance of 1000 feet around the facility. It is a combination of three maps - Topographic Map Nos. F-15 and E-15 from the City of Albuquerque Public Works Department and the Flood Insurance Rate Map of the city of Albuquerque (see Figure 2). The 100-year floodplain areas were enlarged to the same scale as the topographic maps and copied onto them. Figure 4 fulfills the following requirements:

- map scale and date
- 100-year floodplain
- surface waters including intermittent streams
- surrounding land uses
- orientation of the map
- legal boundaries of the hazardous waste management facility site
- access control
- the building
- barriers for drainage or flood control
- location of unit within the hazardous waste management facility site where hazardous waste is stored

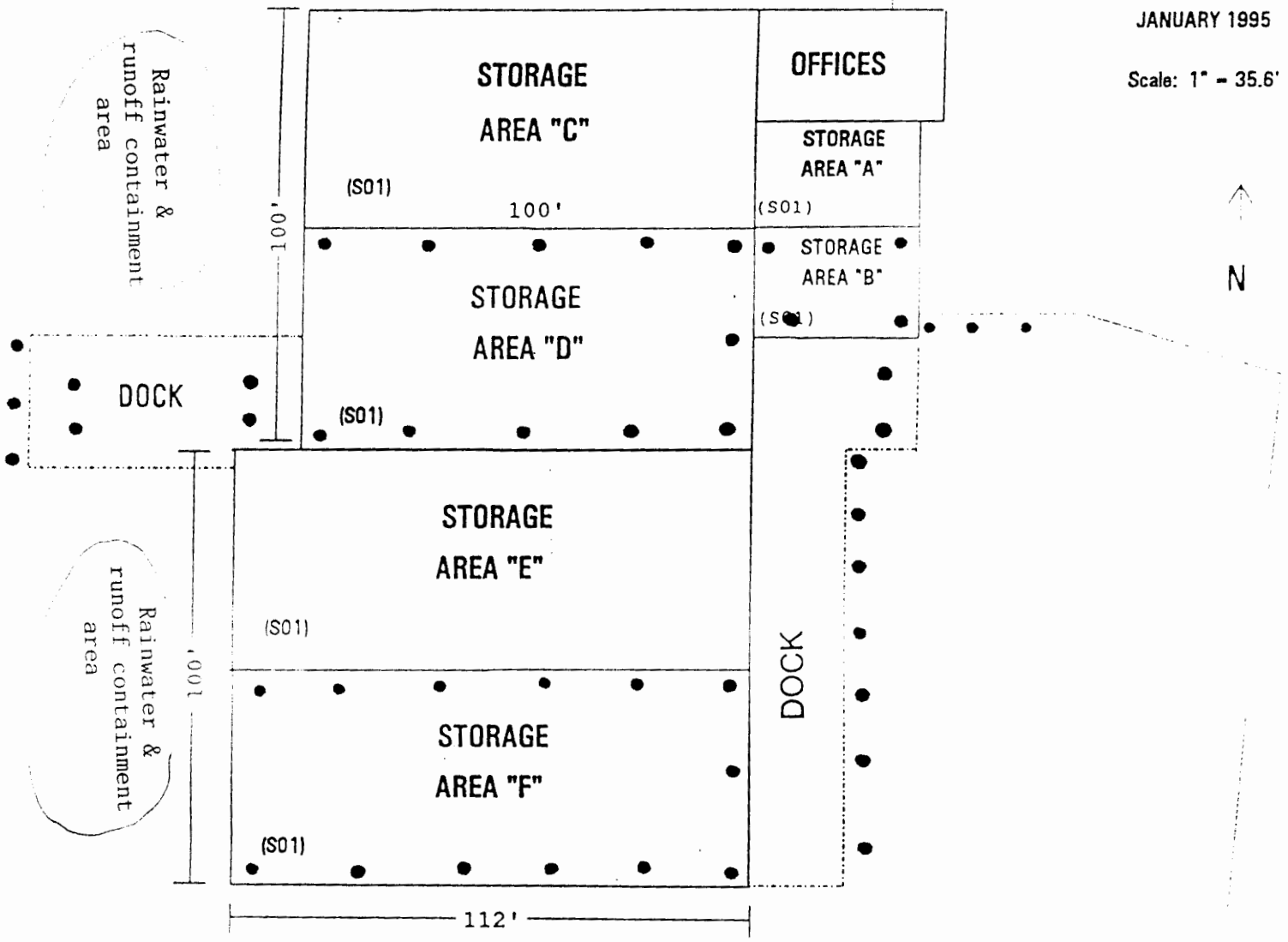
Since Topographic Map No. F-15, which is the latest available map, was compiled before the facility was built, it did not take into account the fact that the land under the building was elevated five feet. Therefore, the revised elevation of 4983 feet is

FIGURE 2

# Rinchem Company, Inc. Facility

JANUARY 1995

Scale: 1" = 35.6'



handwritten on the map.

No injection wells or withdrawal wells are shown because no wells are known to be in use within 1000 feet of the facility site. Several wells had been abandoned because of the lowering of the water table and availability of city water. This information was obtained from the Well Record in the State Engineer's Office. This was also confirmed by a survey of the residential areas in the 1000 feet radius of the facility site. The only building that is on the property is the Rinchem warehouse and office.

# Bernalillo 93 Wind

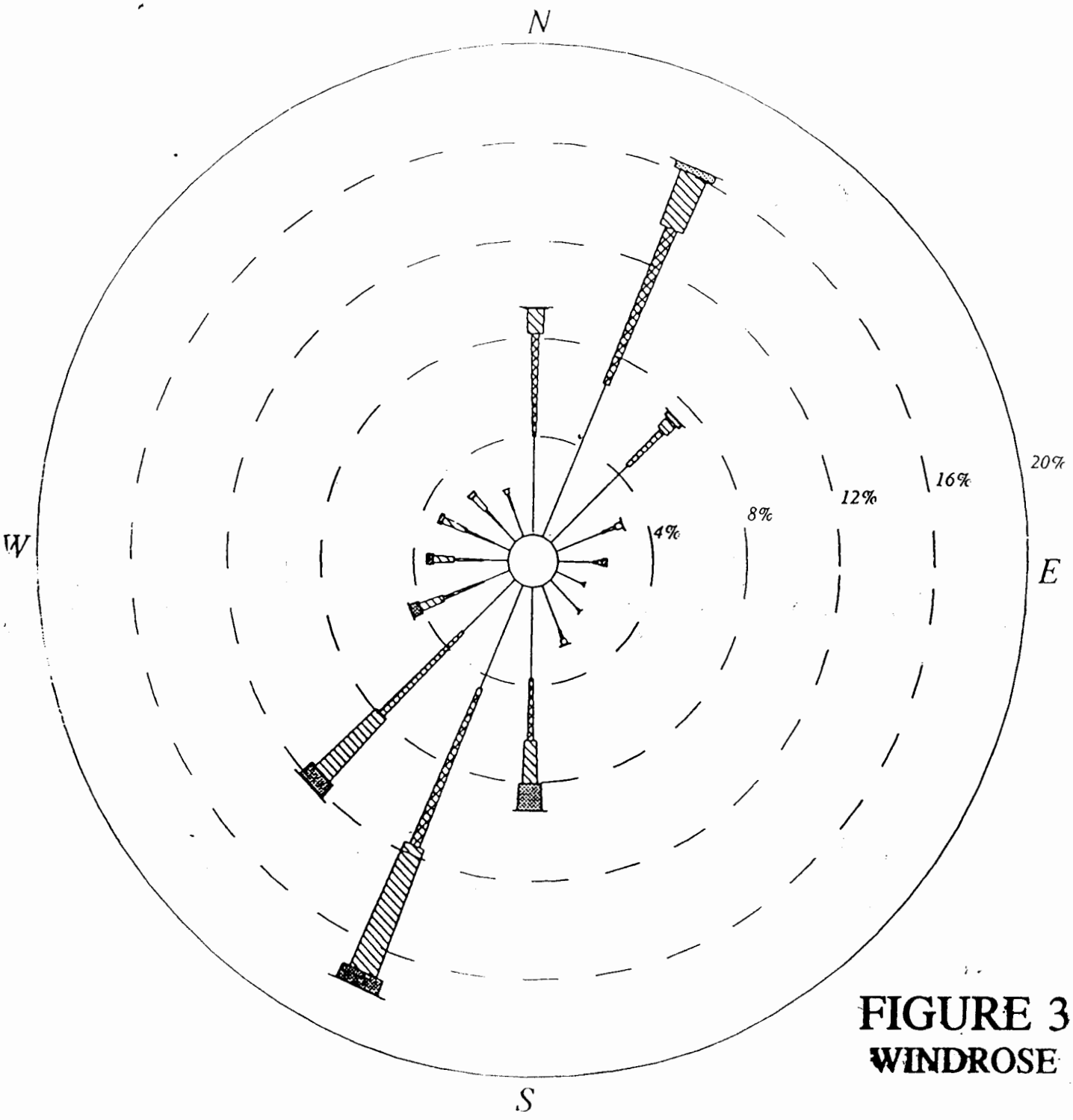



**FIGURE 3**
**WINDROSE**

CALM WINDS 0.77%

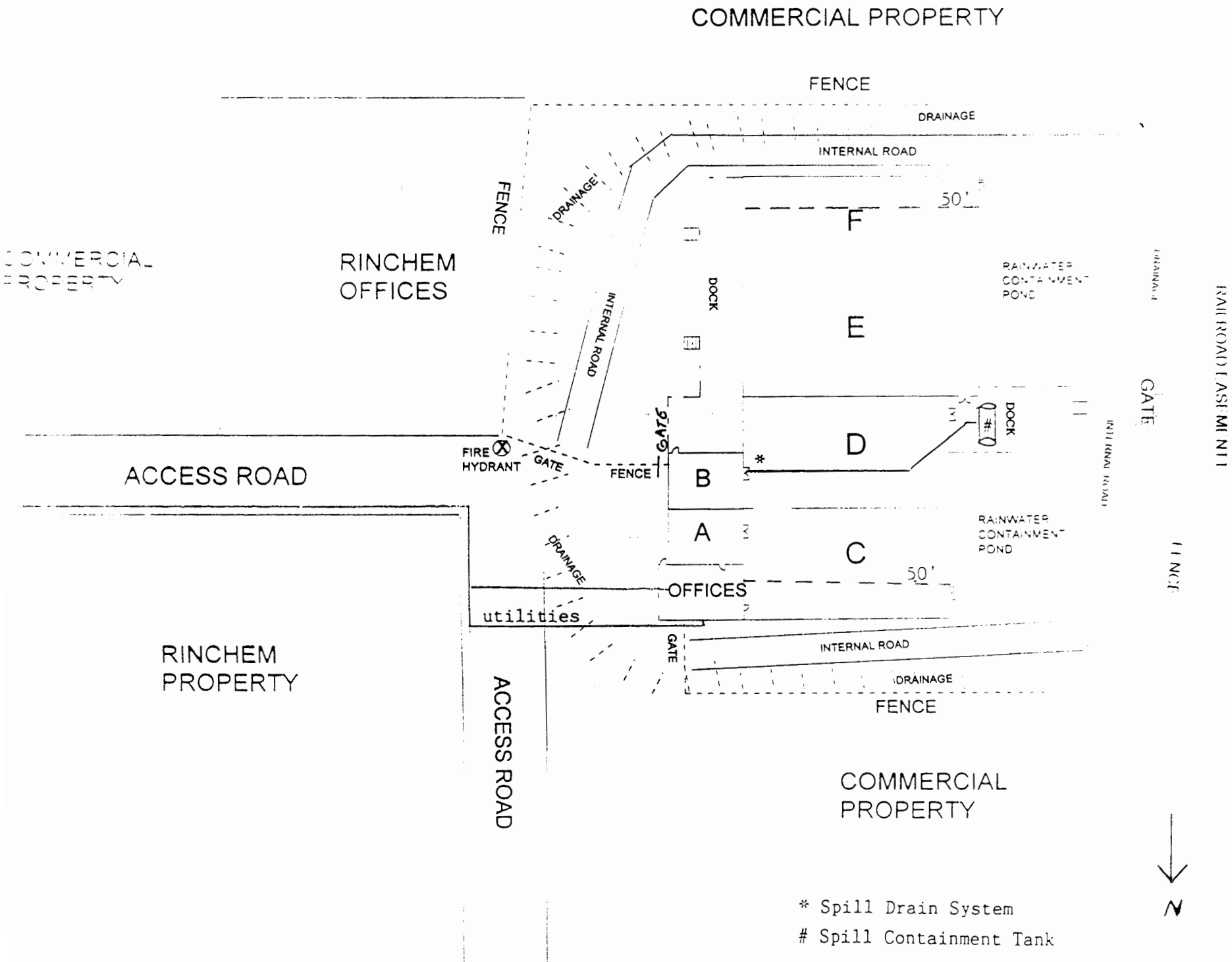
NOTE: Frequencies indicate direction from which the wind is blowing

CALMS

WIND SPEED (KNOTS)

4-6 7-10 11-16 17-21 +21

**TO VIEW THE MAP AND/OR MAPS WITH THIS DOCUMENT, PLEASE CALL THE HAZARDOUS WASTE BUREAU AT 505-476-6000 TO MAKE AN APPOINTMENT**


COMMERCIAL PROPERTY
FENCE
DRAINAGE
INTERNAL ROAD
50'
F
RAINWATER CONTAINMENT POND
E
DOCK
D
#
DOCK
GATE
FIRE HYDRANT
GATE
FENCE
B
A
C
RAINWATER CONTAINMENT POND
50'
OFFICES
utilities
INTERNAL ROAD
DRAINAGE
FENCE
FENCE
DRAINAGE
INTERNAL ROAD
RINCHEM OFFICES
ACCESS ROAD
RINCHEM PROPERTY
ACCESS ROAD
COMMERCIAL PROPERTY
RAILROAD EASEMENT
GATE
FENCE
* Spill Drain System
# Spill Containment Tank
N

# SOLID WASTE MANAGEMENT UNIT INFORMATION

## [40 CFR 270.14 (d)]

For the purposes of this permit, we consider the whole facility consisting of the building containing the storage areas, the collection tank connected to the combustible storage area, the docks and the rainwater impoundments to be one solid waste management unit (SWMU). Figure 5 is a copy of the drawing of the facility that was submitted with Part A of the permit application. The location of the facility is designated on the topographic map required by paragraph (b) (19) of 40 CFR 270.14. The map is Figure 4. Figures 4 and 5 are to be used conjointly in supplying the required information.

All units have been in operation since January 1, 1987 and have been used as a transfer facility for wastes with the following hazardous classes: 2.1, 2.2, 2.3, 3.0, 4.1, 4.2, 4.3, 5.1, 5.2, 6.0, 6.1, 8.0 and 9.0. Figure 5 identifies the areas in regards to the RCRA Facility Assessment as follows :

- Room F- Storage Area of Inorganic Chemicals

This active storage unit is specifically designed to warehouse inorganic chemicals is located in the south end of the facility and is approximately 110 feet x 50 feet in size . The walls of the building are four-hour fire walls . Floors in the inorganic warehouse are recessed four inches below the stem wall ,expansion joints are caulked ,and the floor is sealed with epoxy to prevent possible contamination of the soil should a spill occur. The floor slopes to the aisles to expose any spill quickly. This area stores prepackaged inorganic chemicals for distribution and spent inorganic wastes. No releases to report in this area.

Room A- Controlled Temperature Storage for Inorganic Chemicals

This active storage unit is specifically designed to warehouse inorganic chemicals for distribution and inorganic waste that are sensitive to temperature changes. This area is approximately 25 feet x 50 feet and has a four-hour fire wall on the south end and a

two-hour fire wall to the west end separating from the other storage areas. The floor is recessed four inches below the stemwall and slopes to a catch basin. The expansion joints in the floor are caulked and the floor is sealed with epoxy to prevent possible contamination of the soil should a spill occur. No releases to report in this area.

- Room B- Controlled Temperature Storage for Organic Chemicals

This active storage unit is specifically designed to store organic chemicals for distribution and organic waste that are sensitive to temperature changes. The unit is approximately 25 feet x 50 feet in size. The north wall is a four-hour fire wall and the west wall is a two-hour fire wall separating it from the other units in the warehouse. The floor is recessed four inches from the stemwall and sloped to the drain which will carry any spills from the warehouse to the spill collection tanks located below the west dock. The expansion joints in the floor are caulked and the floor is sealed with epoxy to prevent contamination should a spill occur . No releases to report in this area..

Rooms C,D & E -Storage areas for organic chemicals

These active storage units are designed to warehouse organic chemicals for distribution and organic wastes. RoomsC and D are approximately 100 feet x 50 feet each.Room E is approximately 110 feet x 50 feet. Room D serves as the hazardous waste storage room and the floor is sloped to the drains which will carry any spill to the spill containment tanks located below the west dock. The floor in all rooms is recessed four inches from the stemwall and the joints in the floor are caulked .The floor has an epoxy seal on it to prevent contamination of the soil should a spill occur. All walls running north and south are four- hour fire walls and all east west walls are two-hour fire walls. No reportable releases to report.

- Truck Loading Dock

The Truck Loading Dock is located in the southeast area of the facility .The dock is constructed of concrete with a metal roof . The floor has an epoxy seal and the joints are caulked to prevent ground contamination if a spill should occur .The floor is sloped to the center to contain a spill and there is a concrete secondary containment

system around the lower elevation to capture leakage involving a vehicle.
There has been no release of hazardous materials or wastes to report.

Spill Drain System

The Spill Drain System manages any spills which may occur in Rooms Band C . The system consists of concrete construction , a cast-iron grate covering, and a six-inch cast-iron pipe that will carry any spills to the Spill Collection Tank. The Spill Drain System is active and been in operation since January 1,1987.

Spill Collection Tank

Any spills that occur in Rooms B &D are drained to the Spill Collection Tank located below the west dock. The inground tanks are constructed of concrete and consist of a 500 gallon tank located inside of a 3790 gallon tank. A six-inch cast-iron pipe will carry the spill to the 500 gallon tank , if the spill is greater than 500 gallons it will overflow into the 3790 gallon tank. There has been no chemical cleanup in this area to report.

•

If a release of hazardous waste or hazardous constituents from the solid waste management occurs, Rinchem will submit all available information pertaining to the release.

The Director has not ascertained it necessary to complete a RCRA Facility Assessment of the Rinchem facility so no sampling and analysis of groundwater, landsurface, and subsurface, surface water or air has been conducted.

# ADDITIONAL CONTAINER INFORMATION [40 CFR 270.15]

All floors in storage areas A, B, C and D are recessed four inches below the concrete stemwall and storage areas E and F are recessed six inches below the stem wall. The concrete is sealed and the expansion joints are caulked to prevent possible contamination of the soil should a spill occur. The capacity of the secondary containment system is at least 10% of the volume of the containers stored there.

In storage areas A, B, C, E and F, the floors are sloped away from the storage bays towards the aisles. Storage Area D is divided into six bays which are each sloped to drains situated in the center of the bay. The drains lead to a 500 gallon cement tank behind the building under the dock. This tank is housed in another cement watertight tank which has a volume of 3,790 gallons. Both tanks have removable vented lids to allow for visual inspection and removal of any spilled or leaked waste.

Run-on into the containment system is prevented in two ways. The storage areas with containment systems are inside the building preventing any rain from entering the storage area. Also, the facility was elevated five feet above the surrounding land when it was constructed. This prevents any flooding into the containment system.

It is Rinchem policy that if a spill occurs, the waste is evaluated and cleaned up in as timely a manner as possible to prevent further contamination and overflow of the containment system. The fact that the floors in the storage areas are sloped towards the aisles allows a spill or leak to be detected quickly.

As one can see on Figure 5, all ignitable and reactive wastes as well as all other wastes are stored in the storage areas which are more than 50 feet away from Rinchem's property line. As it has been previously mentioned, all storage containers

holding hazardous waste that is incompatible with other materials will be separated and protected from these materials by cinderblock walls, stemwalls and ramps in between the storage areas.

•

All containers holding hazardsous materials to be stored at Rinchem's facility are inspected prior to acceptance to insure proper condition of the container and compatibility of material with container. Any container not meeting these criteria has its contents transfered to an appropriate container at that time.

•

A container holding hazardous waste will not be handled or stored in a manner which may cause it to leak and will only be opened to add or remove waste as necessary.

•

No incompatible wastes are ever placed in the same container unless the proper precautions are taken to prevent reactions which:

- Generate extreme heat or pressure, fire or explosions, or violent reactions
- Produce uncontrolled toxic mists, fumes, dusts or gases in sufficient quantities to threaten human health or the environment
- Produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions
- Damage structural integrity of the device or facility
- Through other like means threaten human health or the environment

Hazardous waste will not be placed in an unwashed container that previously held an incompatible waste or material.

# APPENDIX A - STANDARD OPERATING PROCEDURES FOR PETREX SOIL-GAS SURVEY

# 1.0 STANDARD OPERATING PROCEDURES FOR PETREX ENVIRONMENTAL SOIL GAS SURVEYS

## 1.1 PURPOSE OF THIS DOCUMENT

The steps and information contained herein are the Standard Procedures for carrying out a PETREX environmental soil gas survey. Minor deviations from these standard procedures may be implemented onsite by authorized field staff to adjust for unique survey conditions, such as frozen ground. PETREX Soil Gas Surveys are also used for oil and gas, geothermal, and mineral exploration; slight alterations in the operating procedures may be required for these specialized applications.

If any questions arise upon review of this document, please address your questions to NERI's technical staff. Please call:

Mark H. Hatheway, Corporate Project Operations Manager
Northeast Research Institute LLC (203) 677-9666
270 Farmington Avenue, Suite 128, P.O. Box 859, Farmington, Connecticut 06034

-or-

Paul A. Harrington, Regional Project Operations Manager
Northeast Research Institute LLC (303) 238-0090
605 Parfet Street, Suite 100, Lakewood, Colorado 80215

## 1.2 OVERVIEW OF MANAGEMENT CONTROLS

The PETREX Passive Soil Gas Survey system includes multiple steps, some of which are proprietary, due to the patented nature of the technique. The steps of the process include: manufacture and assembly of the soil gas samplers, field installation and retrieval of the soil gas samplers, laboratory analysis by Mass Spectrometry and/or Gas Chromatography/Mass Spectrometry, interpretation of results, and production of the final report on the soil gas survey which includes compound and/or mixture isopleth maps. Each operation has its own set of procedures and quality control steps. With these multiple operations, NERI has made serious efforts to staff each of these operations with personnel qualified for the job duties assigned. Manager level

personnel oversee and supervise the use of documents as set forth in individual procedural documents. It is beyond the intent of this document to supply every detail of the multiple operations; emphasis is placed on the type of information that allows the reader to understand the basic operations of sampler production, analysis, and reporting of data. NERI's managers must approve the data analysis and report by countersignature prior to releasing any data to the client.

### 1.2.1 Staff Qualifications

NERI's professional staff includes computer specialists, chemists, geologists, and environmental scientists. New staff members are selected based on their educational background and work experience, as required to successfully fulfill their function within the company. In-house training is provided to all new personnel for a minimum period of two weeks. The mass spectrometer operators receive additional training by the instrument(s) manufacturer as required. Personnel that will be performing field work are trained for working on hazardous waste sites. This is performed by sending field personnel to outside courses; at a minimum they receive the 40 hour Health & Safety course (with yearly 8 hour refresher) that complies with the OSHA requirements of 29 CFR 1910.120 (e) (3) (i).

NERI's personnel are encouraged to continue their education by taking additional course work that will enhance their job skills and professionalism. Presenting papers and attending technical conferences are also encouraged and supported by NERI's management.

## 1.3 ASSEMBLY OF PETREX SOIL GAS SAMPLERS

### 1.3.1 Charcoal Bonding

PETREX collection wires are prepared by applying pre-sieved activated charcoal to the tips of ferromagnetic wires. Details of the procedure for preparing and bonding the activated charcoal are proprietary information. The resultant collection wires contain size-sorted activated charcoal bonded to the wire within 1 inch of the tip. The specialty wires selected for this process have a Curie point of 358°C.

### 1.3.2 Sampler Tubes

Commercially available glass culture tubes, measuring 25 mm X 125 mm and having a screw cap closure, are prepared by hand washing, then run through a wash cycle in a commercial dishwasher, then rinsed in methanol and baked in an oven at 180°C for one hour.

### 1.3.3 Cleaning of Collection Wires

The charcoal bonded ferromagnetic wires are cleaned by heating in a special high vacuum apparatus at 358°C for 12 minutes. Wires are cleaned in lots of 30. The 30 wires are then sealed in one clean culture tube under an inert atmosphere, assigned a lot number, and the lot(s) placed in inventory.

### 1.3.4 Lot Release and Repackaging

#### 1.3.4.1 Quality Control and Quality Assurance

Prior to releasing inventory lots for a field survey, two collection wires from each lot are tested for cleanliness and adsorption potential. One wire is analyzed by mass spectrometry without exposure ("as is"), to verify that the lot

is clean. The second wire is exposed to PCE or TCE vapor for six seconds, and then analyzed in order to verify that the charcoal is highly adsorptive. High adsorption potential is achieved when the analytical responses over a set level is obtained after exposure to a given concentration of PCE/TCE. Exposures are conducted in a hood, in a laboratory separated physically and by dedicated ventilation from the storage and analysis of PETREX samplers.

#### 1.3.4.2 Repacking for Shipment to the Field

Prior to shipment to the field, approved lots are removed from inventory, and the collection wires are repackaged in pre-cleaned sampler tubes under an inert atmosphere. From each lot containing 30 collection wires, 12 sampler tubes are packaged with 2 collection wires and 2 sampler tubes with 3 collection wires. (The basis for having 2 wires in a tube is that it allows NERI to analyze one wire by standard Thermal Desorption Mass Spectrometry (TD-MS), with the second wire being retained as a back-up or used later on for analysis by Thermal Desorption Gas Chromatography/Mass Spectrometry (TD-GC/MS). The third collection wire is used for the mass spectrometer set-up and gain adjustment procedure that is performed for each survey.)

Repackaged tubes with 2 and 3 collection wires are assembled into batches of 25 sampler tubes with either 2 or 3, three-wire tubes in each batch. Where multiple batches are used, packaging assures that a minimum of 10% of sampler tubes have 3 wires. The batches are held in inventory, with a unique inventory number (dated), until release for use on a project.

### 1.3.5 Custody Document

A "Chain of Custody Document" accompanies each batch or group of batches of samplers released to the field for a project.

This document accompanies the sampler tubes through all transportation, field, analyses, and disposal steps.

## 1.4 PETREX FIELD OPERATIONS

NERI can supply its services on a turnkey basis. NERI has a mandatory training program for non-NERI personnel that explains, in detail, all of the field related steps for installing PETREX surveys. The training program is for those clients who wish to perform their own field work. Once training has been performed for a client (or client group) NERI's role is restricted to supplying PETREX samplers, analyses and a report of the results.

The procedures described below reflect the steps that a NERI employee would perform. Some flexibility is allowed in the field to adjust for unusual site conditions; however, NERI field personnel will discuss any alterations in the planned project with a NERI Project Operations Manager and the client project manager before making any changes to the procedures or an approved work plan. Changes are documented in a project notebook.

### 1.4.1 Locating Sampler Sites

Sampler placement sites, usually predetermined on an accepted survey proposal, are located from a nearby, surveyable landmark using a compass and pacing, or some other measuring device (e.g., pacing wheel, hip chain, or tape measure). A transit may be used for more accurate placement, but such accuracy is seldom required.

### 1.4.2 Soil Coring

Once a sampler site has been established, a hole is cored to a predetermined depth (sampler placement depth is held constant for a given survey). This is accomplished using a variety of tools depending on the nature of the material to be cored. The holes should be vertical and as free from debris as possible. When a survey is performed in areas covered by asphalt or concrete, a electric- powered rotary hammer drill with a carbide-tipped bit is used to drill a 1-1/2 inch diameter hole in the cover.

A hand auger is used to remove the cuttings and road base from the hole. Down hole tools are decontaminated between each boring by following the procedure outlined in 2.4.9 below.

### 1.4.3 Sampler Placement

Immediately after the hole is cored, a sampler tube is removed from the Ziploc bag and the bag is resealed. The cap is then removed from the tube, and the tube is placed vertically, open end down, into the hole. (As an option, clean galvanized wire may be attached the tube for ease in later retrieval.) The opening of the hole is then plugged with aluminum foil, with soil or sod placed on top of the foil to bring the hole back to an even grade. The sampler cap is placed in a clean Ziploc bag to be used again later during sampler retrieval.

Samplers placed under asphalt or concrete are treated the same as those in uncovered soil, except for modifications to permit easy retrieval and to avoid potential down-hole contamination from surface cuttings. To allow retrieval of these samplers, a piece of galvanized steel wire is twisted around the neck of the tube and run to the surface so that the tube may be recovered by pulling on the retrieval wire. An aluminum plug is then placed near the top of the hole, and the remainder of the hole is plugged with quick setting hydraulic cement.

### 1.4.4 Sampler Location Marking

Each sampler location position is flagged using pin flags, spray paint or ribbon flagging, then the location is marked and numbered on a base map. A field notebook is used to record the date, sampler number, sampler location description, soil type, and general observations.

### 1.4.5 Special Use PETREX Samplers

All PETREX surveys include samplers that monitor the field exposure time period (referred to as "time calibration samplers"), and others that monitor the integrity of the shipment ("travel blanks").

A series of "time calibration" samplers are included as part of every survey. These samplers are placed in an area of known or suspected contamination. Sets are retrieved and analyzed at specified time intervals to determine the appropriate field residence time for the survey. A sampler submittal form is used when submitting time calibration samplers to NERI's laboratory. These samplers are analyzed within 2 days of receipt in the laboratory, so that the length of exposure for the entire survey can be rapidly ascertained and communicated to field personnel.

A minimum of two "travel blank" samplers are included on each PETREX

survey; they remain unopened through all transportation steps in order to monitor for potential contamination acquired during transit. They are then returned with the survey samplers, with notation made on the form as to the number of travel blanks submitted. Travel blanks are analyzed at the same time as the entire survey set.

### 1.4.6 Sampler Retrieval

All samplers from a survey are retrieved when analysis of the time calibration samplers indicates that there has been sufficient loading of gases onto the charcoal absorbent. The steps in the retrieval process are as follows:

(1) Soil is gently excavated until the tube is exposed.

(2) A cap is taken from the sealed Ziploc bag. The Viton seal is checked to make sure it is seated inside the cap.

(3) The sampler tube is removed from the hole, and any dirt that is on the threads of the tube is wiped off with a clean cloth. If the tube is broken or cracked, the collection wires are transferred to a new tube using forceps.

(4) The tube is capped tightly, numbered (see 2.4.7), and placed in a Ziploc bag.

(5) Bore holes are filled or patched as required.

(6) Flagging material and any other debris are removed from the survey area.

### 1.4.7 Sampler Numbering

Each sampler tube is immediately numbered according to the scheme established in the field notes and on the base map. The location number is written on an adhesive label which is applied to the tube cap. In practice, labels are normally pre-numbered before starting the survey retrieval process, to ensure that no two sampler locations have the same number. Field staff are expected to supply notations regarding the site conditions and

the condition of samplers when retrieved.

### 1.4.8 Sampler Shipment

Once all samplers have been retrieved, they are sealed in Ziploc bags, wrapped in bubble packing material, and packed tightly in a box for shipment. (Packing materials such as Styrofoam, vermiculite, or newspaper can introduce contaminants, and therefore should not be used for packaging.) The samplers, field notes, base map, and chain-of-custody document and the sampler submittal form are either hand-carried or shipped by overnight courier service to NERI's laboratory.

### 1.4.9 Decontamination of Equipment and Tools

All down-hole equipment and tool parts which contact excavated soil are constructed of heavy gauge steel. These tools are decontaminated between use at each sampling location by rotation through a four step cleaning process. The steps are:

1. Loose material is removed from the tools.
2. Immersion and vigorous scrubbing in a mild solution of laboratory grade detergent until all visual accumulations of soil are removed.
3. Thorough rinsing with potable water.
4. Spray rinsing with methyl alcohol.
5. Air drying.

All derived liquids (and sediment) are contained in dedicated disposable vessels.

## 1.5 PETREX SAMPLER LABORATORY ANALYSIS PROCEDURES

### 1.5.1 Sampler Receipt and Preparation

#### 1.5.1.1 Incoming Inspection

The laboratory supervisor or trained delegate opens the box(es) containing PETREX samplers, and verifies that samplers were received in good condition, are suitable for analysis, and that the Sample Submittal Form and other paperwork is properly filled out. The sample number on each tube is recorded and any missing or duplicated numbers are noted. (A missing number

may indicate that the sampler could not be retrieved. Samplers with identical numbers generally cannot be analyzed unless their true site location can be established.) If there are any discrepancies, the laboratory supervisor will place the project "on-hold" until problematic issues are resolved. If no resolution is possible, the client will be contacted for decision on whether to analyze the samplers "as received" or to resample.

### 1.5.1.2 Holding Time

Exposed PETREX soil gas collection wires contain a minute quantity of various volatile organic compounds sorbed onto activated charcoal; the protective glass tube is effectively sealed when the Viton-lined cap is seated properly. Maximum holding time is a function of both the chemical stability of the sorbed compounds, and the integrity of the seal on the tube.

It has been our experience that PETREX soil gas samplers that are properly packaged after retrieval from the field, and stored under environmentally controlled conditions, typically remain composi- tionally unchanged for at least four months. Even with this long term stability, it is NERI's practice to analyze all samplers within three weeks of receipt of samplers in the laboratory.

### 1.5.1.3 Separation of TD-MS and TD-GC/MS Collection Wires

Because each sampler contains a wire for TD-MS and TD-GC/MS, the wires must be separated into individual tubes. One collection wire is removed from each survey using tweezers and inserted into an analytical crystal; the assembly is placed into a second precleaned tube, sealed, and labeled identically to that of the original survey. The collection wire/crystal assembly will be placed directly into the mass spectrometer for analysis. The original tube is then resealed and reserved for possible TD-GC/MS analysis.

## 1.5.2 TD MS Analysis

### 1.5.2.1 Instrumentation Used to Analyze PETREX Samplers

Thermal desorption is accomplished using a Fisher radio frequency power supply and a Curie point pyrolyzer connected to a custom designed inlet. The mass spectrometer used is an Extrel Spectrel C-50 quadrupole mass spectrometer. The analysis is controlled and recorded by a 486 DX33 computer with a 320 MB hard drive. Data are archived on 3.5" diskettes. Data are kept in perpetuity.

### 1.5.2.2 Calibration

#### 1.5.2.2.1 Recordkeeping

All daily instrument calibration steps are printed out and kept in a 3-ring binder near the instrument. The date and all details of the calibration procedures are recorded by the mass spectrometer operator.

#### 1.5.2.2.2 Perfluorotributylamine Tuning

Mass assignment and resolution are manually adjusted using a Perfluorotributylamine (PFTBA) standard. The calibration standard is purchased from Scientific Instrument Services, Ringoes, New Jersey. This standard is produced by 3M, and is repackaged and sold to NERI under Product Code FC-43-Perfluorotributylamine. NERI maintains the specifications, product number, and supplier identification in the maintenance files for the mass spectrometer.

A linear correction, based on the known spectrum of PFTBA, is calculated. This correction is applied to a second PFTBA spectrum. If correct mass (M/Z) values are obtained, the operator proceeds to the next turning step. If not, Step 1 is repeated until correct masses are obtained.

Peak intensity ratios are set from the major peaks in the PFTBA spectrum using the following values:

| Mass Spectrum (M/Z) | | Intensities |
|---|---|---|
| 69 | = | 100% |
| 131 | = | 48% ±20% |
| 219 | = | 51% ±20% |

Electron energy is set to 70 electron volts and emission is set at 12 milliamps. All other operating parameters, such as scans and scan range are established in the computer program. These values may only be changed by the laboratory manager.
Tuning is confirmed at the beginning of each day so that a complete survey is analyzed using the same instrument settings.

### 1.5.2.3 Instrument Parameters

The instrument is normally operated with the following parameters.

| | | |
|---|---|---|
| Vacuum | - | $< 4 \times 10^{-7}$ torr |
| Ionization Energy | - | 70 eV |

| | | |
|---|---|---|
| Ionization Current | - | 12.0 mA |
| Desorption Temperature | - | 358°C |
| Number of Scans/Sample | - | 22 |
| Scan Rate | - | 550 amu/sec |

### 1.5.2.4 Mass Spectrometer Analysis and QA/QC

Survey samplers are analyzed in random order. Every effort is made to analyze all samplers from one survey without interruption.

The organic gases adsorbed onto the charcoal are thermally desorbed, separated according to ion mass, counted, and a mass spectrum of masses in the range of 47 to 267 amu is obtained.

Periodic background analyses are performed as a QC measure to assure minimal influence from cross contamination. If there are peaks that are not related to atmospheric gases (e.g. O, N, Ar, $CO_2$, etc.) the supervisor is notified and corrective action taken as appropriate.

A written sample number record is kept during the analysis to prevent accidental cross numbering. The mass spectrometer control program prompts the operator with a warning if a sample number is entered that has already been used. The operator then checks the current number, along with the disk storage location of the previously entered number, to resolve the true numbering situation.

### 1.5.2.5 Project Identification

The raw data file generated by the each analysis is given a unique file name for storage. The NERI project number is the prefix of the data file number.

### 1.5.2.6 Maintenance

A record of the maintenance activity is recorded and kept in a log book near the instrument.

| Frequency | Activity |
|---|---|

| | |
|---|---|
| 1,000 Analyses | Cleaning of sample introduction area, ion source, and expansion chamber by in-house technicians. |
| 4,000 Analyses | Above noted procedures plus quadrupoles and replacing multiplier. |
| Annually: | Preventive maintenance program conducted by manufacturer's service representative. |

### 1.5.3 TD-GC/MS

Upon completion of TD-MS analyses, or upon instruction from the client, selected duplicate collection wires set aside as described in 2.5.1.3 above, are obtained from storage for TD GC/MS analysis.

Curie-point thermal desorption of PETREX collection wires into the GC inlet is accomplished by using a customized tunable radio frequency (RF) power supply and a Fischer Curie-point Pyrolyzer. The pyrolysis chamber is surrounded by the tunable RF coil. One PETREX collection wire at a time is loaded into the pyrolysis chamber by inserting the wire to a predetermined depth. The power supply is adjusted such that the field strength generated is sufficient to reach the Curie point of the PETREX wire, thereby allowing the sample to be desorbed from the charcoal contained on the PETREX wire.

The desorbate is then concentrated by cryofocusing and injected into the GC by flash desorption. The analysis begins when the cryo trap begins to desorb. Data collection begins immediately after the void volume elutes.

#### 1.5.3.1 TD GC/MS Instrumentation

Thermal desorption is accomplished by using a Fisher power supply linked to a Tekmar Model 5010 cryofocusing unit, for analysis using a Hewlett Packard 5987 Gas Chromatograph/Mass Spectrometer system. The GC/MS is computer controlled on an HP a series computer, using an RTE operating system. Chromatograph columns include: Standard Applications - J&W D B 6 2 4 , 6 0 m x 0 . 3 2 m m x 3.0μ_Σπεχιαλ_Αππλιχατιονσ_-_ϑ_Ω_ΔΒ-_____μ_ξ_____μμ_ξ_____μ__ορ_ϑ_Ω_ΔΒ-_____μ_ξ_____μμ_ξ____μ__ορ_οτηερσ_ασ_ρεθυιρεδ__

#### 1.5.3.2 Calibration

##### 1.5.3.2.1 Record Keeping

All instrument calibration steps are recorded in permanently bound logbooks kept in the laboratory. The data and all details

of calibration are recorded by the GC/MS operator and checked by the supervisor.

#### 1.5.3.2.1 Tuning

The instrument is confirmed at the beginning of each day using 4-Bromofluorobenzene (BFB). This calibration standard is obtained from Aldrich Chemical Co. If tuning does not pass listed criteria, corrective action is taken prior to analysis.

### 1.5.3.3 Instrument Parameters

The parameters listed below are used for standard environmental analyses. Specific targeted analytes may require different columns/conditions.

#### 1.5.3.3.1 Thermal Desorption and Injection

Desorption Time: 2 x 95 seconds (190 seconds total)
Desorbate Transfer Temperature: 150°C.
Cryofocusing Trap Temperature: -150°C.
Desorbate concentrated on cyro trap and held until injection
Desorbate injection: by thermal desorption
Injection temperature: 250°C for 1 minute.

#### 1.5.3.3.2 Gas Chromatograph

Carrier Gas: Helium @ 15 psi head pressure.
Injection temperature: 250°C.
Oven temperature programs: 35°C for 2 minutes; increasing 10°C per minute to 235°C; hold for 12 minutes.
Data Acquisition Delay: 3 minutes.
Total run time: 34 minutes.
Transfer line temperature: 250°C.
Interface is direct to MS source.

#### 1.5.3.3.3 Mass Spectrometer

Scan rate: 1.07 scans/second
Scan range: 35 to 300 amu.
Source temperature: 200°C.
Electron energy: 70 eV.
Electron emission: 300 uA.
Electron multiplier voltage: as per Autotune specifications for PFTBA.
Spectrometer tuning: Performed and recorded in bound instrument log book, using tuning parameters for BFB listed

Table I.

TABLE I
BFB Tuning Parameters

| M/Z | Ion Abundance Criteria |
|---|---|
| 50 | 15-40% of the base peak |
| 75 | 30-60% of the base peak |
| 95 | Base Peak: 100% relative abundance |
| 96 | 5-9% of the base peak |
| 173 | < 1% of the base peak |
| 174 | > 50% of the base peak |
| 175 | 5-9% of mass 174 |
| 176 | > 95% but < 101% of mass 174 |
| 177 | 5-9% of mass 176 |

### 1.5.3.4 Quality Assurance & Quality Control

#### 1.5.3.4.1 System Blank

The TD-GC/MS system is tuned daily according to the operational parameters described above. After the results of the
tuning are verified, a minimum of one system blank is run. A system blank is an analysis in which all procedures are followed, but no sample (i.e. PETREX collection wire) is introduced. A typical

system blank reveals a TD-GC/MS peak at a retention time of 12.9 minutes and a molecular weight of 207 atomic mass units (AMU), which corresponds to a known component bleeding off the GC column. If any other unusual compounds are detected, the cause is investigated, correction made, and another system blank is run prior to analyzing any other samples.

#### 1.5.3.4.2 TD-GC/MS Calibration

Qualitative accuracy and precision are the goals of this step. Purchased standards of a series of commonly observed volatile organic compounds from PETREX surveys were analyzed using NERI's standard conditions for TD-GC/MS. The retention time of these compounds is listed in Table II. These retention times are used as an indication of the performance of the GC column.

The accuracy of the mass spectrometer is checked daily using the BFB tuning parameters described above.

NERI's quality program, which includes analysis of a system blank, daily tuning of the mass spectrometer, and evaluation of the performance of the gas chromatograph, all provide assurance that the system is performing to acceptable standards for TD-GC/MS analysis. The analyst will proceed to analyze project samples only when all quality checks are acceptable. If not, the Laboratory Manager is notified and sample analysis will stop until the Laboratory Manager approves the system for use.

### 1.5.3.5 Sample Analysis and Data Management

#### 1.5.3.5.1 Sample Analysis

A PETREX collection wire is removed form the sampler tube with tweezers, then inserted to a predetermined depth into the pyrolysis chamber. The system operating parameters are then verified and recorded in a log book that is kept next to the instrument. Parameters recorded routinely are: NERI project number, operator name, date,

set-up conditions, and any comments that are considered important by the analyst. Sample analysis then begins using the standard run conditions. Data acquisition is computerized, with data processing and printing occurring as acquisition is conducted.

The data package of results, with accompanying forms, is first evaluated by the GC/MS supervisor, and if acceptable, is then delivered to the project manager for review and incorporation of the results into the project report.

#### 1.5.3.5.2 Data Management

##### 1.5.3.5.2.1 File Naming

Quality Control data files are named according to the quality control process and the date the file was created. Project data files are named by giving it the NERI project number, a unique four digit code that is used on all paperwork for NERI projects.

##### 1.5.3.5.2.2 Data Storage

Calibration files and data generated from analysis of project samples are stored on the HP 5987 GC/MS computer. At the completion of the project, the files are transferred to magnetic tape for long term storage. A copy of the directory (file) listing is kept with the tape. Tapes are archived in a cool, dry environment, free from magnetic fields.

## 1.6 DATA INTERPRETATION AND PRESENTATION

### 1.6.1 Quality Control

Experienced project managers perform the data review, analysis, and

interpretation. Their work is reviewed and always countersigned by the Project Operations Manager or his specific designee. On a regular basis, but not less than twice per month, the V.P. of Operations will review a project through all stages (including survey design, quotation, data analysis, reporting, and map production). This routine audit has proven sufficient to assure data integrity, maintain presentation consistency, and provides for a rapid solution if any deviations from standard procedures are uncovered.

### 1.6.2 Compound Identification

Individual compounds are identified from TD-MS data by comparing the mass spectrum that is obtained from each sampler collection wire to a library of reference mass spectra. Several thousand pure compound spectra have been developed by the Bureau of Standards and are available for spectral comparison. NERI has also developed its own library of spectra through headspace analysis of pure compounds using the PETREX process. Once a compound has been identified in this manner, the ion current (or ion count) of this compound is defined as the total ion current for the "parent peak" or an appropriate indicator peak of that compound. In a typical PETREX survey, numerous compounds are identified from each analysis. In the event that the presence of very complex mixtures masks targeted compounds, the TD GC/MS process is used to confirm identifications. Retention indices (for common VOCs) can be used in combination with mass spectra for verification.

### 1.6.3 Compound Mapping

#### 1.6.3.1 Production of Sampler Location Map

Sampler location maps are created by placing the field base map on a digitizing board and entering each sampler location (and its respective identifying number) as an X-Y coordinate relative to an origin. Alternatively, base maps may be supplied by the client in various CAD output formats on a diskette. Cultural and topographic features can also be digitized onto the map as reference points. The relative ion current (or ion count) for each compound can then be plotted at the exact sampler locations.

#### 1.6.3.2 Production of PETREX Isopleth Maps

The process of plotting ion counts of indicator peaks from the compound(s) identified in the soil gas survey is computerized. Thus the summed ion counts from multiple indicator peaks of identified compound(s) are matched with the sampler location on the base map, and the numeric value is plotted. The data are then contoured to taking into account all other available data, such as geologic setting, soil types, groundwater conditions, type of contaminant, and site history.

The resultant maps show, per compound or class of compounds, isopleth lines that describe the distribution and relative intensity of soil gas constituents throughout the survey area. Soil gas isopleth maps are useful for interpreting the areal extent of contamination, the location of source areas and relative "hot spots", and/or the apparent direction of movement of the contaminants.

The entire PETREX process permits the collection, identification and mapping of numerous compounds simultaneously. This information is used to differentiate multiple compounds and multiple source areas within a single survey.

### 1.6.4 Data Presentation in Report Form

Once the data have been compiled, interpreted, and mapped, a report is produced for the client's use. Also, isopleth maps are finalized and printed using a sophisticated plotter and CAD software. Reports are signed by both the assigned project manager and the Project Operations Manager before they are released.

NERI maintains confidentiality of the work it performs for its clients. All employees are trained in this regard. No report or map is released to a third party without prior written consent of the client.

#### 1.6.4.1 Final Storage of Project Files

NERI maintains all project reports and raw data for a minimum

of 7 years. Completed project files are stored by project number in secure, dedicated storage areas. Duplicate copies of the Final Report are stored at both of NERI's offices (Lakewood, CO and Farmington, CT) to protect against potential loss due to fire or other events.

## 1.7 GUIDANCE ON THE INTERPRETATION OF SOIL GAS RESULTS

This section and Section 2.8 are meant for informational purposes only, and are therefore not a part of the standard procedures utilized for performing PETREX soil gas surveys. The intent is to provide NERI's insight to the reader or the user of soil gas data on using the data provided during a PETREX survey. In addition, Section 2.8 discusses alternative uses for the PETREX samplers to address site specific questions.

Confirmation and quantification of soil gas results are generally conducted using standard field sampling methods for soil and groundwater analysis. The soil gas maps are used to guide the placement of borings and wells.

In general extreme caution needs to be exercised when trying to extrapolate soil gas results (without the above sampling and analysis) to predict exact source of the soil gas signal (i.e. soil or groundwater), the depth of the signal, or concentrations of contaminants. In NERI's experience, the following hold true:

1. Results from soil gas surveys that have been conducted at a uniform shallow depth cannot be used to calculate the depth to the source or the absolute concentration of contaminants at depth. Depth profiling (see section 2.8.2) can greatly enhance the interpretation of the survey results.

2. Ion counts for any compound at one sample location can only be compared to another location within the same survey for the same compound. Ion counts of different compounds cannot be compared to each other.

3. The isopleth maps from one survey cannot be quantitatively compared to the results of any other survey, or between two surveys conducted at the same site at different times of the year. However, the same "hot spots" and migration pathways normally are detected in the same place over multiple surveys at a

given site, allowing for migration.

## 1.8 ADDITIONAL USES OF PETREX SAMPLERS

PETREX samplers have numerous other uses, and the techniques described below are often incorporated into the soil gas survey design. (Specific instructions on sampling, shipment methods, and blanks are provided for each project.)

### 1.8.1 Headspace Analysis of Soils and Water

Headspace analysis can be used to establish a mass spectrometric pattern of compounds from soils or water. The results approximate what happens in the environment, measuring those components that partition from the solid or aqueous phase to the vapor phase. The resulting pattern can then be used during interpretation of the soil gas survey by searching for the headspace pattern in the results obtained from the soil gas survey This approach is very helpful for verifying sources or for mapping specific blends of commercial products at a site.

A soil sample is headspaced by filling a thermochemically cleaned headspace container with the sample soil. A clean PETREX culture tube is often used. The sample is shipped to NERI's laboratory, where approximately 25 grams of soil will be placed in another clean tube and several PETREX collection wires are added. The sample is allowed to equilibrate for up to 24 hours. The exposed wires are then removed and prepared for thermal desorption mass spectrometric analysis as described earlier. A similar process is used for screening water samples and oil samples.

### 1.8.2 Immersion Sampling of Water

It is frequently necessary to establish the presence of any organics present in water, whether they partition or not. In such a case, the wire is immersed in water and allowed to equilibrate for up to 24 hours. Both low and high solubility components are trapped on the charcoal for more complete characterization.

### 1.8.3 Depth Sampling

At sites exhibiting extensive near surface soil contamination, but where the sources and the extent of groundwater contamination are less evenly distributed, sampling at depth (e.g. 3-6' below surface) will enable the client to map deeper subsurface contamination, avoiding the incidental contaminants at the surface.

### 1.8.4 Depth Profiling

In order to determine if the source of the soil gas signal is near surface or in a deeper vadose/saturated zone, depth profiling can be used.

At each selected location, shallow bore holes are drilled a few feet apart to depths such as 1, 2, 4, and 6 feet deep. After all the loose cuttings and cavings have been removed from the bottom of the hole, a core of soil may be taken for headspace analysis. Next, a PETREX Sampler is installed as described earlier.

The samplers remain in place for the same length of time as the rest of the PETREX survey.

Each of the PETREX sampling methods addresses different questions concerning the source of the VOC signal as detected during a soil gas survey.

In the case of soil headspace analysis, detection of VOCs indicates that the VOCs are actually contained within the soil matrix. When the VOC is anthropogenic in nature, the VOC presence is indicative of soil contamination at that depth interval.

When performing passive soil gas sampling with PETREX samplers, the sampler serves as both an extended headspace sampler relative to the soil matrix in its immediate vicinity, as well as measuring the relative rate of soil gas movement through that zone during the exposure period. Soil gas movement through the vadose zone is theorized to be a diffusion process. If the soil headspace data indicate that the VOC is not present in the soil matrix, then the depth profiling samplers should show a relative increase of ion counts as the depth increases. By combining results from depth profiling and headspace analyses, the nature of the VOC source (near surface or deep vadose/saturated) can be inferred.