



VICHEM SITE
ADMINISTRATIVE RECORD INDEX

1.0 SITE IDENTIFICATION

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- 1.3 Data Tables - USEPA TAT, March 1989
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2.0 REMOVAL RESPONSE

- 2.1 Action Memorandum signed August 8, 1989 including attachments

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- 3.1 RCRA Enforcement Interim Report, September 9, 1985
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5.0 PUBLIC PARTICIPATION

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II

P.2

TAT

DATE: **JAN 23 1989**

SUBJECT: Inspection of the Island Chemical Site in St. Croix,
USVI to determine if a Removal Action is warranted
under CERCLA.

T. Mignone

FROM: *George Pavlou*
George Pavlou, Associate Director
Enforcement Programs.

TO: Richard Salkie, Associate Director
Removal Programs.

On November 9th, representatives from EPA and the Department of Planning & Natural Resource (DPNR) conducted a site visit of the Island Chemical Site. The site visit revealed that a portion of the main building contains large amounts of stored chemicals in bags and drums. Some of the chemicals included: sodium hydroxide, toluene, sulfamic acid (granular), potassium sulfate and benzyl chloride. Many of the bags and drums have ruptured and their contents have spilled onto the floor; there are pools of liquids, and powders dispersed throughout. Many of the drums have portions of their sides rusted; others show danger signs such as bulking, pitting, and visible accumulation around the tops. You should also know that the PRP is conducting a RCRA §3013 investigation pursuant to an AO with EPA.

It is recommended that this site be evaluated by your staff and/or contractor to determine whether a removal action is warranted. If your staff has any questions, please contact Ms. Sherrel D. Henry of my staff at (212) 264-0675.

cc: Carlos O'Neill, CFO

1.10
CORRESPONDENCE
REQUEST FOR INSPECT
1/23/89



Suite 201, 1090 King Georges Post Road,
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TECHNICAL ASSISTANCE TEAM FOR EMERGENCY RESPONSE REMOVAL AND PREVENTION
EPA CONTRACT 68-01-7367

TAT-02-F-05117

TO: Doug Kodama, OSC
U.S. EPA Response and Prevention Branch

FROM: Michael Mentzel, TAT-2 ^{MM}
Jeff Bechtel, TAT-2 

SUBJECT: Virgin Islands Chemical Company (VI CHEM) Removal
Site Evaluation and Site Investigation.

DATE: February 10, 1989

INTRODUCTION

On Tuesday, January 31, 1989, the U.S. EPA Response and Prevention Branch conducted a Preliminary Assessment and Removal Evaluation at the Virgin Islands Chemical Company (VI CHEM) site in St. Croix, U.S.V.I. This action is in reply to a request from George Pavlou, Associate Director Enforcement Programs dated January 23, 1989.

PERSONNEL

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1.20
PRELIM ASSESS RPT
TAT
2/10/89

Roy F. Weston, Inc.

SPILL PREVENTION & EMERGENCY RESPONSE DIVISION

In Association with ICF Technology, Inc., C.C. Johnson & Malhotra, P.C., Resource Applications, Inc.,
Geo/Resource Consultants, Inc., and Environmental Toxicology International, Inc.

BACKGROUND AND HISTORY

The Virgin Island Chemical Company (VICHEM) site is located on the Island's south side. The site is situated on Route 66, approximately 0.5 miles due north of the Alexander Hamilton Airport. The site covers approximately 3.5 acres and is bordered to the north by an intermittent stream that originates on the north side of the Island and discharges into the Caribbean Sea. (See Figure 1)

A number of residences and industries are located as close as one-tenth of a mile from the site. In addition, several well fields are located in the vicinity of the site. The St. Croix prison is located 1/4 mile downwind from the site. DPNR stated it would be very difficult to evacuate prisoners in the event of a chemical fire at the site.

Presently occupying the site is the company VIAG Fuels, Inc. VIAG utilizes some office space in the main building and also has ethanol stored in four of the aboveground tanks. The principals of the firm plan to begin an alcohol dehydration project on-site in the near future.

The 3.5 acre site is owned by Charles H. Steffey, Inc. On May 1, 1969 Steffey leased the property to Houston Chemical Industries, Inc. Houston Chemical assigned the lease to Caribe Chemical Company, Inc., (subsequently known as Pierrel America, Inc.) on March 20, 1972.

On June, 1978, Pierrel America assigned the ground lease to Cooper Laboratories, Inc. (Cooper). On October 30, 1979 Cooper Laboratories assigned the lease to its subsidiary, Island Chemical Company (ICC). On November 1, 1979, Cooper Laboratories sold all of the stock of ICC to the predecessor of Berlex Laboratories, Inc. (Berlex). On September 14, 1984, ICC sold its assets to Virgin Island Chemical Company (VICHEM).

This background information has been supplied by the Virgin Islands Department of Planning and Natural Resources (DPNR).

Limited PRP (Berlex) site clean-up and soil excavation has taken place in the recent past under a RCRA enforcement action. Berlex is currently finalizing a scope of work for a remedial investigation/feasibility study addressing soil and groundwater contamination.

The Governors office Department of Fire Services was contacted to assess local chemical fire control capabilities. Three fire companies are located on the island with the nearest to the site being Grove Place. All firefighting personnel are equipped with SCBA, however, only some have had formalized chemical hazard training. A limited amount of foam capability is available.



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CONSULTANTS

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EPA PM
KODAMA

FIGURE 1
SITE LOCATION

In Association with ICF Technology Inc., C.C. Johnson & Associates, Inc., Resource Applications, Inc., Geo/Resource Consultants, Inc., and Environmental Toxicology International, Inc.

TAT PM
MENTZEL

VI CHEM SITE
ST. CROIX US VI

CHRONOLOGY OF EVENTS

Thursday 1/26/89: Gear sent to St. Croix from Edison, N.J.

Monday 1/30/89: TAT personnel in St. Croix, supplies and gear prepared.

Tuesday 1/31/89: Initial site entry. PRP (Southerland) interviewed by OSC.

Wednesday 2/1/89: TAT and DPNR perform inventory of materials.

Thursday 2/2/89: Report generated, community survey conducted and gear shipped back to N.J.

INITIAL SITE CONDITIONS

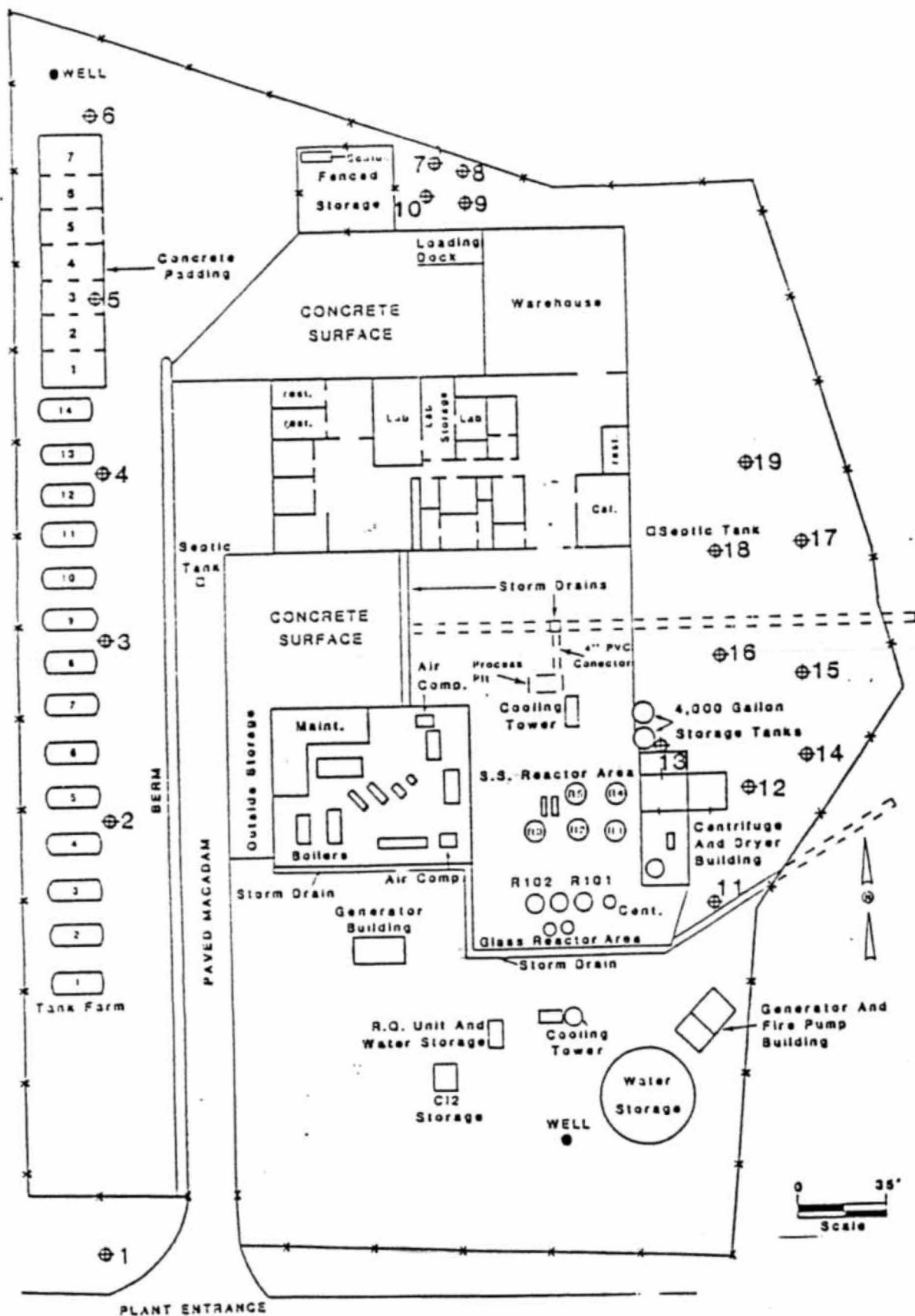
The site consists of a main warehouse building including offices, the reactor and centrifuge buildings and twenty-two aboveground tanks. Living on-site adjacent to the main warehouse building are anywhere from 15-25 guard dogs stored in individual kennels. (See Figure 2).

Also living on-site is the kennel operator, Kate Wesp. A house trailer is located on the concrete surface near the loading dock. It is also apparent that Wesp uses the restroom facilities and kitchen area in the main building (rooms 24, 28, 29 Figure 3), as living quarters.

The initial entry into the main warehouse building was made at 0930 hrs. on January 31, 1989. All safety procedures were followed for a level "B" entry in a hot climate. Air monitoring was conducted with OVA, HNU, CGI, Radiation Detector, HCN Monitox, H₂S Monitox and pyridine Draeger tubes. All ambient air monitoring readings were equivalent to background (taken off site), except for Room 5 which showed ambient conditions 1-2 units above background on the OVA. All further entries were made in level "C" with continuous air monitoring.

This preliminary assessment was coordinated with and observed by DPNR personnel. DPNR's primary concerns with this site are the threat of fire/explosion, and the threat (or actual) migration of spilled materials to the surrounding soil and groundwater.

On Wednesday, February 1, 1989, three TAT members and one DPNR person compiled a full inventory of lab chemicals, drums and tanks located throughout the site. The inventory consisted of listing information found on container labels as well as recording any observations. Refer to Tables 1 and 2 for a complete listing of containers and volumes. No samples to confirm the identity of any material were taken at this time.



SPILL PREVENTION &
EMERGENCY RESPONSE DIVISION

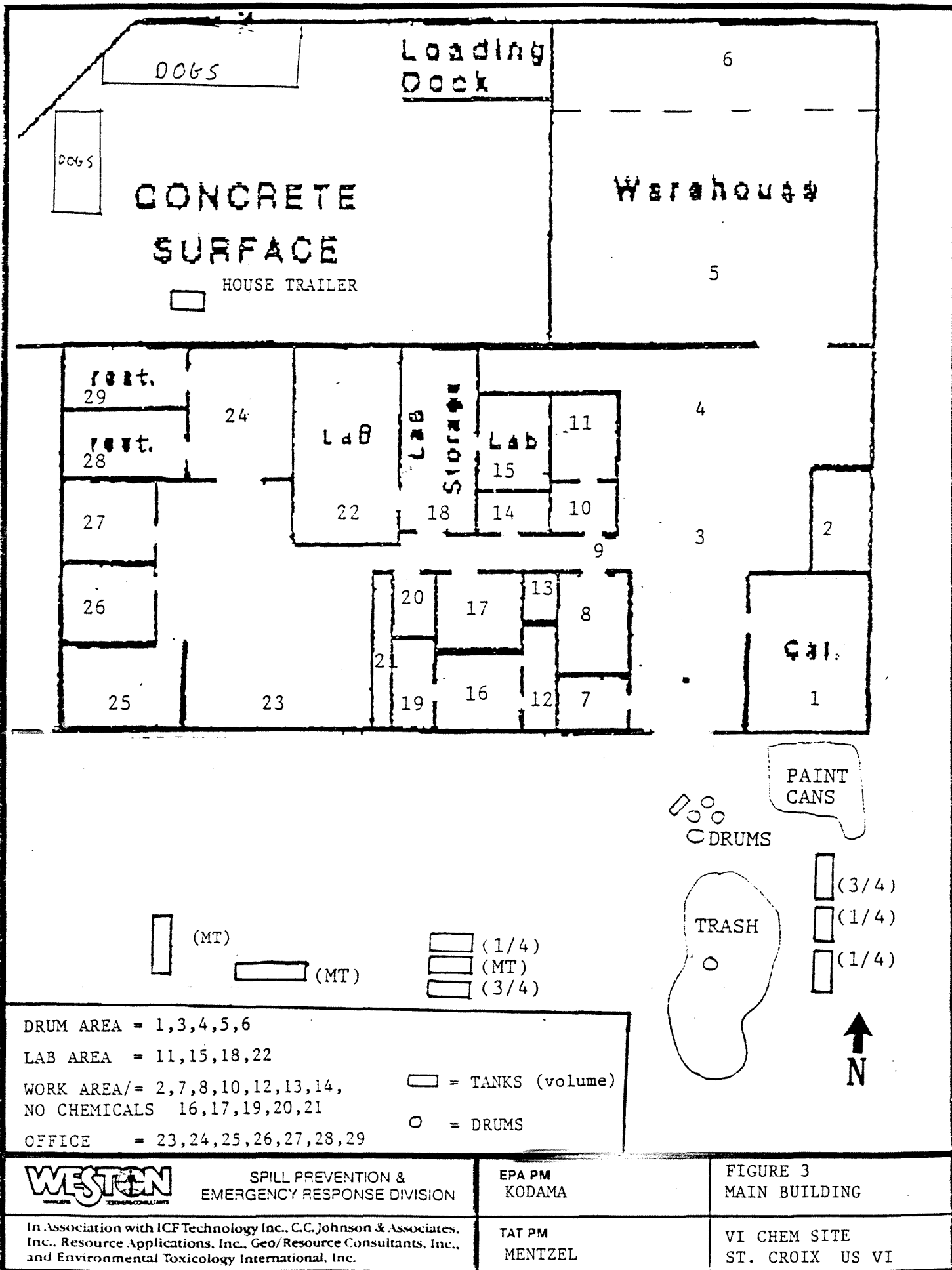
EPA PM
KODAMA

FIGURE 2
SITE DIAGRAM

In Association with ICF Technology Inc., C.C. Johnson & Associates, Inc., Resource Applications, Inc., Geo/Resource Consultants, Inc., and Environmental Toxicology International, Inc.

TAT PM
MENTZEL

VI CHEM SITE
ST. CROIX US VI



Photographs of site conditions were taken and are included as Appendix I.

DESCRIPTION OF MATERIALS

Three areas were delineated based upon the type of material located in each. These areas are:

- A. The laboratory (Rooms 11, 15, 18 and 22 Figure 3).
- B. The drum storage warehouse (Rooms 1, 3, 4, 5 and 6 Figure 3).
- C. The grounds outside the building including the centrifuge and maintenance buildings and the reactor area. (Figure 2).

Each of these areas will be described below.

A. Laboratory

813 containers of laboratory reagents and unknown liquid and solid material are located in this area. Room 22 is the main lab area, Room 18 is the lab storage area, Room 15 contains unmarked glassware and Room 11 contains only a few items. Some of the more dangerous items of note are as follows:

- 1. Sodium metal (2 boxes). Water reactive. (Photo #7).
- 2. Ethyl Ether (6 cans). Potential explosive. (Photo #12).
- 3. Diisobutyl aluminum hydride (4 lecture bottles). Spontaneously combusts in air.
- 4. Potassium cyanide (2 bottles). Poisonous. Stored near acids, potential for release of hydrogen cyanide gas.
- 5. Phosphorous pentoxide (1 bottle). Reactive.
- 6. Sodium hydride (1 pound). Water reactive.
- 7. Two flammable storage cabinets containing various materials and unknowns. (Photo #12).
- 8. Two office type storage cabinets. One cabinet has spilled material on the top shelf which has dripped downward to mix with other chemicals. (Photos #10 and #11).

Many other chemicals exist in the laboratory, as well as many containers with unknown materials. All the chemicals which had dates are at least five years old. Refer to Table 1.

2. Drum Storage Warehouse

In the main warehouse are located approximately 400 drums,

and bags of material of these, 211 are green painted drums which have the words ETHYL ALCOHOL stenciled on the lid. The condition of the ethyl alcohol drums vary from fairly sound to extremely deteriorated. Some of the drums consist of only a rusted shell with gaping corroded holes. A rough estimate shows that half are empty and half contain material. This material may be some type of sludge. A summary of other materials found are as follows. Refer to Table 2 for a complete inventory of drums.

1. Laboratory unknowns (75 containers less than 1 gal.)
2. Methanol (5 x 55 gal.)
3. Glacial acetic acid (13 x 55 gal.)
4. Benzyl acetate (21 x 55 gal.)
5. Toluene (8 x 55 gal.)
6. Antifreeze/glycol (20 x 55 gal.)
7. Benzyl chloride (28 x 55 gal.)
8. Salicylic acid (27 fiber drums)
9. Methyl isobutyl carbinol (12 x 55 gal.)
10. Sodium hydroxide (12 x 55 gal.)
11. Bulging drum, unmarked (1)
12. Drums in which some type of reaction has taken place, lid popped off (2) (Photo #6).
13. Many other drums with contents as shown in table 2.
14. Drums of known and unknown material.
15. Paint (97 x 5 gal. - 21 x 1 gal.)
16. Cylinder chlorine (1). (Photo #14).
17. Cylinder hydrogen chloride (1).
18. One drum of sulfamic acid, broken and leaking its contents. (Photo #17).
19. A cistern with PVC pipe leading to a pumping system outside the building.
20. Another cistern is located in the NW corner of Room 6.

C. Outside Grounds

An inspection of the maintenance and centrifuge buildings, the reactor area and the entire site property revealed various production materials including lubricating oils; propane, oxygen and acetylene cylinders; filter media; ethanol; assorted paints and some sodium hexa-meta phosphate. Some of the oil drums are leaking.

Scattered around the facility are eight stainless steel tanks with quantities of unknown liquid varying from empty to three quarters full (see Figure 2). A large storage tank is on site along with numerous pressure and reaction vessels. Fourteen large green storage tanks are also on-site. Ten are planned to be used in the alcohol dehydration

project. Four of the ten are full of ethanol. The other six are empty. The remaining four not being used are empty and unsound.

Two abandoned tank trucks are also left on-site. The status and ownership of these tank trucks is unknown.

Also three transformers located on a power pole inside the west fence line were observed to be leaking their contents, (possibly PCB oil), onto the ground.

THREAT

An imminent hazard from direct exposure to chemicals through contact, ingestion, or through inhalation exists directed at persons and workers who are on-site. All personnel have free access to the laboratory and drum storage areas. Only an unlocked wooden door exists between the laboratory and the presently occupied office area (see photographs #5 and #6). Some of the persons who daily visit or live on-site have no knowledge of the hazards associated with the stored chemicals. Also affected are the dogs which are housed on site (see photograph #2).

Incompatible materials are stored in close proximity in the laboratory area. The potential for adverse reactions is real and will continue to increase as the chemicals age. At least three examples of reactions taking place are evident in the drum storage area. These consist of one bulging drum and the two drums in which an unknown foam like material has exerted enough pressure to push the drum lids up 2-3 inches (see photograph #16).

Another pathway of exposure to a release is through fire or explosion. Nearby residences, a local engineering/construction firm and the VI prison population could be severely impacted by toxic laden smoke. Although steps have been taken to implement a chemical emergency preparedness program, the fire department may not be able to control a chemical fire and evacuate affected persons during a life threatening emergency.

The third pathway to exposure is through groundwater contamination. Chemical discharges into a local intermittent stream have been documented by the EPA and DPNR. Chloroform was detected in the on-site well at a level of 130 ug/l by the EPA RCRA Enforcement Branch. Wells located off-site were sampled and analyzed by this branch in March and November, 1988. Chloroform contamination was found in five wells located near the site in concentrations ranging from 11 ug/l to 75 ug/l.

TABLE 1

Laboratory Reagent Inventory

CHEMICAL NAME =====	COMPANY =====	QTY ===	STATE =====
1,3-dinitrobenzene	Aldrich Chemical	100 g	solid
1-butanol	J.T.Baker Chemical	500 ml	liquid
1-chlorobutane	MCB	4 L	liquid
1-propanol	J.T.Baker Chemical	500 ml	liquid
18-Crown-6 99%	Aldrich Chemical	25 g	solid
2,2-oxydiethanol	Kodak	1 kg	liquid
2,6-dimethoxybenzoic acid 99%	Aldrich Chemical	25 g	solid
2,6-ditertiarybutyl p-cresol	Biesterfeld	500 g	solid
2-hydroxybenzyl alcohol 99%	Aldrich Chemical	25 g	liquid
2-hydroxyethyl ether	Aldrich Chemical	1 kg	liquid
2-methyl-1-butanol 99%	Aldrich Chemical	10 g	liquid
2-methylbutyl amine	American Laboratorie	15 g	liquid
3,3-dimethoxy benzidene	Kodak	100 g	solid
3-hydroxybenzoin acid	Aldrich Chemical	100 g	solid
4-chlorobenzene sulfonamide	Aldrich Chemical	100 g	solid
4-hydroxy 4methyl 2pentanone	Aldrich Chemical	500 g	liquid
4-hydroxybenzoic acid	Aldrich Chemical	50 g	solid
4-methylbenzo phenone 97%	Aldrich Chemical	50 g	solid
9-hydroxyflourene	Aldrich Chemical	2x25 g	solid
Acetic acid	MCB	2x5 lb	liquid
Acetone	Fisher Scientific	4 L	liquid
Acetonitrile	Supelco	1 box	liquid
Alkalinity C,D,E,G	Mogul Corporation	4x2 oz	liquid
Aluminum Chloride	Mallinckrodt	1 lb	solid
Aluminum chloride	Witco Chemical	500 g	solid
Ammonium acetate	Fluka	1 kg	solid
Ammonium acetate	Aldrich Chemical	2 kg	solid
Ammonium acetate purified	Jarchem Industries	250 g	solid
Ammonium hydroxide	Sargent Welch Scient	500 ml	liquid
Ammonium persulfate	J.T.Baker Chemical	2.5 kg	solid
Ammonium persulfate	J.T.Baker Chemical	500 g	solid
Ammonium thiocyanate	Fisher Scientific	500 g	liquid
Amyl alcohol	Mallinckrodt	1 pt	liquid
Arsenic trioxide	Fisher Scientific	2x113g	solid
Barium chloride	Drew Chemical	1 qt	liquid
Barium chloride	Mallinckrodt	500 g	solid
Barium chloride	Fisher Scientific	1 lb	solid
Barium hydroxide	Fisher Scientific	1 lb	solid
Benzaldehyde	J.T.Baker Chemical	500 ml	liquid
Benzene	Tenneco Oil	2x1gal	liquid

Benzhydrol	Kodak	100 g	solid
Benzoic acid	Mobay Chemical	1 lb	solid
Benzoin	Fluka	2x1 kg	solid
Benzoin 98%	Aldrich Chemical	4x500g	solid
Benzophenone	Aldrich Chemical	500 g	solid
Benzophenone	H&S Chemical	1 bag	solid
Benzophenone	Upjohn	500 g	solid
Benzophenone 99+%	Aldrich Chemical	50 g	solid
Benzoyl chloride	Mobay Chemical	1 lb	solid
Benzyl acetate 99%	Aldrich Chemical	100 g	liquid
Benzyl alcohol	Mallinckrodt	1 pt	liquid
Benzyl benzoate	Aldrich Chemical	100 g	liquid
Benzyl chloride	unknown	4 oz	liquid
Benzyl chloride	Velsicol	500 g	liquid
Benzyl cinnamate 98%	Aldrich Chemical	100 g	solid
Benzyl ether	Aldrich Chemical	1 kg	liquid
Benzyltriethylammoniumchloride	Aldrich Chemical	25 g	solid
Bismuth subnitrate	MCB	1 lb	solid
Bromine	Fisher Scientific	113 g	liquid
Bromophenol blue	Fisher Scientific	5 g	solid
Brucine sulfate	Fisher Scientific	1 oz	solid
Buffer solution pH 10.00	Fisher Chemical	500 ml	liquid
Buffer solution pH 4.00	Fisher Scientific	500 ml	liquid
Buffer solution pH 7.00	Fisher Chemical	500 ml	liquid
CAO-3 BHT	Sherwin Williams	1 bag	solid
Calcium sulfate anhydrous	W.A.Hammond Drierite	4x5 lb	solid
Cello-Seal	Fisher Scientific	25 g	liquid
Chloride F	Mogul Corporation	3 oz	liquid
Chlorodiphenyl methane 98%	Aldrich Chemical	100 g	solid
Chloroform	Fisher Scientific	4 L	liquid
Chromotropic acid Na salt	Fisher Scientific	25 g	solid
Cinnamaldehyde	unknown	2x1 kg	liquid
Citric acid anhydrous	J.T.Baker Chemical	500 g	solid
Citric acid trisodium dihydrate	Aldrich Chemical	1 kg	solid
Cobalt chloride	Fisher Scientific	2x1 lb	solid
Color standard 4	unknown	1 oz	liquid
Congo red	Fisher Scientific	25 g	solid
Copper metal	Fisher Scientific	500 g	solid
Cupric sulfate	Fisher Scientific	500 g	solid
Cupric sulfate	Mallinckrodt	500 g	solid
DPD #1,2,3 Reagents	Taylor Chemical	3x1 oz	liquid
Dibenzo 18-Crown-6 98%	Aldrich Chemical	50 g	solid
Dibenzoyl tartaric acid	Knoll Fine Chemicals	1 kg	solid
Dichloroethane 99%	Aldrich Chemical	1 kg	liquid
Dichlorophenyl methane 99%	Aldrich Chemical	25 g	solid
Dichlorotoluene 99%	Aldrich Chemical	100 g	solid
Diethylene glycol	Fisher Scientific	1 qt	liquid
Diisobutyl aluminum hydride	Texas Acres	4 cyl	gas
Diphenylmethane 99%	Aldrich Chemical	500 g	liquid
Diphenylthiocarbazone	Fisher Scientific	25 g	solid
Eosin Y	Aldrich Chemical	25 g	solid
Ether anhydrous	Fisher Scientific	4 qt	liquid
Ethoxyguin	unknown	4 oz	liquid
Ethyl acetate	Aldrich Chemical	5 gal	liquid
Ethyl acetate	MCB	5x1gal	liquid
Ethyl benzene	Dupont	1 qt	liquid
Ethyl ether 99%	Fisher Scientific	6x500g	liquid
Ferric ammonium sulfate	Fisher Scientific	500 g	solid

Ferric chloride	unknown	100 ml	liquid
Ferric chloride	Fisher Chemical	1 lb	solid
Ferric chloride anhydrous	Pennwalt Corporation	5x500g	solid
Ferric chloride anhydrous	Kodak	500 g	solid
Ferrous ammonium sulfate	Fisher Chemical	1 lb	solid
Formic acid	unknown	200 g	liquid
Glacial acetic acid	Fisher Chemical	5 lb	liquid
Hydrazine sulfate	Fisher Scientific	4 oz	solid
Hydrazine sulfate	Fisher Scientific	100 g	solid
Hydrochloric acid	MCB	2x6 lb	liquid
Hydrochloric acid	Fisher Chemical	3x1 L	liquid
Hydroxylamine hydrochloride	Fisher Scientific	1 kg	solid
Hydroxylamine hydrochloride	MCB	4 oz	solid
Iodine	Fisher Scientific	500 g	solid
Iron chloride anhydrous	BASF	500 g	solid
Isoamyl alcohol	Fisher Scientific	500 ml	liquid
Isobutyl alcohol	J.T.Baker Chemical	500 ml	liquid
Lead acetate	MCB	1 lb	solid
Lead nitrate	Fisher Scientific	100 g	solid
Lithium perchlorate	Aldrich Chemical	500 g	solid
Magnesium sulfate	Fisher Scientific	500 g	solid
Medical oxygen	MSA	1 cyl	gas
Mercuric chloride	Fisher Scientific	2x100g	solid
Mercuric oxide	Fisher Scientific	500 g	solid
Mesityl oxide	Aldrich Chemical	100 g	solid
Methanol	Fisher Scientific	4 L	liquid
Methenamine	Fisher Scientific	500 g	solid
Methyl alcohol	Mallinckrodt	1 gal	liquid
Methyl orange	Fisher Scientific	113 g	
Methyl red	Fisher Scientific	2x10 g	solid
Monochlorobenzene	PPG Industries	10 oz	liquid
N-methylaniline	Kodak	1 kg	liquid
Na salt of ME salicylate	Sattra Chemical	1 bag	solid
Niacin N.F.	Nepera Chemical	250 g	solid
Nitric acid concentrated	J.T.Baker Chemical	2x8 lb	liquid
Nitrobenzene	Fisher Scientific	1 qt	liquid
Non aqueous buffer soln.	Beckman Instruments	1 pt	liquid
Nutrizyme	Merck	2 oz	solid
Oil #3	Frich Oil	5 gal	liquid
Paraffin oil	Fisher Scientific	1 qt	liquid
Paraformaldehyde	MCB	1 qt	liquid
Paraformaldehyde prills 91%	Celanese Chemical	1 lb	solid
Perchloric acid	MCB	2x8 lb	liquid
Phenol red	Fisher Scientific	5 g	solid
Phenophtalein	Fisher Scientific	1 oz	solid
Phenylhydrazine	Fisher Scientific	4x4 oz	liquid
Phenylhydrazinehydrochloride	Fisher Scientific	2 lb	solid
Phosphorous pentoxide	Fisher Scientific	1 lb	solid
Piperazine	MCB	100 g	solid
Potassium bromide	Fisher Scientific	5x500g	solid
Potassium butoxide	Callery Chemical	50 g	solid
Potassium chloride	Beckman Instruments	2x6 oz	solid
Potassium cyanate	Fisher Scientific	1 lb	solid
Potassium cyanide	Fisher Scientific	500 g	solid
Potassium dichromate	Fisher Scientific	500 g	solid
Potassium ferrocyanide	Fisher Scientific	3 kg	solid
Potassium hydroxide	Mallinckrodt	2x1 lb	solid
Potassium hydroxide	Fisher Scientific	500 g	solid

Potassium iodide	Drew Chemical	1 qt	liquid
Potassium iodide	Fisher Scientific	2x500g	solid
Potassium periodate	Fisher Scientific	100 g	solid
Potassium platinate	Varlacold Chemical	5 g	solid
Potassium sulfate	Indiana Army Ammo Plant	250 g	solid
Potassium sulfate	Aldrich Chemical	500 g	solid
Potassium sulfate	unknown	50 g	solid
Potassium thiocyanate	Fisher Scientific	500 g	solid
Resorcinol	Koppers	3 bags	solid
Salicylaldehyde 99+%	Aldrich Chemical	100 g	liquid
Salicylic acid	Aldrich Chemical	100 g	solid
Salicylic acid	Aceto Chemical	500 g	solid
Salicylic acid sodium salt	Aldrich Chemical	100 g	solid
Sicapent	MCB	2.8 L	solid
Silica gel dessicant	Davison Chemical	2x1 qt	solid
Silver nitrate	J.T.Baker Chemical	1 oz	solid
Silver nitrate	Sargent Welch Scientific	30 g	solid
Sodium Chloride	Fisher Scientific	500 g	solid
Sodium acetate	Sattra Chemical	3 bags	solid
Sodium acetate anhydrous	Niacet Corporation	250 g	solid
Sodium acetate anhydrous	CDF Chimie Noth America	2x500g	solid
Sodium amide	Farchan Research Lab	500 g	solid
Sodium benzoate	Sattra Chemical	1 bag	solid
Sodium benzoate	Dastech International	1 bag	solid
Sodium benzoate	Ishihara Corporation	250 g	solid
Sodium benzoate	Pfizer	100 lb	solid
Sodium borohydride	Fisher Scientific	4x25 g	solid
Sodium carbonate	Fisher Scientific	1 kg	solid
Sodium carbonate anhydrous	Mallinckrodt	1 lb	solid
Sodium chlorate	Hooker Chemical	1 box	solid
Sodium dichromate	Fisher Scientific	10 kg	solid
Sodium formate	unknown	5 lb	solid
Sodium hydride	Thiokol/Ventron Division	1 lb	solid
Sodium hydroxide	Mallinckrodt	500 g	solid
Sodium metal	RMI	2 boxs	solid
Sodium nitrite	Fisher Scientific	2x500g	solid
Sodium nitro ferricyanide	MCB	4 oz	solid
Sodium sulfate	Fisher Scientific	500 g	solid
Sodium tartrate	J.T.Baker Chemical	2 oz	solid
Sodium tartrate	Fisher Scientific	6x113g	solid
Sodium thiosulfate	Fisher Scientific	2x1 lb	solid
Succinic anhydride	MCB	6x250g	solid
Succinic anhydride	Aldrich Chemical	2x1 kg	solid
Sulfamic acid	Fisher Scientific	500 g	solid
Sulfanilic acid	H&S Chemical	1 bag	solid
Sulfite O,P,Q	Mogul Corporation	3x2 oz	liquid
Sulfuric acid	J.T.Baker Chemical	10 lb	liquid
Tetraphenolboron sodium 99%	Aldrich Chemical	25 g	solid
Thiopene	Kodak	100 g	liquid
Total alkylinity indicator	Drew Chemical	1 qt	liquid
Tributyl borate	Aldrich Chemical	750 g	liquid
Trichloroethylene	Mallinckrodt	1 pt	liquid
Triethyl borate 97%	Aldrich Chemical	100 g	liquid
Triethylenediamine	Air Products	250 g	solid
Weedox C/R 250 herbicide	Southern Mill Creek Prod.	2x5gal	liquid
Xylene	Fisher Scientific	5x1 L	liquid
Zinc chloride	Fisher Scientific	500 g	solid
Zinc chloride anhydrous	Mineral Research	1 lb	solid

p-chlorobenzene sulfonamide	H&S Chemical	2 bags	solid
p-naptholbenzein	Fisher Scientific	25 g	solid
p-toluenesulfonicmonohydrate	Aldrich Chemical	500 g	solid
pH indicator A	Mogul Corporation	2 oz	liquid
z Miscellaneous unknowns	on site lab glassware	280bot	misc.
z Miscellaneous unknowns	on site one oz bottles	238bot	liquid

TABLE 2

Drum Inventory

Chemical Name =====	Company =====	Qty ===	State =====
Acetone	Ashland Chemical	55 G	liquid
Acetylene	VI Gas	2 cyl	gas
Activated carbon	Calgon Corporation	30 bag	solid
All-weather patch material	Revere Chemical	55 G	solid
Amersite 2	Valley Freight Syst.	55 G	liquid
Ashland MeOH	Ashland Chemical	5 G	
Benzyl acetate	Island Chemical	21x55G	liquid
Benzyl chloride	Velsicol Corporation	28x55G	liquid
Chlorine	VI Gas	1 cyl	gas
Chloroform	unknown	55 G	liquid
Crofox	Cerfact Laboratories	55 G	liquid
Crystal Clear floor finish	Cerfact Laboratories	2x20 G	liquid
Degreaser	unknown	55 G	liquid
Drewtrol 8500	Valley Freight Syst.	55 G	liquid
Ethyl alcohol	unknown	115x55	liquid
Filteraid	unknown	10x30G	solid
Glacial acetic acid	Celanese Chemical	13x55G	liquid
Glycol	Island Chemical	20x55G	liquid
Humisorb	Culligan	30 G	solid
Hydrochloric acid	Certified Laboratory	55 G	liquid
Hydrogen chloride	VI Gas	1 cyl	gas
Insulation (asbestos??)	unknown	13 box	solid
Insulation fiberglass	unknown	7 box	solid
Lubricating oil	Texaco	2x10 G	liquid
Lubricating oil	Texaco	5x55 G	liquid
Magnesium sulfate trihydrate	Tomita Pharmaceutica	6x25kg	solid
Methanol	Ashland Chemical	5x55 G	liquid
Methanol	unknown	3x55 G	liquid
Methyl isobutyl carbinol	Van Waters & Rogers	12x55G	liquid
Methyl isobutyl ketone	Ashland Chemical	55 G	liquid
Micro media filter sheets	Ertel Engineering	18 box	solid
Oxygen	VI Gas	3 cyl	gas
Oxygen	Santa Maria Gases	1 cyl	gas
Paints	unknown	44x5 G	liquid
Paints	unknown	53x1 G	liquid
Paints	International Paint	97x5 G	liquid
Paints	International Paint	21x1 G	liquid
Para-phenetidin	unknown	55 G	liquid
Pentosin	Deutsche Pentosin	20 L	liquid
Potassium acetate	Jarchem Industries	8x100#	solid
Potassium sulfate	unknown	50 bag	solid
Powdered filter media	Ionics	2 boxs	solid
Propane	unknown	4 cyl	gas
Purafil II	unknown	15x10G	solid
Quinine sulfate	Kimafarma	20 G	liquid
Rinseline injector fluid	Bob Chamber Ltd.	55 G	liquid

Rout	Cerfact Laboratories	20 G	solid
Salicylic acid	Rhone-Poulenc	27drum	solid
Salt	unknown	2x30 G	solid
Soda ash	Allied Chemical	15x100	solid
Sodium acetate anhydrous	unknown	50 lb	solid
Sodium acetate anhydrous	Jarchem Industries	200 lb	solid
Sodium bicarbonate	Stauffer Chemical	8x100#	solid
Sodium hexa-meta phosphate	FMC	200 lb	solid
Sodium hydroxide	Mantek	55 G	liquid
Sodium hydroxide	Manuel del Valle Inc	12x55G	liquid
Spent toluene/acetone	unknown	2x55 G	liquid
Sterling salt crystals	unknown	50 lb	solid
Sulfamic acid	Dupont	400 lb	solid
Tartaric acid	Pfizer Chemical	15x100	solid
Thinner	unknown	6x1 G	liquid
Thinner	Advance	55 G	liquid
Toluene	Ashland Chemical	3x55 G	liquid
Toluene	unknown	5x55 G	liquid
Triethylamine	Air Products	55 G	liquid
Waste oil	unknown	2x55 G	liquid
z Empty drums	unknown	130	n/a
z Miscellaneous unknowns	on site containers	25	misc.

APPENDIX I

PHOTOGRAPHS

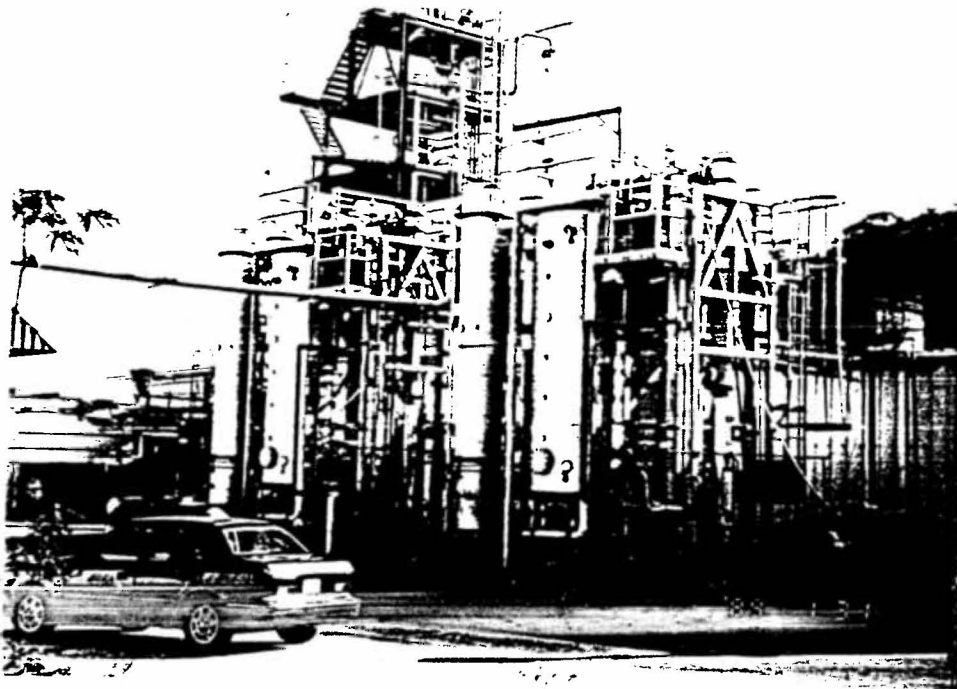


Photo #1. Virgin Island Chemical Company
Alcohol dehydration apparatus

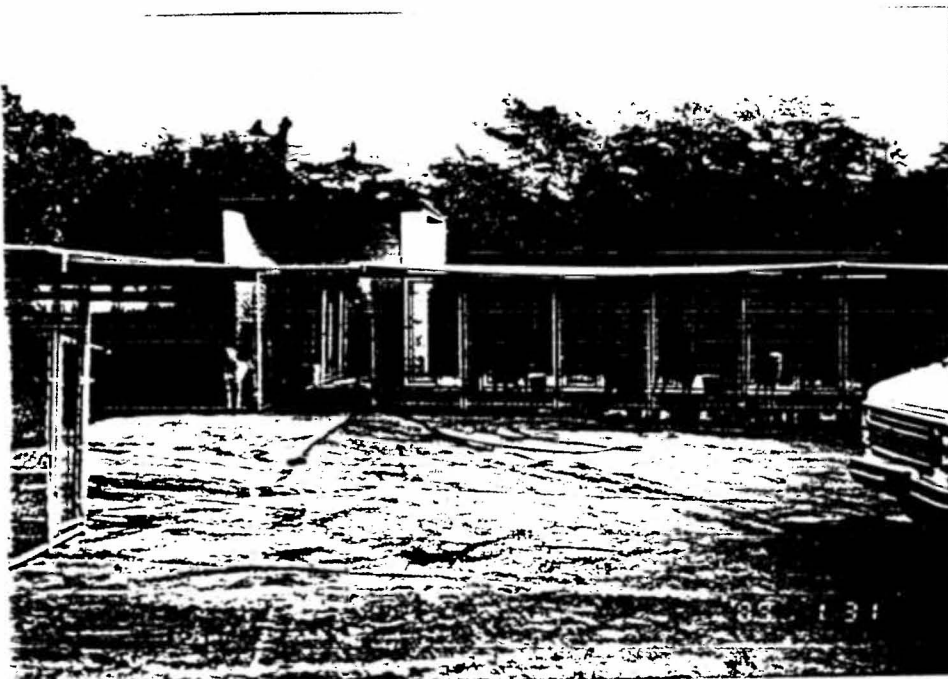


Photo #2. Dog kennel operating on site

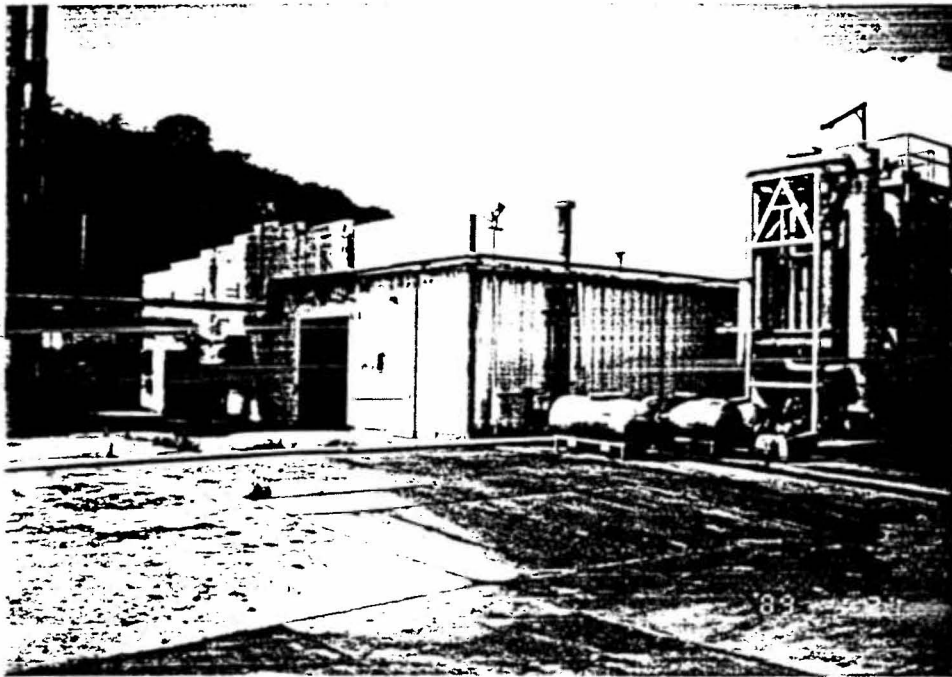


Photo #3. Maintenance building

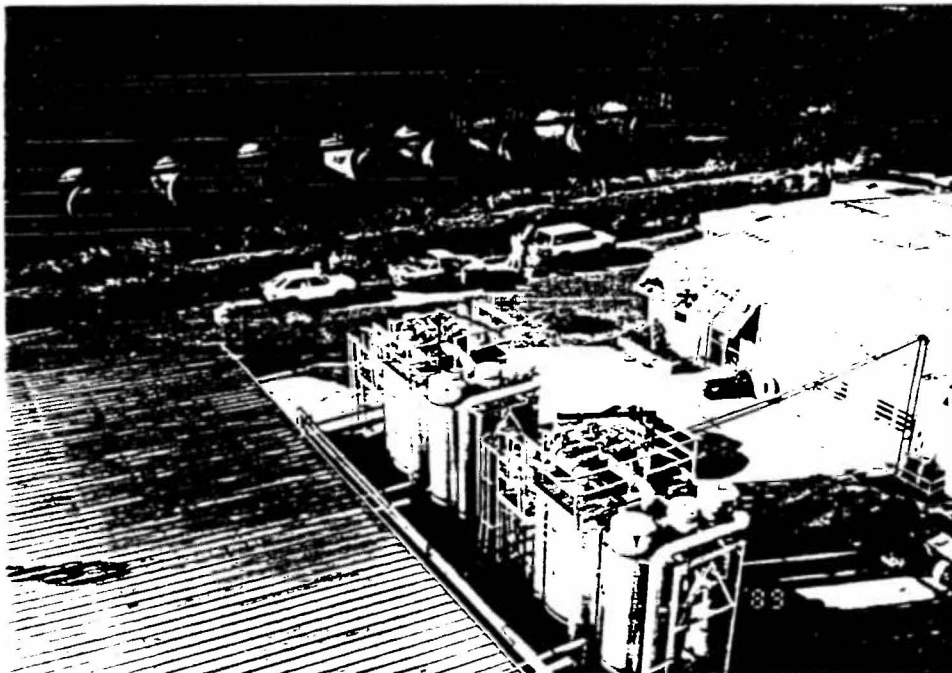


Photo #4. View of tanks, main building, and alcohol dehydration unit

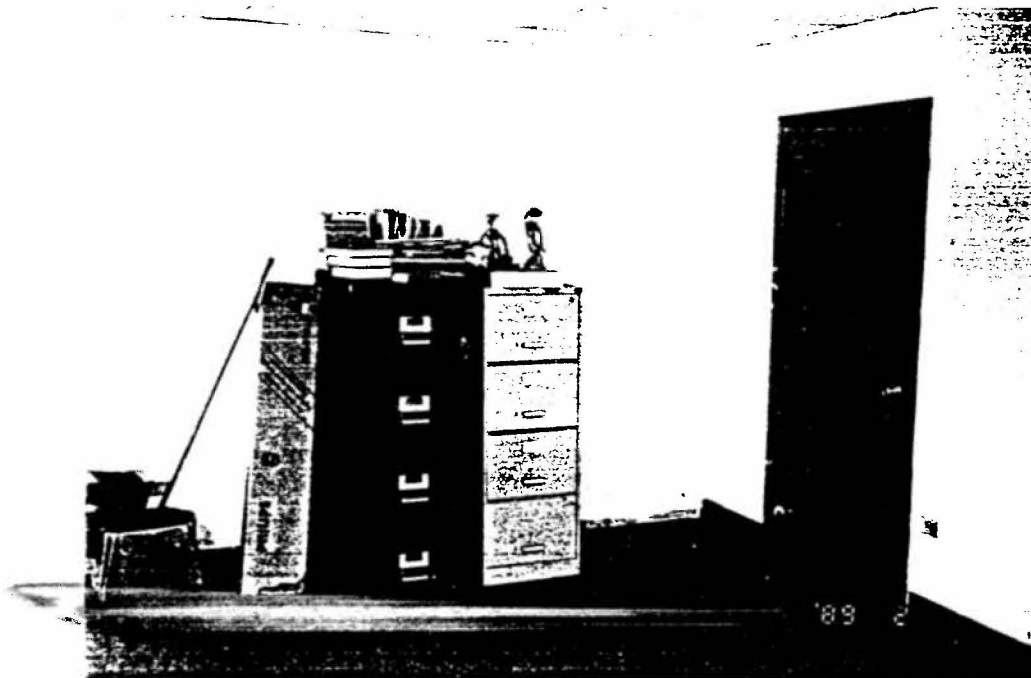


Photo #5. Main building office area 23

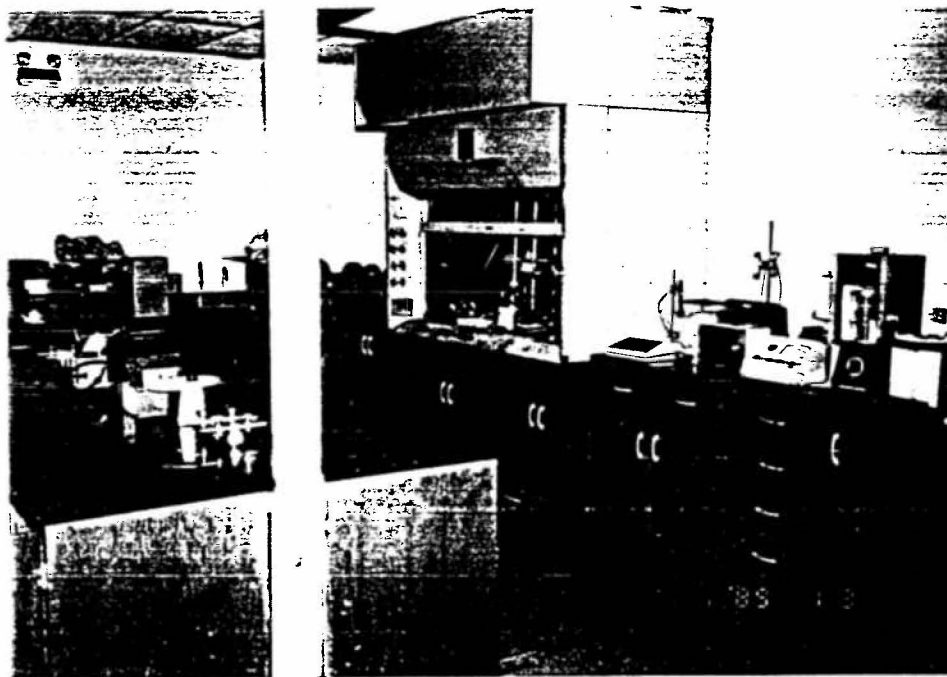


Photo #6. Area 22 lab in the main building



Photo #7. Virgin Island Chemical Company
Sodium metal in area 18



Photo #8. Area 18 chemical and glassware storage

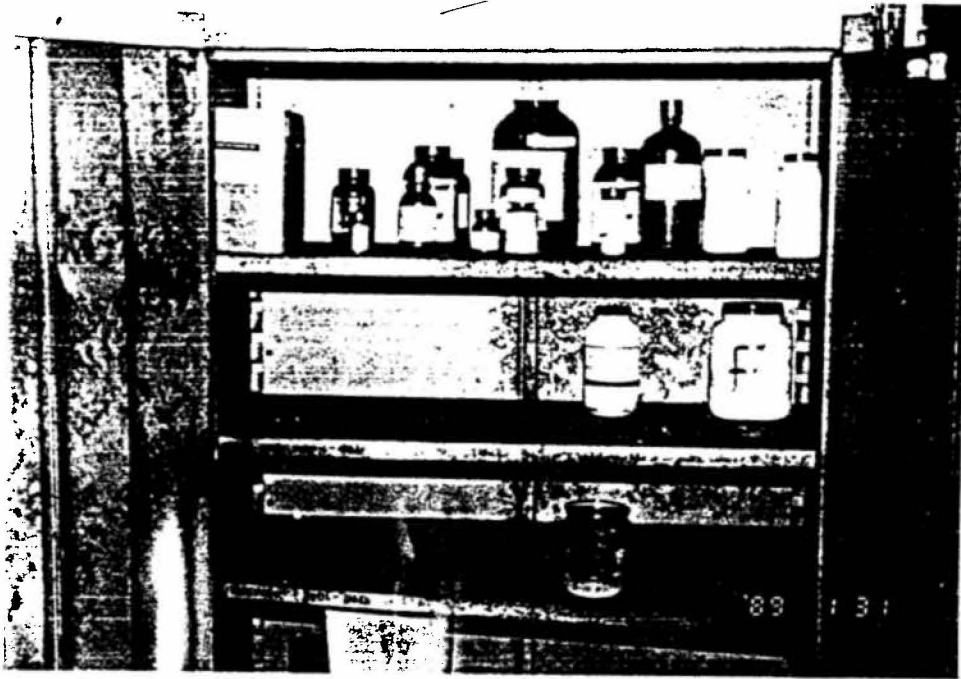


Photo #9. Incompartable storage of lab reagents



Photo #10. Incompartable and leaking storage of lab reagents



Photo #11. Incompatable and leaking storage of lab reagents

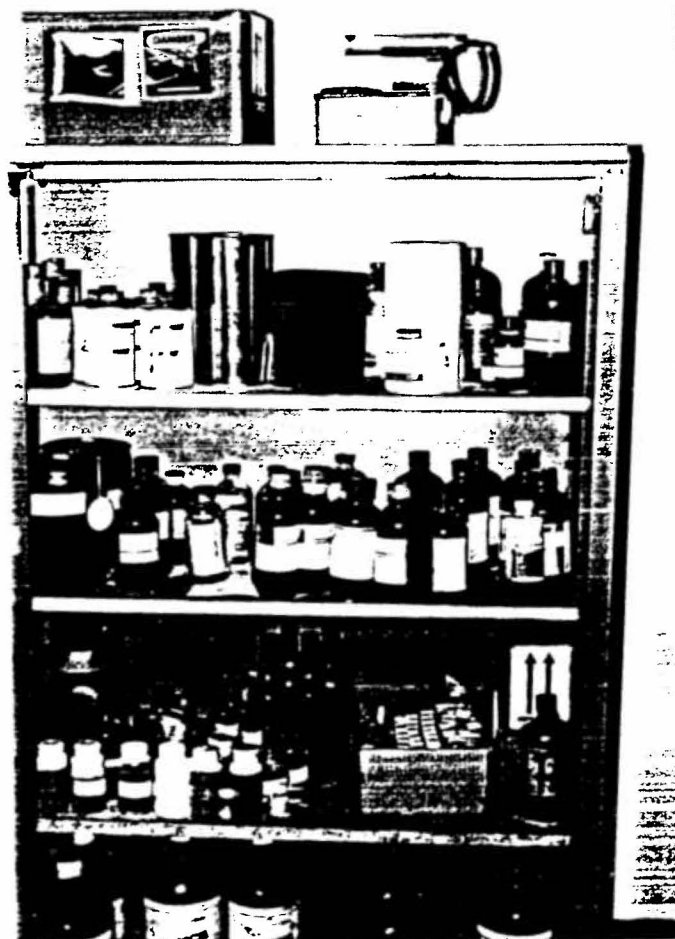


Photo #12. Incompatable storage of lab reagents



Photo #13. Paint cans in area 1



Photo #14. Cylinder of chlorine



Photo #15. Drums in area 4; note water on the floor



Photo #16. Drum contents undergoing a reaction

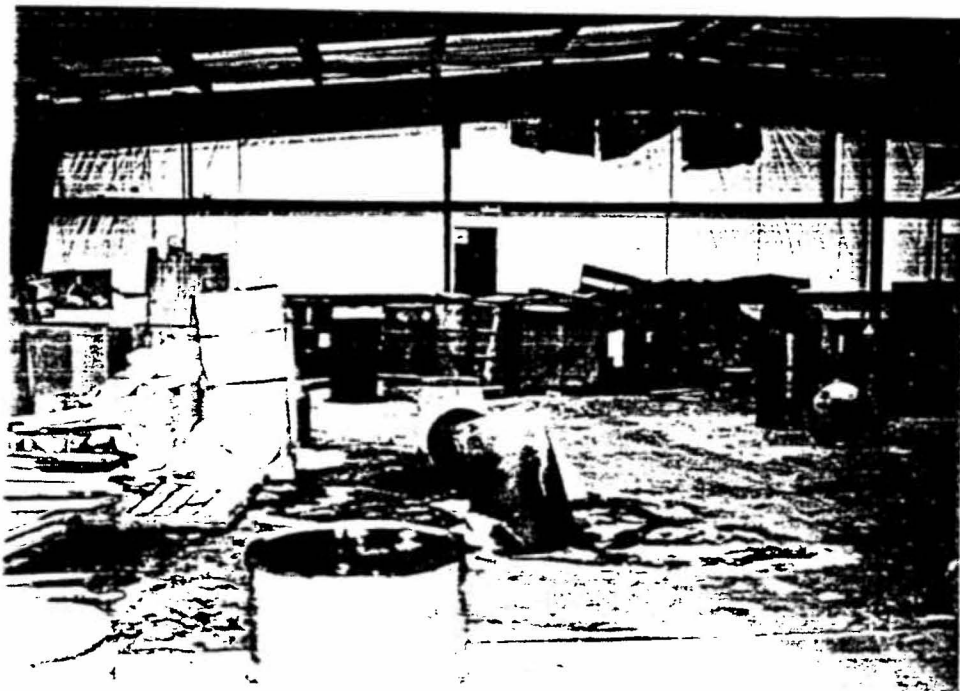


Photo #17. Virgin Island Chemical Company
Drums and debris in area 5



Photo #18. Drums in area 5



Photo #19. Deteriorating drums in area 6



Photo #20. Drums and floor contamination in area 5



Photo #21. Deteriorating bags in area 6



Photo #22. Drums in area 6

Laboratory Reagent Inventory

CHEMICAL NAME =====	COMPANY =====	QTY ===	STATE =====
1,3-dinitrobenzene	Aldrich Chemical	100 g	solid
1-butanol	J.T.Baker Chemical	500 ml	liquid
1-chlorobutane	MCB	4 L	liquid
1-propanol	J.T.Baker Chemical	500 ml	liquid
18-Crown-6 99%	Aldrich Chemical	25 g	solid
2,2-oxydiethanol	Kodak	1 kg	liquid
2,6-dimethoxybenzoic acid 99%	Aldrich Chemical	25 g	solid
2,6-ditertiarybutyl p-cresol	Biesterfeld	500 g	solid
2-hydroxybenzyl alcohol 99%	Aldrich Chemical	25 g	liquid
2-hydroxyethyl ether	Aldrich Chemical	1 kg	liquid
2-methyl-1-butanol 99%	Aldrich Chemical	10 g	liquid
2-methylbutyl amine	American Laboratorie	15 g	liquid
3,3-dimethoxy benzidene	Kodak	100 g	solid
3-hydroxybenzoic acid	Aldrich Chemical	100 g	solid
4-chlorobenzene sulfonamide	Aldrich Chemical	100 g	solid
4-hydroxy 4methyl 2pentanone	Aldrich Chemical	500 g	liquid
4-hydroxybenzoic acid	Aldrich Chemical	50 g	solid
4-methylbenzo phenone 97%	Aldrich Chemical	50 g	solid
9-hydroxyflourene	Aldrich Chemical	2x25 g	solid
Acetic acid	MCB	2x5 lb	liquid
Acetone	Fisher Scientific	4 L	liquid
Acetonitrile	Supelco	1 box	liquid
Alkalinity C,D,E,G	Mogul Corporation	4x2 oz	liquid
Aluminum Chloride	Mallinckrodt	1 lb	solid
Aluminum chloride	Witco Chemical	500 g	solid
Ammonium acetate	Fluka	1 kg	solid
Ammonium acetate	Aldrich Chemical	2 kg	solid
Ammonium acetate purified	Jarchem Industries	250 g	solid
Ammonium hydroxide	Sargent Welch Scient	500 ml	liquid
Ammonium persulfate	J.T.Baker Chemical	2.5 kg	solid
Ammonium persulfate	J.T.Baker Chemical	500 g	solid
Ammonium thiocyanate	Fisher Scientific	500 g	liquid
Amyl alcohol	Mallinckrodt	1 pt	liquid
Arsenic trioxide	Fisher Scientific	2x113g	solid
Barium chloride	Drew Chemical	1 qt	liquid
Barium chloride	Mallinckrodt	500 g	solid
Barium chloride	Fisher Scientific	1 lb	solid
Barium hydroxide	Fisher Scientific	1 lb	solid
Benzaldehyde	J.T.Baker Chemical	500 ml	liquid
Benzene	Tenneco Oil	2x1gal	liquid
Benzhydrol	Kodak	100 g	solid
Benzoic acid	Mobay Chemical	1 lb	solid
Benzoin	Fluka	2x1 kg	solid
Benzoin 98%	Aldrich Chemical	4x500g	solid

TABLE 1

Laboratory Reagent Inventory

CHEMICAL NAME =====	COMPANY =====	QTY ===	STATE =====
Benzophenone	Aldrich Chemical	500 g	solid
Benzophenone	H&S Chemical	1 bag	solid
Benzophenone	Upjohn	500 g	solid
Benzophenone 99+%	Aldrich Chemical	50 g	solid
Benzoyl chloride	Mobay Chemical	1 lb	solid
Benzyl acetate 99%	Aldrich Chemical	100 g	liquid
Benzyl alcohol	Mallinckrodt	1 pt	liquid
Benzyl benzoate	Aldrich Chemical	100 g	liquid
Benzyl chloride	unknown	4 oz	liquid
Benzyl chloride	Velsicol	500 g	liquid
Benzyl cinnamate 98%	Aldrich Chemical	100 g	solid
Benzyl ether	Aldrich Chemical	1 kg	liquid
Benzyltriethylammoniumchloride	Aldrich Chemical	25 g	solid
Bismuth subnitrate	MCB	1 lb	solid
Bromine	Fisher Scientific	113 g	liquid
Bromophenol blue	Fisher Scientific	5 g	solid
Brucine sulfate	Fisher Scientific	1 oz	solid
Buffer solution pH 10.00	Fisher Chemical	500 ml	liquid
Buffer solution pH 4.00	Fisher Scientific	500 ml	liquid
Buffer solution pH 7.00	Fisher Chemical	500 ml	liquid
CAO-3 BHT	Sherwin Williams	1 bag	solid
Calcium sulfate anhydrous	W.A.Hammond Drierite	4x5 lb	solid
Cello-Seal	Fisher Scientific	25 g	liquid
Chloride F	Mogul Corporation	3 oz	liquid
Chlorodiphenyl methane 98%	Aldrich Chemical	100 g	solid
Chloroform	Fisher Scientific	4 L	liquid
Chromotropic acid Na salt	Fisher Scientific	25 g	solid
Cinnamaldehyde	unknown	2x1 kg	liquid
Citric acid anhydrous	J.T.Baker Chemical	500 g	solid
Citricacidtrisodiumdihydrate	Aldrich Chemical	1 kg	solid
Cobalt chloride	Fisher Scientific	2x1 lb	solid
Color standard 4	unknown	1 oz	liquid
Congo red	Fisher Scientific	25 g	solid
Copper metal	Fisher Scientific	500 g	solid
Cupric sulfate	Fisher Scientific	500 g	solid
Cupric sulfate	Mallinckrodt	500 g	solid
DPD #1,2,3 Reagents	Taylor Chemical	3x1 oz	liquid
Dibenzo 18-Crown-6 98%	Aldrich Chemical	50 g	solid
Dibenzoyl tartaric acid	Knoll Fine Chemicals	1 kg	solid
Dichloroethane 99%	Aldrich Chemical	1 kg	liquid
Dichlorophenyl methane 99%	Aldrich Chemical	25 g	solid
Dichlorotoluene 99%	Aldrich Chemical	100 g	solid
Diethylene glycol	Fisher Scientific	1 qt	liquid
Diisobutyl aluminum hydride	Texas Acres	4 cyl	gas
Diphenylmethane 99%	Aldrich Chemical	500 g	liquid

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TABLE 1

Laboratory Reagent Inventory

CHEMICAL NAME =====	COMPANY =====	QTY ===	STATE =====
Diphenylthiocarbazone	Fisher Scientific	25 g	solid
Eosin Y	Aldrich Chemical	25 g	solid
Ether anhydrous	Fisher Scientific	4 qt	liquid
Ethoxyguin	unknown	4 oz	liquid
Ethyl acetate	Aldrich Chemical	5 gal	liquid
Ethyl acetate	MCB	5x1gal	liquid
Ethyl benzene	Dupont	1 qt	liquid
Ethyl ether 99%	Fisher Scientific	6x500g	liquid
Ferric ammonium sulfate	Fisher Scientific	500 g	solid
Ferric chloride	unknown	100 ml	liquid
Ferric chloride	Fisher Chemical	1 lb	solid
Ferric chloride anhydrous	Pennwalt Corporation	5x500g	solid
Ferric chloride anhydrous	Kodak	500 g	solid
Ferrous ammonium sulfate	Fisher Chemical	1 lb	solid
Formic acid	unknown	200 g	liquid
Glacial acetic acid	Fisher Chemical	5 lb	liquid
Hydrazine sulfate	Fisher Scientific	4 oz	solid
Hydrazine sulfate	Fisher Scientific	100 g	solid
Hydrochloric acid	MCB	2x6 lb	liquid
Hydrochloric acid	Fisher Chemical	3x1 L	liquid
Hydroxylamine hydrochloride	Fisher Scientific	1 kg	solid
Hydroxylamine hydrochloride	MCB	4 oz	solid
Iodine	Fisher Scientific	500 g	solid
Iron chloride anhydrous	BASF	500 g	solid
Isoamyl alcohol	Fisher Scientific	500 ml	liquid
Isobutyl alcohol	J.T.Baker Chemical	500 ml	liquid
Lead acetate	MCB	1 lb	solid
Lead nitrate	Fisher Scientific	100 g	solid
Lithium perchlorate	Aldrich Chemical	500 g	solid
Magnesium sulfate	Fisher Scientific	500 g	solid
Medical oxygen	MSA	1 cyl	gas
Mercuric chloride	Fisher Scientific	2x100g	solid
Mercuric oxide	Fisher Scientific	500 g	solid
Mesityl oxide	Aldrich Chemical	100 g	solid
Methanol	Fisher Scientific	4 L	liquid
Methenamine	Fisher Scientific	500 g	solid
Methyl alcohol	Mallinckrodt	1 gal	liquid
Methyl orange	Fisher Scientific	113 g	
Methyl red	Fisher Scientific	2x10 g	solid
Monochlorobenzene	PPG Industries	10 oz	liquid
N-methylaniline	Kodak	1 kg	liquid
Na salt of ME salicylate	Sattra Chemical	1 bag	solid
Niacin N.F.	Nepera Chemical	250 g	solid
Nitric acid concentrated	J.T.Baker Chemical	2x8 lb	liquid
Nitrobenzene	Fisher Scientific	1 qt	liquid

TABLE 1

Laboratory Reagent Inventory

CHEMICAL NAME =====	COMPANY =====	QTY ===	STATE =====
Non aqueous buffer soln.	Beckman Instruments	1 pt	liquid
Nutrizyme	Merck	2 oz	solid
Oil #3	Frich Oil	5 gal	liquid
Paraffin oil	Fisher Scientific	1 qt	liquid
Paraformaldehyde	MCB	1 qt	liquid
Paraformaldehyde prills 91%	Celanese Chemical	1 lb	solid
Perchloric acid	MCB	2x8 lb	liquid
Phenol red	Fisher Scientific	5 g	solid
Phenophtalein	Fisher Scientific	1 oz	solid
Phenylhydrazine	Fisher Scientific	4x4 oz	liquid
Phenylhydrazinehydrochloride	Fisher Scientific	2 lb	solid
Phosphorous pentoxide	Fisher Scientific	1 lb	solid
Piperazine	MCB	100 g	solid
Potassium bromide	Fisher Scientific	5x500g	solid
Potassium butoxide	Callery Chemical	50 g	solid
Potassium chloride	Beckman Instruments	2x6 oz	solid
Potassium cyanate	Fisher Scientific	1 lb	solid
Potassium cyanide	Fisher Scientific	500 g	solid
Potassium dichromate	Fisher Scientific	500 g	solid
Potassium ferrocyanide	Fisher Scientific	3 kg	solid
Potassium hydroxide	Mallinckrodt	2x1 lb	solid
Potassium hydroxide	Fisher Scientific	500 g	solid
Potassium iodide	Drew Chemical	1 qt	liquid
Potassium iodide	Fisher Scientific	2x500g	solid
Potassium periodate	Fisher Scientific	100 g	solid
Potassium platinate	Varlacold Chemical	5 g	solid
Potassium sulfate	Indiana Army Ammo Plant	250 g	solid
Potassium sulfate	Aldrich Chemical	500 g	solid
Potassium sulfate	unknown	50 g	solid
Potassium thiocyanate	Fisher Scientific	500 g	solid
Resorcinol	Koppers	3 bags	solid
Salicylaldehyde 99+%	Aldrich Chemical	100 g	liquid
Salicylic acid	Aldrich Chemical	100 g	solid
Salicylic acid	Aceto Chemical	500 g	solid
Salicylic acid sodium salt	Aldrich Chemical	100 g	solid
Sicapent	MCB	2.8 L	solid
Silica gel dessicant	Davison Chemical	2x1 qt	solid
Silver nitrate	J.T.Baker Chemical	1 oz	solid
Silver nitrate	Sargent Welch Scientific	30 g	solid
Sodium Chloride	Fisher Scientific	500 g	solid
Sodium acetate	Sattra Chemical	3 bags	solid
Sodium acetate anhydrous	Niacet Corporation	250 g	solid
Sodium acetate anhydrous	CDF Chimie Noth America	2x500g	solid
Sodium amide	Farchan Research Lab	500 g	solid
Sodium benzoate	Sattra Chemical	1 bag	solid

Laboratory Reagent Inventory

CHEMICAL NAME =====	COMPANY =====	QTY ===	STATE =====
Sodium benzoate	Dastech International	1 bag	solid
Sodium benzoate	Ishihara Corporation	250 g	solid
Sodium benzoate	Pfizer	100 lb	solid
Sodium borohydride	Fisher Scientific	4x25 g	solid
Sodium carbonate	Fisher Scientific	1 kg	solid
Sodium carbonate anhydrous	Mallinckrodt	1 lb	solid
Sodium chlorate	Hooker Chemical	1 box	solid
Sodium dichromate	Fisher Scientific	10 kg	solid
Sodium formate	unknown	5 lb	solid
Sodium hydride	Thiokol/Ventron Division	1 lb	solid
Sodium hydroxide	Mallinckrodt	500 g	solid
Sodium metal	RMI	2 boxes	solid
Sodium nitrite	Fisher Scientific	2x500g	solid
Sodium nitro ferricyanide	MCB	4 oz	solid
Sodium sulfate	Fisher Scientific	500 g	solid
Sodium tartrate	J.T.Baker Chemical	2 oz	solid
Sodium tartrate	Fisher Scientific	6x113g	solid
Sodium thiosulfate	Fisher Scientific	2x1 lb	solid
Succinic anhydride	MCB	6x250g	solid
Succinic anhydride	Aldrich Chemical	2x1 kg	solid
Sulfamic acid	Fisher Scientific	500 g	solid
Sulfanilic acid	H&S Chemical	1 bag	solid
Sulfite O,P,Q	Mogul Corporation	3x2 oz	liquid
Sulfuric acid	J.T.Baker Chemical	10 lb	liquid
Tetraphenolboron sodium 99%	Aldrich Chemical	25 g	solid
Thiopene	Kodak	100 g	liquid
Total alkylinity indicator	Drew Chemical	1 qt	liquid
Tributyl borate	Aldrich Chemical	750 g	liquid
Trichloroethylene	Mallinckrodt	1 pt	liquid
Triethyl borate 97%	Aldrich Chemical	100 g	liquid
Triethylenediamine	Air Products	250 g	solid
Uranyl acetate	unknown	500 g	solid
Weedox C/R 250 herbicide	Southern Mill Creek Prod.	2x5gal	liquid
Xylene	Fisher Scientific	5x1 L	liquid
Zinc chloride	Fisher Scientific	500 g	solid
Zinc chloride anhydrous	Mineral Research	1 lb	solid
p-chlorobenzene sulfonamide	H&S Chemical	2 bags	solid
p-naptholbenzein	Fisher Scientific	25 g	solid
p-toluenesulfonicmonohydrate	Aldrich Chemical	500 g	solid
pH indicator A	Mogul Corporation	2 oz	liquid
z Miscellaneous unknowns	on site lab glassware	280bot	misc.
z Miscellaneous unknowns	on site one oz bottles	238bot	liquid

TABLE 2

Drum Inventory

Chemical Name =====	Company =====	Qty ===	State =====	Cond =====	Dates =====
Acetone	Ashland Chemical	55 G	liquid	good	
Acetylene	VI Gas	2 cyl	gas	good	
Activated carbon	Calgon Corporation	30 bag	solid	good	
All-weather patch material	Revere Chemical	55 G	solid	fair	
Amersite 2	Valley Freight Syst.	55 G	liquid	fair	
Ashland MeOH	Ashland Chemical	5 G	liquid	good	
Benzyl acetate	Island Chemical	21x55G	liquid	fair	
Benzyl chloride	Velsicol Corporation	28x55G	liquid	fair	
Chlorine	VI Gas	1 cyl	gas	poor	
Chloroform	unknown	55 G	liquid	good	
Crofox	Cerfact Laboratories	55 G	liquid	poor	
Crystal Clear floor finish	Cerfact Laboratories	2x20 G	liquid	good	
Degreaser	unknown	55 G	liquid	good	
Drewtrol 8500	Valley Freight Syst.	55 G	liquid	poor	
Ethyl alcohol	unknown	115x55	liquid	poor	
Filteraid	unknown	10x30G	solid	poor	
Glacial acetic acid	Celanese Chemical	13x55G	liquid	good	
Glycol	Island Chemical	20x55G	liquid	poor	1984
Humisorb	Culligan	30 G	solid	fair	
Hydrochloric acid	Certified Laboratory	55 G	liquid	poor	
Hydrogen chloride	VI Gas	1 cyl	gas	poor	
Insulation (asbestos??)	unknown	13 box	solid	good	
Insulation fiberglass	unknown	7 box	solid	good	
Lubricating oil	Texaco	2x10 G	liquid	good	
Lubricating oil	Texaco	5x55 G	liquid	good	
Magnesium sulfate trihydrate	Tomita Pharmaceutica	6x25kg	solid	fair	
Methanol	Ashland Chemical	5x55 G	liquid	good	
Methanol	unknown	3x55 G	liquid	fair	
Methyl isobutyl carbinol	Van Waters & Rogers	12x55G	liquid	good	1984
Methyl isobutyl ketone	Ashland Chemical	55 G	liquid	good	

TABLE 2

Drum Inventory

Chemical Name =====	Company =====	Qty ===	State =====	Cond =====	Dates =====
Micro media filter sheets	Ertel Engineering	18 box	solid	good	
Oxygen	VI Gas	3 cyl	gas	good	
Oxygen	Santa Maria Gases	1 cyl	gas	good	
Paints	unknown	44x5 G	liquid	fair	
Paints	unknown	53x1 G	liquid	fair	
Paints	International Paint	97x5 G	liquid	fair	
Paints	International Paint	21x1 G	liquid	fair	
Para-phenetidin	unknown	55 G	liquid	fair	1983
Pentosin	Deutsche Pentosin	20 L	liquid	fair	
Potassium acetate	Jarchem Industries	8x100#	solid	good	
Potassium sulfate	unknown	50 bag	solid	good	
Powdered filter media	Ionics	2 boxes	solid	good	
Propane	unknown	4 cyl	gas	good	
Purafil II	unknown	15x10G	solid	good	
Quinine sulfate	Kimafarma	20 G	liquid	good	
Rinseline injector fluid	Bob Chamber Ltd.	55 G	liquid	good	
Rout	Cerfact Laboratories	20 G	solid	poor	
Salicylic acid	Rhone-Poulenc	27drum	solid	good	
Salt	unknown	2x30 G	solid	good	
Soda ash	Allied Chemical	15x100	solid	poor	
Sodium acetate anhydrous	unknown	50 lb	solid	good	
Sodium acetate anhydrous	Jarchem Industries	200 lb	solid	poor	
Sodium bicarbonate	Stauffer Chemical	8x100#	solid	poor	
Sodium hexa-meta phosphate	FMC	200 lb	solid	good	
Sodium hydroxide	Mantek	55 G	liquid	poor	
Sodium hydroxide	Manuel del Valle Inc	12x55G	liquid	good	
Spent toluene/acetone	unknown	2x55 G	liquid	fair	
Sterling salt crystals	unknown	50 lb	solid	poor	
Sulfamic acid	Dupont	400 lb	solid	poor	
Tartaric acid	Pfizer Chemical	15x100	solid	poor	
Thinner	unknown	6x1 G	liquid	fair	

TABLE 2

Drum Inventory

Chemical Name =====	Company =====	Qty ===	State =====	Cond =====	Dates =====
Thinner	Advance	55 G	liquid	fair	
Toluene	Ashland Chemical	3x55 G	liquid	fair	
Toluene	unknown	5x55 G	liquid	good	
Triethylamine	Air Products	55 G	liquid	good	1984
Waste oil	unknown	2x55 G	liquid	good	
z Empty drums	unknown	130	n/a	fair	
z Miscellaneous unknowns	on site containers	25	misc.	poor	

TABLE 3

CERCLA Hazardous Substances and
Statutory Codes (40 CFR Sec. 302.4)

Chemical =====	Codes =====
1,3-dinitrobenzene	1
1-butanol	4
3,3-dimethoxy benzidene	4
Acetic acid	1
Acetone	4
Acetonitrile	4
Ammonium acetate	1
Ammonium hydroxide	1
Ammonium thiocyanate	1
Arsenic trioxide	1,4
Asbestos	2,3
Benzene	1,2,3,4
Benzoic acid	1
Benzoyl chloride	1
Benzyl chloride	1,4
Chlorine	1
Chloroform	1,2,4
Copper metal	2
Cupric sulfate	1
Ethyl acetate	4
Ethyl benzene	1,2
Ethyl ether 99%	4
Ferric chloride	1
Ferrous ammonium sulfate	1
Formic acid	1,4
Glacial acetic acid	1
Hydrochloric acid	1
Isobutyl alcohol	4
Lead acetate	1,4
Lead nitrate	1
Mercuric chloride	2
Mercuric oxide	2
Methanol	4
Methyl alcohol	4
Methyl isobutyl ketone	4
Nitric acid concentrated	1
Nitrobenzene	1,2,4
Paraformaldehyde	1
Potassium cyanide	1,4
Potassium hydroxide	1
Resorcinol	1,4
Silver nitrate	1
Sodium hydroxide	1
Sodium metal	1

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TABLE 3

CERCLA Hazardous Substances and
Statutory Codes (40 CFR Sec. 302.4)

Chemical =====	Codes =====
Sodium nitrite	1
Sulfuric acid	1
Toluene	1,2,4
Trichloroethylene	1,2,4
Triethylamine	1
Uranyl acetate	1
Xylene	1,4
Zinc chloride	1

1= Clean Water Act (CWA) Section 311 (b) 4

2= Clean Water Act (CWA) Section 307 (a)

3= Clean Air Act (CAA) Section 112

4= Resource Conservation Recovery Act (RCRA) Section 3001

Hazard Categories For Lab Reagents

Chemical Name =====	HAZCAT =====
1,3-dinitrobenzene	Poison B
1-butanol	BNA
1-chlorobutane	BNA
1-propanol	BNA
2,2-oxydiethanol	BNA
2,6-dimethoxybenzoic acid 99%	BNA
2,6-ditertiarybutyl p-cresol	BNA
2-hydroxybenzyl alcohol 99%	BNA
2-hydroxyethyl ether	BNA
2-methyl-1-butanol 99%	BNA
2-methylbutyl amine	BNA
3,3-dimethoxy benzidene	BNA
3-hydroxybenzoic acid	BNA
4-chlorobenzene sulfonamide	BNA
4-hydroxy 4methyl 2pentanone	BNA
4-hydroxybenzoic acid	BNA
4-methylbenzo phenone 97%	BNA
9-hydroxyflourene	BNA
Acetic acid	Corrosive
Acetone	Flammable
Acetonitrile	Flammable
Alkalinity C,D,E,G	BNA
Aluminum chloride	Corrosive
Ammonium acetate	ORM-E
Ammonium hydroxide	Corrosive
Ammonium persulfate	BNA
Ammonium thiocyanate	ORM-E
Amyl alcohol	BNA
Arsenic trioxide	Poison B
Barium chloride	BNA
Barium hydroxide	BNA
Benzaldehyde	Combustible
Benzene	Flammable
Benzhydrol	BNA
Benzoic acid	ORM-E
Benzoin 98%	BNA
Benzophenone 99+%	BNA
Benzoyl chloride	Corrosive
Benzyl acetate 99%	BNA
Benzyl alcohol	BNA
Benzyl benzoate	BNA
Benzyl chloride	Corrosive
Benzyl cinnamate 98%	BNA
Benzyl ether	BNA
Benzyltriethylammoniumchloride	BNA

Hazard Categories For Lab Reagents

Chemical Name =====	HAZCAT =====
Bismuth subnitrate	BNA
Bromine	Corrosive
Bromophenol blue	BNA
Brucine sulfate	BNA
Buffer solution pH 10.00	BNA
Buffer solution pH 4.00	BNA
Buffer solution pH 7.00	BNA
CAO-3 BHT	BNA
Calcium sulfate anhydrous	BNA
Chlorodiphenyl methane 98%	BNA
Chloroform	ORM-A
Chromotropic acid Na salt	BNA
Cinnamaldehyde	BNA
Citric acid anhydrous	BNA
Citric acid trisodium dihydrate	BNA
Cobalt chloride	BNA
Color standard 4	BNA
Congo red	BNA
Copper metal	BNA
Cupric sulfate	ORM-E
DPD #1,2,3 Reagent:	BNA
Dibenzo 18-Crown-6 98%	BNA
Dibenzoyl tartaric acid	BNA
Dichloroethane 99%	BNA
Dichlorophenyl methane 99%	BNA
Dichlorotoluene 99%	BNA
Diethylene glycol	BNA
Diisobutyl aluminum hydride	Flammable Gas
Diphenylmethane 99%	BNA
Diphenylthiocarbazone	BNA
Eosin Y	BNA
Ether anhydrous	BNA
Ethoxyguin	BNA
Ethyl acetate	Flammable
Ethyl benzene	Flammable
Ethyl ether 99%	Flammable
Ferric ammonium sulfate	ORM-E
Ferric chloride	ORM-B
Ferrous ammonium sulfate	ORM-E
Formic acid	Corrosive
Glacial acetic acid	Corrosive
Hydrazine sulfate	BNA
Hydrochloric acid	Corrosive
Hydroxylamine hydrochloride	BNA
Iodine	BNA
Iron chloride anhydrous	ORM-B

Hazard Categories For Lab Reagents

Chemical Name =====	HAZCAT =====
Isoamyl alcohol	BNA
Isobutyl alcohol	Flammable
Lead acetate	ORM-E
Lead nitrate	Oxidizer
Lithium perchlorate	BNA
Magnesium sulfate	BNA
Medical oxygen	Non Flammable Gas
Mercuric chloride	Poison B
Mercuric oxide	Poison B
Mesityl oxide	Flammable
Methanol	Flammable
Methenamine	BNA
Methyl alcohol	Flammable
Methyl orange	BNA
Methyl red	BNA
Monochlorobenzene	BNA
N-methylaniline	BNA
Na salt of ME salicylate	BNA
Niacin N.F.	BNA
Nitric acid concentrated	Oxidizer
Nitrobenzene	Poison B
Non aqueous buffer soln.	BNA
Nutrizyme	BNA
Oil #3	Combustible
Paraffin oil	Combustible
Paraformaldehyde	ORM-A
Perchloric acid	Oxidizer
Phenol red	BNA
Phenolphthalein	BNA
Phenylhydrazine	BNA
Phenylhydrazinehydrochloride	BNA
Phosphorous pentoxide	Flammable
Piperazine	BNA
Potassium bromide	BNA
Potassium butoxide	BNA
Potassium chloride	BNA
Potassium cyanate	BNA
Potassium cyanide	Poison B
Potassium dichromate	ORM-A
Potassium ferrocyanide	BNA
Potassium hydroxide	Corrosive
Potassium iodide	BNA
Potassium periodate	BNA
Potassium platinate	BNA
Potassium sulfate	BNA
Potassium thiocyanate	BNA

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TABLE 4

Hazard Categories For Lab Reagents

Chemical Name =====	HAZCAT =====
Resorcinol	ORM-E
Salicylaldehyde 99+%	BNA
Salicylic acid	BNA
Salicylic acid sodium salt	BNA
Silica gel dessicant	BNA
Silver nitrate	Oxidizer
Sodium acetate anhydrous	BNA
Sodium amide	Flammable
Sodium benzoate	BNA
Sodium borohydride	BNA
Sodium carbonate anhydrous	BNA
Sodium chlorate	Oxidizer
Sodium chloride	BNA
Sodium dichromate	ORM-A
Sodium formate	BNA
Sodium hydride	Flammable
Sodium hydroxide	Corrosive
Sodium metal	Flammable
Sodium nitrite	Oxidizer
Sodium nitro ferricyanide	BNA
Sodium sulfate	BNA
Sodium tartrate	BNA
Sodium thiosulfate	BNA
Succinic anhydride	Organic Peroxide
Sulfamic acid	BNA
Sulfanilic acid	BNA
Sulfite O,P,Q	BNA
Sulfuric acid	Corrosive
Tetraphenolboron sodium 99%	BNA
Thiopene	BNA
Total alkylinity indicator	BNA
Tributyl borate	BNA
Trichloroethylene	Flammable
Triethyl borate 97%	BNA
Triethylenediamine	BNA
Uranyl acetate	Radioactive
Weedox C/R 250 herbicide	Poison B
Xylene	Flammable
Zinc chloride	ORM-E
p-chlorobenzene sulfonamide	BNA
p-naptholbenzein	BNA
p-toluenesulfonicmonohydrate	BNA
pH indicator A	BNA

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TABLE 5

Hazard Categories For Drums

Chemical Name =====	HAZCAT =====
Acetone	Flammable
Acetylene	Flammable Gas
Activated carbon	BNA
All-weather patch material	BNA
Ashland MeOH	Flammable
Benzyl acetate	BNA
Benzyl chloride	Corrosive
Chlorine	Non Flammable Gas
Chloroform	ORM-A
Crystal Clear floor finish	BNA
Degreaser	Flammable
Ethyl alcohol	Flammable
Filteraid	BNA
Glacial acetic acid	Corrosive
Glycol	BNA
Humisorb	BNA
Hydrochloric acid	Corrosive
Hydrogen chloride	Non Flammable Gas
Insulation (asbestos??)	ORM-C
Insulation fiberglass	BNA
Lubricating oil	Combustible
Magnesium sulfate trihydrate	BNA
Methanol	Flammable
Methyl isobutyl ketone	Organic Peroxide
Micro media filter sheets	BNA
Oxygen	Non Flammable Gas
Paints	Flammable
Para-phenetidin	Poison B
Potassium acetate	BNA
Potassium sulfate	BNA
Powdered filter media	BNA
Propane	Flammable Gas
Purafil II	BNA
Quinine sulfate	BNA
Rinseline injector fluid	Flammable
Salicylic acid	BNA
Salt	BNA
Soda ash	Corrosive
Sodium acetate anhydrous	BNA
Sodium bicarbonate	BNA
Sodium hexa-meta phosphate	BNA
Sodium hydroxide	Corrosive
Spent toluene/acetone	Flammable
Sterling salt crystals	BNA
Sulfamic acid	BNA

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TABLE 5

Hazard Categories For Drums

Chemical Name
=====

HAZCAT
=====

Tartaric acid
Thinner
Toluene
Triethylamine
Waste oil

BNA
Flammable
Flammable
Flammable
Combustible

TABLE 6

Summary of Toxicological Effects of
Some Identified Compounds

Chemical Name =====	Health Effects Codes =====
1,3-dinitrobenzene	A,B,E,I
1-butanol	A,E
3,3-dimethoxy benzidene	A,B,C,E,F
Acetic acid	A,I
Acetone	A,E
Acetonitrile	A,B,C,D,E,I
Ammonium acetate	A,E
Ammonium hydroxide	A,E
Ammonium thiocyanate	A,E
Arsenic trioxide	A,B,C,D,E,F
Benzene	A,E,F,I
Benzoic acid	A,E
Benzoyl chloride	A,E
Benzyl chloride	A,E
Chloroform	A,B,C,E,F
Copper metal	A,B,C,E
Cupric sulfate	A,E
Ethyl acetate	A,E
Ethyl benzene	A,E,I
Ethyl ether 99%	A,E,I
Ferric chloride	A,E
Ferrous ammonium sulfate	A,E
Formic acid	A,B,C,E
Hydrochloric acid	A,E
Isobutyl alcohol	A,E
Lead acetate	A,E
Lead nitrate	A,E
Mercuric chloride	A,E
Mercuric oxide	A,E
Methanol	A,E,I
Nitric acid concentrated	A,E

A= Eye, skin, respiratory and mucous membrane irritant
 B= Liver Damage
 C= Kidney Damage
 D= Lung Damage
 E= Toxic by inhalation, ingestion, or dermal contact
 F= Carcinogenic
 G= Teratogenic
 H= Mutagenic
 I= Central Nervous system effects

TABLE 6 (Continued)

Summary of Toxicological Effects of
Some Identified Compounds

Chemical Name =====	Health Effects Codes =====
Nitrobenzene	A,B,C,E,I
Paraformaldehyde	A,E
Potassium cyanide	A,E
Potassium hydroxide	A,E
Resorcinol	A,E
Silver nitrate	A,E
Sodium hydroxide	A,E
Sodium metal	A,E
Sodium nitrite	A,E,F
Sulfuric acid	A,E
Trichloroethylene	A,B,C,E,F,I
Xylene	A,B,C,E,I
Zinc chloride	A,E
Chlorine	A,E
Asbestos	D,E,F
Methyl isobutyl ketone	A,E
Toluene	A,B,C,E,I
Triethylamine	A,E
Uranyl acetate	A,B,C,D,E,F,G,H,I

A= Eye, skin, respiratory and mucous membrane irritant
 B= Liver Damage
 C= Kidney Damage
 D= Lung Damage
 E= Toxic by inhalation, ingestion, or dermal contact
 F= Carcinogenic
 G= Teratogenic
 H= Mutagenic
 I= Central Nervous system effects

VICHEM (VIRGIN ISLAND CHEMICAL) SITE, MELVIN EVANS HIGHWAY
FREDERIKSTED DISTRICT, ST CROIX, US VIRGIN ISLANDS

In compliance with Section 113k of CERCLA government documents are now available for public review relating to the U.S. Environmental Protection Agency (EPA) removal action of potentially hazardous materials and wastes under the Superfund program at the VIChem Site.

The documents, which are a part of the site administrative record, include various reports and studies which form the basis of EPA's remedy for the problems posed by this facility.

Presently, several hundred laboratory chemicals, drums and tanks containing hazardous materials exist on-site. Several classifications of materials are represented including flammable solvents, corrosive liquids, oxidizers, and potentially explosive compounds.

EPA plans to begin the removal of these materials on _____.

EPA's action will address stabilization and disposal of aboveground containerized substances. These materials will be treated on-site or shipped off-site for disposal once the proper facilities have been selected.

The administrative record is available for review during normal business hours at the following locations.

1. Department of Planning and Natural Resources
Watergut Homes
Building 111, Apt 14-F
Christiansted, St. Croix, U.S. Virgin Islands
2. USEPA - Region II
Woodbridge Avenue
Edison, New Jersey

TABLE 7

Hazard ID and Disposal Classification For Reagents

Chemical Name =====	HAZCAT =====	ID Number =====	Disp.Cat =====
Barium chloride	Poison B		7
Barium hydroxide	Poison B		7
Benzoic acid	ORM-E		7
Chloroform	ORM-A	D025	7
Cobalt chloride	Irritant		7
Cupric sulfate	ORM-E		7
Diphenylthiocarbazon	Irritant		7
Ferric ammonium sulfate	ORM-E		7
Ferrous ammonium sulfate	ORM-E		7
Hydrazine sulfate	Irritant		7
Hydroxylamine hydrochloride	Irritant		7
Iodine	Irritant		7
Lead acetate	ORM-E	U144	7
Mercuric chloride	Poison B		7
Mercuric oxide	Poison B		7
N-methylaniline	Irritant		7
Na salt of ME salicylate	Irritant		7
Nitrobenzene	Poison B	F004	7
Paraformaldehyde	ORM-A		7
Potassium bromide	Irritant		7
Potassium butoxide	Irritant		7
Potassium chloride	Irritant		7
Potassium cyanate	Poison B		7
Potassium cyanide	Poison B	P098	7
Potassium dichromate	ORM-A		7
Potassium ferrocyanide	Poison B		7
Potassium iodide	Irritant		7
Potassium platinate	Irritant		7
Silver nitrate	Oxidizer		7
Sodium acetate anhydrous	Irritant		7
Sodium benzoate	Irritant		7
Sodium dichromate	ORM-A		7
Sodium nitro ferricyanide	Poison B		7
Tetraphenolboron sodium 99%	Irritant		7
Zinc chloride	ORM-E		7
p-chlorobenzene sulfonamide	Irritant		7
p-naptholbenzein	Irritant		7
p-toluenesulfonicmonohydrate	Irritant		7
Uranyl acetate	Radioactive		7

TABLE 7

Hazard ID and Disposal Classification For Reagents

Chemical Name =====	HAZCAT =====	ID Number =====	Disp.Cat =====
Bismuth subnitrate	BNA		1
Bromophenol blue	BNA		1
Calcium sulfate anhydrous	BNA		1
Copper metal	BNA		1
Eosin Y	BNA		1
Magnesium sulfate	BNA		1
Methyl orange	BNA		1
Methyl red	BNA		1
Niacin N.F.	BNA		1
Non aqueous buffer soln.	BNA		1
Phenol red	BNA		1
Phenophtalein	BNA		1
Silica gel dessicant	BNA		1
Sodium chloride	BNA		1
Sodium carbonate anhydrous	BNA		1
1-butanol	Flammable	D001	2
1-chlorobutane	Flammable	D001	2
1-propanol	Flammable	D001	2
2,2-oxydiethanol	Flammable	D001	2
2-hydroxybenzyl alcohol 99%	Flammable	D001	2
2-methyl-1-butanol 99%	Flammable	D001	2
2-methylbutyl amine	Flammable	D001	2
4-hydroxy 4methyl 2pentanone	Flammable	D001	2
Acetone	Flammable	F003	2
Acetonitrile	Flammable	D001	2
Amyl alcohol	Flammable	D001	2
Benzaldehyde	Combustible	D001	2
Benzene	Flammable	D019	2
Benzhydrol	Combustible	D001	2
Benzoin 98%	Combustible	D001	2
Benzophenone 99+%	Combustible	D001	2
Benzyl acetate 99%	Combustible	D001	2
Benzyl alcohol	Combustible	D001	2
Benzyl benzoate	Combustible	D001	2
Benzyl cinnamate 98%	Combustible	D001	2
Benzyl ether	Combustible	D001	2
CAO-3 BHT	Combustible	D001	2
Chlorodiphenyl methane 98%	Flammable	D001	2
Cinnamaldehyde	Combustible	D001	2
DPD #1,2,3 Reagents	Combustible	D001	2
Dibenzo 18-Crown-6 98%	Combustible	D001	2
Dibenzoyl tartaric acid	Irritant		2
Dichloroethane 99%	Flammable	D001	2
Dichlorophenyl methane 99%	Flammable	D001	2
Dichlorotoluene 99%	Flammable	D001	2
Diethylene glycol	Combustible	D001	2

- | | | | |
|-----------------|----------------------------|--------------------------|---------------------|
| 1. Landfill | 3. Waste water treatment | 5. On-site destruction | 7. Special handling |
| 2. Incineration | 4. Neutralization/landfill | 6. Plastic wrap/landfill | |

TABLE 7

Hazard ID and Disposal Classification For Reagents

Chemical Name =====	HAZCAT =====	ID Number =====	Disp.Cat =====
Diphenylmethane 99%	Flammable	D001	2
Ethoxyquin	Combustible	D001	2
Ethyl acetate	Flammable	F003	2
Ethyl benzene	Flammable	F003	2
Ferric chloride	ORM-B		2
Isoamyl alcohol	Flammable	D001	2
Isobutyl alcohol	Flammable	F005	2
Mesityl oxide	Flammable	D001	2
Methenamine	Flammable	D001	2
Methyl alcohol	Flammable	F003	2
Monochlorobenzene	Flammable	D001	2
Nutrizyme	Combustible	D001	2
Oil #3	Combustible	D001	2
Paraffin oil	Combustible	D001	2
Resorcinol	ORM-E	U201	2
Sodium amide	Flammable	D001	2
Thiopene	Flammable	D001	2
Trichloroethylene	Flammable	F001	2
Triethyl borate 97%	Flammable	D001	2
Weedox C/R 250 herbicide	Poison B		2
Xylene	Flammable	F003	2
Alkalinity C,D,E,G	BNA		3
Ammonium hydroxide	Corrosive	D002	3
Benzoyl chloride	Corrosive	D002	3
Benzyl chloride	Corrosive	D002	3
Bromine	Corrosive	D002	3
Buffer solution pH 10.00	BNA		3
Buffer solution pH 4.00	BNA		3
Buffer solution pH 7.00	BNA		3
Chromotropic acid Na salt	BNA		3
Citric acid anhydrous	BNA		3
Citricacidtrisodiumdihydrate	BNA		3
Color standard 4	BNA		3
Congo red	BNA		3
Formic acid	Corrosive	D002	3
Glacial acetic acid	Corrosive	D002	3
Hydrochloric acid	Corrosive	D002	3
Potassium hydroxide	Corrosive	D002	3
Potassium sulfate	Corrosive	D002	3
Sodium hydroxide	Corrosive	D002	3
Sulfamic acid	Corrosive	D002	3
Sulfuric acid	Corrosive	D002	3
Total alkylinity indicator	BNA		3
pH indicator A	BNA		3
Aluminum chloride	Corrosive	D002	4
2,6-dimethoxybenzoic acid99%	Combustible	D001	5

- | | | | |
|-----------------|----------------------------|--------------------------|---------------------|
| 1. Landfill | 3. Waste water treatment | 5. On-site destruction | 7. Special handling |
| 2. Incineration | 4. Neutralization/landfill | 6. Plastic wrap/landfill | |

TABLE 7

Hazard ID and Disposal Classification For Reagents

Chemical Name =====	HAZCAT =====	ID Number =====	Disp.Cat =====
2,6-ditertiarybutyl p-cresol	Combustible	D001	5
2-hydroxyethyl ether	Flammable	D001	5
3,3-dimethoxy benzidene	Combustible	D001	5
3-hydroxybenzoic acid	Combustible	D001	5
4-chlorobenzene sulfonamide	Irritant		5
4-hydroxybenzoic acid	Combustible	D001	5
4-methylbenzo phenone 97%	Combustible	D001	5
9-hydroxyflourene	Irritant		5
Ammonium persulfate	Oxidizer		5
Benzyltriethylammoniumchloride	Irritant		5
Brucine sulfate	Poison B		5
Diisobutyl aluminum hydride	Flammable Gas	D001	5
Ether anhydrous	Flammable	D001	5
Ethyl ether 99%	Flammable	F003	5
Lead nitrate	Oxidizer		5
Lithium perchlorate	Oxidizer		5
Medical oxygen	Non Flammable Gas	N/A	5
Nitric acid concentrated	Oxidizer		5
Perchloric acid	Oxidizer		5
Phenylhydrazine	Irritant		5
Phenylhydrazinehydrochloride	Irritant		5
Phosphorous pentoxide	Flammable	D001	5
Piperazine	Irritant		5
Potassium periodate	Oxidizer		5
Potassium thiocyanate	Irritant		5
Salicylaldehyde 99+%	Irritant		5
Salicylic acid	Irritant		5
Salicylic acid sodium salt	Irritant		5
Sodium borohydride	Irritant		5
Sodium chlorate	Oxidizer		5
Sodium formate	Irritant		5
Sodium hydride	Flammable	D001	5
Sodium metal	Flammable	D001	5
Sodium nitrite	Oxidizer		5
Sodium sulfate	Irritant		5
Sodium tartrate	Irritant		5
Sodium thiosulfate	Irritant		5
Succinic anhydride	Organic Peroxide		5
Sulfanilic acid	Irritant		5
Sulfite O,P,Q	Irritant		5
Tributyl borate	Combustible	D001	5
Triethylenediamine	Combustible	D001	5
1,3-dinitrobenzene	Poison B		7
Ammonium acetate	ORM-E		7
Ammonium thiocyanate	ORM-E		7
Arsenic trioxide	Poison B	P012	7

- | | | | |
|-----------------|----------------------------|--------------------------|---------------------|
| 1. Landfill | 3. Waste water treatment | 5. On-site destruction | 7. Special handling |
| 2. Incineration | 4. Neutralization/landfill | 6. Plastic wrap/landfill | |

Hazard ID and Disposal Classification For Drums

Chemical Name =====	HAZCAT =====	ID Number =====	Disp.Cat =====
Activated carbon	BNA		1
All-weather patch material	BNA		1
Filteraid	BNA		1
Humisorb	BNA		1
Insulation fiberglass	BNA		1
Magnesium sulfate trihydrate	BNA		1
Micro media filter sheets	BNA		1
Potassium acetate	BNA		1
Potassium sulfate	BNA		1
Powdered filter media	BNA		1
Purafil II	BNA		1
Quinine sulfate	BNA		1
Salicylic acid	BNA		1
Salt	BNA		1
Sodium acetate anhydrous	BNA		1
Sodium bicarbonate	BNA		1
Sodium hexa-meta phosphate	BNA		1
Sterling salt crystals	BNA		1
Sulfamic acid	BNA		1
Tartaric acid	BNA		1
Acetone	Flammable	F003	2
Benzyl acetate	BNA		2
Benzyl chloride	Corrosive	P028	2
Crystal Clear floor finish	BNA		2
Degreaser	Flammable	D001	2
Ethyl alcohol	Flammable	D001	2
Glycol	BNA		2
Lubricating oil	Combustible	D001	2
Methanol	Flammable	F003	2
Paints	Flammable	D001	2
Rinseline injector fluid	Flammable	D001	2
Spent toluene/acetone	Flammable	F005/F003	2
Glacial acetic acid	Corrosive	D002	3
Hydrochloric acid	Corrosive	D002	4
Soda ash	Corrosive	D002	4
Sodium hydroxide	Corrosive	D002	4
Acetylene	Flammable Gas	D001	5
Chlorine	Non Flammable Gas	N/A	5
Hydrogen chloride	Non Flammable Gas	D002	5
Oxygen	Non Flammable Gas	N/A	5
Propane	Flammable Gas	D001	5
Insulation (asbestos??)	ORM-C	N/A	6
Methyl isobutyl ketone	Organic Peroxide	F003	7
Para-phenetidin	Poison B		7
Chloroform	ORM-A	D025	7

- | | | | |
|-----------------|----------------------------|--------------------------|---------------------|
| 1. Landfill | 3. Waste Water Treatment | 5. On-site destruction | 7. Special handling |
| 2. Incineration | 4. Neutralization/landfill | 6. Plastic wrap/landfill | |

TABLE 8

Hazard ID and Disposal Classification For Drums

<u>Chemical Name</u>	<u>HAZCAT</u>	<u>ID Number</u>	<u>Disp.Cat</u>
Activated carbon	BNA		1
All-weather patch material	BNA		1
Filteraid	BNA		1
Humisorb	BNA		1
Insulation fiberglass	BNA		1
Magnesium sulfate trihydrate	BNA		1
Micro media filter sheets	BNA		1
Potassium acetate	BNA		1
Potassium sulfate	BNA		1
Powdered filter media	BNA		1
Purafil II	BNA		1
Quinine sulfate	BNA		1
Salicylic acid	BNA		1
Salt	BNA		1
Sodium acetate anhydrous	BNA		1
Sodium bicarbonate	BNA		1
Sodium hexa-meta phosphate	BNA		1
Sterling salt crystals	BNA		1
Sulfamic acid	BNA		1
Tartaric acid	BNA		1

These materials may be disposed of at an approved hazardous waste landfill.
The following is a list of the quantities present:

28 X 55 gallon drums	1 X 400 pound bag
13 X 30 gallon drums	2 X 200 pound bags
1 X 20 gallon drum	117 X 100 pound bags
15 X 10 gallon drum	2 X 50 pound bags
27 X cubic yard boxes	

TABLE 8

Hazard ID and Disposal Classification For Drums

<u>Chemical Name</u>	<u>HAZCAT</u>	<u>ID Number</u>	<u>Disp.Cat</u>
Acetone	Flammable	F003	2
Benzyl acetate	BNA		2
Benzyl chloride	Corrosive	P028	2
Crystal Clear floor finish	BNA		2
Degreaser	Flammable	D001	2
Ethyl alcohol	Flammable	D001	2
Glycol	BNA		2
Lubricating oil	Combustible	D001	2
Methanol	Flammable	F003	2
Paints	Flammable	D001	2
Rinseline injector fluid	Flammable	D001	2
Spent toluene/acetone	Flammable	F005/F003	2

These materials may be disposed of at an approved hazardous waste incinerator.
The following is a list of the quantities present:

202 X 55 gallon drums
2 X 20 gallon drums
2 X 10 gallon drums
142 X 5 gallon drums
74 X 1 gallon drums

TABLE 8

Hazard ID and Disposal Classification For Drums

<u>Chemical Name</u>	<u>HAZCAT</u>	<u>ID Number</u>	<u>Disp.Cat</u>
Glacial acetic acid	Corrosive	D002	3

These materials may be disposed of at an approved waste water treatment facility.
The following is a list of the quantities present:
13 X 55 gallon drums

TABLE 8

Hazard ID and Disposal Classification For Drums

<u>Chemical Name</u>	<u>HAZCAT</u>	<u>ID Number</u>	<u>Disp.Cat</u>
Hydrochloric acid	Corrosive	D002	4
Soda ash	Corrosive	D002	4
Sodium hydroxide	Corrosive	D002	4

These materials may be disposed of after neutralization at a municipal landfill.
The following is a list of the quantities present:

14 X 55 gallon drums
15 X 100 pound bags

TABLE 8

Hazard ID and Disposal Classification For Drums

<u>Chemical Name</u> =====	<u>HAZCAT</u> =====	<u>ID Number</u> =====	<u>Disp. Cat</u> =====
Acetylene	Flammable Gas	D001	5
Chlorine	Non Flammable Gas	N/A	5
Hydrogen chloride	Non Flammable Gas	D002	5
Oxygen	Non Flammable Gas	N/A	5
Propane	Flammable Gas	D001	5

These materials may be disposed of via on-site destruction.
The following is a list of the quantities present:
12 gas cylinders of various sizes

TABLE 8

Hazard ID and Disposal Classification For Drums

<u>Chemical Name</u>	<u>HAZCAT</u>	<u>ID Number</u>	<u>Disp.Cat</u>
Insulation (asbestos??)	ORM-C	N/A	6

These materials may be disposed of by packing in plastic and landfilling.
The following is a list of the quantities present:
13 X cubic yard boxes

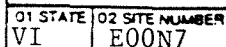
TABLE 8

Hazard ID and Disposal Classification For Drums

<u>Chemical Name</u>	<u>HAZCAT</u>	<u>ID Number</u>	<u>Disp.Cat</u>
Methyl isobutyl ketone	Organic Peroxide	F003	7
Para-phenetidin	Poison B		7
Chloroform	ORM-A	D025	7

These materials require special handling for disposal.
The following is a list of the quantities present:
15 X 55 gallon drums

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT PART 1 - SITE INFORMATION AND ASSESSMENT		I. IDENTIFICATION C1 STATE: VI C2 SITE NUMBER: E00N7	
II. SITE NAME AND LOCATION			
01 SITE NAME (Legal, common, or descriptive name of site) VI Chem (Island Chemical)		02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER Route 66	
03 CITY St. Croix	04 STATE USVI	05 ZIP CODE 00820	06 COUNTY Christiansted
09 COORDINATES LATITUDE 17° 42' 26"		LONGITUDE 64° 47' 23"	
10 DIRECTIONS TO SITE (Starting from nearest public road) From Alexander Hamilton Airport- Take airport road to Melvin Evans Highway (Rt.66) Make a left onto Melvin Evans. Make first U-Turn. Turn left onto property at the last driveway before the light.			
III. RESPONSIBLE PARTIES			
01 OWNER (If known) Charles H. Steffey Holding Corp.		02 STREET (Business, mailing, residential) 540 Baltimore Annapolis Blvd	
03 CITY Severna Park	04 STATE MD	05 ZIP CODE 21146	06 TELEPHONE NUMBER () unk
07 OPERATOR (If known and different from owner) Fred Schubert		08 STREET (Business, mailing, residential) Pondside East Road	
09 CITY Richmond	10 STATE MA	11 ZIP CODE 01254	12 TELEPHONE NUMBER (413) 698-2258
13 TYPE OF OWNERSHIP (Check one) ☒ A. PRIVATE ☐ B. FEDERAL: _____ (Agency name) ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL ☐ F. OTHER: _____ (Specify) ☐ G. UNKNOWN			
14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply) ☐ A. RCRA 3001 DATE RECEIVED: <u>11</u> / <u>1</u> / <u>89</u> MONTH DAY YEAR ☐ B. UNCONTROLLED WASTE SITE (CERCLA 103 d) DATE RECEIVED: _____ / _____ / _____ MONTH DAY YEAR ☐ C. NONE			
IV. CHARACTERIZATION OF POTENTIAL HAZARD			
01 ON SITE INSPECTION BY (Check all that apply) ☒ YES DATE <u>1</u> / <u>31</u> / <u>89</u> MONTH DAY YEAR ☒ A. EPA ☒ B. EPA CONTRACTOR ☒ C. STATE ☐ D. OTHER CONTRACTOR ☐ NO ☐ E. LOCAL HEALTH OFFICIAL ☐ F. OTHER: _____ (Specify) CONTRACTOR NAME(S): Roy F. Weston TAT			
02 SITE STATUS (Check one) ☒ A. ACTIVE ☐ B. INACTIVE ☐ C. UNKNOWN		03 YEARS OF OPERATION <u>5/1/69</u> Present ☐ UNKNOWN BEGINNING YEAR ENDING YEAR	
04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED **SEE ATTACHED TABLES**			
05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION Direct contact to persons and dogs living and working on-site. Risk of fire/explosion, prison located downwind. Groundwater contamination with chloroform. Incomptable materials stored in close proximity.			
V. PRIORITY ASSESSMENT			
01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents) ☒ A. HIGH (Inspection required promptly) ☐ B. MEDIUM (Inspection required) ☐ C. LOW (Inspect on time available basis) ☐ D. NONE (No further action needed, complete current disposition form)			
VI. INFORMATION AVAILABLE FROM			
01 CONTACT Francine Lang		02 OF (Agency/Organization) Dept of Planning and Natural Resources	
04 PERSON RESPONSIBLE FOR ASSESSMENT Doug Kodama		05 AGENCY EPA	06 ORGANIZATION R & P Branch
		07 TELEPHONE NUMBER (201) 906-6905	08 DATE <u>2</u> / <u>10</u> / <u>89</u> MONTH DAY YEAR



X- I. HIGHLY VOLATILE
X- J. EXPLOSIVE
X- K. REACTIVE
X- L. INCOMPATIBLE
C M. NOT APPLICABLE



POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE VI 02 SITE NUMBER E00N7

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ~~XX~~A. GROUNDWATER CONTAMINATION 02 ☐ OBSERVED (DATE: 11/88) ~~XX~~ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 400 04 NARRATIVE DESCRIPTION

Wells which are used as a source of public drinking water have been found to be contaminated with Chloroform at between 11 and 75 ppb.
RCRA enforcement reports 130 ppb Chloroform in the on-site well.

01 ~~XX~~B. SURFACE WATER CONTAMINATION 02 ☐ OBSERVED (DATE: 1/31/89) ~~XX~~ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 20 04 NARRATIVE DESCRIPTION

An intermittent stream originates on the north side of the Island, flows adjacent to the site, and discharges into the Caribbean Sea.

01 ~~XX~~C. CONTAMINATION OF AIR 02 ☐ OBSERVED (DATE: 1/31/89) ☐ POTENTIAL ~~XX~~ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 100 04 NARRATIVE DESCRIPTION

All ambient air monitoring was equivalent to background, however, many open and leaking containers were observed which may release compounds into the air.

01 ~~XX~~D. FIRE/EXPLOSIVE CONDITIONS 02 ☐ OBSERVED (DATE: 1/31/89) ~~XX~~ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 100 04 NARRATIVE DESCRIPTION

Ethyl ether, sodium metal, diisobutyl aluminum hydride and incompatible materials are stored haphazardly throughout the site. These materials have the potential to cause an explosion.

01 ~~XX~~E. DIRECT CONTACT 02 ☐ OBSERVED (DATE: 1/31/89) ~~XX~~ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 4-10 04 NARRATIVE DESCRIPTION

One person lives on-site in a trailer, several people are on-site each day as workers. Guard dogs which have access to the chemical storage areas are moved to banks each night, potentially spreading contamination. The site is fenced.

01 ~~XX~~F. CONTAMINATION OF SOIL 02 ☐ OBSERVED (DATE: 1/31/89) ☐ POTENTIAL ~~XX~~ ALLEGED
03 AREA POTENTIALLY AFFECTED: 3.5 04 NARRATIVE DESCRIPTION

A small patch of potentially PCB oil soaked ground observed. Reports of past spills of pyridine and other laboratory chemicals presented by RCRA enforcement in March 1986.

01 ~~XX~~G. DRINKING WATER CONTAMINATION 02 ☐ OBSERVED (DATE: 11/88) ~~XX~~ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 400 04 NARRATIVE DESCRIPTION

VI Port Authority wells have shown Chloroform contamination downgradient of the site.

01 ~~XX~~H. WORKER EXPOSURE/INJURY 02 ☐ OBSERVED (DATE: 1/31/89) ~~XX~~ POTENTIAL ☐ ALLEGED
03 WORKERS POTENTIALLY AFFECTED: 4-10 04 NARRATIVE DESCRIPTION

Kate Wesp operates a dog kennel and lives on-site. Her assistants as well as owners and operators from VIAG Fuels are on-site and inside the buildings on a regular basis.

01 ~~XX~~I. POPULATION EXPOSURE/INJURY 02 ☐ OBSERVED (DATE: 1/31/89) ~~XX~~ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 400 04 NARRATIVE DESCRIPTION

Several industries, businesses, residences, an airport and a prison are located in the general vicinity of the site.



POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE 02 SITE NUMBER
VI E00N7

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ J. DAMAGE TO FLORA
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL

☐ ALLEGED

No observed damage to flora.

01 ☒ K. DAMAGE TO FAUNA
04 NARRATIVE DESCRIPTION (Include names of species)

02 ☐ OBSERVED (DATE: 5/89)

☐ POTENTIAL

☒ ALLEGED

Bats were observed in the warehouse, damage unknown.

01 ☒ L. CONTAMINATION OF FOOD CHAIN
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: 1/31/89)

☐ POTENTIAL

☒ ALLEGED

The prison located within 1/4 mile of the site operates a farm which sells vegetables to the local population

01 ☒ M. UNSTABLE CONTAINMENT OF WASTES
(Spills/runoff/standing liquids/leaking drums)

02 ☐ OBSERVED (DATE: 1/31/89)

☒ POTENTIAL

☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: 100

04 NARRATIVE DESCRIPTION

Two drums have had their lids popped off by some unknown reaction. Lab chemicals observed dripping contents down storage cabinet shelves.

01 ☒ N. DAMAGE TO OFFSITE PROPERTY
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: 1/31/89)

☐ POTENTIAL

☒ ALLEGED

Groundwater contamination and the potential for past illegal discharges exists.

01 ☒ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: 1/31/89)

☐ POTENTIAL

☒ ALLEGED

The intermittent stream acts as the storm water runoff system.

01 ☒ P. ILLEGAL/UNAUTHORIZED DUMPING
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: 3/13/86)

☐ POTENTIAL

☒ ALLEGED

RCRA enforcement reported spills of pyridine and a potentially leaking laboratory drainage system. Also process spills of toluene.

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

III. TOTAL POPULATION POTENTIALLY AFFECTED: 400

IV. COMMENTS

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

RCRA enforcement report 3/13/86.
DPMR summary of site conditions.
VICHEM letter to Centerchem 2/1/85.
TAT site evaluation report 2/10/89.
TAT St. Croix well survey 10/25/88.

Laboratory Reagent Inventory

CHEMICAL NAME =====	COMPANY =====	QTY ===	STATE =====
1,3-dinitrobenzene	Aldrich Chemical	100 g	solid
1-butanol	J.T.Baker Chemical	500 ml	liquid
1-chlorobutane	MCB	4 L	liquid
1-propanol	J.T.Baker Chemical	500 ml	liquid
18-Crown-6 99%	Aldrich Chemical	25 g	solid
2,2-oxydiethanol	Kodak	1 kg	liquid
2,6-dimethoxybenzoic acid 99%	Aldrich Chemical	25 g	solid
2,6-ditertiarybutyl p-cresol	Biesterfeld	500 g	solid
2-hydroxybenzyl alcohol 99%	Aldrich Chemical	25 g	liquid
2-hydroxyethyl ether	Aldrich Chemical	1 kg	liquid
2-methyl-1-butanol 99%	Aldrich Chemical	10 g	liquid
2-methylbutyl amine	American Laboratorie	15 g	liquid
3,3-dimethoxy benzidene	Kodak	100 g	solid
3-hydroxybenzoic acid	Aldrich Chemical	100 g	solid
4-chlorobenzene sulfonamide	Aldrich Chemical	100 g	solid
4-hydroxy 4methyl 2pentanone	Aldrich Chemical	500 g	liquid
4-hydroxybenzoic acid	Aldrich Chemical	50 g	solid
4-methylbenzo phenone 97%	Aldrich Chemical	50 g	solid
9-hydroxyflourene	Aldrich Chemical	2x25 g	solid
Acetic acid	MCB	2x5 lb	liquid
Acetone	Fisher Scientific	4 L	liquid
Acetonitrile	Supelco	1 box	liquid
Alkalinity C,D,E,G	Mogul Corporation	4x2 oz	liquid
Aluminum Chloride	Mallinckrodt	1 lb	solid
Aluminum chloride	Witco Chemical	500 g	solid
Ammonium acetate	Fluka	1 kg	solid
Ammonium acetate	Aldrich Chemical	2 kg	solid
Ammonium acetate purified	Jarchem Industries	250 g	solid
Ammonium hydroxide	Sargent Welch Scient	500 ml	liquid
Ammonium persulfate	J.T.Baker Chemical	2.5 kg	solid
Ammonium persulfate	J.T.Baker Chemical	500 g	solid
Ammonium thiocyanate	Fisher Scientific	500 g	liquid
Amyl alcohol	Mallinckrodt	1 pt	liquid
Arsenic trioxide	Fisher Scientific	2x113g	solid
Barium chloride	Drew Chemical	1 qt	liquid
Barium chloride	Mallinckrodt	500 g	solid
Barium chloride	Fisher Scientific	1 lb	solid
Barium hydroxide	Fisher Scientific	1 lb	solid
Benzaldehyde	J.T.Baker Chemical	500 ml	liquid
Benzene	Tenneco Oil	2x1gal	liquid
Benzhydrol	Kodak	100 g	solid
Benzoic acid	Mobay Chemical	1 lb	solid
Benzoin	Fluka	2x1 kg	solid
Benzoin 98%	Aldrich Chemical	4x500g	solid

07/14/89

TABLE 1

Laboratory Reagent Inventory

CHEMICAL NAME =====	COMPANY =====	QTY ===	STATE =====
Benzophenone	Aldrich Chemical	500 g	solid
Benzophenone	H&S Chemical	1 bag	solid
Benzophenone	Upjohn	500 g	solid
Benzophenone 99+%	Aldrich Chemical	50 g	solid
Benzoyl chloride	Mobay Chemical	1 lb	solid
Benzyl acetate 99%	Aldrich Chemical	100 g	liquid
Benzyl alcohol	Mallinckrodt	1 pt	liquid
Benzyl benzoate	Aldrich Chemical	100 g	liquid
Benzyl chloride	unknown	4 oz	liquid
Benzyl chloride	Velsicol	500 g	liquid
Benzyl cinnamate 98%	Aldrich Chemical	100 g	solid
Benzyl ether	Aldrich Chemical	1 kg	liquid
Benzyltriethylammoniumchloride	Aldrich Chemical	25 g	solid
Bismuth subnitrate	MCB	1 lb	solid
Bromine	Fisher Scientific	113 g	liquid
Bromophenol blue	Fisher Scientific	5 g	solid
Brucine sulfate	Fisher Scientific	1 oz	solid
Buffer solution pH 10.00	Fisher Chemical	500 ml	liquid
Buffer solution pH 4.00	Fisher Scientific	500 ml	liquid
Buffer solution pH 7.00	Fisher Chemical	500 ml	liquid
CAO-3 BHT	Sherwin Williams	1 bag	solid
Calcium sulfate anhydrous	W.A.Hammond Drierite	4x5 lb	solid
Cello-Seal	Fisher Scientific	25 g	liquid
Chloride F	Mogul Corporation	3 oz	liquid
Chlorodiphenyl methane 98%	Aldrich Chemical	100 g	solid
Chloroform	Fisher Scientific	4 L	liquid
Chromotropic acid Na salt	Fisher Scientific	25 g	solid
Cinnamaldehyde	unknown	2x1 kg	liquid
Citric acid anhydrous	J.T.Baker Chemical	500 g	solid
Citricacidtrisodiumdihydrate	Aldrich Chemical	1 kg	solid
Cobalt chloride	Fisher Scientific	2x1 lb	solid
Color standard 4	unknown	1 oz	liquid
Congo red	Fisher Scientific	25 g	solid
Copper metal	Fisher Scientific	500 g	solid
Cupric sulfate	Fisher Scientific	500 g	solid
Cupric sulfate	Mallinckrodt	500 g	solid
DPD #1,2,3 Reagents	Taylor Chemical	3x1 oz	liquid
Dibenzo 18-Crown-6 98%	Aldrich Chemical	50 g	solid
Dibenzoyl tartaric acid	Knoll Fine Chemicals	1 kg	solid
Dichloroethane 99%	Aldrich Chemical	1 kg	liquid
Dichlorophenyl methane 99%	Aldrich Chemical	25 g	solid
Dichlorotoluene 99%	Aldrich Chemical	100 g	solid
Diethylene glycol	Fisher Scientific	1 qt	liquid
Diisobutyl aluminum hydride	Texas Acres	4 cyl	gas
Diphenylmethane 99%	Aldrich Chemical	500 g	liquid

TABLE 1

Laboratory Reagent Inventory

CHEMICAL NAME =====	COMPANY =====	QTY ===	STATE =====
Diphenylthiocarbazone	Fisher Scientific	25 g	solid
Eosin Y	Aldrich Chemical	25 g	solid
Ether anhydrous	Fisher Scientific	4 qt	liquid
Ethoxyguin	unknown	4 oz	liquid
Ethyl acetate	Aldrich Chemical	5 gal	liquid
Ethyl acetate	MCB	5x1gal	liquid
Ethyl benzene	Dupont	1 qt	liquid
Ethyl ether 99%	Fisher Scientific	6x500g	liquid
Ferric ammonium sulfate	Fisher Scientific	500 g	solid
Ferric chloride	unknown	100 ml	liquid
Ferric chloride	Fisher Chemical	1 lb	solid
Ferric chloride anhydrous	Pennwalt Corporation	5x500g	solid
Ferric chloride anhydrous	Kodak	500 g	solid
Ferrous ammonium sulfate	Fisher Chemical	1 lb	solid
Formic acid	unknown	200 g	liquid
Glacial acetic acid	Fisher Chemical	5 lb	liquid
Hydrazine sulfate	Fisher Scientific	4 oz	solid
Hydrazine sulfate	Fisher Scientific	100 g	solid
Hydrochloric acid	MCB	2x6 lb	liquid
Hydrochloric acid	Fisher Chemical	3x1 L	liquid
Hydroxylamine hydrochloride	Fisher Scientific	1 kg	solid
Hydroxylamine hydrochloride	MCB	4 oz	solid
Iodine	Fisher Scientific	500 g	solid
Iron chloride anhydrous	BASF	500 g	solid
Isoamyl alcohol	Fisher Scientific	500 ml	liquid
Isobutyl alcohol	J.T.Baker Chemical	500 ml	liquid
Lead acetate	MCB	1 lb	solid
Lead nitrate	Fisher Scientific	100 g	solid
Lithium perchlorate	Aldrich Chemical	500 g	solid
Magnesium sulfate	Fisher Scientific	500 g	solid
Medical oxygen	MSA	1 cyl	gas
Mercuric chloride	Fisher Scientific	2x100g	solid
Mercuric oxide	Fisher Scientific	500 g	solid
Mesityl oxide	Aldrich Chemical	100 g	solid
Methanol	Fisher Scientific	4 L	liquid
Methenamine	Fisher Scientific	500 g	solid
Methyl alcohol	Mallinckrodt	1 gal	liquid
Methyl orange	Fisher Scientific	113 g	
Methyl red	Fisher Scientific	2x10 g	solid
Monochlorobenzene	PPG Industries	10 oz	liquid
N-methylaniline	Kodak	1 kg	liquid
Na salt of ME salicylate	Sattra Chemical	1 bag	solid
Niacin N.F.	Nepera Chemical	250 g	solid
Nitric acid concentrated	J.T.Baker Chemical	2x8 lb	liquid
Nitrobenzene	Fisher Scientific	1 qt	liquid

TABLE 1

Laboratory Reagent Inventory

CHEMICAL NAME =====	COMPANY =====	QTY ===	STATE =====
Non aqueous buffer soln.	Beckman Instruments	1 pt	liquid
Nutrizyme	Merck	2 oz	solid
Oil #3	Frich Oil	5 gal	liquid
Paraffin oil	Fisher Scientific	1 qt	liquid
Paraformaldehyde	MCB	1 qt	liquid
Paraformaldehyde prills 91%	Celanese Chemical	1 lb	solid
Perchloric acid	MCB	2x8 lb	liquid
Phenol red	Fisher Scientific	5 g	solid
Phenophtalein	Fisher Scientific	1 oz	solid
Phenylhydrazine	Fisher Scientific	4x4 oz	liquid
Phenylhydrazinehydrochloride	Fisher Scientific	2 lb	solid
Phosphorous pentoxide	Fisher Scientific	1 lb	solid
Piperazine	MCB	100 g	solid
Potassium bromide	Fisher Scientific	5x500g	solid
Potassium butoxide	Callery Chemical	50 g	solid
Potassium chloride	Beckman Instruments	2x6 oz	solid
Potassium cyanate	Fisher Scientific	1 lb	solid
Potassium cyanide	Fisher Scientific	500 g	solid
Potassium dichromate	Fisher Scientific	500 g	solid
Potassium ferrocyanide	Fisher Scientific	3 kg	solid
Potassium hydroxide	Mallinckrodt	2x1 lb	solid
Potassium hydroxide	Fisher Scientific	500 g	solid
Potassium iodide	Drew Chemical	1 qt	liquid
Potassium iodide	Fisher Scientific	2x500g	solid
Potassium periodate	Fisher Scientific	100 g	solid
Potassium platinate	Varlacold Chemical	5 g	solid
Potassium sulfate	Indiana Army Ammo Plant	250 g	solid
Potassium sulfate	Aldrich Chemical	500 g	solid
Potassium sulfate	unknown	50 g	solid
Potassium thiocyanate	Fisher Scientific	500 g	solid
Resorcinol	Koppers	3 bags	solid
Salicylaldehyde 99+%	Aldrich Chemical	100 g	liquid
Salicylic acid	Aldrich Chemical	100 g	solid
Salicylic acid	Aceto Chemical	500 g	solid
Salicylic acid sodium salt	Aldrich Chemical	100 g	solid
Sicapent	MCB	2.8 L	solid
Silica gel dessicant	Davison Chemical	2x1 qt	solid
Silver nitrate	J.T.Baker Chemical	1 oz	solid
Silver nitrate	Sargent Welch Scientific	30 g	solid
Sodium Chloride	Fisher Scientific	500 g	solid
Sodium acetate	Sattra Chemical	3 bags	solid
Sodium acetate anhydrous	Niacet Corporation	250 g	solid
Sodium acetate anhydrous	CDF Chimie Noth America	2x500g	solid
Sodium amide	Farchan Research Lab	500 g	solid
Sodium benzoate	Sattra Chemical	1 bag	solid

TABLE 1

Laboratory Reagent Inventory

CHEMICAL NAME =====	COMPANY =====	QTY ===	STATE =====
Sodium benzoate	Dastech International	1 bag	solid
Sodium benzoate	Ishihara Corporation	250 g	solid
Sodium benzoate	Pfizer	100 lb	solid
Sodium borohydride	Fisher Scientific	4x25 g	solid
Sodium carbonate	Fisher Scientific	1 kg	solid
Sodium carbonate anhydrous	Mallinckrodt	1 lb	solid
Sodium chlorate	Hooker Chemical	1 box	solid
Sodium dichromate	Fisher Scientific	10 kg	solid
Sodium formate	unknown	5 lb	solid
Sodium hydride	Thiokol/Ventron Division	1 lb	solid
Sodium hydroxide	Mallinckrodt	500 g	solid
Sodium metal	RMI	2 boxs	solid
Sodium nitrite	Fisher Scientific	2x500g	solid
Sodium nitro ferricyanide	MCB	4 oz	solid
Sodium sulfate	Fisher Scientific	500 g	solid
Sodium tartrate	J.T.Baker Chemical	2 oz	solid
Sodium tartrate	Fisher Scientific	6x113g	solid
Sodium thiosulfate	Fisher Scientific	2x1 lb	solid
Succinic anhydride	MCB	6x250g	solid
Succinic anhydride	Aldrich Chemical	2x1 kg	solid
Sulfamic acid	Fisher Scientific	500 g	solid
Sulfanilic acid	H&S Chemical	1 bag	solid
Sulfite O,P,Q	Mogul Corporation	3x2 oz	liquid
Sulfuric acid	J.T.Baker Chemical	10 lb	liquid
Tetraphenolboron sodium 99%	Aldrich Chemical	25 g	solid
Thiopene	Kodak	100 g	liquid
Total alkylinity indicator	Drew Chemical	1 qt	liquid
Tributyl borate	Aldrich Chemical	750 g	liquid
Trichloroethylene	Mallinckrodt	1 pt	liquid
Triethyl borate 97%	Aldrich Chemical	100 g	liquid
Triethylenediamine	Air Products	250 g	solid
Uranyl acetate	unknown	500 g	solid
Weedox C/R 250 herbicide	Southern Mill Creek Prod.	2x5gal	liquid
Xylene	Fisher Scientific	5x1 L	liquid
Zinc chloride	Fisher Scientific	500 g	solid
Zinc chloride anhydrous	Mineral Research	1 lb	solid
p-chlorobenzene sulfonamide	H&S Chemical	2 bags	solid
p-naptholbenzein	Fisher Scientific	25 g	solid
p-toluenesulfonicmonohydrate	Aldrich Chemical	500 g	solid
pH indicator A	Mogul Corporation	2 oz	liquid
z Miscellaneous unknowns	on site lab glassware	280bot	misc.
z Miscellaneous unknowns	on site one oz bottles	238bot	liquid

TABLE 2

Drum Inventory

Chemical Name =====	Company =====	Qty ===	State =====	Cond =====	Dates =====
Acetone	Ashland Chemical	55 G	liquid	good	
Acetylene	VI Gas	2 cyl	gas	good	
Activated carbon	Calgon Corporation	30 bag	solid	good	
All-weather patch material	Revere Chemical	55 G	solid	fair	
Amersite 2	Valley Freight Syst.	55 G	liquid	fair	
Ashland MeOH	Ashland Chemical	5 G	liquid	good	
Benzyl acetate	Island Chemical	21x55G	liquid	fair	
Benzyl chloride	Velsicol Corporation	28x55G	liquid	fair	
Chlorine	VI Gas	1 cyl	gas	poor	
Chloroform	unknown	55 G	liquid	good	
Crofox	Cerfact Laboratories	55 G	liquid	poor	
Crystal Clear floor finish	Cerfact Laboratories	2x20 G	liquid	good	
Degreaser	unknown	55 G	liquid	good	
Drewtrol 8500	Valley Freight Syst.	55 G	liquid	poor	
Ethyl alcohol	unknown	115x55	liquid	poor	
Filteraid	unknown	10x30G	solid	poor	
Glacial acetic acid	Celanese Chemical	13x55G	liquid	good	
Glycol	Island Chemical	20x55G	liquid	poor	1984
Humisorb	Culligan	30 G	solid	fair	
Hydrochloric acid	Certified Laboratory	55 G	liquid	poor	
Hydrogen chloride	VI Gas	1 cyl	gas	poor	
Insulation (asbestos??)	unknown	13 box	solid	good	
Insulation fiberglass	unknown	7 box	solid	good	
Lubricating oil	Texaco	2x10 G	liquid	good	
Lubricating oil	Texaco	5x55 G	liquid	good	
Magnesium sulfate trihydrate	Tomita Pharmaceutica	6x25kg	solid	fair	
Methanol	Ashland Chemical	5x55 G	liquid	good	
Methanol	unknown	3x55 G	liquid	fair	
Methyl isobutyl carbinol	Van Waters & Rogers	12x55G	liquid	good	1984
Methyl isobutyl ketone	Ashland Chemical	55 G	liquid	good	

TABLE 2

Drum Inventory

Chemical Name =====	Company =====	Qty ===	State =====	Cond =====	Dates =====
Micro media filter sheets	Ertel Engineering	18 box	solid	good	
Oxygen	VI Gas	3 cyl	gas	good	
Oxygen	Santa Maria Gases	1 cyl	gas	good	
Paints	unknown	44x5 G	liquid	fair	
Paints	unknown	53x1 G	liquid	fair	
Paints	International Paint	97x5 G	liquid	fair	
Paints	International Paint	21x1 G	liquid	fair	
Para-phenetidin	unknown	55 G	liquid	fair	1983
Pentosin	Deutsche Pentosin	20 L	liquid	fair	
Potassium acetate	Jarchem Industries	8x100#	solid	good	
Potassium sulfate	unknown	50 bag	solid	good	
Powdered filter media	Ionics	2 boxs	solid	good	
Propane	unknown	4 cyl	gas	good	
Purafil II	unknown	15x10G	solid	good	
Quinine sulfate	Kimafarma	20 G	liquid	good	
Rinseline injector fluid	Bob Chamber Ltd.	55 G	liquid	good	
Rout	Cerfact Laboratories	20 G	solid	poor	
Salicylic acid	Rhone-Poulenc	27drum	solid	good	
Salt	unknown	2x30 G	solid	good	
Soda ash	Allied Chemical	15x100	solid	poor	
Sodium acetate anhydrous	unknown	50 lb	solid	good	
Sodium acetate anhydrous	Jarchem Industries	200 lb	solid	poor	
Sodium bicarbonate	Stauffer Chemical	8x100#	solid	poor	
Sodium hexa-meta phosphate	FMC	200 lb	solid	good	
Sodium hydroxide	Mantek	55 G	liquid	poor	
Sodium hydroxide	Manuel del Valle Inc	12x55G	liquid	good	
Spent toluene/acetone	unknown	2x55 G	liquid	fair	
Sterling salt crystals	unknown	50 lb	solid	poor	
Sulfamic acid	Dupont	400 lb	solid	poor	
Tartaric acid	Pfizer Chemical	15x100	solid	poor	
Thinner	unknown	6x1 G	liquid	fair	

TABLE 2

Drum Inventory

<u>Chemical Name</u> =====	<u>Company</u> =====	<u>Qty</u> ===	<u>State</u> =====	<u>Cond</u> =====	<u>Dates</u> =====
Thinner	Advance	55 G	liquid	fair	
Toluene	Ashland Chemical	3x55 G	liquid	fair	
Toluene	unknown	5x55 G	liquid	good	
Triethylamine	Air Products	55 G	liquid	good	1984
Waste oil	unknown	2x55 G	liquid	good	
z Empty drums	unknown	130	n/a	fair	
z Miscellaneous unknowns	on site containers	25	misc.	poor	

U.S. ENVIRONMENTAL PROTECTION AGENCY

POLLUTION REPORT

DATE: August 8, 1989

Region II
Response and Prevention Branch
Edison, New Jersey 08837
(201) 548-8730 - Commercial and FTS
24 Hour Emergency

TO: W. Muszynski, EPA
S. Luftig, EPA
R. Salkie, EPA
M. Randol, EPA
G. Pavlou, EPA
ERD, WH-548B
(E-Mail)
B. Sprague, EPA
G. Zachos, EPA
P. Gelabert, EPA
A. Smith, VIDPNR
LEPC
TAT

POLREP NO.: Three (3)
INCIDENT/SITE NO.: N/A
POLLUTANT: Lab Chemicals, Alcohols, Solvents, Acids
CLASSIFICATION: Major
SOURCE: Virgin Island Chemical Company (VIChem)
LOCATION: St. Croix, USVI
AMOUNT: 800 Lab Chemicals, 400 Drums, 22 Tanks
WATER BODY: Groundwater, Caribbean Sea

1. SITUATION

A. Same as previous POLREPs. Site conditions have not significantly changed.

2. ACTION TAKEN

A. June 14, 1989, conference call conducted between ORC, NYCCB, OSC and F. Schubert (owner of VIChem). Mr. Schubert explained that he will not be able to finance a clean-up at the facility. EPA informed him that due to the significant hazards presented by the site, Region II is prepared to conduct a removal action and remove the chemicals from the facility.

EPA informed Mr. Schubert that he will have approximately one month to contact facilities which may be interested in buying some of the materials on-site. EPA will send him a Letter of Intent form to be used during these recycling efforts.

Mr. Schubert had no objection to EPA removing all chemicals from the site and further stated that he would not be obstructive to EPA's cleanup.

B. July 18, 1989, Action Memorandum finalized and sent to NY

office for concurrence and approval.

OSC received a copy of a letter from Mr. Schubert to NYCCB, stating that he has a potential buyer for the site and requesting EPA to hold off on the removal action. OSC coordinated with NYCCB on this matter.

C. July 25, 1989, Chief RPB coordinated with ORC on potential sale of VIChem.

D. August 1, 1989, receive fax from NYCCB concerning VIAG's request to start operation shortly and install a water treatment unit for their ethanol dehydration operation.

E. August 4, 1989, conference call conducted with OSC, ORC, NYCCB and F. Schubert. The potential sale of VIChem has fallen through and it appears doubtful that a sale with other potential buyers will occur. Mr. Schubert assured EPA that all prospective buyers of VIChem are aware of EPA's interest in having the site cleaned-up. ORC informed Mr. Schubert that EPA will proceed with our plans for a Superfund clean up, EPA will send him an access agreement form for his signature and wanted to be sure that all prospective buyers have received copies of the March 13, 1989 Notice Letter to VIChem.

F. August 8, 1989, Consent for Access to Property form sent by ORC to F. Schubert. Acting Regional Administrator approves Action Memorandum.

FUTURE PLANS AND RECOMMENDATIONS:

A. OSC will initiate a Delivery Order for O.H. Materials to conduct the site clean up.

B. OSC will inform USVI DPNR about the Action Memorandum approval.

C. OSC will coordinate contingency planning meeting for appropriate U.S.V.I. public agencies.

FURTHER
POLREPS
FINAL POLREP _____ FORTHCOMING X SUBMITTED BY


Douglas R. Kodama
On-Scene Coordinator
Response and
Prevention Branch

DATE RELEASED

Sept. 7, 1989

U.S. ENVIRONMENTAL PROTECTION AGENCY

POLLUTION REPORT

DATE: June 7, 1989

Region II
Response and Prevention Branch
Edison, New Jersey 08837
(201) 548-8730 - Commercial and FTS
24 Hour Emergency

TO: W. Muszynski, EPA
S. Luftig, EPA
R. Salkie, EPA
M. Randol, EPA
G. Pavlou, EPA
ERD, WH-548B
(E-Mail)
B. Sprague, EPA
G. Zachos, EPA
P. Gelabert, EPA
A. Smith, DPNR
LEPC
TAT

POLREP NO.: Two (2)
INCIDENT/SITE NO.: N/A
POLLUTANT: Lab chemicals, Alcohols, Solvents, Acids
CLASSIFICATION: Major
SOURCE: Virgin Island Chemical Company (VIChem)
LOCATION: St. Croix, U.S. Virgin Islands
AMOUNT: 800 Lab Chemicals, 400 Drums, 22 Tanks
WATER BODY: Groundwater, Caribbean Sea

1. SITUATION:

A. Same as previous polrep. Site conditions have not significantly changed.

2. ACTION TAKEN:

A. OSC discusses contents of Notice Letters with ORC and Enforcement Programs. On March 13, 1989 Notice Letters were issued to the following Potentially Responsible Parties (PRPs): Berlex Laboratories, Island Chemical Company, CHS Holding Company (land owner), Virgin Island Chemical Company, and VIAG Fuels.

B. March 30, OSC receives copies of Notice Letter replies from Berlex, VIChem and VIAG Fuels. None of the PRP's are willing to conduct or finance a CERCLA response. OSC informed verbally that Region II will conduct a removal action at this site [REDACTED]

C. April 5, OSC contacts D. Weston of VIAG Fuels and requests him to inform Enforcement Programs of VIAG's intended use of ethanol, paints and water treatment chemicals, thus averting the need for EPA to dispose of these materials.

D. OSC drafts memo to Enforcement Programs concerning enforcement issues which must be addressed prior to an EPA removal action. Issues include material owned or planned for purchase by VIAG and temporarily evacuating VIAG and St. Croix Security Kennels (SCSK). Memo issued April 20, 1989.

E. Draft Action Memorandum prepared and distributed for comment on May 17, 1989. Comments due June 2.

F. OSC contacts Fred Schubert, President of VIChem and receives verbal permission for access to the site during the week of May 22, 1989. Mr. Schubert was not aware that there were hydrogen chloride and chlorine cylinders on-site and knew nothing about the cans of ether stored in the labs. Mr. Schubert informed the OSC that he is making plans to repair the warehouse.

G. OSC discusses proposed removal action with representatives from DPNR on May 22. Discuss possibility of having DPNR order VIAG and SCSK to leave the site during on-site removal activities and monitoring the site prior to EPA's mobilization to the site. OSC will write a formal request for DPNR to carry out these tasks.

H. May 23, 1989, OSC discusses with Lt. Steve Hanewich, the possibility of using the US Coast Guard HazMat unit in San Juan for technical and contractor oversight assistance during the removal. USCG will need a Memorandum of Understanding (MOU) for reimbursement of lodging/per diem and disposable personnel protective gear.

I. OSC briefs the Caribbean Regional Response Team on EPA's proposed removal action at VIChem. FEMA recommends that during on-site treatment activities or a fire at the facility that the nearby prison not be evacuated.

J. OSC visits VIChem with OH Materials Project Manager on May 25, 1989 to review site conditions and discuss proposed clean up activities for the site. Conditions within the labs remains the same. Drums within the warehouse have been restaged in an orderly fashion however they are not staged by compatibility groups. The warehouse floor has been swept clean and the leaking drum of sulfamic acid has been overpacked, according to VIChem's President, however this drum was not located. One drum labeled "skin cleaner" was leaking.

According to D. Weston of VIAG, the company remains inactive and is having trouble getting ethanol from Europe. Within the tank farm, the first four tanks contain ethanol and the fifth tank contains diesel fuel. The red tank truck contains water

VIAG has had water from the on-site well analyzed and determined that it was free of contamination and suitable for their treatment process. OSC inquired if chloroform was included in these analyses, Mr. Weston was not sure.

K. May 26, 1989, OSC meets with Winston Turnbull, Director for VI Fire Services and Kirk Grybowski, Director for VI Emergency Management Services and briefed them on EPA's proposed removal action. Grybowski recommended meeting with the St. Croix hospital administrator and EMS's Deputy Director on St. Croix to discuss EPA's on-site decontamination procedures since neither the hospital or EMS is prepared to receive contaminated personnel.

L. May 30, OSC receives copies of letters from VIChem (thru Enforcement Programs) stating that "VIChem is prepared to make its best effort to undertake the clean-up at the site" and "As you know, I feel the clean up needed at the site is quite manageable...". This contradicts VIChem's reply to the Notice Letter in which VIChem stated "...I have to indicate for the record that Virgin Island Chemical Company has no funds with which to have any required work carried out and has no staff to perform such work."

M. OSC coordinates with Enforcement Programs and is informed that ORC and NY/CC will meet on June 1 to develop an enforcement strategy.

N. June 2, 1989, OSC has received comments on draft action memo from AD-REPP and at his suggestion will include resampling of wells contaminated with chloroform in the scope of work for this removal.

3. FUTURE PLANS AND RECOMMENDATIONS:

A. OSC will investigate the possibility of developing a MOU with USCG for MSO-San Juan HazMat assistance during the removal action.

B. OSC will request ATSDR to notify and inform the St. Croix hospital and EMS of EPA's proposed activities and decontamination procedures which will be available.

C. OSC will prepare notification procedures and a contingency plan for the prison at Golden Grove.

D. OSC will develop CAMEO plume models for various weather conditions and air release scenarios.

E. OSC will formally request DPNR to monitor the site prior to EPA's mobilization, investigate the possibility of DPNR ordering SCSK and VIAG off-site during EPA's removal action, and request a list of appropriate agencies and politicians to notify concerning the proposed removal action.

FURTHER
POLREPS
FINAL POLREP _____ FORTHCOMING ☒ SUBMITTED BY Douglas R. Kodama
Douglas R. Kodama
OSC
Response and
Prevention Branch

DATE RELEASED June 7, 1989

U.S. ENVIRONMENTAL PROTECTION AGENCY

POLLUTION REPORT

DATE: February 8, 1989

Region II
Response and Prevention Branch
Edison, New Jersey 08837
(201) 548-8730 - Commercial and FTS
24 Hour Emergency

TO: W. Muszynski, EPA
S. Luftig, EPA
R. Salkie, EPA
M. Randol, EPA
G. Pavlou, EPA
ERD, WH-548B
(E-Mail)
B. Sprague, EPA
G. Zachos, EPA
P. Gelabert, EPA
A. Smith, DPNR
LEPC
TAT

POLREP NO: One (1)
INCIDENT/SITE NO.: N/A
POLLUTANT: Lab Chemicals, Alcohols, Solvents, Acids
CLASSIFICATION: Major
SOURCE: Virgin Island Chemical Company (VI CHEM)
LOCATION: St. Croix, US Virgin Islands
AMOUNT: 800 Lab Chemicals, 400 Drums, 22 Tanks
WATER BODY: Groundwater, Caribbean Sea

1. SITUATION:

A. The Virgin Island Chemical Company (VICHEM) site is located on the Island's south side. The site is situated on Route 66, approximately 0.5 miles due north of the Alexander Hamilton Airport. The site covers approximately 3.5 acres and is bordered to the north by an intermittent stream that originates on the north side of the Island and discharges into the Caribbean Sea.

A number of residences and industries are located as close as one-tenth of a mile from the site. In addition, several well fields are located in the vicinity of the site. The St. Croix prison is located 1/4 mile downwind from the site. DPNR stated it would be very difficult to evacuate prisoners in the event of a chemical fire at the site.

B. The site consists of a main warehouse building including offices, the reactor, centrifuge and maintenance buildings and fourteen above ground tanks. Living on-site adjacent to the main warehouse building are anywhere from 15 to 25 guard dogs housed in individual kennels.

Also living on-site is the kennel operator, Kate Wesp. A house trailer is located on the concrete surface near the

loading dock. It is also apparent that Wesp uses the restroom facilities and kitchen area in the main building as living quarters.

C. Presently occupying the site is the company VIAG Fuels, Inc. VIAG utilizes some office space in the main building and also has ethanol stored in four of the aboveground tanks. The principals of the firm plan to begin an alcohol dehydration project on-site in the near future.

D. The 3.5 acre site is owned by Charles H. Steffey, Inc. On May 1, 1969 Steffey leased the property to Houston Chemical Industries, Inc. Houston Chemical assigned the lease to Caribe Chemical Company, Inc., (subsequently known as Pierrel America, Inc.) on March 20, 1972.

On June, 1978, Pierrel America assigned the ground lease to Cooper Laboratories, Inc. (Cooper). On October 30, 1979 Cooper Laboratories assigned the lease to its subsidiary, Island Chemical Company (ICC). On November 1, 1979, Cooper Laboratories sold all of the stock of ICC to the predecessor of Berlex Laboratories, Inc. (Berlex). On September 14, 1984, ICC sold its assets to Virgin Island Chemical Company (VICHEM).

This background information has been supplied by the Virgin Islands Department of Planning and Natural Resources (DPNR).

E. Limited PRP (Berlex) site clean-up and soil excavation has taken place in the recent past under a RCRA enforcement action. Berlex is currently finalizing a scope of work for a remedial investigation/feasibility study addressing soil and groundwater contamination.

2. ACTION TAKEN:

A. On Tuesday, January 31, 1989, the U.S. EPA Response and Prevention Branch conducted a Preliminary Assessment and Removal Evaluation at the VICHEM site. This action is in reply to a request from George Pavlou, Associate Director Enforcement Programs dated 1/23/89.

B. This preliminary assessment was coordinated with and observed by DPNR personnel. DPNR's primary concerns with this site are the threat of fire/explosion, and the threat (or actual) migration of spilled materials to the surrounding soil and groundwater.

C. The initial entry into the main warehouse building was made at 0930 hrs. on January 31, 1989. All safety procedures were followed for a level "B" entry in a hot climate. Air monitoring was conducted with OVA, HNU, CGI, Radiation Detector, HCN Monitox, H₂S Monitox and pyridine

Draeger tubes. All air monitoring readings were equivalent to background (taken off-site), except for in room 5 of the drum warehouse which showed ambient conditions 1 unit above background on the OVA. All further entries were made in level "C".

D. Three areas were delineated based upon the type of material located in each of these areas are:

- A. The laboratory (main building).
- B. The drum storage warehouse (main building).
- C. The grounds outside the building including the reactor and centrifuge.

Each of these areas will be described below.

1. Laboratory

813 containers of laboratory reagents and unknown liquid and solid material are located in this area. Some of the more dangerous items of note are as follows:

- a. Sodium metal (2 boxes). Water reactive.
- b. Ethyl Ether (6 cans). Potential explosive.
- c. Diisobutyl aluminum hydride (4 lecture bottles). Spontaneously combusts in air.
- d. Potassium cyanide (2 bottles). Poisonous. Stored near acids, potential for release of hydrogen cyanide gas.
- e. Phosphorous pentoxide (1 bottle). Reactive.
- f. Sodium hydride (1 bottle). Water reactive.
- g. Two flammable storage cabinets containing various materials and unknowns.
- h. Two office type storage cabinets. One cabinet has spilled material on the top shelf which has dripped downward to mix with other chemicals.

Many other chemicals exist in the laboratory, as well as many containers with unknown materials. All the chemicals which had dates are at least five years old.

2. Drum Storage Warehouse

In the main warehouse are located approximately 400 drums, of these, 211 are green painted drums which have the words ETHYL ALCOHOL stenciled on the lid. The condition of the ethyl alcohol drums vary from fairly sound to extremely deteriorated. Some of the drums consist of only a rusted shell with gaping corroded holes. A rough estimate shows that 100 are empty and 100 contain material. This material may be some type of sludge. Other materials found are as follows:

- a. Laboratory unknowns (75 containers less than 1 gal.)
- b. Methanol (5 x 55 gal.)
- c. Glacial acetic acid (13 x 55 gal.)
- d. Benzyl acetate (21 x 55 gal.)
- e. Toluene (8 x 55 gal.)
- f. Antifreeze/glycol (20 x 55 gal.)
- g. Benzyl chloride (28 x 55 gal.)
- h. Salicylic acid (27 fiber drums)
- i. Methyl isobutyl carbinol (12 x 55 gal.)
- j. Sodium hydroxide (12 x 55 gal.)
- k. Bulging drum, unmarked (1)
- l. Drums in which some type of reaction has taken place, lid popped off (2)
- m. Drums of known and unknown material.
- n. Paint (97 x 5 gal. - 21 x 1 gal.)
- o. Cylinder chlorine (1 poor condition).
- p. Cylinder hydrogen chloride (1 deteriorated condition).
- q. One drum of sulfonic acid, broken and leaking its contents.
- r. A cistern with PVC pipe leading to a pumping system outside the building.

3. Outside Grounds

An inspection of the reactor and centrifuge and maintenance buildings revealed various production materials including lubricating oils; propane; oxygen and acetylene cylinders; filter media; ethanol; assorted paints and some sodium hexa-meta phosphate. Some of the oil drums are leaking.

Scattered around the facility are eight stainless steel tanks with quantities of unknown liquid varying from empty to three quarters full. A large storage tank is on site along with numerous pressure and reaction vessels. Fourteen large green storage tanks are also on-site. Ten are planned to be used in the alcohol dehydration project. Four of the ten are full of ethanol. The other six are empty. The remaining four not being used are empty and unsound.

E. The Governors office Department of Fire Services was contacted to assess local chemical fire control capabilities. Three fire companies are located on the island with the nearest to the site being Grove Place. All firefighting personnel are equipped with SCBA, however, only some have had formalized chemical hazard training. A limited amount of foam capability is available.

3. FUTURE PLANS AND RECOMMENDATIONS:

A. The USEPA CERCLA Enforcement Program is actively pursuing PRP involvement in a site clean-up and drum removal.

B. An action memo and disposal plan will be drafted by this branch in the event the PRP's fail to act promptly.

FINAL POLREP _____ FURTHER
POLREPS
FORTHCOMING X SUBMITTED BY Douglas R. Kodama
Douglas R. Kodama,
OSC
Response and
Prevention Branch

DATE RELEASED Feb 8, 1989

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

AUG 8 1989

REGION II

DATE:

SUBJECT:

Preliminary Assessment, Removal Site Evaluation, and Funding
Authorization Request for a CERCLA Removal Action at the Virgin
Island Chemical Company, Inc. Site, St. Croix, U.S. Virgin
Islands - ACTION MEMORANDUM

FROM:

Douglas R. Kodama, On-Scene Coordinator
Response and Prevention Branch

TO:

William J. Muszynski, P.E.
Acting Regional Administrator

THRU:

Stephen D. Luftig, Director
Emergency and Remedial Response Division

I. EXECUTIVE SUMMARY

On January 23, 1989, Mr. George Pavlou, Associate Director for Enforcement Programs, formally requested that the Response and Prevention Branch conduct a removal evaluation at the Virgin Island Chemical Company site in St. Croix, U.S. Virgin Islands. A preliminary assessment, site inspection and removal site evaluation were conducted on January 31 and February 1, 1989.

Unstable and reactive hazardous materials are present in a building and on the grounds at this inactive chemical plant. Unknown contaminants are migrating off-site into the adjacent soil and potentially the ground water. Hazardous substances present include chlorine and hydrogen chloride, both of which are contained in extremely deteriorated cylinders, sodium metal a water-reactive material posing a threat of fire and potassium cyanide. Other reactive materials include diisobutyl aluminum hydride (a pyrophoric liquid), phosphorus pentoxide, sodium borohydride, sodium hydride and ethyl ether (potentially shock-sensitive).

Five businesses are adjacent to the facility and the St. Croix Prison at Golden Grove is located approximately one-quarter mile downwind from the site. An air release or fire at this chemical plant could adversely affect the prison, businesses and area residents.

The proposed removal action will address all above ground containerized materials and is expected to take eight to ten months to complete. The estimated project ceiling is \$1,840,000 of which \$1,262,000 is for mitigation contracting.

2.10

ACTION MEMO, SIGNED

8/8/89

II. BACKGROUND

A. Site Setting/Description

The Virgin Island Chemical Company (VIChem) is located on Plot 13Q of Estate Bethlehem Middle Works off of the Melvin Evans Highway (Route 66) in St. Croix, U.S. Virgin Islands. Located on the south side of the island near the western end of St. Croix (Figure 1), the 3.5 acre site has a gently rolling topography ranging in elevation from 10 to 30 feet above sea level. The site is bordered on the north by an intermittent stream which originates on the north side of the island and discharges to the Caribbean Sea. Runoff from the site enters this unnamed intermittent stream.

The Caribbean climate is typical of the Neotropics. Temperatures vary from 70°-95° Fahrenheit with a relative humidity in excess of 60%. Winds are fairly constant at 10-20 miles per hour and are generally from the eastern quadrant as they pass over the Caribbean Sea. Seasonal rains in winter and summer are common. Hurricanes and tropical storms may occur at any time during the year, but are more likely during the summer and fall.

The surrounding area is predominantly commercial with five businesses adjacent to the site. Downwind, approximately one-quarter mile northwest of the site is the St. Croix Prison at Golden Grove (Figure 1). Several residences are located one-third mile north of the site at Upper Bethlehem and three-quarters of a mile northwest of the site at Golden Grove. South of the site (upwind) is one residence within one-tenth of a mile, a quarry, the Melvin Evans Highway and the Alexander Hamilton Airport.

The site property is currently owned by the Charles H. Steffey Holding Corporation. This landowner originally leased the land on a 30 year lease to Houston Chemical Industries on May 1, 1969. On March 20, 1972, Houston Chemical assigned the lease to Caribe Chemical Company, Inc. (subsequently known as Pierrel America, Inc.). On June 30, 1978, Pierrel America assigned the ground lease to Cooper Laboratories, Inc.. On July 21, 1978, Cooper Laboratories incorporated Island Chemical Company as its subsidiary to assume its production activities at the facility. On October 30, 1979, Cooper Laboratories assigned the lease to its subsidiary, Island Chemical Company. On November 1, 1979, Cooper Laboratories sold all of the stock of Island Chemical Company to the predecessor of Berlex Laboratories, Inc. (a subsidiary of Schering-Berlin Inc.). On September 14, 1984, Berlex sold Island Chemical Company assets and assigned the lease to Virgin Island Chemical Company (VIChem). VIChem is currently inactive and attempting to sell company assets and reassign the lease.

Prior to 1980, it is believed that the facility was used for the manufacture of pharmaceutical chemicals, primarily phenacetin, ethoxyquin and quinidine. Berlex reportedly used this facility to make quinidine gluconate used for the production of quinine. Quinine is an antimalarial medicine and flavoring in carbonated beverages. VIChem produced benzyl acetate by reacting benzyl chloride with acetic acid. Benzyl acetate is used in perfumes, flavorings, resins, lacquers, polishes, printing inks and varnish removers. In 1985, VIChem also began producing benzyl salicylate which is used as a perfume fixative, solvent for synthetic musk, sun-screening lotions and soap odorant.

In 1984, U.S. Resources and Chemicals, Inc. began leasing a portion of the facility from VIChem, and shortly thereafter started an alcohol dehydration operation. U.S. Resources transferred the lease and operation to VIAG Fuels, Inc. (VIAG). VIAG currently owns the alcohol dehydration process equipment and is presently inactive. According to David Weston, President of VIAG, there is an oral agreement between Chase Manhattan Bank (VIChem's mortgage bank), VIChem and VIAG in which VIAG currently provides site security. Also on-site at the present time is the St. Croix Security Kennels (SCSK). Dog kennels for 20 to 30 guard and attack dogs are present and the Secretary/Treasurer for SCSK lives on-site in a trailer.

B. Quantity and Types of Substances Present

The VIChem process facility was set up for batch and semi-continuous chemical manufacture. The process area, east of the maintenance and utility building (Figure 2) consists of two open-bay reactor areas and a centrifuge/dryer building. The six reactors are either glass-lined or stainless steel and are agitated, jacketed and have overhead condenser systems. Four of these reactors are also equipped with distillation columns. The centrifuge/dryer building contains various centrifuges, dryers, filters and grinding equipment. During the January 1989 preliminary assessment, inspection of accessible areas of the reactors and the centrifuge/dryer building revealed that they were empty of raw materials and product.

West of the main building is the tank farm which contains fourteen 8000 gallon tanks. Four of these tanks contain ethanol and one tank contains diesel fuel owned by VIAG and used to fuel their alcohol dehydration process. The remaining tanks in the tank farm are empty.

The main building and warehouse (areas 1,3,4,5 and 6 on Figure 3) contain approximately 400 drums (drum inventory, Table 2). Two hundred of these drums are labeled ethyl alcohol and half of these are empty. The condition of the ethyl alcohol drums varies from fairly sound to extremely deteriorated. Some of the other materials in the warehouse which are in deteriorated or leaking

containers include a cylinder of chlorine, one cylinder of hydrogen chloride, one unlabeled bulging drum, two drums with unknown contents in which a reaction has taken place causing the lids to come off and dispersing a white crystalline material, one drum of sulfamic acid which is broken and is leaking its contents.

The deterioration of these containers has been accelerated by leaks in the warehouse roof, causing portions of the warehouse floor to be flooded after it rains. The accumulation of rain water on the floor allows spilled materials to mix and is eventually discharged to the ground east of the warehouse near the septic tank.

The majority of the remaining drums contain flammable, poisonous, combustible or corrosive materials. Although some of these drums are in poor condition, they have not yet been severely impacted by rain water from the leaking roof.

The two laboratories within the main building (areas 11,15,18 and 22 on Figure 3) contain over 800 laboratory reagent containers (lab inventory, Table 1). Some of the more dangerous materials within the labs are: sodium metal (water-reactive), ethyl ether (formation of shock-sensitive peroxides), diisobutyl aluminum hydride (air-reactive), potassium cyanide stored near acids (hydrogen cyanide air release), phosphorus pentoxide (water-reactive), sodium hydride (water-reactive), sodium borohydride (water-reactive), and approximately 75 unknown materials in reagent-size containers. At the time of EPA's removal site inspection on February 1, 1989, the water from the leaking warehouse roof had not affected the lab areas.

According to the June 1978 "Quinidine Sourcing Project" written for Cooper Laboratories and attached as Exhibit B to Civil Action No. 88-1346-Y "Certification of Michael C. Chester", both diisobutyl aluminum hydride and sodium metal were necessary for converting cinchona bark into quinidine gluconate. According to Exhibit C of this document, Cooper Laboratories experimented with this process from November 1978 to October 1979.

Table 3 lists materials on-site which are CERCLA hazardous substances and the statutory source for this designation. Table 4 lists toxicological effects of some of the compounds found at the site.

C. National Priorities List Designation

This site is not on the National Priorities List. It has not been submitted for ranking.

III. THREAT

A. Threat of Exposure to the Public and the Environment

Five categories of threats exist at this site: threat of fire/explosion, threat of direct contact, threat of an air release from the deteriorated hydrogen chloride and chlorine cylinders, the multiple threats posed by the leaking roof in the warehouse, and the improper storage of reactive hazardous materials at this inactive facility.

Neither of the two companies presently operating at the site (SCSK, VIAG) have qualified personnel to safely handle or monitor hazardous materials stored at the facility. The threat of exposure through direct contact, ingestion or inhalation exists for personnel employed by these companies. All personnel have free access to the labs and warehouse area. Tampering with some of the reactive materials or materials in deteriorated containers could result in serious injury or death.

Incompatible materials are stored in close proximity in the laboratories and the warehouse. In addition, the potential for adverse reactions is real and will continue to increase as the chemicals age in a hot and humid climate and are subject to persistent winds laden with saline moisture from the Caribbean Sea and rain water from the leaking warehouse roof. At least three examples of reactions taking place are evident in the drum storage area. These consist of one bulging drum and two drums in which an unknown crystalline material has exerted enough pressure to push open the drum lids and dispersed this material to the surrounding floor (photo #16). An unknown lab reagent has leaked its contents within one of the reagent storage closets (photo #10 and #11).

During a fire, explosion or air release from VIChem, nearby residences, businesses, the St. Croix prison and people using the Melvin Evans Highway could be severely impacted by toxic-laden smoke or plume. There are three fire departments on St. Croix which would respond to a fire at this facility. Although they have a number of self contained breathing apparatus, the required OSHA training is limited for qualified responders to hazardous material incidents.

In addition, there is another exposure pathway for direct contact and ingestion. Groundwater contamination by chloroform has been well documented by EPA for potable wells in the immediate vicinity of the VIChem facility. The March 13, 1986 RCRA Enforcement investigation, conducted by the Surveillance and Monitoring Branch, revealed chloroform contamination in the on-site production well. During March and November 1988, the Response and Prevention Branch conducted well sampling and

analyses at the nearby Fairplains wells. These wells are located between VIChem and the St. Croix prison and are a major source of drinking water on the island. Chloroform contamination was found in Fairplains wells number 6, 8 and 9 in concentrations ranging from 11 ug/l to 75 ug/l (ug/l=micrograms per liter). The Virgin Island Port Authority (VIPA) well number 2 is located approximately one-half mile west of the site and was also contaminated with chloroform at a concentration of 11 ug/l.

During the March 1986 RCRA Enforcement investigation, the inspectors observed four empty 55 gallon drums of chloroform. During the Response and Prevention Branch's site investigation in January 1989, one 55 gallon drum and one four liter bottle of chloroform were observed. There are no other known chemical industries in the Upper Bethlehem/Golden Grove area.

B. Evidence of Extent of Release

The warehouse area of the main building contains several drums which have leaked or are presently leaking. A 55 gallon fiber drum of sulfamic acid has been extremely deteriorated by the flooding of the warehouse floor from the leaking roof (photo #17). Two unlabeled drums show signs of an uncontrolled reaction and have dispersed some of their contents to the surrounding warehouse floor (photo #16). Bags of tartaric acid have deteriorated and released some of the acid to the floor as well (photo #21). Several unlabeled drums are in such poor condition that any material in them has already been released (photo #19). There may be other releases which have occurred which are not as obvious as those presented in the photodocumentation. Air monitoring in the warehouse area during the initial entry in January 1989 revealed minor elevated readings on the organic vapor analyzer (1 to 2 units above background). No other elevated air monitoring readings were observed.

Leaks in the warehouse roof have allowed for the mixing of spills in the warehouse and their subsequent release to the environment. As the rain water accumulates on the warehouse floor it eventually reaches a point where the water flows out of the east side of the warehouse (areas 2 and 4, Figure 3) and is discharged to the soil adjacent to this area of the warehouse.

Investigations conducted by the Surveillance and Monitoring Branch (SMB) in 1985 and 1986 revealed that process waste water from the facility was discharged into the intermittent stream adjacent to the site. Analyses of sediments from this creek bed downstream from the discharge point showed that contamination consisted of xylene, di-n-octyl phthalate, 1,4-dichlorobenzene, 1,2-dichlorobenzene, naphthalene, fluorene, phenanthrene, aliphatic and aromatic hydrocarbons, arsenic, beryllium, chromium, copper, lead, nickel, antimony, and zinc. The on-site production well had detectable levels of arsenic, beryllium,

cadmium, chromium, copper, mercury, antimony, and zinc in addition to the previously mentioned chloroform contamination.

There are four possible sources for the contamination listed above. 1) A 17,000 gallon underground concrete pit used to contain production wastewater and sludges. This pit was abandoned and sealed with concrete in 1985. 2) The former wastewater drainage line leading from the process water pit to the intermittent stream was constructed of welded 55 gallon drums. This pipeline was excavated and replaced when it was discovered that numerous leaks and punctures had allowed wastewater to contaminate the surrounding soil. 3) Soil contamination as a result of leakage from a broken drainage line originating at a laboratory drain. 4) Spills associated with material transfer and tank or process line leakage.

C. Previous Actions to Abate Threat

As part of the sales contract with VICHem, Berlex (Island Chemical Company) was required to clean up any contamination present at the site. Berlex hired Enviro-Sciences, Inc. (ESI) of Denville, NJ, to survey the site and certify it as environmentally clean. ESI's sampling survey disclosed four areas of contamination. Two areas within the tank farm were found to be contaminated, primarily with toluene. This contamination was thought to be from process or transfer spills. The other two areas, underneath the concrete loading dock and a nearby trench were contaminated primarily with pyridine. This contamination is believed to be from the leaking laboratory drain. The quantity of contaminants was estimated at 125 pounds of toluene and 120 pounds of pyridine.

ESI recommended on-site treatment of the contaminated soil. The toluene contaminated soil was to be placed in a drying oven equipped with carbon filters, so that emission rates did not exceed the 200 ppm Threshold Limit Value (TLV) for toluene. The pyridine contaminated soil was to be treated by cutting the concrete pad and tilling the soil every two to three days and allowing the soil to aerate. A structure was to be built over the area to prevent soil saturation from rainfall.

During SMB's September 1986 investigation these two on-site treatment procedures were confirmed, however some discrepancies were noted from the process outlined above. The drying oven was employed for the volatilization of toluene from the soil, but the charcoal filters to absorb the volatilized material were not observed. The contaminated soil was tilled and aerated using a backhoe and then covered with a large synthetic liner. No permanent structure had been built to prevent future saturation of the soil from rainfall. The synthetic liner was not owned by Berlex but was rented. During RPB's January 1989 investigation

this area was covered by concrete and a new loading dock had been built. It is adjacent to the dog kennel area and trailer used for living quarters by the kennel operator.

In addition, on October 10, 1985, SMB was informed by Dr. A.L. Kyles, Vice President, Enviro-Sciences, that 192 55 gallon drums of waste were removed by Berlex for disposal. This material consisted of process pit water and sludge, drums and soil from the wastewater drainage line, one 55 gallon drum of water/toluene, and toluene contaminated soil. No copies of manifests were received to confirm these shipments. At the time (1985) an additional 33 drums of waste belonging to Berlex were staged on site awaiting sample analyses and disposal. Data on the sampling performed by Berlex was never received by SMB to confirm the clean up by Berlex. Also, the re-routing of existing laboratory discharges to a self-contained unit was not observed.

When Region II became aware of chloroform contamination in the public wells in St. Croix a health evaluation was conducted. According to the Agency for Toxic Substances and Disease Registry (ATSDR), chloroform is a B-2 carcinogen and has been shown to be a carcinogen in animals but not in humans. The Maximum Contaminant Level (MCL) for chloroform is 100 parts per billion (ppb). If other halogenated organics were present along with the chloroform, the 100 ppb MCL would be for all halogenated organics present. Chloroform contamination ranged from 11 to 75 ppb and no other contaminants were detected. Since the MCL was not exceeded, a CERCLA/SARA response was not initiated.

D. Current Actions to Abate Threat

The threat of direct contact to the general public is currently being limited by a perimeter chain link fence and site security maintained by VIAG and SCSK. There is evidence that at times the guard dogs are allowed to roam through the yard of the facility.

In a letter dated March 1, 1989, to Region II's New York/Caribbean Compliance Branch, Fred Schubert, President of VIChem, informed EPA that during his February 21-23, 1989 site visit "a small amount of non-contaminated rain water was swept out of the warehouse floor, the floors of the warehouse were swept and all sweepings were collected in an open head drum which was covered and remains on the site and a single five gallon pail of a laboratory solvent was placed in a second open head drum which was covered and remains on the site". No sampling/analyses were conducted to verify if the rain water or floor sweepings were contaminated. The type of laboratory solvent overpacked is unknown. Mr. Schubert also stated "non-chemical waste (empty boxes, waste paper, etc.) was removed from the site". Cans of paint were staged in one location outdoors.

IV. ENFORCEMENT

Berlex Laboratories, Inc. has submitted a work plan to EPA for the performance of environmental sampling at the site. The work plan is being finalized, after which it is expected that Berlex will implement the work called for by the work plan, pursuant to an Administrative Order to be issued by EPA.

On March 13, 1989, Notice Letters were sent to the following Potentially Responsible Parties (PRPs): Berlex Laboratories, Inc., Island Chemical Company, Inc., CHS Holding Corporation, Virgin Island Chemical Company, and VIAG Fuels, Inc.. None of these PRPs indicated that they were willing to conduct or finance a drum removal or other appropriate CERCLA response.

VIChem has indicated that it would not object to or obstruct EPA's performance of the removal action described herein. EPA will also seek VIAG's and SCSK's agreement to not operate or have personnel (or dogs) on-site during working hours of the removal action or if conditions at the site (stability) warrant evacuating the site of non-essential personnel. It may be desirable to have SCSK maintain site security during interim periods when EPA has temporarily demobilized for analytical and transportation/disposal coordination. The dog kennel is a very effective deterrent for potential trespassers or vandals. Further, EPA will seek to ensure that VIAG properly removes its numerous paint cans and two drums of water treatment chemicals at the site.

Four of the tanks currently contain ethanol. VIAG does not own this ethanol; however, they intend to buy this material when their company becomes fully operational. Enforcement Programs will seek assurances from VIAG that VIAG intends to buy the ethanol from the current owner of this alcohol, Ethanol Corp. of Birmingham, Alabama, and that VIAG will take responsibility for this material by using and storing it properly. This action will generate a cost savings to the Region in that 40,000 gallons of product will not have to be disposed of or recycled by EPA. The tanks appear sound and should provide continued safe storage of the ethanol.

V. PROPOSED PROJECT AND COSTS

A. Objective of the Project

The overall objective of this removal action will be to reduce the threat of fire, explosion, air release and direct contact.

The scope of this response will be to continue site security, stabilize reactive, leaking or weakened containers, and dispose of above ground containerized materials and resample public wells contaminated with chloroform.

For the purposes of planning, this response will be divided into three phases. The first phase of the project will involve activities at the site which reduce the most immediate potential for fire/explosion or air release and stabilize leaking and weakened containers. A security service will be provided during those times of the removal action when work is not being performed at the site. The activities and actions of the first phase are listed below.

Phase 1:

- 1) Stabilize, detonate/treat, or recycle air-reactive, water-reactive and shock-sensitive materials, and the deteriorated cylinders.
- 2) Sample and overpack or transfer to new drums all other containerized materials.
- 3) Contact potential recyclers in the Caribbean area (USVI and Puerto Rico) and coordinate recycling of usable product if possible and appropriate. Recyclers outside the Caribbean area may not be considered. This is due to the possibility of a recycler rejecting a product. If this were to occur with a United States mainland recycler, the cost of transportation from and back to the site would far exceed any potential cost savings to be realized through recycling.
- 4) Segregate materials by hazard class, and separate incompatible materials. Relocate and stage all overpacked containers in an area of the warehouse where they will not be impacted by rain water from the leaking roof. If dry warehouse space is limited, overpacked drums will be placed on pallets and covered with waterproof tarps.
- 5) Conduct sampling of the Fairplains and VIPA wells and analyze for chloroform contamination.

EPA will not make capital improvements to the main building by repairing the leaking warehouse roof. All sound and usable tanks will be left on site. Except for the 40,000 gallons of ethyl alcohol discussed previously, the contents of other tanks will be disposed of.

Any on-site treatment or detonation (on- or off-site) will be fully coordinated with the St. Croix Local Emergency Planning Committee (LEPC) and U.S. Virgin Islands Emergency Response Commission (VIERC). If these commissions are not established or fully functional by this time, these actions will be coordinated with the Virgin Islands Department of Planning and Natural Resources (DPNR) and appropriate emergency management agencies.

Phase 2:

- 1) Continue recycling efforts.
- 2) Conduct verification analyses for known materials and waste characterization for unknown materials or labeled materials which may have been tampered with.
- 3) Conduct disposal analyses for bulked unknown samples.
- 4) Based on this analytical information, coordinate the transportation and off-site disposal of all remaining materials.

Phase 3:

- 1) Continue recycling efforts.
- 2) Package and label containers for transportation to the pre-arranged disposal facility.
- 3) Site demobilization and discontinue site security.

Use of disposal facilities in Puerto Rico will be considered. However, these facilities may not be in compliance with appropriate RCRA regulations.

Due to the fact that transportation for off-site disposal will be by water carrier, all drums leaving the site will be overpacked or in new drums. Materials will not be bulked in tanks or sealed roll-off containers in order to avert the possibility of an adverse reaction occurring during transportation. The increase in cost due to this action will outweigh the risks associated with a mode of transportation which will take a relatively long period of time during which mixing by wave action on the ship and heat from the tropical environment persists.

B. Project Estimated Costs

The following synopsis of the estimated costs is based on information obtained from several sources. The ERCS cost data is based on the OSC's copy of the ERCS contract. Several OSCs and OSC Reports were consulted for on-site treatment cost estimates and typical costs for field purchases, rental equipment and other items while working in the Caribbean.

This is the first drum removal conducted in the U.S. Virgin Islands by Region II. Delays from the weather (rain storms, heat stress), supply and equipment deliveries, and other logistical complications are expected. Consequently, the ERCS contingency factor has been increased to 30%.

O.H. Materials will be the ERCS contractor for this removal, since they are the only Region II ERCS contractor to service the Caribbean area.

REMOVAL PROJECT CEILING COSTS

EXTRAMURAL COSTS

ERCS Cleanup Contractor	\$971,000
30% Contingency Factor	\$291,300
Rounded Mitigation Contracting Total	\$1,262,000
TAT Costs	\$105,000
Subtotal Extramural Costs	\$1,367,000
20% Contingency of Extramural Costs	\$273,400
Total Extramural Costs	\$1,640,400

INTRAMURAL COSTS

Direct Costs	\$50,000
Indirect Costs	\$150,000
TOTAL PROJECT CEILING	\$1,840,400
ROUNDED TOTAL PROJECT CEILING	\$1,840,000

C. Project Schedule

Approximately one month prior to the anticipated start date, the OSC and Response Manager from O. H. Materials will visit the site and review the scope of work, and develop strategies and a work plan. This will be necessary to determine which equipment and supplies will have to be shipped from the mainland.

Mobilization of equipment will take two weeks and mobilization of personnel will take two days. The first phase should take approximately three weeks. Analytical, transportation and disposal coordination will be the most time-consuming phase and may take six to eight months. After all disposal approvals have been obtained, the final phase for packaging, labeling and off-site shipment is anticipated to take three weeks.

All disposal activities will be conducted in accordance with CERCLA's off-site disposal policy and other applicable or relevant and appropriate regulations.

VI. RECOMMENDATIONS

Conditions at the VIChem site meet the criteria for a removal action under 40 CFR 300.65(b)(2) of the November 20, 1985 National Oil and Hazardous Substances Contingency Plan (NCP). These criteria are:

- 1) Actual or potential exposure to hazardous substances or pollutants or contaminants by nearby populations, animals or food chain (Section 300.65(b)(2)(i));
- 2) Actual or potential contamination of drinking water supplies or sensitive ecosystems (Section 300.65(b)(2)(ii));
- 3) Hazardous substances or pollutants or contaminants in drums, barrels, tanks or other bulk storage containers, that may pose a threat of release (Section 300.65(b)(2)(iii));
- 4) Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released (Section 300.65(b)(2)(v));
- 5) Threat of fire or explosion (Section 300.65(b)(2)(vi));

A removal action addressing containerized surface contaminants, pollutants and hazardous substances is consistent with Section 104(b)(2) of CERCLA as amended by SARA, in that this response will contribute to the efficient performance of long term remedial actions planned for this site.

The funds requested to initiate and complete this removal action will come from the Removal Advice of Allowance for Fiscal Years 1989 and 1990. Obligation of the necessary funds to complete this removal will occur in the first quarter of FY 1990. This action is in accordance with OSWER Directives 9360.0-18 and 9200.3-05.

I, therefore, recommend your approval of this request for a removal action under CERCLA as amended by SARA for the Virgin Island Chemical Company site. The estimated project ceiling for this removal is \$1,840,000 of which \$1,262,000 is for mitigation contracting.

Your authority to approve these project funds is pursuant to Assistant Administrator J. Winston Porter's May 25, 1988, redelegation memorandum, Delegation Number R-14-1-A.

APPROVED: William J. Porter

DATE: 8/8/89

DISAPPROVED: _____

DATE: _____

cc: (After approval is obtained)

J. Marshall, 2DRA
S. Luftig, 2ERR
R. Salkie, 2ERR-ADREPP
B. Sprague, 2ERR-RPB
M. Randol, 2OEP
E. Schaaf, 2ORC-NYCSUP
R. Gherardi, 2OPM-FIN
S. Anderson, PM-214F (EXPRESS MAIL)
T. Fields, OS-210
A. Smith, VIDPNR
C. Moyik, 2ERR-PS
L. Guarneiri, OS-210
J. Rosianski, 2OEP
P. McKechnie, 2IG
D. Henne, 2TATL ✓

ATTACHMENT 1: ERCS CLEANUP CONTRACTOR COSTS

PHASE 1

Mobilization (personnel and equipment)	\$30,000
Personnel Costs (Labor, Per Diem, Travel)	\$180,000
Equipment (Trailers, Heavy Equipment, Monitoring Equip.)	\$32,000
Materials	\$18,000
Total Costs for Phase 1	<u>\$260,000</u>

PHASE 2

Analytical Services (includes transportation)	\$80,000
Contingency for Resampling	\$30,000
Total Costs for Phase 2	<u>\$110,000</u>

PHASE 3

Mobilization (personnel and equipment)	\$30,000
Personnel Costs (Labor, Per Diem, Travel)	\$90,000
Equipment (Trailers, Heavy Equipment, Monitoring Equip.)	\$15,000
Materials	\$16,000
Transportation and Disposal of Wastes	\$450,000
Total Costs for Phase 3	<u>\$601,000</u>
TOTAL MITIGATION COSTS	\$971,000

ST. CROIX



WESTON

SPILL PREVENTION &
EMERGENCY RESPONSE DIVISION

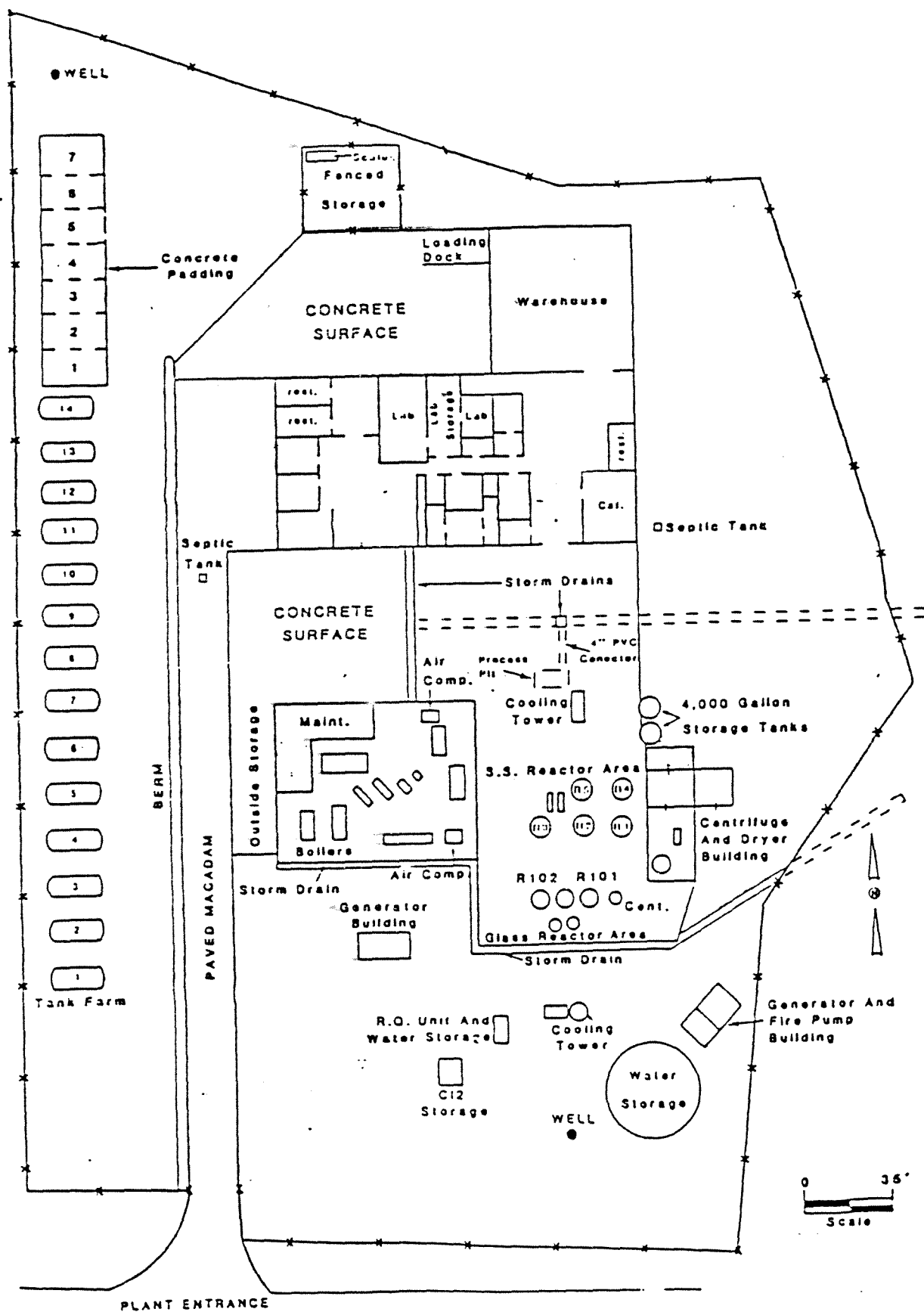
EPA PM
KODAMA

FIGURE 1
SITE LOCATION

In Association with ICF Technology Inc., C.C. Johnson & Associates,
Inc., Resource Applications, Inc., Geo/Resource Consultants, Inc.,
and Environmental Toxicology International, Inc.

TAT PM
MENTZEL

VI CHEM SITE
ST. CROIX US VI



SPILL PREVENTION &
EMERGENCY RESPONSE DIVISION

EPA PM
KODAMA

FIGURE 2
SITE DIAGRAM

In Association with ICF Technology Inc., C.C. Johnson & Associates, Inc., Resource Applications, Inc., Geo/Resource Consultants, Inc., and Environmental Toxicology International, Inc.

TAT PM
MENTZEL

VICHEM SITE
ST. CROIX US VI

FIGURE 3

Virgin Island Chemical Company Main Building Inventory Zones

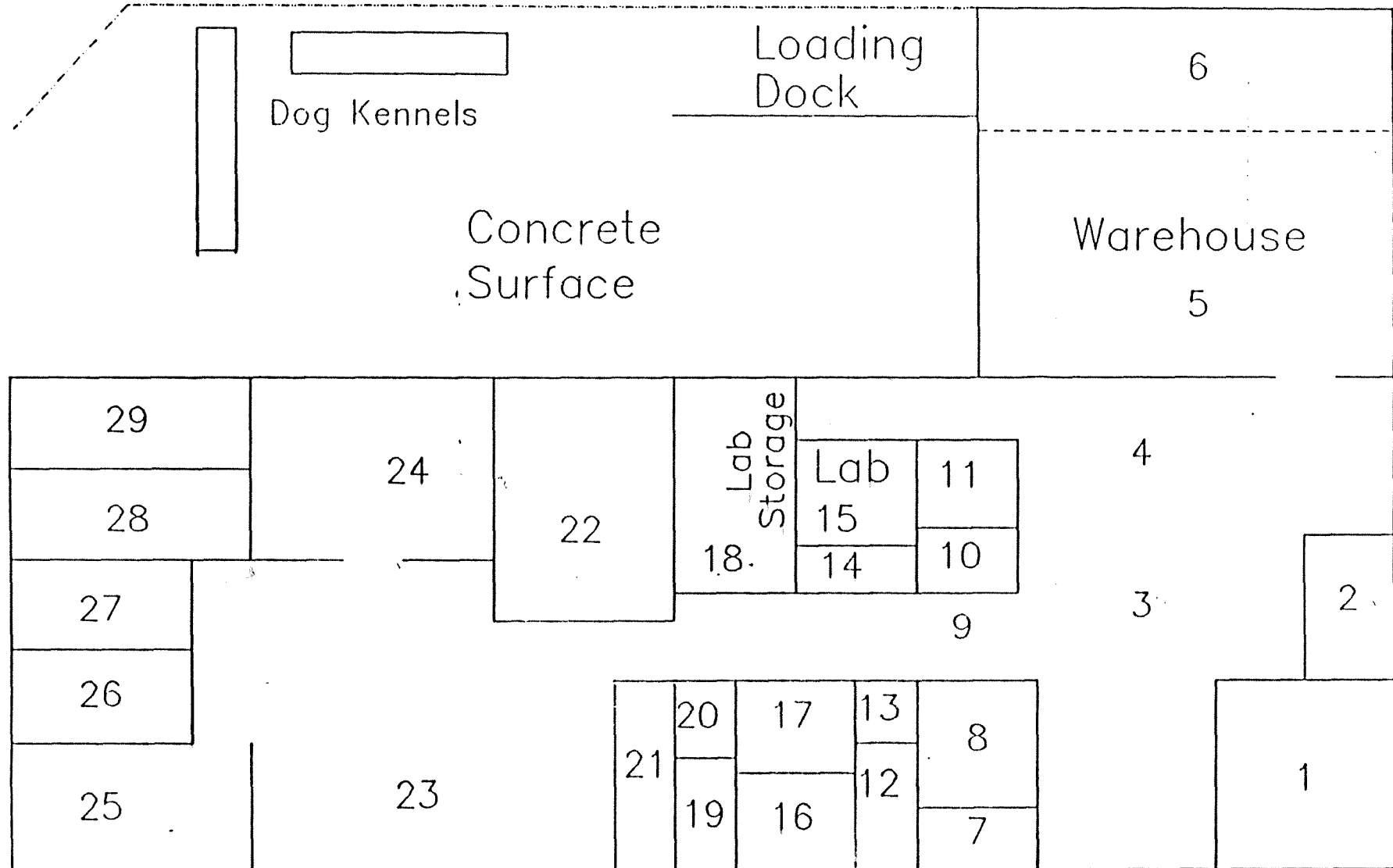
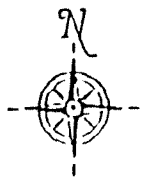


TABLE 1

Laboratory Reagent Inventory

CHEMICAL NAME =====	COMPANY =====	QTY ===	STATE =====
1,3-dinitrobenzene	Aldrich Chemical	100 g	solid
1-butanol	J.T.Baker Chemical	500 ml	liquid
1-chlorobutane	MCB	4 L	liquid
1-propanol	J.T.Baker Chemical	500 ml	liquid
18-Crown-6 99%	Aldrich Chemical	25 g	solid
2,2-oxydiethanol	Kodak	1 kg	liquid
2,6-dimethoxybenzoic acid 99%	Aldrich Chemical	25 g	solid
2,6-ditertiarybutyl p-cresol	Biesterfeld	500 g	solid
2-hydroxybenzyl alcohol 99%	Aldrich Chemical	25 g	liquid
2-hydroxyethyl ether	Aldrich Chemical	1 kg	liquid
2-methyl-1-butanol 99%	Aldrich Chemical	10 g	liquid
2-methylbutyl amine	American Laboratorie	15 g	liquid
3,3-dimethoxy benzidene	Kodak	100 g	solid
3-hydroxybenzoin acid	Aldrich Chemical	100 g	solid
4-chlorobenzene sulfonamide	Aldrich Chemical	100 g	solid
4-hydroxy 4methyl 2pentanone	Aldrich Chemical	500 g	liquid
4-hydroxybenzoic acid	Aldrich Chemical	50 g	solid
4-methylbenzo phenone 97%	Aldrich Chemical	50 g	solid
9-hydroxyflourene	Aldrich Chemical	2x25 g	solid
Acetic acid	MCB	2x5 lb	liquid
Acetone	Fisher Scientific	4 L	liquid
Acetonitrile	Supelco	1 box	liquid
Alkalinity C,D,E,G	Mogul Corporation	4x2 oz	liquid
Aluminum Chloride	Mallinckrodt	1 lb	solid
Aluminum chloride	Witco Chemical	500 g	solid
Ammonium acetate	Fluka	1 kg	solid
Ammonium acetate	Aldrich Chemical	2 kg	solid
Ammonium acetate purified	Jarchem Industries	250 g	solid
Ammonium hydroxide	Sargent Welch Scient	500 ml	liquid
Ammonium persulfate	J.T.Baker Chemical	2.5 kg	solid
Ammonium persulfate	J.T.Baker Chemical	500 g	solid
Ammonium thiocyanate	Fisher Scientific	500 g	liquid
Amyl alcohol	Mallinckrodt	1 pt	liquid
Arsenic trioxide	Fisher Scientific	2x113g	solid
Barium chloride	Drew Chemical	1 qt	liquid
Barium chloride	Mallinckrodt	500 g	solid
Barium chloride	Fisher Scientific	1 lb	solid
Barium hydroxide	Fisher Scientific	1 lb	solid
Benzaldehyde	J.T.Baker Chemical	500 ml	liquid
Benzene	Tenneco Oil	2x1gal	liquid
Benzhydrol	Kodak	100 g	solid
Benzoic acid	Mobay Chemical	1 lb	solid
Benzoin	Fluka	2x1 kg	solid
Benzoin 98%	Aldrich Chemical	4x500g	solid

07/14/89

TABLE 1

Laboratory Reagent Inventory

CHEMICAL NAME =====	COMPANY =====	QTY ===	STATE =====
Benzophenone	Aldrich Chemical	500 g	solid
Benzophenone	H&S Chemical	1 bag	solid
Benzophenone	Upjohn	500 g	solid
Benzophenone 99+%	Aldrich Chemical	50 g	solid
Benzoyl chloride	Mobay Chemical	1 lb	solid
Benzyl acetate 99%	Aldrich Chemical	100 g	liquid
Benzyl alcohol	Mallinckrodt	1 pt	liquid
Benzyl benzoate	Aldrich Chemical	100 g	liquid
Benzyl chloride	unknown	4 oz	liquid
Benzyl chloride	Velsicol	500 g	liquid
Benzyl cinnamate 98%	Aldrich Chemical	100 g	solid
Benzyl ether	Aldrich Chemical	1 kg	liquid
Benzyltriethylammoniumchloride	Aldrich Chemical	25 g	solid
Bismuth subnitrate	MCB	1 lb	solid
Bromine	Fisher Scientific	113 g	liquid
Bromophenol blue	Fisher Scientific	5 g	solid
Brucine sulfate	Fisher Scientific	1 oz	solid
Buffer solution pH 10.00	Fisher Chemical	500 ml	liquid
Buffer solution pH 4.00	Fisher Scientific	500 ml	liquid
Buffer solution pH 7.00	Fisher Chemical	500 ml	liquid
CAO-3 BHT	Sherwin Williams	1 bag	solid
Calcium sulfate anhydrous	W.A.Hammond Drierite	4x5 lb	solid
Cello-Seal	Fisher Scientific	25 g	liquid
Chloride F	Mogul Corporation	3 oz	liquid
Chlorodiphenyl methane 98%	Aldrich Chemical	100 g	solid
Chloroform	Fisher Scientific	4 L	liquid
Chromotropic acid Na salt	Fisher Scientific	25 g	solid
Cinnamaldehyde	unknown	2x1 kg	liquid
Citric acid anhydrous	J.T.Baker Chemical	500 g	solid
Citricacidtrisodiumdihydrate	Aldrich Chemical	1 kg	solid
Cobalt chloride	Fisher Scientific	2x1 lb	solid
Color standard 4	unknown	1 oz	liquid
Congo red	Fisher Scientific	25 g	solid
Copper metal	Fisher Scientific	500 g	solid
Cupric sulfate	Fisher Scientific	500 g	solid
Cupric sulfate	Mallinckrodt	500 g	solid
DPD #1,2,3 Reagents	Taylor Chemical	3x1 oz	liquid
Dibenzo 18-Crown-6 98%	Aldrich Chemical	50 g	solid
Dibenzoyl tartaric acid	Knoll Fine Chemicals	1 kg	solid
Dichloroethane 99%	Aldrich Chemical	1 kg	liquid
Dichlorophenyl methane 99%	Aldrich Chemical	25 g	solid
Dichlorotoluene 99%	Aldrich Chemical	100 g	solid
Diethylene glycol	Fisher Scientific	1 qt	liquid
Diisobutyl aluminum hydride	Texas Acres	4 cyl	gas
Diphenylmethane 99%	Aldrich Chemical	500 g	liquid

TABLE 1

Laboratory Reagent Inventory

CHEMICAL NAME =====	COMPANY =====	QTY ===	STATE =====
Diphenylthiocarbazone	Fisher Scientific	25 g	solid
Eosin Y	Aldrich Chemical	25 g	solid
Ether anhydrous	Fisher Scientific	4 qt	liquid
Ethoxyguin	unknown	4 oz	liquid
Ethyl acetate	Aldrich Chemical	5 gal	liquid
Ethyl acetate	MCB	5x1gal	liquid
Ethyl benzene	Dupont	1 qt	liquid
Ethyl ether 99%	Fisher Scientific	6x500g	liquid
Ferric ammonium sulfate	Fisher Scientific	500 g	solid
Ferric chloride	unknown	100 ml	liquid
Ferric chloride	Fisher Chemical	1 lb	solid
Ferric chloride anhydrous	Pennwalt Corporation	5x500g	solid
Ferric chloride anhydrous	Kodak	500 g	solid
Ferrous ammonium sulfate	Fisher Chemical	1 lb	solid
Formic acid	unknown	200 g	liquid
Glacial acetic acid	Fisher Chemical	5 lb	liquid
Hydrazine sulfate	Fisher Scientific	4 oz	solid
Hydrazine sulfate	Fisher Scientific	100 g	solid
Hydrochloric acid	MCB	2x6 lb	liquid
Hydrochloric acid	Fisher Chemical	3x1 L	liquid
Hydroxylamine hydrochloride	Fisher Scientific	1 kg	solid
Hydroxylamine hydrochloride	MCB	4 oz	solid
Iodine	Fisher Scientific	500 g	solid
Iron chloride anhydrous	BASF	500 g	solid
Isoamyl alcohol	Fisher Scientific	500 ml	liquid
Isobutyl alcohol	J.T.Baker Chemical	500 ml	liquid
Lead acetate	MCB	1 lb	solid
Lead nitrate	Fisher Scientific	100 g	solid
Lithium perchlorate	Aldrich Chemical	500 g	solid
Magnesium sulfate	Fisher Scientific	500 g	solid
Medical oxygen	MSA	1 cyl	gas
Mercuric chloride	Fisher Scientific	2x100g	solid
Mercuric oxide	Fisher Scientific	500 g	solid
Mesityl oxide	Aldrich Chemical	100 g	solid
Methanol	Fisher Scientific	4 L	liquid
Methenamine	Fisher Scientific	500 g	solid
Methyl alcohol	Mallinckrodt	1 gal	liquid
Methyl orange	Fisher Scientific	113 g	
Methyl red	Fisher Scientific	2x10 g	solid
Monochlorobenzene	PPG Industries	10 oz	liquid
N-methylaniline	Kodak	1 kg	liquid
Na salt of ME salicylate	Sattra Chemical	1 bag	solid
Niacin N.F.	Nepera Chemical	250 g	solid
Nitric acid concentrated	J.T.Baker Chemical	2x8 lb	liquid
Nitrobenzene	Fisher Scientific	1 qt	liquid

07/14/89

TABLE 1

Laboratory Reagent Inventory

CHEMICAL NAME =====	COMPANY =====	QTY ===	STATE =====
Non aqueous buffer soln.	Beckman Instruments	1 pt	liquid
Nutrizyme	Merck	2 oz	solid
Oil #3	Frich Oil	5 gal	liquid
Paraffin oil	Fisher Scientific	1 qt	liquid
Paraformaldehyde	MCB	1 qt	liquid
Paraformaldehyde prills 91%	Celanese Chemical	1 lb	solid
Perchloric acid	MCB	2x8 lb	liquid
Phenol red	Fisher Scientific	5 g	solid
Phenophtalein	Fisher Scientific	1 oz	solid
Phenylhydrazine	Fisher Scientific	4x4 oz	liquid
Phenylhydrazinehydrochloride	Fisher Scientific	2 lb	solid
Phosphorous pentoxide	Fisher Scientific	1 lb	solid
Piperazine	MCB	100 g	solid
Potassium bromide	Fisher Scientific	5x500g	solid
Potassium butoxide	Callery Chemical	50 g	solid
Potassium chloride	Beckman Instruments	2x6 oz	solid
Potassium cyanate	Fisher Scientific	1 lb	solid
Potassium cyanide	Fisher Scientific	500 g	solid
Potassium dichromate	Fisher Scientific	500 g	solid
Potassium ferrocyanide	Fisher Scientific	3 kg	solid
Potassium hydroxide	Mallinckrodt	2x1 lb	solid
Potassium hydroxide	Fisher Scientific	500 g	solid
Potassium iodide	Drew Chemical	1 qt	liquid
Potassium iodide	Fisher Scientific	2x500g	solid
Potassium periodate	Fisher Scientific	100 g	solid
Potassium platinate	Varlacold Chemical	5 g	solid
Potassium sulfate	Indiana Army Ammo Plant	250 g	solid
Potassium sulfate	Aldrich Chemical	500 g	solid
Potassium sulfate	unknown	50 g	solid
Potassium thiocyanate	Fisher Scientific	500 g	solid
Resorcinol	Koppers	3 bags	solid
Salicylaldehyde 99+%	Aldrich Chemical	100 g	liquid
Salicylic acid	Aldrich Chemical	100 g	solid
Salicylic acid	Aceto Chemical	500 g	solid
Salicylic acid sodium salt	Aldrich Chemical	100 g	solid
Sicapent	MCB	2.8 L	solid
Silica gel dessicant	Davison Chemical	2x1 qt	solid
Silver nitrate	J.T.Baker Chemical	1 oz	solid
Silver nitrate	Sargent Welch Scientific	30 g	solid
Sodium Chloride	Fisher Scientific	500 g	solid
Sodium acetate	Sattra Chemical	3 bags	solid
Sodium acetate anhydrous	Niacet Corporation	250 g	solid
Sodium acetate anhydrous	CDF Chimie Noth America	2x500g	solid
Sodium amide	Farchan Research Lab	500 g	solid
Sodium benzoate	Sattra Chemical	1 bag	solid

Laboratory Reagent Inventory

CHEMICAL NAME =====	COMPANY =====	QTY =====	STATE =====
Sodium benzoate	Dastech International	1 bag	solid
Sodium benzoate	Ishihara Corporation	250 g	solid
Sodium benzoate	Pfizer	100 lb	solid
Sodium borohydride	Fisher Scientific	4x25 g	solid
Sodium carbonate	Fisher Scientific	1 kg	solid
Sodium carbonate anhydrous	Mallinckrodt	1 lb	solid
Sodium chlorate	Hooker Chemical	1 box	solid
Sodium dichromate	Fisher Scientific	10 kg	solid
Sodium formate	unknown	5 lb	solid
Sodium hydride	Thiokol/Ventron Division	1 lb	solid
Sodium hydroxide	Mallinckrodt	500 g	solid
Sodium metal	RMI	2 boxes	solid
Sodium nitrite	Fisher Scientific	2x500g	solid
Sodium nitro ferricyanide	MCB	4 oz	solid
Sodium sulfate	Fisher Scientific	500 g	solid
Sodium tartrate	J.T.Baker Chemical	2 oz	solid
Sodium tartrate	Fisher Scientific	6x113g	solid
Sodium thiosulfate	Fisher Scientific	2x1 lb	solid
Succinic anhydride	MCB	6x250g	solid
Succinic anhydride	Aldrich Chemical	2x1 kg	solid
Sulfamic acid	Fisher Scientific	500 g	solid
Sulfanilic acid	H&S Chemical	1 bag	solid
Sulfite O,P,Q	Mogul Corporation	3x2 oz	liquid
Sulfuric acid	J.T.Baker Chemical	10 lb	liquid
Tetraphenolboron sodium 99%	Aldrich Chemical	25 g	solid
Thiopene	Kodak	100 g	liquid
Total alkylinity indicator	Drew Chemical	1 qt	liquid
Tributyl borate	Aldrich Chemical	750 g	liquid
Trichloroethylene	Mallinckrodt	1 pt	liquid
Triethyl borate 97%	Aldrich Chemical	100 g	liquid
Triethylenediamine	Air Products	250 g	solid
Uranyl acetate	unknown	500 g	solid
Weedox C/R 250 herbicide	Southern Mill Creek Prod.	2x5gal	liquid
Xylene	Fisher Scientific	5x1 L	liquid
Zinc chloride	Fisher Scientific	500 g	solid
Zinc chloride anhydrous	Mineral Research	1 lb	solid
p-chlorobenzene sulfonamide	H&S Chemical	2 bags	solid
p-naptholbenzein	Fisher Scientific	25 g	solid
p-toluenesulfonicmonohydrate	Aldrich Chemical	500 g	solid
pH indicator A	Mogul Corporation	2 oz	liquid
z Miscellaneous unknowns	on site lab glassware	280bot	misc.
z Miscellaneous unknowns	on site one oz bottles	238bot	liquid

TABLE 2

Drum Inventory

Chemical Name =====	Company =====	Qty ===	State =====	Cond =====	Dates =====
Acetone	Ashland Chemical	55 G	liquid	good	
Acetylene	VI Gas	2 cyl	gas	good	
Activated carbon	Calgon Corporation	30 bag	solid	good	
All-weather patch material	Revere Chemical	55 G	solid	fair	
Amersite 2	Valley Freight Syst.	55 G	liquid	fair	
Ashland MeOH	Ashland Chemical	5 G	liquid	good	
Benzyl acetate	Island Chemical	21x55G	liquid	fair	
Benzyl chloride	Velsicol Corporation	28x55G	liquid	fair	
Chlorine	VI Gas	1 cyl	gas	poor	
Chloroform	unknown	55 G	liquid	good	
Crofox	Cerfact Laboratories	55 G	liquid	poor	
Crystal Clear floor finish	Cerfact Laboratories	2x20 G	liquid	good	
Degreaser	unknown	55 G	liquid	good	
Drewtrol 8500	Valley Freight Syst.	55 G	liquid	poor	
Ethyl alcohol	unknown	115x55	liquid	poor	
Filteraid	unknown	10x30G	solid	poor	
Glacial acetic acid	Celanese Chemical	13x55G	liquid	good	
Glycol	Island Chemical	20x55G	liquid	poor	1984
Humisorb	Culligan	30 G	solid	fair	
Hydrochloric acid	Certified Laboratory	55 G	liquid	poor	
Hydrogen chloride	VI Gas	1 cyl	gas	poor	
Insulation (asbestos??)	unknown	13 box	solid	good	
Insulation fiberglass	unknown	7 box	solid	good	
Lubricating oil	Texaco	2x10 G	liquid	good	
Lubricating oil	Texaco	5x55 G	liquid	good	
Magnesium sulfate trihydrate	Tomita Pharmaceutica	6x25kg	solid	fair	
Methanol	Ashland Chemical	5x55 G	liquid	good	
Methanol	unknown	3x55 G	liquid	fair	
Methyl isobutyl carbinol	Van Waters & Rogers	12x55G	liquid	good	1984
Methyl isobutyl ketone	Ashland Chemical	55 G	liquid	good	

TABLE 2

Drum Inventory

Chemical Name =====	Company =====	Qty ---	State =====	Cond =====	Dates =====
Micro media filter sheets	Ertel Engineering	18 box	solid	good	
Oxygen	VI Gas	3 cyl	gas	good	
Oxygen	Santa Maria Gases	1 cyl	gas	good	
Paints	unknown	44x5 G	liquid	fair	
Paints	unknown	53x1 G	liquid	fair	
Paints	International Paint	97x5 G	liquid	fair	
Paints	International Paint	21x1 G	liquid	fair	
Para-phenetidin	unknown	55 G	liquid	fair	1983
Pentosin	Deutsche Pentosin	20 L	liquid	fair	
Potassium acetate	Jarchem Industries	8x100#	solid	good	
Potassium sulfate	unknown	50 bag	solid	good	
Powdered filter media	Ionics	2 boxes	solid	good	
Propane	unknown	4 cyl	gas	good	
Purafil II	unknown	15x10G	solid	good	
Quinine sulfate	Kimafarma	20 G	liquid	good	
Rinseline injector fluid	Bob Chamber Ltd.	55 G	liquid	good	
Rout	Cerfact Laboratories	20 G	solid	poor	
Salicylic acid	Rhone-Poulenc	27drum	solid	good	
Salt	unknown	2x30 G	solid	good	
Soda ash	Allied Chemical	15x100	solid	poor	
Sodium acetate anhydrous	unknown	50 lb	solid	good	
Sodium acetate anhydrous	Jarchem Industries	200 lb	solid	poor	
Sodium bicarbonate	Stauffer Chemical	8x100#	solid	poor	
Sodium hexa-meta phosphate	FMC	200 lb	solid	good	
Sodium hydroxide	Mantek	55 G	liquid	poor	
Sodium hydroxide	Manuel del Valle Inc	12x55G	liquid	good	
Spent toluene/acetone	unknown	2x55 G	liquid	fair	
Sterling salt crystals	unknown	50 lb	solid	poor	
Sulfamic acid	Dupont	400 lb	solid	poor	
Tartaric acid	Pfizer Chemical	15x100	solid	poor	
Thinner	unknown	6x1 G	liquid	fair	

TABLE 2

Drum Inventory

Chemical Name =====	Company =====	Qty ===	State	Cond	Dates =====
Thinner	Advance	55 G	liquid	fair	
Toluene	Ashland Chemical	3x55 G	liquid	fair	
Toluene	unknown	5x55 G	liquid	good	
Triethylamine	Air Products	55 G	liquid	good	1984
Waste oil	unknown	2x55 G	liquid	good	
z Empty drums	unknown	130	n/a	fair	
z Miscellaneous unknowns	on site containers	25	misc.	poor	

CERCLA Hazardous Substances and
Statutory Codes (40 CFR Sec. 302.4)

Chemical =====	Codes =====
1,3-dinitrobenzene	1
1-butanol	4
3,3-dimethoxy benzidene	4
Acetic acid	1
Acetone	4
Acetonitrile	4
Ammonium acetate	1
Ammonium hydroxide	1
Ammonium thiocyanate	1
Arsenic trioxide	1,4
Asbestos	2,3
Benzene	1,2,3,4
Benzoic acid	1
Benzoyl chloride	1
Benzyl chloride	1,4
Chlorine	1
Chloroform	1,2,4
Copper metal	2
Cupric sulfate	1
Ethyl acetate	4
Ethyl benzene	1,2
Ethyl ether 99%	4
Ferric chloride	1
Ferrous ammonium sulfate	1
Formic acid	1,4
Glacial acetic acid	1
Hydrochloric acid	1
Isobutyl alcohol	4
Lead acetate	1,4
Lead nitrate	1
Mercuric chloride	2
Mercuric oxide	2
Methanol	4
Methyl alcohol	4
Methyl isobutyl ketone	4
Nitric acid concentrated	1
Nitrobenzene	1,2,4
Paraformaldehyde	1
Potassium cyanide	1,4
Potassium hydroxide	1
Resorcinol	1,4
Silver nitrate	1
Sodium hydroxide	1
Sodium metal	1

TABLE 3

CERCLA Hazardous Substances and
Statutory Codes (40 CFR Sec. 302.4)

<u>Chemical</u>	<u>Codes</u>
Sodium nitrite	1
Sulfuric acid	1
Toluene	1,2,4
Trichloroethylene	1,2,4
Triethylamine	1
Uranyl acetate	1
Xylene	1,4
Zinc chloride	1

1= Clean Water Act (CWA) Section 311 (b) 4

2= Clean Water Act (CWA) Section 307 (a)

3= Clean Air Act (CAA) Section 112

4= Resource Conservation Recovery Act (RCRA) Section 3001

TABLE 4

Summary of Toxicological Effects of
Some Identified Compounds

Chemical Name =====	Health Effects Codes =====
1,3-dinitrobenzene	A,B,E,I
1-butanol	A,E
3,3-dimethoxy benzidene	A,B,C,E,F
Acetic acid	A,I
Acetone	A,E
Acetonitrile	A,B,C,D,E,I
Ammonium acetate	A,E
Ammonium hydroxide	A,E
Ammonium thiocyanate	A,E
Arsenic trioxide	A,B,C,D,E,F
Asbestos	D,E,F
Benzene	A,E,F,I
Benzoic acid	A,E
Benzoyl chloride	A,E
Benzyl chloride	A,E
Chlorine	A,E
Chloroform	A,B,C,E,F
Copper metal	A,B,C,E
Cupric sulfate	A,E
Ethyl acetate	A,E
Ethyl benzene	A,E,I
Ethyl ether 99%	A,E,I
Ferric chloride	A,E
Ferrous ammonium sulfate	A,E
Formic acid	A,B,C,E
Hydrochloric acid	A,E
Isobutyl alcohol	A,E
Lead acetate	A,E
Lead nitrate	A,E
Mercuric chloride	A,E
Mercuric oxide	A,E
Methanol	A,E,I
Methyl isobutyl ketone	A,E
Nitric acid concentrated	A,E
Nitrobenzene	A,B,C,E,I
Paraformaldehyde	A,E
Potassium cyanide	A,E
Potassium hydroxide	A,E
Resorcinol	A,E
Silver nitrate	A,E
Sodium hydroxide	A,E
Sodium metal	A,E
Sodium nitrite	A,E,F
Sulfuric acid	A,E

TABLE 4

Summary of Toxicological Effects of
Some Identified Compounds

<u>Chemical Name</u>	<u>Health Effects Codes</u>
Toluene	A,B,C,E,I
Trichloroethylene	A,B,C,E,F,I
Triethylamine	A,E
Xylene	A,B,C,E,I
Zinc chloride	A,E

A= Eye, skin, respiratory and mucous membrane irritant

B= Liver damage

C= Kidney damage

D= Lung damage

E= Toxic by inhalation, ingestion, or dermal contact

F= Carcinogenic

G= Teratogenic

H= Mutagenic

I= Central nervous system effects

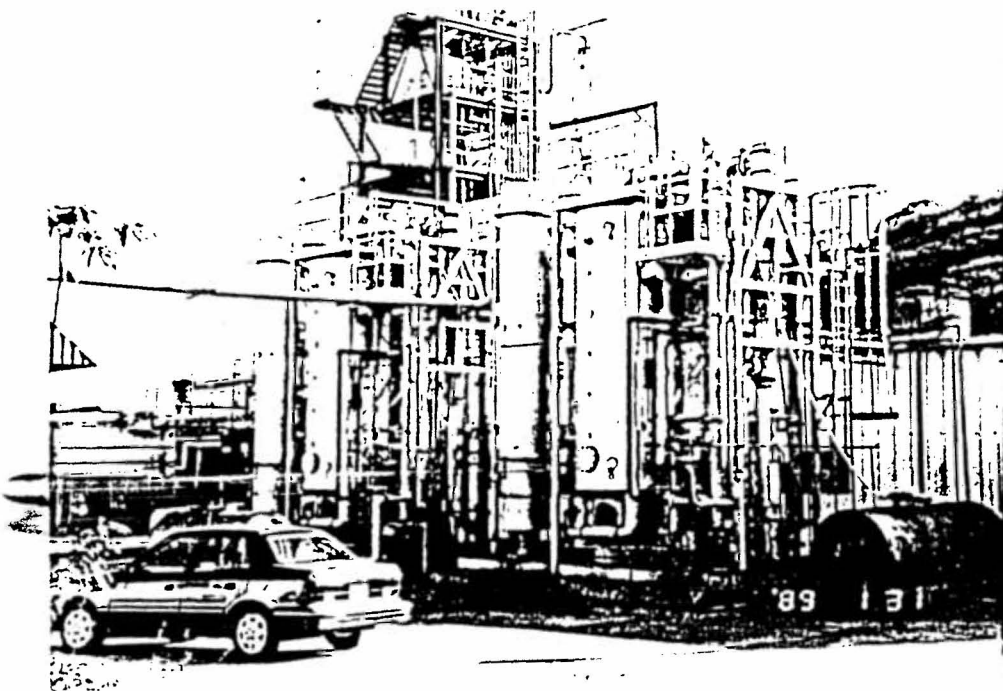


Photo #1. Virgin Island Chemical Company
Alcohol dehydration apparatus

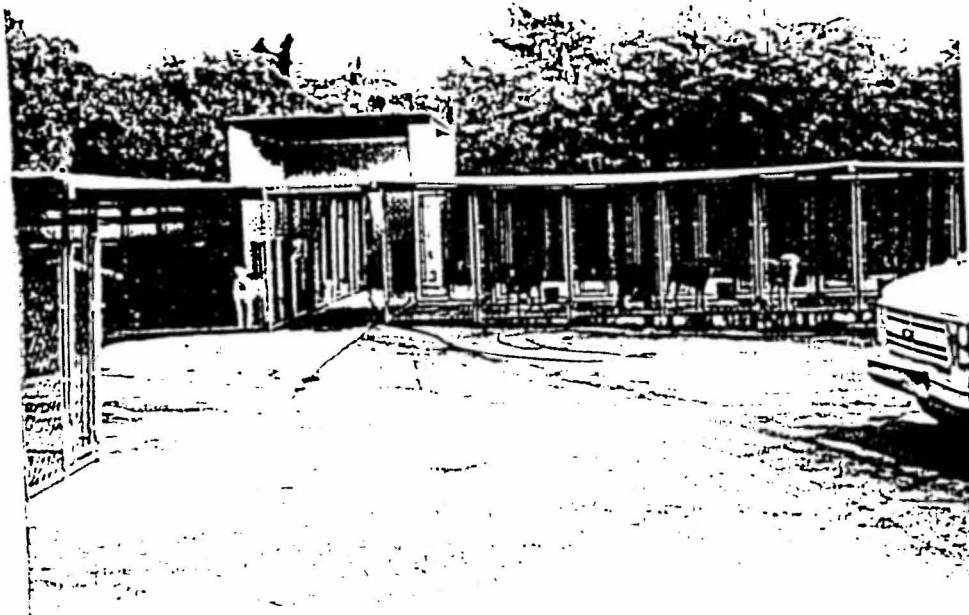


Photo #2. Dog kennel operating on site

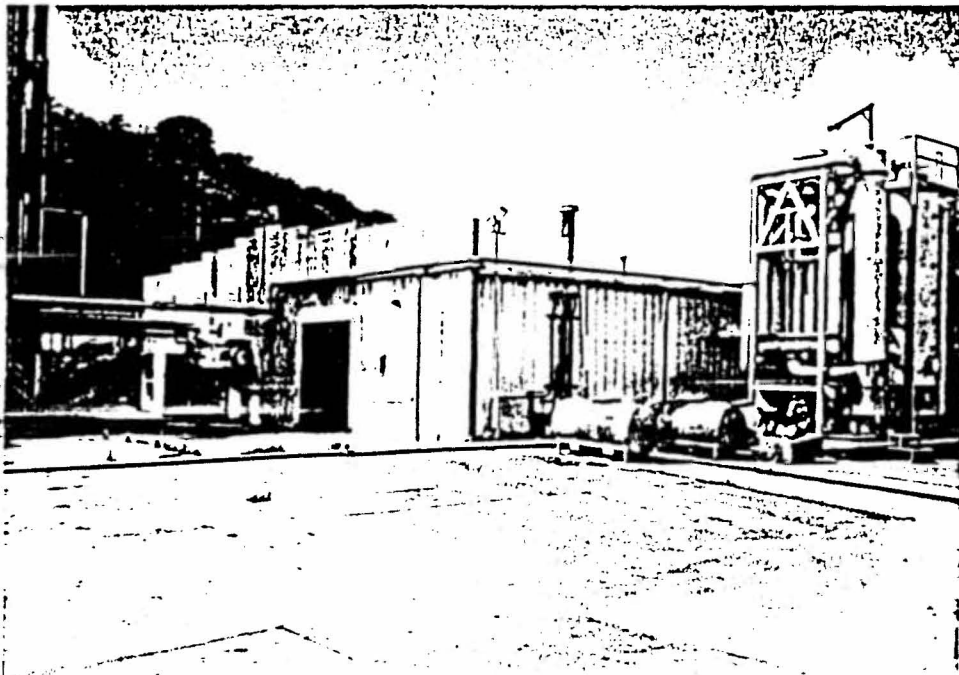


Photo #3. Maintenance building

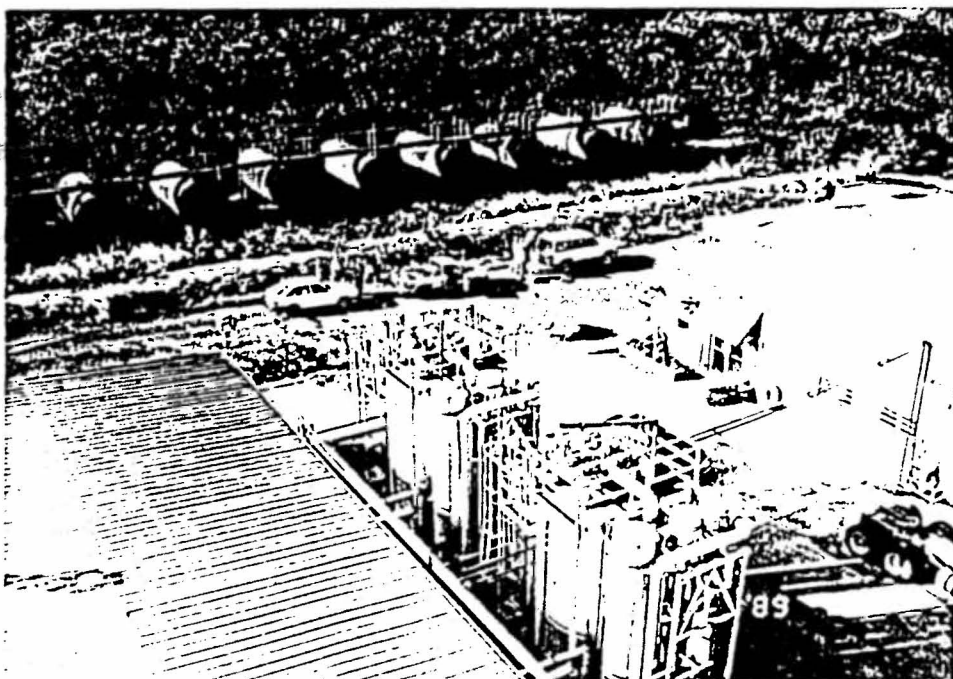


Photo #4. View of tanks, main building, and alcohol dehydration unit

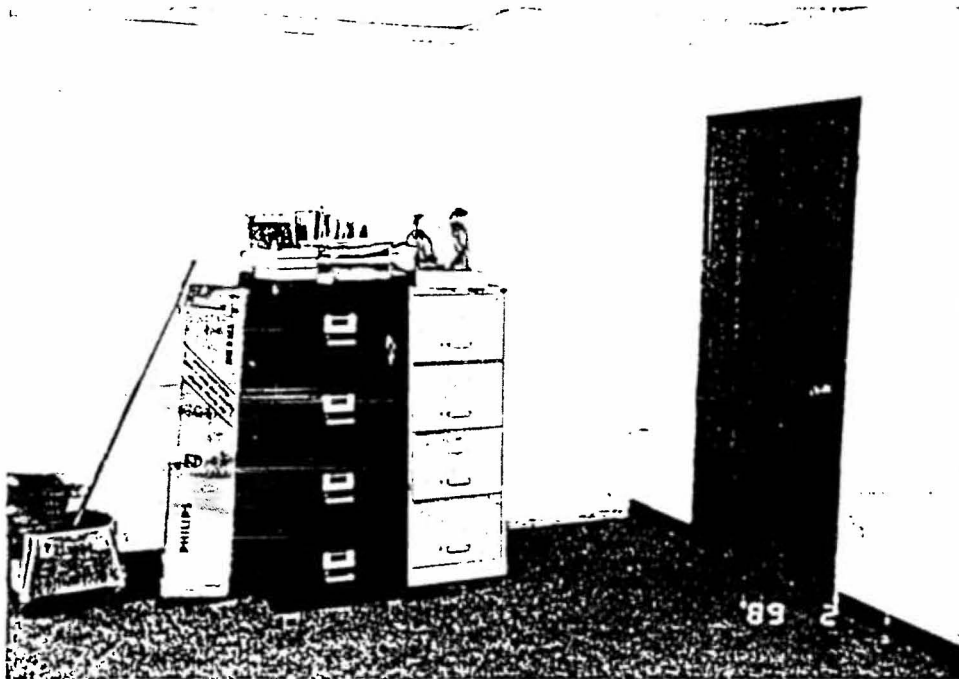


Photo #5. Main building office area 23

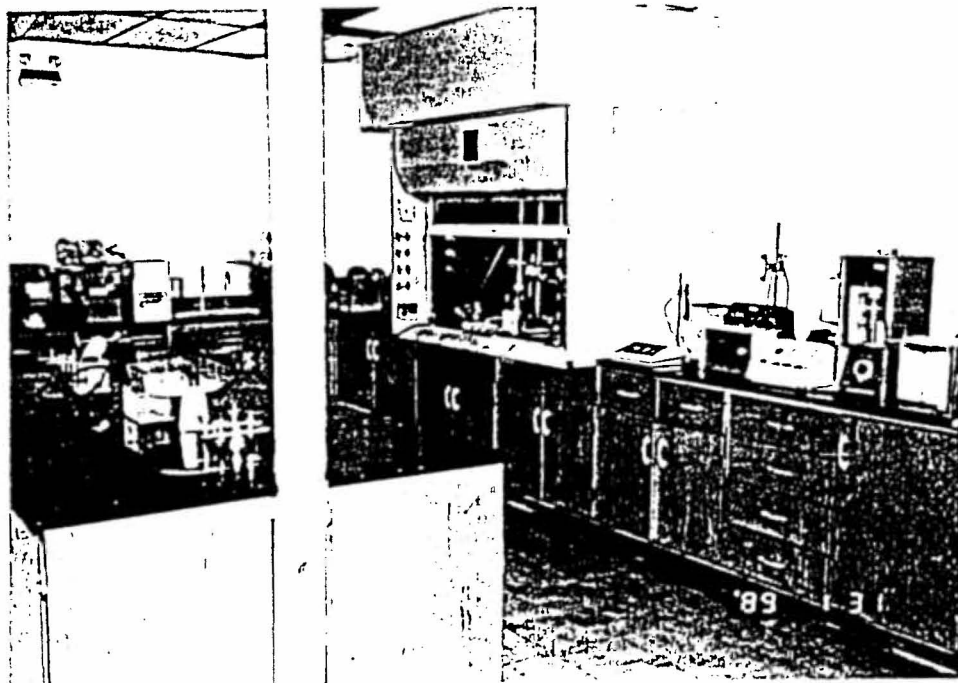


Photo #6. Area 22 lab in the main building

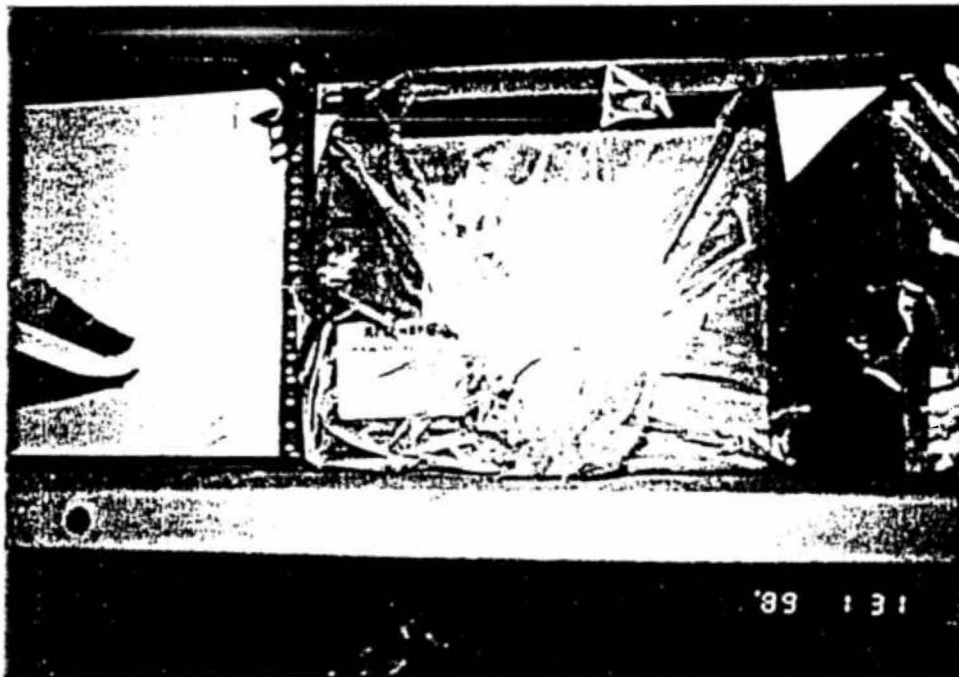


Photo #7. Virgin Island Chemical Company
Sodium metal in area 18



Photo #8. Area 18 chemical and glassware storage



Photo #9. Incompatible storage of lab reagents

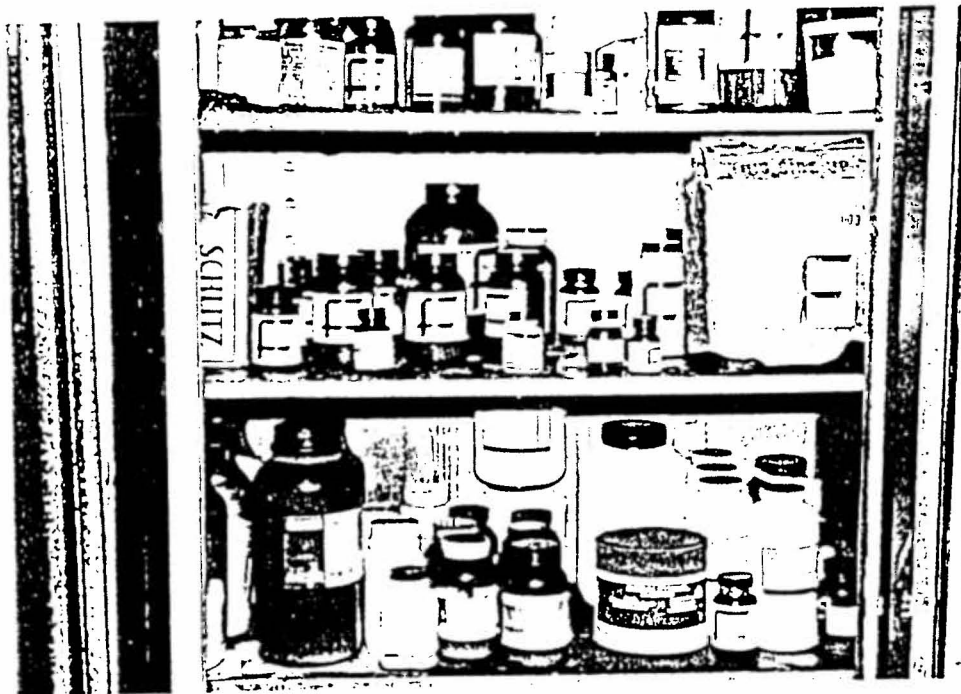


Photo #10. Incompatible and leaking storage of lab reagents



Photo #11. Incompatible and leaking storage of lab reagents

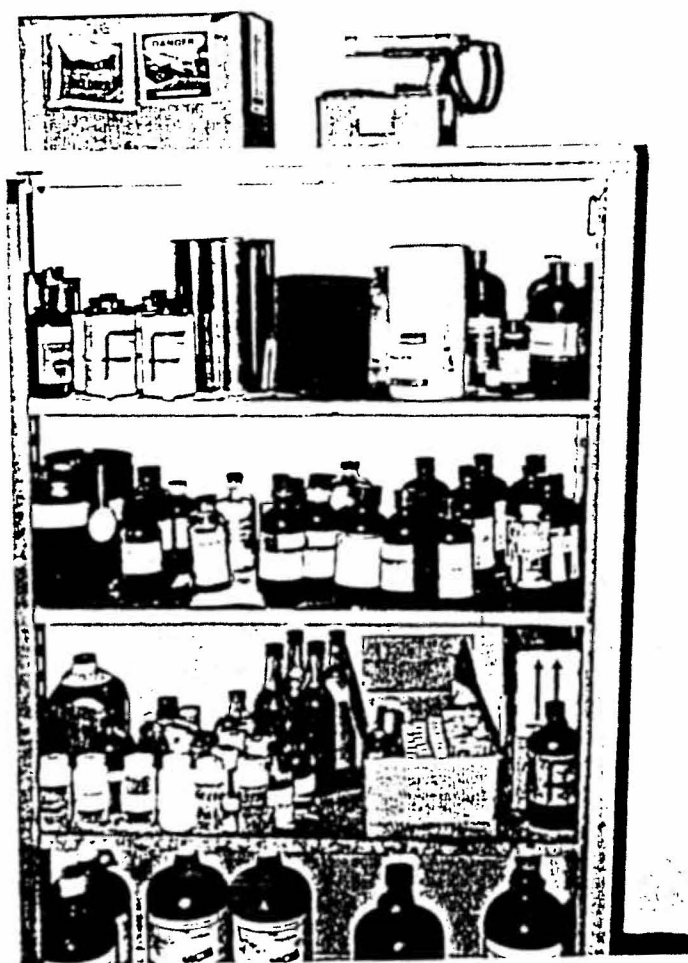


Photo #12. Incompatible storage of lab reagents

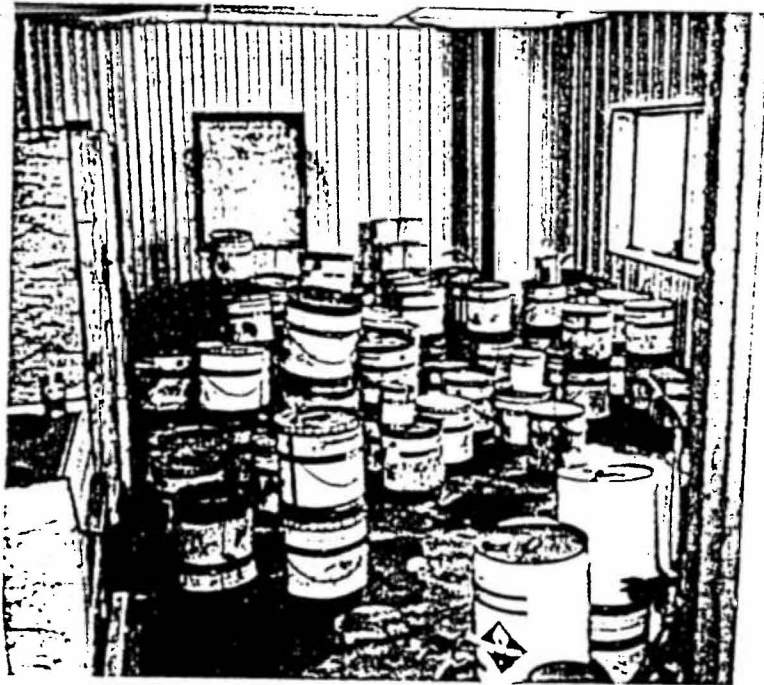


Photo #13. Paint cans in area 1



Photo #14. Cylinder of chlorine

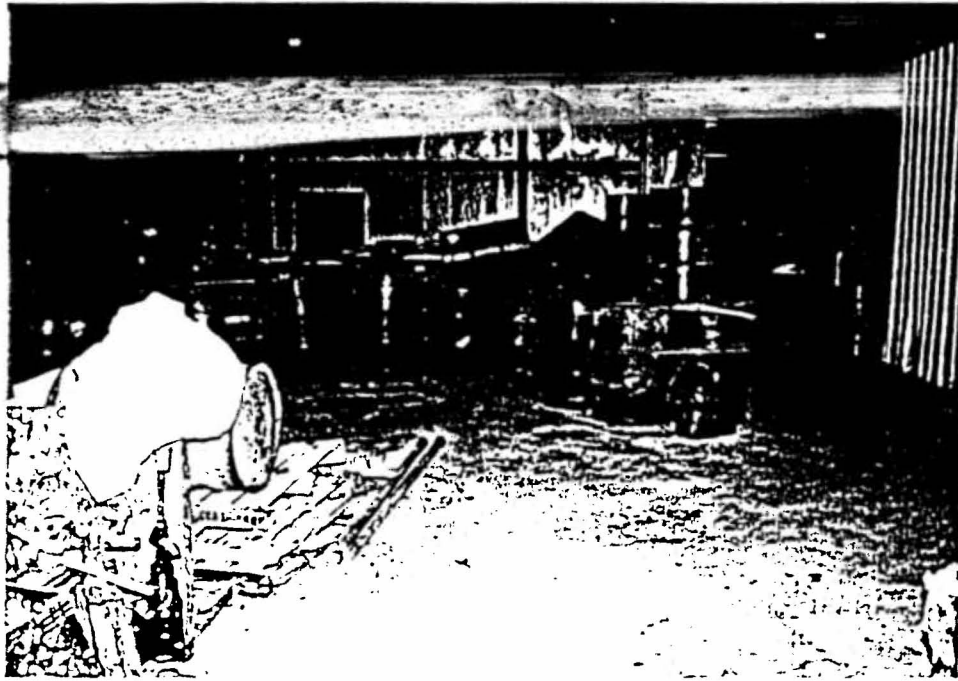


Photo #15. Drums in area 4; note water on the floor



Photo #16. Drum contents undergoing a reaction

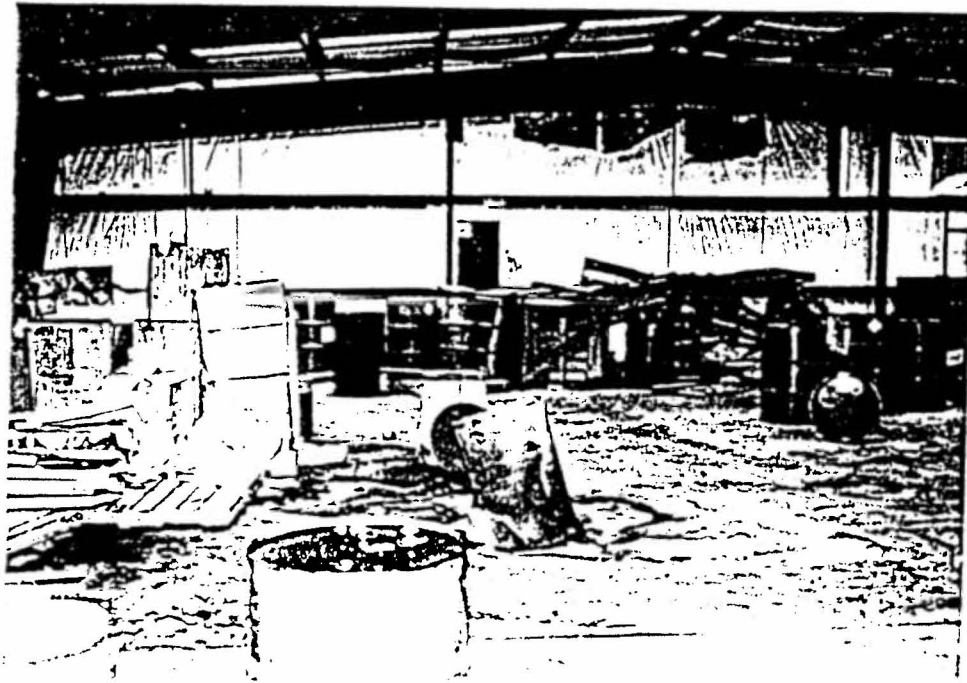


Photo #17. Virgin Island Chemical Company
Drums and debris in area 5



Photo #18. Drums In area 5



Photo #19. Deteriorating drums in area 6



Photo #20. Drums and floor contamination in area 5



Photo #21. Deteriorating bags in area 6



Photo #22. Drums in area 6

☒ Generator

☐ Transporter

☒ TSD

3.10
RCRA
ENFORCE INTERIM RPT
9/985

RCRA Enforcement

Berlex Laboratories, (a subsidiary of
Island Chemical Co., Inc.)
St. Croix, Virgin Islands

VID80651095

September 9, 1985

Participating Personnel:

U.S. Environmental Protection Agency
Louis DiGuardia, Geologist
Carol Price, Environmental Scientist
Darvene Adams, Environmental Scientist

Berlex Laboratories, (ICC)
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Approved for the Director by:


Richard D. Spear, Chief
Surveillance & Monitoring Branch

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SUMMARY

Objective

This compliance evaluation and sampling inspection was conducted at the request of the Solid Waste Branch to support and verify the decontamination and removal by Berlex (ICC), St. Croix, VI of soil contaminated with toluene and pyridine.

Findings

1) Sampling results indicate:

° Organic analysis on samples #087001 and #087002 (drying oven) detected the following organic compounds ranging in values from 460 ppb to 15000000 ppb: toluene, flourene, bis(2-ethylhexyl) phthalate, benzophenone and di-n-octyl phthalate (detected only in sample #087002).

° Organics analysis on samples #087003, #087004, #087005, and #087006 (lab waste drainage area) detected the following organic compounds ranging in values from 360 ppb to 75,000 ppb: toluene, bis(2-ethylhexyl) phthalate, di-n-octyl phthalate, chloroform, benzene and di-n-butyl phthalate.

From the results, the toluene values were found to be within the acceptable level range of 2 ppm (reference document #2). Due to the late arrival of guidance protocol from EPA Research Laboratories, Cincinnati, no analysis of pyridine was performed.

2) Confirmation of on-site treatment of soil by Berlex (ICC) for toluene and pyridine was made.

° Toluene

The drying oven was employed for the volatilization of toluene from the soil, but the necessary charcoal filters to absorb the volatilized material were not observed.

° Pyridine

The contaminated soil was tilled and aerated using a backhoe and then covered over by a large synthetic liner. No permanent structure had been built to prevent future saturation of the soil from rainfall. The present liner was not owned by Berlex but rented.

- 3) No data on the sampling performed by Berlex was ever received by the USEPA, Environmental Services Division, Edison, NJ to confirm the clean-up by Berlex.
- 4) The re-routing of existing laboratory discharges to a self-contained unit and portable toilet facilities was not observed.
- 5) On October 10, 1985, Dr. A. L. Kyles, Vice President, Enviro-Sciences, the consultant working with Berlex (ICC) informed me that 192, 55-gallon drums of waste was removed from Berlex for disposal. The material consisted of the following:
 - Process pit water and sludge.
 - Drums and soil from the wastewater drainage line.
 - 1, 55-gallon drum of water/toluene.
 - Toluene contaminated soil.

No manifest copies were received to confirm this shipment.

- 6) Hazardous material was stored on-site for greater than 90 days and in quantities greater than 1000 kg. Berlex is then subject to the regulations 40 CFR Parts 262 and 264. None of these regulations were observed to have been followed.
- 7) In review, a question is raised that a possible source of contamination is that of the dry creek bed. Process wastewater was discharged via a drainage line to the creek bed. Since the drainage line and soil associated with the line was found contaminated, the possibility of soil contamination in the creek is likely and should be investigated.

DISCUSSION

Applicable Regulations

40 CFR Parts 262 and 264.

Purpose of Survey

A RCRA compliance evaluation and sampling inspection (CEI) was conducted at Berlex Laboratories (ICC), St. Croix, VI on September 9, 1985. The survey was conducted at the request of the Solid Waste Branch to support and verify Berlex's decontamination and removal of soil contaminated with toluene and pyridine.

The elements of the survey included a compliance record review, site survey and sampling.

Facility History

The Berlex Laboratories, Inc. plant, under the name Island Chemical Company (ICC), produced quinidine from November, 1979 after purchasing the site from Cooper Laboratories, until late 1982. In October 1982, Berlex notified EPA of the forthcoming closure and removal of waste materials and excess chemicals (xylene, toluene) from the site to Island Chemical of Puerto Rico. EPA assigned Berlex the ID No. VID80651095. Prior to the removal, Berlex was operating as a small quantity generator.

Berlex sold the site in September 1984, 21 months after the shut-down of operations to Virgin Island Chemical Co. The sales contract for the site called for the contractor Enviro-Sciences, Inc. (ESI), 19 Copeland Road, Denville, NJ to survey the site and certify it as environmentally clean. An ESI sampling survey initiated in September 1984 disclosed two areas of soil contamination, with the compounds of concern being toluene and pyridine.

On December 21, 1984 Enviro-Sciences, Inc. delivered a progress report describing ESI's sampling and analysis of soil at the Berlex site on St. Croix and included recommendation for treatment of the pyridine (U196) and toluene (U220) contaminated areas.

The recommended on-site treatment was selected by ESI as a more economical method than the alternative off-site shipment of drummed soil to the U.S. mainland for placement in an approved landfill. The proposed method of clean-up includes the drying of toluene contaminated soil (which is presently stored at the facility in drums) and degradation of pyridine contaminated soil. This would occur by exposure to ambient air causing soil aeration. Soil saturation by rainfall would be prevented by covering the area with a synthetic liner.

The toluene contamination resulted from soil leaks/spills at a tank site and pyridine contamination from leaks from a laboratory drain line. The estimated quantity of the two materials (toluene and pyridine) are less than 245 pounds.

On May 15, 1985, ESI reported the intended initiation of clean-up activities on June 6, 1985.

Facility Description and Operation

The Berlex Laboratories, Inc. (Berlex) plant under the name Island Chemical Co. (ICC), located in St. Croix, Virgin Island started producing quinidine gluconate in November 1979 and operated for 2 years. During operations Berlex employed 215 people on a 2 shift, 5 day/week, work schedule. Maximum production output was estimated at 50 tons/year, but this level was never reached. The first production batch by Berlex was November 1, 1979 (see Site Location Map, Figure 1).

Berlex (ICC), St. Croix, VI manufactured as their sole product quinidine gluconate. The basic raw materials used in production included quinine sulfate, toluene, and methanol. Production involved the conversion of quinine sulfate into quinine gluconate by the addition of toluene in a reaction vessel. The liquid was then distilled with methanol to produce the crystalline solid, quinidine gluconate.

Within the production area, the facility housed the following reaction vessels:

Reaction Vessels

<u>Number of Vessels</u>	<u>Material Construction</u>	<u>Capacity</u>
4	Stainless Steel	1200-1500 gallons
1	Carbon Steel	1200 gallons
1	Glass Lined	3000 gallons
1	Glass Lined	2000 gallons
3	Glass Lined (Receivers)	2000 gallons

Bulk raw materials arrived in tank trucks and were stored on-site in 14, 8000 gallon raw material tanks (see photograph #1).

Water Usage and Treatment

Groundwater was the primary source of water used in production. Approximately 20,000 gallons were used, of which, 10,000 gallons were recovered. Water was pretreated by filtering and adjusting pH (with sulfuric acid) due to the high carbonate concentration in the groundwater. The facility also housed the following systems (and tanks):

<u>Number of Tanks</u>	<u>Capacity</u>	<u>Systems</u>
1	15,000 gallons	Boiler System
1	15,000 gallons	Drinking Water (rainwater)
4	50,000 gallons	Recirculated Cooling Water
1	20,000 gallons	Reduction/Oxidation Unit
1	250,000 gallons	Firetank

Wastewater from production operations (primarily cooling water) was collected in a 17,000 gallon underground concrete, process pit. No treatment was applied but prior to discharge, the pit was sampled to see if any product was released by accident. If nothing showed in the sampling, the water was discharged via an underground pipe to a dry creek adjacent to facility property.

Waste Streams

Hazardous wastes at Berlex (ICC) were generated from the following sources:

1) Process Pit Water and Sludge

The 17,000 gallon underground concrete pit used to contain production wastewater and accumulate settled sludge from this wastewater.

2) Former Main Wastewater Drainage Line

The underground pipe (constructed of welded 55-gallon drums) from the process pit to dry creek bed. The pipeline was excavated due to the finding of numerous leaks and punctures from which wastewater had contaminated the soil (see Figure 2, areas of contamination).

3) Contaminated Soil Due to Drainage Line Leakage

A) Contaminated soil associated with the excavation of the main wastewater drainage line.

B) Contaminated soil due to drainage line leakage from the laboratory drain.

4) Contaminated soil from raw material spillage - toluene, pyridine.

The spills associated with material transfer and tank or line leakage. Includes soil under the concrete surface loading dock, along trench number 4, under concrete slab number 3, between tanks numbered 8 and 9, and along trench number 9 (see Figure 2, areas of contamination).

5) Contaminated or off-specification raw materials which could neither be reworked nor sold.

Prior to the facility's shutdown, Berlex (ICC) was said to be operating as a small quantity generator. What Berlex did with waste prior to the requested hazardous waste shipment (October 27, 1982) is unknown.

Treatment Methodology

As a result of sampling performed by Enviro-Science, Inc. (ESI) to certify how environmentally clean the site was, ESI disclosed two areas of soil contamination by toluene and pyridine (see figure #2, Plot Plan Showing Areas of Contamination). In response to such a disclosure, ESI recommended on-site treatment as an alternative to the economically unfeasible transport of the waste to the U.S. mainland.

Reference document #1, contained the following methodology of treatment which was to be followed:

° Toluene

The toluene contaminated soil would be placed on trays in a dryer located within the facility (see Figure 3, location of drying oven).

Soils with low and high toluene concentration were permitted to be mixed to insure uniform drying. The empty drums from which the excavated material was stored would be washed with a nonphosphate detergent, rinsed with tap water and then air dried. Drum washings would be collected and later evaporated in the dryer. These same drums would be used to store the air-dried soil until laboratory analysis indicates that it is free of toluene or has very low concentration. If the soil is found to be free of toluene or at very low levels (2 ppm, reference document #2), it will be redistributed on the site.

Prior to beginning the drying operation, calculations will be made using the fan speed, oven temperature, and stack diameter to insure that emission rates for toluene do not exceed 200 ppm TLV. This concentration in air is not flammable. If calculations show that this control rate is marginal, then a carbon pot will be added to insure this limit would not be exceeded (see photographs #4 & #5).

° Pyridine

The pyridine contaminated area would be treated in a 3 step approach.

- 1) The pyridine contaminated area would be covered over to prevent the saturation of soil from rainfall (see photograph #6).
- 2) The concrete surface loading dock in the vicinity of the pyridine contaminated areas would be removed using a backhoe and hauled to a landfill or used to stabilize the bank along the dry river bed. The Department of Public Works would be contacted for permission to do the latter.
- 3) The pyridine contaminated soil would be tilled and aerated using a backhoe at 2-3 day intervals. Soil turning would allow exposure of the contaminated soil to ambient air.

Samples would be taken at the beginning of the cleaning operation and continue at weekly intervals until acceptable pyridine levels are reached (2 ppm, reference document #2). When the pyridine level has decreased to zero or an acceptable level the area will be restored and resurfaced according to the owner's requirements.

Waste Storage

Berlex at the time of inspection was storing waste material in two areas:

1) Outside Fenced Storage Area

During facility operations, this was used as a raw material storage area. It consists of a 50' x 20' concrete pad surrounded by a chain-link fence. At the time of inspection, 1, 55-gallon drum containing approximately 40 gallons of a water/toluene mixture was being stored. Other empty 55-gallon drums were also present (see photograph #2 & #3, Outside Drum Storage Area).

2) Warehouse Storage

This area was used by Berlex as their major raw material storage area. At the time of inspection, 20, 55-gallon drums of toluene contaminated soil were being stored prior to treatment in the drying oven (see photographs #12, #13, & #14). Large numbers of 55-gallon drums containing raw materials used in production were also being stored in the warehouse.

Manifested Shipments

After the shutdown of plant operations in late 1982, the raw materials which remained on-site in the facility's above-ground storage tank were removed (including toluene and xylene). The transporters and TSD used for these shipments were as follows:

Transporters

Trailer Marine Transport Corp. PRD980644579
Isla Grande, Puerto Rico

Transporte Diaz PRD980526834
Zona Portuaria, Puerto Nuevo, San Juan, Puerto Rico

TSD

Island Chemical of P.R. Inc. PRD090399718
Km 51, Highway #2, Manati, Puerto Rico

The manifests are enclosed as Attachment IV.

According to Dr. A. L. Kyles, Vice President of Enviro-Science, the consultant working with Berlex (ICC), 192, 55 - gallon drums of waste was removed from the Berlex (ICC) facility on October 10, 1985. The drum contents consisted of the following material:

- ° Process pit water and sludge
- ° Drums and soil from the wastewater drainage line
- ° 1, 55-gallon drum of water/toluene
- ° Toluene contaminated soil

No manifest copies were ever received on the shipments from Dr. Kyles.

Sampling Procedures

On September 9, 1985 samples were taken at Berlex (ICC), St. Croix, Virgin Island from the following areas:

- ° Composite soil sample from the drying oven (left side).
Sample #087001
- ° Composite soil sample from the drying oven (right side).
Sample #087002
- ° Surface soil composite from the north side of the Lab Waste Drainage Area.
Sample #087003

- ° Subsurface soil composite from the north side of the Lab Waste Drainage Area.
Sample #087004
- ° Surface soil composite from the south side of the Lab Waste Drainage Area.
Sample #087005
- ° Subsurface soil composite from the south side of the Lab Waste Drainage Area.
Sample #087006

Attachment III contains copies of the sample data sheets.

Within the drying oven, the soil was placed on steel trays and stacked in 13, 20 tray bins. A division of the dryer into the left side and right side was made and a composite sample was taken from a representative number of trays. See Figure 4, for sample locations. Photographs #4 and #5, show the location of the drying oven.

To take a more representative sample of the Lab Waste Drainage Area, the area was divided into two sections: north and south. Surface soil samples were taken using trowels and subsurface soil samples (approx. 3 foot depth) were taken using dedicated bucket augers. Due to the very resistant nature of the soil (impermeable clay) only a sample depth of three feet could be obtained. See Figure 5, for sample locations. Photographs #7, #8, #9, #10, and #11, shows the areas of sampling.

Sampling equipment and containers were prepared according to EPA standard procedures prior to sampling. A total of six samples were taken.

The samples were analyzed for purgeable (POA) and non-volatile (NVOA) organic priority pollutants. All analyses were performed in EPA's Edison, New Jersey laboratory. EPA standard procedures were followed for the collection of samples throughout the survey. Samples were not split with facility representatives. Receipt for samples (Attachment I) and chain-of-custody methods forms (Attachment II) were employed for all samples taken.

Sample Results

Sample results are given in Table I.

Organic analysis on samples #087001 and #087002 (drying oven) detected the following organic compounds ranging in values from 460 ppb to 15,000,000 ppb: toluene, flourene, bis(2-ethyl hexyl) phthal, benzphenone and di-n-octyl phthalate (detected only in sample #087002).

Organic analysis on samples #087003, #087004, #087005 and #087006 (lab waste drainage area) detected the following organic compounds ranging in values from 360 ppb to 75,000 ppb: toluene, bis(2-ethylhexyl) phthalate, di-n-octyl phthalate, chloroform, benzene and di-n-butyl phthalate.

From the results the toluene values were found within the acceptable range of 2 ppm. No laboratory analysis was performed for pyridine due to late arrival of guidance on pyridine protocol from EPA Research Laboratories, Cincinnati.

Reference Documents

- 1) Enviro-Science Inc., Progress Report, Island Chemical Company, Inc. (Berlex), April 4, 1985.
- 2) U.S. Environmental Protection Agency, Review of a Report on Proposed Soil Decontamination by Enviro-Sciences, Inc.
- 3) U.S. Environmental Protection Agency, Fact Sheet, Requests to Treat Contaminated Soil at St. Croix Plant Site, February 5, 1985.
- 4) U.S. Environmental Protection Agency, ICC/Berlex Plant Site, St. Croix Fact Sheet Including Preliminary Analytical Results on Nearby Well Fields.

Table I

Results of Organics Analysis on Samples

Organic Compounds	Sample# 087001 ug/kg	Sample# 087002 ug/kg	Sample# 087003 ug/kg	Sample# 087004 ug/kg	Sample# 087005 ug/kg	Sample# 087006 ug/kg
Toluene	460	560	420	440	360	400
Flourene	9200	1300				
Bis(2-ethylhexyl)Phtha- -late	13000	4700	16000	1900	51000	36000
Benzophenone	15000000	2600000				
Di-n-octyl Phthalate		500J		4200	600J	2000
Chloroform				200K		
Benzene				200K		
Di-n-butyl Phthalate						75000

Sample #087001 - Aerated Soil Composite from Storage Room (left side)

Sample #087002 - Aerated Soil Composite from Storage Room (right side)

Sample #087003 - Surface Soil Composite from North Side of Lab Waste Drainage Area

Sample #087004 - Subsurface Soil Composite from North Side of Lab Waste Drainage Area

Sample #087005 - Surface Soil Composite from South Side of Lab Waste Drainage Area

Sample #087006 - Subsurface Soil Composite from South Side of Lab Waste Drainage Area

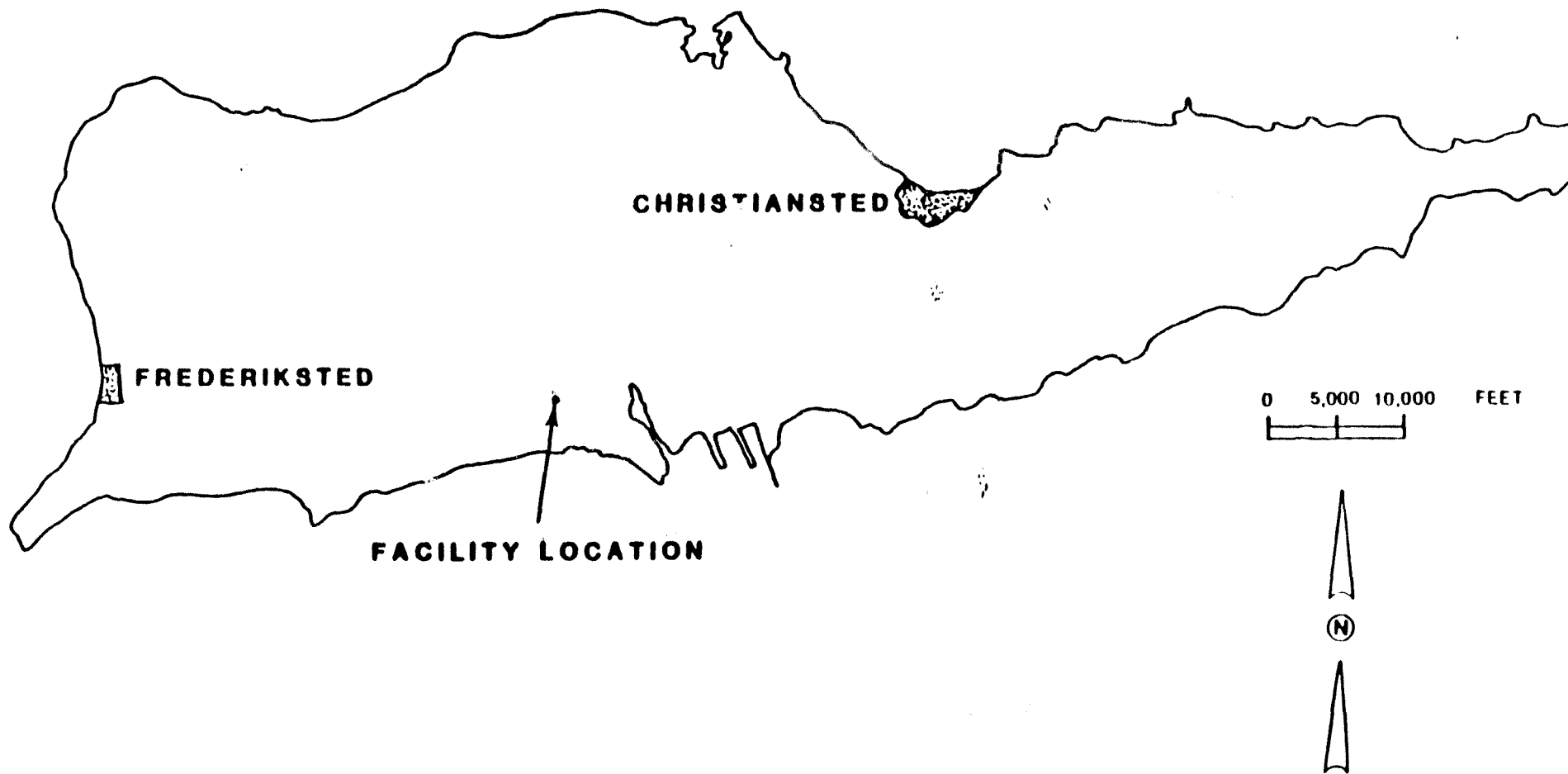
K = Actual value known to be less than value given

J = Estimated value

Blank Space - Material Analyzed but not detected

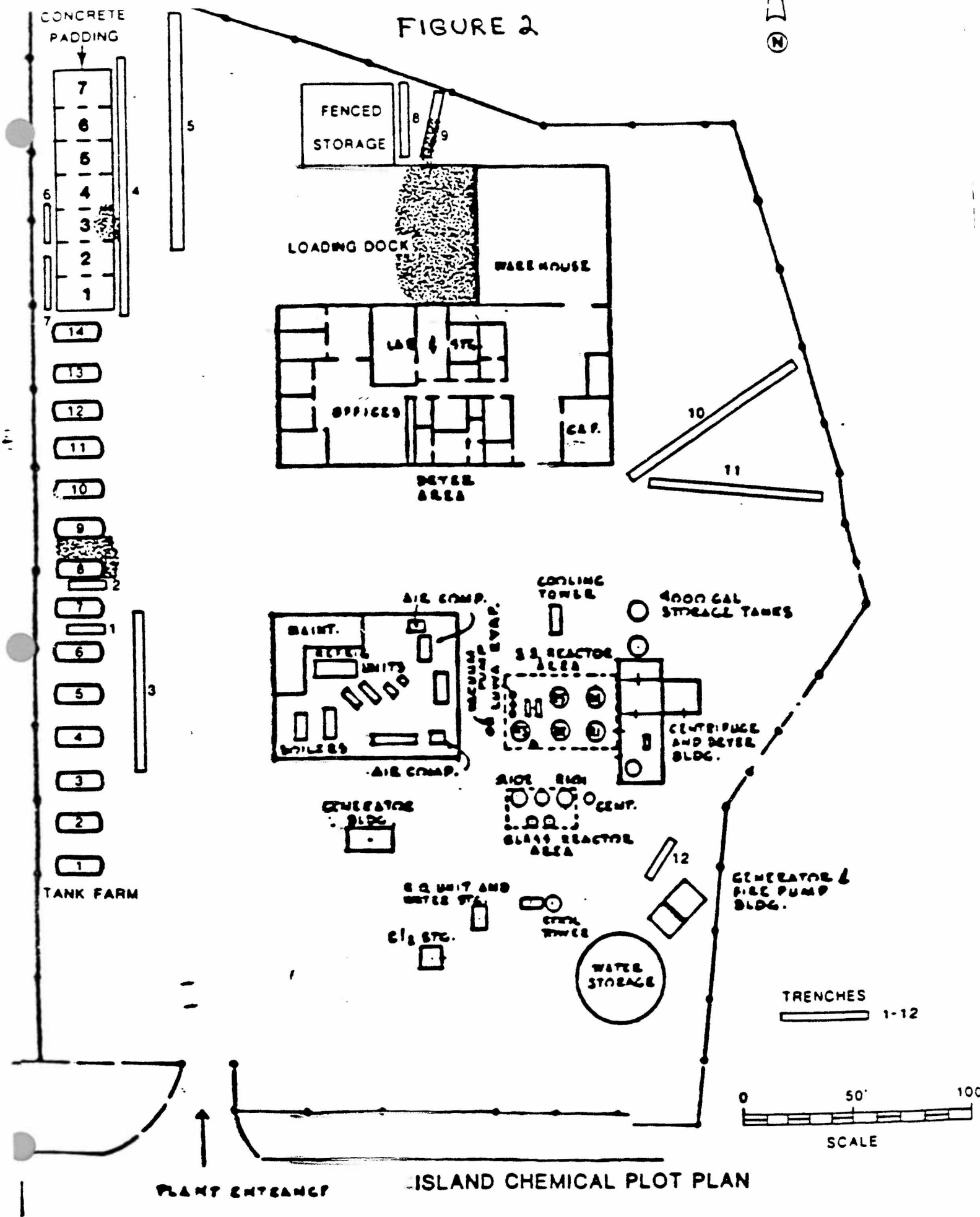
FIGURE 1

FACILITY LOCATION MAP



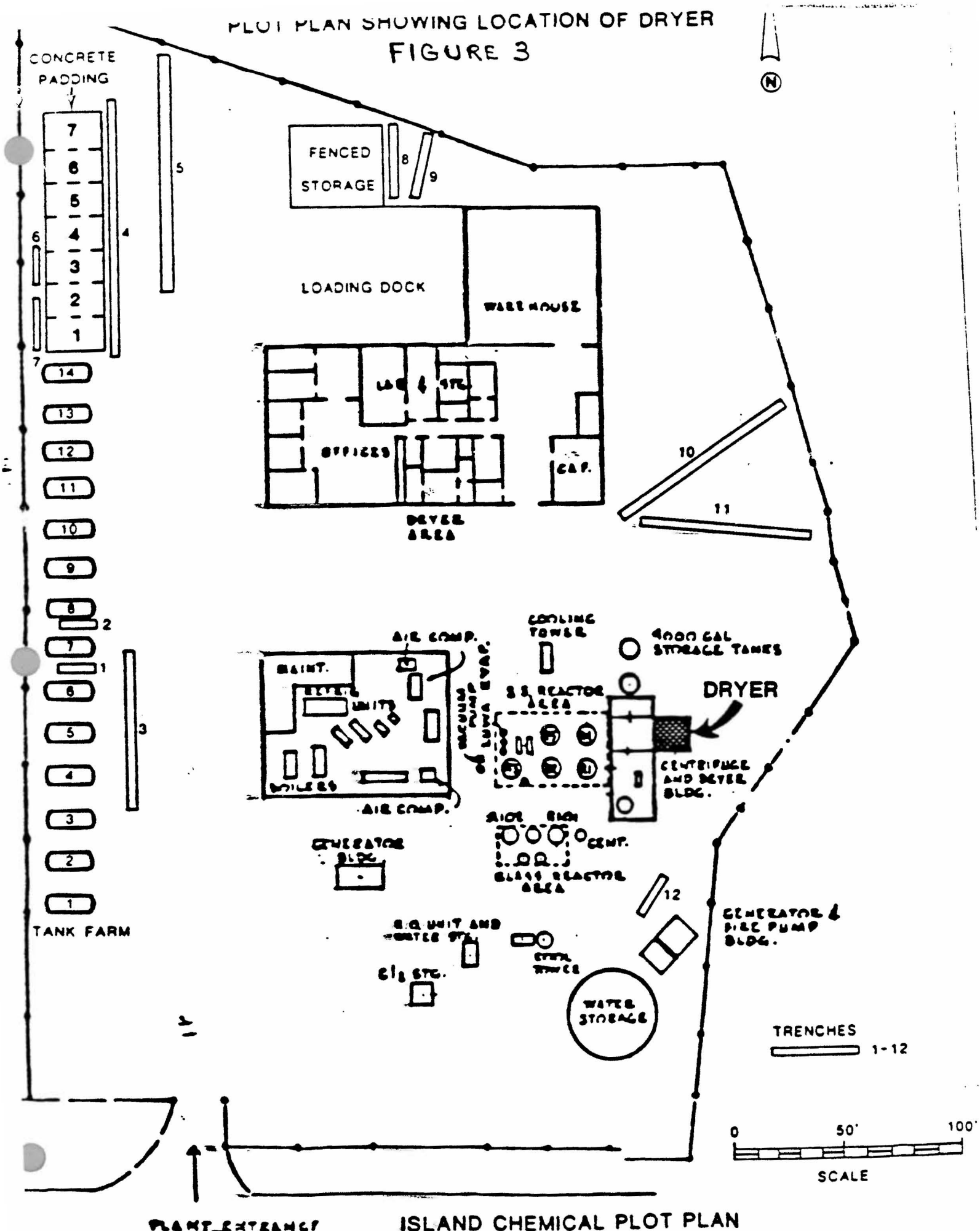
**SOURCE: COMPREHENSIVE WATER RESOURCES
MANAGEMENT PLAN FOR THE UNITED
STATES VIRGIN ISLANDS, 1983.**

FIGURE 2



ISLAND CHEMICAL PLOT PLAN

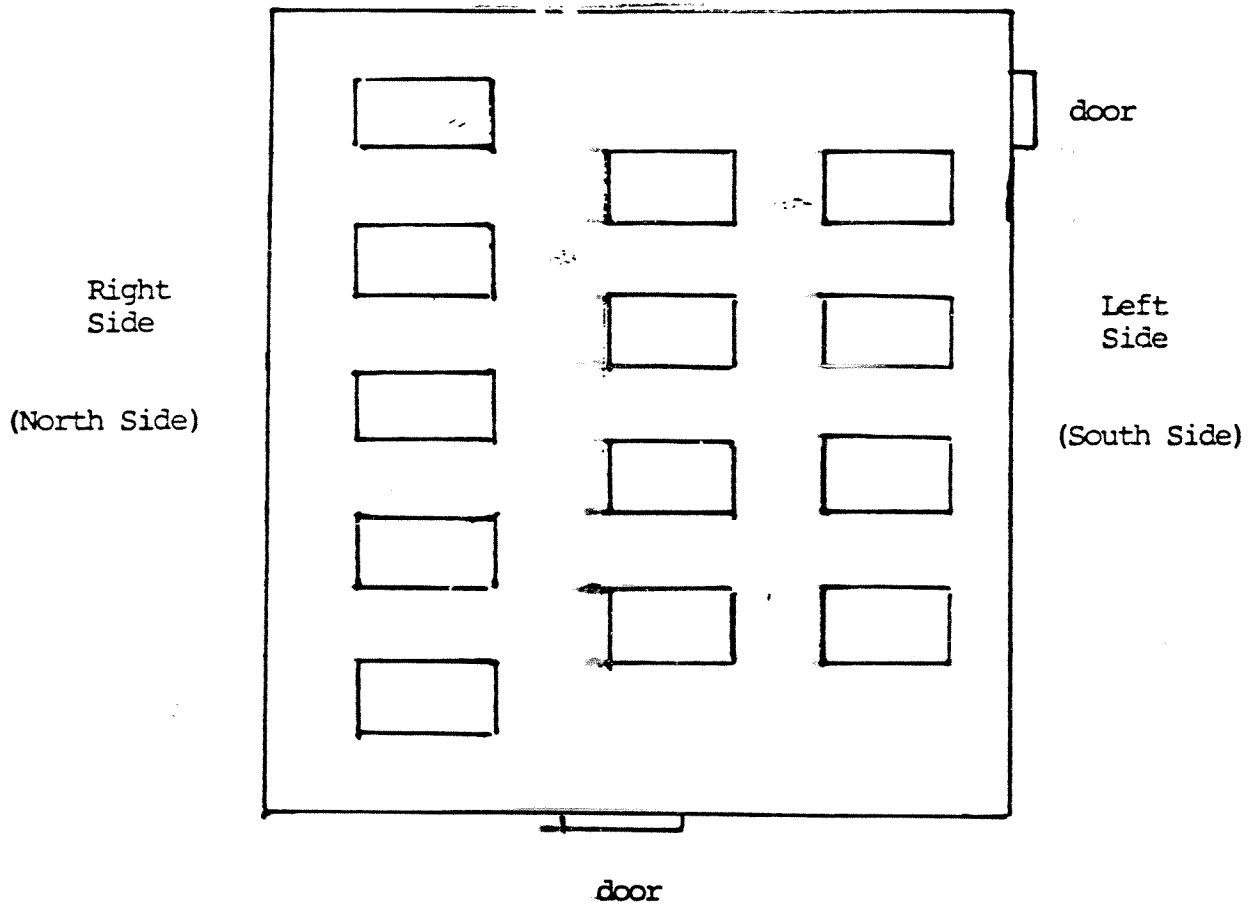
PLOT PLAN SHOWING LOCATION OF DRYER
FIGURE 3



DRYING OVEN

- toluene contaminated soil

(Top View)



Composite soil sample from drying oven

- ° #087001 - left side (south side)
- ° #087002 - right side (north side)

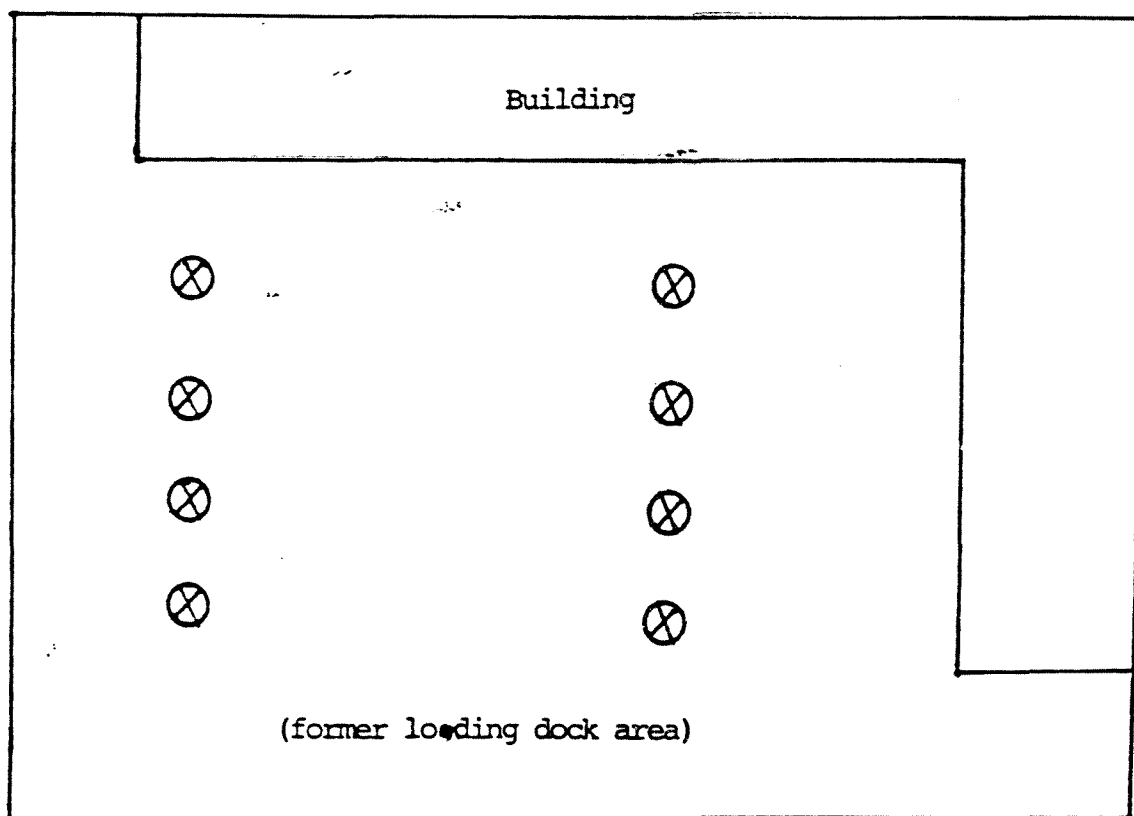
(Not to Scale)

* Each rectangle represents one bin containing a stack of twenty trays.

Figure 4 - Sample Location Map - Drying Oven

LAB WASTE DRAINAGE AREA

- pyridine contaminated soil



⊗ - Sample locations for composite

←
NORTH

Soil sample from north side of the Lab Waste Drainage Area

° Surface - #087003

° Subsurface - #087004

Soil sample from south side of the Lab Waste Drainage Area

° Surface - #087005

° Subsurface - #087006

(Not to Scale)

Figure 5 - Sample Location Map - Lab Waste Drainage Area

ATTACHMENT I

Receipt For Samples

Berlex Laboratories
St. Croix. VI

September 9, 1985

RECEIPT FOR SAMPLES CHAIN-OF-CUSTODY RECORD

ENVIRONMENTAL PROTECTION AGENCY - REGION II
Environmental Services Division
EDISON, NEW JERSEY 08817

Name of Unit and Address		Berlex Laboratories (V.I. Chemical)		9/9/85	
		VID 80651095			

Sample Number	Number of Containers	Description of Samples
087001	1	Qt. - NVOA
	2	40 ml vials
		} Aerial Soil - Composite
087002	1	Qt. - NVOA
	2	40 ml vials
		} Aerial Soil - Composite
087003	1	Qt. - NVOA
	2	40 ml vials
		} Surface Soil - Composite
087004	1	Qt. - NVOA
	2	40 ml vials
		} Subsurface Soil - Composite
087005	1	Qt. - NVOA
	2	40 ml vials
		} Surface Soil - Composite
087006	1	Qt. - NVOA
	2	40 ml vials
		} Subsurface Soil - Composite

9/9/85

Long O. Lee USEPA

Ray 9/9/85-2:02

Person Assuming Responsibility for Sample:					Time	Date
--	--	--	--	--	------	------

Sample Number	Relinquished By:	Received By:	Time	Date	Reason for Change of Custody

ATTACHMENT II

Chain of Custody Form

Berlex Laboratories
St. Croix. VI

September 9, 1985

CHAIN OF CUSTODY RECORD

ENVIRONMENTAL PROTECTION AGENCY - REGION II
Environmental Services Division
EDISON, NEW JERSEY 08817

Name of Unit and Address: Berlex Laboratories Inc. St. Croix, Virgin Islands USA	9 VID 80651095
--	-------------------

Sample Number	Number of Containers	Description of Samples
087001	1	Qt. Jar NVOA w/ice
	2	40 ml Vials w/ice
087002	1	Qt. Jar NVOA w/ice
	2	40 ml Vials w/ice
087003	1	Qt. Jar NVOA w/ice
	2	40 ml Vials w/ice
087004	1	Qt. Jar NVOA w/ice
	2	40 ml Vials w/ice
087005	1	Qt. Jar NVOA w/ice
	2	40 ml Vials w/ice
087006	1	Qt. Jar NVOA w/ice
	2	40 ml Vials w/ice

Person Assuming Responsibility for Sample: <i>Lowell D. Miller</i>	Time 1:00 PM	Date 9/10/85
--	-----------------	-----------------

Sample Number	Relinquished By:	Received By:	Time	Date	Reason for Change of Custody
087001 to 087006	<i>Lowell D. Miller</i> 9/10/85	<i>Kevin Petrus</i>	10:00 PM	9/10/85	Shipment of Samples to Lab
087001 to 087006	<i>Kevin Petrus</i>	<i>R. Miller</i>	7:45 AM	9/11/85	Log in at OSCAR
087001 to 087006	<i>R. Miller</i>	<i>R. Mason</i>	1:30 PM	9/11/85	For analysis
087001 to 087006	<i>R. Mason</i>	<i>Chet Goldberg</i>	2:00 PM	9/11/85	For PQA and NVOA analysis

ATTACHMENT III

Sample Data Sheets

Berlex Laboratories
St. Croix, VI

September 9, 1985

FIELD DATA SHEET

ENVIRONMENTAL PROTECTION AGENCY - Region II, Eastern New Jersey

ENVIRONMENTAL SERVICES DIVISION

UEF

Project Name Berlex Lab Inc. Site, VI
Collector(s) D. Guadagnoli Affiliation US EPA

SAMPLING METHOD (Circle)

Kemmerer Dredge Ponar Manual
Niskin Net Seine Trawl Bucket
Trowel Cream Dipper
Automatic
Other _____

LDMS CODE _____
DATA BASE CODE _____
STA. TYPE CODE _____

SUBSTRATE TYPE (Circle) Aqueous Sediment Sludge Oil Biological
Solvent Extract Other Soil

BOD - Seed Supplied ☐ Yes ☐ No Source: _____

Sample Preparation (Circle)

Container Glass Jar - 1
Plastic Jar
Metal
POA Vial - 2
Cubitainer
Acetate Core
Paper Cap
Teflon Cap
Foil Cap
Other _____
Preservation
Acid _____
Solvent _____
Chemical _____
Wet Ice
Dry Ice
Ambient
Other _____

Cleaning Procedure
Detergent Wash
Water Rinse
Acid Rinse
Solvent Rinse:
Acetone
Hexane
Methylene Chloride
Other (Specify): _____

Sample Source Type (Circle)

Landfill
Leachate
Drum
Test Well
Depth: _____
Other: _____
Storage Tank
Top
Middle
Bottom
Truck
Drum
Tank
Other: _____
Wells
Monitoring
Production
Drinking
Private

Samples to:

Bact ☒ Blo ☐ Chem ☒ Other ☐

Station No.

VI 080651095

Sample Depth (Ft.)/Fac. Loc. Code

3200

Lab Number

087001

Type of Sample

Grab Composite

Time Space ☒

Collection (Ending) Date

Yr 85 Mo 09 Day 09

Ending Time (24 Hr)

1100

Beginning Date

Yr 85 Mo 09 Day 09

Beginning Time (24 Hr)

1043

pH

7.5

Sample Temp. (°C)

22.0

DO (mg/l)

8.5

Cond. (µMHOS/CM)

150

Salinity(‰)

0.5

Sample Split

☐ Yes ☒ No

If Yes With Whom?

Receipt ☐ Yes ☐ No

Sample Location Description:

aerated soil composite from
storage room (left side)

Remarks:

1-qt. NVGA jar } iced
2-40 ml POA vials }

contaminated soil from
toluene spill.

FIELD DATA SHEET

ENVIRONMENTAL PROTECTION AGENCY - Region II, Edison, New Jersey

ENVIRONMENTAL SERVICES DIVISION

UEF

Project Name Bureau Laboratories (Island) Environmental Action

Collector(s) D. Guardia Affiliation EPA-ESD

SAMPLING METHOD (Circle)

Kemmerer Dredge Ponar Manual
Niskin Net Seine Trawl Bucket
Trowel Cream Dipper
Automatic
Other _____

LDMS CODE _____

DATA BASE CODE _____

STA. TYPE CODE _____

SUBSTRATE TYPE (Circle) Aqueous Sediment Sludge Oil Biological

Solvent Extract Other (Soil) 1

BOD - Seed Supplied ☐ Yes ☐ No Source: _____

Sample Preparation (Circle)

Container
Glass Jar
Plastic Jar
Metal
POA Vial
Cubitainer
Acetate Core
Paper Cap
Teflon Cap
Foil Cap
Other _____

Cleaning Procedure

Detergent Wash
Water Rinse
Acid Rinse
Solvent Rinse:
Acetone
Hexane
Methylene Chloride
Other (Specify): _____

Sample Source Type (Circle)

Landfill
Leachate
Drum
Test Well
Depth: _____
Other: _____
Storage Tank
Top
Middle
Bottom
Truck
Drum
Tank
Other: _____
Wells
Monitoring
Production
Drinking
Private

Industrial
Effluent
Process Stream
Holding Pond
Drum
Waste Pile
Municipal Treatment
Influent
Effluent-CI
Effluent-Non CI
Sludge
Ambient
Lake
Stream
Pond
Ocean
Estuary

Preservation

Acid
Solvent
Chemical
Wet Ice
Dry Ice
Ambient
Other _____

Sample Location Description:

Aerated soil composite from right side of storage room plus contained on floor

Remarks:

NVOA - 1 quart glass jar
FOA's - 2 glass vials
Contaminated soil from toluene spill

Samples to:

Bact ☒ Bio ☐ Chem ☒ Other ☐

Station No.

VID 804 E 1075

Sample Depth (Ft.)/Fac. Loc. Code

3201

Lab Number

087002

Type of Sample

Grab Composite

Time ☐ Space ☒

Collection (Ending) Date

Yr 85 Mo 09 Day 09

Ending Time (24 Hr)

1113

Beginning Date

Yr 85 Mo 09 Day 09

Beginning Time (24 Hr)

1100

pH

Sample Temp. (°C)

DO (mg/l)

Cond. (uMHOS/CM)

Salinity(‰)

Sample Split

☐ Yes ☒ No

If Yes With Whom?

Receipt ☐ Yes ☐ No

FIELD DATA SHEET

ENVIRONMENTAL PROTECTION AGENCY - Region II, Edison, New Jersey

ENVIRONMENTAL SERVICES DIVISION

UEF

Project Name Berlex Lab, Inc. St. George, VI
Collector(s) D. Guend Affiliation USEPA

SAMPLING METHOD (Circle)

Kemmerer Dredge Ponar Manual
Niskin Net Seine Trawl Bucket
Trowel Cream Dipper
Automatic
Other _____

LDMS CODE _____

DATA BASE CODE _____

STA. TYPE CODE _____

Samples to:

Bact ☐ Bio ☐ Chem ☒ Other ☐

Station No.

V2080651095

Sample Depth (Ft.)/Fac. Loc. Code

3202

Lab Number

087003

Type of Sample

Grab ☐ Composite ☒
Time ☐ Space ☒

Collection (Ending) Date

Yr 85 Mo 09 Day 09

Ending Time (24 Hr)

1200

Beginning Date

Yr 85 Mo 09 Day 09

Beginning Time (24 Hr)

1140

pH

Sample Temp. (°C)

DO (mg/l)

Cond. (uMHOS/CM)

Salinity(‰)

Sample Split

☐ Yes ☒ No

If Yes With Whom?

Receipt ☐ Yes ☐ No

SUBSTRATE TYPE (Circle)

Aqueous Sediment Sludge Oil Biological
Solvent Extract Other (Soil)

SCD - Seed Supplied ☐ Yes ☐ No Source: _____

Sample Preparation (Circle)

Container Glass Jar - 1
Plastic Jar Water Rinse
Metal Acid Rinse
POA Vial - 2
Cubitainer
Acetate Core
Paper Cap
Teflon Cap
Foil Cap
Other _____

Cleaning Procedure
Detergent Wash
Water Rinse
Acid Rinse
Solvent Rinse:
Acetone
Hexane
Methylene Chloride
Other (Specify): _____

Sample Source Type (Circle)

Landfill
Leachate
Drum
Test Well
Depth: _____
Other: _____
Storage Tank
Top
Middle
Bottom
Truck
Drum
Tank
Other: _____
Wells
Monitoring
Production
Drinking
Private

Industrial
Effluent
Process Stream
Holding Pond
Drum
Waste Pile
Municipal Treatment
Influent
Effluent-CI
Effluent-Non CI
Sludge
Ambient
Lake
Stream
Pond
Ocean
Estuary

Preservation

Acid _____
Solvent _____
Chemical _____
Wet Ice
Dry Ice
Ambient
Other _____

Sample Location Description:

Surface soil composite from north side of laboratory waste drainage area

Remarks:

1-qt NVOA jar } iced
2-40 ml POA vials }

clayey soil, somewhat wet

FIELD DATA SHEET

ENVIRONMENTAL PROTECTION AGENCY - Region II, Edison, New Jersey

ENVIRONMENTAL SERVICES DIVISION

UEF

Project Name Borlex Laboratories Inc. (Poland Chem. Co.)

Collector(s) L. Guardia Affiliation EPA-ESD

SAMPLING METHOD (Circle)

Kemmerer Dredge Ponar Manual
Niskin Net Seine Trawl Bucket
Trowl Cream Dipper
Automatic
Other _____

LDMS CODE _____

DATA BASE CODE _____

STA. TYPE CODE _____

SUBSTRATE TYPE (Circle)

Aqueous Sediment Sludge Oil Biological
Solvent Extract Other (Soil)

BOD — Seed Supplied ☐ Yes ☐ No Source: _____

Sample Preparation (Circle)

Container
Glass Jar
Plastic Jar
Metal
POA Via
Cubitainer
Acetate Core
Paper Cap
Teflon Cap
Foil Cap
Other _____
Preservation
Acid _____
Solvent _____
Chemical _____
Wet Ice
Dry Ice
Ambient
Other _____

Cleaning Procedure
Detergent Wash
Water Rinse
Acid Rinse
Solvent Rinse:
Acetone
Hexane
Methylene Chloride
Other (Specify): _____

Sample Source Type (Circle)

Landfill Industrial
Leachate Effluent
Drum Process Stream
Test Well Holding Pond
Depth: Drum
Other: Waste Pile
Municipal Treatment
Storage Tank Influent
Top Effluent-CI
Middle Effluent-Non CI
Bottom Sludge
Truck Ambient
Drum Lake
Tank Stream
Other Pond
Ocean
Wells Estuary
Monitoring
Production
Drinking
Private

Samples to:

Bact Bio Chem ☒ Other

Station No.

VTD80651095

Sample Depth (Ft.)/Fac. Loc. Code

3203

Lab Number

087004

Type of Sample

Grab Composite

Time Space ☒

Collection (Ending) Date

Yr Mo Day
850909

Ending Time (24 Hr)

1155

Beginning Date

Yr Mo Day
850909

Beginning Time (24 Hr)

1140

pH

7.0

Sample Temp. (°C)

18.0

DO (mg/l)

5.0

Cond. (uMHOS/CM)

150

Salinity(‰)

0.0

Sample Split

☐ Yes ☒ No

If Yes With Whom?

Receipt ☐ Yes ☐ No

Sample Location Description:

Subsurface soil sample from lab drainage area

Remarks:

NUOA - 1 qt glass jar
POA - 2 glass vials
Clayey soil

FIELD DATA SHEET

ENVIRONMENTAL PROTECTION AGENCY - Region II, Edison, New Jersey

ENVIRONMENTAL SERVICES DIVISION

UEF

Project Name Borlex Labs Inc. St Louis VI
Collector(s) D. Guard. 9 Affiliation UEPA

SAMPLING METHOD (Circle)

Kemmerer Dredge Ponar Manual
Niskin Net Seine Trawl Bucket
Trowel Cream Dipper
Automatic
Other _____

LDMS CODE _____

DATA BASE CODE _____

STA. TYPE CODE _____

SUBSTRATE TYPE (Circle)

Aqueous Sediment Sludge Oil Biological
Solvent Extract Other (Soil)

BOD — Seed Supplied ☐ Yes ☐ No Source: _____

Sample Preparation (Circle)

Container Grass Jar - 1
Plastic Jar
Metal POA Vial - 2
Cubitainer
Acetate Core
Paper Cap
Teflon Cap
Foil Cap
Other _____
Preservation
Acid _____
Solvent _____
Chemical _____
Wet Ice
Dry Ice
Ambient
Other _____

Cleaning Procedure

Detergent Wash
Water Rinse
Acid Rinse
Solvent Rinse:
Acetone
Hexane
Methylene Chloride
Other (Specify): _____

Sample Source Type (Circle)

Landfill Industrial
Leachate Effluent
Drum Process Stream
Test Well Holding Pond
Depth: Drum
Other: Waste Pile
Municipal Treatment
Storage Tank Influent
Top Effluent-CI
Middle Effluent-Non CI
Bottom Sludge
Truck Ambient
Drum Lake
Tank Stream
Other Pond
Wells Ocean
Monitoring Estuary
Production
Drinking
Private

Samples to:

Bact Bio Chem ☒ Other

Station No.

VI D 806 S1 095

Sample Depth (Ft.)/Fac. Loc. Code

3204

Lab Number

087005

Type of Sample

Grab Composite ☒
Time Space

Collection (Ending) Date

Yr Mo Day
85 09 09

Ending Time (24 Hr)

1155

Beginning Date

Yr Mo Day
85 09 09

Beginning Time (24 Hr)

1140

pH

7.0

Sample Temp. (°C)

20.0

DO (mg/l)

8.0

Cond. (uMHOS/CM)

150

Salinity(‰)

0.0

Sample Split

☐ Yes ☒ No

If Yes With Whom?

Receipt ☐ Yes ☐ No

Sample Location Description:

Surface soil composite from ^{South} ~~North~~ side of laboratory waste drainage area.

Remarks:

1-qt. NVGA } used
2-40ml POA vials }

clayey soil

FIELD DATA SHEET

UEF

ENVIRONMENTAL PROTECTION AGENCY - Region II, Edison, New Jersey

ENVIRONMENTAL SERVICES DIVISION

Project Name Parker Laboratories Inc. (Island Chemical Co.)

Collector(s) J. G. Gordon Affiliation EPA - E.D.

SAMPLING METHOD (Circle)

Kemmerer Dredge Ponar Manual
Niskin Net Seine Trawl Bucket
Trowel Cream Dipper
Automatic
Other _____

LDMS CODE _____

DATA BASE CODE _____

STA. TYPE CODE _____

Samples to:

Bact ☐ Bio ☐ Chem ☒ Other ☐

Station No.

V1D80651297

Sample Depth (Ft.)/Fac. Loc. Code

3205

Lab Number

087006

Type of Sample

Grab ☐ Composite ☐
Time ☐ Space ☒

Collection (Ending) Date

Yr 85 Mo 09 Day 09

Ending Time (24 Hr)

1230

Beginning Date

Yr 85 Mo 09 Day 09

Beginning Time (24 Hr)

1205

pH

7

Sample Temp. (°C)

20

DO (mg/l)

8

Cond. (uMHOS/CM)

150

Salinity(‰)

35

Sample Split

☐ Yes ☐ No

If Yes With Whom?

Receipt ☐ Yes ☐ No

SUBSTRATE TYPE (Circle)

Aqueous Sediment Sludge Oil Biological
Solvent Extract Other Soil

BOD — Seed Supplied ☐ Yes ☒ No Source:

Sample Preparation (Circle)

Sample Source Type (Circle)

Container
Glass Jar
Plastic Jar
Metal
POA Vial
Cubitainer
Acetate Core
Paper Cap
Teflon Cap
Foil Cap
Other _____
Preservation
Acid _____
Solvent _____
Chemical _____
Wet Ice
Dry Ice
Ambient
Other _____

Cleaning Procedure
Detergent Wash
Water Rinse
Acid Rinse
Solvent Rinse:
Acetone
Hexane
Methylene Chloride
Other (Specify): _____

Landfill
Leachate
Drum
Test Well
Depth: _____
Other: _____
Storage Tank
Top
Middle
Bottom
Truck
Drum
Tank
Other _____
Wells
Monitoring
Production
Drinking
Private

Industrial
Effluent
Process Stream
Holding Pond
Drum
Waste Pile
Municipal Treatment
Influent
Effluent-CI
Effluent-Non CI
Sludge
Ambient
Lake
Stream
Pond
Ocean
Estuary

Sample Location Description:

Soil sample from lab drainage area

Remarks:

North - 1 glass jar
POA - 2 glass vials
Change book

ATTACHMENT IV

Waste Manifests

Berlex Laboratories
St. Croix. VI

September 9, 1985

PLEASE TYPE

ENVIRONMENTAL QUALITY BOARD
HAZARDOUS WASTE MANIFEST

PART 1

DOCUMENT NO

P R IC 07

GENERATOR NAME Island Chemical Co., Inc.	PHONE (809) 778-2200	EPA ID NO V, I, D, 9, 8, 0, 6, 5, 1, 0
SITE ADDRESS Estate 130, Estate Bethlehem, St. Croix, U.S. Virgin Islands		
TRANSPORTER NO. 1 Treller Marine Transport Corporation	PHONE (809) 721-1313	P, R, D, 9, 8, 0, 6, 4, 4, 5
SITE ADDRESS Isla Grande, Puerto Rico		
TRANSPORTER NO. 2 Transporte Diaz	PHONE (809) 792-7999	P, R, D, 9, 8, 0, 5, 2, 6, 8
SITE ADDRESS Zona Portuaria, Puerto Nuevo, San Juan, Puerto Rico		
TREATMENT, STORAGE OR DISPOSAL (TSD) FACILITY Inland Chemical of P.R., Inc.	PHONE (809) 854-1090	P, R, D, 0, 9, 0, 3, 9, 9, 7
SITE ADDRESS Km. 51, Highway # 2, Manati, Puerto Rico		

IF MORE THAN TWO TRANSPORTERS ARE TO BE UTILIZED, FILL OUT THE FOLLOWING AS APPROPRIATE

THIS FORM IS NO 1 OF A TOTAL OF 1 THE FIRST MANIFEST DOCUMENT NO IS

P. R.

I, C, 0, 7

PROPER US DOT SHIPPING NAME	US DOT HAZARD CLASS	UN NUMBER	FORM	NET QUANTITY	UNITS	CONTAINERS		EPA HAZ CODE	EQU/ WASTE
						NO	TYPE		
1 Xylene RQ	Flam. Liquid	3307	L	3, 3, 2, 0	gal	1	T K	I	F C
2									
3									
4									
5									
6									

SPECIAL HANDLING INSTRUCTIONS INCLUDING CONTAINER EXEMPTION (i.e. IDENTIFICATION OF ADDITIONAL WASTES INCLUDED IN SHIPMENT OF A HAZARDOUS NATURE WHICH DO NOT HAVE TO BE MANIFESTED)

GENERATOR'S CERTIFICATION: This is to certify that the above named materials are properly classified, described, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation, U.S. EPA and the Commonwealth of P.R. The waste described above were consigned to the Transporter named The Treatment, Storage or Disposal Facility and will accept the shipment of hazardous waste, and has a valid permit to do so. I certify that the foregoing is true and correct to the best of my knowledge.

GENERATOR'S SIGNATURE Jerome H. Ludwig	TITLE President	DATE SHIPPED 11/13/83	EXPECTED ARRIVAL DATE 12/1/83
TRANSPORTER NO. 1 SIGNATURE To the best of my knowledge the contents of the shipment I have accepted for transport conforms with the description on this manifest.	TRANSPORTER NO. 1 VEHICLE SECS NO	1912181211910	DATE RECEIVED 12/1/83

TEAR AT THIS DISCONTINUATION

PART 8

GEN EPA ID#

V, I, D, 9, 8, 0, 6, 5, 1, 0, 9

TRANSPORTER NO. 1 SIGNATURE "I certify that I have not tampered with or materially altered the contents of this shipment."	DATE DELIVERED 11/13/83
TRANSPORTER NO. 2 SIGNATURE "To the best of my knowledge the contents of the shipment I have accepted for transport conforms with the description on this manifest."	TRANSPORTER NO. 2 VEHICLE SECS NO
TRANSPORTER NO. 2 SIGNATURE "I certify that I have not tampered with or materially altered the contents of this shipment."	DATE RECEIVED 12/1/83
TREATMENT STORAGE OR DISPOSAL FACILITY INDICATION OF ANY DIFFERENCES BETWEEN MANIFEST AND SHIPMENT OR LISTING OF REASONS FOR AND DISPOSITION OF REJECTED MATERIALS	HANDLING METHOD
	1 2 3 4 5 6
TREATMENT STORAGE OR DISPOSAL FACILITY SIGNATURE "To the best of my knowledge, I certify that the contents of this shipment conform with the description on this manifest except where discrepancies noted on this form."	DATE RECEIVED 12/1/83

In case of emergency or spill immediately call the Environmental Quality Board (809) 725-8997

DOCUMENT NO

P. R.

PART 6:

DOCUMENT NO

1000

IF MORE THAN TWO TRANSPORTERS ARE TO BE UTILIZED, FILL OUT THE FOLLOWING AS APPROPRIATE

THIS FORM IS NO 1 OF A TOTAL OF 1 THE FIRST MANIFEST DOCUMENT NO IS

P R

I, C, O, E

LEGAL MATERIALS INSTRUCTIONS INCLUDING CONTAINER EXEMPTION: NO IDENTIFICATION OF ANNUAL OR QUARTERLY REPORTS, FORMS, OR DOCUMENTS, JOINTLY OWNED, DO NOT HAVE TO BE MANIFESTED

GENERATOR'S CERTIFICATION: This is to certify that the above named materials are properly classified, described, quantified and labeled and are in proper condition for transportation as required by the applicable regulations of the Department of Transportation, U.S. EPA and the Commonwealth of MA. The waste described above is to be shipped to the treatment, storage or disposal facility can and will accept the shipment of hazardous waste and has a duty to do so. I certify that the foregoing is true and correct to the best of my knowledge.

TEAR AT THIS PERIOD: 11/11/11

ENC-31209

PART B

UN IFA -UN

|v, 1, 0, 9, 8, 0, 6, 5, 1, 0, 9, 5

TRANSPORTER NO. 1 SIGNATURE "I certify that I have not tampered with or materially altered the contents of this shipment"		DATE DELIVERED 12 20 88	
TRANSPORTER NO. 2 SIGNATURE "To the best of my knowledge the contents of the shipment I have accepted for transport conforms with the description on this manifest"		DATE RECEIVED 12 20 88	
TRANSPORTER NO. 2 SIGNATURE "I certify that I have not tampered with or materially altered the contents of this shipment"		DATE RECEIVED 12 20 88	
TREATMENT STORAGE OR DISPOSAL FACILITY INDICATION OF ANY DIFFERENCES BETWEEN MANIFEST AND SHIPMENT OR LISTING OF MISSING FOR AND DISPOSITION OF REJECTED MATERIALS		MONTH YEAR	
		1 3 2	
		3 4	
		5 6	
TREATMENT STORAGE OR DISPOSAL FACILITY SIGNATURE "Upon visual inspection, I certify that the contents of this shipment conform with the description on this manifest except those discrepancies noted on this form"		DATE RECEIVED 12 20 88	
IN CASE OF EMERGENCY, A 24-HOUR EMERGENCY CALL THE Environmental Security Board (ESB) 722-8-12			

ART A:

DOCUMENT NO

P R IC 05

GENERATOR NAME Island Chemical Co., Inc.		PHONE (809) 778-2200	EPA ID NO V I D 9 8 0 6 5 1 0 9
SITE ADDRESS Estate 130, Estate Bethlehem, St. Croix, U.S. Virgin Islands			
TRANSPORTER NO 1 Trailer Marine Transport Corporation		PHONE (809) 721-1313	P R D 9 8 0 6 4 4 5 7
SITE ADDRESS Isla Grande, Puerto Rico			
TRANSPORTER NO 2 Transporte Diaz		PHONE (809) 792-7999	P R D 9 8 0 5 2 6 8 3
SITE ADDRESS Zona Portuaria, Puerto Nuevo, San Juan, Puerto Rico			
TREATMENT, STORAGE OR DISPOSAL (TSD) FACILITY Inland Chemical of P.R., Inc.		PHONE (809) 854-1090	P R D 0 9 0 3 9 9 7 1
SITE ADDRESS Km. 51, Highway # 2, Manati, Puerto Rico			

IF MORE THAN TWO TRANSPORTERS ARE TO BE UTILIZED, FILL OUT THE FOLLOWING AS APPROPRIATE

THIS FORM IS NO 1 OF A TOTAL OF 1 THE FIRST MANIFEST DOCUMENT NO IS P R I C 0 5

PROPER US DOT SHIPPING NAME	US DOT HAZARD CLASS	UN NUMBER	FORM	NET QUANTITY	UNITS	CONTAINERS NO	TYPE	LOW EPA HAZ CODE	EQB/EPA WASTE TYPE
1 Toluene RQ	Flam. Liquid	1294	L	147.31	Gal	1	TK	1	F, D, O
2									
3									
4									
5									
6									

SPECIAL HANDLING INSTRUCTIONS INCLUDING CONTAINER EXEMPTION (i.e. IDENTIFICATION OF ADDITIONAL WASTES INCLUDED IN SHIPMENT OF A MANIFESTOR SIGNATURE WHEN DO NOT HAVE TO BE MANIFESTED)

GENERATOR'S CERTIFICATION: This is to certify that the above named materials are properly classified, described, packaged, labeled and are in proper condition for transportation in conformity with the applicable regulations of the Department of Transportation, U.S. EPA and the Commonwealth of P.R. The waste described above were transported in the containers named. The Treatment, Storage or Disposal Facility can and will accept the shipment of hazardous waste, and has a valid permit to do so. I certify that the foregoing is true and correct to the best of my knowledge.

GENERATOR'S SIGNATURE <i>Jerome H. Ludwig</i> Jerome H. Ludwig	TITLE President	DATE SHIPPED 11/10/83	EXPECTED ARRIVAL DATE 11/24/83
TRANSPORTER NO 1 SIGNATURE "To the best of my knowledge the contents of the shipment I have accepted for transport conform with the description on this manifest."		TRANSPORTER NO 1 VEHICLE ID NO S C X U 231105119	DATE RECEIVED 11/17/83

M. A. Serrano SEAL AT THIS JURISDICTION *RHP-31210*

PART B

GEN EPA OR

V I D 9 8 0 6 5 1 0 9

TRANSPORTER NO 1 SIGNATURE "I certify that I have not tampered with or materially altered the contents of this shipment."	DATE DELIVERED 11/24/83
TRANSPORTER NO 2 SIGNATURE "To the best of my knowledge the contents of the shipment I have accepted for transport conform with the description on this manifest."	DATE RECEIVED 11/24/83
TRANSPORTER NO 2 SIGNATURE "I certify that I have not tampered with or materially altered the contents of this shipment."	
TREATMENT STORAGE OR DISPOSAL FACILITY INDICATION OF ANY DIFFERENCES BETWEEN MANIFEST AND SHIPMENT OR LISTING OF REASONS FOR AND DISPOSITION OF REJECTED MATERIALS	HAZARDING SECTION 1 5 0 2 7
TREATMENT STORAGE OR DISPOSAL FACILITY SIGNATURE "Upon visual inspection, I certify that the contents of this shipment conform with the description on this manifest except those differences noted on this form."	DATE RECEIVED 11/24/83

In case of emergency or spill immediately call the Environmental Quality Board at 725-8992

HAZARDOUS WASTE MANIFEST

A:		DOCUMENT NO	P R IC 04
FROM NAME Island Chemical Co., Inc.		PHONE (809) 770-2200	EPA ID NO V, I, D, 9, 8, 0, 6, 5, 1 (1, 1)
TO ADDRESS Estate 130 Estate Bethlehem, St. Croix, U.S. Virgin Islands			
TRANSPORTER NAME Trailer Marine Transport Corporation		PHONE (809) 721 1313	P, R, D, 9, 8, 0, 6, 4, 4, 5, 7
SITE ADDRESS Isla Grande, Puerto Rico			
TRANSPORTER ADDRESS Transporte Diaz		PHONE (809) 792-7999	P, R, D, 9, 8, 0, 5, 2, 6, 0, 3
SITE ADDRESS Zona Portuaria, Puerto Nuevo, San Juan, Puerto Rico			
FROM NAME Island Chemical of P.R., Inc.		PHONE (809) 854-1090	P, R, D, 0, 9, 0, 3, 9, 9, 7, 1
SITE ADDRESS Km. 51, Highway #2, Manati, Puerto Rico			

THIS MANIFEST IS FOR THE TRANSPORT OF HAZARDOUS WASTE FROM THE FOLLOWING SOURCE TO THE FOLLOWING DESTINATION. THE TOTAL OF THE NUMBER OF CONTAINERS IS 1. THE FIRST MANIFEST DOCUMENT NO. IS 1, C, 0, 4.

CONTAINER NO.	HAZARDOUS CLASS	UN NUMBER	QUANTITY	UNIT	CONTAINER		EPA ID NO.	DATE
					NO.	TYPE		
1	Flammable Liquid	1294	1511.50	Gal	1	T, K	1	12-14-88

SIGNED <i>Jerome H. Ludwig</i> Jerome H. Ludwig President		DATE 12-14-88	PRINTED APPROVAL 12-14-88
SIGNED [Signature] [Name] SCXU		DATE 12-14-88	PRINTED APPROVAL 12-14-88

12-14-88 REP-3718

PART B

SIGNED <i>E. Garcia</i> [Name]		DATE 12-22-88
SIGNED [Signature] [Name]		DATE 12-22-88

ADDRESS
134 Estato Bethlehem, St. Croix, U.S. Virgin Islands

TRANSPORTER NO 1
T. Maria Transport Corporation
PHONE (809) 721-1313

SITE ADDRESS
P.R. 00980, Puerto Rico

TRANSPORTER NO 2
Lo Diaz
PHONE (809) 792-7999

SITE ADDRESS
P.R. 00905, Puerto Nuevo, San Juan, Puerto Rico

TREATMENT STORAGE OR DISPOSAL (TSD) FACILITY
Inland Chemical of P.R., Inc.
PHONE (809) 854-1000

SITE ADDRESS
P.R. 00903, 2, 2, 2, 7, 1

P.R. 00980, 6, 4, 4, 5, 1

P.R. 00905, 2, 6, 8, 5

P.R. 00903, 2, 2, 7, 1

IF MORE THAN TWO TRANSPORTERS ARE TO BE UTILIZED, FILL OUT THE FOLLOWING AS APPROPRIATE
THIS FORM IS NO 1 OF A TOTAL OF 1 THE FIRST MANIFEST DOCUMENT NO IS P.R. I, C, O, 3

PROPER US DOT SHIPPING NAME	US DOT HAZARD CLASS	UN NUMBER	FORM	NET QUANTITY	UNITS	CONTAINERS		ECB EPA HAZ CODE	ECB/EPA WASTE
						NO	TYPE		
1. Toluene	Flam. Liquid	1204	L	147.63	Gal.	1	TK	1	1
2									
3									
4									
5									
6									

SPECIAL HANDLING INSTRUCTIONS (INCLUDING CONTAINER EXEMPTION & IDENTIFICATION OF ADDITIONAL WASTES INCLUDED IN SHIPMENT OF A NONHAZARDOUS MATERIAL WHICH DO NOT HAVE TO BE MANIFESTED)

GENERATOR'S CERTIFICATION: This is to certify that the above named materials are properly classified, described, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation, U.S. EPA and the Commonwealth of P.R. The waste described above were consigned to the Transporter named. The Treatment, Storage or Disposal Facility can and will accept the shipment of hazardous waste, and has a valid permit to do so. I certify that the foregoing is true and correct to the best of my knowledge.

GENERATOR'S SIGNATURE: Jerome H. Ludwig TITLE: President DATE SHIPPED: 02/17/86 EXPECTED ARRIVAL DATE: 02/17/86

TRANSPORTER NO 1 SIGNATURE: [Signature] To the best of my knowledge the contents of the shipment I have accepted for transport conforms with the description on this manifest. TRANSPORTER NO 1 VEHICLE ID NO: SCXU 2317503 DATE RECEIVED: 02/17/86

TEAR AT THIS PERFORATION

PART B GEN EPA ID# V1000000000000

TRANSPORTER NO 1 SIGNATURE: [Signature] I certify that I have not tampered with or materially altered the contents of this shipment. DATE DELIVERED: 02/17/86

TRANSPORTER NO 2 SIGNATURE: [Signature] To the best of my knowledge the contents of the shipment I have accepted for transport conforms with the description on this manifest. TRANSPORTER NO 2 VEHICLE ID NO: [Blank] DATE RECEIVED: [Blank]

TRANSPORTER NO 3 SIGNATURE: [Blank] I certify that I have not tampered with or materially altered the contents of this shipment. DATE RECEIVED: [Blank]

TREATMENT STORAGE OR DISPOSAL FACILITY INDICATION OF ANY DIFFERENCES BETWEEN MANIFEST AND SHIPMENT OR LISTING OF REASONS FOR RECLASSIFICATION OF MATERIALS	MANIFEST			
	1	2	3	4
	5	6	7	8
	9	10	11	12

TREATMENT STORAGE OR DISPOSAL FACILITY SIGNATURE: [Signature] Upon visual inspection I certify that the contents of this shipment conform with the description on this manifest except those discrepancies noted on this form. DATE RECEIVED: 02/22/86

CSNY, IC 02

PR

NOTE THAT IF YOU TRANSPORTERS ARE TO BE UTILIZED, FILL OUT THE FOLLOWING AS APPROPRIATE

P R

1. The following distinctions including container exemption (a) identification of additional wastes included in shipment of a nonhazardous material shall apply to the manifest:

10. I, the undersigned, certify that the above named materials are properly classified, described, marked and labeled and are in proper condition for transportation in accordance with the applicable regulations of the Department of Transportation, U.S. EPA and the Commonwealth of PA. The waste described above were transported to the Transcon, Inc. owned Transfer Station, 5000 S. Hagerstown Road and will accept the shipment of hazardous waste, and has a valid permit to do so. I certify that the foregoing is true and correct to the best of my knowledge.

TEAM AT THIS PERFORMANCE

GEN EPA O.S.

DOCUMENT NO

P. R.

HAZARDOUS WASTE MANIFEST

DOCUMENT NO

P. R. IC02

Generator: Chemical Company, Incorporated		PHONE: (809) 778-2200	EPA ID NO: V I D 9 8 0 6 5 1 0 9 5
Address: Route 130 Estero Bethlehem, St. Croix U.S. Virgin Islands		TRANSPORTER NO 1: Trailer Marine Transport Corporation	PHONE: (809) 721-1313
SITE ADDRESS: Isla Grande, Puerto Rico		EPA ID NO: P R D 9 8 0 6 4 4 5 7 9	
TRANSPORTER NO 2: Transporte Diaz		PHONE: (809) 792-7999	EPA ID NO: P R D 9 8 0 5 2 6 8 3 4
SITE ADDRESS: Zona Portuaria, Puerto Nuevo, San Juan, Puerto Rico			
TREATMENT STORAGE OR DISPOSAL (TSDF) FACILITY: Inland Chemical of P.R., Inc.		PHONE: (809) 854-1090	EPA ID NO: P R D 10 9 10 3 19 9 7 1 8
SITE ADDRESS: Km. 51, Highway #2, Manati, Puerto Rico			

IF MORE THAN TWO TRANSPORTERS ARE TO BE UTILIZED, FILL OUT THE FOLLOWING AS APPROPRIATE

THIS FORM IS NO 1 OF A TOTAL OF 1 THE FIRST MANIFEST DOCUMENT NO IS P. R. I C 0 2

GENERATOR	PROPER US DOT SHIPPING NAME	US DOT HAZARD CLASS	UN NUMBER	FORM	NET QUANTITY	UNITS	CONTAINERS		EGB EPA HAZ CODE	EGB/EPA WASTE TYPE
							NO	TYPE		
1	TOLUENE RQ	Flam. Liquid	1294	1	512051	Gal.	1	TK	1	F101015
2										
3										
4										
5										
6										

SPECIAL HANDLING INSTRUCTIONS INCLUDING CONTAINER EXEMPTION (i.e. IDENTIFICATION OF ADDITIONAL WASTES INCLUDED IN SHIPMENT OF A NONHAZARDOUS NATURE WHICH DO NOT HAVE TO BE MANIFESTED)

GENERATOR'S CERTIFICATION: This is to certify that the above named materials are properly classified, described, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation U.S. EPA and the Commonwealth of P.R. The waste described above were consigned to the Transporter named The Treatment Storage or Disposal Facility can and will accept the shipment of hazardous waste, and has a valid permit to do so. I certify that the foregoing is true and correct to the best of my knowledge.

GENERATOR'S SIGNATURE: <i>Jerome H. Ludwig</i>	TITLE: President	DATE SHIPPED: 11/11/2011	EXPECTED ARRIVAL DATE: 11/21/2011
TRANSPORTER NO 1 SIGNATURE: <i>[Signature]</i>	TRANSPORTER NO 1 VEHICLE ID NO: SCXU	DATE RECEIVED: 11/11/2011	

YEAR AT THIS PERFORMANCE

PART B

GEN EPA ID# **V I D 9 8 0 6 5 1 10 9 5**

TRANSPORTER	TRANSPORTER NO 1 SIGNATURE: "I certify that I have not tampered with or materially altered the contents of this shipment."		DATE DELIVERED: 11/11/2011						
	TRANSPORTER NO 2 SIGNATURE: "To the best of my knowledge the contents of the shipment I have accepted for transport conforms with the description on this manifest."		DATE RECEIVED: 11/11/2011						
	TRANSPORTER NO 2 SIGNATURE: "I certify that I have not tampered with or materially altered the contents of this shipment."		HANDLING METHOD:						
			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>1</td><td>2</td></tr> <tr><td>3</td><td>4</td></tr> <tr><td>5</td><td>6</td></tr> </table>		1	2	3	4	5
1	2								
3	4								
5	6								
TSDF FACILITY	TREATMENT STORAGE OR DISPOSAL FACILITY INDICATION OF ANY DIFFERENCES BETWEEN MANIFEST AND SHIPMENT OR LISTING OF REASONS FOR AND DISPOSITION OF REJECTED MATERIALS			DATE RECEIVED: 11/11/2011					
	TREATMENT STORAGE OR DISPOSAL FACILITY SIGNATURE: Upon visual inspection I certify that the contents of this shipment conform with the description on this manifest except those discrepancies noted on this form.								

In case of emergency or spill immediately call the Environmental Quality Board (809) 725-8992

DOCUMENT NO

P. R.

ART A:

DOCUMENT NO 1001 P R

GENERATOR NAME Island Chemical Company, Incorporated	PHONE (809) 778-2500	EPA ID NO 720980631001
SITE ADDRESS Estato 130 Petate Bethlehem, St. Cruz U.S. Virgin Islands		
TRANSPORTER NO 1 Trailer Marine Transport Corporation	PHONE (809) 721-1111	EPA ID NO 720980644370
SITE ADDRESS Isla Grande, Puerto Rico		
TRANSPORTER NO 2 Transporte Diaz	PHONE (809) 797-7998	EPA ID NO 720980526031
SITE ADDRESS Zona Portuaria, Puerto Ricos, San Juan, Puerto Rico		
TREATMENT STORAGE OR DISPOSAL (TSD) FACILITY Island Chemical of P.R., Inc.	PHONE (809) 856-1090	EPA ID NO 720980309710
SITE ADDRESS Ra. 51, Highway #2, Maunabo, Puerto Rico		

IF MORE THAN TWO TRANSPORTERS ARE TO BE UTILIZED, FILL OUT THE FOLLOWING AS APPROPRIATE

THIS FORM IS NO _____ OF A TOTAL OF _____ THE FIRST MANIFEST DOCUMENT NO IS 1001 P R

PROPER US DOT SHIPPING NAME	US DOT HAZARD CLASS	UN NUMBER	FORM	NET QUANTITY	UNITS	CONTAINERS		EOB EPA MAZ CODE	EOB/EPA WASTE TYPE
						NO	TYPE		
1 Toluene 50	Flam. Liq.	1204	2	1,195	Gal.	1	Y	1	P01
2									
3									
4									
5									
6									

SPECIAL HANDLING INSTRUCTIONS INCLUDING CONTAINER EXEMPTION (i.e. IDENTIFICATION OF ADDITIONAL WASTES INCLUDED IN SHIPMENT OF A NONHAZARDOUS NATURE WHICH DO NOT HAVE TO BE MANIFESTED)

EMITTER'S CERTIFICATION: I certify that the above named materials are properly classified, described, marked and labelled and are in proper condition for transportation according to the requirements of Transportation, U.S. EPA and the Commonwealth of P.R. Residues described above were consigned to the Transporter named The _____ and will accept the shipment of hazardous waste, and has a valid permit to do so. I certify that the foregoing is true and correct to the best of my knowledge.

TITLE President	DATE SHIPPED MO DAY YR 11 13 89	EXPECTED ARRIVAL DATE MO DAY YR 11 13 89
TRANSPORTER NO 1 VEHICLE ID NO 2310303	DATE RECEIVED MO DAY YR 11 13 89	

TEAR AT THIS PERFORATION

PART 2		GEN EPA ID NO 720980631001						
TRANSPORTER NO 1 SIGNATURE: I certify that I have not tampered with or materially altered the contents of this shipment. <i>G. Lopez-Transporte Diaz</i>	DATE DELIVERED MO DAY YR 11 13 89							
TRANSPORTER NO 2 SIGNATURE: To the best of my knowledge the contents of the shipment I have accepted for transport conforms with the description on this manifest.	TRANSPORTER NO 2 VEHICLE ID NO 2310303	DATE RECEIVED MO DAY YR 11 13 89						
TRANSPORTER NO 2 SIGNATURE: I certify that I have not tampered with or materially altered the contents of this shipment.								
TREATMENT STORAGE OR DISPOSAL FACILITY INDICATION OF ANY DIFFERENCES BETWEEN MANIFEST AND SHIPMENT OR LISTING OF REASONS FOR AND DISPOSITION OF REJECTED MATERIALS	HANDLING METHOD <table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> </tr> <tr> <td>4</td> <td>5</td> <td>6</td> </tr> </table>		1	2	3	4	5	6
1	2	3						
4	5	6						
TREATMENT STORAGE OR DISPOSAL FACILITY SIGNATURE: Upon visual inspection I certify that the contents of this shipment conform with the description on this manifest except those discrepancies noted on this form. <i>G. Lopez</i>	DATE RECEIVED MO DAY YR 11 13 89							
In case of emergency or spill immediately call the Environmental Quality Board (809) 725-8992								

DOCUMENT NO 1001 P R

PHOTOGRAPHS

Berlex Laboratories

St. Croix. VI

September 9, 1985

PHOTOGRAPHS



Photo #1 - Aboveground raw material storage tanks. Berlex, VI

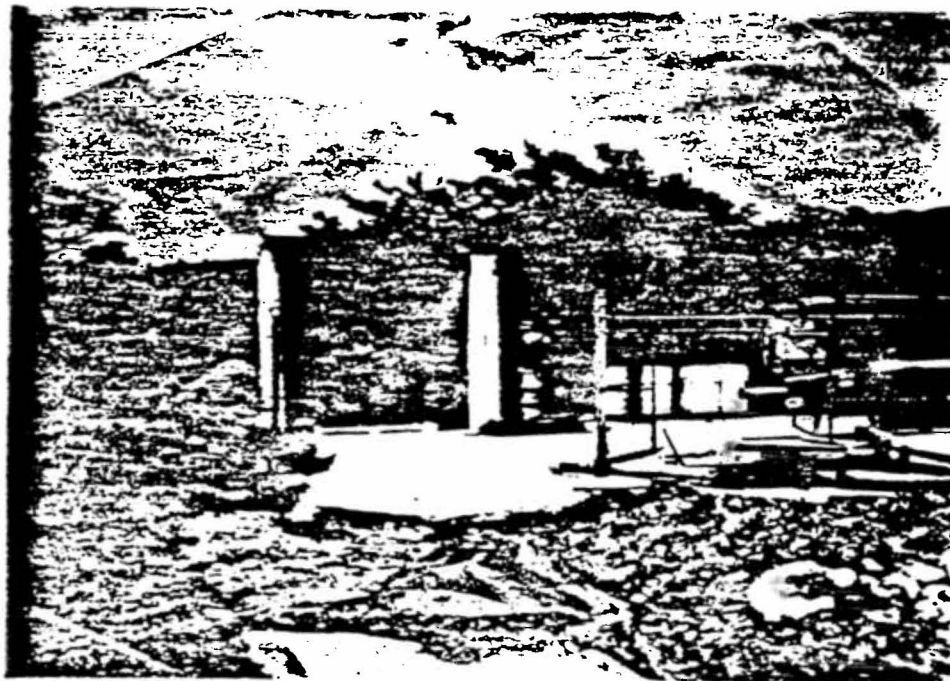


Photo #2 - Outside material storage area. Berlex, VI

PHOTOGRAPHS

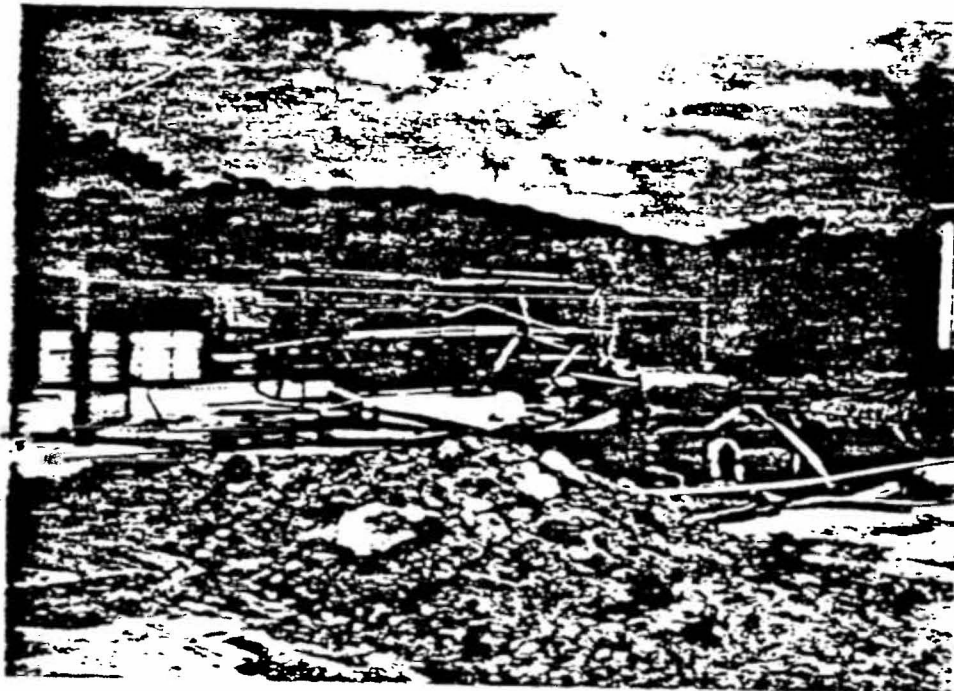


Photo #3 - Outside material storage area. Berlex, VI



Photo #4 - Location of toluene drying oven. Berlex, VI

PHOTOGRAPHS

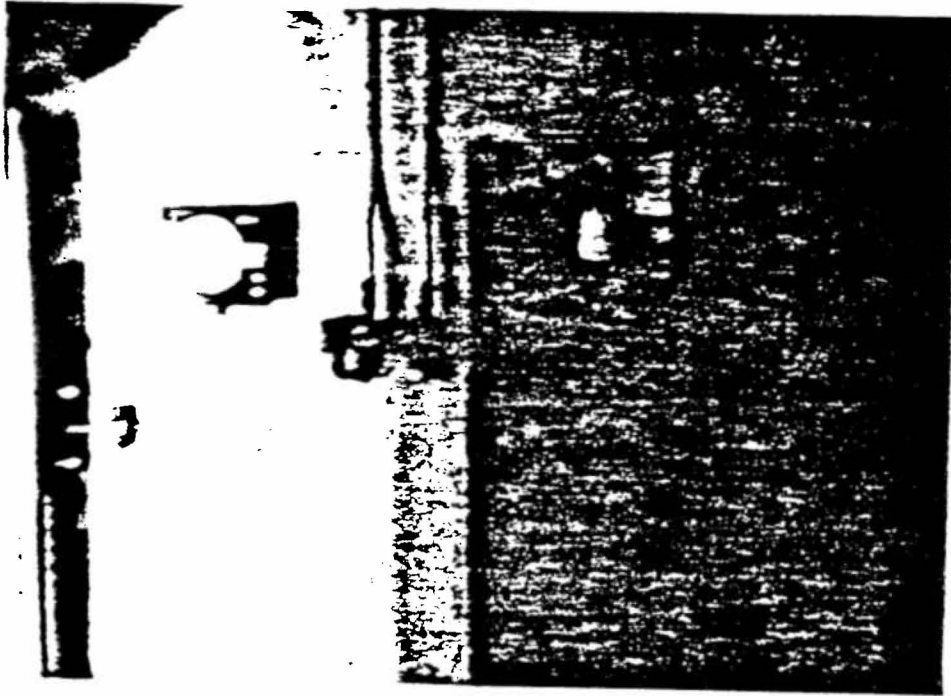


Photo #5 - Entrance to toluene drying oven. Berlex, VI

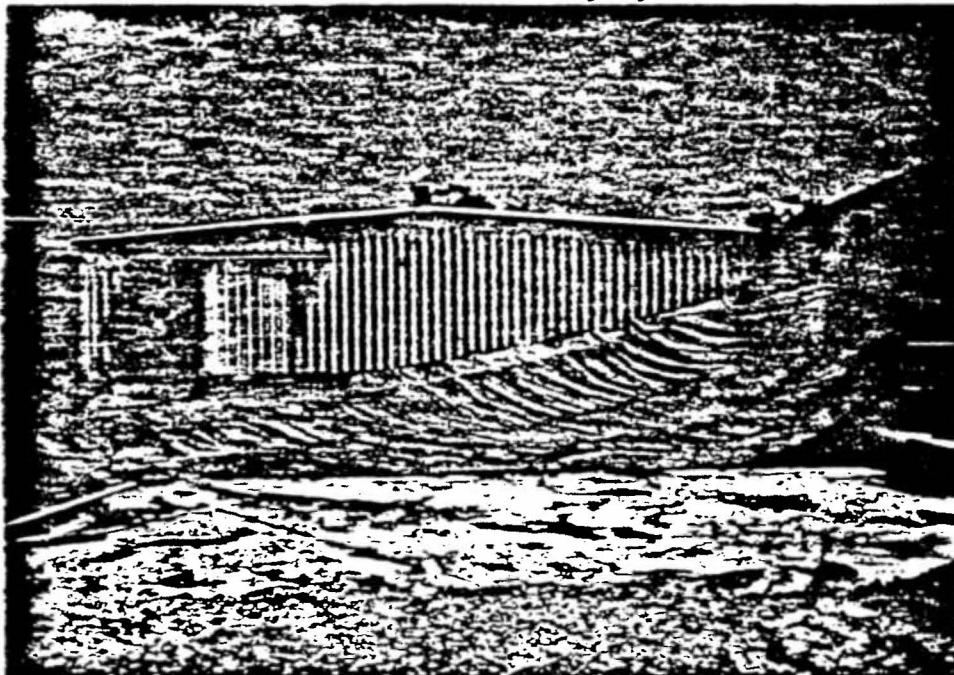


Photo #6 - pyridine contaminated Area. Synthetic liner used to prevent saturation of soil. Berlex, VI

PHOTOGRAPHS



Photo #7 & #8 - Pyridine contaminated area. Lab waste drainage area, surface sampling using trowels. Berlex, VI



PHOTOGRAPHS

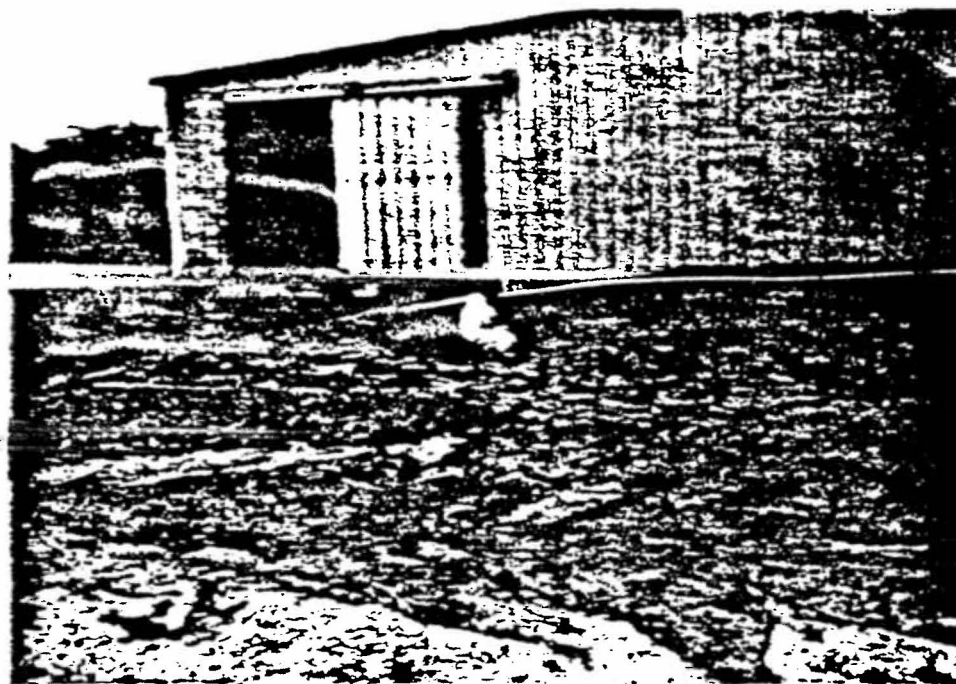


Photo #9 - Pyridine contaminated area. Lab waste drainage area, surface sampling using trowels. Berlex, VI

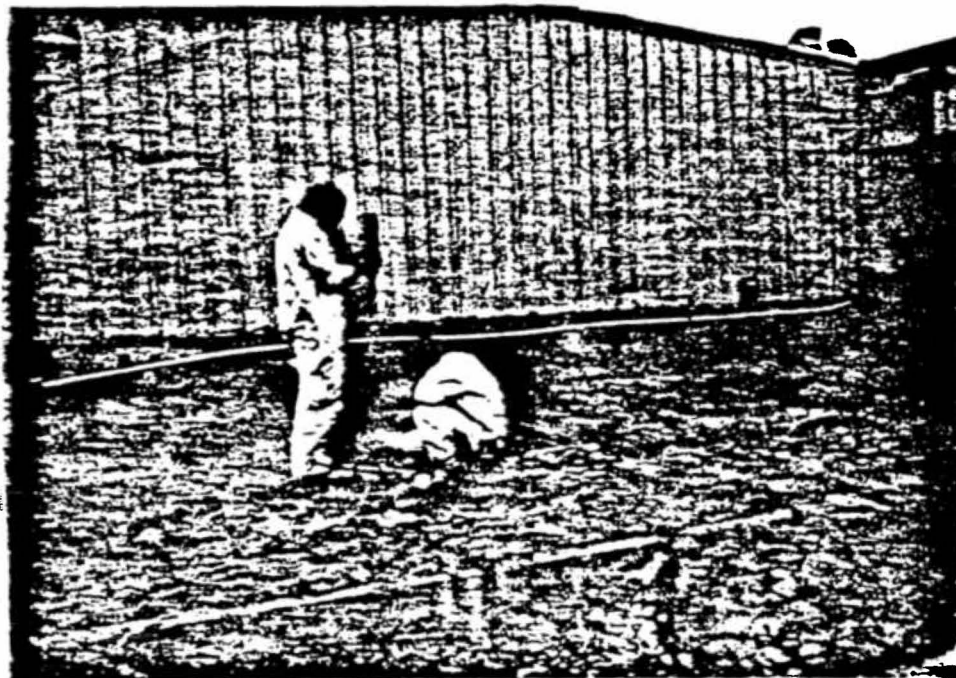


Photo #10 - Pyridine contaminated area. Lab waste drainage area, subsurface sampling using bucket augers. Berlex, VI

PHOTOGRAPHS

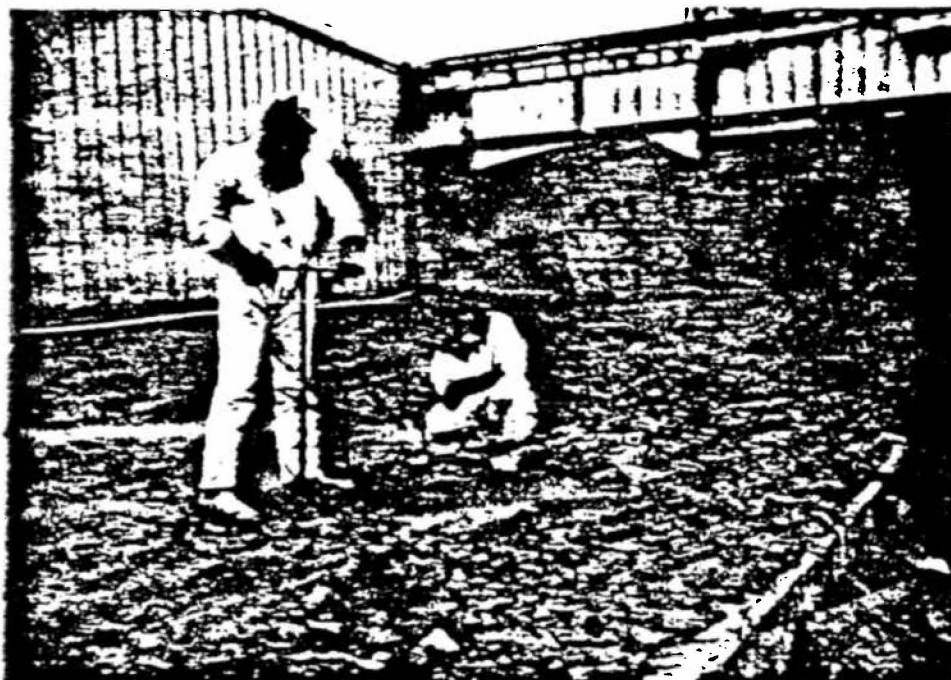


Photo #11 - Pyridine contaminated area. Lab waste drainage area, subsurface sampling using bucket augers. Berlex, VI

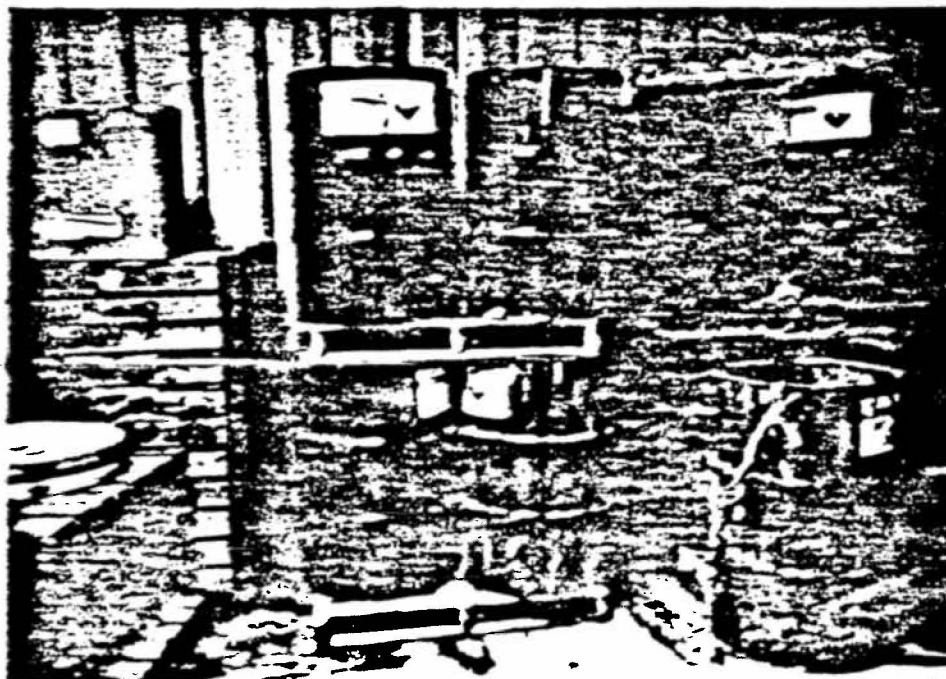


Photo #12 - 55-gallon drums of toluene contaminated soil in warehouse. Berlex, VI

PHOTOGRAPHS



Photo #13 - Close-up view of toluene contaminated soil stored in warehouse. Berlex, VI

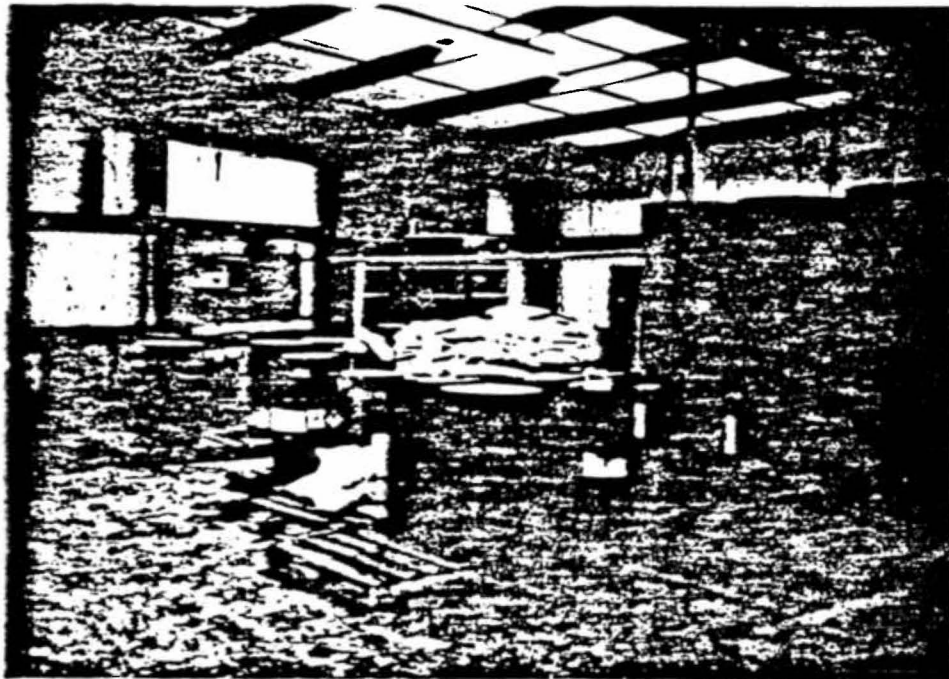


Photo #14 - 55-gallon drums of raw materials stored in warehouse. Berlex, VI

☒ Generator

☐ transporter

☐ TSD

3.20

RCRA

ENFORCE INTERIM RPT

3/13/86

RCRA Enforcement

Interim Report- No Analysis data

Berlex Laboratories

St. Croix, VI

VID980651095

March 13, 1986

Participating Personnel:

Environmental Protection Agency

Carol Price, Environmental Scientist

Joseph Cosentino, Environmental Scientist

Steven Hale, Env. Protection Specialist

Michael Glogower, Life Scientist

Berlex Laboratories (ICC)

Allan Kyles, Vice-President,

Enviro-Sciences, Inc. (ESI)

Raymond Hays, Facility Handyman

Report prepared by:

Carol Price 5/11/86
Carol Price, Environmental Scientist
Source Monitoring Section

Approved for the Director by:

Richard P. Spear 5/5/86
Richard P. Spear, Chief
Surveillance & Monitoring Branch

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Summary

Objective

This RCRA enforcement inspection was conducted of Berlex Laboratories (ICC) at the request of the Solid Waste Branch in order to gather information necessary to determine the facility's compliance with applicable RCRA regulations.

Findings and Recommendations

1. Drums of hazardous material are being stored on the Berlex (ICC) site. Environmental Sciences, Inc. (ESI), the facility's contractor claims that these drums of chemicals have not been declared "waste" yet and so are not subject to accumulation and storage requirements. Most of the drums are the property of Virgin Island Chemical; no representative of this company was present on the site. ESI claims that thirty-three of the drums in storage belong to Berlex (ICC). The other drums (approximately 155) ESI says belong to Virgin Island Chemical. The attached inventory (Attachment 2), prepared by a Virgin Island Chemical representative but given to EPA by ESI, contains a listing of the drums in storage. The number in the inventory does not match the number counted by EPA.
2. A storm sewer that collects run-off from the facility discharges into a intermittent stream behind the Berlex (ICC) property. The facility does not have a NPDES permit.
3. The results of the analyses for organics, metals, and PCB's revealed the following:
 - Phthalates appeared in all of the samples ranging from 1000 ug/kg to 17,000 ug/kg in the soil samples and 3.9 ug/l to 280 ug/l in the water sample.
 - Organics contamination was higher in the sample taken from the gut sediments at the point of the drainage pit discharge than in the other samples. This contamination consisted of xylene, di-n-octyl phthalate, 1,4-dichlorobenzene, 1,2-dichlorobenzene, naphthalene, flourene, phenanthrene, and aliphatic and aromatic hydrocarbons.
 - Chloroform appeared in the on-site well at a level of 130 ug/l.
 - PCB's were detected below the detection limit in all six of the samples.
 - The metals arsenic (estimated value), beryllium (estimated value), chromium (ranging from 10 ug/kg to 52 ug/kg), copper (ranging from 40 ug/kg to 58 ug/kg), lead (estimated value), nickel (ranging from 19 ug/kg to 32 ug/kg), antimony (ranging from 8.4 ug/kg to 10 ug/kg), selenium (estimated value), and zinc (ranging from 63 ug/kg to 360 ug/kg) were all detected in the sediment samples. Arsenic, beryllium, cadmium, chromium, copper, mercury, antimony, and zinc were all detected in the water sample at estimated values.

Purpose of Survey

A RCRA enforcement inspection was conducted at Berlex Laboratories (otherwise known as Island Chemical Company or ICC), St. Croix, VI. The survey was conducted at the request of the Solid Waste Branch to generate additional information necessary to determine the facility's compliance with RCRA regulations. The elements of the survey included a review of the facility's history; inspection of the facility; and the sampling of the stream sediments behind the plant, the laboratory waste pit, and an on-site well.

Facility History

The Berlex (ICC) facility has undergone many changes in ownership since it opened. The owner of the land itself, that the facility is built on, has remained constant. A local landowner originally leased the land on a 99 year lease. The first operator of the plant was Pierell America, Inc., who started operations in 1972. There were several other owners of the facility until 1979, when Berlex Laboratories (ICC) obtained the facility, having merged with the then current owner, Cooper Laboratories.

Berlex Laboratories (ICC), a subsidiary of Schearing, began operating in November 1979. Their process involved taking quinidine (found in the eucalyptus tree) and changing isomers in the substance to convert it to quinine. This process continued through late 1982. In October 1982 Berlex (ICC) notified EPA of the forthcoming closure and removal of waste materials and excess chemicals (xylene, toluene) to Inland Chemical of Puerto Rico. EPA assigned Berlex (ICC) the RCRA identification number VID80651095. Prior to this removal, Berlex (ICC) was operating as a small quantity generator.

In 1984 Berlex (ICC) sold the facility to Virgin Island Chemical. Virgin Island Chemical planned to produce benzyl acetate at the site by reacting benzyl chloride with acetic acid. This process was in operation for approximately 6-8 months, but ceased when the market price of benzyl acetate plummeted.

As part of the sales contract with Virgin Island Chemical, Berlex (ICC) was required to clean up any contamination present at the site. Berlex (ICC) hired Enviro-Sciences, Inc. (ESI) of Denville, NJ, to survey the site and certify it as environmentally clean. ESI's sampling survey disclosed four areas of contamination. Two areas, between tanks 8 and 9 and concrete slab #3 (see Figure 1) were found to be contaminated, primarily with toluene. This contamination was thought to be from process spills. The other two areas, along trench #9 and underneath the concrete loading dock, were contaminated primarily with pyridine, thought to be from a leaking laboratory drain. The quantity of contaminants was estimated at 125 pounds of toluene and 120 pounds of pyridine.

ESI recommended on-site treatment of this contaminated soil. The toluene contaminated soil was to be placed in a drying oven equipped with carbon filters, so that emission rates did not exceed the 200 ppm TLV for toluene.

The pyridine contaminated soil was to be treated by cutting the concrete pad and tilling the soil every 2-3 days to allow the soil to aerate. A structure was to be built over the area to prevent soil saturation from rainfall. ESI reported by letter on May 15, 1985 that this clean-up would be initiated on June 6, 1985.

The Environmental Services Division conducted an inspection of Berlex Laboratories (ICC) on September 9, 1985. The findings of this inspection are summarized in the attached report (Attachment 1). On October 10, 1985, 192 fifty-five gallon drums of waste were shipped from Berlex (ICC) to Chemical Waste Management in Alabama (see Attachment 2 - Hazardous waste manifests). This waste included:

- ° Toluene contaminated soil which had been treated in the drying oven
- ° Process pit water and sludge
- ° Drums and soil from the wastewater drainage line

The pyridine contaminated soil remained in place.

As of March 13, 1986, Virgin Island Chemical is not operating the facility. A warehouse full of drums exists on the site. ESI claims that approximately 33 of these drums belong to Berlex (ICC). According to ESI the drums contain mostly laboratory reagents, washings, and miscellaneous materials. These have been sampled by ESI and analysis is currently underway. The remaining drums belong to Virgin Island Chemical. These drums contain raw materials, product, and other incidentals used in the Virgin Island Chemical process. A count of these drums yielded a number of approximately 155. According to an inventory of drums by Virgin Island Chemical, which ESI possessed, the number should have been approximately 208. According to ESI, this inventory may have not been accurate because some of the materials may have been re-sold on the island. A representative of Virgin Island Chemical was not present during the inspection. A listing of the drum inventory is provided as Figure 2.

Presently, plans are being developed for U.S. Resources, Inc. to lease the site from Virgin Island Chemical. A representative of U.S. Resources was present on the site on the day of the inspection and some of the company's equipment was present on-site. U.S. Resources, Inc. plans to operate the facility as an alcohol conversion plant. The process involves dehydrating alcohol contaminated with water, which is then used to make gasohol.

Facility areas/treatment units inspected

During the March 13th inspection the following areas were inspected and/or sampled:

°Process pit

The process pit is an 8,000 gallon underground concrete pit that was used to contain process wastewater and sludge that settled from this wastewater. This pit was cleaned out in 1982 when Berlex (ICC) shut down operations. The sludge and wastewater present in the tank were

disposed of locally. In 1985 ESI tested water which was found accumulating in the tank. The results from this analysis showed contamination consisting of benzyl chloride and some heavy metals. The pit was cleaned again and the contents were shipped to Chemical Waste Management in Alabama as "hazardous waste liquid, N.O.S.". This tank was not sampled during the March 13th inspection, as originally planned, because it was sealed with concrete after the 1985 clean-out.

°Toluene drying oven

The oven used for the treatment of toluene contaminated soil was found to be empty during the March 13th inspection (see photos 1 and 2). According to ESI's representative, the soil present during EPA's September 9, 1985 inspection was shipped to Chemical Waste Management in October 1985.

°Pyridine contaminated pad

The concrete pad located behind the Berlex (ICC) facility was the area of pyridine contamination. The pad was broken up and the soil tilled every 2-3 days as treatment for the removal of pyridine as specified in ESI's workplan. At the time of the March 13th inspection the area was uncovered, and according to ESI, had not been tilled recently.

Two samples, #085254 and #085255, were taken from this area. A composite of the soil from the surface to a three foot depth was obtained. A sample, #085252, was also taken from a suspected area of seepage into the intermittent stream behind the Berlex (ICC) plant. This soil sample was a composite from the surface to approximately 10 inches in depth. A background soil sample, #085251, was also taken upstream of the Berlex property for comparison purposes.

°Storm water sewer

According to ESI, the original storm water sewer at the facility consisted of old, clean toluene drums welded together and attached to a concrete line. In October 1985 the line was excavated and the drums were found to be corroded. Sludge was found to be accumulated in the bottom of the line. The drums, sludge, and two feet of soil were removed and shipped out. A new PVC line was installed (see photo 3). Although this storm water sewer discharges into an intermittent stream located at the edge of the property, the facility does not possess a NPDES permit. Sampling done earlier in this area by ESI revealed higher than background levels of zinc, cadmium, chromium, and lead.

A soil sample, #085253, was taken at the point of discharge to the intermittent stream. During sampling, a tropical rainstorm developed, and water was observed discharging from the pipe (see photos 4 and 5).

°Production well

During the inspection a production well was discovered on-site. The well was not in use at the time, but was still operable. ESI had no knowledge

of the purpose, depth, or construction of the well or which owner of the facility had installed or used it. A water sample, #085256, was taken from this well (see photo 6).

°Drum storage area

A variety of chemicals are presently being stored in a warehouse located on the Berlex (ICC) property. According to ESI, the drums contain raw materials, product, and incidentals from Virgin Island Chemical and Berlex (ICC). Approximately 188 drums were found to be stored during the March 13th inspection (see photos 7, 8, 9, and 10). Attachment 2 lists the name and quantity of waste stored, according to Virgin Island Chemical's inventory and ESI's statements.

Sampling procedures

A total of six samples were taken from the Berlex (ICC) facility (see Figure 2- Map of sampling points). Three of the six samples were taken from the intermittent stream (known as the "gut") that runs along the edge of the Berlex (ICC) property. The first sample taken, #085251, was a background soil sample to be used as a comparison to the other samples taken from the gut. The sample was taken from the surface mud using polyethylene scoops and mixed on Benchkote paper to insure representative split samples. The sample was analyzed for purgeable organics (POA's), non-volatile organics (NVOA's), PCB's, and metals.

The second and third samples, #085252 and #085253, were soil samples taken from areas of the gut directly behind the Berlex (ICC) facility. Sample #085252 was taken from an area behind the laboratory drainage pit where drainage may have seeped into the gut. Sample #085253 was taken from the area of the gut where the storm sewer discharges. Both of these soil samples were taken from the surface to a depth of 10" using a stainless steel hand auger. The first core from the auger was discarded to minimize cross-contamination; the remaining cores were mixed on Benchkote paper in order to obtain a well-mixed representative sample. Both of the samples were analyzed for POA's, NVOA's, PCB's and metals.

Two soil samples were obtained from the laboratory waste drainage pit. The first sample, #085254, was taken approximately 10 feet from the building, and the second, #085255, approximately 20 feet from the building. The stainless steel bucket auger (rinsed with water and deionized water) was used to obtain cores to a depth of 3 feet. The cores were mixed on Benchkote paper in order to obtain a representative and well-mixed sample. Both of the samples were analyzed for POA's, NVOA's, PCB's, and metals.

The sixth sample, #085256, was obtained from the production well located on the site. Since the well was of indeterminate diameter and depth, a precise determination of the volume of water to be removed could not be made. By considering the average depth to groundwater in the area of the Berlex (ICC) facility, and the apparent size of the well casing, it was estimated that purging 150 gallons from the well would remove 3-5 times the well volume and samples representative of the groundwater would be obtained. Consequently, the well was pumped for 6 minutes and 20 seconds, removing 170 gallons of water. The sample was then taken directly from the plastic hose attached to the well head to minimize damage to the well head.

All samples were split, with ESI acting for the facility. The samples were collected in appropriate containers and preserved according to EPA protocol. All samples were shipped on ice the following day to EPA's Edison laboratory.

Results of Analysis

The results of the analysis of the sediment and water samples are summarized on three tables. Table 1 presents a list of organic compounds for which analyses were conducted. This list does not include compounds which the laboratory may have identified as major peaks. Table 2 shows the organic compounds that were identified in the samples collected. Table 3 lists the results of the metal scan analysis.

Most of the samples showed some organics contamination. All of the samples, including the background sample taken in the gut, contained phthalates, chiefly di-n-octyl phthalate, with butyl benzyl phthalate and bis(2-ethyl hexyl phthalate also appearing in a few samples. These values ranged from 1000 ug/kg to 17,000 ug/kg in the soil samples and 3.9 ug/l to 280 ug/l in the water sample. The results from the sample taken in the gut, at the point where the drainage line discharges (#085253), showed more contamination. This sample contained xylene, 1,4-dichlorobenzene, 1,2-dichlorobenzene, di-n-octyl phthalate, naphthalene, flourene, phenanthrene, and aliphatic and aromatic hydrocarbons. The on-site well results showed contamination with chloroform. The PCB analysis results showed the presence of PCB's below the detection limit in all of the samples.

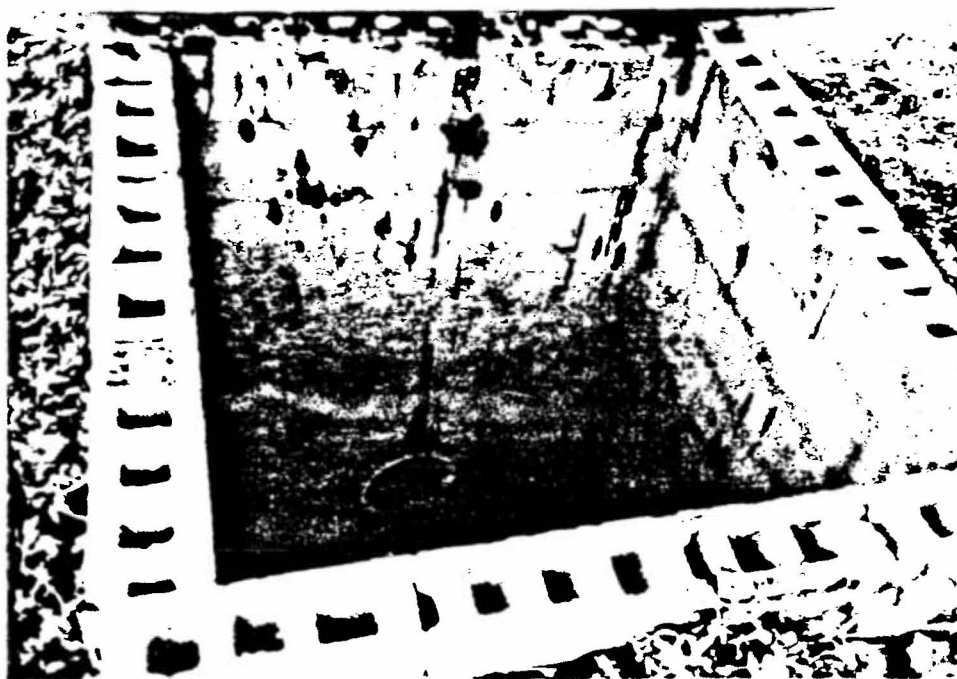
The results of the metals analyses, for the sediment samples, showed varying levels of arsenic, beryllium, chromium, copper, lead, nickel, antimony, selenium, and zinc. The results of the metals analyses for the water sample showed estimated levels of arsenic, beryllium, cadmium, chromium, copper, mercury, antimony, and zinc. The value for chromium in the sediment samples increased from the background level of 10 ug/kg to 52 ug/kg at the point of the drainage pit discharge, finally leveling off to 25 and 27 ug/kg in the lab waste pit. The value for copper remained fairly constant through all the samples. The value for zinc decreased from background to the point where the lab waste pit seeped into the gut, but increased to a high of 360 ug/kg at the point where the drainage pit discharged into the gut. The value leveled off to 79 and 80 ug/kg in the lab waste pit. The value for nickel was also higher at the point where the drainage pit discharged into the gut, with a value of 32 ug/kg.



1. Oven formerly used for the drying
of toluene contaminated earth.



2. Former toluene drying oven.



3. Polyethylene storm sewer line replaced in 1985.



4. Storm sewer discharge into intermittent stream behind Berlex property during tropical storm.



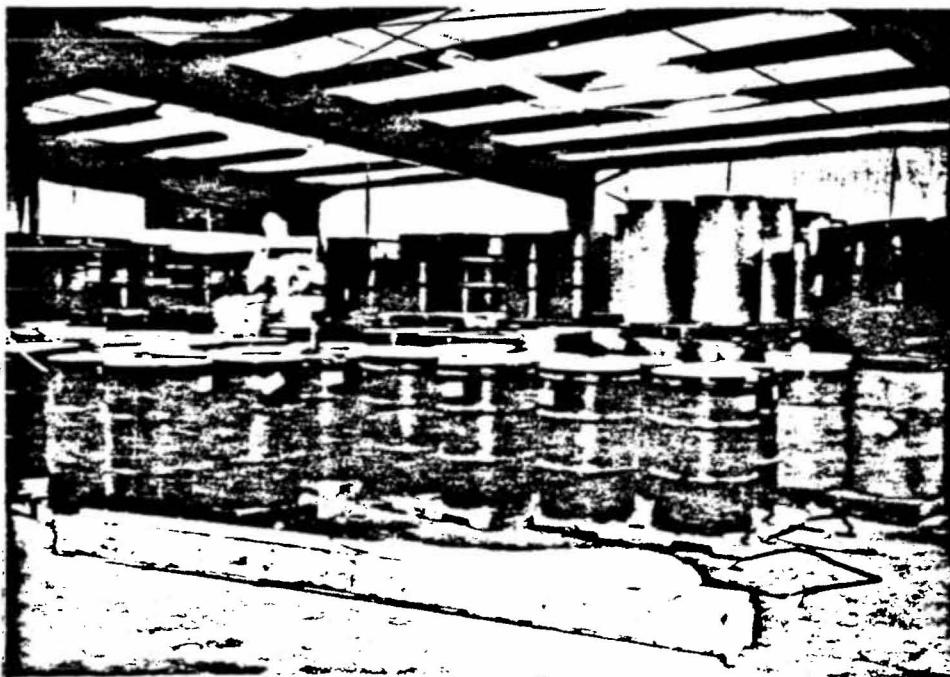
5. Sampling of intermittent stream bed during discharge of storm sewer.



6. Production well located on-site.



7. Warehouse used for drum storage- first room of drums



8. Warehouse used for drum storage- second room of drums



9. Lab pack drums stored in warehouse.



10. Close-up of drums of benzyl chloride in warehouse.

Figure 1 - Map of facility:
Contaminated areas

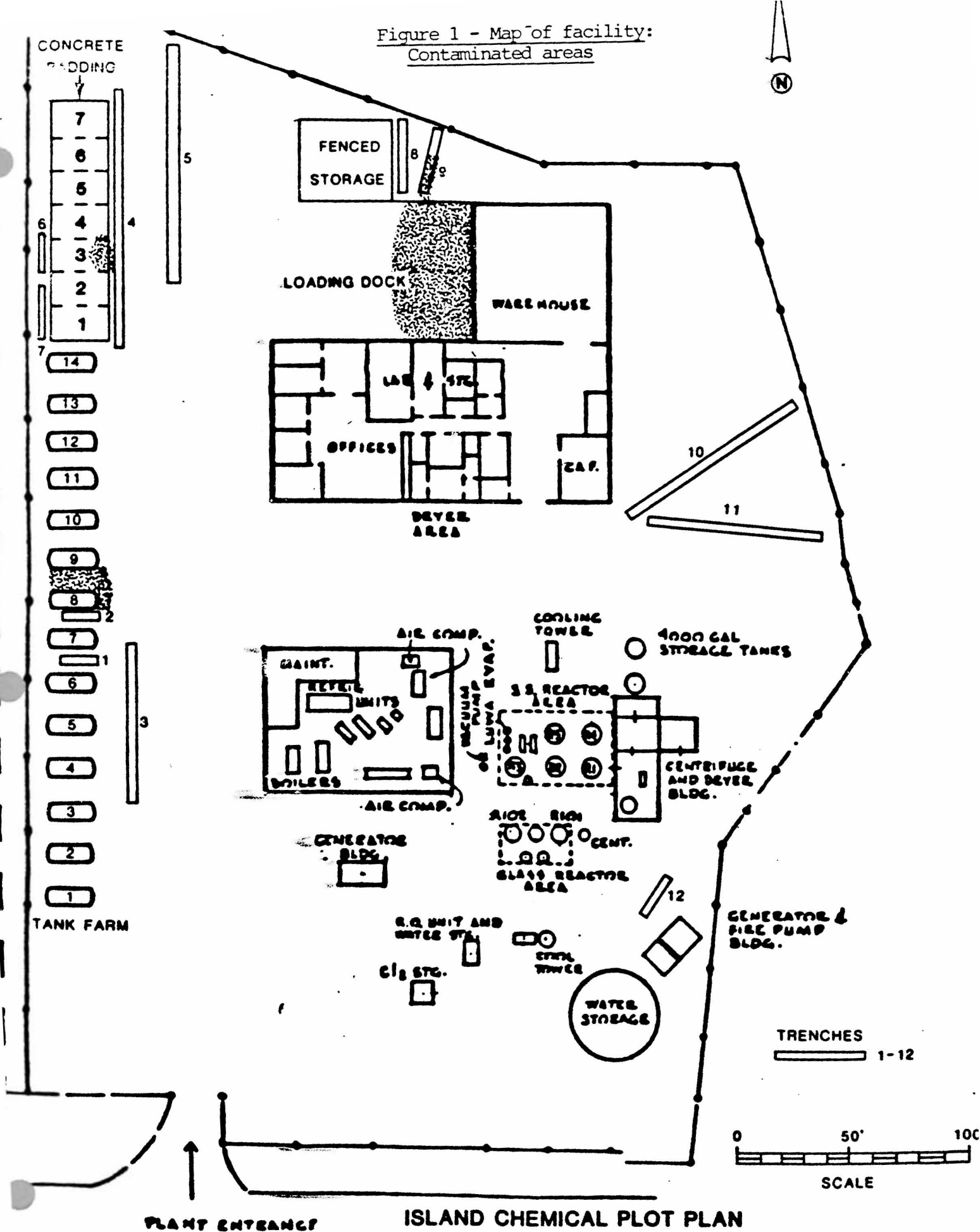


Figure 2 - Drums in storage

Virgin Island Chemical drums:

<u>Type of material</u>	<u>Waste #</u>	<u>Size of drum</u>	<u>Quantity</u>
Anti-freeze		55 gallon	19
Miscellaneous detergent		20 gallon, 15 gallon	13
Salt		35 gallon (fiber)	2
Toluene	U220	55 gallon	10
Lube oil		55 gallon	5
Modul		35 gallon (fiber, steel)	2
Herbicide		55 gallon (plastic)	1
Benzyl chloride	P028	55 gallon	28
Methyl isobutyl carbonyl		55 gallon	12
Salicylic acid		55 gallon (fiber)	27
Sodium hydroxide		55 gallon (plastic)	33
Acetic acid		55 gallon	18
Triethylamine (TEA)		55 gallon	3
Acetone	U002	55 gallon	1
Methyl isobutyl ketone	U161	55 gallon	1
Sulfanic acid		55 gallon (fiber)	1
Sodium acetate		35 gallon	1
Sodium hexametaphosphate		35 gallon	1
Benzyl acetate		55 gallon	22
Toluene-acetone mix	U002,U220	55 gallon	2
Methanol		55 gallon	4
Sodium hydroxide (solid)		55 gallon	2
			<u>208</u>

Chloroform drums (empty)

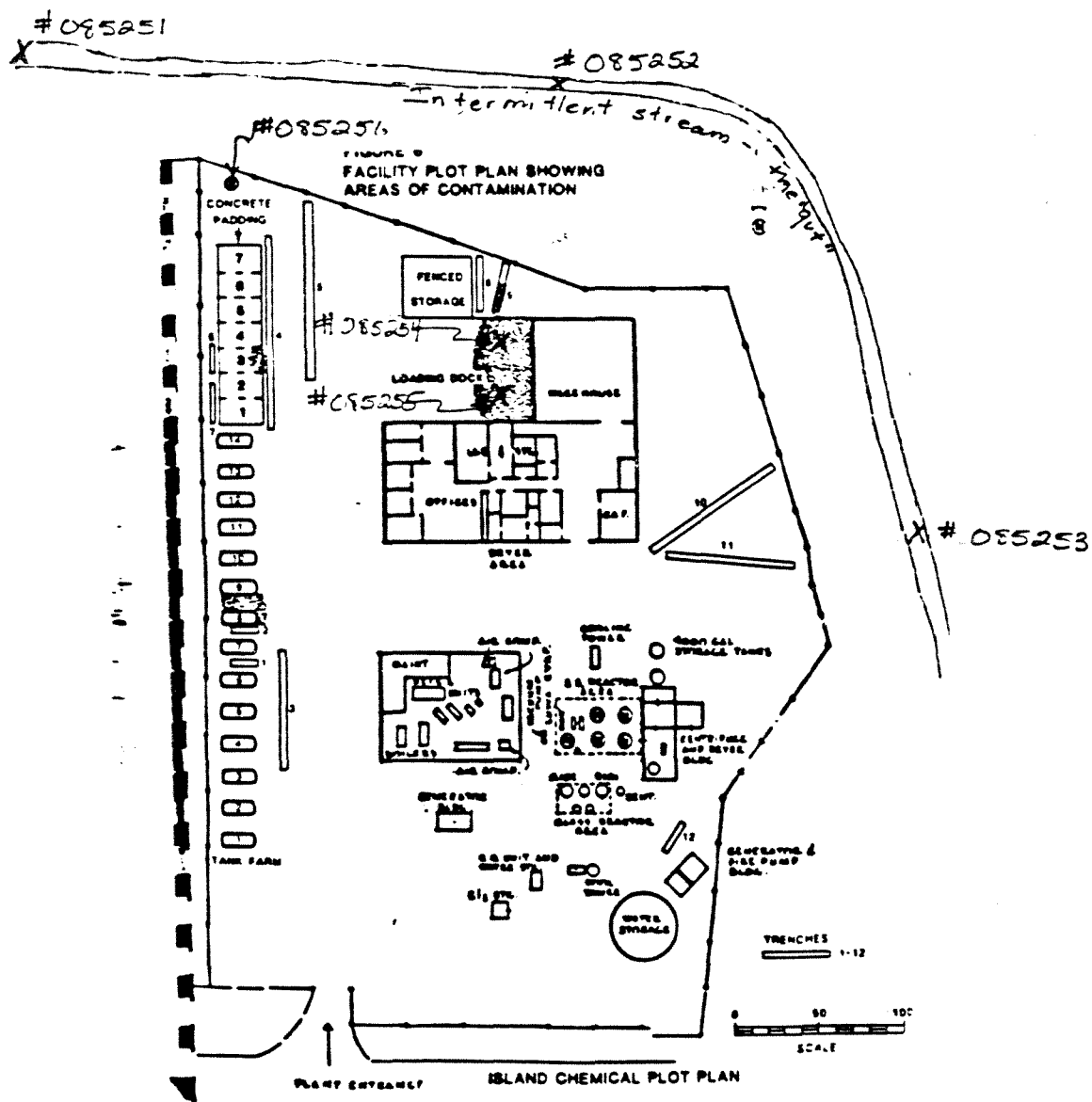
55 gallon

4

Berlex (ICC) drums:

<u>Type of material</u>	<u>Quantity</u>
Lab chemicals (Aceto-nitrate, Acetic acid)	33 (total)
Washings	
Cut up drums	
Miscellaneous materials	
Crystallized material	

Figure 3
Map of sampling points



X = Sampling point

• = Production well

Not to scale.

Table 1 - Organic compounds for which analysis was conducted

Acid Compounds

2,4,6-trichlorophenol
p-chloro-n-cresol
2-chlorophenol
2,4-dichlorophenol
2,4-dimethylphenol
2-nitrophenol
4-nitrophenol
2,4-dinitrophenol
4,6-dinitro-o-cresol
pentachlorophenol
phenol

Base/Neutral Compounds

acenaphthene
benzidine
1,2,4-trichlorobenzene
hexachlorobenzene
hexachloroethane
bis(2-chloroethyl)ether
2-chloronaphthalene
1,2-dichlorobenzene
1,3-dichlorobenzene
1,4-dichlorobenzene
3,3'-dichlorobenzidine
2,4-dinitrotoluene
2,6-dinitrotoluene
1,2-diphenylhydrazine
(as azobenzene)
fluoranthene
4-chlorophenyl phenyl ether

Base/Neutral Compounds

4-bromophenyl phenyl ether
bis-(2-chloroisopropyl)ether
bis(2-chloroethoxy)methane
hexachlorobutadiene
hexachlorocyclopentadiene
isophorone
naphthalene
nitrobenzene
N-nitrosodiphenylamine
N-nitroso-n-propylamine
bis(2-ethylhexyl)phthalate
butyl benzyl phthalate
di-n-butyl phthalate
di-n-octyl phthalate
diethyl phthalate
dimethyl phthalate
benzo(a)anthracene
benzo(a)pyrene
3,4-benzofluoranthene
benzo(k)fluoranthene
chrysene
acenaphthylene
anthracene
benzo(ghi)perylene
fluorene
phenanthrene
dibenzo(a,h)anthracene
indeno(1,2,3-cd)pyrene
pyrene

Volatiles

acrolein
acrylonitrile
benzene
carbon tetrachloride
chlorobenzene
1,2-dichloroethane
1,1,1-trichloroethane
1,1-dichloroethane
1,1,2-trichloroethane
1,1,2,2-tetrachloroethane
chloroethane
2-chloroethylvinyl ether
chloroform
1,1-dichloroethene
1,2-trans-dichloroethene
1,2-dichloropropane
1,3-dichloropropane
ethylbenzene
methylene chloride
chloromethane
bromoethane
bromoforn
dichlorobromomethane
trichlorofluoromethane
dichlorodifluoromethane
chlorodibromomethane
tetrachloroethylene
toluene
trichloroethylene
vinyl chloride

Pesticides

aldrin
dieldrin
chlordane
4,4'-DDT
4,4'-DDE
4,4'-DDD
endosulfan I
endosulfan II
endosulfan sulfate
endrin
endrin aldehyde
heptachlor
heptachlor epoxide
M/C-Alpha
M/C-Beta
M/C-Delta
M/C-Gamma
PCV-1242
PCV-1254
PCV-1221
PCV-1232
PCV-1248
PCV-1260
PCV-1016
toxaphene

Dioxins
2,3,7,8-tetrachlorodi-
p-dioxin

List does not include compounds identified as other major peaks.

Table 2 - Results of Organic Analysis- Organic Compounds Detected

<u>Compound name</u>		<u>Sample location/Sample #</u>				
<u>VOA</u>	Gut Back-ground* #085251	Lab waste pit seep #085252	Drainage pit disch. #085253	Lab waste pit # 1 #085254	Lab waste pit # 2 #085255	On-site well (ug/l) #085256
Xylene Chloroform			470			130
<u>NVOA</u>						
Butyl benzyl phthalate	1000					2K
Di-n-octyl phthalate	17000	9000	7700	4900	3200	3.9
1,4 dichlorobenzene			870			
1,2 dichlorobenzene			2900			
Napthalene			2100			
Flourene			2000			
Phenanthrene			2400			
Bis(2-ethylhexyl)phthalate						280
Aliphatic & aromatic hydrocarbons			M			
<u>PCB</u>						
PCB-1016	1000K	1000K	1000K	1000K	1000K	1K
PCB-1221	1000K	1000K	1000K	1000K	1000K	1K
PCB-1232	1000K	1000K	1000K	1000K	1000K	1K
PCB-1242	1000K	1000K	1000K	1000K	1000K	1K
PCB-1248	1000K	1000K	1000K	1000K	1000K	1K
PCB-1254	1000K	1000K	1000K	1000K	1000K	1K
PCB-1260	1000K	1000K	1000K	1000K	1000K	1K

*All values in ug/kg except where otherwise stated.
K = Actual value known to be less than value given.
M = Presence of material verified but not quantified.
Blank space means compound was not detected in sample analysis.

Table 3 - Results of Metals Scan Analysis

<u>Compound name</u>		<u>Sample location/Sample #</u>				
	Gut Back-ground* #085251	Lab waste pit seep #085252	Drainage pit disch. #085253	Lab waste pit # 1 #085254	Lab waste pit # 2 #085255	On-site well (ug/l) #085256
Silver						
Arsenic	2J	1J	0.8J	0.8J	2J	2J
Beryllium		7J	8J	7J	7J	5J
Cadmium						3J
Chromium	10	22	52	27	26	7J
Copper	40	45	52	55	58	8J
Mercury						0.6J
Lead			30J			
Nickel	19	20J	32	25	27	
Antimony		10		8.4		3J
Selenium	1J		1J	0.8J	0.8J	
Thallium						
Zinc	100	63	360	80	79	20J

*All values in mg/kg except where otherwise stated.

J = Estimated value.

M = Presence of material verified but not quantified.

Blank space means compound was not detected in sample analysis.

Attachment 1:

ESD Report of September 9, 1985

Berlex Laboratories (ICC)
VID980651095

March 13, 1986

☒ Generator

☐ Transporter

☒ TSD

RCRA Enforcement

Berlex Laboratories, (a subsidiary of
Island Chemical Co., Inc.)
St. Croix, Virgin Islands

VID80651095

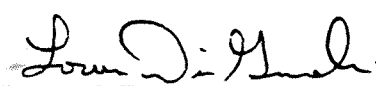
September 9, 1985

Participating Personnel:

U.S. Environmental Protection Agency
Louis DiGuardia, Geologist
Carol Price, Environmental Scientist
Darvene Adams, Environmental Scientist

Berlex Laboratories, (ICC)
Alec A. Smith, Vice President of Operations
Raymond Hays
Armando Morales, Process Engineer

Report Prepared by:


Louis DiGuardia, Geologist
Source Monitoring Section

Approved for the Director by:

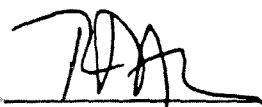

Richard D. Spear, Chief
Surveillance & Monitoring Branch

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- Attachment II - Chain of Custody Form
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TABLE

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Figure 2 - Berlex (Island Chemical) Plot Plan Showing Areas
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of Dryer

Figure 4 - Sample Location Map - Drying Oven

Figure 5 - Sample Location Map - Lab Waste Drainage Area

SUMMARY

Objective

This compliance evaluation and sampling inspection was conducted at the request of the Solid Waste Branch to support and verify the decontamination and removal by Berlex (ICC), St. Croix, VI of soil contaminated with toluene and pyridine.

Findings

1) Sampling results indicate:

- ° Organic analysis on samples #087001 and #087002 (drying oven) detected the following organic compounds ranging in values from 460 ppb to 15000000 ppb: toluene, flourene, bis(2-ethylhexyl) phthalate, benzophenone and di-n-octyl phthalate (detected only in sample #087002).
- ° Organics analysis on samples #087003, #087004, #087005, and #087006 (lab waste drainage area) detected the following organic compounds ranging in values from 360 ppb to 75,000 ppb: toluene, bis(2-ethylhexyl) phthalate, di-n-octyl phthalate, chloroform, benzene and di-n-butyl phthalate.

From the results, the toluene values were found to be within the acceptable level range of 2 ppm (reference document #2). Due to the late arrival of guidance protocol from EPA Research Laboratories, Cincinnati, no analysis of pyridine was performed.

2) Confirmation of on-site treatment of soil by Berlex (ICC) for toluene and pyridine was made.

° Toluene

The drying oven was employed for the volatilization of toluene from the soil, but the necessary charcoal filters to absorb the volatilized material were not observed.

° Pyridine

The contaminated soil was tilled and aerated using a backhoe and then covered over by a large synthetic liner. No permanent structure had been built to prevent future saturation of the soil from rainfall. The present liner was not owned by Berlex but rented.

- 3) No data on the sampling performed by Berlex was ever received by the USEPA, Environmental Services Division, Edison, NJ to confirm the clean-up by Berlex.
- 4) The re-routing of existing laboratory discharges to a self-contained unit and portable toilet facilities was not observed.
- 5) On October 10, 1985, Dr. A. L. Kyles, Vice President, Enviro-Sciences, the consultant working with Berlex (ICC) informed me that 192, 55-gallon drums of waste was removed from Berlex for disposal. The material consisted of the following:
 - ° Process pit water and sludge.
 - ° Drums and soil from the wastewater drainage line.
 - ° 1, 55-gallon drum of water/toluene.
 - ° Toluene contaminated soil.

No manifest copies were received to confirm this shipment.

- 6) Hazardous material was stored on-site for greater than 90 days and in quantities greater than 1000 kg. Berlex is then subject to the regulations 40 CFR Parts 262 and 264. None of these regulations were observed to have been followed.
- 7) In review, a question is raised that a possible source of contamination is that of the dry creek bed. Process wastewater was discharged via a drainage line to the creek bed. Since the drainage line and soil associated with the line was found contaminated, the possibility of soil contamination in the creek is likely and should be investigated.

DISCUSSION

Applicable Regulations

40 CFR Parts 262 and 264.

Purpose of Survey

A RCRA compliance evaluation and sampling inspection (CEI) was conducted at Berlex Laboratories (ICC), St. Croix, VI on September 9, 1985. The survey was conducted at the request of the Solid Waste Branch to support and verify Berlex's decontamination and removal of soil contaminated with toluene and pyridine.

The elements of the survey included a compliance record review, site survey and sampling.

Facility History

The Berlex Laboratories, Inc. plant, under the name Island Chemical Company (ICC), produced quinidine from November, 1979 after purchasing the site from Cooper Laboratories, until late 1982. In October 1982, Berlex notified EPA of the forthcoming closure and removal of waste materials and excess chemicals (xylene, toluene) from the site to Island Chemical of Puerto Rico. EPA assigned Berlex the ID No. VID80651095. Prior to the removal, Berlex was operating as a small quantity generator.

Berlex sold the site in September 1984, 21 months after the shut-down of operations to Virgin Island Chemical Co. The sales contract for the site called for the contractor Enviro-Sciences, Inc. (ESI), 19 Copeland Road, Denville, NJ to survey the site and certify it as environmentally clean. An ESI sampling survey initiated in September 1984 disclosed two areas of soil contamination, with the compounds of concern being toluene and pyridine.

On December 21, 1984 Enviro-Sciences, Inc. delivered a progress report describing ESI's sampling and analysis of soil at the Berlex site on St. Croix and included recommendation for treatment of the pyridine (U196) and toluene (U220) contaminated areas.

The recommended on-site treatment was selected by ESI as a more economical method than the alternative off-site shipment of drummed soil to the U.S. mainland for placement in an approved landfill. The proposed method of clean-up includes the drying of toluene contaminated soil (which is presently stored at the facility in drums) and degradation of pyridine contaminated soil. This would occur by exposure to ambient air causing soil aeration. Soil saturation by rainfall would be prevented by covering the area with a synthetic liner.

The toluene contamination resulted from soil leaks/spills at a tank site and pyridine contamination from leaks from a laboratory drain line. The estimated quantity of the two materials (toluene and pyridine) are less than 245 pounds.

On May 15, 1985, ESI reported the intended initiation of clean-up activities on June 6, 1985.

Facility Description and Operation

The Berlex Laboratories, Inc. (Berlex) plant under the name Island Chemical Co. (ICC), located in St. Croix, Virgin Island started producing quinidine gluconate in November 1979 and operated for 2 years. During operations Berlex employed 215 people on a 2 shift, 5 day/week, work schedule. Maximum production output was estimated at 50 tons/year, but this level was never reached. The first production batch by Berlex was November 1, 1979 (see Site Location Map, Figure 1).

Berlex (ICC), St. Croix, VI manufactured as their sole product quinidine gluconate. The basic raw materials used in production included quinine sulfate, toluene, and methanol. Production involved the conversion of quinine sulfate into quinine gluconate by the addition of toluene in a reaction vessel. The liquid was then distilled with methanol to produce the crystalline solid, quinidine gluconate.

Within the production area, the facility housed the following reaction vessels:

Reaction Vessels

<u>Number of Vessels</u>	<u>Material Construction</u>	<u>Capacity</u>
4	Stainless Steel	1200-1500 gallons
1	Carbon Steel	1200 gallons
1	Glass Lined	3000 gallons
1	Glass Lined	2000 gallons
3	Glass Lined (Receivers)	2000 gallons

Bulk raw materials arrived in tank trucks and were stored on-site in 14, 8000 gallon raw material tanks (see photograph #1).

Water Usage and Treatment

Groundwater was the primary source of water used in production. Approximately 20,000 gallons were used, of which, 10,000 gallons were recovered. Water was pretreated by filtering and adjusting pH (with sulfuric acid) due to the high carbonate concentration in the groundwater. The facility also housed the following systems (and tanks):

<u>Number of Tanks</u>	<u>Capacity</u>	<u>Systems</u>
1	15,000 gallons	Boiler System
1	15,000 gallons	Drinking Water (rainwater)
4	50,000 gallons	Recirculated Cooling Water
1	20,000 gallons	Reduction/Oxidation Unit
1	250,000 gallons	Firetank

Wastewater from production operations (primarily cooling water) was collected in a 17,000 gallon underground concrete process pit. No treatment was applied but prior to discharge, the pit was sampled to see if any product was released by accident. If nothing showed in the sampling, the water was discharged via an underground pipe to a dry creek adjacent to facility property.

Waste Streams

Hazardous wastes at Berlex (ICC) were generated from the following sources:

1) Process Pit Water and Sludge

The 17,000 gallon underground concrete pit used to contain production wastewater and accumulate settled sludge from this wastewater.

2) Former Main Wastewater Drainage Line

The underground pipe (constructed of welded 55-gallon drums) from the process pit to dry creek bed. The pipeline was excavated due to the finding of numerous leaks and punctures from which wastewater had contaminated the soil (see Figure 2, areas of contamination).

3) Contaminated Soil Due to Drainage Line Leakage

A) Contaminated soil associated with the excavation of the main wastewater drainage line.

B) Contaminated soil due to drainage line leakage from the laboratory drain.

4) Contaminated soil from raw material spillage - toluene, pyridine.

The spills associated with material transfer and tank or line leakage. Includes soil under the concrete surface loading dock, along trench number 4, under concrete slab number 3, between tanks numbered 8 and 9, and along trench number 9 (see Figure 2, areas of contamination).

5) Contaminated or off-specification raw materials which could neither be reworked nor sold.

Prior to the facility's shutdown, Berlex (ICC) was said to be operating as a small quantity generator. What Berlex did with waste prior to the requested hazardous waste shipment (October 27, 1982) is unknown.

Treatment Methodology

As a result of sampling performed by Enviro-Science, Inc. (ESI) to certify how environmentally clean the site was, ESI disclosed two areas of soil contamination by toluene and pyridine (see figure #2, Plot Plan Showing Areas of Contamination). In response to such a disclosure, ESI recommended on-site treatment as an alternative to the economically unfeasible transport of the waste to the U.S. mainland.

Reference document #1, contained the following methodology of treatment which was to be followed:

° Toluene

The toluene contaminated soil would be placed on trays in a dryer located within the facility (see Figure 3, location of drying oven).

Soils with low and high toluene concentration were permitted to be mixed to insure uniform drying. The empty drums from which the excavated material was stored would be washed with a nonphosphate detergent, rinsed with tap water and then air dried. Drum washings would be collected and later evaporated in the dryer. These same drums would be used to store the air-dried soil until laboratory analysis indicates that it is free of toluene or has very low concentration. If the soil is found to be free of toluene or at very low levels (2 ppm, reference document #2), it will be redistributed on the site.

Prior to beginning the drying operation, calculations will be made using the fan speed, oven temperature, and stack diameter to insure that emission rates for toluene do not exceed 200 ppm TLV. This concentration in air is not flammable. If calculations show that this control rate is marginal, then a carbon pot will be added to insure this limit would not be exceeded (see photographs #4 & #5).

° Pyridine

The pyridine contaminated area would be treated in a 3 step approach.

- 1) The pyridine contaminated area would be covered over to prevent the saturation of soil from rainfall (see photograph #6).
- 2) The concrete surface loading dock in the vicinity of the pyridine contaminated areas would be removed using a backhoe and hauled to a landfill or used to stabilize the bank along the dry river bed. The Department of Public Works would be contacted for permission to do the latter.
- 3) The pyridine contaminated soil would be tilled and aerated using a backhoe at 2-3 day intervals. Soil turning would allow exposure of the contaminated soil to ambient air.

Samples would be taken at the beginning of the cleaning operation and continue at weekly intervals until acceptable pyridine levels are reached (2 ppm, reference document #2). When the pyridine level has decreased to zero or an acceptable level the area will be restored and resurfaced according to the owner's requirements.

Waste Storage

Berlex at the time of inspection was storing waste material in two areas:

1) Outside Fenced Storage Area

During facility operations, this was used as a raw material storage area. It consists of a 50' x 20' concrete pad surrounded by a chain-link fence. At the time of inspection, 1, 55-gallon drum containing approximately 40 gallons of a water/toluene mixture was being stored. Other empty 55-gallon drums were also present (see photograph #2 & #3, Outside Drum Storage Area).

2) Warehouse Storage

This area was used by Berlex as their major raw material storage area. At the time of inspection, 20, 55-gallon drums of toluene contaminated soil were being stored prior to treatment in the drying oven (see photographs #12, #13, & #14). Large numbers of 55-gallon drums containing raw materials used in production were also being stored in the warehouse.

Manifested Shipments

After the shutdown of plant operations in late 1982, the raw materials which remained on-site in the facility's above-ground storage tank were removed (including toluene and xylene). The transporters and TSD used for these shipments were as follows:

Transporters

Trailer Marine Transport Corp. PRD980644579
Isla Grande, Puerto Rico

Transporte Diaz PRD980526834
Zona Portuaria, Puerto Nuevo, San Juan, Puerto Rico

TSD

Island Chemical of P.R. Inc., PRD090399718
Km 51, Highway #2, Manati, Puerto Rico

The manifests are enclosed as Attachment IV.

According to Dr. A. L. Kyles, Vice President of Enviro-Science, the consultant working with Berlex (ICC), 192, 55 - gallon drums of waste was removed from the Berlex (ICC) facility on October 10, 1985. The drum contents consisted of the following material:

- ° Process pit water and sludge
- ° Drums and soil from the wastewater drainage line
- ° 1, 55-gallon drum of water/toluene
- ° Toluene contaminated soil

No manifest copies were ever received on the shipments from Dr. Kyles.

Sampling Procedures

On September 9, 1985 samples were taken at Berlex (ICC), St. Croix, Virgin Island from the following areas:

- ° Composite soil sample from the drying oven (left side).
Sample #087001
- ° Composite soil sample from the drying oven (right side).
Sample #087002
- ° Surface soil composite from the north side of the Lab Waste Drainage Area.
Sample #087003

- ° Subsurface soil composite from the north side of the Lab Waste Drainage Area.
Sample #087004
- ° Surface soil composite from the south side of the Lab Waste Drainage Area.
Sample #087005
- ° Subsurface soil composite from the south side of the Lab Waste Drainage Area.
Sample #087006

Attachment III contains copies of the sample data sheets.

Within the drying oven, the soil was placed on steel trays and stacked in 13, 20 tray bins. A division of the dryer into the left side and right side was made and a composite sample was taken from a representative number of trays. See Figure 4, for sample locations. Photographs #4 and #5, show the location of the drying oven.

To take a more representative sample of the Lab Waste Drainage Area, the area was divided into two sections: north and south. Surface soil samples were taken using trowels and subsurface soil samples (approx. 3 foot depth) were taken using dedicated bucket augers. Due to the very resistant nature of the soil (impermeable clay) only a sample depth of three feet could be obtained. See Figure 5, for sample locations. Photographs #7, #8, #9, #10, and #11, shows the areas of sampling.

Sampling equipment and containers were prepared according to EPA standard procedures prior to sampling. A total of six samples were taken.

The samples were analyzed for purgeable (POA) and non-volatile (NVOA) organic priority pollutants. All analyses were performed in EPA's Edison, New Jersey laboratory. EPA standard procedures were followed for the collection of samples throughout the survey. Samples were not split with facility representatives. Receipt for samples (Attachment I) and chain-of-custody methods forms (Attachment II) were employed for all samples taken.

Sample Results

Sample results are given in Table I.

Organic analysis on samples #087001 and #087002 (drying oven) detected the following organic compounds ranging in values from 460 ppb to 15,000,000 ppb: toluene, flourene, bis(2-ethyl hexyl) phthal, benzphenone and di-n-octyl phthalate (detected only in sample #087002).

Organic analysis on samples #087003, #087004, #087005 and #087006 (lab waste drainage area) detected the following organic compounds ranging in values from 360 ppb to 75,000 ppb: toluene, bis(2-ethylhexyl) phthalate, di-n-octyl phthalate, chloroform, benzene and di-n-butyl phthalate.

From the results the toluene values were found within the acceptable range of 2 ppm. No laboratory analysis was performed for pyridine due to late arrival of guidance on pyridine protocol from EPA Research Laboratories, Cincinnati.

Reference Documents

- 1) Enviro-Science Inc., Progress Report, Island Chemical Company, Inc. (Berlex), April 4, 1985.
- 2) U.S. Environmental Protection Agency, Review of a Report on Proposed Soil Decontamination by Enviro-Sciences, Inc.
- 3) U.S. Environmental Protection Agency, Fact Sheet, Requests to Treat Contaminated Soil at St. Croix Plant Site, February 5, 1985.
- 4) U.S. Environmental Protection Agency, ICC/Berlex Plant Site, St. Croix Fact Sheet Including Preliminary Analytical Results on Nearby Well Fields.

Table I

Results of Organics Analysis on Samples

Organic Compounds	Sample# 087001 ug/kg	Sample# 087002 ug/kg	Sample# 087003 ug/kg	Sample# 087004 ug/kg	Sample# 087005 ug/kg	Sample# 087006 ug/kg
Toluene	460	560	420	440	360	400
Flourene	9200	1300				
Bis(2-ethylhexyl)Phtha- -late	13000	4700	16000	1900	51000	36000
Benzophenone	15000000	2600000				
Di-n-octyl Phthalate		500J		4200	600J	2000
Chloroform				200K		
Benzene				200K		
Di-n-butyl Phthalate						75000

Sample #087001 - Aerated Soil Composite from Storage Room (left side)

Sample #087002 - Aerated Soil Composite from Storage Room (right side)

Sample #087003 - Surface Soil Composite from North Side of Lab Waste Drainage Area

Sample #087004 - Subsurface Soil Composite from North Side of Lab Waste Drainage Area

Sample #087005 - Surface Soil Composite from South Side of Lab Waste Drainage Area

Sample #087006 - Subsurface Soil Composite from South Side of Lab Waste Drainage Area

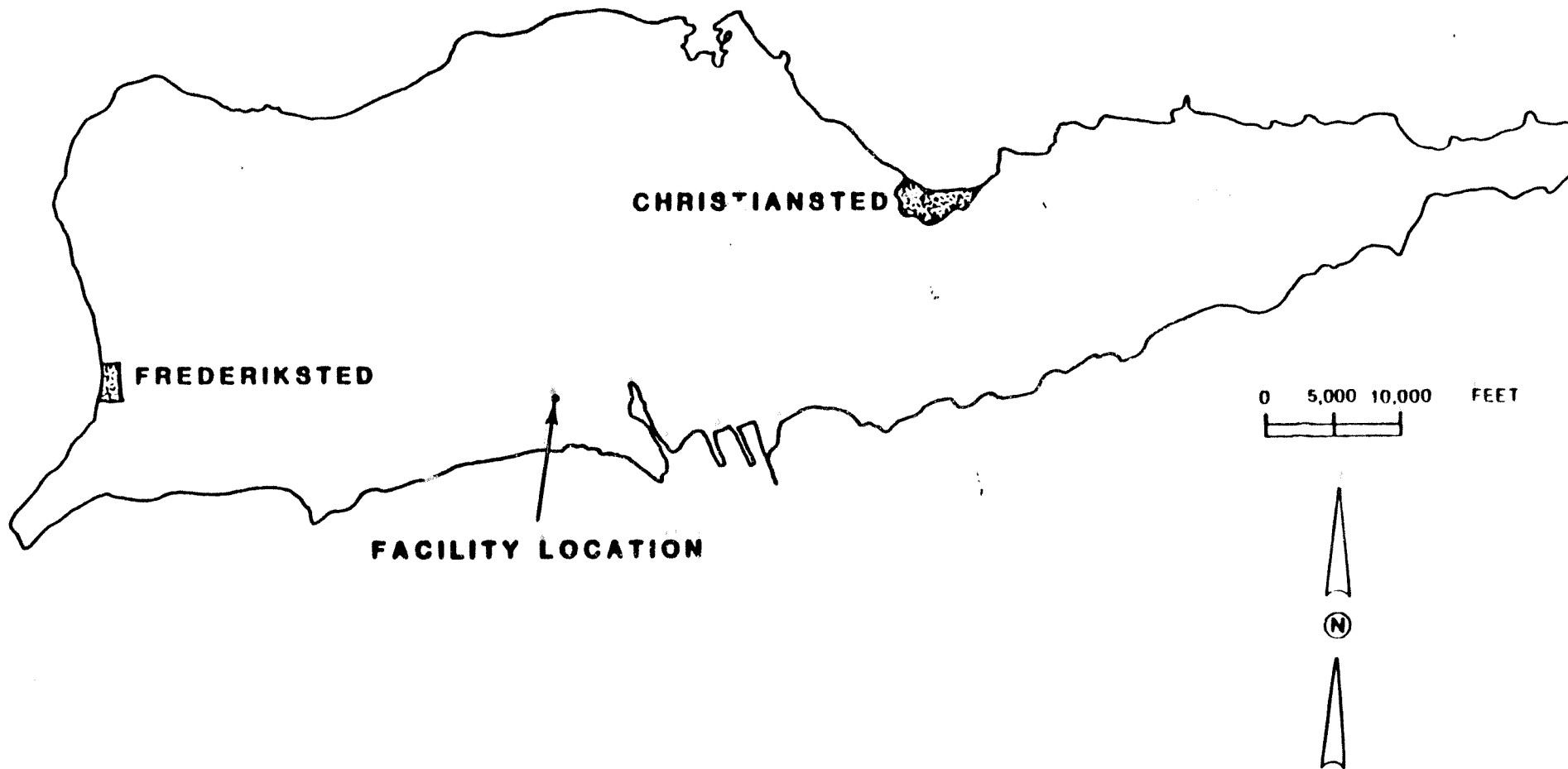
K = Actual value known to be less than value given

J = Estimated value

Blank Space - Material Analyzed but not detected

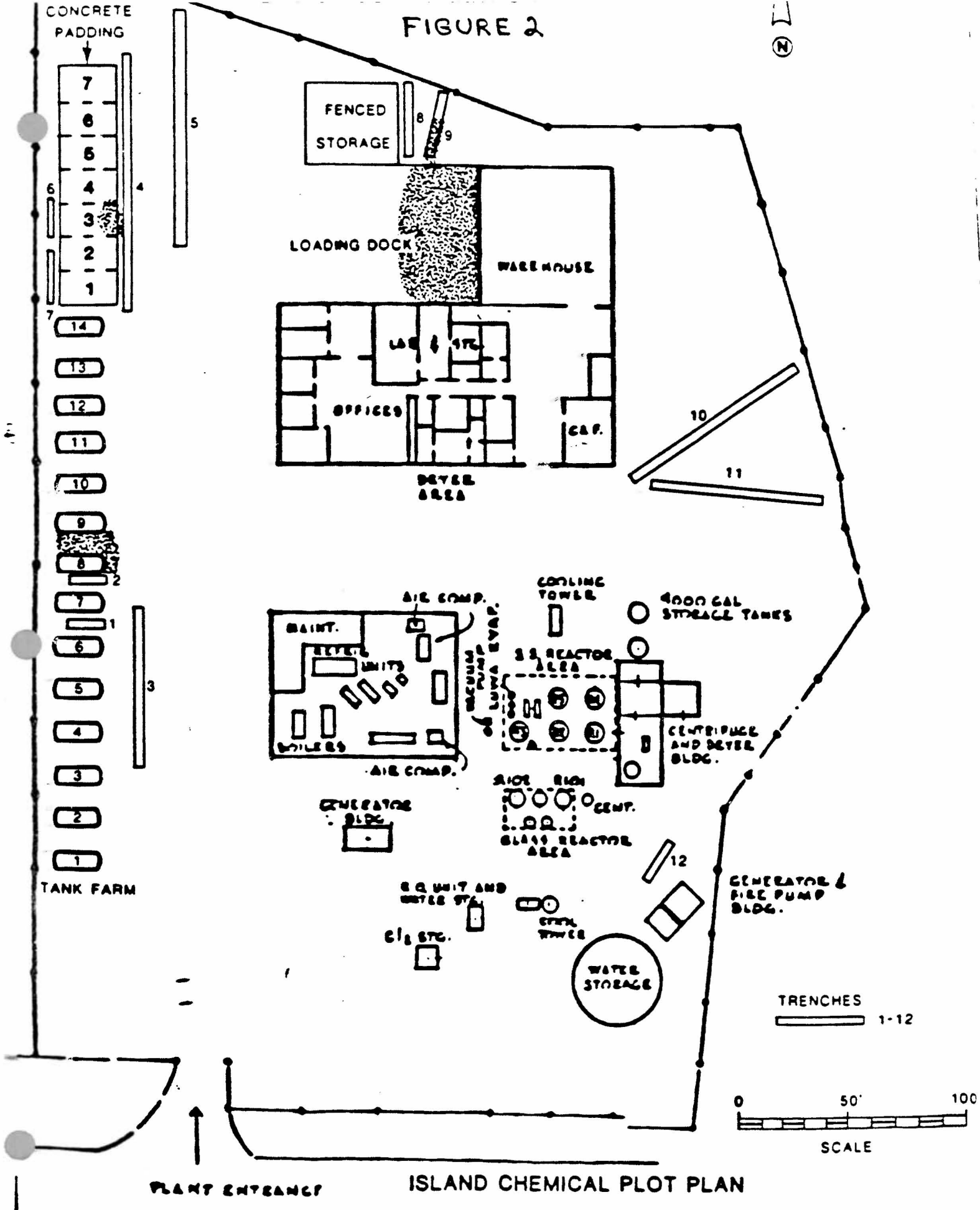
FIGURE 1

FACILITY LOCATION MAP



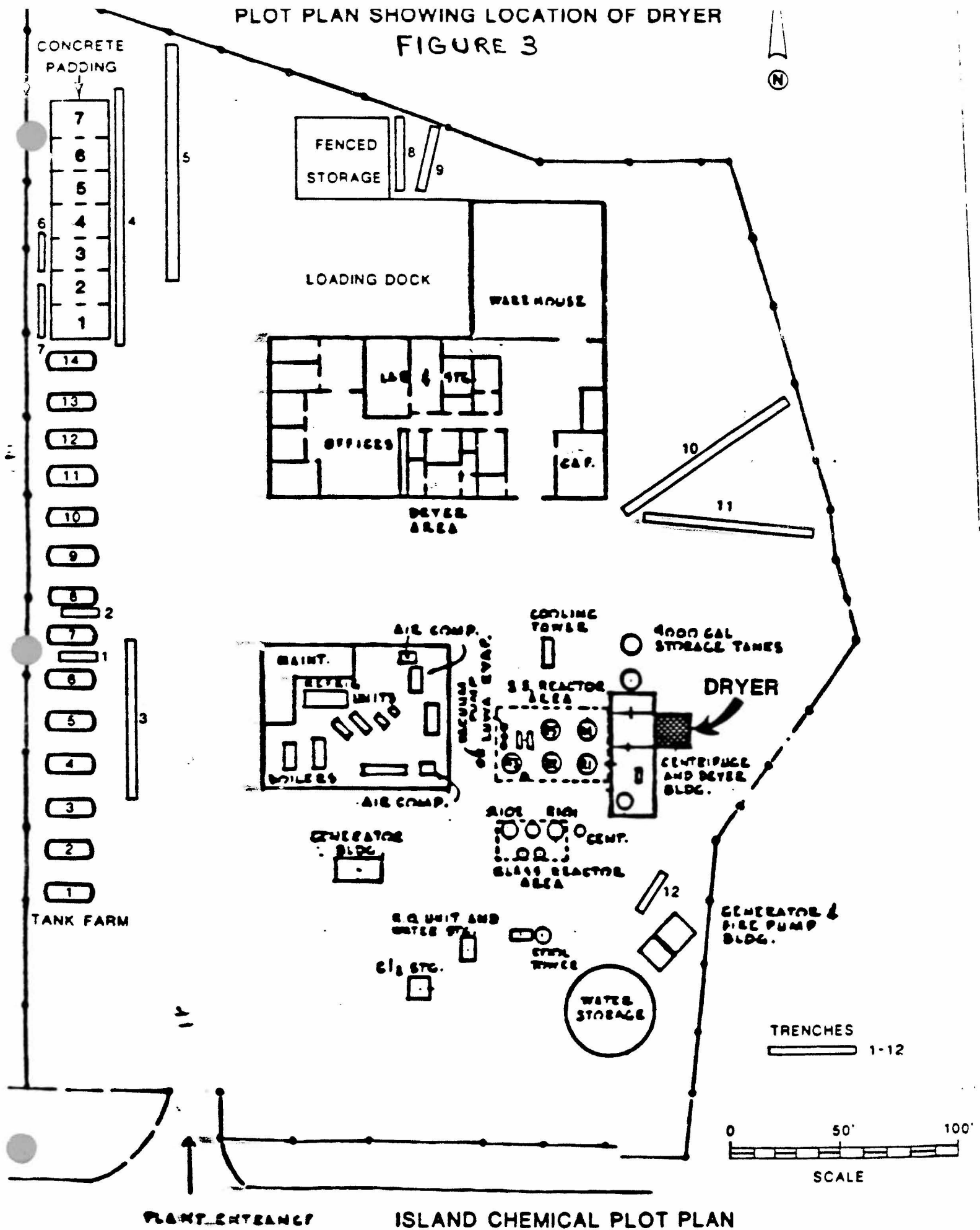
**SOURCE: COMPREHENSIVE WATER RESOURCES
MANAGEMENT PLAN FOR THE UNITED
STATES VIRGIN ISLANDS, 1983.**

FIGURE 2



ISLAND CHEMICAL PLOT PLAN

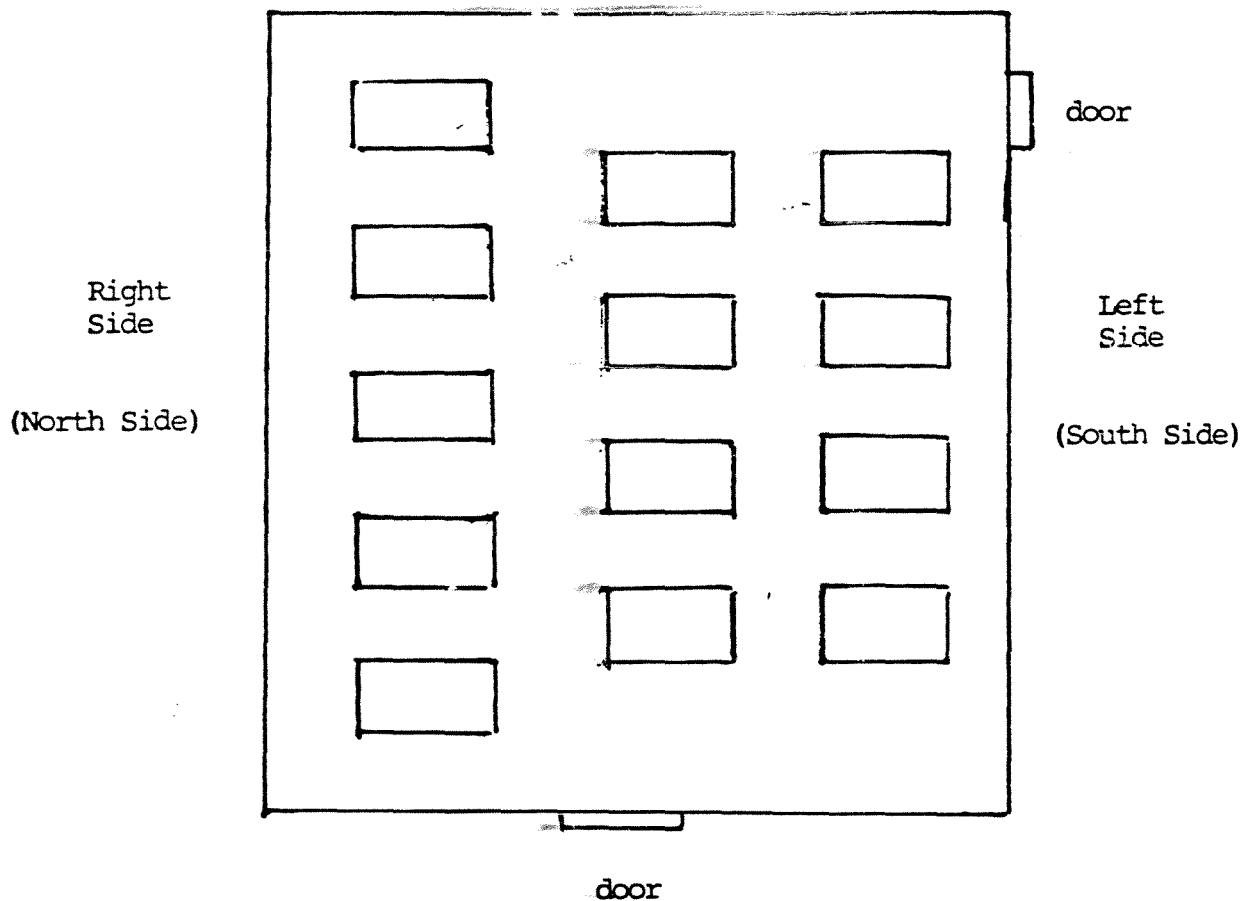
PLOT PLAN SHOWING LOCATION OF DRYER
 FIGURE 3



DRYING OVEN

- toluene contaminated soil

(Top View)



↑
NORTH

Composite soil sample from drying oven

- #087001 - left side (south side)
- #087002 - right side (north side)

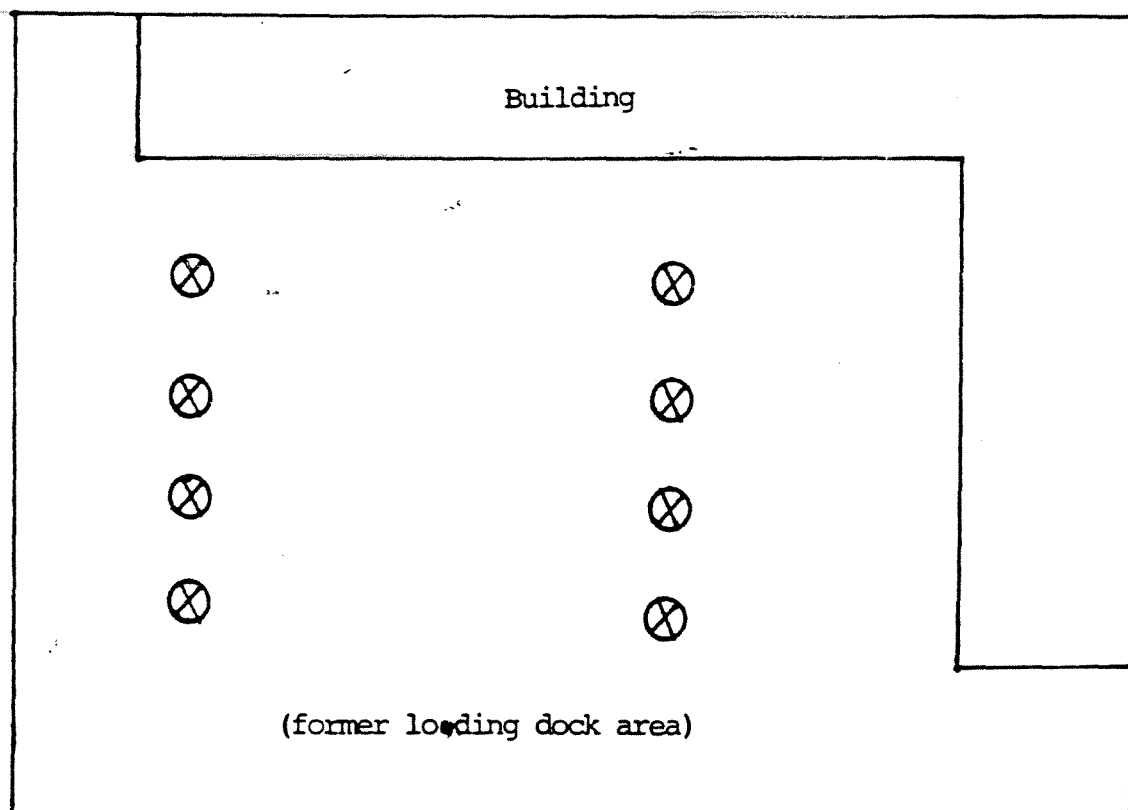
(Not to Scale)

* Each rectangle represents one bin containing a stack of twenty trays.

Figure 4 - Sample Location Map - Drying Oven

LAB WASTE DRAINAGE AREA

- pyridine contaminated soil



⊗ - Sample locations for composite

←
NORTH

Soil sample from north side of the Lab Waste Drainage Area

° Surface - #087003

° Subsurface - #087004

Soil sample from south side of the Lab Waste Drainage Area

° Surface - #087005

° Subsurface - #087006

(Not to Scale)

Figure 5 - Sample Location Map - Lab Waste Drainage Area

ATTACHMENT I

Receipt For Samples

Berlex Laboratories
St. Croix. VI

September 9, 1985

RECEIPT FOR SAMPLES CHAIN-OF-CUSTODY RECORD

ENVIRONMENTAL PROTECTION AGENCY - REGION II
Environmental Services Division
EDISON, NEW JERSEY 08817

Name of Unit and Address:		Berlex Laboratories (V.I. Chemical)		9/9/85	
		VID 80651095			

Sample Number	Number of Containers	Description of Samples
087001	1	Qt. - NVOA
	2	40 ml vials
		} Aerial Soil - Composite
087002	1	Qt. - NVOA
	2	40 ml vials
		} Aerial Soil - Composite
087003	1	Qt. - NVOA
	2	40 ml vials
		} Surface Soil - Composite
087004	1	Qt. - NVOA
	2	40 ml vials
		} Subsurface Soil - Composite
087005	1	Qt. - NVOA
	2	40 ml vials
		} Surface Soil - Composite
087006	1	Qt. - NVOA
	2	40 ml vials
		} Subsurface Soil - Composite

9/9/85

[Signature] USFA

[Signature] 9/9/85-202

Person Assuming Responsibility for Sample:					Time	Date
--	--	--	--	--	------	------

Sample Number	Relinquished By:	Received By:	Time	Date	Reason for Change of Custody

ATTACHMENT II

Chain of Custody Form

Berlex Laboratories
St. Croix. VI

September 9, 1985

CHAIN OF CUSTODY RECORD

ENVIRONMENTAL PROTECTION AGENCY - REGION II
Environmental Services Division
EDISON, NEW JERSEY 08817

Name of Unit and Address: Berlex Laboratories Inc. St. Croix, Virgin Islands USA VID 80651095					
Sample Number	Number of Containers	Description of Samples			
087001	1	Qt. Jar NVOA w/ice			
	2	40 ml Vials w/ice			
087002	1	Qt. Jar NVOA w/ice			
	2	40 ml Vials w/ice			
087003	1	Qt. Jar NVOA w/ice			
	2	40 ml Vials w/ice			
087004	1	Qt. Jar NVOA w/ice			
	2	40 ml Vials w/ice			
087005	1	Qt. Jar NVOA w/ice			
	2	40 ml Vials w/ice			
087006	1	Qt. Jar NVOA w/ice			
	2	40 ml Vials w/ice			

Person Assuming Responsibility for Sample: <i>James D. Delli</i>	Time <i>1:00 PM</i>	Date <i>9/10/85</i>
--	------------------------	------------------------

Sample Number	Relinquished By:	Received By:	Time	Date	Reason for Change of Custody
087001 to 087006	<i>Jon Delli</i> 9/10/85	<i>Kevin Petrus</i>	10:00 PM	9/10/85	Shipment of Samples to Lab
087001 to 087006	<i>Kevin Petrus</i>	<i>R. Miller</i>	7:45 AM	9/11/85	Log in at OSCAR
087001 to 087006	<i>A. Miller</i>	<i>R. Mason</i>	1:30 PM	9/11/85	For analysis
087001 to 087006	<i>R. Mason</i>	<i>Cheryl Goldberg</i>	2:00 PM	9/11/85	for POA and NVOA analysis

ATTACHMENT III

Sample Data Sheets

Berlex Laboratories
St. Croix. VI

September 9, 1985

FIELD DATA SHEET

ENVIRONMENTAL PROTECTION AGENCY - Region II, Edison, New Jersey

ENVIRONMENTAL SERVICES DIVISION

UEF

Project Name Berlex Leasing, St Croix, VI

Collector(s) D. Guardia Affiliation US EPA

SAMPLING METHOD (Circle)

Kemmerer Dredge Ponar Manual

Niskin Net Seine Trawl Bucket

Trowl Cream Dipper

Automatic

Other

LDMS CODE

DATA BASE CODE

STA. TYPE CODE

SUBSTRATE TYPE (Circle)

Aqueous Sediment Sludge Oil Biological

Solvent Extract Other Soil

BOD - Seed Supplied ☐ Yes ☐ No Source:

Sample Preparation (Circle)

Container

Glass Jar - 1

Plastic Jar

Metal

POA Vial - 2

Cubittainer

Acetate Core

Paper Cap

Teflon Cap

Foil Cap

Other

Cleaning Procedure

Detergent Wash

Water Rinse

Acid Rinse

Solvent Rinse:

Acetone

Hexane

Methylene Chloride

Other (Specify):

Sample Source Type (Circle)

Landfill

Leachate

Drum

Test Well

Depth:

Other:

Storage Tank

Top

Middle

Bottom

Truck

Drum

Tank

Other

Wells

Monitoring

Production

Drinking

Private

Industrial

Effluent

Process Stream

Holding Pond

Drum

Waste Pile

Municipal Treatment

Influent

Effluent-CI

Effluent-Non CI

Sludge

Ambient

Lake

Stream

Pond

Ocean

Estuary

Sample Location Description:

aerated soil composite from
storage room (left side)

Samples to:

Bact ☐ Bio ☐ Chem ☒ Other ☐

Station No.

VI 080651095

Sample Depth (Ft.)/Fac. Loc. Code

3200

Lab Number

087001

Type of Sample

Grab ☐ Composite ☒
Time ☐ Space ☒

Collection (Ending) Date

Yr 85 Mo 09 Day 09

Ending Time (24 Hr)

1100

Beginning Date

Yr 85 Mo 09 Day 09

Beginning Time (24 Hr)

1043

pH

Sample Temp. (°C)

DO (mg/l)

Cond. (uMHOS/CM)

Salinity(‰)

Sample Split

☐ Yes ☒ No

If Yes With Whom?

Receipt ☐ Yes ☐ No

Remarks:

1-qt. NVUA jar } iced
2-40 ml POA vials }

contaminated soil from
toluene spill.

FIELD DATA SHEET

ENVIRONMENTAL PROTECTION AGENCY - Region II, Edison, New Jersey

ENVIRONMENTAL SERVICES DIVISION

UEF

Project Name Bio-ox Laboratories (Island Avenue) Cr. #12
Collector(s) D. Guardia Affiliation EPA-ESD

SAMPLING METHOD (Circle)

Kemmerer Dredge Ponar Manual
Niskin Net Seine Trawl Bucket
Trowl Cream Dipper
Automatic
Other _____

LDMS CODE _____

DATA BASE CODE _____

STA. TYPE CODE _____

Samples to:

Bact ☒ Bio ☐ Chem ☒ Other ☐

Station No.

VID 80451075

Sample Depth (Ft.)/Fac. Loc. Code

3201

Lab Number

087002

Type of Sample

Grab ☐ Composite ☒
Time ☐ Space ☒

Collection (Ending) Date

Yr 85 Mo 09 Day 09

Ending Time (24 Hr)

1113

Beginning Date

Yr 85 Mo 09 Day 09

Beginning Time (24 Hr)

1100

pH

Sample Temp. (°C)

DO (mg/l)

Cond. (uMHOS/CM)

Salinity(‰)

Sample Split

☐ Yes ☒ No

If Yes With Whom?

Receipt ☐ Yes ☐ No

SUBSTRATE TYPE (Circle)

Aqueous Sediment Sludge Oil Biological
Solvent Extract Other Soil

BOD — Seed Supplied ☐ Yes ☐ No

Source:

Sample Preparation (Circle)

Sample Source Type (Circle)

Container

Cleaning Procedure

Landfill

Industrial

Glass Jar - 1

Detergent Wash

Leachate

Effluent

Plastic Jar

Water Rinse

Drum

Process Stream

Metal

Acid Rinse

Test Well

Holding Pond

POA Vial - 2

Solvent Rinse:

Depth:

Drum

Cubitainer

Acetone

Other:

Waste Pile

Acetate Core

Hexane

Storage Tank

Municipal Treatment

Paper Cap

Methylene Chloride

Top

Influent

Teflon Cap

Other (Specify):

Middle

Effluent-Cl

Foil Cap

Bottom

Effluent-Non Cl

Other _____

Truck

Sludge

Preservation

Drum

Lake

Acid _____

Tank

Stream

Solvent _____

Other _____

Pond

Chemical _____

Wells

Ocean

Wet Ice

Monitoring

Estuary

Dry Ice

Production

Ambient

Drinking

Other _____

Private

Sample Location Description:

Aerated soil composite from right side of storage room plus contained on floor

Remarks:

NVOA - 1 quart glass jar
FOA's - 2 glass vials

Contaminated soil from toluene spill

FIELD DATA SHEET

ENVIRONMENTAL PROTECTION AGENCY - Region II, Edison, New Jersey
ENVIRONMENTAL SERVICES DIVISION

UEF

Project Name Berlex Lab, Inc. St. Croix, VI
Collector(s) D. Guadalupe Affiliation USEPA

Samples to:

Bact	Bio	Chem	Other
		☒	

Station No.

V	I	D	8	0	6	5	1	0	9	5
---	---	---	---	---	---	---	---	---	---	---

Sample Depth (Ft.)/Fac. Loc. Code

3	2	0	2
---	---	---	---

Lab Number

0	8	7	0	0	3
---	---	---	---	---	---

Type of Sample

Grab	Composite
	Time Space
	☒

Collection (Ending) Date

Yr	Mo	Day
8	5	09

Ending Time (24 Hr)

1	2	0	0
---	---	---	---

Beginning Date

Yr	Mo	Day
8	5	09

Beginning Time (24 Hr)

1	1	4	0
---	---	---	---

pH

--	--	--	--

Sample Temp. (°C)

--	--	--	--

DO (mg/l)

--	--	--	--

Cond. (µMHOS/CM)

--	--	--	--	--	--

Salinity(‰)

--	--	--	--

Sample Split

☐ Yes ☒ No

If Yes With Whom?

Receipt ☐ Yes ☐ No

SAMPLING METHOD (Circle)

Kemmerer Dredge Ponar Manual
Niskin Net Seine Trawl Bucket
Trowel Cream Dipper
Automatic
Other _____

LDMS CODE _____

DATA BASE CODE _____

STA. TYPE CODE _____

SUBSTRATE TYPE (Circle)

Aqueous Sediment Sludge Oil Biological
Solvent Extract Other (Soil)

BOD --- Seed Supplied ☐ Yes ☐ No Source:

Sample Preparation (Circle)

Sample Source Type (Circle)

Container
Glass Jar - 1
Plastic Jar
Metal
POA Vial - 2
Cubitainer
Acetate Core
Paper Cap
Teflon Cap
Foil Cap
Other _____
Preservation
Acid _____
Solvent _____
Chemical _____
Wet Ice
Dry Ice
Ambient
Other _____

Cleaning Procedure
Detergent Wash
Water Rinse
Acid Rinse
Solvent Rinse:
Acetone
Hexane
Methylene Chloride
Other (Specify): _____

Landfill
Leachate
Drum
Test Well
Depth: _____
Other: _____
Storage Tank
Top
Middle
Bottom
Truck
Drum
Tank
Other _____
Wells
Monitoring
Production
Drinking
Private

Industrial
Effluent
Process Stream
Holding Pond
Drum
Waste Pile
Municipal Treatment
Influent
Effluent-Cl
Effluent-Non Cl
Sludge
Ambient
Lake
Stream
Pond
Ocean
Estuary

Sample Location Description:

Surface soil composite from north side of laboratory waste drainage area

Remarks:

1-qt NVOA jar } iced
2-40 ml POA vials }

clayey soil, somewhat wet

FIELD DATA SHEET

ENVIRONMENTAL PROTECTION AGENCY - Region II, Edison, New Jersey
ENVIRONMENTAL SERVICES DIVISION

UEF

Project Name Borlex Laboratories Inc. (Holland Chem. Co.)

Collector(s) L. Guardia Affiliation EPA-ESD

SAMPLING METHOD (Circle)

Kemmerer Dredge Ponar Manual
Niskin Net Seine Trawl Bucket
Trowe Cream Dipper
Automatic
Other _____

LDMS CODE _____

DATA BASE CODE _____

STA. TYPE CODE _____

SUBSTRATE TYPE (Circle)

Aqueous Sediment Sludge Oil Biological
Solvent Extract Other (Soil)

BOD — Seed Supplied ☐ Yes ☐ No Source: _____

Sample Preparation (Circle)

Container

Glass Jar

Plastic Jar

Metal

POA Vial

Cubitainer

Acetate Core

Paper Cap

Teflon Cap

Foil Cap

Other _____

Cleaning Procedure

Detergent Wash

Water Rinse

Acid Rinse

Solvent Rinse:

Acetone

Hexane

Methylene Chloride

Other (Specify): _____

Sample Source Type (Circle)

Landfill

Leachate

Drum

Test Well

Depth: _____

Other: _____

Storage Tank

Top

Middle

Bottom

Truck

Drum

Tank

Other _____

Wells

Monitoring

Production

Drinking

Private

Industrial

Effluent

Process Stream

Holding Pond

Drum

Waste Pile

Municipal Treatment

Influent

Effluent-CI

Effluent-Non CI

Sludge

Ambient

Lake

Stream

Pond

Ocean

Estuary

Sample Location Description:

Subsurface soil sample from lab drainage
area

Samples to:

Bact ☐ Bio ☐ Chem ☒ Other ☐

Station No.

VI D 80651095

Sample Depth (Ft.)/Fac. Loc. Code

3003

Lab Number

087004

Type of Sample

Grab ☐ Composite ☐
Time ☐ Space ☒

Collection (Ending) Date

Yr 85 Mo 09 Day 09

Ending Time (24 Hr)

1155

Beginning Date

Yr 85 Mo 09 Day 09

Beginning Time (24 Hr)

1140

pH

Sample Temp. (°C)

DO (mg/l)

Cond. (uMHOS/CM)

Salinity(‰)

Sample Split

☐ Yes ☒ No

If Yes With Whom?

Receipt ☐ Yes ☐ No

Remarks:

NVOA - 1 qt glass jar
FOA - 2 glass vials
Clayey soil

FIELD DATA SHEET

ENVIRONMENTAL PROTECTION AGENCY - Region II, Edison, New Jersey

ENVIRONMENTAL SERVICES DIVISION

UEF

Project Name Borlex Labs, Inc. St. Croix VI
Collector(s) D. Guedes Affiliation USEPA

SAMPLING METHOD (Circle)

Kemmerer Dredge Ponar Manual
Niskin Net Seine Trawl Bucket
Trowel Cream Dipper
Automatic
Other _____

LDMS CODE _____

DATA BASE CODE _____

STA. TYPE CODE _____

SUBSTRATE TYPE (Circle)

Aqueous Sediment Sludge Oil Biological
Solvent Extract Other Soil

BOD - Seed Supplied ☐ Yes ☐ No Source: _____

Sample Preparation (Circle)

Container	Cleaning Procedure
<u>Glass Jar - 1</u>	<u>Detergent Wash</u>
Plastic Jar	<u>Water Rinse</u>
Metal	Acid Rinse
<u>POA Vial - 2</u>	Solvent Rinse:
Cubitainer	Acetone
Acetate Core	Hexane
Paper Cap	<u>Methylene Chloride</u>
<u>Teflon Cap</u>	Other (Specify):
Foil Cap	
Other _____	
Preservation	
Acid _____	
Solvent _____	
Chemical _____	
<u>Wet Ice</u>	
Dry Ice	
Ambient	
Other _____	

Sample Source Type (Circle)

Landfill	Industrial
Leachate	Effluent
Drum	Process Stream
Test Well	Holding Pond
Depth: _____	Drum
Other: _____	Waste Pile
	Municipal Treatment
Storage Tank	Influent
Top	Effluent-CI
Middle	Effluent-Non CI
Bottom	Sludge
Truck	Ambient
Drum	Lake
Tank	Stream
Other _____	Pond
	Ocean
Wells	Estuary
Monitoring	
Production	
Drinking	
Private	

Samples to:

☐ Bact ☐ Bio ☒ Chem ☐ Other

Station No.

V I D 2 0 6 S I 0 9 5

Sample Depth (Ft.)/Fac. Loc. Code

3 2 0 4

Lab Number

087005

Type of Sample

Grab ☐ Composite ☒
Time ☐ Space ☒

Collection (Ending) Date

Yr 8 5 Mo 0 9 Day 0 9

Ending Time (24 Hr)

1 1 5 5

Beginning Date

Yr 8 5 Mo 0 9 Day 0 9

Beginning Time (24 Hr)

1 1 4 0

pH

Sample Temp. (°C)

DO (mg/l)

Cond. (uMHOS/CM)

Salinity(‰)

Sample Split

☐ Yes ☒ No

If Yes With Whom?

Receipt ☐ Yes ☐ No

Sample Location Description:

Surface soil composite from ^{South} ~~North~~ side of laboratory waste drainage area.

Remarks:

1-qt. NVOA } used
2-40ml POA vials }
clayey soil

FIELD DATA SHEET

UEF

ENVIRONMENTAL PROTECTION AGENCY - Region II, Edison, New Jersey
ENVIRONMENTAL SERVICES DIVISION

Project Name Barker Laboratories Inc. (Island Chemical Co.)
Collector(s) T. G. Ward Affiliation EPA-ED

SAMPLING METHOD (Circle)

Kemmerer Dredge Ponar Manual
Niskin Net Seine Trawl Bucket
Trowel Cream Dipper
Automatic
Other _____

LDMS CODE _____

DATA BASE CODE _____

STA. TYPE CODE _____

Samples to:

Bact ☒ Bio ☐ Chem ☒ Other ☐

Station No.

V1280651097

Sample Depth (Ft.)/Fac. Loc. Code

3205

Lab Number

087006

SUBSTRATE TYPE (Circle)

Aqueous Sediment Sludge Oil Biological
Solvent Extract Other Soil

BOD — Seed Supplied ☐ Yes ☐ No Source:

Sample Preparation (Circle)

Container
Glass Jar
Plastic Jar
Metal
POA Vial
Cubitainer
Acetate Core
Paper Cap
Teflon Cap
Foil Cap
Other _____
Preservation
Acid _____
Solvent _____
Chemical _____
Wet Ice
Dry Ice
Ambient
Other _____

Cleaning Procedure

Detergent Wash
Water Rinse
Acid Rinse
Solvent Rinse:
Acetone
Hexane
Methylene Chloride
Other (Specify): _____

Sample Source Type (Circle)

Landfill
Leachate
Drum
Test Well
Depth: _____
Other: _____
Storage Tank
Top
Middle
Bottom
Truck
Drum
Tank
Other _____
Wells
Monitoring
Production
Drinking
Private
Industrial
Effluent
Process Stream
Holding Pond
Drum
Waste Pile
Municipal Treatment
Influent
Effluent-CI
Effluent-Non CI
Sludge
Ambient
Lake
Stream
Pond
Ocean
Estuary

Type of Sample

Grab ☐ Composite ☒
Time ☐ Space ☒

Collection (Ending) Date

Yr 85 Mo 09 Day 09

Ending Time (24 Hr)

1230

Beginning Date

Yr 85 Mo 09 Day 09

Beginning Time (24 Hr)

1205

pH

7

Sample Temp. (°C)

20

DO (mg/l)

7.5

Cond. (µMHOS/CM)

150

Salinity(‰)

0

Sample Split

☐ Yes ☒ No

If Yes With Whom?

Receipt ☐ Yes ☒ No

Sample Location Description:

Soil sample from lab drainage area

Remarks:

North - 1 glass jar
TOA - 2 glass vials
Change bank

ATTACHMENT IV

Waste Manifests

Berlex Laboratories
St. Croix. VI

September 9, 1985

PART A:

DOCUMENT NO

P R IC 08

GENERATOR NAME Island Chemical Co., Inc.	PHONE (809) 778-2200
SITE ADDRESS Estate 130, Estate Bethlehem, St. Croix, U.S. Virgin Islands	
TRANSPORTER NO 1 Trailer Marine Transport Corporation	PHONE (809) 721-1313
SITE ADDRESS Isla Grande, Puerto Rico	
TRANSPORTER NO 2 Transporte Diaz	PHONE (809) 792-7999
SITE ADDRESS Zona Portuaria, Puerto Nuevo, San Juan, Puerto Rico	
TREATMENT, STORAGE OR DISPOSAL (TSD) FACILITY Island Chemical of P.R., Inc.	PHONE (809) 854-1090
SITE ADDRESS Km. 51, Highway # 2, Manati, Puerto Rico	

V I D 9 8 0 6 5 1 0 9 5

P R D 9 8 0 6 4 4 5 7 9

P R D 9 8 0 5 1 2 6 8 3 4

P R D 0 9 0 3 9 9 7 1 8

IF MORE THAN TWO TRANSPORTERS ARE TO BE UTILIZED, FILL OUT THE FOLLOWING AS APPROPRIATE

THIS FORM IS NO 1 OF A TOTAL OF 1 THE FIRST MANIFEST DOCUMENT NO IS I C 0 8

PROPER US DOT SHIPPING NAME	US DOT HAZARD CLASS	UN NUMBER	TEST	NET LIQUIDITY	UNIT	CONTAINER NO.	TYPE	10B EPA HAZ CODE	10B/TPA WASTE TYPE
Xylene RQ	Flam. Liquid	1307	1	13161216	gal	11	TK	1	F101013
2									
3									
4									
5									
6									

SPECIAL HANDLING INSTRUCTIONS INCLUDING CONTAINER EXEMPTION (ie IDENTIFICATION OF ADDITIONAL WASTES PLACED IN OR SHIPPED AS A KNOWLEDGEABLE NATURE WHICH DO NOT HAVE TO BE MANIFESTED)

GENERATOR'S CERTIFICATION This is to certify that the above named materials are properly classified, described, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation, U.S. EPA and the Commonwealth of P.R. The waste described above were consigned to the transporter named. The Treatment, Storage or Disposal Facility can and will accept the shipment of hazardous waste, and has a valid permit to do so. I certify that the foregoing is true and correct to the best of my knowledge.

GENERATOR'S SIGNATURE Jerome H. Ludwig	TITLE President	DATE SHIPPED 12/14/83	EXPECTED ARRIVAL DATE 12/15/83
TRANSPORTER NO 1 SIGNATURE "To the best of my knowledge the contents of the shipment, I have accepted for transport conforms with the description on this manifest"		TRANSPORTER NO 1 VEHICLE NO SECS 19121812131	DATE RECEIVED 12/15/83

TEAM AT THIS SHIPMENT

PART B

EPA 600

V I D 9 8 0 6 5 1 0 9 5

TRANSPORTER NO 1 SIGNATURE "I certify that I have not tampered with or materially altered the contents of this shipment"	DATE RECEIVED 12/15/83
TRANSPORTER NO 2 SIGNATURE "To the best of my knowledge the contents of the shipment I have accepted for transport conforms with the description on this manifest"	DATE RECEIVED 12/15/83
TRANSPORTER NO 2 SIGNATURE "I certify that I have not tampered with or materially altered the contents of this shipment"	DATE RECEIVED 12/15/83
TREATMENT STORAGE OR DISPOSAL FACILITY INDICATION OF ANY DIFFERENCES BETWEEN MANIFEST AND SHIPMENT OR LISTING OF INACCURACIES	HANDLING METHOD
THAT THE TREATMENT, STORAGE OR DISPOSAL FACILITY SIGNATURE I certify that the contents of this shipment conform with the description on this manifest and that these descriptions were on the label	DATE RECEIVED 12/15/83
In case of emergency call 725 8892	

INSTRUCTIONS
PLEASE TYPE

ENVIRONMENTAL QUALITY BOARD
HAZARDOUS WASTE MANIFEST

PART A

DOCUMENT NO

P R IC 07

GENERATOR NAME Inland Chemical Co., Inc.	PHONE (809) 778-2200	EPA ID NO V11D98065109
SITE ADDRESS Estate 130, Estate Bethlehem, St. Croix, U.S. Virgin Islands		
TRANSPORTER NO 1 Trailer Marine Transport Corporation	PHONE (809) 721-1313	P R D 98064457
SITE ADDRESS Isla Grande, Puerto Rico		
TRANSPORTER NO 2 Transporte Diaz	PHONE (809) 792-7999	P R D 9805126813
SITE ADDRESS Zona Portuaria, Puerto Nuevo, San Juan, Puerto Rico		
TREATMENT, STORAGE OR DISPOSAL (TSD) FACILITY Inland Chemical of P.R., Inc.	PHONE (809) 854-1090	P R D 09039971
SITE ADDRESS Km. 51, Highway # 2, Manati, Puerto Rico		

IF MORE THAN TWO TRANSPORTERS ARE TO BE UTILIZED, FILL OUT THE FOLLOWING AS APPROPRIATE

THIS FORM IS NO 1 OF A TOTAL OF 1 THE FIRST MANIFEST DOCUMENT NO IS P R I C 07

PROPER US DOT SHIPPING NAME	US DOT HAZARD CLASS	UN NUMBER	FORM	NET QUANTITY	UNITS	CONTAINERS		LOB EPA HAZ CODE	EOB/EF WASTE
NO	TYPE	NO	TYPE	NO	TYPE	NO	TYPE	NO	TYPE
1 Xylene RQ	Flam. Liquid	1307	L	31320	gal	1	TK	I	FQ
2									
3									
4									
5									
6									

OFFICIAL HANDLING INSTRUCTIONS INCLUDING CONTAINER EXEMPTION (ie IDENTIFICATION OF ADDITIONAL WASTES INCLUDED IN SHIPMENT IF A NONHAZARDOUS NATURE WHICH DO NOT HAVE TO BE MANIFESTED)

GENERATOR CERTIFICATION: This is to certify that the above named materials are properly classified, described, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation, U.S. EPA and the Commonwealth of P.R. The waste described above were consigned to the Transporter named The Treatment, Storage or Disposal Facility and will accept the shipment of hazardous waste, and has a valid permit to do so. I certify that the foregoing is true and correct to the best of my knowledge.

GENERATOR'S SIGNATURE Jerome H. Ludwig	TITLE President	DATE SHIPPED 11/13/81	EXPECTED ARRIVAL DATE 12/1/81
TRANSPORTER NO 1 SIGNATURE "To the best of my knowledge the contents of the shipment I have accepted for transport conforms with the description on this manifest."		TRANSPORTER NO 1 VEHICLE ID NO SECS 1912181211910	DATE RECEIVED 11/13/81

TEAM AT THIS VERIFICATION

PART B

GEN EPA ID NO

V11D98065109

TRANSPORTER NO 1 SIGNATURE "I certify that I have not tampered with or materially altered the contents of this shipment."	DATE DELIVERED 11/13/81
TRANSPORTER NO 2 SIGNATURE "To the best of my knowledge the contents of the shipment I have accepted for transport conforms with the description on this manifest."	TRANSPORTER NO 2 VEHICLE ID NO
TRANSPORTER NO 2 SIGNATURE "I certify that I have not tampered with or materially altered the contents of this shipment."	DATE RECEIVED 11/13/81
TREATMENT, STORAGE OR DISPOSAL FACILITY INDICATION OF ANY DIFFERENCES BETWEEN MANIFEST AND SHIPMENT OR LISTING OF REASONS FOR AND DISPOSITION OF REJECTED MATERIALS	HANDLING METHOD
	1 2 3 4 5 6
TREATMENT, STORAGE OR DISPOSAL FACILITY SIGNATURE "Upon receipt of this shipment, I certify that the contents of the shipment conform with the description on this manifest except those differences noted on this form."	DATE RECEIVED 11/13/81

In case of emergency or spill immediately call the Environmental Quality Board (809) 725-8992

DOCUMENT NO

P R

ENVIRONMENTAL QUALITY BOARD HAZARDOUS WASTE MANIFEST

PART A:

DOCUMENT NO

P R I C 06

GENERATOR NAME Island Chemical Co., Inc.	PHONE (809) 778-2200	P R I C 06 1 1 0 9 8 0 6 5 1 0 9 1
SITE ADDRESS Estate 130, Estate Bethlehem, St. Croix, U.S. Virgin Islands		
TRANSPORTER NO 1 Trailer Marine Transport Corporation	PHONE (809) 721-1313	
SITE ADDRESS Isla Grande, Puerto Rico		P R I C 06 1 1 0 9 8 0 6 5 1 0 9 1
TRANSPORTER NO 2 Transporte Diaz	PHONE (809) 722-7999	
SITE ADDRESS Zona Portuaria, Puerto Nuevo, San Juan, Puerto Rico		P R I C 06 1 1 0 9 8 0 6 5 1 0 9 1
TREATMENT, STORAGE OR DISPOSAL (TSD) FACILITY Inland Chemical of P.R., Inc.	PHONE (809) 854-1090	
SITE ADDRESS Km. 51, Highway # 2, Manati, Puerto Rico		P R I C 06 1 1 0 9 8 0 6 5 1 0 9 1

IF MORE THAN TWO TRANSPORTERS ARE TO BE UTILIZED, FILL OUT THE FOLLOWING AS APPROPRIATE

THIS FORM IS NO 1 OF A TOTAL OF 1 THE FIRST MANIFEST DOCUMENT NO IS P R I C 06

PROPER US DOT SHIPPING NAME	US DOT HAZARD CLASS	UN NUMBER	FORM	NET QUANTITY	UNITS	CONTAINERS		LUN EPA HAZ CODE	EOR/PA WASTE TYPE
						NO	TYPE		
1 Toluene RQ	Flam. Liquid	1294	L	13.724	Gal.	1	TK	1	F 0 0
2									
3									
4									
5									
6									

OPTIONAL HANDLING INSTRUCTIONS INCLUDING CONTAINER EXEMPTION (ie IDENTIFICATION OF ANIMAL OR VERMIN IN CONTACT WITH THE HAZARDOUS MATERIAL WHICH DO NOT HAVE TO BE MANIFESTED)

GENERATOR'S CERTIFICATION: This is to certify that the above named materials are properly classified, described, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation, U.S. EPA and the Commonwealth of P.R. The waste described above was assigned to the transporter named. The Treatment, Storage or Disposal Facility can and will accept the shipment of hazardous waste, and has agreed in writing to do so. I certify that the foregoing is true and correct to the best of my knowledge.

GENERATOR'S SIGNATURE <i>Jerome H. Ludwig</i> Jerome H. Ludwig	TITLE President	DATE SHIPPED 11/10/83	EXPIRATION/RECEIVAL DATE 11/24/83
TRANSPORTER NO 1 SIGNATURE "To the best of my knowledge the contents of the shipment I have accepted for transport conforms with the description on this manifest"	TRANSPORTER NO 1 VEHICLE NO SCXU	12/31/05/03	DATE RECEIVED 12/10/83

M.A. Serrano TEAR AT THIS PERFORATION *244-31209*

PART B

GEN EPA UN

1 1 0 9 8 0 6 5 1 0 9 1

TRANSPORTER NO 1 SIGNATURE "I certify that I have not tampered with or materially altered the contents of this shipment"	DATE DELIVERED 12/28/83												
TRANSPORTER NO 2 SIGNATURE "To the best of my knowledge the contents of the shipment I have accepted for transport conforms with the description on this manifest"	TRANSPORTER NO 2 VEHICLE NO SCXU												
TRANSPORTER NO 2 SIGNATURE "I certify that I have not tampered with or materially altered the contents of this shipment"	DATE RECEIVED 12/28/83												
TREATMENT STORAGE OR DISPOSAL FACILITY INDICATION OF ANY DIFFERENCES BETWEEN MANIFEST AND SHIPMENT OR LISTING OF REASONS FOR AND DISPOSITION OF REJECTED MATERIALS													
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2">REASONING</td> </tr> <tr> <td>1</td> <td>302</td> </tr> <tr> <td>2</td> <td></td> </tr> <tr> <td>3</td> <td></td> </tr> <tr> <td>4</td> <td></td> </tr> <tr> <td>5</td> <td></td> </tr> </table>		REASONING		1	302	2		3		4		5	
REASONING													
1	302												
2													
3													
4													
5													
TREATMENT STORAGE OR DISPOSAL FACILITY SIGNATURE "Upon visual inspection, I certify that the contents of this shipment conform with the description on the manifest except those discrepancies noted on this form"	DATE RECEIVED 12/28/83												

In case of emergency or spill, immediately call the Environmental Quality Board (EQB) 725-1122

RT A:

DOCUMENT NO

P R IC 05

GENERATOR NAME Island Chemical Co., Inc.	PHONE (809) 778-2200	EPA ID NO V I D 9 8 0 6 5 1 0 9 1
SITE ADDRESS Estate 130, Estate Bethlehem, St. Croix, U.S. Virgin Islands		
TRANSPORTER NO 1 Trailer Marine Transport Corporation	PHONE (809) 721-1313	P R D 9 8 0 6 4 4 5 7 1
SITE ADDRESS Isla Grande, Puerto Rico		
TRANSPORTER NO 2 Transporte Diaz	PHONE (809) 792-7999	P R D 9 8 0 5 2 6 8 3 1
SITE ADDRESS Zona Portuaria, Puerto Nuevo, San Juan, Puerto Rico		
TREATMENT, STORAGE OR DISPOSAL (TSD) FACILITY Inland Chemical of P.R., Inc.	PHONE (809) 854-1090	P R D 0 2 0 3 9 9 7 1 1
SITE ADDRESS Km. 51, Highway # 2, Manati, Puerto Rico		

IF MORE THAN TWO TRANSPORTERS ARE TO BE UTILIZED, FILL OUT THE FOLLOWING AS APPROPRIATE

THIS FORM IS NO 1 OF A TOTAL OF 1 THE FIRST MANIFEST DOCUMENT NO IS P. R. 1 IC 0 5

PROPER US DOT SHIPPING NAME	US DOT HAZARD CLASS	UN NUMBER	FORM	NET QUANTITY	UNITS	CONTAINERS		EQU EPA MA? CODE	EQU EPA WASTE TY
						NO	TYPE		
1 Toluene RD	Flam. Liquid	1294	L	147.31	Gal	1	I, K	1	F, O, C
2									
3									
4									
5									
6									

SPECIAL HANDLING INSTRUCTIONS INCLUDING CONTAINER EXEMPTION (ie IDENTIFICATION OF ADDITIONAL WASTES INCLUDED IN SHIPMENT OF A SUBSTANCE) (SIGNATURE WHICH DO NOT HAVE TO BE MANIFESTED)

GENERATOR'S CERTIFICATION: This is to certify that the above named materials are properly classified, described, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation, U.S. EPA and the Commonwealth of P.R. The waste described above were transported to the transporter named The Treatment, Storage or Disposal Facility can and will accept the shipment of hazardous waste, and has a valid permit to do so. I certify that the foregoing is true and correct to the best of my knowledge.

GENERATOR'S SIGNATURE <i>Jerome H. Ludwig</i> Jerome H. Ludwig	TITLE President	DATE SHIPPED 11/08/31	EXPECTED ARRIVAL DATE 11/24/31
TRANSPORTER NO 1 SIGNATURE "To the best of my knowledge the contents of the shipment I have accepted for transport conforms with the description on this manifest."	TRANSPORTER NO 1 VEHICLE ID NO S C X U 231105119	DATE RECEIVED 10/11/31	DATE RECEIVED 10/21/31

M. A. Serrano TEAR AT THIS PERFORATION *RHP-31210*

PART B

GEN EPA ID#

V I D 9 8 0 6 5 1 0 9 1

TRANSPORTER NO 1 SIGNATURE "I certify that I have not tampered with or materially altered the contents of this shipment."	DATE DELIVERED 11/24/31
TRANSPORTER NO 2 SIGNATURE "To the best of my knowledge the contents of the shipment I have accepted for transport conforms with the description on this manifest."	DATE RECEIVED 11/24/31
TRANSPORTER NO 2 SIGNATURE "I certify that I have not tampered with or materially altered the contents of this shipment."	DATE RECEIVED 11/24/31
TREATMENT STORAGE OR DISPOSAL FACILITY INDICATION OF ANY DIFFERENCES BETWEEN MANIFEST AND SHIPMENT OR LISTING OF REASONS FOR AND DISPOSITION OF REJECTED MATERIALS	HAZARDING METHOD 5027
TREATMENT STORAGE OR DISPOSAL FACILITY SIGNATURE "Upon visual inspection, I certify that the contents of this shipment conform with the description on this manifest except those discrepancies noted on this form."	DATE RECEIVED 11/24/31
In case of emergency or spill immediately call the Environmental Emergency Response Unit 775 8997	

HAZARDOUS WASTE MANIFEST

A:

DOCUMENT NO

P R IC 04

FOR NAME Island Chemical Co., Inc.	PHONE (809) 778-2200	EPA ID NO V1D98065109
SITE ADDRESS Estate 130 Estate Bethlehem, St. Croix, U.S. Virgin Islands		
TRANSPORTER NAME Trailer Marine Transport Corporation	PHONE (809) 721 1315	EPA ID NO P1R098064457
SITE ADDRESS Isla Grande, Puerto Rico		
PERSON IN CHARGE Transporte Diaz	PHONE (809) 792-7999	EPA ID NO P1R098052685
SITE ADDRESS Zona Portuaria, Puerto Nuevo, San Juan, Puerto Rico		
THIRD PARTY STORAGE OR TREATMENT FACILITY Inland Chemical of P.R., Inc.	PHONE (809) 854-1090	EPA ID NO P1R098039971
SITE ADDRESS Km. 51, Highway #2, Manati, Puerto Rico		

HAZARDOUS WASTE MANIFESTS ARE TO BE UTILIZED, FILL OUT THE FOLLOWING AS APPLICABLE
 THIS MANIFEST IS FOR 1 OF A TOTAL OF 1 THE FIRST HAZARDOUS WASTE DOCUMENT NO. IS P R 1 C 0 4

HAZARDOUS WASTE NAME	MS DOT HAZARD CLASS	UN NUMBER	HAZARD	NET QUANTITY	HAZID	CONTAINERS		EPA ID NO	HAZ CLASS
						NO	TYPE		
Toluene 991	Flam. Liquid	1294	I	151150	Gal	1	TK	1	FC

SIGNED <i>Jerome H. Ludwig</i> Jerome H. Ludwig	TITLE President	DATE SIGNED 12 14 82	EXPIRATION DATE 12 31 83
SIGNED <i>[Signature]</i> SCAH		DATE SIGNED 12 11 10 15 19	EXPIRATION DATE 12 31 83

12-14-82 *12-31-83*

V1D98065109

PART B

SIGNED <i>E. Pacci</i> E. Pacci	DATE SIGNED 12 22 82
SIGNED <i>[Signature]</i> SCAH	DATE SIGNED 12 22 82

SITE ADDRESS P.O. Box 134 Estado Bethlehem, St. Croix, U.S. Virgin Islands		V I D 9 8 0 6 1 1 0 1
TRANSPORTER NO 1 L. J. Marine Transport Corporation	PHONE (809) 721-1313	P R D 9 8 0 6 4 4 5 7
SITE ADDRESS P.O. Box 134, Puerto Rico		
TRANSPORTER NO 2 L. J. Marine	PHONE (809) 792-7999	P R D 9 8 0 5 2 6 0 3
SITE ADDRESS P.O. Box 134, Puerto Nuevo, San Juan, Puerto Rico		
TREATMENT STORAGE OR DISPOSAL (TSD) FACILITY Inland Chemical of P.R., Inc.	PHONE (809) 854-1020	P R D 9 8 0 3 2 2 7 1
SITE ADDRESS P.O. Box 134, P.R. # 2, Manati, Puerto Rico		

IF MORE THAN TWO TRANSPORTERS ARE TO BE UTILIZED, FILL OUT THE FOLLOWING AS APPROPRIATE

THIS FORM IS NO 1 OF A TOTAL OF 1 THE FIRST MANIFEST DOCUMENT NO IS P. R. I C O 3

PROPER US DOT SHIPPING NAME	US DOT HAZARD CLASS	UN NUMBER	FORM	NET QUANTITY	UNITS	CONTAINERS		ECG EPA HAZ CODE	EOB/EPA WASTE IN
						NO	TYPE		
1. Toluene	Flam. Liquid	1204	L	147.63	Gal.	1	TK	1	Flam
2									
3									
4									
5									
6									

SPECIAL HANDLING INSTRUCTIONS INCLUDING CONTAINER EXEMPTION (i.e. IDENTIFICATION OF ADDITIONAL WASTES INCLUDED IN SHIPMENT OF A NONHAZARDOUS NATURE WHICH DO NOT HAVE TO BE MANIFESTED)

GENERATOR'S CERTIFICATION: This is to certify that the above named materials are properly classified, described, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation, U.S. EPA and the Commonwealth of P.R. The waste described above were consigned to the Transporter named The Treatment, Storage or Disposal Facility can and will accept the shipment of hazardous waste, and has a valid permit to do so. I certify that the foregoing is true and correct to the best of my knowledge.

GENERATOR'S SIGNATURE <i>Jerome H. Ludwig</i>	TITLE President	DATE SHIPPED MO DAY YR 12 17 82	EXPECTED ARRIVAL DATE MO DAY YR 12 19 82
TRANSPORTER NO 1 SIGNATURE "To the best of my knowledge the contents of the shipment I have accepted for transport conforms with the description on this manifest"		TRANSPORTER NO 1 VEHICLE ID NO SCXU 2310503	DATE RECEIVED MO DAY YR 12 17 82

TEAR AT THIS PERFORATION

PART B

GEN EPA ID#

V I D 9 8 0 5 5 0 0 0

TRANSPORTER NO 1 SIGNATURE "I certify that I have not tampered with or materially altered the contents of this shipment"	DATE DELIVERED MO DAY YR 12 17 82
TRANSPORTER NO 2 SIGNATURE "To the best of my knowledge the contents of the shipment I have accepted for transport conforms with the description on this manifest"	DATE RECEIVED MO DAY YR 12 17 82
TRANSPORTER NO 2 VEHICLE ID NO	
TREATMENT STORAGE OR DISPOSAL FACILITY SIGNATURE "Upon visual inspection, I certify that the contents of this shipment conform with the description on this manifest except those discrepancies noted on this form"	DATE RECEIVED MO DAY YR 12 22 82

In case of emergency, please immediately call the Environmental Quality Board (809) 721-1313

DOCUMENT NO 103 P. R.

COMMONWEALTH OF MASSACHUSETTS
ENVIRONMENTAL QUALITY BOARD
HAZARDOUS WASTE MANIFEST

CSN. 1C 01

DOCUMENT NO.

P. R.

SHIPPER'S NAME General Incorporated	PHONE (617) 777-2000	EPA NO. 101 101-101-101
SHIPPER'S ADDRESS 100 North Street, Boston, MA 02110	PHONE (617) 777-2000	EPA NO. 102 102-102-102
SHIPPER'S ADDRESS 100 North Street, Boston, MA 02110	PHONE (617) 777-2000	EPA NO. 103 103-103-103
SHIPPER'S ADDRESS 100 North Street, Boston, MA 02110	PHONE (617) 777-2000	EPA NO. 104 104-104-104
SHIPPER'S ADDRESS 100 North Street, Boston, MA 02110	PHONE (617) 777-2000	EPA NO. 105 105-105-105

IF MORE THAN TWO TRANSPORTERS ARE TO BE UTILIZED, FILL OUT THE FOLLOWING AS APPROPRIATE

THIS MANIFEST IS NO. 1 OF A TOTAL OF 1 THE FIRST MANIFEST DOCUMENT NO. IS		P. R. 101-101-101							
SHIPPER'S DOT SHIPPING NAME	DOT HAZARD CLASS	UN NUMBER	FORM	NET QUANTITY	UNITS	CONTAINERS		EPA NO. 101 101-101-101	EPA NO. 102 102-102-102
						NO	TYPE		

IF THE MANIFEST CONTAINS INFORMATION INCLUDING CONTAINER EXEMPTION (i.e. IDENTIFICATION OF ADDITIONAL WASTES INCLUDED IN SHIPMENT OF A NONHAZARDOUS MATERIAL WHICH IS NOT MEANT TO BE MANIFESTED)

SHIPPER'S CERTIFICATION: This is to certify that the above named materials are properly classified, described, marked and labeled and are in proper condition for transportation in accordance with the regulations of the Department of Transportation, U.S. EPA and the Commonwealth of P.R. The waste described above were consigned to the Transporter named. The Transporter named is a Hazardous Waste Facility and will accept the shipment of hazardous waste, and has a valid permit to do so. I certify that the foregoing is true and correct to the best of my knowledge.

SHIPPER'S SIGNATURE [Signature]	TITLE [Title]	DATE SHIPPED 10/1/80	EXPECTED ARRIVAL DATE 10/1/80
TRANSPORTER NO. 1 SIGNATURE "To the best of my knowledge the contents of the shipment I have accepted for transport conforms with the description on this manifest"		TRANSPORTER NO. 1 VEHICLE NO. NO 101-101-101	DATE RECEIVED 10/1/80

TEAM AT THIS PERFORMANCE

TRANSPORTER NO. 1 SIGNATURE "I certify that I have not tampered with or materially altered the contents of this shipment"	TRANSPORTER NO. 1 VEHICLE NO. NO 101-101-101	DATE RECEIVED 10/1/80
TRANSPORTER NO. 2 SIGNATURE "To the best of my knowledge the contents of the shipment I have accepted for transport conforms with the description on this manifest"	TRANSPORTER NO. 2 VEHICLE NO. NO 102-102-102	DATE RECEIVED 10/1/80
TRANSPORTER NO. 2 SIGNATURE "I certify that I have not tampered with or materially altered the contents of this shipment"		
REMARKS: STORAGE OR DISPOSAL FACILITY INDICATION OF ANY DIFFERENCES BETWEEN MANIFEST AND SHIPMENT OR LISTING OF REASONS FOR NON-RECEIPT OF REJECTED MATERIALS		REMARKS: STORAGE OR DISPOSAL FACILITY INDICATION OF ANY DIFFERENCES BETWEEN MANIFEST AND SHIPMENT OR LISTING OF REASONS FOR NON-RECEIPT OF REJECTED MATERIALS
STORAGE OR DISPOSAL FACILITY SIGNATURE "Upon visual inspection, I certify that the contents of this shipment conform with the description on this manifest except for the differences noted on this form"		DATE RECEIVED 10/1/80

DOCUMENT NO.

P. R.

ENVIRONMENTAL QUALITY BOARD HAZARDOUS WASTE MANIFEST

DOCUMENT NO

P. R. IC02
EPA ID NO

NAME Chemical Company, Incorporated		PHONE (809) 778-2200	V I D 9 8 0 6 5 1 0 9 5
ADDRESS 130 Estate Bethlehem, St. Croix U.S. Virgin Islands			
TRANSPORTER NO 1 Trailer Marine Transport Corporation		PHONE (809) 721-1313	P R D 9 8 0 6 4 4 5 7 9
SITE ADDRESS Isla Grande, Puerto Rico			
TRANSPORTER NO 2 Transporte Diaz		PHONE (809) 792-7999	P R D 9 8 0 5 2 6 8 3 4
SITE ADDRESS Zona Portuaria, Puerto Nuevo, San Juan, Puerto Rico			
TREATMENT STORAGE OR DISPOSAL (TSD) FACILITY Inland Chemical of P.R., Inc.		PHONE (809) 854-1090	P R D 10 9 10 3 9 9 7 1 8
SITE ADDRESS Km. 51, Highway #2, Manati, Puerto Rico			

IF MORE THAN TWO TRANSPORTERS ARE TO BE UTILIZED, FILL OUT THE FOLLOWING AS APPROPRIATE

THIS FORM IS NO 1 OF A TOTAL OF 1 THE FIRST MANIFEST DOCUMENT NO IS P. R. IC 0 2

GENERATOR

	PROPER US DOT SHIPPING NAME	US DOT HAZARD CLASS	UN NUMBER	FORM	NET QUANTITY	UNITS	CONTAINERS		EGB EPA MAZ CODE	EGB/EPA WASTE TYPE
							NO	TYPE		
1	TOLUENE RQ	Flam. Liquid	1294	L	5 1 2 0 5	Gal.	1	TK	1	F 10 10 15
2										
3										
4										
5										
6										

SPECIAL HANDLING INSTRUCTIONS INCLUDING CONTAINER EXEMPTION (i.e. IDENTIFICATION OF ADDITIONAL WASTES INCLUDED IN SHIPMENT OF A NONHAZARDOUS NATURE WHICH DO NOT HAVE TO BE MANIFESTED)

GENERATOR'S CERTIFICATION This is to certify that the above named materials are properly classified, described, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation U.S. EPA and the Commonwealth of P.R. The waste described above were consigned to the Transporter named The Treatment Storage or Disposal Facility can and will accept the shipment of hazardous waste, and has a valid permit to do so. I certify that the foregoing is true and correct to the best of my knowledge.

GENERATOR'S SIGNATURE <i>Jerome H. Ludwig</i>	TITLE President	DATE SHIPPED MO <u>11</u> DAY <u>9</u> YR <u>1982</u>	EXPECTED ARRIVAL DATE MO <u>11</u> DAY <u>3</u> YR <u>1982</u>
TRANSPORTER NO 1 SIGNATURE "To the best of my knowledge the contents of the shipment I have accepted for transport conforms with the description on this manifest."		TRANSPORTER NO 1 VEHICLE ID. NO. SCXU 1213110151191	DATE RECEIVED MO <u>11</u> DAY <u>3</u> YR <u>1982</u>

TEAR AT THIS PERFORATION

PART B

GEN EPA ID# V I D 9 8 0 6 5 1 0 9 5

TRANSPORTER

TRANSPORTER NO 1 SIGNATURE "I certify that I have not tampered with or materially altered the contents of this shipment."	DATE DELIVERED MO <u>11</u> DAY <u>9</u> YR <u>1982</u>
TRANSPORTER NO 2 SIGNATURE "To the best of my knowledge the contents of the shipment I have accepted for transport conforms with the description on this manifest."	DATE RECEIVED MO <u>11</u> DAY <u>3</u> YR <u>1982</u>
TRANSPORTER NO 2 SIGNATURE "I certify that I have not tampered with or materially altered the contents of this shipment."	DATE RECEIVED MO <u>11</u> DAY <u>3</u> YR <u>1982</u>

TSD FACILITY

TREATMENT STORAGE OR DISPOSAL FACILITY INDICATION OF ANY DIFFERENCES BETWEEN MANIFEST AND SHIPMENT OR LISTING OF REASONS FOR AND DISPOSITION OF REJECTED MATERIALS	HANDLING METHOD						
	<table border="1" style="width: 100%; text-align: center;"> <tr><td>1</td><td>2</td></tr> <tr><td>3</td><td>4</td></tr> <tr><td>5</td><td>6</td></tr> </table>	1	2	3	4	5	6
1	2						
3	4						
5	6						
TREATMENT STORAGE OR DISPOSAL FACILITY SIGNATURE "Upon visual inspection I certify that the contents of this shipment conform with the description on this manifest except those discrepancies noted on this form."							

In case of emergency or spill immediately call the Environmental Quality Board (809) 725-8992

DOCUMENT NO

P. R.

ART A:

DOCUMENT NO 1001 P.R.

GENERATOR NAME Inland Chemical Company, Incorporated	PHONE (809) 778-2508	EPA ID NO 710980651091
SITE ADDRESS Estado 130 Estado Bethlehem, St. Cruz U.S. Virgin Islands		
TRANSPORTER NO 1 Trailer Marine Transport Corporation	PHONE (809) 728-1111	EPA ID NO 7209806440379
SITE ADDRESS Isla Grande, Puerto Rico		
TRANSPORTER NO 2 Transporte Diaz	PHONE (809) 702-7990	EPA ID NO 720980526031
SITE ADDRESS Zona Portuaria, Puerto Ricos, San Juan, Puerto Rico		
TREATMENT STORAGE OR DISPOSAL (TSD) FACILITY Inland Chemical of P.R., Inc.	PHONE (809) 854-1070	EPA ID NO 71098090399711
SITE ADDRESS Ka. St, Highway #2, Ponce, Puerto Rico		

IF MORE THAN TWO TRANSPORTERS ARE TO BE UTILIZED, FILL OUT THE FOLLOWING AS APPROPRIATE

THIS FORM IS NO _____ OF A TOTAL OF _____ THE FIRST MANIFEST DOCUMENT NO IS

P.R.

1001

PROPER US DOT SHIPPING NAME	US DOT HAZARD CLASS	UN NUMBER	FORM	NET QUANTITY	UNITS	CONTAINERS		EPA HAZ CODE	EPA WASTE TYPE
						NO	TYPE		
1 Toluene 70	Flam. Liq.	1204	L	512.5	Gal.	1	1	1	1
2									
3									
4									
5									
6									

SPECIAL HANDLING INSTRUCTIONS INCLUDING CONTAINER EXEMPTION (i.e. IDENTIFICATION OF ADDITIONAL WASTES INCLUDED IN SHIPMENT OF A NONHAZARDOUS NATURE WHICH DO NOT HAVE TO BE MANIFESTED)

GENERATOR'S CERTIFICATION: I certify that the above named materials are properly classified, described, marked and labeled and are in proper condition for transportation according to the requirements of the Department of Transportation, U.S. EPA and the Commonwealth of P.R. The waste described above were consigned to the Transporter named The _____ and I will accept the shipment of hazardous waste, and has a valid permit to do so. I certify that the foregoing is true and correct to the best of my knowledge.

TITLE President	DATE SHIPPED MO DAY YR 11 18 82	EXPECTED ARRIVAL DATE MO DAY YR 11 18 82
TRANSPORTER NO 1 VEHICLE NO 8000	DATE RECEIVED MO DAY YR 11 18 82	

TEAR AT THIS PERFORATION

GEN EPA ID#

710980651091

TRANSPORTER NO 1 SIGNATURE "I certify that I have not tampered with or materially altered the contents of this shipment."	DATE DELIVERED MO DAY YR 11 18 82
TRANSPORTER NO 2 SIGNATURE "To the best of my knowledge the contents of the shipment I have accepted for transport conforms with the description on this manifest."	DATE RECEIVED MO DAY YR 11 18 82
TRANSPORTER NO 2 SIGNATURE "I certify that I have not tampered with or materially altered the contents of this shipment."	
TREATMENT STORAGE OR DISPOSAL FACILITY INDICATION OF ANY DIFFERENCES BETWEEN MANIFEST AND SHIPMENT OR LISTING OF REASONS FOR AND DISPOSITION OF REJECTED MATERIALS	HANDLING METHOD 1 2 3 4 5 1 2 2
TREATMENT STORAGE OR DISPOSAL FACILITY SIGNATURE "Upon visual inspection I certify that the contents of this shipment conform with the description on this manifest except those discrepancies noted on this form."	DATE RECEIVED MO DAY YR 11 18 82

In case of emergency or spill immediately call the Environmental Quality Board (809) 725-8992

DOCUMENT NO 1001 P.R.

PHOTOGRAPHS

Berlex Laboratories

St. Croix. VI

September 9, 1985

PHOTOGRAPHS



Photo #1 - Aboveground raw material storage tanks. Berlex, VI

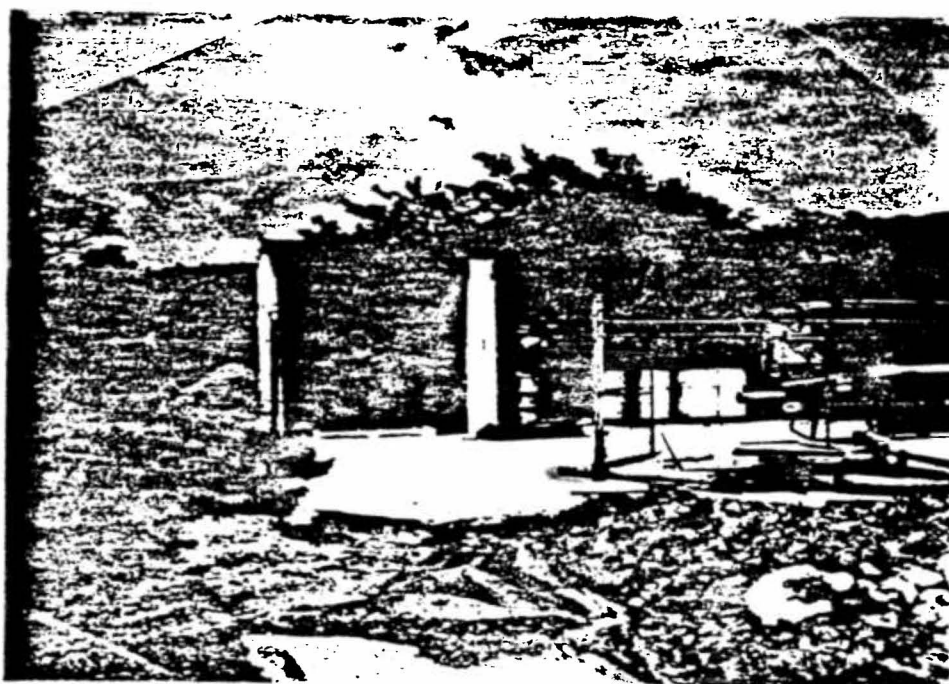


Photo #2 - Outside material storage area. Berlex, VI

PHOTOGRAPHS

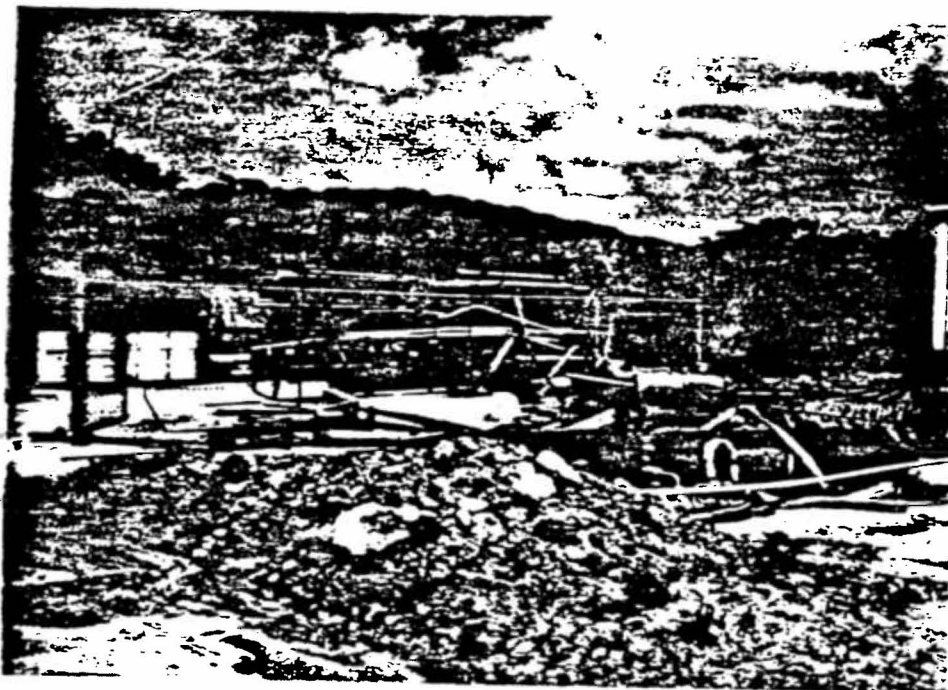


Photo #3 - Outside material storage area. Berlex, VI



Photo #4 - Location of toluene drying oven. Berlex, VI

PHOTOGRAPHS

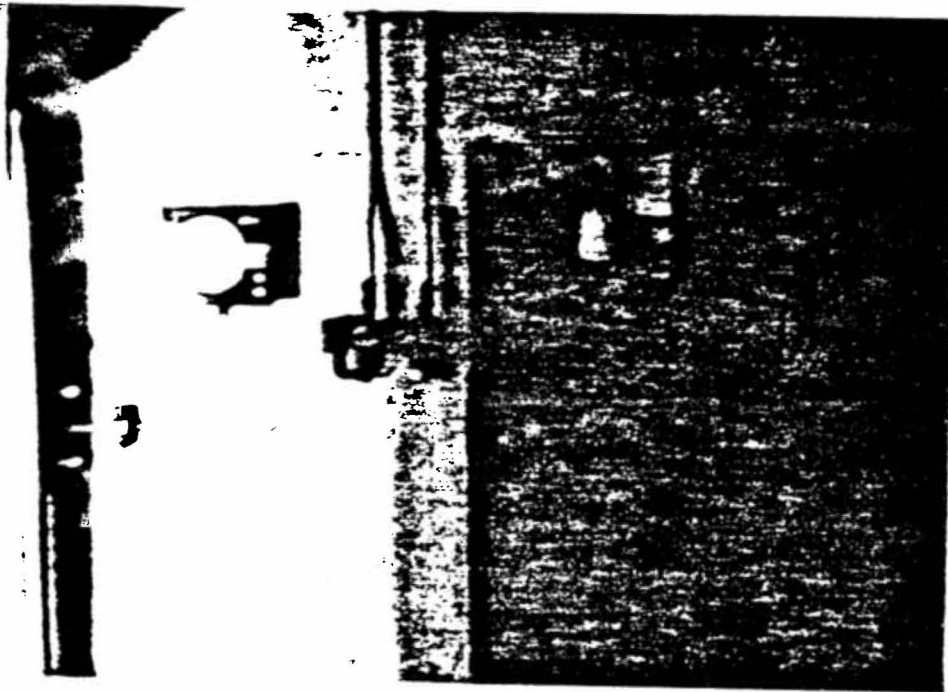


Photo #5 - Entrance to toluene drying oven. Berlex, VI

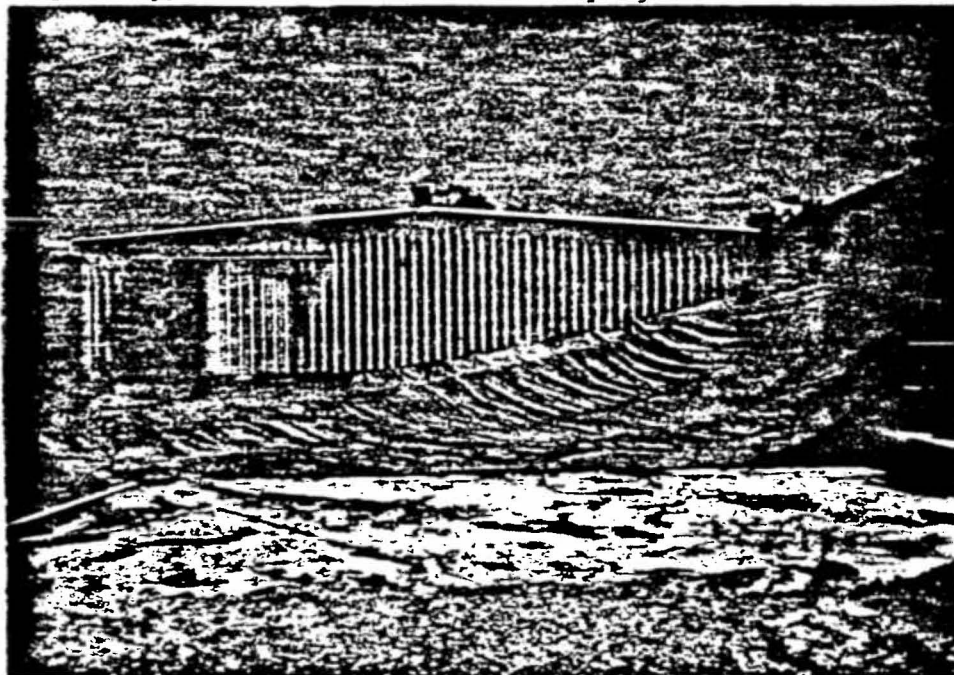


Photo #6 - pyridine contaminated Area. Synthetic liner used to prevent saturation of soil. Berlex, VI

PHOTOGRAPHS



Photo #7 & #8 - Pyridine contaminated area. Lab waste drainage area, surface sampling using trowels. Berlex, VI



PHOTOGRAPHS

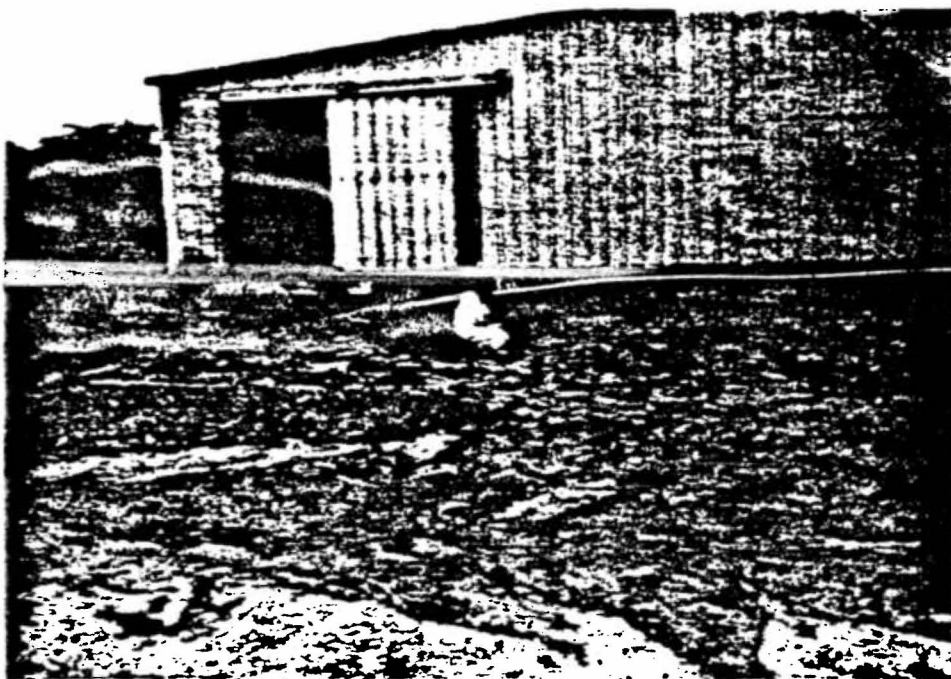


Photo #9 - Pyridine contaminated area. Lab waste drainage area, surface sampling using trowels. Berlex, VI

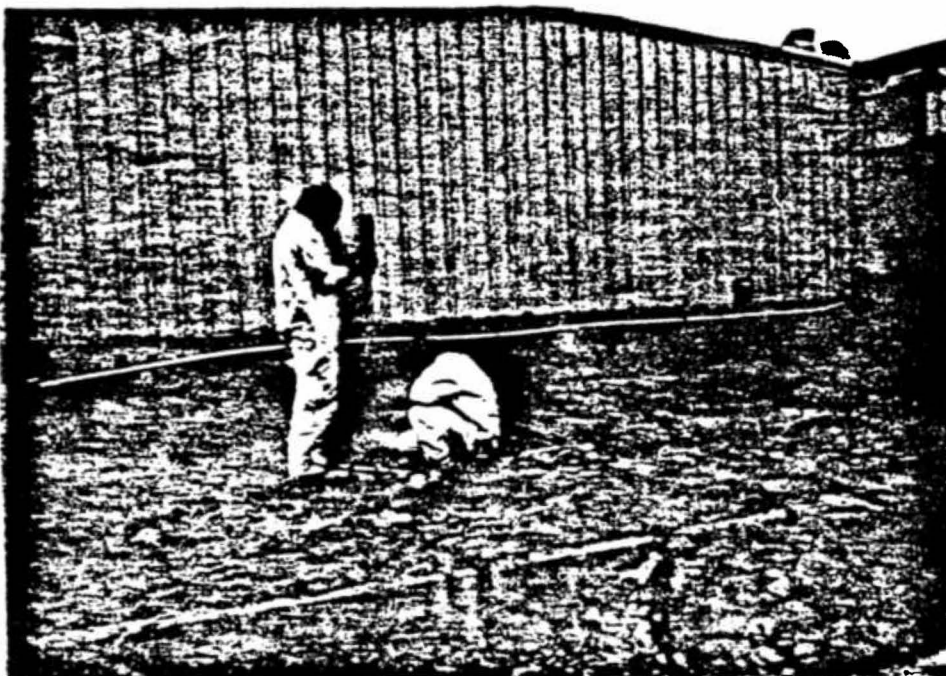


Photo #10 - Pyridine contaminated area. Lab waste drainage area, subsurface sampling using bucket augers. Berlex, VI

PHOTOGRAPHS



Photo #11 - Pyridine contaminated area. Lab waste drainage area, subsurface sampling using bucket augers. Berlex, VI

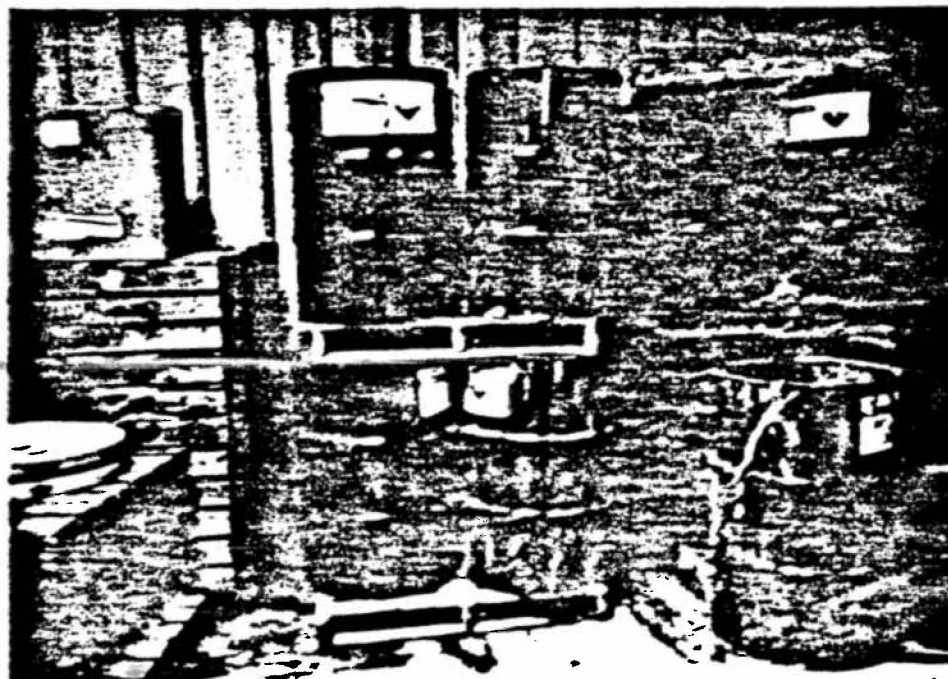


Photo #12 - 55-gallon drums of toluene contaminated soil in warehouse. Berlex, VI

PHOTOGRAPHS

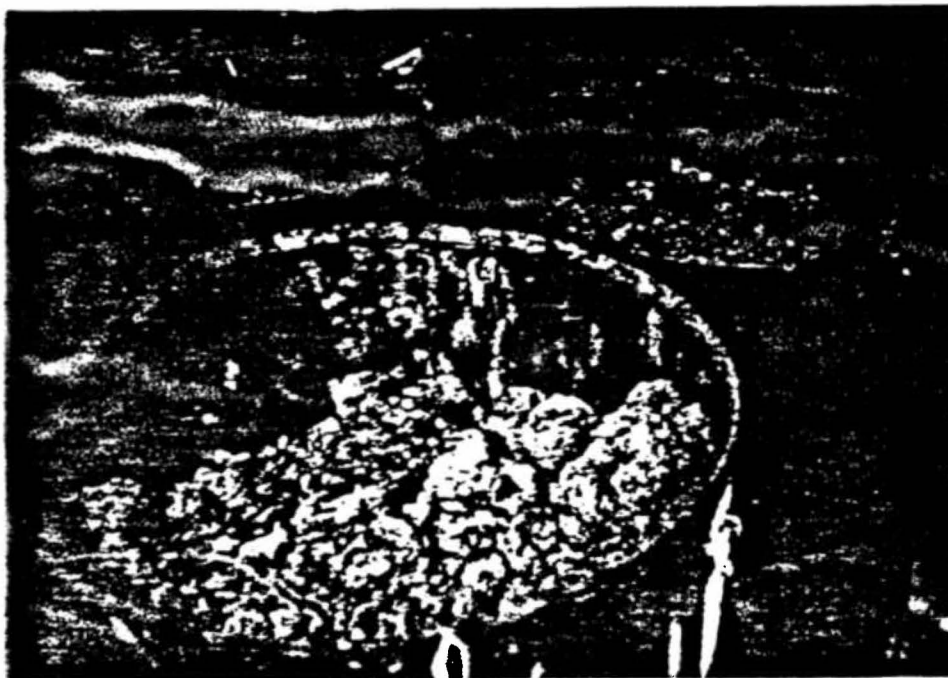


Photo #13 - Close-up view of toluene contaminated soil stored in warehouse. Berlex, VI



Photo #14 - 55-gallon drums of raw materials stored in warehouse. Berlex, VI

Attachment 2:

Hazardous waste manifests

Berlex Laboratories (ICC)
VID980651095

March 13, 1986



HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type (Form designed for use on elite (12-pitch) typewriter)

Form Approved OMB No. 2000-0404 Expires 7-31-85

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. V1098065109512003	Manifest Document No. 2003	2. Page 1 of 2	Information in the shaded areas is not required by Federal law	
3. Generator's Name and Mailing Address ISLAND CHEMICAL COMPANY 300 FAIRFIELD ROAD WAYNE, NEW JERSEY 07090			Trailer Number TMTZ 680365		A. State Manifest Document Number CWMA 243032	
4. Generator's Phone (201) 696-8100					B. State Generator's ID	
5. Transporter 1 Company Name ONEALE'S TRUCKING AND TRAILER TRANSPORT, INC.			6. US EPA ID Number PRD980642579		C. State Transporter's ID	
7. Transporter 2 Company Name TRAILER MARINE TRANSPORT, INC.			8. US EPA ID Number PRD980642579		D. Transporter's Phone 404-452-1447	
9. Designated Facility Name and Site Address CHEMICAL WASTE MANAGEMENT, INC. Emelle Facility Alabama Highway 17 at Mile Marker 163 Emelle, Alabama 35459			10. US EPA ID Number ALD000622464		E. State Facility's ID	
					H. Facility's Phone 205/652-9721	
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)			12. Containers No. Type		13. Total Quantity	14. Unit Wt/Vol
a. HAZARDOUS WASTE LIQUID NOS (Toluene & Benzene) ORM-E NA9189 CWM Profile Number ALAD 48602			12 DIM			
b. HAZARDOUS WASTE LIQUID NOS (Toluene & Chloroform) ORM-E NA9189 CWM Profile Number ALAD 48603			10 DIM			
c. HAZARDOUS WASTE SOLID NOS (METAL DRUMS) ORM-E NA9189 CWM Profile Number ALAE 68804			14 DIM			
d. CWM Profile Number						
J. Additional Descriptions for Materials Listed Above 11a. Less than 1.0% Toluene and Benzene 11b. Approximately 20% organic, primarily Benzyl acetate 11c. Drums contain pieces of metal drums w/ Voids			K. Handling Codes for Wastes Listed Above a. DB1 c. DB1 b. DB1 d.			
15. Special Handling Instructions and Additional Information 11c. Drums will have to be filled with inert material by CWMA						
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. Unless I am a small quantity generator who has been exempted by statute or regulation from the duty to make a waste minimization certification under Section 3002(b) of RCRA, I also certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and I have selected the method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment.						
Printed/Typed Name ALON L. KYLE			Signature Alon L. Kyle		Month Day Year 11/01/85	
17. Transporter 1 Acknowledgement of Receipt of Materials Printed/Typed Name Oneale's Transport Inc Norton C. M. Burt			Signature Norton C. M. Burt		Month Day Year 11/01/85	
18. Transporter 2 Acknowledgement of Receipt of Materials Printed/Typed Name Glenora Berry			Signature Glenora Berry		Month Day Year 11/22/85	
19. Discrepancy Indication Space						
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19. Printed/Typed Name HOWARD TOMPKE						
			Signature Howard Tompke		Month Day Year 11/20/85	

**UNIFORM HAZARDOUS
WASTE MANIFEST
(Continuation Sheet)**

21. Generator's US EPA ID No

Manifest Document No

22. Page

Information in the shaded areas is not required by Federal law.

V 1 0 9 8 0 6 5 1 0 9 5

IC003

2 of 2

J. Generator's Name

ISLAND CHEMICAL COMPANY
300 FARMFIELD ROAD
WAXING, NEW JERSEY 07070
TEL 201-694-4100

Trailer Number
TMTZ 680365

L. State Manifest Document Number

CWMA 243032

M. State Generator's ID

24. Transporter's Company Name

RANGER NATIONAL

25. US EPA ID Number

FLD 980803977

N. State Transporter's ID

O. Transporter's Phone

26. Transporter's Company Name

RYDER RANGER

27. US EPA ID Number

FLD 007022578

P. State Transporter's ID

Q. Transporter's Phone 318-439-6249

28. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)

a. ~~HAZARDOUS WASTE LIQUID NOS (Toluene & Benzene)~~

~~ORM-E NA 9189~~

CWM Profile Number ALAD 48603

12 DM

b. ~~HAZARDOUS WASTE LIQUID NOS (Toluene & Benzene)~~

~~ORM-E NA 9189~~

CWM Profile Number ALAD 48603

10 DM

c. ~~HAZARDOUS WASTE LIQUID NOS (Metal Drums)~~

~~ORM-E NA 9189~~

CWM Profile Number ALAE 68104

14 DM

d.

CWM Profile Number

12/3

e.

CWM Profile Number

f.

CWM Profile Number

g.

CWM Profile Number

h.

CWM Profile Number

i.

CWM Profile Number

S. Additional Descriptions for Materials Listed Above

28a. less than 1.0% Toluene & Benzene
28b. Approximately 80% organic, primarily benzene acetate
28c. Drums contain pieces of metal drums w/ lids

T. Handling Codes for Wastes Listed Above

a. d. g.
b. e. h.
c. f. i.

32. Special Handling Instructions and Additional Information

28c. Drums will have to be filled with inert material by CWM.

33. Transporter Acknowledgement of Receipt of Materials

Date

Printed/Typed Name
Norton C. M. Burr
Norton C. M. Burr

Signature

Norton C. M. Burr Jr.

Month Day Year

10 17 85

34. Transporter Acknowledgement of Receipt of Materials

Date

Printed/Typed Name

JESSE DAILEY

Signature

Jesse Dailey

Month Day Year

1 4 28

35. Discrepancy Indication Space

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type (Form designed for use on 12-pitch typewriter)

Form Approved OMB No 2000-0404 Expires 7-31-85

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. V1D980651095		Manifest Document No. 2001		2. Page 1 of 2		Information in the shaded areas is not required by Federal law.						
Generator's Name and Mailing Address ISLAND CHEMICAL COMPANY 800 FARRIS ROAD WAYNE NEW JERSEY 07420 Generator's Phone (201) 694-4100				Trailer Number RTMZ;274676		A. State Manifest Document Number CWMA 243033								
5. Transporter 1 Company Name O'NEALE TRUCKING & TRAILER TRANSPORT, INC.				6. US EPA ID Number PRD980644579		C. State Transporter's ID								
7. Transporter 2 Company Name TRAILER MARINE TRANSPORT, INC.				8. US EPA ID Number PRD980644579		D. Transporter's Phone								
9. Designated Facility Name and Site Address CHEMICAL WASTE MANAGEMENT, INC. Emelle Facility Alabama Highway 17 at Mile Marker 163 Emelle, Alabama 35459				10. US EPA ID Number ALD000622464		E. State Transporter's ID								
						F. Transporter's Phone								
						G. State Facility's ID								
						H. Facility's Phone 205/652-9721								
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)						12. Containers		13. Total Quantity		14. Unit Wt/Vol		15. Waste No.		
a. HAZARDOUS WASTE SOLID NOS (TOLUENE & ACETONE) ORM-E NA 9189 CWM Profile Number ALAE68803						150 M								
b. HAZARDOUS WASTE SOLID NOS (TOLUENE & CHLOROFORM) ORM-E NA 9189 CWM Profile Number ALAD48604						23 M								
c. HAZARDOUS WASTE LIQUID NOS (TOLUENE & BENZENE) ORM-E NA 9189 CWM Profile Number ALAD48602						38 M								
d. CWM Profile Number														
Additional Descriptions for Materials Listed Above 11a. less than 1.0% Toluene and Acetone 11b. less than 1.0% Toluene and Chloroform 11c. less than 1.0% Toluene and Benzene NOS SLIGHT ODOR OF Benzyl Acetate						K. Handling Codes for Wastes Listed Above a. DB1 c. DB1 b. DB1 d.								
15. Special Handling Instructions and Additional Information NONE/ITEMS 11a, 11b, 11c. MUST BE INSPECTED BY ENVIRONMENTAL AGENCY PRIOR TO DEPARTURE FROM ST. CROIX. PERMIT INVOICES														
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. Unless I am a small quantity generator who has been exempted by statute or regulation from the duty to make a waste minimization certification under Section 3002(b) of RCRA, I also certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and I have selected the method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment.														
Printed/Typed Name ALON L. KYLES					Signature Alon L. Kyles					Month Day Year 10/09/95				
17. Transporter 1 Acknowledgement of Receipt of Materials														
Printed/Typed Name O'Neale's Transport Inc Norton C.M. Burt					Signature Norton C.M. Burt					Month Day Year 11/01/95				
18. Transporter 2 Acknowledgement of Receipt of Materials														
Printed/Typed Name GENDA HENRY					Signature Genda Henry					Month Day Year 11/02/95				
19. Discrepancy Indication Space														
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.														
Printed/Typed Name HOWARD TEMPE					Signature Howard Tempe					Month Day Year 11/20/95				

**UNIFORM HAZARDOUS
WASTE MANIFEST
(Continuation Sheet)**

21. Generator's US EPA ID No

Manifest
Document No

22. Page

Information in the shaded areas
is not required by Federal
law

V I D 9 8 0 6 5 1 0 9 5 I C 0 0 1

2 of 2

23. Generator's Name

ISLAND CHEMICAL COMPANY
300 FAIRFIELD ROAD 07870
WAYNE, NEW JERSEY

Trailer Number
RTM2; 274676

TEL 201-694 2100

L. State Manifest Document Number

CWMA 243033

M. State Generator's ID

24. Transporter's Company Name

RANGER NATIONAL

25. US EPA ID Number

FLD 980803977

N. State Transporter's ID

O. Transporter's Phone

26. Transporter's Company Name

RYDER RANGER

27. US EPA ID Number

FLD 007022572

P. State Transporter's ID

Q. Transporter's Phone 318-439-6210

28. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)

29. Containers	30. Total Quantity	31. Unit	32. Waste No.
No.	Type	Wt/Vol	
a.			
b.			
c.			
d.			
e.			
f.			
g.			
h.			
i.			

a. HAZARDOUS WASTE SOLID AQS (Toluene & Xylene)

ORM-E NA 9119 CWM Profile Number ALAEC003 15 DM

b. HAZARDOUS WASTE SOLID AQS (Toluene & Xylene)

ORM-E NA 9119 CWM Profile Number ALAD9104 23 DM

c. HAZARDOUS WASTE LIQUID AQS (Toluene & Xylene)

ORM-E NA 9119 CWM Profile Number ALA0602 34 DM

d. CWM Profile Number

CSL 10/3

e. CWM Profile Number

f. CWM Profile Number

g. CWM Profile Number

h. CWM Profile Number

i. CWM Profile Number

j. CWM Profile Number

k. CWM Profile Number

l. CWM Profile Number

m. CWM Profile Number

n. CWM Profile Number

o. CWM Profile Number

p. CWM Profile Number

q. CWM Profile Number

r. CWM Profile Number

s. CWM Profile Number

t. CWM Profile Number

u. CWM Profile Number

v. CWM Profile Number

w. CWM Profile Number

x. CWM Profile Number

y. CWM Profile Number

z. CWM Profile Number

aa. CWM Profile Number

ab. CWM Profile Number

ac. CWM Profile Number

ad. CWM Profile Number

T. Handling Codes for Wastes Listed Above

a.	d.	g.
b.	e.	h.
c.	f.	i.

32. Special Handling Instructions and Additional Information

See Permit in Items 11a & 11b. MUST BE INSPECTED BY USOP-PPQ PRIOR TO DEPARTURE FROM ST. CROIX PERMIT INCLUDED

Allow Kyles 10/29/95

33. Transporter's Acknowledgement of Receipt of Materials

Date

Printed/Typed Name
Norton C. M. Burt

Signature

Norton C. M. Burt

Month Day Year
1 0 1 7 18 5

34. Transporter's Acknowledgement of Receipt of Materials

Date

Printed/Typed Name

DANIEL R LOUET

Signature

Daniel R. Louet

Month Day Year
1 1 2 1 95

35. Discrepancy Indication Space

STATE OF ALABAMA (Must Accompany Shipment)

HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type (Form designed for use on elite (12-pitch) typewriter.)

Form Approved OMB No 2000-0404 Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No V1098065109576802		Manifest Document No		2. Page 1 of 2		Information in the shaded areas is not required by Federal Law						
Generator's Name and Mailing Address ISLAND CHEMICAL COMPANY 300 FAIRFIELD ROAD WAYNE NEW JERSEY 07070				Trailer Number RTMZ 251880		A. State Manifest Document Number CWMA 243031								
4. Generator's Phone (201) 698-6100						B. State Generator's ID								
5. Transporter 1 Company Name O'NEALE'S TRUCKING & TRAILER TRANSPORT, INC.				6. US EPA ID Number PR0980642579		C. State Transporter's ID								
7. Transporter 2 Company Name TARHEEL MARINE TRANSPORT INC.				8. US EPA ID Number PR0980642579		D. Transporter's Phone								
9. Designated Facility Name and Site Address CHEMICAL WASTE MANAGEMENT, INC. Emelle Facility Alabama Highway 17 at Mile Marker 163 Emelle, Alabama 35459				10. US EPA ID Number ALD000622464		E. State Transporter's ID								
						F. Transporter's Phone								
						G. State Facility's ID								
						H. Facility's Phone 205/652-9721								
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)						12. Containers		13. Total Quantity		14. Unit Wt/Vol		15. Waste No.		
a. HAZARDOUS WASTE LIQUID NOS (TOLUENE & BENZENE) ORM-E NA 9189 CWM Profile Number ALAD 48602						44								
b. HAZARDOUS WASTE LIQUID NOS (TOLUENE & CHLOROFORM) ORM-E NA 9189 CWM Profile Number ALAD 48603						350								
c. HAZARDOUS WASTE SOLID NOS (TOLUENE & CHLOROFORM) ORM-E NA 9189 CWM Profile Number ALAD 48604						10								
d. CWM Profile Number														
Additional Descriptions for Materials Listed Above NA. Less than 1.0% Toluene and Benzene Slight odor of Benzyl Acetate NB. Approximately 20% organic, primarily Benzyl Acetate NC. Less than 1.0% Toluene and Benzene Chloroform						K. Handling Codes for Wastes Listed Above D81 D81 D81								
15. Special Handling Instructions and Additional Information 11c. Soil permit in these drums. Must be inspected by USDA-PAP Prior to departure from Ft. Davis. Permit Included.														
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. Unless I am a small quantity generator who has been exempted by statute or regulation from the duty to make a waste minimization certification under Section 3002(b) of RCRA, I also certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and I have selected the method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment.														
Printed/Typed Name Alan L. Kyle					Signature <i>Alan L. Kyle</i>					Month Day Year 11/01/85				
17. Transporter 1 Acknowledgement of Receipt of Materials														
Printed/Typed Name O'Neale's Transport Inc Norton C.M. Burt					Signature <i>Norton C.M. Burt</i>					Month Day Year 11/01/85				
18. Transporter 2 Acknowledgement of Receipt of Materials														
Printed/Typed Name HELEN HEURLY					Signature <i>HELEN HEURLY</i>					Month Day Year 11/01/85				
19. Discrepancy Indication Space 12/3														
20. Facility Owner or Operator. Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.														
Printed/Typed Name HOWARD TOMPCE					Signature <i>Howard Tompce</i>					Month Day Year 11/20/85				

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)		21. Generator's US EPA ID No. V10980651095	Manifest Document No.	22. Page 2 of 2	Information in the shaded areas is not required by Federal law.	
23. Generator's Name ISLAND CHEMICAL COMPANY 300 FAIRFIELD ROAD 07070 WAYNE, NEW JERSEY 07090 201/694-4100		Trailer Number RTMZ 251880		L. State Manifest Document Number CWMA 243031		
24. Transporter Company Name RENNER NATIONWIDE		25. USEPA ID Number FL0980803977		M. State Generator's ID		
26. Transporter Company Name BYDER RANGER		27. USEPA ID Number FL098077572		N. State Transporter's ID		
				O. Transporter's Phone		
				P. State Transporter's ID		
				U. Transporter's Phone 318-4396240		
28. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)		29. Containers No. Type	30. Total Quantity	31. Unit Wt/Vol	R. Waste No.	
a. HAZARDOUS LIQUID NOT (TOLUENE & BENZENE) ORM-E NO 9189		44 DM				
b. HAZARDOUS LIQUID NOT (TOLUENE & CHLORFORM) ORM-E NO 9189		35 DM				
c. HAZARDOUS LIQUID NOT (TOLUENE & CHLORFORM) ORM-E NO 9189		1 DM				
d. CWM Profile Number						
e. CWM Profile Number						
f. CWM Profile Number						
g. CWM Profile Number						
h. CWM Profile Number						
i. CWM Profile Number						
S. Additional Descriptions for Materials Listed Above		T. Handling Codes for Wastes Listed Above				
28a. Less than 1% Toluene and Benzene Slight odor of Benzyl acetate		a. d. g.				
28b. Approximately 80% organic, primarily Benzyl Acetate		b. e. h.				
28c. Less than 1% Toluene & Chloroform		c. f. i.				
32. Special Handling Instructions and Additional Information						
28c. Not permit in the drums. Must be inspected by MSDA-PPQ prior to departure from St. Louis. Permit included.						
33. Transporter Acknowledgement of Receipt of Materials		Signature		Date		
Printed/Typed Name Omeale Transport Inc Norton C. M. Burr		Norton C. M. Burr		10/17/85		
34. Transporter Acknowledgement or Receipt of Materials		Signature		Date		
Printed/Typed Name Charles M. Doherty		Charles M. Doherty		12/2/86		
35. Discrepancy Indication Space						

Attachment 3:

Copies of chain of custody and sampling paperwork

Berlex Laboratories (ICC)
VID980651095

March 13, 1986

CHAIN OF CUSTODY RECORD

Receipt for samples

ENVIRONMENTAL PROTECTION AGENCY - REGION II

SURVEILLANCE & ANALYSIS DIVISION

EDISON, NEW JERSEY 08817

VID980651095

Name of Unit and Address:

Berlex Laboratories
St. Croix, Virgin Islands

Sample Number	Number of Containers	Description of Samples
085251 085251 085252 085253 085254 085255	5	2 40 ml. vials for POA analysis 1 quart glass jar for NVOA analysis 1 quart glass jar for PCB analysis 1 quart glass jar for metals scan analysis The above samples were taken at the following locations: Gut #1 (Background) Gut #2 (Lab pit seepage area) Gut #3 (Drainage line entry), Lab waste pit #1 (composite of pit soil to 3 ft.), Lab waste pit (composite of pit soil to 3 ft.)
085256	1	2 40 ml. vials for POA analysis 2 liter glass jars for NVOA analysis 1 liter glass jar for PCB analysis 1 gallon cubitainer for metals scan analysis The above sample was taken from the on-site well.

Samples split w/ facility

Person Assuming Responsibility for Sample:

Representative for Berlex
(Island Chemical Co)

12 Nov 1986

Alan L. Kyles

Time

Date

Sample Number	Relinquished By:	Received By:	Time	Date	Reason for Change of Custody

ENVIRONMENTAL PROTECTION AGENCY — REGION II
SURVEILLANCE & ANALYSIS DIVISION
EDISON, NEW JERSEY 08817

Name of Unit and Address: Berke Laboratories St. Louis, VI VIDTECH 7095							
Sample Number	Number of Containers	Description of Samples					
65-5	2	40 ml. vials for TOA analysis					
	1	Quart glass jar for NACA analysis					
	1	Quart glass jar for PCB analysis					
	1	Quart glass jar for metals analysis					
65-5	2	40 ml. vials for POA analysis					
	2	liter glass bottle for NACA analysis					
	1	liter glass bottle for PCB analysis					
	1	gallon cubitainer for metals assay					
Person Assuming Responsibility for Sample: Carol Price						Time 5:00	Date 3/1
Sample Number	Relinquished By:	Received By:	Time	Date	Reason for Change of Custody		
All above	Carol Price				Ship to lab.		
65-5	Carol Price	J. Williams	8:30 AM	3/1/80	Turn in at OSCAR		
Sample Number	Relinquished By:	Received By:	Time	Date	Reason for Change of Custody		
Sample Number	Relinquished By:	Received By:	Time	Date	Reason for Change of Custody		

FIELD DATA SHEET

ENVIRONMENTAL PROTECTION AGENCY - Region II, Edison, New Jersey
ENVIRONMENTAL SERVICES DIVISION

Project Name Berlex Laboratories, St. Louis, VI.
Collector(s) P. Rice Affiliation U.S.E.P.A.

SAMPLING METHOD (Circle)

Kemmerer Dredge Ponar Manual
Niskin Net Seine Trawl Bucket
Trowel Cream Dipper
Automatic
Other _____

LDMS CODE M
DATA BASE CODE H
STA. TYPE CODE F

Samples to:

Bact Bio Chem ☒ Other

Station No.

VID980651095

Sample Depth (Ft.)/Fac. Loc. Code

3100

Lab Number

085251

Type of Sample

Grab Composite
☒ Time Space

Collection (Ending) Date

Yr 86 Mo 03 Day 13

Ending Time (24 Hr)

1318

Beginning Date

Yr Mo Day

Beginning Time (24 Hr)

pH

Sample Temp. (°C)

DO (mg/l)

Cond. (uMHOS/CM)

Salinity(‰)

Sample Split

☒ Yes ☐ No

If Yes With Whom? Facility Contractor

Receipt ☒ Yes ☐ No

SUBSTRATE TYPE (Circle)

Aqueous Sediment Sludge Oil Biological
Solvent Extract Other ()

BOD — Seed Supplied

☐ Yes ☐ No

Source:

Sample Preparation (Circle)

Container
Glass Jar
Plastic Jar
Metal
POA Vial
Cubitainer
Acetate Core
Paper Cap
Folien Cap
Foil Cap
Other _____

Cleaning Procedure

Detergent Wash

Water Rinse

Acid Rinse

Solvent Rinse:

Acetone

Hexane

Methylene Chloride

Other (Specify):

Sample Source Type (Circle)

Landfill Industrial
Leachate Effluent
Drum Process Stream
Test Well Holding Pond
Depth: Drum
Other: Waste Pile
Municipal Treatment
Storage Tank Influent
Top Effluent-CI
Middle Effluent-Non CI
Bottom Sludge
Truck Ambient
Drum Lake
Tank Stream
Other Pond
Ocean
Wells Estuary
Monitoring
Production
Drinking
Private

Preservation

Acid _____
Solvent _____
Chemical Wet Ice
Dry Ice
Ambient
Other _____

Sample Location Description:

Background sample from stream (gut)
be find Berlex property

Remarks:

2 - 40 ml. vials for POA analysis
1 - quart glass jar for NVOA analysis
1 - quart glass jar for PCB analysis
1 - quart glass jar for metals analysis
Water sample is a compound of interest
all samples recd

FIELD DATA SHEET

ENVIRONMENTAL PROTECTION AGENCY - Region II, Edison, New Jersey

ENVIRONMENTAL SERVICES DIVISION

Project Name Berlex Laboratories, St. Croix VI
Collector(s) Price Affiliation USEPA

SAMPLING METHOD (Circle)

Kemmerer Dredge Ponar Manual
Niskin Net Seine Trawl Bucket
Trowel Cream Dipper
Automatic
Other _____

LDMS CODE M

DATA BASE CODE H

STA. TYPE CODE F

SUBSTRATE TYPE (Circle)

Aqueous Sediment Sludge Oil Biological
Solvent Extract Other ()

BOD — Seed Supplied ☐ Yes ☐ No Source: _____

Sample Preparation (Circle)

Container

Glass Jar

Plastic Jar

Metal

POA Vial

Cubitainer

Acetate Core

Paper Cap

Teflon Cap

Foil Cap

Other _____

Preservation

Acid _____

Solvent _____

Chemical _____

Wet Ice

Dry Ice

Ambient

Other _____

Cleaning Procedure

Detergent Wash

Water Rinse

Acid Rinse

Solvent Rinse:

Acetone

Hexane

Methylene Chloride

Other (Specify): _____

Sample Source Type (Circle)

Landfill

Leachate

Drum

Test Well

Depth: _____

Other: _____

Storage Tank

Top

Middle

Bottom

Truck

Drum

Tank

Other _____

Wells

Monitoring

Production

Drinking

Private

Industrial

Effluent

Process Stream

Holding Pond

Drum

Waste Pile

Municipal Treatment

Influent

Effluent-CI

Effluent-Non CI

Sludge

Ambient

Lake

Stream

Pond

Ocean

Estuary

Samples to:

Bact ☐ Bio ☐ Chem ☒ Other ☐

Station No.

U7D980651095

Sample Depth (Ft.)/Fac. Loc. Code

310.1

Lab Number

085252

Type of Sample

Grab ☒ Composite ☐
Time ☒ Space ☐

Collection (Ending) Date

Yr 86 Mo 03 Day 13

Ending Time (24 Hr)

1345

Beginning Date

Yr ☐ Mo ☐ Day ☐

Beginning Time (24 Hr)

☐ ☐ ☐ ☐

pH

☐ ☐ ☐ ☐

Sample Temp. (°C)

☐ ☐ ☐ ☐

DO (mg/l)

☐ ☐ ☐ ☐

Cond. (uMHOS/CM)

☐ ☐ ☐ ☐ ☐

Salinity(‰)

☐ ☐ ☐ ☐

Sample Split

☒ Yes ☐ No

If Yes With Whom? Facility

Receipt ☒ Yes ☐ No

Sample Location Description:

Sample from stream (gut) behind plant
(lab waste pit seepage area)

Surface to 10"

Remarks:

2- 40 ml vials for VOA analysis
1- quart glass jar for NVOA analysis
1- quart glass jar for PCB analysis
1- quart glass jar for metals analysis
* Note: For use as a compound of specific interest
All samples used

ENVIRONMENTAL PROTECTION AGENCY - Region II, Edison, New Jersey
ENVIRONMENTAL SERVICES DIVISION

Project Name Berlex Laboratories, St. Clair VI
Collector(s) P. Lee Affiliation USEPA

SAMPLING METHOD (Circle)

Kemmerer Dredge Ponar Manual
Niskin Net Seine Trawl Bucket
Trowel Cream Dipper
Automatic
Other _____

LDMS CODE M
DATA BASE CODE H
STA. TYPE CODE F

SUBSTRATE TYPE (Circle)

Aqueous Sediment Sludge Oil Biological
Solvent Extract Other ()

BOD - Seed Supplied ☐ Yes ☐ No Source: _____

Sample Preparation (Circle)

Container
Glass Jar
Plastic Jar
Metal
POA Vial
Cubittainer
Acetate Core
Paper Cap
Teflon Cap
Foil Cap
Other _____

Cleaning Procedure

Detergent Wash
Water Rinse
Acid Rinse
Solvent Rinse:
Acetone
Hexane
Methylene Chloride
Other (Specify): _____

Sample Source Type (Circle)

Landfill
Leachate
Drum
Test Well
Depth: _____
Other: _____
Storage Tank
Top
Middle
Bottom
Truck
Drum
Tank
Other: _____
Wells
Monitoring
Production
Drinking
Private
Industrial
Effluent
Process Stream
Holding Pond
Drum
Waste Pile
Municipal Treatment
Influent
Effluent-CI
Effluent-Non CI
Sludge
Ambient
Lake
Stream
Pond
Ocean
Estuary

Preservation

Acid _____
Solvent _____
Chemical _____
Wet Ice
Dry Ice
Ambient
Other _____

Sample Location Description:

Sample from stream (gut) behind plant's
drainage line discharge area

Surface to approx. 10 inches

Remarks:

2 - 40 ml. vials for POA analysis
1 - quart glass jar for NVOA analysis
1 - quart glass jar for PCB analysis
1 - quart glass jar for metals analysis
Note: P. Lee is a specific compound of interest
All samples iced

Samples to:

Bact Bio Chem Other

Station No.

VID980651095

Sample Depth (Ft.)/Fac. Loc. Code

3102

Lab Number

085253

Type of Sample

Grab Composite

✓ Time Space

Collection (Ending) Date

Yr Mo Day
8 6 0 3 1 3

Ending Time (24 Hr)

1420

Beginning Date

Yr Mo Day

Beginning Time (24 Hr)

pH

Sample Temp. (°C)

DO (mg/l)

Cond. (µMHOS/CM)

Salinity(‰)

Sample Split

☒ Yes ☐ No

If Yes With Whom? Facility contract

Receipt ☒ Yes ☐ No

FIELD DATA SHEET

ENVIRONMENTAL PROTECTION AGENCY - Region II, Edison, New Jersey
ENVIRONMENTAL SERVICES DIVISION

Project Name Ecology Laboratories, St. Croix VI
Collector(s) Price Affiliation USEPA

SAMPLING METHOD (Circle)

Kemmerer Dredge Ponar Manual
Niskin Net Seine Trawl Bucket
Trowel Cream Dipper
Automatic
Other _____

LDMS CODE M

DATA BASE CODE H

STA. TYPE CODE F

Samples to:

Bact ☐ Blo ☐ Chem ☒ Other ☐

Station No.

VI 980651095

Sample Depth (Ft.)/Fac. Loc. Code

3200

Lab Number

085254

SUBSTRATE TYPE (Circle)

Aqueous Sediment Sludge Oil Biological
Solvent Extract Other ()

BOD — Seed Supplied ☐ Yes ☐ No

Source:

Sample Preparation (Circle)

Sample Source Type (Circle)

Container

Glass Jar

Plastic Jar

Metal

POA Vial

Cubitainer

Acetate Core

Paper Cap

Teflon Cap

Foil Cap

Other _____

Preservation

Acid _____

Solvent _____

Chemical _____

Wet Ice

Dry Ice

Ambient

Other _____

Cleaning Procedure

Detergent Wash

Water Rinse

Acid Rinse

Solvent Rinse:

Acetone

Hexane

Methylene Chloride

Other (Specify): _____

Landfill

Leachate

Drum

Test Well

Depth:

Other: _____

Storage Tank

Top

Middle

Bottom

Truck

Drum

Tank

Other _____

Wells

Monitoring

Production

Drinking

Private

Industrial

Effluent

Process Stream

Holding Pond

Drum

Waste Pile

Municipal Treatment

Influent

Effluent-CI

Effluent-Non CI

Sludge

Ambient

Lake

Stream

Pond

Ocean

Estuary

Type of Sample

Grab ☒ Composite

Time Space

Collection (Ending) Date

Yr Mo Day
8 6 0 3 1 3

Ending Time (24 Hr)

1525

Beginning Date

Yr Mo Day

Beginning Time (24 Hr)

pH

Sample Temp. (°C)

DO (mg/l)

Cond. (uMHOS/CM)

Salinity(‰)

Sample Split

☒ Yes ☐ No

If Yes With Whom? Facility contractor

Receipt ☒ Yes ☐ No

Sample Location Description:

Composite from surface to 3 feet
Lab waste pit area

Remarks:

2- 40 ml. vials for POA analysis
1- quart glass jar for NVOA analysis
1- quart glass jar for PCB analysis
1- quart glass jar for metals scan
1- quart glass jar for specific interest
All samples recd.

FIELD DATA SHEET

ENVIRONMENTAL PROTECTION AGENCY - Region II, Edison, New Jersey
ENVIRONMENTAL SERVICES DIVISION

Project Name Berlex Laboratories, St. Croix VI
Collector(s) Price Affiliation U.S.E.P.A.

SAMPLING METHOD (Circle)

Kemmerer Dredge Ponar Manual
Niskin Net Seine Trawl Bucket
Trowel Cream Dipper
Automatic
Other _____

LDMS CODE m
DATA BASE CODE H
STA. TYPE CODE F

SUBSTRATE TYPE (Circle)

Aqueous Sediment Sludge Oil Biological
Solvent Extract Other ()

BOD — Seed Supplied ☐ Yes ☐ No Source: _____

Sample Preparation (Circle)

Container

Glass Jar

Plastic Jar

Metal

POA Vial

Cubitainer

Acetate Core

Paper Cap

Teflon Cap

Foil Cap

Other _____

Preservation

Acid _____

Solvent _____

Chemical _____

Wet Ice

Dry Ice

Ambient

Other _____

Cleaning Procedure

Detergent Wash

Water Rinse

Acid Rinse

Solvent Rinse:

Acetone

Hexane

Methylene Chloride

Other (Specify): _____

Sample Source Type (Circle)

Landfill

Leachate

Drum

Test Well

Depth: _____

Other: _____

Storage Tank

Top

Middle

Bottom

Truck

Drum

Tank

Other _____

Wells

Monitoring

Production

Drinking

Private

Industrial

Effluent

Process Stream

Holding Pond

Drum

Waste Pile

Municipal Treatment

Influent

Effluent-CI

Effluent-Non CI

Sludge

Ambient

Lake

Stream

Pond

Ocean

Estuary

Samples to:

Bact ☐ Bio ☐ Chem ☒ Other ☐

Station No.

VID980651095

Sample Depth (Ft.)/Fac. Loc. Code

3201

Lab Number

085255

Type of Sample

Grab ☒ Composite ☐
Time ☐ Space ☐

Collection (Ending) Date

Yr 86 Mo 03 Day 13

Ending Time (24 Hr)

1540

Beginning Date

Yr ☐ Mo ☐ Day ☐

Beginning Time (24 Hr)

☐ ☐ ☐ ☐

pH

☐ ☐ ☐ ☐

Sample Temp. (°C)

☐ ☐ ☐ ☐

DO (mg/l)

☐ ☐ ☐ ☐

Cond. (uMHOS/CM)

☐ ☐ ☐ ☐ ☐ ☐

Salinity(‰)

☐ ☐ ☐ ☐

Sample Split

☒ Yes ☐ No

If Yes With Whom? Facility contracts

Receipt ☒ Yes ☐ No

Sample Location Description:

Composite from surface to 3 feet
Lab waste pit area

Remarks:

2 - 40 ml. vials for POA analysis
1 - quart glass jar for NUOA analysis
1 - quart glass jar for PCB analysis
1 - quart glass jar for metals analysis
Note: Samples were analyzed at specific intervals
All samples used.

FIELD DATA SHEET

ENVIRONMENTAL PROTECTION AGENCY - Region II, Edison, New Jersey
ENVIRONMENTAL SERVICES DIVISION

Project Name Eciler Laboratories, St Croix VI
Collector(s) Kure Affiliation U.S. E.P.A.

SAMPLING METHOD (Circle)

Kemmerer Dredge Ponar Manual
Niskin Net Seine Trawl Bucket
Trowel Cream Dipper
Automatic
Other Eciler

LDMS CODE M

DATA BASE CODE H

STA. TYPE CODE F

SUBSTRATE TYPE (Circle)

Aqueous Sediment Sludge Oil Biological
Solvent Extract Other ()

BOD — Seed Supplied ☐ Yes ☐ No Source:

Sample Preparation (Circle)

Container
Glass Jar
Plastic Jar
Metal
POA Vial
Cubitainer
Acetate Core
Paper Cap
Teflon Cap
Foil Cap
Other _____

Cleaning Procedure

Detergent Wash
Water Rinse
Acid Rinse
Solvent Rinse:
Acetone
Hexane
Methylene Chloride
Other (Specify): _____

Sample Source Type (Circle)

Landfill	Industrial
Leachate	Effluent
Drum	Process Stream
Test Well	Holding Pond
Depth:	Drum
Other: _____	Waste Pile
	Municipal Treatment
Storage Tank	Influent
Top	Effluent-CI
Middle	Effluent-Non CI
Bottom	Sludge
Truck	Ambient
Drum	Lake
Tank	Stream
Other: _____	Pond
	Ocean
Wells	Estuary
Monitoring	
Production	
Drinking	
Private	

Preservation

Acid HNO₃ 2
Solvent _____
Chemical _____
Wet Ice
Dry Ice
Ambient
Other _____

Sample Location Description:

On site well

Samples to:

Bact Bio Chem ☒ Other

Station No.

VI D980651095

Sample Depth (Ft.)/Fac. Loc. Code

3000

Lab Number

085256

Type of Sample

Grab Composite
☒ Time Space

Collection (Ending) Date

Yr Mo Day
8 6 0 3 1 3

Ending Time (24 Hr)

1605

Beginning Date

Yr Mo Day

Beginning Time (24 Hr)

pH

Sample Temp. (°C)

DO (mg/l)

Cond. (uMHOS/CM)

Salinity(‰)

Sample Split

☒ Yes ☐ No

If Yes With Whom? Toxicology contractor

Receipt ☒ Yes ☐ No

Remarks:

2 - 40 ml vials for POA analysis
2 - 1 liter bottles for NUOA analysis
1 - 1 liter bottle for PCB analysis
- gallon cubitainer for metals scan
preserved w/ HNO₃ to pH < 2
All samples iced.

TAT-02-F-05356

Community Relations Plan
Virgin Island Chemical Company
St. Croix, U.S. Virgin Island

Prepared By:
Jeff M. Bechtel
Mike Mentzel
Weston/SPER Division
Edison, New Jersey 08837

Prepared For:
Doug Kodama, OSC
Response and Prevention Branch, U.S. EPA
Edison, New Jersey 08837

Date Issued: July 10, 1989

5.10
COMMUNITY RELAT PLAN

Community Relations Plan
Virgin Island Chemical Company
St. Croix, U.S. Virgin Islands

I. Background

A. Site Description/History

The Virgin Island Chemical Company (VIChem) site is located on the Islands south side. The site is situated on Route 66, approximately 0.5 miles due north of the Alexander Hamilton Airport. The site covers approximately 3.5 acres and is bordered to the north by an intermittent stream that originates on the north side of the Island and discharges into the Carribean Sea.

A number of businesses are located adjacent to the site and several residences are within one-half mile of the facility. In addition, several well fields are located in the vicinity of the site. The St. Croix prison is located one-quarter mile downwind from the site.

Presently occupying the site is the company VIAG Fuels, Inc. VIAG utilizes some office space in the main building and also has ethanol stored in four of the above ground tanks. The principals of the firm plan to begin an alcohol dehydration project on site in the near future.

The site is owned by Charles H. Steffey, Inc. On May 1, 1969, Steffey leased the property to Houston Chemical Industries, Inc. Houston Chemical assigned the lease to Caribe Chemical Company, Inc. (subsequently known as Pierrel America, Inc.) on March 20, 1972.

In June 1978, Pierrel America assigned the ground lease to Cooper Laboratories, Inc. (Cooper). On October 30, 1979, Cooper assigned the lease to its subsidiary, Island Chemical Company (ICC). On November 1, 1979, Cooper sold all of the stock of ICC to the predecessor of Berlex Laboratories Inc. (Berlex). On September 14, 1984, ICC sold its assets to VIChem.

The site consists of a main warehouse building including offices, reactor and centrifuge buildings, and twenty-two above ground tanks. Also on site is a kennel for guard dogs and a house trailer where the kennel operator resides.

B. Quantities and Types of Substances Present

Two hundred and twenty different lab chemicals are present in numerous containers stored in the on-site laboratories. Another sixty-six chemicals are stored in numerous drums throughout the site.

C. National Priorities List Designation

This site is not on the National Priorities List.

II. Threat

A. Public Exposure

An imminent hazard from direct exposure to chemicals through contact, ingestion, and inhalation exists for persons who are on-site. All personnel have free access to the laboratories and drum storage areas. Some of the persons who visit the facility or live there have no knowledge of the hazards posed by the chemicals. This threat of direct exposure for the general public has been reduced due to the 24 hour site security maintained by VIAG and the kennel operation. Incompatible materials are stored in close proximity to each other posing the threat for an adverse reaction, fire, or explosion. Local industries, residents, the airport and the prison could be affected by airborne toxics.

Groundwater and surface water contamination is also possible via chemical releases. Chemical releases into an intermittent stream have been documented. Contaminants have also been discovered in a well field adjacent to the site.

B. Evidence of Release

Bulging drums, empty drums, puddles of chemicals, and documented releases have all contributed to the evidence that materials are being released into the environment at the VIChem site.

C. Previous Actions to Abate Threat

Limited clean-up and soil excavation has been performed by Berlex, a potential responsible party (PRP), under a RCRA enforcement action. Berlex is currently finalizing a scope of work for a remedial investigation/feasibility study addressing soil and groundwater contamination.

III. Proposed Project

A. Objective

The objective of this proposed action is to mitigate the existing threat to the public and the environment posed by the substances found at the Virgin Island Chemical Company.

To accomplish this objective, it is necessary to remove and properly dispose of all containerized and spilled material at the site.

B. Objective of the Community Relations Plan

1. Make available accurate, understandable information to interested local citizens, elected officials, and the media.
2. Integrate the local government, state and federal responses.
3. Assist public acceptance of the chosen response action.
4. Enlist the assistance of local officials as needed.

The information and groups for whom the plan is aimed are: local citizens, citizen groups, school principals, local businesses, elected officials, local, state, and federal agencies working in association with Region II EPA.

The information will be supplied by EPA's Office of External Programs (OEP) with the cognizance of the Office of the Regional Administrator.

C. Community Relations Activities

<u>Date(s)</u>	<u>Activities</u>	<u>Objective</u>	<u>Staff</u>
9/13/89	1. Meeting with State and Local officials	To discuss community relations needs	OSC OEP Rep TAT*
Prior to start of removal action	2. Press release	To brief local community and press. Provide community with information on progress of the action	OSC OEP Rep
	3. Fact Sheet	To provide information for affected/interested public on activity at key decision points	OSC OEP Rep
	4. Briefings	To inform state and local officials about on-going developments at the site	OSC OEP Rep
	5. Public meetings (As necessary or upon request)	To discuss the need for response to and review of key decision points, explain the cleanup method and respond to concerned residences	OSC OEP Rep

*TAT stands for the U.S. EPA authorized contractor, Technical Assistance Team, Roy F. Weston, Inc.

D. List of Key Officials and Contacts:

Federal Agencies

Phone

EPA Region II Response
and Prevention Branch

- Doug Kodama (201) 906-6905
- John Higgins (201) 906-6614

EPA Office of External Programs

- Margaret Kandal (212) 264-4913
- Rich Cahill (212) 264-8504
- Herman Phillips (212) 264-1044
- Lillian Johnson (212) 264-2515

Federal Officials

U.S. Delegate to Congress

- Ron DeLugo (809) 774-4408

St. Croix, U.S. VI Agencies

St. Croix Department of Planning
and Natural Resources

(809) 773-0565

St. Croix, U.S. VI Officials

Governor Alexander A. Farrelly

(809) 773-1404

Local Officials

Commisioner Alan Smith

(809) 774-3320

Fire Department (Grove Place)

(809) 778-2410

Police Department (Christiansted)

(809) 773-2530

Media

The Daily News

(809) 774-8772

Associated Press

(809) 776-2149

St. Croix Avis

(809) 773-2300

WSVI TV Channel 8

(809) 778-5008

WTJX TV Channel 12

(809) 774-6255