02-8703-45-SR
REV. NO. 0

FINAL DRAFT
SITE INSPECTION REPORT
CHAMPION INTERNATIONAL CORPORATION/ RETAIL PKG. DIV.
WALDEN, NEW YORK

PREPARED UNDER

TECHNICAL DIRECTIVE DOCUMENT NO. 02-8703-45
CONTRACT NO. 68-01-7346

FOR THE

ENVIRONMENTAL SERVICES DIVISION
U.S. ENVIRONMENTAL PROTECTION AGENCY

JANUARY 27, 1989

NUS CORPORATION
SUPERFUND DIVISION

SUBMITTED BY

EDWARD L. LEONARD
PROJECT MANAGER

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305296

SECTION 1

SITE INSPECTION REPORT EXECUTIVE SUMMARY

NUS CORPORATION

02-8703-45-SR
Rev. No. 0

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
EXECUTIVE SUMMARY

Champion International Corporation/Retail Pkg. Div.
Site Name

NYD089756340
EPA Site ID Number

Coldenham Road
Walden, New York 12586
Address

02-8703-45
TDD Number

SITE DESCRIPTION

Champion International Corporation is an active paper processing facility owned by Champion since 1975, and is located in Walden, Orange County, New York. The site is approximately 40 acres in size, with the plant occupying 180 square yards of the property. In 1961, while the site was owned and operated by Interstate Bag Company, waste was disposed of in two trenches on property adjoining the facility. Approximately 100 55-gallon drums reportedly containing glue, varnish, printing inks (water-and solvent-based), and alcohol/water washup solutions were disposed of in the trenches. Each trench is estimated to be 10 feet wide by 300 feet long, containing two to three cells more than 8 feet deep. There is varying background information which suggests the trench depth to be 10 feet deep. The trenches are unlined and surrounded by soil that naturally contains clay.

Aerial photographs reveal a topographic depression extending from the suspected trench area towards the northernmost part of the property. A small stream flows northward from this area towards the Tin Brook. The Tin Brook is primarily used for recreational purposes.

Community and noncommunity drinking water in the area is supplied by groundwater wells. All residents within the city limits are connected to the community water system. All residents outside the city limits obtain their drinking water from private wells.

(Continued)

Prepared by; Joseph Murtaugh
of NUS Corporation

Date: 1/27/89

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
EXECUTIVE SUMMARY

SITE DESCRIPTION (Cont'd)

On April 15 and 16 1987, Region 2 FIT conducted a site inspection. Two sediment samples and two surface water samples were collected from the on-site stream. Seven soil samples were collected on April 16, 1987, from selected locations in the suspected trench area. Analytical data from the on-site soil samples indicate the presence of phthalates, chloroform, solvents, and metals.

In addition, a magnetometer survey was conducted during the site inspection in an attempt to delineate the perimeter of the suspected trenches. No anomalies were measured that would indicate the presence of buried drums in the suspected trench area.

After reviewing all information gathered during the site inspection, the Champion International Site is recommended for further action as a high priority. The migration route of major concern is the groundwater route. A threat to groundwater drinking supplies does exist. The presence of contaminants in the soil, the high groundwater table (2.8 ft), and the potential target population warrant this recommendation. The nearest community well is 1.10 miles from the site. An estimated 10,427 people are serviced by groundwater wells within 3 miles of the site. In addition, the potenital exists for direct contact. The trenched area is not completely fenced, and is accessible by the general public and on-site employees.

SECTION 2

ENVIRONMENTAL PROTECTION AGENCY FORM 2070-13

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

I. IDENTIFICATION
01 STATE 02 SITE NUMBER
NY D089756340

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)
Champion International Corporation/Retail Pkg. Div.

02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
Coldenham Road

03 CITY
Walden

04 STATE: NY
05 ZIP CODE: 12586
06 COUNTY: Orange
07 COUNTY CODE: 071
08 CONG DIST.: NY26

09 COORDINATES
LATITUDE: 41° 33' 18". N
LONGITUDE: 074° 11' 08". W

10 TYPE OF OWNERSHIP (Check one)
X A. PRIVATE
_ B. FEDERAL
_ C. STATE
_ D. COUNTY
_ E. MUNICIPAL
_ F. OTHER
_ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION: 04 / 15-16/ 87 (MONTH DAY YEAR)

02 SITE STATUS
X ACTIVE
_ INACTIVE

03 YEARS OF OPERATION
Unknown / still active
BEGINNING YEAR / ENDING YEAR
_ UNKNOWN

AGENCY PERFORMING INSPECTION (Check all that apply)
_ A. EPA
X B. EPA CONTRACTOR NUS Corporation (Name of firm)
_ C. MUNICIPAL
_ D. MUNICIPAL CONTRACTOR (Name of firm)
_ E. STATE
_ F. STATE CONTRACTOR (Name of firm)
_ G. OTHER (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
Denise K. Horgan	Chemist	NUS Corporation	(201) 225-6160
09 OTHER INSPECTORS	**10 TITLE**	**11 ORGANIZATION**	**12 TELEPHONE NO.**
Alan Cherepon	Geologist	NUS Corporation	(201) 225-6160
Andrea McClung	Chemical Engineer	NUS Corporation	(201) 225-6160
Scott Engle	Environmental Scientist	NUS Corporation	(201) 225-6160
Susan Kennedy	Environmental Scientist	NUS Corporation	(201) 225-6160
Gerry Gilliland	Geologist	NUS Corporation	(201) 225-6160

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO.
Harold Judd	Manager - Water Progams	One Champion Plaza Stamford, CT 06921	(203) 358-7338
Wayne Gewin	Plant Manager	Coldenham Road Walden, NY 12586	(914) 778-5511
John DeFilippi	President - Consultant	ERM - Northeast 88 Sunnyside Blvd. Plainview, NY 11803	(516) 349-0050

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
X PERMISSION _ WARRANT	0830	Cloudy, 50°F, 2 mph winds

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO.
Amy Brochu	U.S. Environmental Protection Agency	(201) 906-6802

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
Joseph M. Murtaugh	U.S. EPA	NUS Corporation	(201) 225-6160	01/27/89 (MONTH DAY YEAR)

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION
01 STATE 02 SITE NUMBER
NY D089756340

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- _ A. SOLID
- _ B. POWDER, FINES
- X C. SLUDGE
- _ D. OTHER _____ (Specify)
- _ E. SLURRY
- X F. LIQUID
- _ G. GAS

02 WASTE QUANTITY AT SITE

(Measures of waste quantities must be independent)

TONS _____
CUBIC YARDS _____
NO. OF DRUMS 100

03 WASTE CHARACTERISTICS (Check all that apply)

- X A. TOXIC
- _ B. CORROSIVE
- _ C. RADIOACTIVE
- X D. PERSISTENT
- _ E. SOLUBLE
- _ F. INFECTIOUS
- X G. FLAMMABLE
- _ H. IGNITABLE
- _ I. HIGHLY VOLATILE
- _ J. EXPLOSIVE
- _ K. REACTIVE
- _ L. INCOMPATIBLE
- _ M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE	Unknown		The drums are presumed to have contained glue, painting inks (water- and solvent-based), varnish,and alcohol/water washup solutions.
OLW	OILY WASTE			
SOL	SOLVENTS	Unknown		
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS	Unknown		
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
OCC	Di-n-butyl phthalate	84-74-2	Landfill	40000	ug/kg
OCC	Butylbenzyl phthalate	85-68-7	Landfill	1500	ug/kg
OCC	Bis(2-ethylhexyl) phthalate	117-81-7	Landfill	4200	ug/kg
OCC	Di-n-octyl phthalate	117-84-0	Landfill	950	ug/kg
OCC	Chloroform	67-66-3	Landfill	6.6	ug/kg
OCC	Vinyl acetate	108-05-4	Landfill	J	ug/kg
SOL	2-Hexanone	591-78-6	Landfill	J	ug/kg
SOL	Toluene	108-88-3	Landfill	190	ug/kg
PSD	4,4'-DDD	72-54-8	Landfill	J	ug/kg
MES	Lead	7439-92-1	Landfill	1240	mg/kg
MES	Chromium	7440-47-3	Landfill	483	mg/kg

J - Compound present above the instrument detection limit, but below the contract - specified detection limit.

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS	N/A		FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

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

A Notification of Hazardous Waste Site, CERCLA 103 (c), 6/9/81
Field Notebook No. 0049, Champion International Corporation/Retail Pkg. Div., TDD No. 02-8703-45, Off-Site Reconnaissance, NUS Corp. Region 2 FIT, Edison, New Jersey, April 1, 1987.
U.S. EPA Contract Laboratory Analysis, Nanco Labs Inc. and Associated Laboratories, Case No. 7136.

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 X A. GROUNDWATER CONTAMINATION — 02 OBSERVED (DATE:) X POTENTIAL _ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 10,427 — 04 NARRATIVE DESCRIPTION

The potential exists for groundwater contamination. Approximately 100 drums containing glue, varnish, and painting inks (water- and solvent-based) were disposed of in unlined trenches. The depth to groundwater is 2.8 feet. Groundwater wells constitute all municipal and nonmunicipal drinking water supplies within 3 miles of the site. Phthalates, chloroform, solvents, and metals were detected in soil samples collected from the site.

01. X B. SURFACE WATER CONTAMINATION — 02 OBSERVED (DATE:) X POTENTIAL _ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: Unknown — 04 NARRATIVE DESCRIPTION

The potential exists for surface water contamination via the small stream which flows towards the Tin Brook from the northern most part of the site. Phthalates, chloroform, solvents, and metals were detected in soil samples collected from the site. Children were observed fishing in the Tin Brook during the site inspection.

01 C. CONTAMINATION OF AIR — 02 OBSERVED (DATE:) _ POTENTIAL _ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 0 — 04 NARRATIVE DESCRIPTION

No potential exists for the contamination of air. No readings above background on the undisturbed portions of the site were detected by the OVA flame ionizer or HNu photoionizer during the site inspection.

01. D. FIRE/EXPLOSIVE CONDITIONS — 02 OBSERVED (DATE:) _ POTENTIAL _ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 0 — 04 NARRATIVE DESCRIPTION

There is no potential for fire/explosive conditions. Drums were not detected in the suspected trench area during the magnetometer survey. The trenches were enclosed with soil that naturally contains clay. Finally, the phthalates, chloroform, solvents, and metals detected in soil samples on site are found in quantites that do not produce fire/explosive conditions.

01. X E. DIRECT CONTACT — 02 OBSERVED (DATE:) X POTENTIAL _ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 5,659 — 04 NARRATIVE DESCRIPTION

The potential exists for direct contact. The trenched area is not completely fenced, and is accessible to the general public. Phthalates, chloroform, solvents, and metals were detected in soil samples collected from the site.

01 X F. CONTAMINATION OF SOIL — 02 X OBSERVED (DATE: 04/15-16/87) _ POTENTIAL _ ALLEGED
03 AREA POTENTIALLY AFFECTED: 40 (ACRES) — 04 NARRATIVE DESCRIPTION

The potential exists for the contamination of soil. Approximately 100 drums containing glue, varnish, and painting inks (water- and solvent-based) were disposed of in unlined trenches. Phthalates, chloroform, solvents, and metals were detected in soil samples collected from the site.

01. X G. DRINKING WATER CONTAMINATION — 02 OBSERVED (DATE:) X POTENTIAL _ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 10,427 — 04 NARRATIVE DESCRIPTION

The potential exists for drinking water contamination. Groundwater wells constitute all municipal and nonmunicipal drinking water supplies. The depth to groundwater is 2.8 feet. The population indicated represents the population within 3 miles of the site.

01 X H. WORKER EXPOSURE/INJURY — 02 OBSERVED (DATE:) X POTENTIAL _ ALLEGED
03 WORKERS POTENTIALLY AFFECTED: 400 — 04 NARRATIVE DESCRIPTION

There is a potential for worker exposure/injury. Present employees have access to the trench area. Phthalates, chloroform, solvents, and metals were detected in soil samples collected from the site.

01 X I. POPULATION EXPOSURE/INJURY — 02 OBSERVED (DATE:) X POTENTIAL _ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 10,427 — 04 NARRATIVE DESCRIPTION

There is a potential for population exposure/injury from contaminant migration via groundwater. Groundwater wells constitute all municipal and nonmunicipal drinking water supplies within 3 miles of the site.

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 X J. DAMAGE TO FLORA — **02 _ OBSERVED (DATE: _____) X POTENTIAL _ ALLEGED**
04 NARRATIVE DESCRIPTION

The potential exists for damage to flora due to contaminants detected in soil samples collected. The site is grassy and partially wooded.

01 X K. DAMAGE TO FAUNA — **02 _ OBSERVED (DATE: _____) X POTENTIAL _ ALLEGED**
04 NARRATIVE DESCRIPTION (Include name(s) of species)

The potential exists for damage to fauna due to the possible ingestion of contaminated soils and flora.

01 X L. CONTAMINATION OF FOOD CHAIN — **02 _ OBSERVED (DATE: _____) X POTENTIAL _ ALLEGED**
04 NARRATIVE DESCRIPTION

The potential exists for contamination of the terrestrial and aquatic food chains via the ingestion and bioaccumulation of contaminated soils, flora, and fauna. The bioaccumulators di-n-octyl phthalate, chromium, and lead were detected in soil samples collected from the site.

01 X M. UNSTABLE CONTAINMENT OF WASTES (Spills/runoff/standing liquids/leaking drums) — **02 _ OBSERVED (DATE: _____) X POTENTIAL _ ALLEGED**
03 POPULATION POTENTIALLY AFFECTED: 5659 — **04 NARRATIVE DESCRIPTION**

The potential exists for unstable containment of wastes, since the trenches are not lined. The population indicated represents the population within 1 mile of the site.

01 X N. DAMAGE TO OFFSITE PROPERTY — **02 _ OBSERVED (DATE: _____) X POTENTIAL _ ALLEGED**
04 NARRATIVE DESCRIPTION

There is a slight potential for damage to off-site property via contaminant migration in the groundwater and surface water.

01 X O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — **02 _ OBSERVED (DATE: _____) X POTENTIAL _ ALLEGED**
04 NARRATIVE DESCRIPTION

The potential exists for the contamination of the storm drains located on site. The facility has SPDES permits for the storm drains.

01 X P. ILLEGAL/UNAUTHORIZED DUMPING — **02 _ OBSERVED (DATE: _____) X POTENTIAL _ ALLEGED**
04 NARRATIVE DESCRIPTION

The potential exists for unauthorized dumping since no permits were issued for disposal in the trenches on site.

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

Approximately 40 drums labeled Penn Solu 1009 were observed on the western side of the building. Discolored runoff water (brilliantly colored oil sheen) was observed entering a gully that borders the western side of the property and the railroad tracks.

The drums stored in this area are washed in a drum washer prior to being set out for storage.

III. TOTAL POPULATION POTENTIALLY AFFECTED: 10,427

IV. COMMENTS

None

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

A Notification of Hazardous Waste Site, CERCLA 103 (c), 6/9/81.
Field Notebook No. 0049, Champion International Corporation/Retail Pkg. Div., TDD No. 02-8703-45, Off-Site Reconnaissance, April 1, 1987, and Site Inspection, April 15, 1987 and April 16,1987, NUS Corp. Region 2 FIT, Edison, New Jersey.
Clement Associates, Inc., Chemical, Physical, and Biological properties of compounds present at Hazardous Waste Sites, September 1985.
General Sciences Corporation, Graphical Exposure Modeling Systems (GEMS), Landover, Maryland, 1986.
Sax, NI. Dangerous properties of Industrial materials, 6th edition, 1984.
Aerial Photographs of Champion International Facility, USGS., April 27, 1974.
Telecon Note: Conversation between John Defillipi, ERM Northeast, and Denise Horgan, NUS Corporation, April 3, 1987.
Telecon Note: Conversation between the Orange County Health Department and Denise Horgan, NUS Corporation, March 26, 1987.
Telecon Note: Conversation between Mr. Williamson, Walden Water Company, and Denise Horgan, NUS Corporation, March 31, 1987.
New York State Atlas of Community Water System Sources, New York State Department of Health, 1982.
Telecon Note: Conversation between the New York State Department of Environmental Conservation in White Plains and Denise Horgan, NUS Corporation, June 19, 1987.

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

1. IDENTIFICATION
01 STATE 02 SITE NUMBER
NY D089756340

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
_ A. NPDES				
_ B. UIC				
X C. AIR	A334205 0155 00031I	12/86		Application for permit to construct and operate incinerators.
X D. RCRA	NYD0897562340			
_ E. RCRA INTERIM STATUS				
_ F. SPCC PLAN				
_ G. STATE (Specify)				
_ H. LOCAL (Specify)				
X I. OTHER (Specify) SPDES	NY0005720	8/1/82	8/1/87	
_ J. NONE				

III. SITE DESCRIPTION

01 Storage/Disposal (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
_ A. SURFACE IMPOUNDMENT		
_ B. PILES		
_ C. DRUMS, ABOVE GROUND		
_ D. TANK, ABOVE GROUND		
_ E. TANK, BELOW GROUND		
_ F. LANDFILL		
_ G. LANDFARM		
_ H. OPEN DUMP		
X I. OTHER 2 Trenches (Specify)	100 Drums	55 gallons

04 TREATMENT (Check all that apply)
- _ A. INCINERATION
- _ B. UNDERGROUND INJECTION
- _ C. CHEMICAL/PHYSICAL
- _ D. BIOLOGICAL
- _ E. WASTE OIL PROCESSING
- _ F. SOLVENT RECOVERY
- _ G. OTHER RECYCLING/RECOVERY
- _ H. OTHER _____ (Specify)

05 OTHER
- X A. BUILDINGS ON SITE

06 AREA OF SITE
40 (Acres)

07 COMMENTS

Circa 1961, approximately 100 55-gallon drums were disposed of in two trenches on property adjoining the plant. Each trench is estimated to be 10 feet wide by 300 feet long and over 8 feet deep. The specific contents of these drums are unknown, but presumed to include glue, printing inks (water- and solvent-based), varnish, and alcohol/water washup solutions.

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

_ A. ADEQUATE, SECURE _ B. MODERATE X C. INADEQUATE, POOR _ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

There is no indication in the available background information that the trenches are lined. The two trenches are encapsulated with soil that naturally contains clay.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: _ YES X NO

02 COMMENTS

The disposal of waste in the two trenches was a one-time occurrence, not a continuing operation. Since 1961, the trenches have been covered with soil that naturally contains clay. The trench area is located in an area which is not fenced.

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

Field Notebook No. 0049, Champion International Corporation/Retail Pkg. Div., TDD No. 02-8703-45, Off-Site Reconnaissance, April 1, 1987, and Site Inspection, April 15, 1987, and April 16, 1987, NUS Corp. Region 2 FIT, Edison, New Jersey.
Notification of Hazardous Waste Site, CERCLA 103 (c), 6/9/81.
Telecon Note: Conversation between Theresa Harrison, NYSDEC and Joseph Murtaugh, NUS Corporation, September 22, 1988.
Telecon Note: Conversation between Theresa Harrison, William More, NYSDEC and Joseph Murtaugh, NUS Corporation, October 3, 1988.
Telecon Note: Conversation between John DeFillipi, ERM northeast and Denise Horgan, NUS Corporaton, April 3, 1987.

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)

	SURFACE	WELL	02 STATUS ENDANGERED	AFFECTED	MONITORED	03 DISTANCE TO SITE
COMMUNITY	A. _	B. X	A. _	B. _	C. _	A. 1.10 (mi)
NON-COMMUNITY	C. _	D. X	D. _	E. _	F. _	B. 1.20 (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

X A. ONLY SOURCE FOR DRINKING _ B. DRINKING (Other sources available) COMMERCIAL, INDUSTRIAL, IRRIGATION (No other water sources available) _ C. COMMERCIAL, INDUSTRIAL, IRRIGATION (Limited other sources available) _ D. NOT USED, UNUSEABLE

02 POPULATION SERVED BY GROUND WATER: 10,427 03 DISTANCE TO NEAREST DRINKING WATER WELL: 1.10 (mi)

04 DEPTH TO GROUNDWATER	05 DIRECTION OF GROUNDWATER FLOW	06 DEPTH TO AQUIFER OF CONCERN	07 POTENTIAL YIELD OF AQUIFER	08 SOLE SOURCE AQUIFER
2.8 (ft)	West	2.8 (ft)	Unknown (gpd)	_ YES X NO

09 DESCRIPTION OF WELLS (Including useage, depth, and location relative to population and buildings)

The community and noncommunity drinking water is supplied by groundwater wells. The municipal drinking water system supplies all residents within the city limits, 5800-6000 persons. All residents outside the city limits have private wells for drinking water supply.
There are two hydrologically connected aquifers. Most wells in the area are screened in the fractured Trenton Group Shale. The remaining wells are screened in an unnamed gravel aquifer which lies directly above the shale and directly below the top silty clay zone.

10 RECHARGE AREA

X YES _ NO COMMENTS Recharge occurs via precipitation.

11. DISCHARGE AREA

X YES _ NO COMMENTS Discharge is to the Wallkill River which is 1.63 mile west of the site.

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

X A. RESERVOIR, RECREATION DRINKING WATER SOURCE _ B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES _ C. COMMERCIAL, INDUSTRIAL _ D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:	AFFECTED	DISTANCE TO SITE
Tin Brook	No	0.19 (mi)
Wallkill River	No	1.63 (mi)
		(mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE
A. 5659 NO. OF PERSONS	B. 8972 NO. OF PERSONS	C. 10,427 NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION: Adjacent (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE: 3326

04 DISTANCE TO NEAREST OFF-SITE BUILDING: Adjacent (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site. e.g., rural, village, densely populated urban area)

The site is located in a moderately populated residential area of the village of Walden. The area outside the city limits is more rural.

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

_ A. 10^{-6} - 10^{-8} cm/sec X B. 10^{-4} - 10^{-6} cm/sec _ C. 10^{-4} - 10^{-3} cm/sec _ D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

X A. IMPERMEABLE (Less than 10^{-6} cm/sec) _ B. RELATIVELY IMPERMEABLE (10^{-4} - 10^{-6} cm/sec) _ C. RELATIVELY PERMEABLE (10^{-2} - 10^{-4} cm/sec) _ D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

03 DEPTH TO BEDROCK: 30 (ft)
04 DEPTH OF CONTAMINATED SOIL ZONE: 8 (ft)
05 SOIL pH: 7.0

06 NET PRECIPITATION: 16 (in)
07 ONE YEAR 24 HOUR RAINFALL: 3.0 (in)
08 SLOPE
SITE SLOPE: 3 %
DIRECTION OF SITE SLOPE: North
TERRAIN AVERAGE SLOPE: 2 %

09 FLOOD POTENTIAL
SITE IS IN > 500 YEAR FLOODPLAIN _ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

10 DISTANCE TO WETLANDS (5 acre minimum)
ESTUARINE: A. >1 (mi)
OTHER: B. >2 (mi)

11 DISTANCE TO CRITICAL HABITAT (of endangered species): > 1 (mi)
ENDANGERED SPECIES: N/A

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS: NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS: PRIME AG LAND	AGRICULTURAL LANDS: AG LAND
A. 0.03 (mi)	B. 0.03 (mi)	C. 0.32 (mi)	D. 0.15 (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

The topography of the area encompassing the site is essentially level. Aerial photographs of the site (1974) revealed a topographic depression extending from the suspected trench area towards the northernmost part of the property. A small stream flows northward from this area towards the Tin Brook. This brook is used recreationally; children were observed fishing during the site inspection.

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

Field Notebook No. 0049, Champion International Corporation/Retail Pkg. Div., TDD No. 02-8703-45, Site Inspection, NUS Corp. Region 2 FIT, Edison, New Jersey, April 15, 1987, and April 16, 1987.
Groundwater Basic Data Orange and Ulster Counties, New York State Water Resources Commission, 1970.
U.S. Department of the Interior, Geological Survey Topographical Map, 7.5 minute series, "Walden Quadrangle - New York", 1965.
Soil Survey of Orange County, New York, Soil Conservation Service, October 1981.
New York State Department of Environmental Conservation, Division of Fish and Wildlife, Bureau of Wildlife, Significant Habitat Overlays, Scranton Quadrangle, 1 of 2 and 2 of 2, March 1981, revised November 1985.
Flood Insurance Rate Map, Village of Walden, New York, Orange County, August 15, 1984.
Uncontrolled hazardous waste site ranking system, A user's manual, 40 CFR, Part 300, Appendix A, 1986.
U.S. EPA Contract Laboratory Program, Nanco Labs Inc. and Associated Laboratories, Case No. 7136, Laboratory analysis from NUS Region 2 FIT Site Inspection conducted on April 15, 1987, and April 16, 1987.
Groundwater Resources of Orange and Ulster Counties, New York, Michael Frimpter, 1972.
Project Note to file, from Joseph Murtaugh, site slope/average terrain slope, January 3, 1989.
General Sciences Corporation, Graphical Exposure modeling Systems (GEMS). Landover, Maryland, 1986.
Telecon Note: Conversation between Orange County Health Department and Densie Horgan, NUS Corporation, March 26, 1987.
Telecon Note: Conversation between Mr. Williamson, Walden Water Company and Denise Horgan, NUS Corporation, March 31, 1987.
Telecon Note: Conversation between NYSDEC in White Plains and Denise Horgan, NUS Corporation, June 19, 1987.

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO		03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER		Organics:	Nanco Labs Inc. Rd 6 Robinson Lane Wappingers Falls, NY 12590 Attn: George O'Dell	September 25, 1987
SURFACE WATER	2			
WASTE				
AIR		Inorganics:	Associated Laboratories Inc. 806 N. Batavia Orange, CA 92668 Attn: Bruce Warden	October 5, 1987
RUNOFF				
SPILL				
SOIL	9			
VEGETATION				
OTHER				

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
Air Monitoring	Air monitoring was performed continuously using HNu photoionization and OVA flame ionization instruments. No readings above background were detected during the site inspection from the undisturbed portions of the site. A 1 ppm reading was detected in the borehole of the NYQ1-S6 sample.
Magnetometer Survey	The magnetometer survey was performed in an attempt to delineate the perimeter of the two trenches in question. No significant anomalies were measured to indicate the presence of drums buried in the trenches.

IV. PHOTOGRAPHS AND MAPS

01 TYPE X GROUND X AERIAL

02 IN CUSTODY OF NUS Corporation Region 2 FIT
(Name of organization or individual)

03 MAPS X YES _ NO

04 LOCATION OF MAPS NUS Corporation Region 2 FIT

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

Documentation of field activities recorded in logbook No. 0049, filed under TDD No. 02-8703-45.

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

Field Notebook No.0049, Champion International Corporation/Retail Pkg. Div., TDD No. 02-8703-45, Site Inspection, NUS Corp. Region 2 FIT, Edison, New Jersey, April 15, 1987, and April 16, 1987.

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION
01 STATE 02 SITE NUMBER
NY D089756340

II. CURRENT OWNER(S)

01 NAME		02 D + B NUMBER	08 NAME		09 D + B NUMBER
Robert E. Harrison, Champion International Corporation					
03 STREET ADDRESS (P.O. Box, RFD#, etc.)		04 SIC CODE	10 STREET ADDRESS (P.O. Box, RFD#, etc.)		11 SIC CODE
One Champion Plaza					
05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE
Stamford	CT	06921			

01 NAME		02 D + B NUMBER	08 NAME		09 D + B NUMBER
03 STREET ADDRESS (P.O. Box, RFD#, etc.)		04 SIC CODE	10 STREET ADDRESS (P.O. Box, RFD#, etc.)		11 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE

01 NAME		02 D + B NUMBER	08 NAME		09 D + B NUMBER
03 STREET ADDRESS (P.O. Box, RFD#, etc.)		04 SIC CODE	10 STREET ADDRESS (P.O. Box, RFD#, etc.)		11 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE

01 NAME		02 D + B NUMBER	08 NAME		09 D + B NUMBER
03 STREET ADDRESS (P.O. Box, RFD#, etc.)		04 SIC CODE	10 STREET ADDRESS (P.O. Box, RFD#, etc.)		11 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE

III. PREVIOUS OWNER(S) (List most recent first)

01 NAME		02 D + B NUMBER	01 NAME		02 D + B NUMBER
Waldorf					
03 STREET ADDRESS (P.O. Box, RFD#, etc.)		04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD#, etc.)		04 SIC CODE
Coldenham Road					
05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE
Walden	NY	12586			

01 NAME		02 D + B NUMBER	01 NAME		02 D + B NUMBER
Albernarle Paper Company					
03 STREET ADDRESS (P.O. Box, RFD#, etc.)		04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD#, etc.)		04 SIC CODE
Coldenham Road					
05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE
Walden	NY	12586			

01 NAME		02 D + B NUMBER	01 NAME		02 D + B NUMBER
Interstate Bag Company					
03 STREET ADDRESS (P.O. Box, RFD#, etc.)		04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD#, etc.)		04 SIC CODE
Coldenham Road					
05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE
Walden	NY	12586			

IV. REALTY OWNER(S) (If applicable; list most recent first)

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

A Notification of Hazardous Waste Site, CERCLA 103 (c), 6/9/81
Field Notebook No. 0049, Champion International Corporation/Retail Pkg. Div., TDD No. 02-8703-45, On-Site Reconnaissance, NUS Corp. Region 2 FIT, Edison, New Jersey, April 1, 1987.

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

1. IDENTIFICATION
01 STATE 02 SITE NUMBER
NY D089756340

II. CURRENT OPERATOR(S) / **OPERATOR'S PARENT COMPANY (If applicable)**

01 NAME		02 D + B Number	10 NAME		11 D + B NUMBER
Champion International Corporation					
03 STREET ADDRESS (P.O. Box, RFD#, etc.)		04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD#, etc.)		13 SIC CODE
One Champion Plaza					
05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE
Stamford	CT.	06921			
08 YEARS OF OPERATION	09 NAME OF OWNER				
1975-Present	Robert E. Harrison				

III. PREVIOUS OPERATOR(S) (List most recent first: Provide only if different from owner) / **PREVIOUS OPERATOR'S PARENT COMPANIES (If applicable)**

01 NAME		02 D + B Number	10 NAME		11 D + B NUMBER
03 STREET ADDRESS (P.O. Box, RFD#, etc.)		04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD#, etc.)		13 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER				

01 NAME		02 D + B Number	10 NAME		11 D + B NUMBER
03 STREET ADDRESS (P.O. Box, RFD#, etc.)		04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD#, etc.)		13 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER				

01 NAME		02 D + B Number	10 NAME		11 D + B NUMBER
03 STREET ADDRESS (P.O. Box, RFD#, etc.)		04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD#, etc.)		13 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER				

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

A Notification Of Hazardous Waste Sites., CERCLA 103 (C), 6/9/81.
Field Notebook No. 0049, Champion International TDD No. 02-8703-45, On-Site Reconnaissance, NUS Corp. Region 2 FIT, Edison, NJ, 04/01/87.

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION
01 STATE 02 SITE NUMBER
NY D089756340

II ON-SITE GENERATOR

01 NAME | 02 D + B NUMBER

Not Applicable

03 STREET ADDRESS (P.O. Box, RFD#, etc.) | 04 SIC CODE

05 CITY | 06 STATE | 07 ZIP CODE

III OFF-SITE GENERATOR(S)

01 NAME | 02 D + B NUMBER | 01 NAME | 02 D + B NUMBER

Not Applicable

03 STREET ADDRESS (P.O. Box, RFD#, etc.) | 04 SIC CODE | 03 STREET ADDRESS (P.O. Box, RFD#, etc.) | 04 SIC CODE

05 CITY | 06 STATE | 07 ZIP CODE | 05 CITY | 06 STATE | 07 ZIP CODE

01 NAME | 02 D + B NUMBER | 01 NAME | 02 D + B NUMBER

03 STREET ADDRESS (P.O. Box, RFD#, etc.) | 04 SIC CODE | 03 STREET ADDRESS (P.O. Box, RFD#, etc.) | 04 SIC CODE

05 CITY | 06 STATE | 07 ZIP CODE | 05 CITY | 06 STATE | 07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME | 02 D + B NUMBER | 01 NAME | 02 D + B NUMBER

Not Applicable

03 STREET ADDRESS (P.O. Box, RFD#, etc.) | 04 SIC CODE | 03 STREET ADDRESS (P.O. Box, RFD#, etc.) | 04 SIC CODE

05 CITY | 06 STATE | 07 ZIP CODE | 05 CITY | 06 STATE | 07 ZIP CODE

01 NAME | 02 D + B NUMBER | 01 NAME | 02 D + B NUMBER

03 STREET ADDRESS (P.O. Box, RFD#, etc.) | 04 SIC CODE | 03 STREET ADDRESS (P.O. Box, RFD#, etc.) | 04 SIC CODE

05 CITY | 06 STATE | 07 ZIP CODE | 05 CITY | 06 STATE | 07 ZIP CODE

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

II. PAST RESPONSE ACTIVITIES

01 ___ A. WATER SUPPLY CLOSED — 02 DATE: _____ 03 AGENCY: _____
04 DESCRIPTION

No previous history.

01 ___ B. TEMPORARY WATER SUPPLY PROVIDED — 02 DATE: _____ 03 AGENCY: _____
04 DESCRIPTION

No previous history.

01 ___ C. PERMANENT WATER SUPPLY PROVIDED — 02 DATE: _____ 03 AGENCY: _____
04 DESCRIPTION

No previous history.

01 ___ D. SPILLED MATERIAL REMOVED — 02 DATE: _____ 03 AGENCY: _____
04 DESCRIPTION

No previous history.

01 ___ E. CONTAMINATED SOIL REMOVED — 02 DATE: _____ 03 AGENCY: _____
04 DESCRIPTION

No previous history.

01 ___ F. WASTE REPACKAGED — 02 DATE: _____ 03 AGENCY: _____
04 DESCRIPTION

No previous history.

01 ___ G. WASTE DISPOSED ELSEWHERE — 02 DATE: _____ 03 AGENCY: _____
04 DESCRIPTION

No previous history.

01 ___ H. ON SITE BURIAL — 02 DATE: _____ 03 AGENCY: _____
04 DESCRIPTION

No previous history.

01 ___ I. IN SITU CHEMICAL TREATMENT — 02 DATE: _____ 03 AGENCY: _____
04 DESCRIPTION

No previous history.

01 ___ J. IN SITU BIOLOGICAL TREATMENT — 02 DATE: _____ 03 AGENCY: _____
04 DESCRIPTION

No previous history.

01 ___ K. IN SITU PHYSICAL TREATMENT — 02 DATE: _____ 03 AGENCY: _____
04 DESCRIPTION

No previous history.

01 ___ L. ENCAPSULATION — 02 DATE: _____ 03 AGENCY: _____
04 DESCRIPTION

No previous history.

01 ___ M. EMERGENCY WASTE TREATMENT — 02 DATE: _____ 03 AGENCY: _____
04 DESCRIPTION

No previous history.

01 ___ N. CUTOFF WALLS — 02 DATE: _____ 03 AGENCY: _____
04 DESCRIPTION

No previous history.

01 ___ O. EMERGENCY DIKING/SURFACE WATER DIVERSION — 02 DATE: _____ 03 AGENCY: _____
04 DESCRIPTION

No previous history.

01 ___ P. CUTOFF TRENCHES/SUMP — 02 DATE: _____ 03 AGENCY: _____
04 DESCRIPTION

No previous history.

01 ___ Q. SUBSURFACE CUTOFF WALL — 02 DATE: _____ 03 AGENCY: _____
04 DESCRIPTION

No previous history.

I. IDENTIFICATION
01 STATE 02 SITE NUMBER
NY D089756340

II. PAST RESPONSE ACTIVITIES

01 R. BARRIER WALLS CONSTRUCTED 02 DATE: 03 AGENCY:
04 DESCRIPTION

No previous history.

01 X S. CAPPING/COVERING 02 DATE: circa 1961 03 AGENCY:
04 DESCRIPTION

The two trenches are encapsulated with soil that is naturally composed of clay.

01 T. BULK TANKAGE REPAIRED 02 DATE: 03 AGENCY:
04 DESCRIPTION

No previous history.

01 U. GROUT CURTAIN CONSTRUCTED 02 DATE: 03 AGENCY:
04 DESCRIPTION

No previous history.

01 V. BOTTOM SEALED 02 DATE: 03 AGENCY:
04 DESCRIPTION

No previous history.

01 W. GAS CONTROL 02 DATE: 03 AGENCY:
04 DESCRIPTION

No previous history.

01 X. FIRE CONTROL 02 DATE: 03 AGENCY:
04 DESCRIPTION

No previous history.

01 Y. LEACHATE TREATMENT 02 DATE: 03 AGENCY:
04 DESCRIPTION

No previous history.

01 Z. AREA EVACUATED 02 DATE: 03 AGENCY:
04 DESCRIPTION

No previous history.

01 1. ACCESS TO SITE RESTRICTED 02 DATE: 03 AGENCY:
04 DESCRIPTION

No previous history.

01 2. POPULATION RELOCATED 02 DATE: 03 AGENCY:
04 DESCRIPTION

No previous history.

01 3. OTHER REMEDIAL ACTIVITIES 02 DATE: 03 AGENCY:
04 DESCRIPTION

No previous history.

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

A Notification of Hazardous Waste Site, CERCLA 103 (c), 6/9/81.
Field Notebook No. 0049, Champion International Corporation/Retail Pkg. Div., TDD No. 02-8703-45, On-Site Reconnaissance, April 1, 1987, and Site Inspection, April 15, 1987 and April 16, 1987, NUS Corp. Region 2 FIT, Edison, New Jersey.

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION _ YES X NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

According to the information collected, no regulatory enforcement actions have been initiated at this site.

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

A Notification of Hazardous Waste Site, CERCLA 103 (c), 6/9/81.
Field Notebook No. 0049, Champion International Corporation/Retail Pkg. Div. TDD NO. 02-8703-45, On-Site Recconnaissance, April 1, 1987, and Site Inspection, April 15, 1987 and April 16, 1987, NUS Corp. Region 2 FIT, Edison, New Jersey.

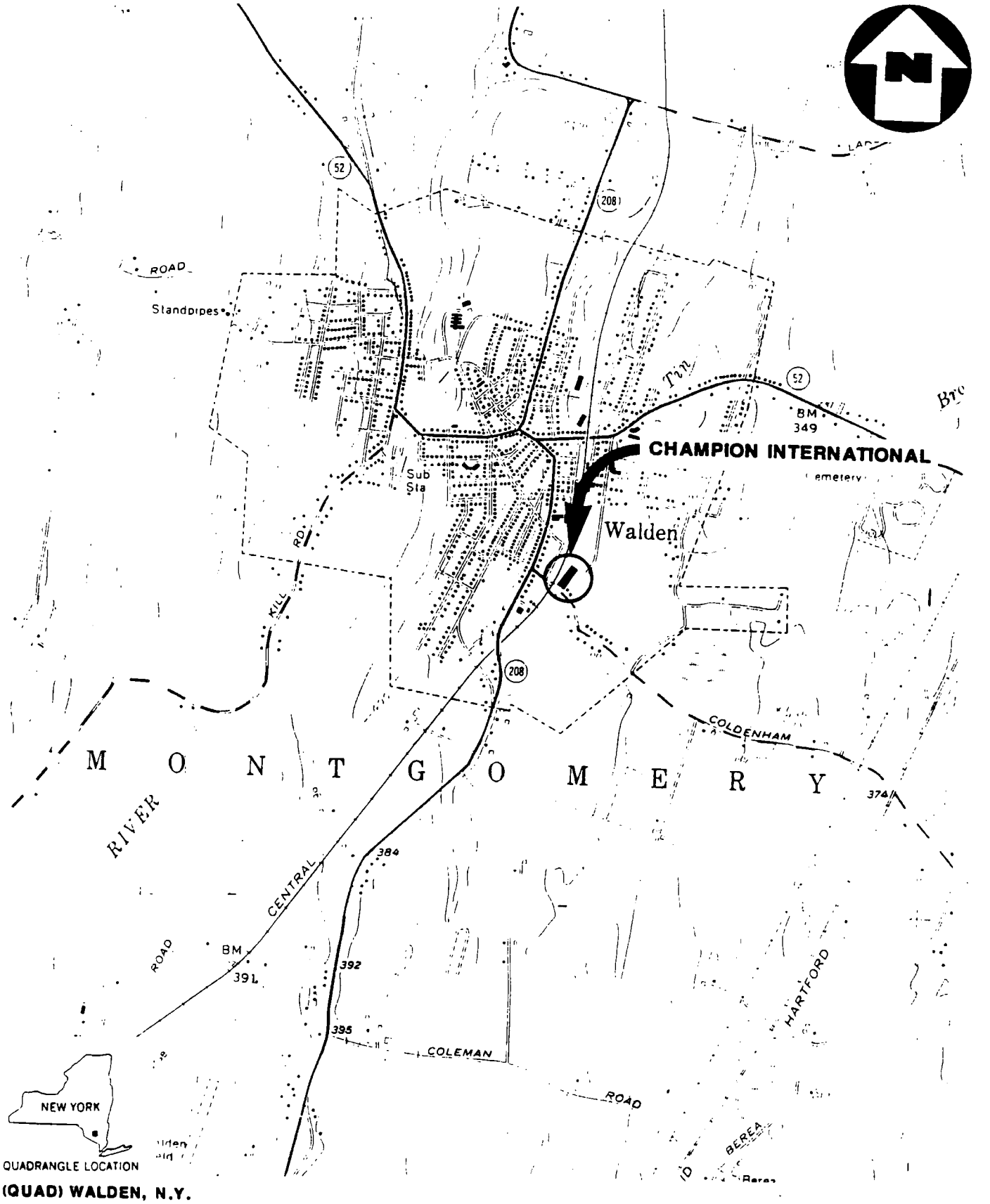
SECTION 3

MAPS AND PHOTOGRAPHS

CHAMPION INTERNATIONAL
WALDEN, NEW YORK
TDD NO. 02-8703-45

CONTENTS

Figure 1: Site Location Map
Figure 2: Sample Location Map
Figure 3: Magnetometer Survey Contour Map
Exhibit A: Photograph Log



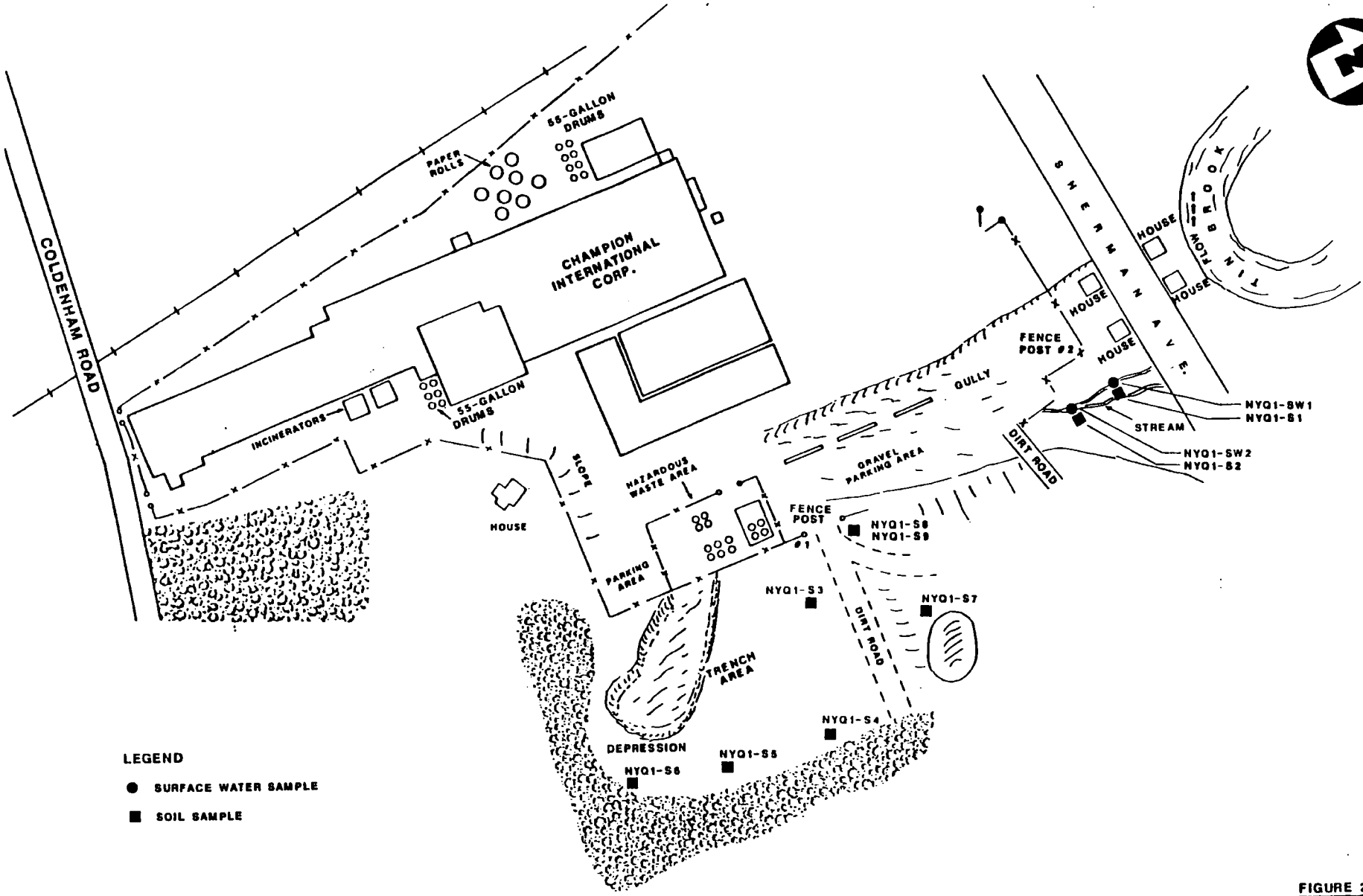
(QUAD) WALDEN, N.Y.

SITE LOCATION MAP
CHAMPION INTERNATIONAL, WALDEN, N.Y.

SCALE: 1" = 2000'

FIGURE 1

NUS CORPORATION



SAMPLE LOCATION MAP

CHAMPION INTERNATIONAL, WALDEN, N.Y.

NOT TO SCALE

FIGURE 2

NUS CORPORATION

02-8703-45-SR
Rev. No. 0

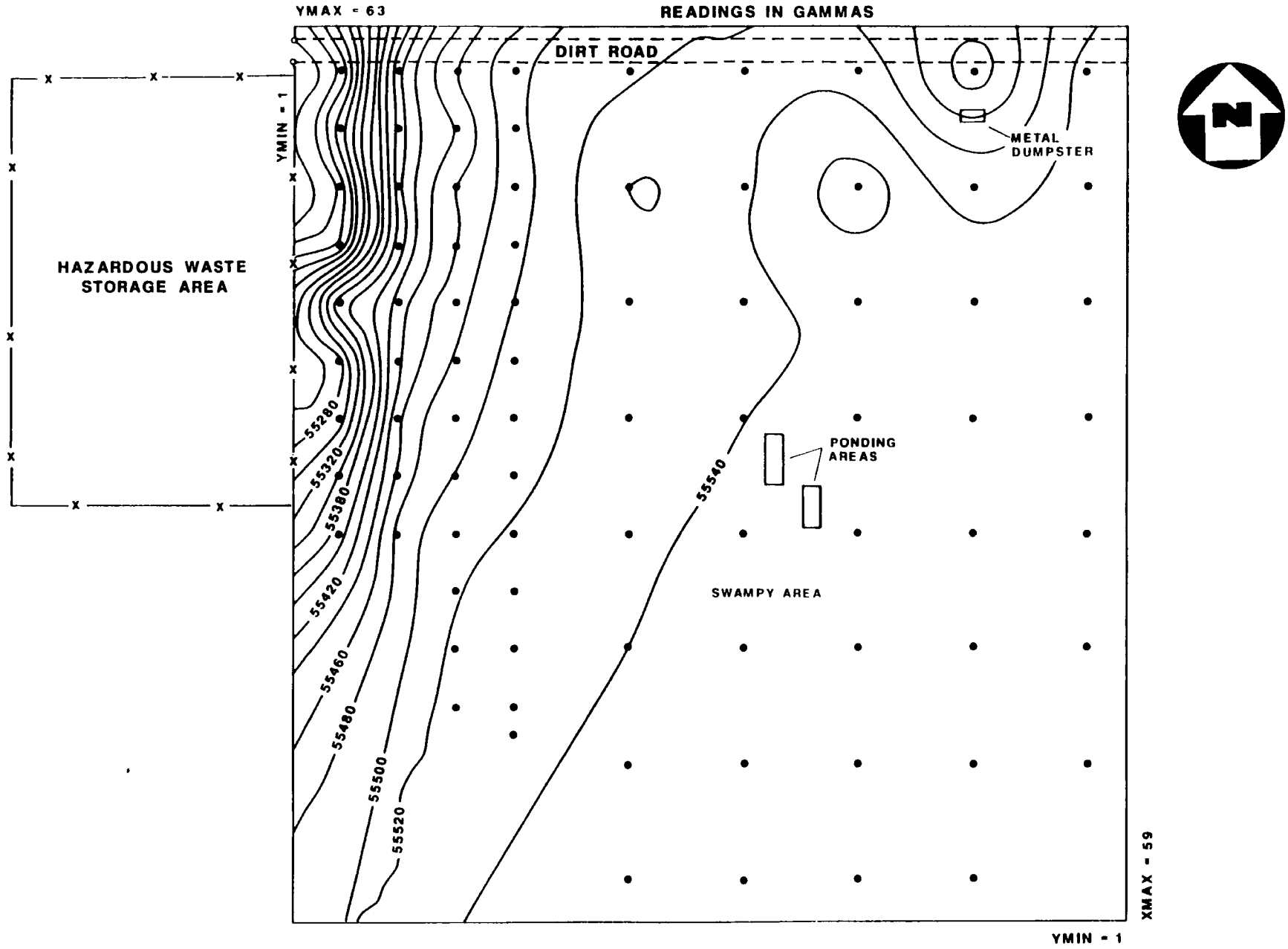


FIGURE 3

MAGNETOMETER SURVEY CONTOUR MAP

CHAMPION INTERNATIONAL, WALDEN, N.Y.

SCALE: 1" = 50'

NUS CORPORATION

02-8703-45-SR
Rev. No. 0

EXHIBIT A

PHOTOGRAPH LOG

CHAMPION INTERNATIONAL CORPORATION
WALDEN, NEW YORK
TDD NO. 02-8703-45

APRIL 15 AND APRIL 16, 1987

CHAMPION INTERNATIONAL CORPORATION
WALDEN, NEW YORK
TDD No.02-8703-45

PHOTOGRAPH INDEX

Photo Number	Description	Time
1P-1	April 15, 1987 NUS personnel air monitoring ponding in trench area. Samplers: S. Maybury, A. Cherepon. Photographer: D. Horgan.	0943
1P-2	April 15, 1987 Stream originating from Champion flowing north to Tin Brook. Storm drain in foreground. Photographer: D. Horgan.	1120
1P-3	April 15, 1987 Surface water sample NYQ1-SW1 being collected from flowing water leading off site. Sampler: S. Kennedy. Photographer: D. Horgan.	1208
1P-4	April 15, 1987 Sediment sample NYQ1-SED1 being collected from same location as NYQ1-SW1. Sampler: S. Kennedy. Photographer: D. Horgan.	1237
1P-5	April 15, 1987 Surface water sample NYQ1-SW2 being collected. Sampler: A. McClung. Photographer: D. Horgan.	1250
1P-6	April 15, 1987 Sediment sample NYQ1-SED2 being collected from same location as NYQ1-SW2. Sampler: A. McClung. Photographer: D. Horgan.	1313
1P-7	April 16, 1987 Photo of active hazardous waste compound looking northward. Photographer: S. Engle.	0751
1P-8	April 16, 1987 Photo of partially buried drum at rear of hazardous waste compound. Photographer: S. Engle.	0756
1P-9	April 16, 1987 Composite soil sample NYQ1-S3 being collected. Samplers: A. Cherepon, S. Kennedy. Photographer: S. Engle.	1057

CHAMPION INTERNATIONAL CORPORATION
WALDEN, NEW YORK
TDD No. 02-8703-45

PHOTOGRAPH INDEX

Photo Number	Description	Time
1P-10	April 16, 1987 Second view of the collection of composite soil sample NYQ1-S3. Samplers: A. Cherepon, S. Kennedy. Photographer: S. Engle.	1057
1P-11	April 16, 1987 Collection of composite soil sample NYQ1-S4. Sampler: S. Kennedy. Photographer: S. Engle.	1117
1P-12	April 16, 1987 Collection of composite soil sample NYQ1-S5. Samplers: S. Kennedy, A. Cherepon. Photographer: S. Engle.	1147
1P-13	April 16, 1987 NUS personnel collecting composite soil sample NYQ1-S6. Samplers: S. Kennedy, A. Cherepon. Photographer: S. Engle.	1257
1P-14	April 16, 1987 Composite soil sample NYQ1-S7 being collected by NUS personnel. Samplers: S. Kennedy, A. Cherepon. Photographer: S. Engle.	1315
1P-15	April 16, 1987 Collection of composite soil ample NYQ1-S8 by NUS personnel. Sampler: S. Kennedy. Photographer: S. Engle.	1328
1P-16	April 16, 1987 Composite soil sample NYQ1-S9 being collected. Sampler: S. Kennedy. Photographer: S. Engle.	1340
1P-17	April 16, 1987 Eastward-looking photo of drums in active hazardous waste storage area. Photographer: S. Engle.	1430
1P-18	April 16, 1987 Closeup of drum in hazardous waste staging area showing hazardous waste labeling. Photographer: S. Engle.	1430

CHAMPION INTERNATIONAL CORPORATION
WALDEN, NEW YORK
TDD No. 02-8703-45

PHOTOGRAPH INDEX

Photo Number	Description	Time
1P-19	April 16, 1987 Photo of hazardous waste staging area. Photographer: S. Engle.	1430
1P-20	April 16, 1987 Overview of drum and glue encasement storage area located on western side of the building. Photographer: S. Engle.	1500
1P-21	April 16, 1987 Closer view of drums located on west side of facility illustrating liquid runoff from beneath drums. Photographer: S. Engle.	1500
1P-22	April 16, 1987 Closeup of label on glue container located on the west side of the facility. Photographer: S. Engle.	1500

1P-1 April 15, 1987 0943
NUS personnel air monitoring ponding in trench area.
Samplers: S. Maybury, A. Cherepon. Photographer: D. Horgan.

1P-2 April 15, 1987 1120
Stream originating from Champion flowing north to Tin Brook.
Storm drain in foreground.
Photographer: D. Horgan.

CHAMPION INTERNATIONAL CORPORATION, WALDEN, NEW YORK

1P-3 April 15, 1987 1208
Surface water sample NYQ1-SW1 being collected from flowing water leading off site.
Sampler: S. Kennedy. Photographer: D. Horgan.

1P-4 April 15, 1987 1237
Sediment sample NYQ1-SED1 being collected from same location as NYQ1-SW1.
Sampler: S. Kennedy. Photographer: D. Horgan.

CHAMPION INTERNATIONAL CORPORATION, WALDEN, NEW YORK

1P-5 April 15, 1987 1250
Surface water sample NYQ1-SW2 being collected.

Sampler: A. McClung. Photographer: D. Horgan.

1P-6 April 15, 1987 1313
Sediment sample NYQ1-SED2 being collected from same location as NYQ1-SW2.
Sampler: A. McClung. Photographer: D. Horgan.

CHAMPION INTERNATIONAL CORPORATION, WALDEN, NEW YORK

1P-7 April 16, 1987 0751
Photo of active hazardous waste compound looking northward.
Photographer: S. Engle.

1P-8 April 16, 1987 0756
Photo of partially buried drum at rear of hazardous waste compound.
Photographer: S. Engle.

CHAMPION INTERNATIONAL CORPORATION, WALDEN, NEW YORK

1P-9 April 16, 1987 1057
Composite soil sample NYQ1-S3 being collected.
Samplers: A. Cherepon, S. Kennedy.
Photographer: S. Engle.

1P-10 April 16, 1987 1057
Second view of the collection of composite soil sample NYQ1-S3.
Samplers: A. Cherepon, S. Kennedy. Photographer: S. Engle.

1P-11 April 16, 1987 1117
Collection of composite soil sample NYQ1-S4.
Sampler: S. Kennedy. Photographer: S. Engle.

1P-12 April 16, 1987 1147
Collection of composite soil sample NYQ1-S5.
Samplers: S. Kennedy, A. Cherepon. Photographer: S. Engle.

1P-13 April 16, 1987 1257
NUS personnel collecting composite soil sample NYQ1-S6.
Samplers: S. Kennedy, A. Cherepon.
Photographer: S. Engle.

1P-14 April 16, 1987 1315
Composite soil sample NYQ1-S7 being collected by NUS personnel.
Samplers: S. Kennedy, A. Cherepon. Photographer: S. Engle.

1P-15 April 16, 1987 1328
Collection of composite soil sample NYQ1-S8 by NUS personnel.
Sampler: S. Kennedy. Photographer: S. Engle.

1P-16 April 16, 1987 1340
Composite soil sample NYQ1-S9 being collected.
Sampler: S. Kennedy. Photographer: S. Engle.

1P-17 April 16, 1987 1430
Eastward-looking photo of drums in active hazardous waste storage area.
Photographer: S. Engle.

1P-18 April 16, 1987 1430
Closeup of drum in hazardous waste staging area showing hazardous waste labeling.
Photographer: S. Engle.

CHAMPION INTERNATIONAL CORPORATION, WALDEN, NEW YORK

1P-19 April 16, 1987 1430
Photo of hazardous waste staging area.
Photographer: S. Engle.

1P-20 April 16, 1987 1500
Overview of drum and glue encasement storage area located on western side of the building.
Photographer: S. Engle.

CHAMPION INTERNATIONAL CORPORATION, WALDEN, NEW YORK

1P-21 April 16, 1987 1500
Closer view of drums located on west side of facility illustrating liquid runoff from beneath drums.
Photographer: S. Engle.

1P-22 April 16, 1987 1500
Closeup of label on glue container located on the west side of the facility.
Photographer: S. Engle.

SECTION 4

BIBLIOGRAPHY OF INFORMATION SOURCES

BIBLIOGRAPHY OF INFORMATION SOURCES

	SOURCE	LOCATION
1.	Groundwater Basic Data Orange and Ulster Counties, New York State Water Resources Commission, 1970.	NUS Corp. Edison, NJ
2.	Field Notebook No. 0049, Champion International, TDD No. 02-8703-45, On-Site Reconnaissance, NUS Corp. Region 2 FIT, Edison, NJ, 04/01/87.	NUS Corp. Edison, NJ
3.	Uncontrolled hazardous waste site ranking system, A user's manual, 40 CFR, Part 300, Appendix A, 1986.	NUS Corp. Edison, NJ
4.	U.S. Department of Agriculture, Soil Conservation Service, Soil Survey of Orange County, October 1981.	NUS Corp. Edison, NJ
5.	A Notification of Hazardous Waste Site, CERCLA 103(c), 06/09/81.	NUS Corp. Edison, NJ
6.	Telecon Note: Conversation between John Defillipi, ERM Northeast, and Denise Horgan, NUS Corporation, April 3,1987.	NUS Corp. Edison, NJ
7.	Telecon Note: Conversation between the Orange County Health Department and Denise Horgan, NUS Corporation, March 26, 1987.	NUS Corp. Edison, NJ
8.	Telecon Note: Conversation between Mr. Williamson, Walden Water Company, and Denise Horgan, NUS Corporation, March 31, 1987.	NUS Corp. Edison, NJ
9.	New York State Atlas of Community Water System Sources, New York State Department of Health, 1982.	NUS Corp. Edison, NJ
10.	Three-mile vicinity map based on U.S. Department of the Interior, Geological Survey Topographic Map, 7.5 minute series, "Walden Quadrangle, NY," 1965.	NUS Corp. Edison, NJ
11.	Aerial Photographs of Champion International Facility, Walden, New York. United States Geographic Survey, Reston, VA, April 27, 1974.	NUS Corp. Edison, NJ
12.	Field Notebook No. 0049, Champion International, TDD No. 02-8703-45, Site Inspection, NUS Corp, Region 2 FIT, Edison, NJ, 04/15/87, and 04/16/87.	NUS Corp. Edison, NJ

BIBLIOGRAPHY OF INFORMATION SOURCES

(CONTD)

	SOURCE	LOCATION
13.	New York State Department of Environmental Conservation Division of Fish and Wildlife, Bureau of Wildlife, Critical Habitat Overlays, Scranton Quadrangle, 1 of 2 and 2 of 2, March 1981, Revised November 1985.	NUS Corp. Edison, NJ
14.	Telecon Note: Conversation between the New York State Department of Environmental Conservation in White Plains and Denise Horgan, NUS Corporation, June 19, 1987.	NUS Corp. Edison, NJ
15.	General Sciences Corporation, Graphical Exposure Modeling Systems (GEMS). Landover, Maryland, 1986.	NUS Corp. Edison, NJ
16.	Sax, N. I., Dangerous properties of industrial materials, 6th Edition, New York, Van Nostrand Reinhold Company, 1984.	NUS Corp. Edison, NJ
17.	U.S. EPA Contract Laboratory Program, Nanco Labs Inc. and Associated Laboratories, Case No. 7136, Laboratory Analysis from NUS Region 2 FIT site inspection conducted on April 15, 1987, and April 16, 1987.	NUS Corp. Edison, NJ
18.	Clement Associates, Inc., Chemical, Physical, and Biological properties of compounds present at Hazardous Waste Sites. Final report, September 27, 1985.	NUS Corp. Edison, NJ
19.	FIRM Flood Insurance Rate Map, Village of Walden, New York, Orange County, August 15, 1984.	NUS Corp. Edison, NJ
20.	Ground-water Resources of Orange and Ulster Counties, New York. Michael H. Frimpter, 1972.	NUS Corp. Edison, NJ
21.	Telecon Note: Conversation between Theresa Harrison, the New York State Department of Environmental Conservation, Region 3, and Joseph Murtaugh, NUS Corporation, September 22, 1988.	NUS Corp. Edison, NJ
22.	Telecon Note: Conversation between Theresa Harrison and William More, the New York State Department of Environmental Conservation, Region 3, and Joseph Murtaugh, NUS Corporation, October 3, 1988.	NUS Corp. Edison, NJ
23.	Project Note: To file from Joseph Murtaugh, NUS Corporation, Site Slope/Average Terrain Slope, January 3, 1989, Edison, NJ.	NUS Corp. Edison, NJ

SECTION 5

PRESS RELEASE SUMMARY

02-8703-45-SR
Rev. No. 0

SUMMARY STATEMENT
CHAMPION INTERNATIONAL CORPORATION/RETAIL PKG. DIV.
WALDEN, NEW YORK

Champion International Corporation is an active paper processing facility, owned by Champion since 1975, and located in Walden, Orange County, New York. The site is approximately 40 acres in size, with the plant occupying 180 square yards of the property. In 1961, while the site was owned and operated by Interstate Bag Company, waste was buried in two unlined trenches on property adjoining the plant. Approximately 100 55-gallon drums containing glue, varnish, printing inks (water- and solvent- based), and alcohol/water washup solutions were disposed of in the trenches. This was a one-time dumping occurrence and not a continuous disposal operation.

Each trench is estimated to be 10 feet wide by 300 feet long by 8 feet deep, containing two to three cells. The soil encompassing the trenches naturally contains clay.

Surface water, sediment, and soil samples were collected during a site inspection conducted on April 15, 1987, and April 16, 1987. Analysis of the soil samples indicates the presence of solvents, phthalates, chloroform, chromium, and lead on site.

There have been no remedial activities performed at this facility to date.

SECTION 6

BACKGROUND INFORMATION

REFERENCE NO. 1

GROUND-WATER BASIC DATA ORANGE AND ULSTER COUNTIES NEW YORK

BY

MICHAEL H. FRIMPTER
U. S. GEOLOGICAL SURVEY

Prepared by

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
in cooperation with

NEW YORK WATER RESOURCES COMMISSION

STATE OF NEW YORK
CONSERVATION DEPARTMENT
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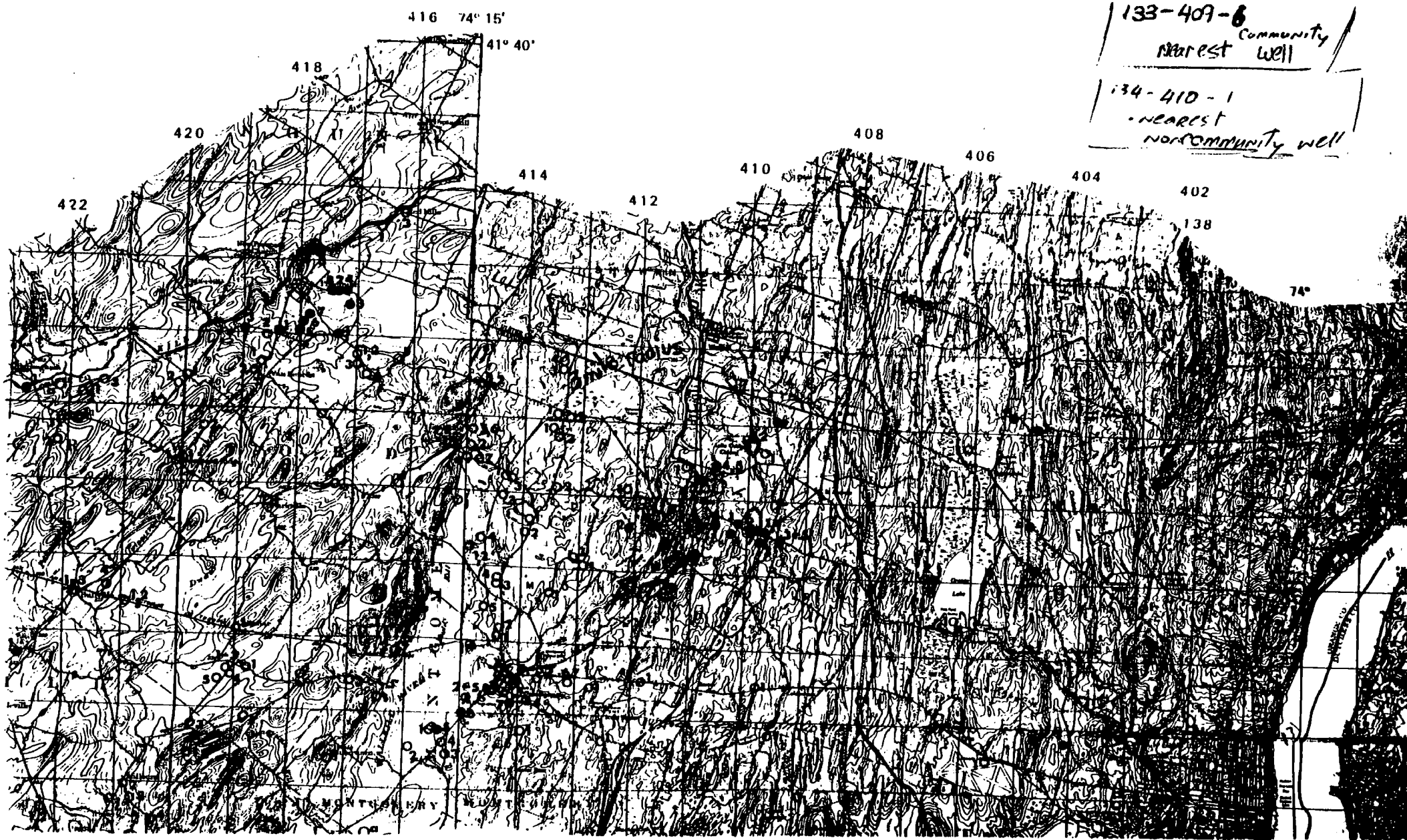


Table 1.--Records of selected wells and springs

Explanation of symbols and abbreviations used in table:

Well number: See text for explanation.

Use: A - agricultural; C - commercial; D - domestic; I - institutional; In - industrial; O - observation; P - public supply; T - test; U - unused

Method of construction; completion: Dr - drilled; Dv - driven; Du - dug; J - jetted; OE - open end; OH - open hole; P - perforated; S - screened

Depth of well: All depths below land surface.
r - reported.
? - unknown
Measurement given to nearest foot except for well diameter which is given to nearest inch.

Diameter of wells: Diameters of dug wells are approximate. Multiple casing sizes are given, where applicable.

Aquifer: Carbonate - limestone, dolostone, or marble
Crystalline - igneous or metamorphic
None - no deposits that yield significant quantities of water were penetrated.
? - Unknown

Water level below land surface: All water levels are below land surface except those preceded by a plus (+) sign which are above land surface.
flows - water flows above land surface.
r - reported
all others measured by U.S.G.S. personnel.

Topographic situation: Hs - hillside; Ht - hilltop; Pln - plain; Plt - plateau; Ter - terrace; VF - valley flat

Altitude above sea level: estimated from topographic maps.

Remarks: Anal - chemical analyses
dd - drawdown, in feet
gpd - gallons per day
gpm - gallons per minute
H_2S - noticeable odor of hydrogen sulfide ("sulfur water")
Iron - water contains a relatively high concentration of iron, and stains porcelain fixtures.
Log - graphical log in this report.
min - minutes
temp - temperature, in degrees Celsius, measured by U.S.G.S.

Table 1.--Records of selected wells and springs (Continued)

Well number	Owner's name	Reported yield (gallons per minute)	Use	Method of construction; completion	Depth of well (feet)	Diameter (inches)	Length of casing (feet)	Aquifer	Water level: Below land surface (feet)	Water level: Date	Topo-graphic situa-tion	Altitude above sea level (feet)	Remarks
136-403-2	Joseph Giaraffa	10	D	-- --	r114	6	15	Quartzite	--	--	Ht	660	
136-359-1	Charles Scuderi	9	D	-- --	r118	6	--	Shale	--	--	Ht	470	
-2	R. Amoroso	--	B	-- --	r115	6	--	do.	--	--	Hs	425	H_2S.
-3	Mr. Eckerson	7	D	-- --	r160	6	28	do.	--	--	Hs	345	Do.
136-357-1	Marlboro Water Dist.	220	P	Dr; S	r104	12	84	Sand and gravel	4	10/12/65	VF	0	dd 20 after pumping 72 hours in 1954 at 400 gpm; H_2S; iron; log. reportedly affected by tide in Hudson River; backfilled 24 ft
-2	do.	--	T	Dr; OE	104	6	104	do.	+1.4	10/12/65	VF	0	Water level reportedly rises and falls with tide in Hudson River.
135-423-1	William Soss	--	D	-- --	r100	6	100	do.	r40	8/ /63	Ter	420	Pumped at 10 gpm with very little draw-down; water is occasionally turbid and sandy.
-2	Jack Schwartz	--	D	Dr; OH	r220	6	--	Shale	--	--	Ter	415	
135-422-1	Mr. Martin	20	D	Dr; OE	r70	6	70	Gravel	r12	10/ /62	VF	380	
135-421-1	Howard Kessler	6	D	Dr; OH	r120	6	60	Shale	--	--	Ter	435	
-2	Walter Kessler	2	D	-- --	143	6	72	do.	25.3	6/15/65	Ter	435	
-3	L. Peebles	5	D	-- --	r195	6	110	do.	flows	7/16/65	Hs	410	H_2S; log.
135-420-1	Edward Wharton	--	A	-- --	r125	6	20	do.	--	--	Hs	430	
-2	Leland W. Hufcut	--	A	-- --	r188	6	11	do.	r50	1964	Hs	405	Drilled 148 ft deep in 1944, drilled 40 ft deeper in 1956.
135-419-1	Charles Wood	30	D	-- --	r100	6	20	do.	--	--	Hs	370	
135-418-1	Ralph Plasno	--	D	-- --	99	6	19	do.	3.9	9/ 2/64	VF	370	Temp 10.3 9/2/64.
-2	Unknown	--	D	-- --	r112	6	25	do.	--	--	Ht	405	
135-416-1	Larry Gunderman and Dalford Connell	5	C	-- --	r119	6	100	do.	r50	5/ /56	Plt	405	
-2	Larry Gunderman	5	D	-- --	r134	6	75	do.	r40	1959	Plt	410	
-3	Dalford Connell	8	D	-- --	r159	6	52	do.	--	--	Ter	410	
-4	Joseph Green	12	D	Dr; OH	r52	6	35	do.	r15	1958	Hs	400	
-5	Warren Van Houten	12	C, D	-- --	r100	6	96	do.	r25	10/ /64	Ter	380	Log.
135-414-1	T. Adams	--	D	Du; P	13	42	13	Till	4.6	5/17/63	Hs	400	
-2	Theo. G. Adams	10	D	Dr; OH	132	6	30	Shale	2.7	5/17/63	Hs	400	
135-413-1	Mrs. Moellmann	--	C	-- --	r110	6	85	do.	--	--	VF	360	
-2	Howard Stewart	10	D	-- --	r101	6	52	do.	13.3	10/26/64	VF	360	H_2S; log.
-3	Clifford Barber	25	D	-- --	r167	6	125	do.	53	1965	Ht	390	Do.
-4	Earl Blanchard	10	D	-- --	r167	6	132	do.	--	--	Hs	390	
135-409-1	Osiris Country Club	170	A	Dr; S	r54	8	34	Gravel	7	1/ /65	Hs	370	Log; 1/4-inch slotted screen.
135-408-1	John Standish	8	D	Dr; OH	r147	6	47	Shale	--	--	VF	400	H_2S.
135-407-1	Gary Terwilleger	5	D	-- --	r105	6	20	do.	--	--	Hs	575	

Table 1.--Records of selected wells and springs (Continued)

Well number	Owner's name	Reported yield (gallons per minute)	Use	Method of construction; completion	Depth of well (feet)	Diameter (inches)	Length of casing (feet)	Aquifer	Water level: Below land surface (feet)	Water level: Date	Topographic situation	Altitude above sea level (feet)	Remarks
135-404-1	William O. Post	--	D	Dr; OE	r72	6	72	Gravel	--	--	Hs	540	
135-402-1	James Horton	11	D	Dr; OH	r85	6	5	Quartzite	--	--	Ter	555	
135-400-1	Dominick Felicello	10	D	-- --	r250	6	37	Shale	3.4	9/16/65	Hs	525	
-2	do.	--	D	-- --	204	6	--	do.	3.9	9/16/65	Hs	525	
135-358-1	Grazios Nurseries	17	A, D	-- --	r136	6	--	Carbonate	--	--	Hs	150	
134-425-1	Arthur Gillespie	3	D	-- --	r180	6	130	Shale	--	--	Hs	565	Log.
134-424-1	Henry Miller, Jr.	10	C, D	-- --	r85	6	8	do.	9	8/ /62	Hs	430	H_2S.
-2	Henry Miller, Sr.	7	A, D	-- --	r73	6	70	do.	r10	3/ /64	Ter	425	Log.
134-423-1	Mike Cirina	16	D	Dr; OE	r47	6	47	Gravel	r13	1945	Ter	425	
134-422-1	Mrs. Otto Wedlick	10	D	Dr; OH	r126	6	54	Shale	r25	1963	Hs	490	H_2S; log.
-2	Mr. Martin	5	D	-- --	r90	6	40	do.	r31	--	Hs	510	
134-421-1	Mr. Turini	--	D	-- --	r207	6	81	do.	r61	--	Ht	550	
134-420-1	Robert Haynes	22	D	-- --	r90	6	20	do.	--	--	Hs	500	H_2S.
134-419-1	Fred Redder	--	D	-- --	r48	6	20	do.	--	--	Hs	495	
-2	Norman Ketcham	20	D	-- --	r110	6	12	do.	r22	1961	Hs	420	H_2S.
134-417-1	Freda Irber	8	D	-- --	r98	6	20	do.	r3	7/ /58	Hs	439	Do.
-2	A. Pollack	10	D	-- --	r104	6	22	do.	r12	1964	Hs	430	
134-416-1	Paul Huba	5	D	-- --	r160	6	33	do.	14.2	7/13/65	Pln	410	
134-415-1	Mrs. G. Thomsen	--	D	-- --	62	6	--	do.	5.5	5/23/63	Hs	440	
-2	Mrs. J. Gallagher	12	D	-- --	90	6	--	do.	20.0	7/12/65	Hs	410	H_2S.
134-414-1	Mrs. F. Weeden	--	D	-- --	140	6	--	do.	11.7	5/23/63	VF	410	Iron.
-2	Alfred Rhinehart	25	A	-- --	r176	6	172	do.	28.0	7/ 8/65	Hs	370	Log.
-3	John Maroney	6	D	-- --	73	6	--	do.	14.0	7/ 8/65	Pln	420	
-4	Edward Nash	--	D	-- --	115	6	--	do.	27.1	7/12/65	Pln	410	
-5	Alfred Rhinehart	25	D	-- --	100	6	40	do.	24.8	7/12/65	Ht	370	
-6	do.	--	D	Du; P	19	40	19	Till	14.6	7/12/65	Ht	370	
-7	Edward Bertram	7	D	Dr; OH	r123	6	50	Shale	r20	1958	Hs	390	Log.
134-413-1	K. N. Volk	9	A, D	Dr; OH	r210	6	70	do.	r40	1930	VF	380	ad 100.
-2	Fred Reichle	20	D	-- --	r60	6	18	do.	r12	1962	Ter	420	
-3	Martin J. Wolfe	9	D	-- --	r103	6	50	do.	r20	1959	Hs	380	H_2S; log.
134-412-1	Hal Ross	12	D	-- --	r220	6	160	do.	--	--	Hs	460	
134-411-1	Village of Walden	--	T	-- --	r22	3	--	do.	--	--	VF	280	Log.
134-410-1	Abe Thorn	20	D	Dr; OH	r239	6	157	do.	--	--	Hs	450	H_2S.
-2	Richard E. Anderson	8	D	-- --	r200	6	150	do.	--	--	Ht	450	

Table 1.--Records of selected wells and springs (Continued)

Well number	Owner's name	Reported yield (gallons per minute)	Use	Method of construction; completion	Depth of well (feet)	Diameter (inches)	Length of casing (feet)	Aquifer	Water level: Below land surface (feet)	Water level: Date	Topographic situation	Altitude above sea level (feet)	Remarks
134-410-3	Village of Walden	--	T	-- --	r17	3	--	None	r3.2	7/19/63	Hs	390	Log.
-4	do.	--	T	-- --	r48	3	--	do.	--	--	VF	360	Do.
-5	do.	--	T	-- --	r49	3	--	do.	r1.6	7/24/63	VF	350	Do.
134-409-1	Laura Chaffee	7	D	Dr; OH	r167	6	123	Shale	r55	--	Pln	410	
-2	Lake Osiris Association	150	P	Dr; S	r98	8	90	Sand and gravel	r3.	7/ /65	Hs	360	Log; 8 ft of screen with number 50 slot.
134-406-1	Matthew Heinz	--	D	Dr; OH	r126	6	--	Shale	--	--	Hs	515	
134-358-1	Jova Brick Co.	200	I	Dr; OE	r70	6	70	Sand and gravel	(r)flows	6/ 4/65	VF	5	Log; flows when not in use.
-2	do.	--	P	Dr; OH	r225	6	25	Carbonate	flows	2/ /66	Hs	20	Carbon dioxide; flows 10 gpm.
133-426-1	George Shearer	--	D	-- --	87	6	55	Shale	39.0	8/18/64	Hs	460	
-2	do.	--	D	Du; P	23	24	23	Till	18.1	8/18/64	Ht	460	
133-424-1	Paul Oates	6	D	Dr; OH	r53	6	48	Shale	r18	1949	Hs	480	
-2	John Gale	6	D	-- --	r54	6	53	do.	--	--	Hs	480	
-3	Kurt Simon	30	A	Dr; OE	r58	6	58	Gravel	r20	1959	VF	450	H_2S.
-4	do.	35	D	-- --	r65	6	65	do.	r20	1963	Hs	465	Log.
133-418-1	Homer Comfort	8	D	Dr; OH	r71	6	17	Shale	r16	9/ /64	Ter	470	
133-415-1	Ray Wild	7	A	-- --	r180	6	24	do.	r20	11/ 5/64	VF	395	H_2S.
133-414-1	David H. Smith	30	A, D	-- --	r117	6	42	do.	18.0	5/27/63	VF	400	Do.
-2	do.	--	D	Du; P	26	30	26	Till	22.4	5/27/63	VF	410	
-3	Andrew Hoekstra	25	A, D	Dr; OH	r146	6	92	Shale	r20	1957	Pln	410	H_2S; log.
-4	Dr. R. L. Schmitt	20	D	-- --	r165	6	50	do.	25.1	7/ 8/65	Ht	390	
133-413-1	Robert F. Baisley	6	D	-- --	r106	6	35	do.	r15	1957	Pln	405	Log.
-2	do.	5	D	-- --	r73	6	10	do.	r8	1957	Pln	390	H_2S.
-3	Estate of L. D. Morrissey	25	D	-- --	102	6	22	do.	21.3	7/14/65	Ht	430	
133-412-1	do.	--	A	-- --	163	6	35	do.	28.5	7/14/65	Ht	410	H_2S.
-2	Village of Walden	--	T	-- --	r27	3	--	None	r2.8	7/30/63	VF	400	Log.
133-411-1	do.	--	T	-- --	r28	3	--	do.	--	--	Hs	395	Do.
133-410-1	do.	--	T	-- --	r54	--	--	do.	--	--	VF	350	Do.
-2	do.	20	T	Dr; --	r24	6	--	Gravel	--	--	VF	350	dd 20 after pumping 9 hours; log.
-3	do.	--	T	-- --	r10	3	--	None	--	--	Hs	370	Log.
-4	do.	--	T	-- --	r45	3	--	do.	--	--	Pln	350	Do.
133-409-1	do.	100	T	-- --	r41	--	--	Gravel	--	--	VF	350	dd 3; log.
-2	do.	--	T	-- --	r29	--	--	None	--	--	VF	350	Log.
-3	do.	30	T	-- --	r48	6	--	Sand and gravel	r0	5/29/56	VF	355	dd 24 after pumping 8 hours; log.
-4	do.	300	P	Dr; S	r51	8	40	do.	13	5/14/65	VF	350	Log; backfilled 3 ft.

Table 1.--Records of selected wells and springs (Continued)

Well number	Owner's name	Reported yield (gallons per minute)	Use	Method of construction; completion	Depth of well (feet)	Diameter (inches)	Length of casing (feet)	Aquifer	Water level: Below land surface (feet)	Water level: Date	Topo-graphic situa-tion	Altitude above sea level (feet)	Remarks
133-409-5	Village of Walden	--	T	-- --	r36	--	--	None	--	--	VF	350	Log.
-6	do.	381	P	Dr; S	r43	16, 8	33	Gravel	7.0	5/14/65	VF	350	Anal; dd 20.5 after pumping 24 hours; log.
-7	do.	480	P	Dr; S	r37	--	--	do.	15	5/14/65	VF	355	Water level measured while pumping 480 gpm.
133-406-1	D. Gomez	4	D	Dr; OH	r200	6	5	Shale	flows	9/16/65	Hs	490	
-2	do.	--	D	-- --	r268	6	5	do.	r80	--	Hs	580	
133-404-1	Max Dosik, M. D.	--	D	-- --	r224	6	--	do.	--	--	Hs	595	
133-400-1	Jackson Baldwin	20	D	-- --	r300	6	175	do.	--	--	Hs	460	
132-425-1	Roy Johnson and Clair Dickinson	3	D	Dr; OE	r120	6	120	Sand and gravel	r92	1940	Hs	580	Log; well ends on bedrock surface.
-2	do.	180	I	Dr; OH	r255	8	--	Shale	r25	--	Hs	560	
-3	Sherwood Allen	25	D	Dr; OE	r64	6	64	Gravel	r11	1940	Hs	530	
-4	Arthur Terwilliger	36	D	-- --	r64	6	64	Sand and gravel	r4.5	6/ /64	Hs	505	Log.
-5	Walt Dickinson	--	D	Dv; S	r37	1	37	do.	r0	1/ /64	VF	500	Log; flowed when driven to 25 ft.
-6	Mrs. Mario Furlin	1	D	Dr; OH	r286	6	73	Shale	r70	--	Hs	540	
-7	Bruno Furlin	15	D	-- --	r105	6	103	do.	r70	--	Hs	580	Log.
-8	Kenneth Angeloni	15	D	-- --	r73	6	48	do.	r38	1956	VF	550	
-9	Mrs. Josephine Walters	--	D	-- --	r98	6	--	do.	--	--	Hs	630	
132-421-1	Art Lunney	21	D	-- --	r56	6	40	do.	r13	7/ /64	Pln	500	
-2	John Bell	12	D	-- --	r175	6	45	do.	--	--	Pln	520	
-3	do.	25	D	-- --	r75	6	40	do.	r7	--	Pln	500	
-4	do.	21	C, D	-- --	49	6	40	do.	10.2	8/29/64	Pln	500	
132-420-1	Vincent Viola	9	D	-- --	r54	6	44	do.	r20	1953	Hs	510	Partial anal.
-2	Anthony Viola	25	C, D	-- --	r48	6	28	do.	--	--	Hs	515	
132-418-1	Joseph Scoffone	10	D	-- --	r32	6	10	do.	r15	6/ /53	Hs	595	
132-414-1	Frank O. Moffitt	10	D	-- --	r50	6	23	do.	r6	5/ /58	VF	380	
-2	James Kniffin	30	D	-- --	r74	6	33	do.	r10	1964	VF	385	
-3	Carl Helstrom	10	D	-- --	r85	4	42	do.	r8	7/ /64	VF	390	
-4	Barney Miller	6	D	-- --	53	6	20	do.	10.2	7/ 8/65	Hs	380	
-5	William Hoekstra	25	A, D	-- --	98	6	18	do.	21.7	7/ 8/65	Ht	390	
132-413-1	Levi Sinsabaugh	5	D	-- --	r107	6	20	do.	--	--	Hs	400	
132-406-1	Frank Demaro	9	D	-- --	r125	6	100	do.	--	--	Hs	493	Log.
132-402-1	William Coyne	--	D	-- --	r98	--	--	do.	--	--	Hs	380	
132-400-1	Milton Quick	--	D	-- --	r497	6	3	Carbonate	--	--	Hs	360	
-2	Philip De Santis	--	D	-- --	420	6	3	do.	43.1	9/20/65	Hs	360	
131-427-1	Don Hamilton	15	D	-- --	r62	6	43	Shale	--	--	Hs	510	

Table 1.--Records of selected wells and springs (Continued)

Well number	Owner's name	Reported yield (gallons per minute)	Use	Method of construction; completion	Depth of well (feet)	Diameter (inches)	Length of casing (feet)	Aquifer	Water level: Below land surface (feet)	Water level: Date	Topographic situation	Altitude above sea level (feet)	Remarks
131-423-1	Mr. Stubbs	5	D	-- --	110	6	30	Shale	15.1	7/15/65	Hs	680	Iron.
-2	Harry Jacobs	7	D	-- --	88	6	15	do.	6	1965	Hs	640	
131-422-1	Raymond Yarwood	--	D	Dv; S	22	2	--	Sand	--	--	VF	580	
131-419-1	Raymond Rollings	10	D	Dr; OH	154	6	14	Shale	40.2	7/14/65	Hs	530	dd 77; H_2S.
-2	Damian Pitcalthly	--	D	-- --	185	--	--	do.	37.7	7/14/65	Ht	540	
-3	Mr. Howe	10	D	-- --	155	6	--	do.	34.0	7/14/65	Pln	530	
-4	Linn Coleman	5	D	-- --	r205	6	15	do.	r15	--	Pln	530	H_2S.
-5	Ralph White	25	D	-- --	r42	6	22	do.	r12	1965	Pln	530	
131-418-1	Robert Meiers	5	D	-- --	r215	6	27	do.	r12	1957	Pln	510	H_2S.
131-417-1	A. Gruner	12	D	-- --	r195	6	20	do.	--	--	Hs	550	Do.
131-416-1	Anthony Wild	40	A, D	-- --	r70	6	20	do.	r15	3/ /53	Hs	383	
-2	Rev. Richard Joyce	5	D	-- --	r268	6	25	do.	r100	1964	Hs	590	
-3	Mr. Haigle	6	D	-- --	r100	6	20	do.	r45	--	Hs	470	
131-414-1	Joseph Kalb	6	D	-- --	r83	6	17	do.	r15	9/ /63	Ter	385	H_2S.
-2	Village of Montgomery	90	P	Dr; S	r38	8	--	Gravel	4.5	4/ 6/65	Ter	375	
-3	do.	15	T	Dr; OE	r15	8	15	None	r1	2/18/60	Ter	375	Log.
-4	do.	100	D	Dr; S	18	8	--	Sand and gravel	1.9	5/13/65	Ter	375	Log; water level 12.0 ft 12/20/65; backfilled 6 ft.
-5	do.	55	T	Dr; --	r33	8	--	Sand	r4.5	3/ 9/60	Ter	380	Log; specific capacity 2.2 gpm per ft of drawdown; backfilled 5 ft; destroyed.
-6	do.	30	T	Dr; --	r23	8	--	Sand and gravel	r4.3	1/12/60	Ter	380	Log; backfilled 6 ft; destroyed.
-7	do.	15	T	Dr; --	r22	8	--	do.	r1.0	2/ 3/60	VF	375	dd 20; log; backfilled 3 ft; destroyed.
-8	do.	50	P	Dr; OH	203	6	25	Shale	8.0	3/18/66	Ter	370	dd 100 after pumping 1 hour; H_2S; log.
131-413-1	do.	83	P	Du; P	16	360	16	Till	7.9	5/13/65	VF	350	Temp 7.5 5/13/65; bottom of well is open brick.
-2	do.	8	P	Dr; OH	119	4	--	Shale	3.2	5/13/65	VF	350	H_2S.
-3	do.	10	P	-- --	126	4	--	do.	20.1	12/21/65	VF	350	Do.
-4	Norbury Chambers	5	D	-- --	r140	6	42	do.	r33	--	Ht	400	
-5	Village of Montgomery	20	P	-- --	r307	6	20	do.	20.1	8/26/65	VF	350	H_2S.
-6	Valley Central School	40	I	-- --	r300	6	70	do.	--	--	Ter	500	
-7	do.	20	I	-- --	r345	6	45	do.	r25	8/ 6/65	Ter	500	Log.
131-412-1	Montgomery Heights	125	P	-- --	244	8	27	do.	14.1	8/ 5/65	Hs	420	
131-411-1	Leland S. Van Kleeck	25	D	-- --	r114	--	36	do.	--	--	Pln	430	
131-409-1	Arnold Puff	18	C	-- --	r98	6	25	do.	r10	1964	Plt	425	
131-407-1	Albert Lamberson	4	D	-- --	r145	6	23	do.	--	--	VF	445	

Table 2.--Lithologic logs of wells and test borings

EXPLANATION

Locations of wells and test borings are shown in plates 1 and 2.
Well and test-boring logs have been generalized in some cases for consistency.

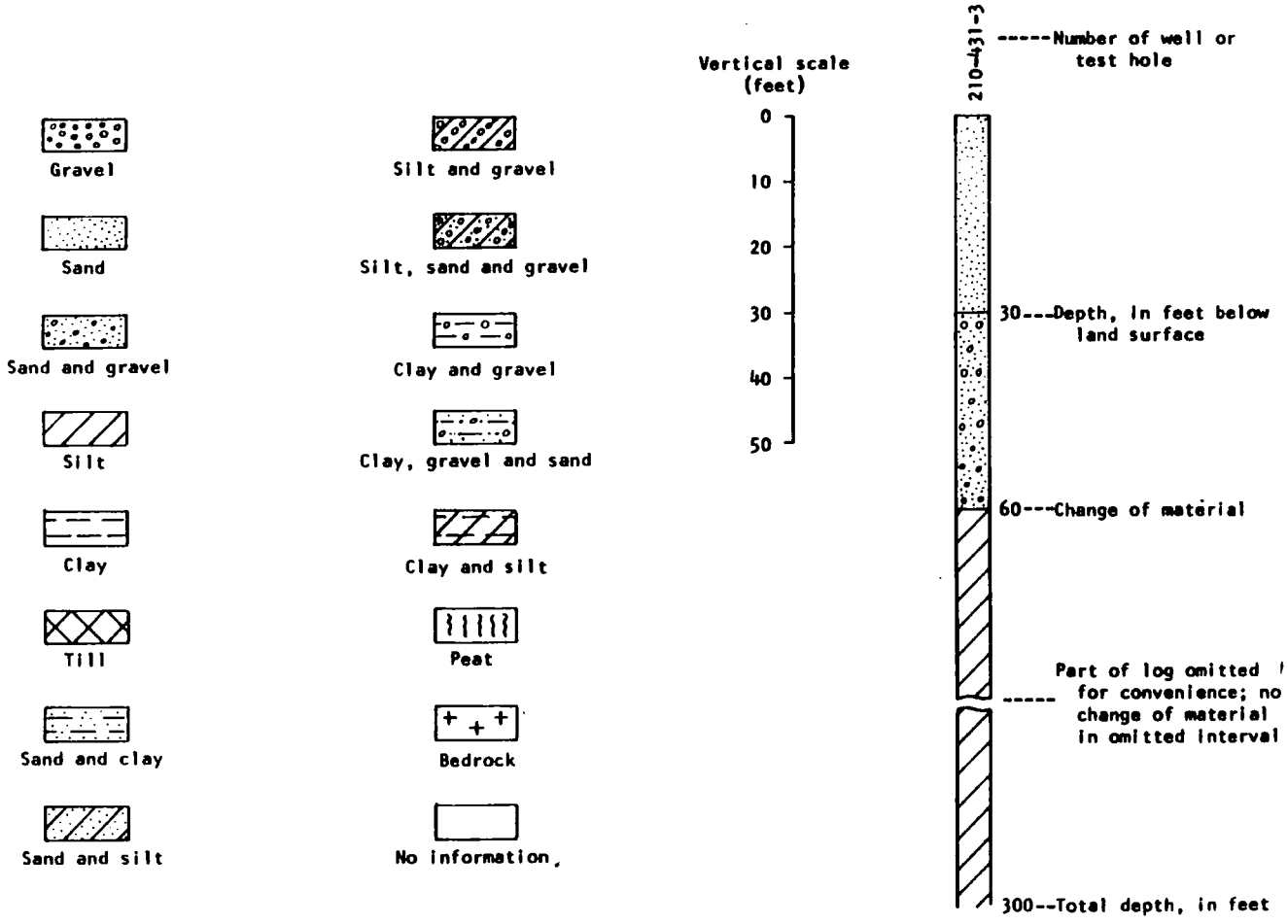
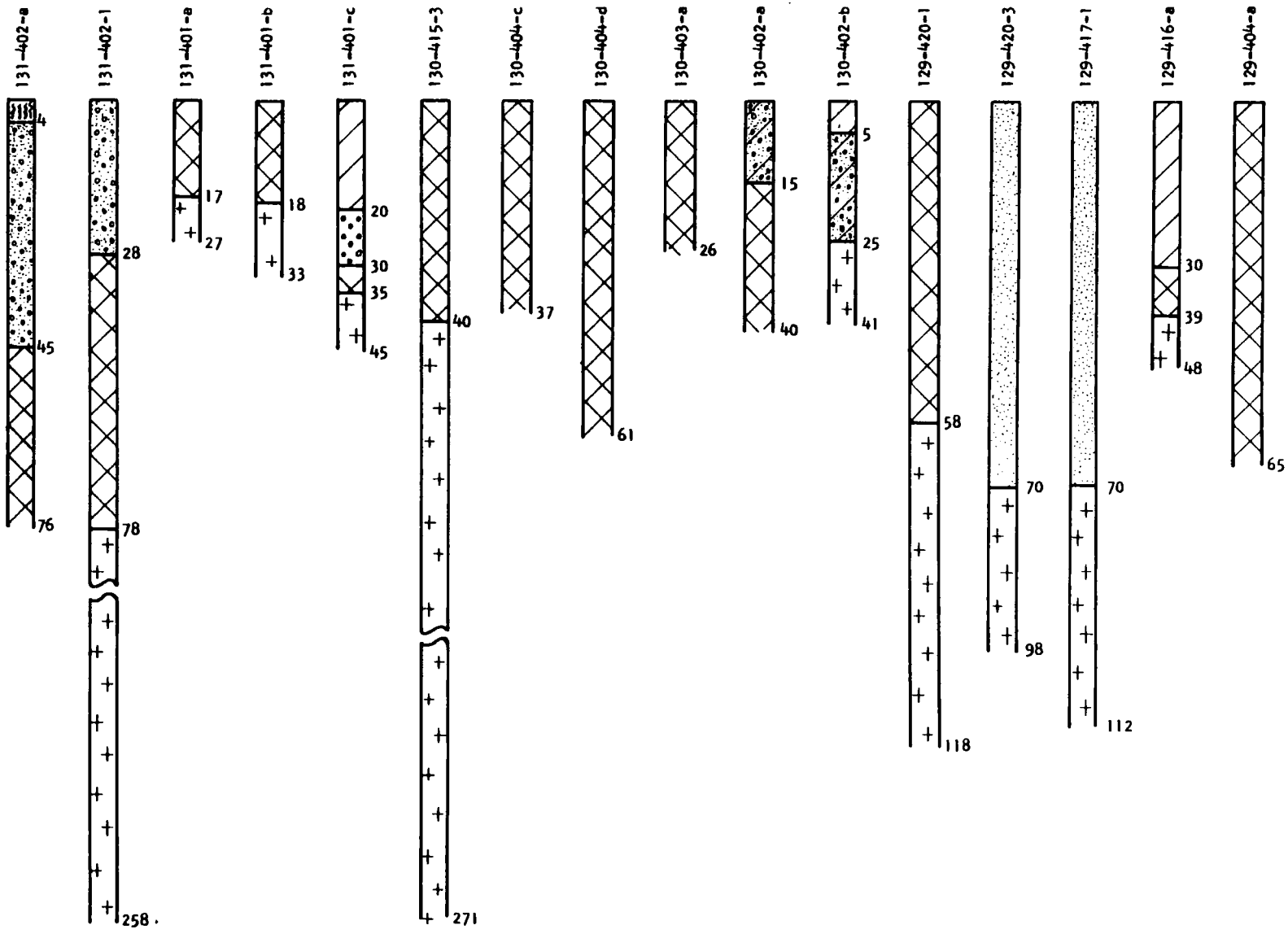


Table 2.--Lithologic logs of wells and test borings (Continued)



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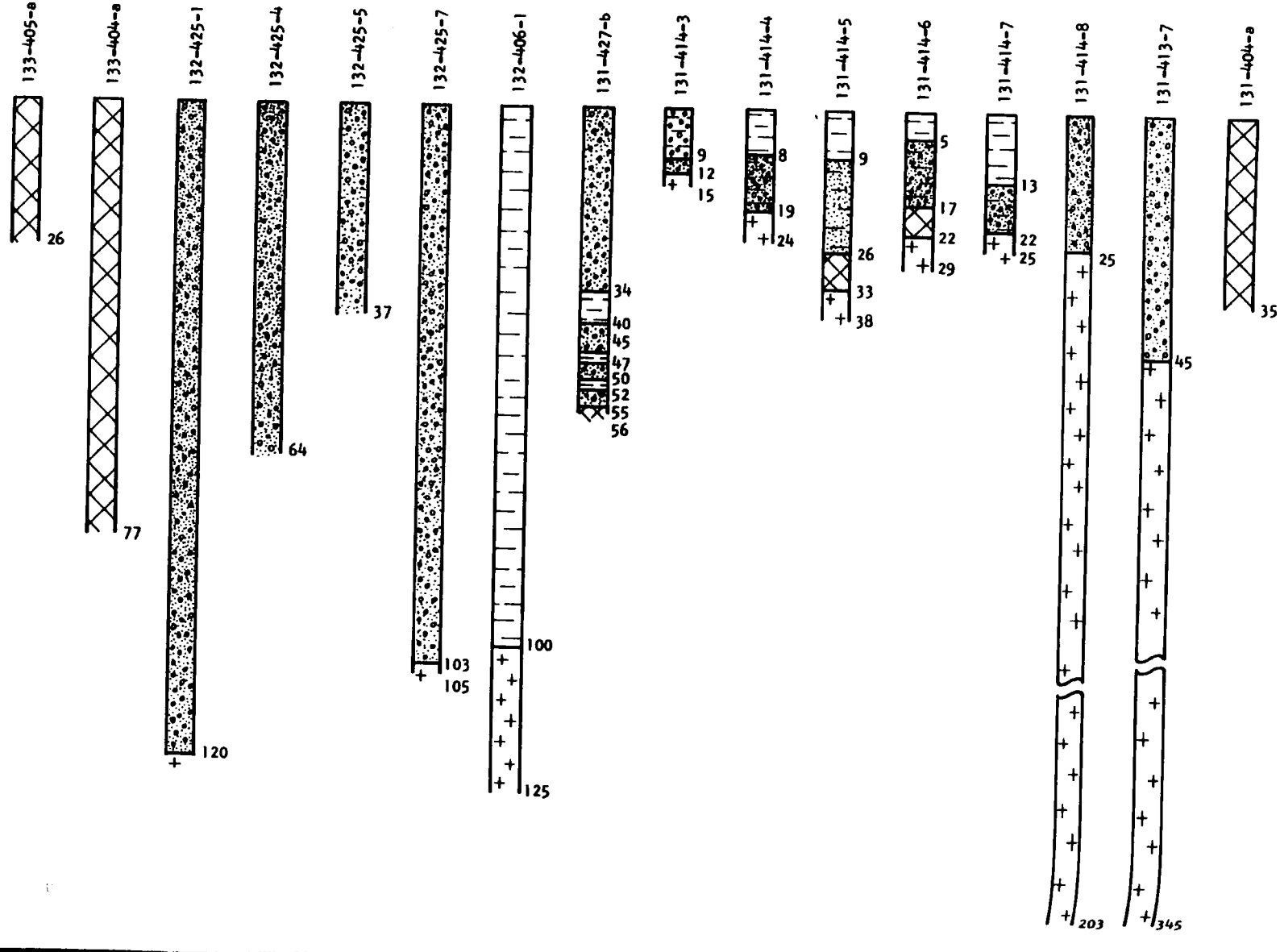


Table 2.--Lithologic logs of wells and test borings (Continued)

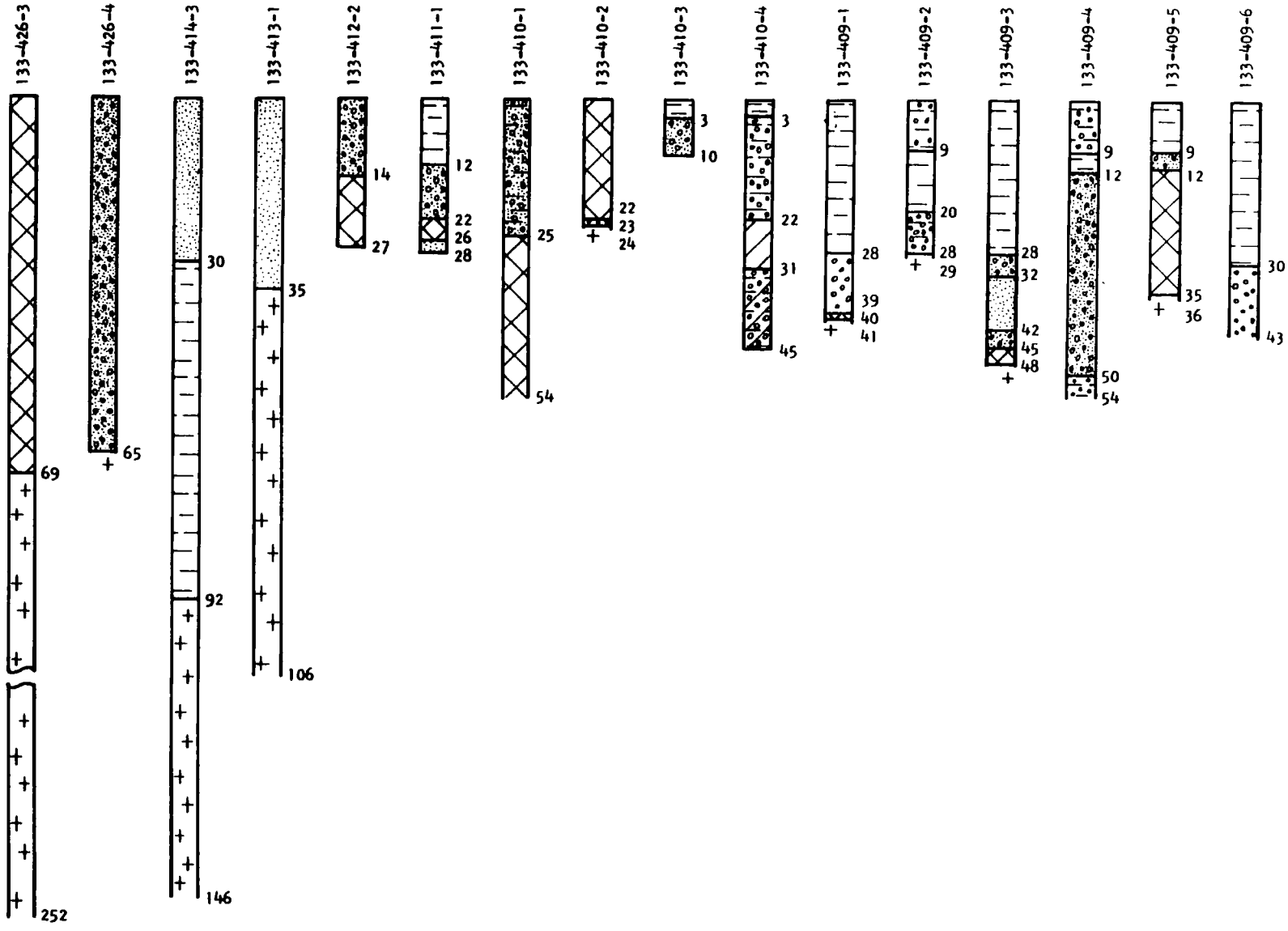
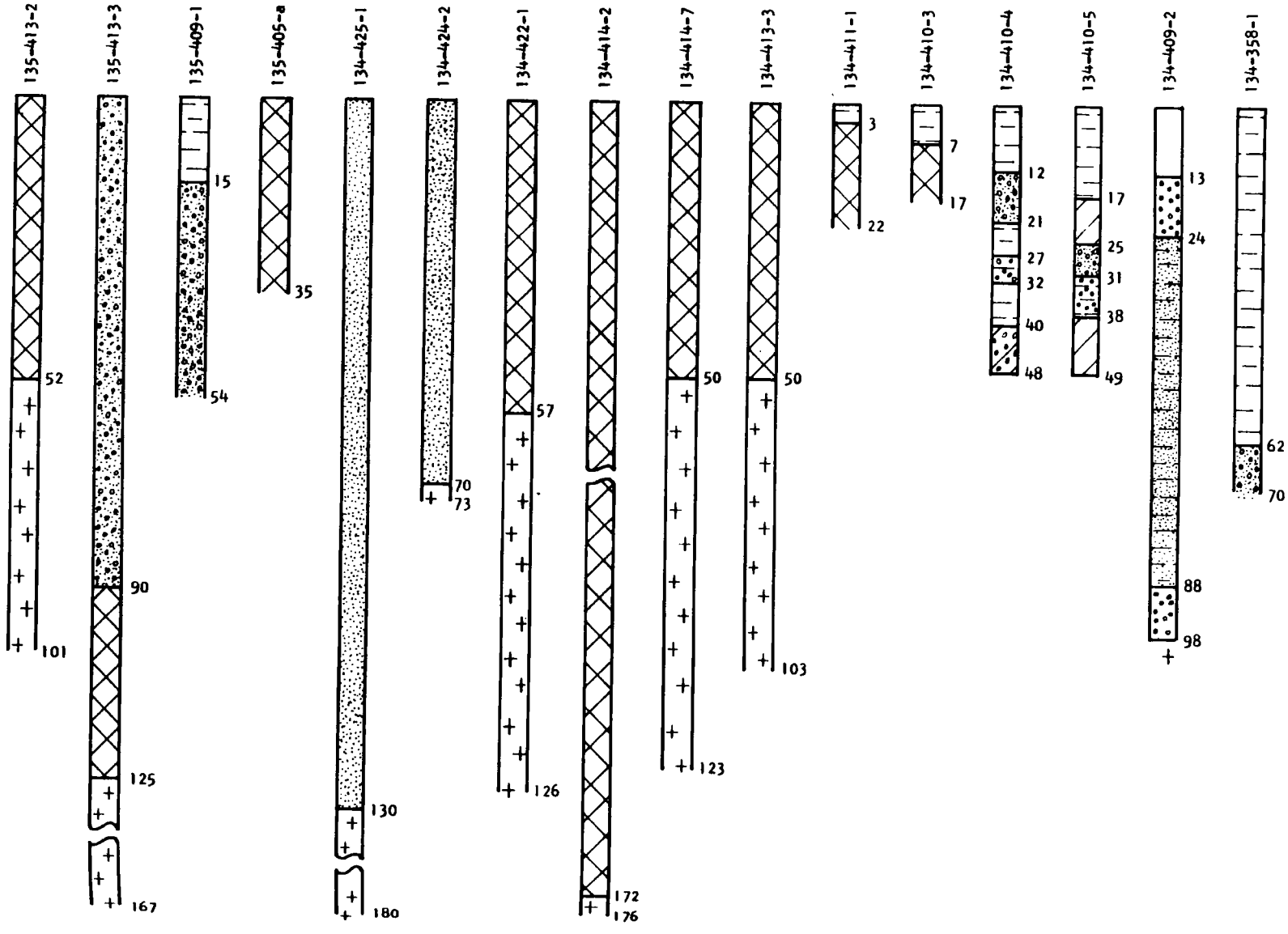


Table 2.--Lithologic logs of wells and test borings (Continued)



REFERENCE NO. 2

0 C
0 2 8703-45

NUS CORPORATION

II

0049

Champion International Corp.
TDD# 02-8703-45
Project Manager: Denise Horgan
Logbook# 0049
March 24, 1987

04/01/87 02-8703-45 4

CHAMPION INTERNATIONAL CORP./RETAIL PKG. DIV

WALDEN, ORANGE COUNTY, NEW YORK

NUS PERSONNEL:

DENISE HURGAN - P.M. Denise Hurgan

LAURA LAFORGE - Laura LaForge

STEVE MAYBURY - Steve E. Mayb

THE ABOVE HAVE READ AND UNDERSTOOD THE WORKPLAN. ALSO ATTENDED THE TAILGATE SAFETY MEETING.

WEATHER CONDITIONS: SUNNY, 10-15 mph winds
45°

INSTRUMENTS

	EPA #	
OVA G	428821	Calib. Ind 3/30
HNU	469747	
MINI RAD	428588	

CAMERAS:

CHINON	469756
INSTAMATIC	428802

SCBA'S 192003 - Steve Mayburg
428552 - Laura LaForge
307170 - Denise Hurgan

Denise Hurgan 4/2/87 Laura LaForge 4/3/87

4/1/87 02-8703-45 5

1000 Arrived at Champion Intl
met John DeFillippi from ERM
Harold Judd from CIC
Wayne Gewin Plant Manager
Ralph Willis
~~Charlie McNeely~~

1015 Mr. Gewin said site is ~40 acres; 180 sq. yds. of buildings

1020 Meeting with the above gentlemen in Wayne Gewin's office. D.H., S.M. AND L.L. ATTENDED THE MEETING
The Discussion Encompassed the Following
- There are no monitoring wells on-site
- The Clay reported in the 103(c) to underlie and cover the trenches is natural clay
- THERE ARE TWO EMPLOYEES WHO WORKED AT THE PLANT WHEN THE WASTE WAS DUMPED INTO THE TRENCHES.
- THE WASTES DUMPED WERE MOST LIKELY INKS, GLUE, MIXTURES, VOC BASE
- THE PLANT CONVERTS PAPER INTO BAGS - COATED, BEACHED
- THEY SAVE THEIR WASTEWATER
- THE PLANT JUST INSTALLED AN ALAR PROCESSING SYSTEM WHICH WILL SEPARATE SLUDGE AND WATER - THE WATER WILL BE CLOSE TO POTABLE FOLLOWING TREATMENT / It's not yet in operation now.
- NOW THE W.W. IS PLACED IN 55 GALLON DRUMS
- THE SLUDGE WASTE (55 GALLON DRUMS) IS STORED IN THE ACTIVE HAZARD WASTE COMPOUND, RECRA PERMITTED, SEACOAST IS THE HAULER

Denise Hansen 4/3/87 Laura LaForge 4/3/87

4/1/87

MEETING CONT'D

- THE WASTE IS HIGH IN CHROMIUM AND Pb - ONLY TRACE ORGANICS
- ORGANICS - CHEM WASTE MANAGEMENT HAULS TO RECRA FACILITY
- WATER BASE WASTES TO CITY SEWER
- CHAMPION ACQUIRED THE PLANT IN '76 or '75
- THE FACILITY HAS DEC PERMITS FOR AIR EFFLUENTS FOR THE TWO ACTIVE INCINERATORS ON SITE
- THE FACILITY USES MUNICIPAL WATER
- THE FACILITY HAS NPDES PERMITS FOR STORM DRAINS ON-SITE
- THE TWO TRENCHES IN QUESTION WERE MOST LIKELY NOT PERMITTED
- NO PREVIOUS REMEDIAL ACTIVITIES AT THE FACILITY
- NO PRETREATMENT PROGRAM IN THE CITY

10:40 An Employee Charlie McNeely joins the meeting
He was employed at the facility at the time of the dumping.
Fork lift driver ; Question Charlie M.
C.M. said there are two trenches
- THE TRENCHES ARE UNLINED
- TRENCHES ARE OVER 10 FT. WIDE
- ONLY 55 GALLON DRUMS CONTAINING MOST LIKELY SLUDGE WERE DUMPED IN THE TRENCHES - Approximately 100 DRUMS
DUMPING OCCURED ~ IN 1961 - ONE TIME OCCURRENCE
- DUG TRENCHES WITH A BULLDOZER - OVER 8 FT. DEEP
- INTERSTATE BAG CO WAS OWNER AT TIME OF THE DUMPING FOLLOWED BY ALBERNARLE, WALDORF?, AND THEN CHAMPION
- PAPER PROCESS AT THE TIME OF THE DUMPING:
NATURAL WHITE - BLEACHING, PRINTING W/INKS
ALCOHOL BLUE AND GREEN

Dennis Hagan 4/2/87 Laura LaForge 4/3/87

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11:00 DECON SET-UP OF DECON AREA.

11:05 Tailgate safety meeting conducted by Steve Maybury. Laura LaForge and S.M. on air
For a perimeter survey of trench area
D.H. will be back up for A.R.
Will also check the drum areas
Will also check the other side of the plant
Will continuously monitor the air using the OVA and HNU.
Saranex, bootie, and Latex gloves

11:15 Finished suiting up in Saranex
SCBA's checked out okay
instrument - OVA and HNU checked out okay
with charged

11:25 Jim DeFeliz said the trenches
are approximately 100 ft wide and 300 ft long

11:30 S.M., L.L., D.H. suited up in Level B

11:35 S.M. and L.L. go on A.R.
D.H. will keep visual contact
HNU and OVA are zeroed on one

Dennis Aragon 4/2/87 Laura LaForge 4/3/87

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11:38 Entered Gate
I suggested to J.D., H.J., C.M., and R.W.
to stand back and follow S.M. and L.L.
w/ Air Monitoring

11:42 Property is not entirely fenced according to
to Ralph Willis
Beyond the gate is a wooded area
sloped area : excavating for a new
baseball diamond (to the east)
Approximately 400 employees
The entire site is not fenced

11:45 S.M. and L.L. continue Air Monitoring

11:52 Pictures of trench area

11:52 S.M. and L.L. off air
Reported no readings on HNU or OVA
Ponded water at bottom of slope
Noted a dog on site.
S.M. said trench area is swamp-like
Crushed drum - no readings on HNU or OVA

11:53 Pictures of [illegible]

12:00 Proceed to Beyond Dump Area

Denise Jorgen 4/2/87 Laura LaTorre 4/3/87

4/1/87 02-8703-45 9

12:01 S.M. GOES ON AIR

12:02 S.M. GOES INTO THE ACTIVE HAZARD WASTE COMPOUND USING THE OVA AND THE HNU WHILE ON LEVEL B.

DRUMS ARE STORED ON PALLETS (WOODEN)
SOME DRUMS ARE ON THE CEMENT CURB (NO PALLETS)
OLD STEEL TRASH ie. FILE CABINETS AND BURDUES

12:08 SM. RETURNS FROM SURVEY AND GOES OFF AIR
NO READINGS ON OVA OR HNU
PROCEED TO DRUM SITE ON SIDE OF BUILDING

12:11 WALKING ALONG THE SIDE OF THE PLANT NEAR THE INCINERATORS
THE OVA PEGS OUT ~ 3 PPM
- DUE TO AIR EMISSIONS FROM INCINERATORS

12:13 DEFAIRO JUDD, BEGIN QUESTIONED OUR AUTHORITY TO TEST THE DRUMS NEAR THE BUILDING.
IS INSPECTION OF THE PROCESS AREA IS OUR JURISDICTION

12:15 PICTURES OF S.M. SURVEYING THE DRUMS USING OVA + HNU

12:16 DRUMS IN QUESTION ARE RAW OUR MATERIALS
THE INCINERATOR COMPRESSORS
AIR EMISSION PERMITS WITH THE DOE

Dennis Hargan 4/2/87 Laura LaPage 4/3/87

4/1/87 02-8703-45 10

12:20 S.M. RETURNED
BERMED AREA AROUND THE DRUMS, A
DRAIN OUT OF THE CONCRETE WITH A PLUG ON IT
GOES INTO THE CONCRETE TROUGH

12:23 S.M. L.L. D.H. GO ON AIR

12:25 S.M. L.L. D.H GO OFF AIR
HAVE RETURNED TO THE VEHICLE
LEAVING SCBA'S AT THE VEHICLE
WILL WALK THE TRENCH AREA IN LEVEL D
USING CONSTANT AIR MONITORING WITH THE
OVA AND THE HNU.

12:35 HAROLD JUDD WILL WALK THE TRENCH AREA
WITH S.M., L.L. AND DH

12:37 PICTURES OF GATE ENTRANCE TO TRENCH AREA

12:40 WALKING TRENCH AREA
DRUM CLD NO READINGS ON OVA + HNU

12:42 MARSHY AREA NO READINGS ON OVA or HNU

12:43 SOIL DEPRESSIONS IN TRENCH AREA
AREA IS WET NO READINGS ON OVA or HNU
2 OLD TIRES ON SITE

12:45 TRENCHES ARE BASICALLY LOCATED BETWEEN 2
SMALL EVERGREEN
PONDED AREA HERE NO AMBIENT READING ON OVA
OR HNU
NO READINGS ON OVA OR HNU WHEN A
SMALL AREA IS DISTURBED NO EDGE OF PONDED
AREA

Denise Aurgen 4/2/87 Laura LaFarge 4/3/87

4/1/87 02-8703-45

12:45 ANOTHER POUNDING AREA
NO READINGS ON OVA or HNU

12:53 POUNDING AREA AT BASE OF SLOPE

13:00 PICTURES OF ACTIVE HAZARD WASTE COMPOUND

13:05 PARTED W/ MR. JOOD
RETURNED TO VEHICLE TO PACK UP

13:25 Leave Site

Daniel [illegible] 4/2/87 Laura LaFarge 4/3/87

~~04~~/0/87

CHAMPION INTL. CORP PHOTOLOG / RECON

ALL PHOTOS TAKEN BY DENISE HORGAN

#	TIME	PHOTO #	SAMPLE #	SAMPLER	DATE	DESCRIPTION
1-P 0-S	1150	1			4/1/87	TRENCH AREA LOOKING SOUTHWEST
2-P 1-S	1155	2			4/1/87	ROAD LEADING OUT TO PROPERTY LOOKING SOUTH
3-P 2-S	1215	3			4/1/87	DRUMS HEAD INCINERATOR AND PROCESSING AREA LOOKING EAST
4-P 3-S		4				
5-P 4-S	1237	5			4/1/87	GATE ENTRANCE TO TRENCH AREA LOOKING SOUTH
6-P 5-S	1250	6			4/1/87	PONDING IN TRENCH AREA LOOKING SOUTH
7-P 6-S	~~1250~~ 1255	7			4/1/87	PONDING AT BASE OF SLOPE ~~AT EASTERN SIDE OF SITE~~ LOOKING NEAST
8-P 7-S	1301	8			4/1/87	ACTIVE HAZARD COMPOUND LOOKING SOUTH FROM OUTSIDE FENCE
-P -S		9				
-P -S		10				
-P -S		11				
-P -S		12				
-P -S		13				
-P -S		14				
-P -S		15				
-P -S		16				

Denise Horgan 4/3/87 Laura LaBoye 4/3/87

REFERENCE NO. 3

Uncontrolled Hazardous Waste Site Ranking System

A Users Manual

(HW-10)

Originally Published in
the July 16, 1982, *Federal Register*

United States
Environmental Protection
Agency

1984

3.0 GROUND WATER MIGRATION ROUTE

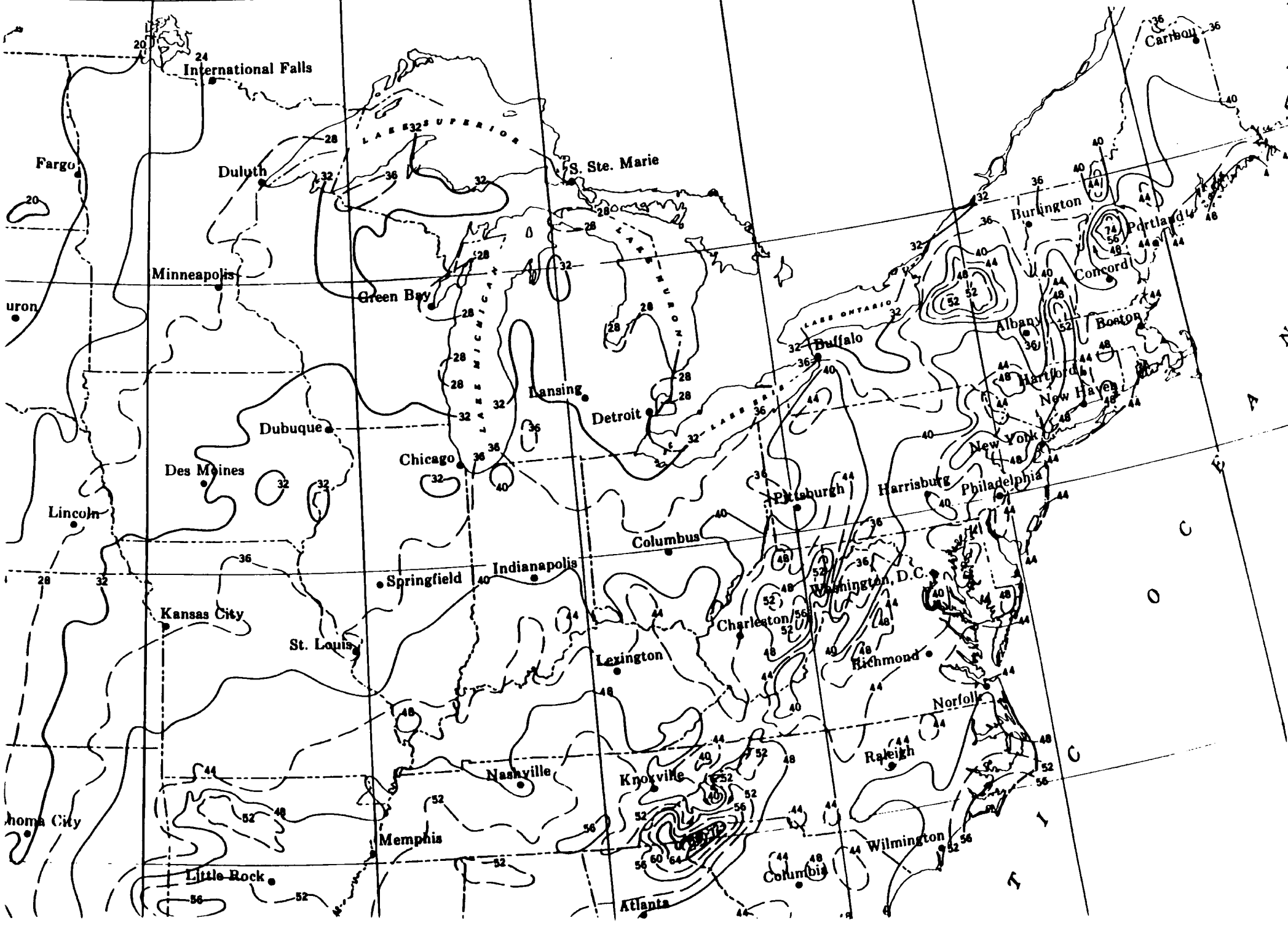
3.1 Observed Release

If there is direct evidence of release of a substance of concern from a facility to ground water, enter a score of 45 on line 1 of the work sheet for the ground water route (Figure 2); then you need not evaluate route characteristics and containment factors (lines 2 and 3). Direct evidence of release must be analytical. If a contaminant is measured (regardless of frequency) in ground water or in a well in the vicinity of the facility at a significantly (in terms of demonstrating that a release has occurred, not in terms of potential effects) higher level than the background level, then quantitative evidence exists, and a release has been observed. Qualitative evidence of release (e.g., an oily or otherwise objectionable taste or smell in well water) constitutes direct evidence only if it can be confirmed that it results from a release at the facility in question. If a release has been observed, proceed to "3.4 Waste Characteristics" to continue scoring. If direct evidence is lacking, enter a value of 0 on line 1 and continue the scoring procedure by evaluating Route Characteristics.

3.2 Route Characteristics

Depth to aquifer of concern is measured vertically from the lowest point of the hazardous substances to the highest seasonal level of the saturated zone of the aquifer of concern (Figure 3). This factor is one indicator of the ease with which a pollutant from the facility could migrate to ground water. Assign a value as follows:

NORMAL ANNUAL TOTAL PRECIPITATION (Inches)



MEAN ANNUAL LAKE EVAPORATION
(In Inches)

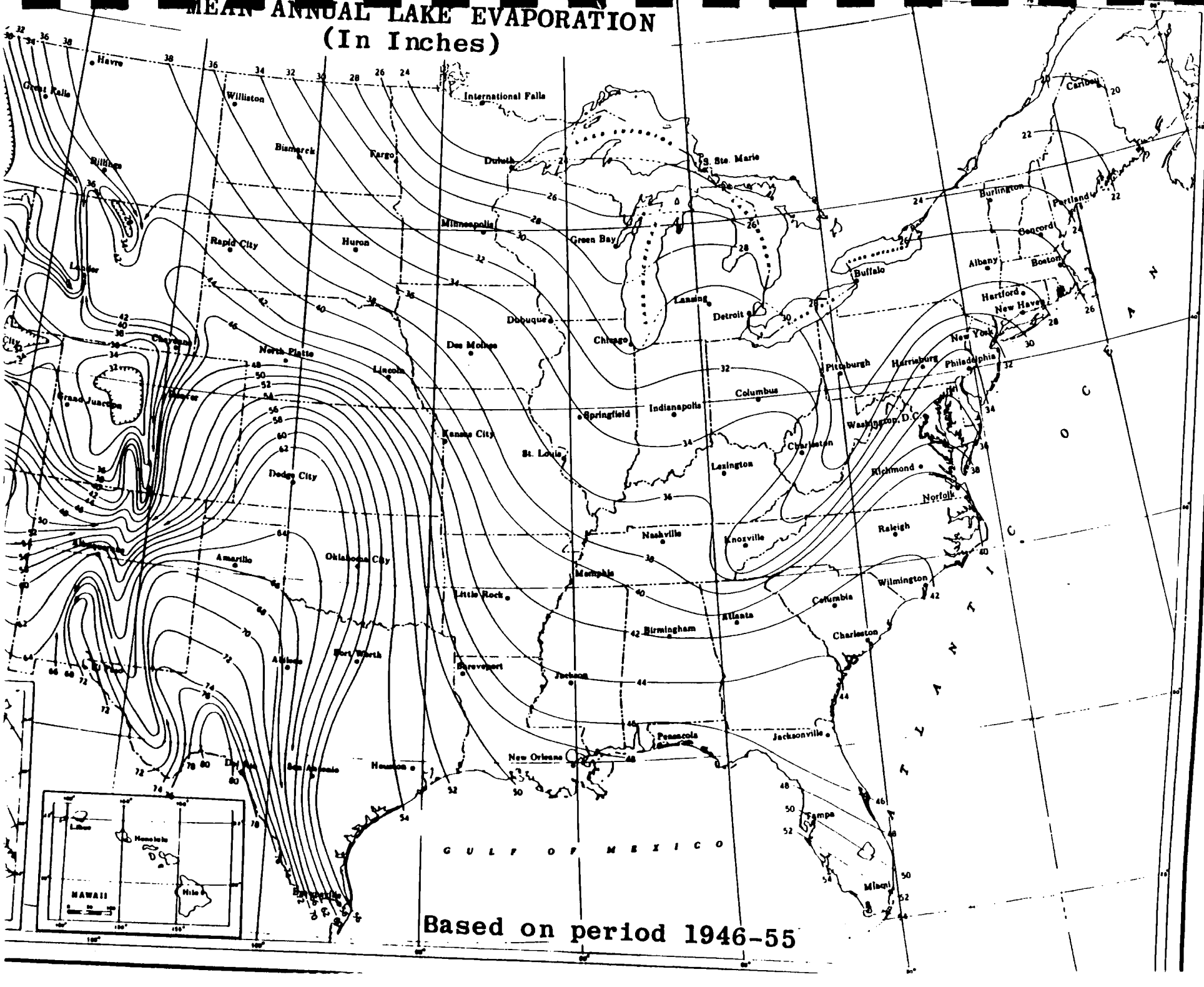


TABLE 2

PERMEABILITY OF GEOLOGIC MATERIALS*

Type of Material	Approximate Range of Hydraulic Conductivity	Assigned Value
Clay, compact till, shale; unfractured metamorphic and igneous rocks	$<10^{-7}$ cm/sec	0
Silt, loess, silty clays, silty loams, clay loams; less permeable limestone, dolomites, and sandstone; moderately permeable till	$10^{-5} - 10^{-7}$ cm/sec	1
Fine sand and silty sand; sandy loams; loamy sands; moderately permeable limestone, dolomites, and sandstone (no karst); moderately fractured igneous and metamorphic rocks, some coarse till	$10^{-3} - 10^{-5}$ cm/sec	2
Gravel, sand; highly fractured igneous and metamorphic rocks; permeable basalt and lavas; karst limestone and dolomite	$>10^{-3}$ cm/sec	3

*Derived from:

Davis, S. N., Porosity and Permeability of Natural Materials in Flow-Through Porous Media, R.J.M. DeWest ed., Academic Press, New York, 1969

Freeze, R.A. and J.A. Cherry, Groundwater, Prentice-Hall, Inc., New York, 1979

TABLE 3

CONTAINMENT VALUE FOR GROUND WATER ROUTE

Assign containment a value of 0 if: (1) all the hazardous substances at the facility are underlain by an essentially non permeable surface (natural or artificial) and adequate leachate collection systems and diversion systems are present; or (2) there is no ground water in the vicinity. The value "0" does not indicate no risk. Rather, it indicates a significantly lower relative risk when compared with more serious sites on a national level. Otherwise, evaluate the containment for each of the different means of storage or disposal at the facility using the following guidance.

A. Surface Impoundment

	Assigned Value
Sound run-on diversion structure, essentially non permeable liner (natural or artificial) compatible with the waste, and adequate leachate collection system	0
Essentially non permeable compatible liner with no leachate collection system; or inadequate freeboard	1
Potentially unsound run-on diversion structure; or moderately permeable compatible liner	2
Unsound run-on diversion structure; no liner; or incompatible liner	3

B. Containers

	Assigned Value
Containers sealed and in sound condition, adequate liner, and adequate leachate collection system	0
Containers sealed and in sound condition, no liner or moderately permeable liner	1
Containers leaking, moderately permeable liner	2
Containers leaking and no liner or incompatible liner	3

C. Piles

	Assigned Value
Piles uncovered and waste stabilized; or piles covered, waste unstabilized, and essentially non permeable liner	0
Piles uncovered, waste unstabilized, moderately permeable liner, and leachate collection system	1
Piles uncovered, waste unstabilized, moderately permeable liner, and no leachate collection system	2
Piles uncovered, waste unstabilized, and no liner	3

D. Landfill

	Assigned Value
Essentially non permeable liner, liner compatible with waste, and adequate leachate collection system	0
Essentially non permeable compatible liner, no leachate collection system, and landfill surface precludes ponding	1
Moderately permeable, compatible liner, and landfill surface precludes ponding	2
No liner or incompatible liner; moderately permeable compatible liner; landfill surface encourages ponding; no run-on control	3

more specific information is given in Tables 4 and 5.

Toxicity of each hazardous substance being evaluated is given a value using the rating scheme of Sax (Table 6) or the National Fire Protection Association (NFPA) (Table 7) and the following guidance:

Toxicity	Assigned Value
Sax level 0 or NFPA level 0	0
Sax level 1 or NFPA level 1	1
Sax level 2 or NFPA level 2	2
Sax level 3 or NFPA level 3 or 4	3

Table 4 presents values for some common compounds.

Hazardous waste quantity includes all hazardous substances at a facility (as received) except that with a containment value of 0. Do not include amounts of contaminated soil or water; in such cases, the amount of contaminating hazardous substance may be estimated.

On occasion, it may be necessary to convert data to a common unit to combine them. In such cases, 1 ton = 1 cubic yard = 4 drums and for the purposes of converting bulk storage, 1 drum = 50 gallons. Assign a value as follows:

Tons/Cubic Yards	No. of Drums	Assigned Value
0	0	0
1-10	1-40	1
11-62	41-250	2
63-125	251-500	3
126-250	501-1000	4
251-625	1001-2500	5
626-1250	2501-5000	6
1251-2500	5001-10,000	7
>2500	>10,000	8

TABLE 5

PERSISTENCE (BIODEGRADABILITY) OF SOME ORGANIC COMPOUNDS*

VALUE = 3 HIGHLY PERSISTENT COMPOUNDS

aldrin
benzopyrene
benzothiazole
benzothiophene
benzyl butyl phthalate
bromochlorobenzene
bromoform butanal
bromophenyl phenyl ether
chlordane
chlorohydroxy benzophenone
bis-chloroisopropyl ether
m-chloronitrobenzene
DDE
DDT
dibromobenzene
dibutyl phthalate
1, 4-dichlorobenzene
dichlorodifluoroethane
dieldrin
diethyl phthalate
di(2-ethylhexyl)phthalate
dihexyl phthalate
di-isobutyl phthalate
dimethyl phthalate
4,6-dinitro-2-aminophenol
diprepyl phthalate
endrin
heptachlor
heptachlor epoxide
1,2,3,4,5,7,7-heptachloronorbornene
hexachlorobenzene
hexachloro-1,3-butadiene
hexachlorocyclohexene
hexachloroethane
methyl benzothiazole
pentachlorobiphenyl
pentachlorophenol
1,1,3,3-tetrachloroacetone
tetrachlorobiphenyl
thiomethylbenzothiazole
trichlorobenzene
trichlorobiphenyl
trichlorofluoromethane
2,4,6-trichlorophenol
triphenyl phosphate
bromodichloromethane
bromoform
carbon tetrachloride
chloroform
chlorodibromomethane
dibromodichloroethane
tetrachloroethane
1,1,2-trichloroethane

VALUE = 1 SOMEWHAT PERSISTENT COMPOUNDS

acetylene dichloride
behenic acid, methyl ester
benzene
benzene sulfonic acid
butyl benzene
butyl bromide
e-caprolactam
carbon-disulfide
o-cresol
decane
1,2-dichloroethane
1,2-dimethoxy benzene
1,3-dimethyl naphthalene
1,4-dimethyl phenol
dioctyl adipate
n-dodecane
ethyl benzene
2-ethyl-n-hexane
o-ethyltoluene
isodecane
isoprophyl benzene
limonene
methyl ester of lignoceric acid
methane
2-methyl-5-ethyl-pyridine
methyl naphthalene
methyl palmitate
methyl phenyl carbinol
methyl stearate
naphthalene
nonane
octane
octyl chloride
pentane
phenyl benzoate
phthalic anhydride
propylbenzene
l-terpineol
toluene
vinyl benzene
xylene

VALUE = 2 PERSISTENT COMPOUNDS

acenaphthylene
atrazine
(diethyl) atrazine
barbital
borneol
bromobenzene
camphor
chlorobenzene
1,2-bis-chloroethoxy ethane
b-chloroethyl methyl ether
chloromethyl ether
chloromethyl ethyl ether
3-chloropyridine
di-t-butyl-p-benzoquinone
dichloroethyl ether
dihyrocarvone
dimethyl sulfoxide
2,6-dinitrotoluene
cis-2-ethyl-4-methyl-1,3-dioxolane
trans-2-ethyl-4-methyl-1,3-dioxolane
guaiacol
2-hydroxyadiponitrile
isophorone
indene
isobornool
isopropenyl-r-isopropyl benzene
2-methoxy biphenyl
methyl biphenyl
methyl chloride
methylindene
methylene chloride
nitroanisole
nitrobenzene
1,1,2-trichloroethylene
trimethyl-trione-hexahydro-triazine isomer

VALUE = 0 NONPERSISTENT COMPOUNDS

acetaldehyde
acetic acid
acetone
acetophenone
benzoic acid
di-isobutyl carbinol
decosane
eicosane
ethanol
ethylamine
hexadecane
methanol
methyl benzoate
3-methyl butanol
methyl ethyl ketone
2-methylpropanol
octadecane
pentadecane
pentanol
propanol
propylamine
tetradecane
n-tridecane
n-undecane

TABLE 7

NFPA TOXICITY RATINGS*

0	Materials which on exposure under fire conditions would offer no health hazard beyond that of ordinary combustible material.
1	Materials only slightly hazardous to health. It may be desirable to wear self-contained breathing apparatus.
2	Materials hazardous to health, but areas may be entered freely with self-contained breathing apparatus.
3	Materials extremely hazardous to health, but areas may be entered with extreme care. Full protective clothing, including self-contained breathing apparatus, rubber gloves, boots and bands around legs, arms and waist should be provided. No skin surface should be exposed.
4	A few whiffs of the gas or vapor could cause death, or the gas, vapor, or liquid could be fatal on penetrating the fire fighters' normal full protective clothing which is designed for resistance to heat. For most chemicals having a Health 4 rating, the normal full protective clothing available to the average fire department will not provide adequate protection against skin contact with these materials. Only special protective clothing designed to protect against the specific hazard should be worn.

*National Fire Protection Association. National Fire Codes, Vol. 13, No. 49, 1977.

Value for Population Served	Value for Distance to Nearest Well 0	1	2	3	4
0	0	0	0	0	0
1	0	4	6	8	10
2	0	8	12	16	20
3	0	12	18	24	30
4	0	16	24	32	35
5	0	20	30	35	40

Distance to nearest well is measured from the hazardous substance (not the facility boundary) to the nearest well that draws water from the aquifer of concern. If the actual distance to the nearest well is unknown, use the distance between the hazardous substance and the nearest occupied building not served by a public water supply (e.g., a farmhouse). If a discontinuity in the aquifer occurs between the hazardous substance and all wells, give this factor a score of 0, except where it can be shown that the contaminant is likely to migrate beyond the discontinuity. Figure 6 illustrates how the distance should be measured. Assign a value using the following guidance:

Distance	Assigned Value
>3 miles	0
2 to 3 miles	1
1 to 2 miles	2
2001 feet to 1 mile	3
< 2000 feet	4

Population served by ground water is an indicator of the population at risk, which includes residents as well as others who would regularly use the water such as workers in factories or offices and students. Include employees in restaurants, motels, or campgrounds but exclude customers and travelers passing through the area in autos, buses, or trains. If aerial photography is used, and residents are known to use ground water, assume each dwelling unit has 3.8 residents. Where ground water is used for irrigation, convert to population by assuming 1.5 persons per acre of irrigated land. The well or wells of concern must be within three miles of the hazardous substances, including the area of known aquifer contamination, but the "population served" need not be. Likewise, people within three miles who do not use water from the aquifer of concern are not to be counted. Assign a value as follows:

Population	Assigned Value
0	0
1-100	1
101-1,000	2
1,001-3,000	3
3,001-10,000	4
>10,000	5

4.0 SURFACE WATER ROUTE

4.1 Observed Release

Direct evidence of release to surface water must be quantitative evidence that the facility is releasing contaminants into surface water. Quantitative evidence could be the measurement of levels of contaminants from a facility in surface water, either at the facility or downhill from it, that represents a significant (in terms of demonstrating that a release has occurred, not in terms of potential effects) increase over background levels. If direct evidence of release has been obtained (regardless of frequency), enter a value of 45 on line 1 of the work sheet (Figure 7) and omit the evaluation of the route characteristics and containment factors. If direct evidence of release is lacking, enter a value of 0 on line 1 and continue with the scoring procedure.

4.2. Route Characteristics

Facility slope and intervening terrain are indicators of the potential for contaminated runoff or spills at a facility to be transported to surface water. The facility slope is an indicator of the potential for runoff or spills to leave the facility. Intervening terrain refers to the average slope of the shortest path which would be followed by runoff between the facility boundary and the nearest downhill surface water. This rating factor can be assessed using topographic maps. Table 8 shows values assigned to various facility conditions.

TABLE 8

VALUES FOR FACILITY SLOPE AND INTERVENING TERRAIN

Facility Slope	Intervening Terrain				
	Terrain Average Slope ≤3%; or Site Separated from Water Body by Areas of Higher Elevation	Terrain Average Slope 3-5%	Terrain Average Slope 5-8%	Terrain Average Slope >8%	Site in Surface Water
Facility is closed basin	0	0	0	0	3
Facility has average slope ≤3%	0	1	1	2	3
Average slope 3-5%	0	1	2	2	3
Average slope 5-8%	0	2	2	3	3
Average slope >8%	0	2	3	3	3

1 YEAR 24-HOUR RAINFALL (inches)

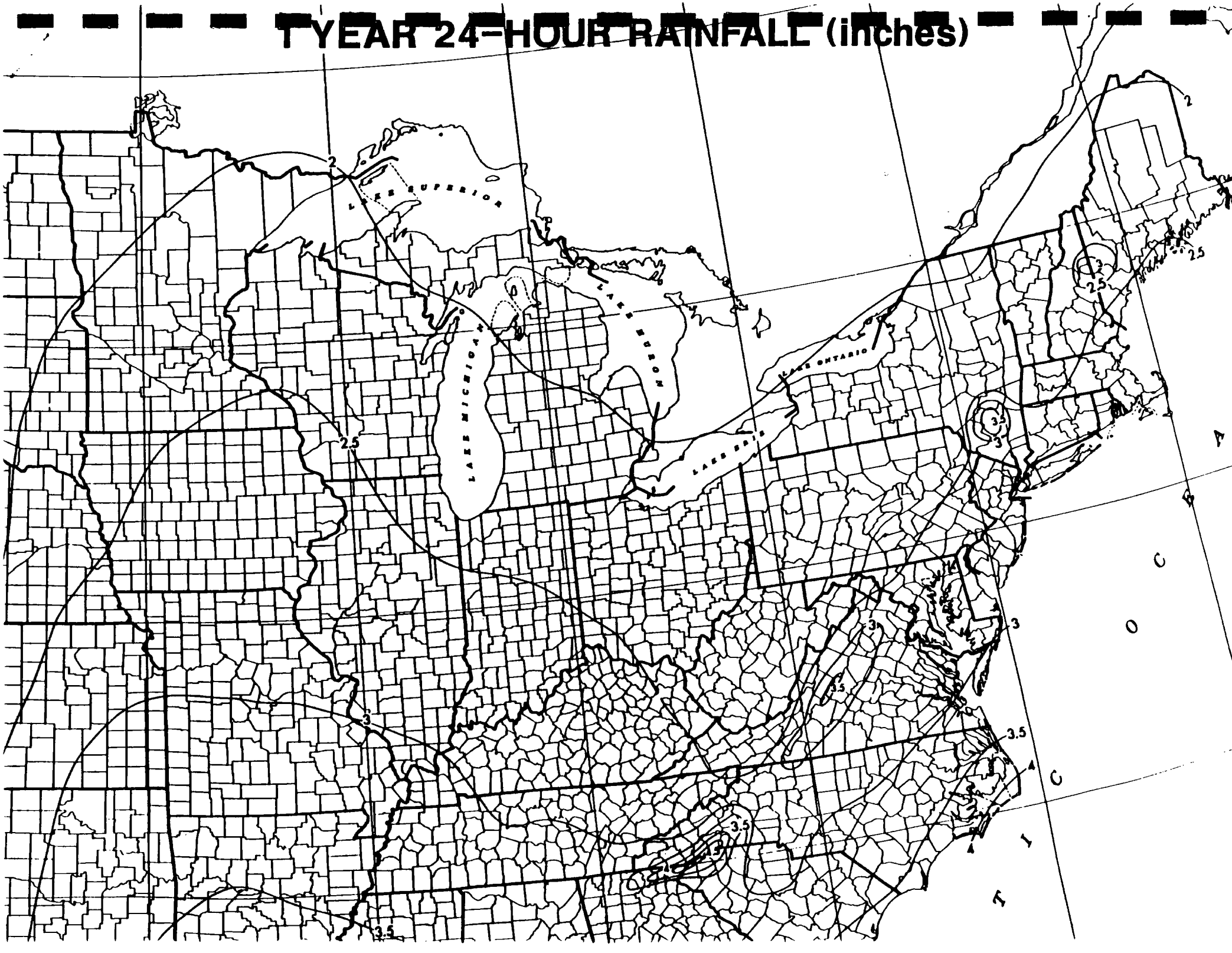


TABLE 9

CONTAINMENT VALUES FOR SURFACE WATER ROUTE

Assign containment a value of 0 if: (1) all the waste at the site is surrounded by diversion structures that are in sound condition and adequate to contain all runoff, spills, or leaks from the waste; or (2) intervening terrain precludes runoff from entering surface water. Otherwise, evaluate the containment for each of the different means of storage or disposal at the site and assign a value as follows:

A. Surface Impoundment

	Assigned Value
Sound diking or diversion structure, adequate freeboard, and no erosion evident	0
Sound diking or diversion structure, but inadequate freeboard	1
Diking not leaking, but potentially unsound	2
Diking unsound, leaking, or in danger of collapse	3

B. Containers

	Assigned Value
Containers sealed, in sound condition, and surrounded by sound diversion or containment system	0
Containers sealed and in sound condition, but not surrounded by sound diversion or containment system	1
Containers leaking and diversion or containment structures potentially unsound	2
Containers leaking, and no diversion or containment structures or diversion structures leaking or in danger of collapse	3

C. Waste Piles

	Assigned Value
Piles are covered and surrounded by sound diversion or containment system	0
Piles covered, wastes unconsolidated, diversion or containment system not adequate	1
Piles not covered, wastes unconsolidated, and diversion or containment system potentially unsound	2
Piles not covered, wastes unconsolidated, and no diversion or containment or diversion system leaking or in danger or collapse	3

D. Landfill

	Assigned Value
Landfill slope precludes runoff, landfill surrounded by sound diversion system, or landfill has adequate cover material	0
Landfill not adequately covered and diversion system sound	1
Landfill not covered and diversion system potentially unsound	2
Landfill not covered and no diversion system present, or diversion system unsound	3

TABLE 10

VALUES FOR SENSITIVE ENVIRONMENT (SURFACE WATER)

ASSIGNED VALUE =	0	1	2	3
DISTANCE TO WETLANDS* (5 acre minimum)				
Coastal	>2 miles	1 - 2 miles	½ - 1 mile	< ½ mile
Fresh Water	>1 mile	¼ - 1 mile	100 feet - ¼ mile	< 100 feet
DISTANCE TO CRITICAL HABITAT (of endangered species)**	>1 mile	½ - 1 mile	¼ - ½ mile	< ¼ mile

*Wetland is defined by EPA in the Code of Federal Regulations 40 CFR Part 230, Appendix A, 1980

**Endangered species are designated by the U.S. Fish and Wildlife Service.

8.0 DIRECT CONTACT

The direct contact hazard mode refers to the potential for injury by direct contact with hazardous substances at the facility.

8.1 Observed Incident

If there is a confirmed instance in which contact with hazardous substances at a facility has caused injury, illness, or death to humans or domestic or wild animals, enter a value of 45 on line 1 of the work sheet (Figure 12) and proceed to line 4 (toxicity). Document the incident giving the date, location and pertinent details. If no such instance is known, enter "0" on line 1 and proceed to line 2.

8.2 Accessibility

Accessibility to hazardous substance refers to the measures taken to limit access by humans or animals to hazardous substances. Assign a value using the following guidance:

Barrier	Assigned Value
A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel) which continuously monitors and controls entry onto the facility;	0
or	
an artificial or natural barrier (e.g., a fence combined with a cliff), which completely surrounds the facility; and a means to control entry, at all times, through the gates or other entrances to the facility (e.g., an attendant, television monitors, locked entrances, or controlled roadway access to the facility).	

Barrier (continued)	Assigned Value
Security guard, but no barrier	1
A barrier, but no separate means to control entry	2
Barriers do not completely surround the facility	3

8.3 Containment

Containment indicates whether the hazardous substance itself is accessible to direct contact. For example, if the hazardous substance at the facility is in surface impoundments, containers (sealed or unsealed), piles, tanks, or landfills with a cover depth of less than 2 feet, or has been spilled on the ground or other surfaces easily contacted (e.g., the bottom of shallow pond or creek), assign this rating factor a value of 15. Otherwise, assign a value of 0.

8.4 Waste Characteristics

Toxicity. Assign a value as in Section 3.4.

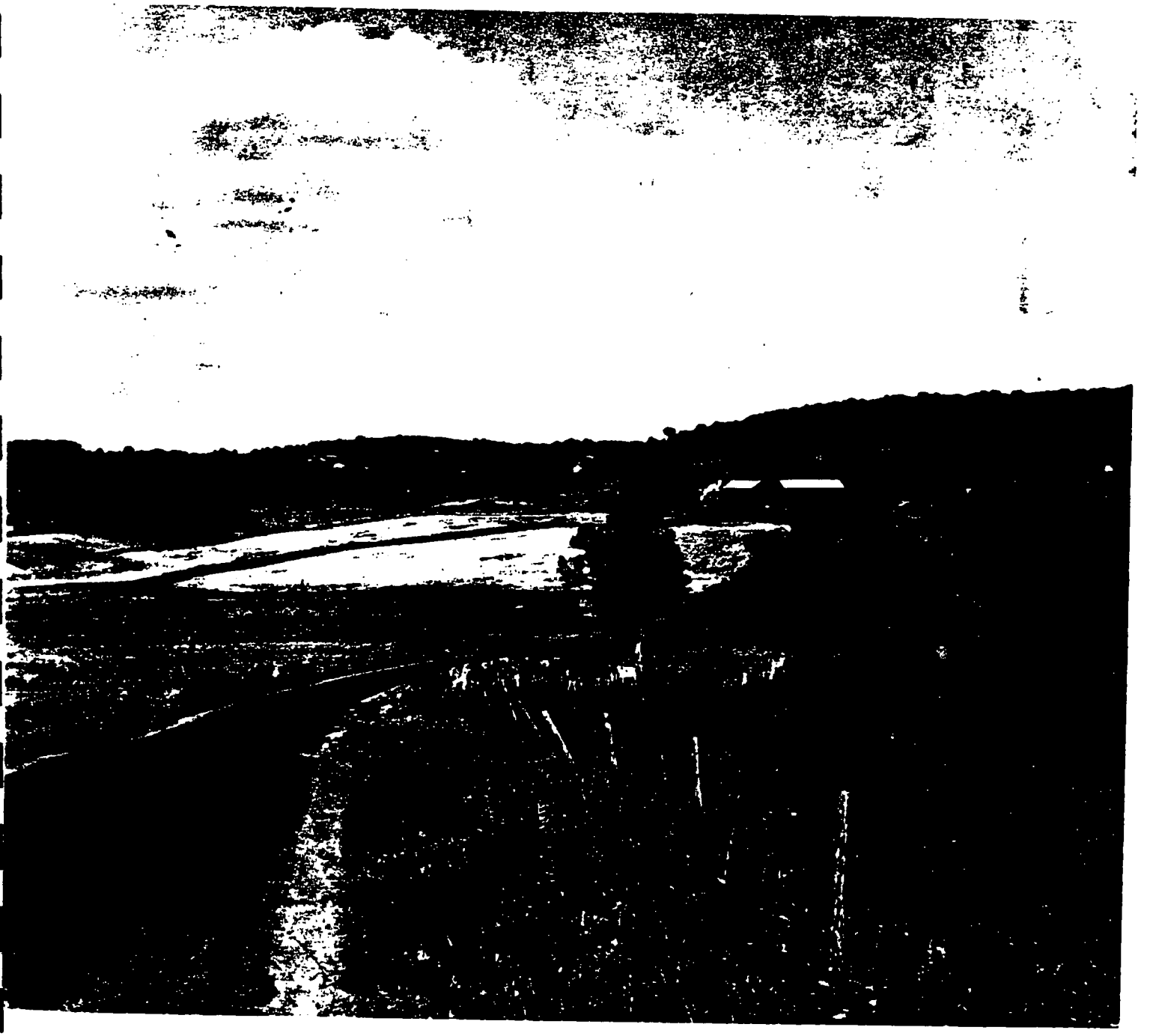
8.5 Targets

Population within one-mile radius is a rough indicator of the population that could be involved in direct contact incidents at an uncontrolled facility. Assign a value as follows:

Population	Assigned Value
0	0
1 - 100	1
101 - 1,000	2
1,001 - 3,000	3
3,001 - 10,000	4
>10,000	5

REFERENCE NO. 4

Soil Survey of Orange County, New York



United States Department of Agriculture, Soil Conservation Service
In cooperation with Cornell University Agricultural Experiment Station

ORANGE COUNTY, NEW YORK, PRIME FARMLAND MAPPING UNITS: 5/84

AdA Allard silt loam, 0 to 3 percent slopes

Ba Barbour fine sandy loam

Be Basher fine sandy loam

CgA Castile gravelly silt loam, 0 to 3 percent slopes
CgB Castile gravelly silt loam, 3 to 8 percent slopes

ChB Charlton fine sandy loam, 3 to 8 percent slopes

CnA Chenango gravelly silt loam, 0 to 3 percent slopes
CnB Chenango gravelly silt loam, 3 to 8 percent slopes

Fd Fredon loam - where drained

LdB Lordstown channery silt loam, 3 to 8 percent slopes

My Middlebury silt loam

PtB Pittsfield gravelly loam, 3 to 8 percent slopes

Ra Raynham silt loam - where drained

RhA Riverhead sandy loam, 0 to 3 percent slopes
RhB Riverhead sandy loam, 3 to 8 percent slopes

ScA Scio silt loam, 0 to 3 percent slopes

SwB Swartswood gravelly loam, 3 to 8 percent slopes

Tg Tioga silt loam

UnB Unadilla silt loam, 0 to 8 percent slopes

WuB Wurtsboro gravelly loam, 3 to 8 percent slopes

RECEIVED

MAR 30 1987

NUS CORPORATION
REGION II
SENT TO_____

AdB Allard silt loam, 3 to 8 percent slopes

ANC Arnot-Lordstown complex, sloping

BnB Bath-Nassau shaly silt loams, 3 to 8 percent slopes
BnC Bath-Nassau shaly silt loams, 3 to 15 percent slopes

Ca Canandaigua silt loam

ChC Charlton fine sandy loam, 8 to 15 percent slopes

CnC Chenango gravelly silt loam, 8 to 15 percent slopes

CoB Collamer silt loam, 3 to 8 percent slopes
CoC Collamer silt loam, 8 to 15 percent slopes

ErA Erie gravelly silt loam, 0 to 3 percent slopes
ErB Erie gravelly silt loam, 3 to 8 percent slopes

FAC Farmington silt loam, sloping

HLC Hollis soils, sloping

HoA Hoosic gravelly sandy loam, 0 to 3 percent slopes
HoB Hoosic gravelly sandy loam, 3 to 8 percent slopes
HoC Hoosic gravelly sandy loam, 8 to 15 percent slopes

LdC Lordstown channery silt loam, 8 to 15 percent slopes

MdB Mardin gravelly silt loam, 3 to 8 percent slopes
MdC Mardin gravelly silt loam, 8 to 15 percent slopes

OkA Oakville loamy fine sand, 0 to 3 percent slopes
OkB Oakville loamy fine sand, 3 to 8 percent slopes

PtC Pittsfield gravelly loam, 8 to 15 percent slopes

RbA Rhinebeck silt loam, 0 to 3 percent slopes
RbB Rhinebeck silt loam, 3 to 8 percent slopes

RdC Riverhead sandy loam, 8 to 15 percent slopes

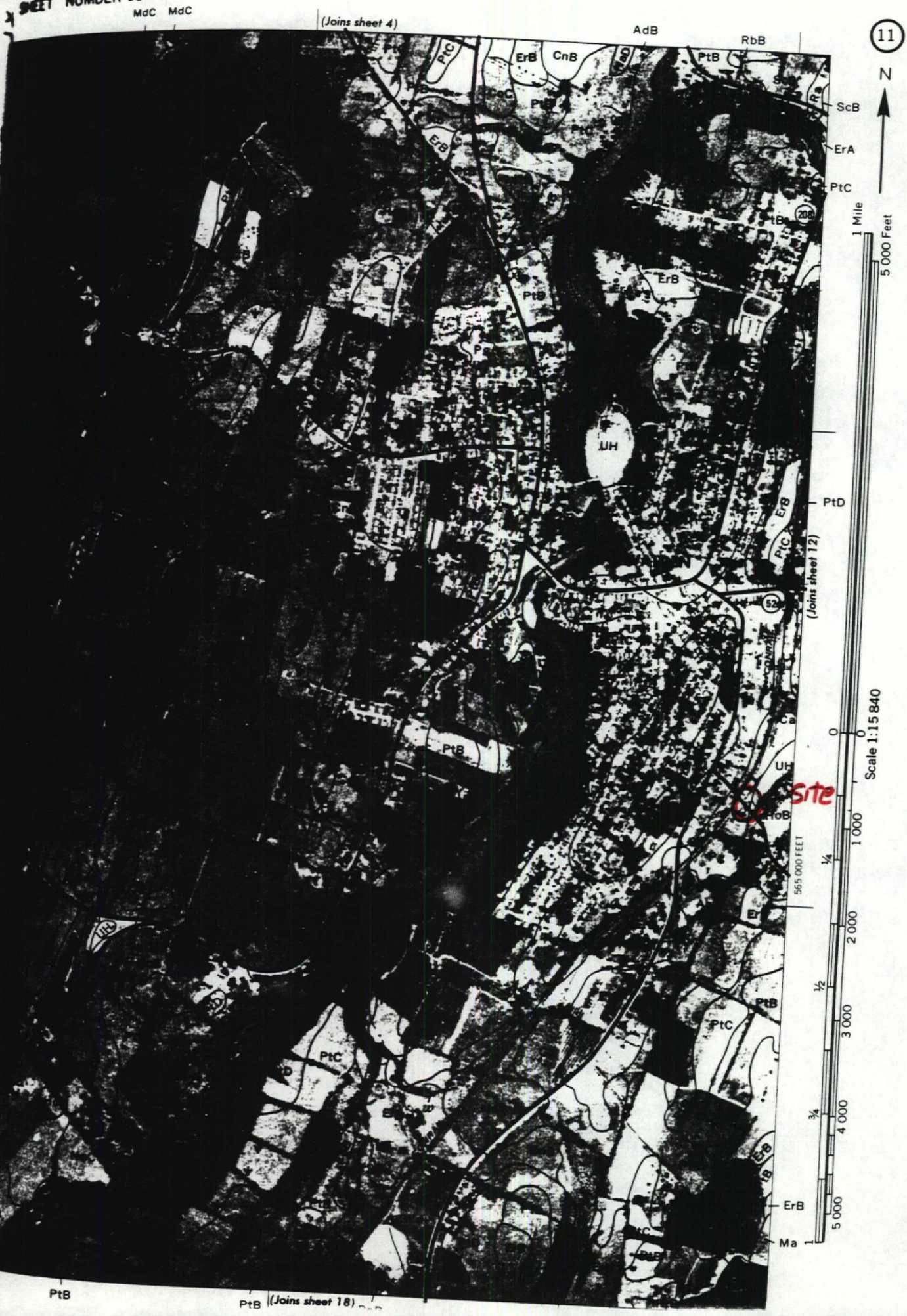
Su Suncook sandy loam

SwC Swartswood gravelly loam, 8 to 15 percent slopes

UnC Unadilla silt loam, 8 to 15 percent slopes

WuC Wurtsboro gravelly loam, 8 to 15 percent slopes

SHEET NUMBER 11



runoff is medium. Roots are not restricted, and some extend into the substratum. Natural organic matter content is low. Gravel fragments make up 15 to 20 percent of the surface layer, and the content commonly increases in the subsoil and substratum. In unlimed areas, the surface layer is very strongly acid to neutral.

Most areas of this soil are farmed. A few are used for urban development or are idle.

This soil is suited to cultivated crops, small grain, and hay. Erosion is a serious hazard, particularly on long slopes. Gravel fragments are slightly bothersome for some kinds of planting and harvesting and cause excessively rapid wear of equipment. Random tile drains to include wet spots are needed to make some fields more uniform. Cross-slope tillage, stripcropping, return of crop residue, cover crops, minimum tillage, and sod crops in the cropping system are needed to control erosion and maintain tilth.

This soil is well suited to pasture grasses. Proper stocking, rotation grazing, and restricted grazing when the soil is wet extend the life of pasture seedings.

Suitability for timber production is good. Woodlots commonly support such species as northern red oak, sugar maple, and white pine. There are few limitations for the use of equipment and little hazard of windthrow, seedling mortality, or erosion. Logging trails should be laid out across the slope to prevent trailside gullying.

This soil can be used for some urban and recreation uses. Slope and small stones are limitations. Some areas provide good homesites, but careful site selection is needed.

The capability subclass is IIIe.

PtD—Pittsfield gravelly loam, 15 to 25 percent slopes. This deep, well drained, moderately steep soil formed in glacial till deposits derived from limestone and schist. It is on hillsides, valley sides, and ridges in uplands. Areas are long and narrow and commonly 5 to 20 acres.

Typically the surface layer is very dark brown gravelly loam 8 inches thick. The subsoil is 20 inches thick. The upper part is yellowish brown gravelly loam, the middle part is yellowish brown gravelly fine sandy loam, and the lower part is dark yellowish brown gravelly fine sandy loam. The substratum to a depth of 60 inches is very friable, brown gravelly sandy loam.

Included with this soil in mapping are small areas where the surface is covered with large stones and a few areas of moderately well drained Mardin soils and well drained Bath soils that have a fragipan. A few small areas are severely eroded, and in some areas there is a dense substratum. In the towns of Montgomery and Crawford is an included soil that is similar to Pittsfield soil but has a high content of shale fragments and is strongly acid in the substratum.

Depth to the water table is usually more than 6 feet. Permeability is moderately rapid in the surface layer and subsoil and moderate to moderately rapid in the substratum. Available water capacity is moderate to high, and runoff is medium to rapid. Roots are not restricted, and some extend into the substratum. Natural organic matter content is low. Gravel fragments make up 15 to 20 percent of the surface layer, and the content commonly increases in the subsoil and substratum. In unlimed areas, the surface layer is very strongly acid to neutral.

Many areas of this soil are either pastured or idle. Only a few are cultivated.

This soil is not well suited to cultivated crops because of steepness of slope. It is generally better suited to hay or pasture. Erosion is a very serious hazard, particularly on long slopes or in areas bare of plant cover. Operating equipment is somewhat difficult because of the moderately steep slopes. Cultivation should be infrequent and under maximum conservation measures. Cross-slope tillage, stripcropping, cover crops, return of crop residue, and a high proportion of sod crops in the cropping system minimize the erosion hazard and maintain soil tilth.

This soil is suitable for pasture. Proper stocking, rotation grazing, and restricted grazing when the soil is wet are needed to maintain pasture seedings. Reseeding and fertilizing are somewhat difficult because of the slope.

Suitability for timber production is fair to good. Woodlots commonly support such species as northern red oak, sugar maple, and white pine. Equipment use is somewhat limited because of slope. Logging trails laid out across the slope reduce the hazard of erosion and gullying.

This soil is poorly suited to most urban and recreation uses because of slope. Some areas are suitable for hiking trails. In many areas wildlife habitat can be improved by planting shrubs for food and cover.

The capability subclass is IVe.

Qu—Quarries. Quarries are excavations into various kinds of bedrock, including shale, slate, limestone, and granitic gneiss. The rock material has been removed for road subgrade and other construction purposes. Areas are 5 to 80 feet deep. They have nearly vertical sides and relatively level floors. Piles of rock are commonly scattered across parts of the quarry floor. There are small pools of water in some quarries. Areas vary in shape, depending on ownership boundaries and the nature of the bedrock strata. They are mainly 3 to 5 acres, but at least two large quarries are more than 20 acres.

Areas no longer quarried are mostly idle. Scraggly bushes and brambles are anchored in a few crevices in side walls and along quarry floors.

Abandoned quarries are generally unsuitable for farm, urban, and recreation uses. Reclamation of areas is very difficult because not enough soil material is available for landscaping and revegetation. Pollution of the water table is a hazard if waste materials are dumped on abandoned quarry floors. Some areas provide excellent sites for viewing geologic strata.

Suitability for timber production is fair to good. Forested areas support such trees as black cherry, sugar maple, and northern red oak. Windthrow and seedling mortality are minor hazards because of the restricted root depth. Wetness can be a problem in machine planting of seedlings in spring.

Seasonal wetness and slow or very slow permeability in the fragipan are serious limitations for most urban and recreation uses. Some areas are excellent sites for dugout ponds or small marshes for wetland wildlife.

The capability subclass is IIIw.

ErB—Erie gravelly silt loam, 3 to 8 percent slopes. This deep, somewhat poorly drained, gently sloping soil has a fragipan. It formed in glacial till deposits derived from shale, slate, and sandstone. It is on foot slopes, on lower hillsides, and along shallow drainageways of the uplands. It commonly receives runoff from higher adjacent soils. Areas are mainly oval and 5 to 20 acres.

Typically the surface layer is dark brown gravelly silt loam 9 inches thick. The subsoil is 45 inches thick. It is mottled grayish brown channery silt loam in the upper 9 inches and a firm, mottled olive brown channery silt loam fragipan in the lower part. The substratum from 54 to 70 inches is mottled olive brown channery silt loam.

Included with this soil in mapping are small areas of the moderately well drained Mardin soils on slightly higher rises and knolls and very poorly drained Alden soils on a few small concave toe slopes. On a few acres there are large stones on the surface.

The water table in this Erie soil is perched above the fragipan in spring and other wet periods. Permeability is moderate in the surface layer and upper part of the subsoil and is slow or very slow in the pan and substratum. Runoff is medium, and available water capacity is moderate to low. Roots are restricted by the dense pan to depths of 10 to 24 inches. Natural organic matter content is medium. The soil layers above the fragipan are 15 to 35 percent gravel or channery fragments. Unless limed, the surface layer ranges from very strongly acid to medium acid.

Most areas of this soil are either idle or pastured. A few are used for hay and cultivated crops.

This soil can be used for cultivated crops but is better suited to hay or pasture. Unless the soil is drained, wetness delays planting in spring and often hinders harvesting in fall. This soil is somewhat difficult to drain because of slow water movement through the fragipan. A combination of subsurface drains and interceptor drains is often essential for adequate drainage. Subsurface drains may require backfilling with gravel to be effective. This soil is usually easier to drain than the nearly level Erie soil. Erosion is a hazard, particularly on long slopes and in intensively cultivated areas. Minimum tillage, cover crops, cross slope tillage, and sod crops in the cropping system are needed to preserve tilth, control erosion, and maintain organic matter content.

This soil is fairly well suited to pasture. Grazing in wet periods compacts the soil and destroys desirable grass species. Rotation grazing, proper stocking, lime and f tilizer, and restricted grazing in wet periods are neec to maintain pasture seedings.

Suitability for timber production is fair to good. Fore ed areas support such species as black cherry, su maple, and northern red oak. Windthrow and seedl mortality are minor hazards because of the restric root zone. Seasonal wetness can be a problem in r chine planting of seedlings in spring.

Seasonal wetness and slow or very slow permeab in the fragipan are serious limitations for most urban a recreation uses. Many areas provide excellent sites dike ponds.

The capability subclass is IIIw.

ESB—Erie extremely stony soils, gently slopi These deep, somewhat poorly drained, gently slop soils have a fragipan. They formed in glacial till depo derived from shale, slate, and sandstone. They are lower hillsides, foot slopes, and hilltops and along s low drainageways of the uplands. The slope ranges fr 3 to 8 percent. Stones and boulders more than inches in diameter and less than 5 feet apart cover surface. Texture of the surface layer, excluding la stones, is gravelly silt loam, gravelly loam, or grav fine sandy loam. Areas are mostly round and 5 to acres.

Typically the surface layer is dark brown gravelly loam 4 inches thick. Large stones are at the surfa The subsoil is 46 inches thick. It is mottled grayish br channery silt loam in the upper 14 inches. The lower is a firm, mottled olive brown fragipan. The substra from 50 to 70 inches is mottled olive brown channery loam.

Included with these soils in mapping are small area moderately well drained Mardin soils on slightly hi rises and knolls and very poorly drained Alden soils few small concave toe slopes. Some small areas h very few if any large stones on the surface.

The water table is perched above the fragipar spring and other wet periods. Permeability is moderat the surface layer and upper part of the subsoil an slow or very slow in the fragipan and substratum. Ru is medium. Available water capacity is moderate to Roots are restricted by the dense fragipan. Natura ganic matter content is medium. The soil layers ab the pan are 15 to 35 percent gravel or channery f ments. Unless limed, the surface layer ranges from strongly acid to medium acid.

Most areas are either idle or forested. A few are u proved pasture.

These soils are not suited to most cultivated crop hay because of the large stones on the surface. D age is required for optimum crop production if l stones are removed. Where drainage and remove stones are feasible, cross-slope tillage, cover crops, crops in the cropping system, and minimum tillage needed to maintain tilth and organic matter content reduce erosion.

REFERENCE NO. 5

Notification of Hazardous Waste Site

United States
Environmental Protection
Agency
Washington DC 20460

This initial notification information is required by Section 103(c) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 and must be mailed by June 9, 1981.

Please type or print in ink. If you need additional space, use separate sheets of paper. Indicate the letter of the item which applies.

810610

NYS 00001126

A Person Required to Notify:
Enter the name and address of the person or organization required to notify.

Name: Salim Bana c/o Champion International Corporation
Street: P. O. Box 271
City: Walden State: NY Zip Code: 12586

B Site Location:
Enter the common name (if known) and actual location of the site.

Name of Site: Champion International Corporation Retail Packaging Division
Street: ~~P. O. Box 271~~ COLDENHEN RD.,
City: Walden County: ORANGE State: NY Zip Code: 12586

NYD 000512616

C Person to Contact:
Enter the name, title (if applicable), and business telephone number of the person to contact regarding information submitted on this form.

Name (Last, First and Title): Rankin, Dennis C., Director of Administration & Industrial Engineering
Phone: (203) 358-7081

D Dates of Waste Handling:
Enter the years that you estimate waste treatment, storage, or disposal began and ended at the site.

From (Year): To (Year): 1961 (est.)

E Waste Type: Choose the option you prefer to complete

Option I: Select general waste types and source categories. If you do not know the general waste types or sources, you are encouraged to describe the site in Item I—Description of Site.

General Type of Waste:
Place an X in the appropriate boxes. The categories listed overlap. Check each applicable category.

1. ☒ Organics
2. ☐ Inorganics
3. ☒ Solvents
4. ☐ Pesticides
5. ☐ Heavy metals
6. ☐ Acids
7. ☐ Bases
8. ☐ PCBs
9. ☐ Mixed Municipal Waste
10. ☐ Unknown
11. ☒ Other (Specify) (Printing inks) 300

Source of Waste:
Place an X in the appropriate boxes.

1. ☐ Mining
2. ☐ Construction
3. ☐ Textiles
4. ☐ Fertilizer
5. ☒ Paper/Printing
6. ☐ Leather Tanning
7. ☐ Iron/Steel Foundry
8. ☐ Chemical, General
9. ☐ Plating/Polishing
10. ☐ Military/Ammunition
11. ☐ Electrical Conductors
12. ☐ Transformers
13. ☐ Utility Companies
14. ☐ Sanitary/Refuse
15. ☐ Photofinish
16. ☐ Lab/Hospital
17. ☐ Unknown
18. ☐ Other (Specify)

Option 2: This option is available to persons familiar with the Resource Conservation and Recovery Act (RCRA) Section 3001 regulations (40 CFR Part 261).

Specific Type of Waste:
EPA has assigned a four-digit number to each hazardous waste listed in the regulations under Section 3001 of RCRA. Enter the appropriate four-digit number in the boxes provided. A copy of the list of hazardous wastes and codes can be obtained by contacting the EPA Region serving the State in which the site is located.

Form Approved
OMB No. 2000-0138

ation of Hazardous Waste Site — Side Two

aste Quantity:

Place an X in the appropriate boxes to indicate the facility types found at the site.

In the "total facility waste amount" space give the estimated combined quantity (volume) of hazardous wastes at the site using cubic feet or gallons.

In the "total facility area" space, give the estimated area size which the facilities occupy using square feet or acres.

Facility Type

1. ☐ Piles
2. ☐ Land Treatment
3. ☒ Landfill
4. ☐ Tanks
5. ☐ Impoundment
6. ☐ Underground Injection
7. ☐ Drums, Above Ground
8. ☐ Drums, Below Ground
9. ☐ Other (Specify) _____

Total Facility Waste Amount

cubic feet _____

gallons ~~Unknown~~

Total Facility Area

square feet 900 (approx).

acres _____

Known, Suspected or Likely Releases to the Environment:

Place an X in the appropriate boxes to indicate any known, suspected, or likely releases of wastes to the environment.

☐ Known ☐ Suspected ☐ Likely ☐ None

Note: Items H and I are optional. Completing these items will assist EPA and State and local governments in locating and assessing hazardous waste sites. Although completing the items is not required, you are encouraged to do so.

H Sketch Map of Site Location: (Optional)

Sketch a map showing streets, highways, routes or other prominent landmarks near the site. Place an X on the map to indicate the site location. Draw an arrow showing the direction north. You may substitute a publishing map showing the site location.

Description of Site: (Optional)

Describe the history and present conditions of the site. Give directions to the site and describe any nearby wells, springs, lakes, or housing. Include such information as how waste was disposed and where the waste came from. Provide any other information or comments which may help describe the site conditions.

Information has been obtained that during a time when this facility was operated by former owners (Albernarle Paper Co. or Interstate Bag Co.) unspecified amounts of starch paste, alcohol/water washup solutions, partially dried up painting inks, varnish and miscellaneous trash was buried in two trenches (approx. 3-4 ft deep, 6 ft wide by 7-75 feet long) in property adjoining the plant. It is reported that a clay layer existed below the disposal site, that clay was used to cover the trench, which was further covered with loam and seeded. The site reportedly shows no evidence of a problem since vegetative growth is normal. We believe this action was taken circa 1961. This was a one time occurence not a continuing practice.

Signature and Title:

The person or authorized representative (such as plant managers, superintendents, trustees or attorneys) of persons required to notify must sign the form and provide a mailing address (if different than address in item A). For other persons providing notification, the signature is optional. Check the boxes which best describe the relationship to the site of the person required to notify. If you are not required

Name: Robert E. Harrison, Sr. V.P. & Gen. Mgr., Consumer Pkg. Div.
Champion International Corporation

Street: One Champion Plaza

City: Stamford State: CT Zip Code: 06921

Signature: Robert E. Harrison Date: 6/9/81

☒ Owner, Present
☐ Owner, Past
☐ Transporter
☒ Operator, Present
☐ Operator, Past
☐ Other

REFERENCE NO. 6

NUS CORPORATION — TELECON NOTE

CONTROL NO:	DATE:	TIME:
02-8703-45	04/03/87	1520

DISTRIBUTION:

CHAMPION INTERNATIONAL CORP / RETAIL PKG DIV

BETWEEN:	OF:	PHONE:
JOHN DEFILLIPI	ENV. ADMINISTRATIVE RESOURCES MANAGEMENT	(516) 349-[illegible]

AND: DENISE MORGAN (NUS)

DISCUSSION:

RE MR. DEFILLIPI RETURNED MY CALL. NEEDED MORE SPECIFIC INFORMATION ABOUT THE DIMENSIONS OF THE TRENCHES

MR. DEFILLIPI SAID THAT CHARLIE MCNEELY, OF CHAMPION INTL. CORP. HAD SAID THAT THERE ~~WAS~~ WERE TWO PARALLEL TRENCHES.

THE TRENCHES, HOWEVER, WERE NOT CONTINUOUS. EACH TRENCH WAS COMPOSED OF 2 OR 3 CELLS.

IF YOU FOLLOW THE DIRT ROAD THAT LEADS TO THE TRENCH AREA AND MAKE A 90° TURN TOWARDS THE TRENCH AREA, YOU WILL BE LOOKING DOWN THE 2 TRENCHES.

ESTIMATES EACH CELL TO BE APPROXIMATELY 20 FT. WIDE AND 200-300 ft. LONG.

ACTION ITEMS:

NUS 067 REVISED 0581

REFERENCE NO. 7

02-8703-45

NUS CORPORATION — **TELECON NOTE**

CONTROL NO:	DATE:	TIME:
02-5703-45	03/20/87	1340

DISTRIBUTION: CHAMPION INTL. CORP / RETAIL PKG. DIV.

BETWEEN:	OF:	PHONE:
ORANGE CO. HEALTH DEPT. / ENV. HEALTH DIV		(914) 294-3361

AND: Denise Hurgin (NUS)

DISCUSSION:

RE: WITHIN THE MUNICIPAL LIMITS OF WALDEN THE RESIDENTS USE MUNICIPAL water supply. The MUNICIPAL WATER IS PUMPED FROM 4 WELLS THAT ARE ~200-300 ft. in depth. All residents outside the VILLAGE LIMITS OF WALDEN USE PRIVATE WELL groundwater for their drinking supply.

ACTION ITEMS:

NUS 087 REVISED 0581

REFERENCE NO. 8

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02 . 8 7 0 9 - 4 0

NUS CORPORATION TELECON NOTE

CONTROL NO:	DATE:	TIME:
02-8703-45	03/31/87	1000

DISTRIBUTION:

CHAMPION INTL CORP / RETAIL PRO DIV

BETWEEN:	OF:	PHONE:
MR. WILLIAMSON	WALDEN WATER CO.	(914) 778-1724

AND: DENISE HORGAN (NUS)

DISCUSSION:

RE: MR. WILLIAMSON SAID THAT THE MUNICIPAL DRINKING WATER SUPPLY COMES FROM WELLS RESIDENTS OUTSIDE THE CITY LIMITS ~~[illegible]~~ USE PRIVATE groundwater wells FOR DRINKING PURPOSES The MUNICIPAL WATER SYSTEM SUPPLIES 5800-6000 RESIDENTS. ONE PUMPING STATION IS LOCATED ON RC 52 AND THE SECOND IS LOCATED ON Edmonds Lane

ACTION ITEMS:

NUS 067 REVISED 0581

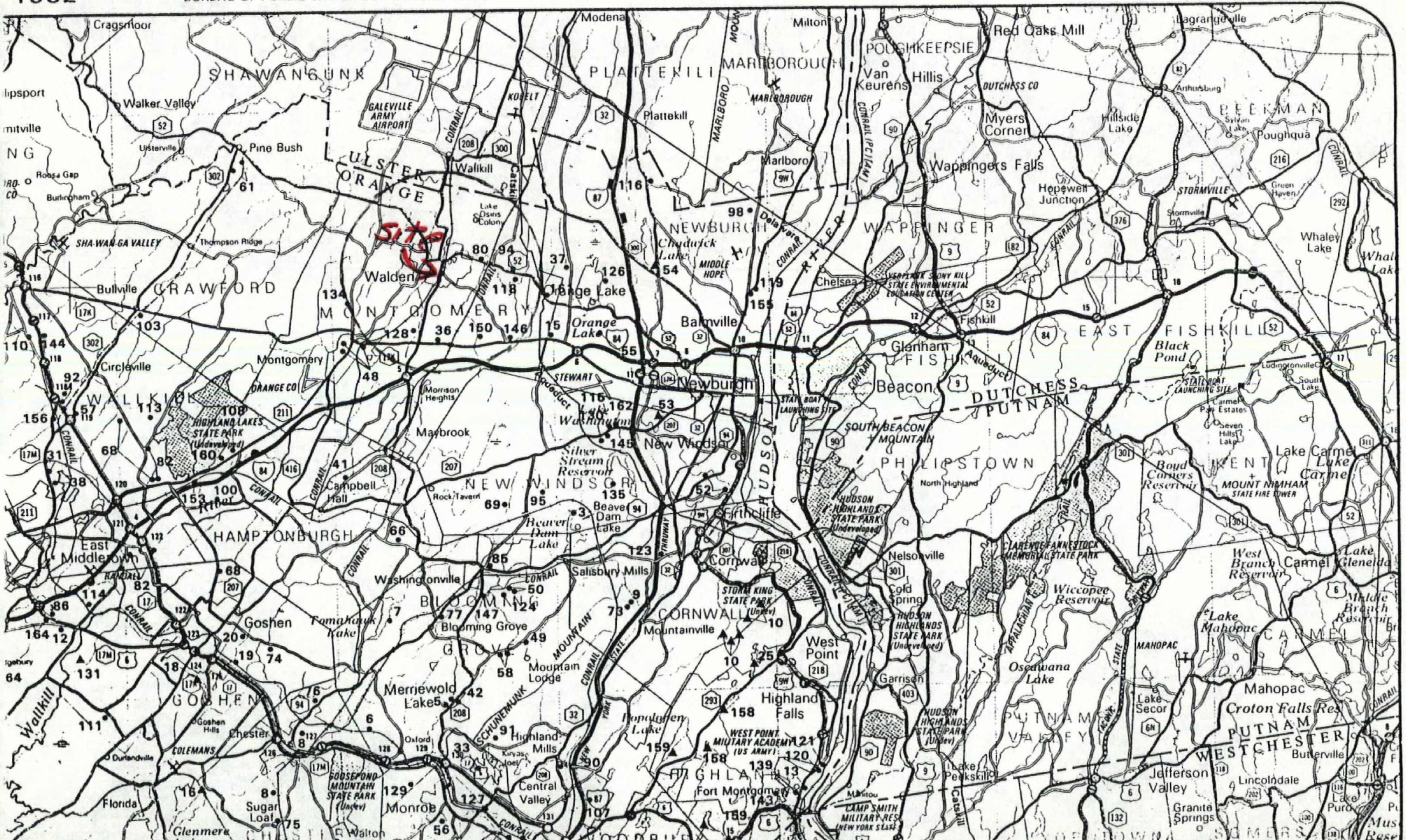
REFERENCE NO. 9

New York State Atlas of Community Water System Sources 1982

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL PROTECTION
BUREAU OF PUBLIC WATER SUPPLY PROTECTION

-1982 BUREAU OF PUBLIC WATER SUPPLY PROTECTION

ORANGE COUNTY



ID NO	COMMUNITY WATER SYSTEM	POPULATION	SOURCE
	Municipal Community		
1	Arden Farms Dairy Company	60.	Echo Lake
2	Arrow Park, Inc.	NA.	Wells
3	Beaver Dam Lake Development	400.	Wells
4	Bellvale Park Water District	100.	Wells
5	Blooming Grove Water District #1	2000.	Wells
6	Blooming Grove Water District #2 Oxford Heights	80.	Wells
7	Blooming Grove Water District #3	200.	Wells
8	Chester Village	1910.	Walton Lake, Wells
9	Cornwall-on-Hudson, Main Line	3164.	Alec Meadow Reservoir, Arthurs, Tamarac, & Sphagnum Ponds
10	Cornwall-on-Hudson, Mt. Line	300.	Upper Reservoir
11	Deer Park Manor	400.	Wells
12	Denton Hills	130.	Wells
13	Drew Road Association	50.	Wells
14	Eurich Heights	200.	Wells
15	Fleetwood Manor - Holiday Park	225.	Wells
16	Florida Water Works	2000.	Glenmere Lake
17	Forest Knolls	400.	Wells
18	Goshen Village	5000.	Goshen Reservoir
19	Goshen Water District #2 (Arcadia Hills)	750.	Wells
20	Goshen Water District #1	500.	Wells
21	Greater Display & Wire Forming	75.	Wells
22	Greenwood Lake Village	2150.	Wells
23	Harriman Village	1800.	Wells
24	Hidden Valley Estates	200.	Wells
25	Highland Falls Village	5500.	Bog Meadow Pond
26	Hill Lake Estates	40.	Wells
27	Hillcrest Heights	25.	Wells
28	Hillside Acres	80.	Wells
29	Indian Kill	2000.	Indian Kill
30	J. Ludlam Water Supply	15.	Wells
31	Keystone Park	150.	Wells
32	King Tract	200.	Wells
33	Kiryas Joel	2500.	Wells
34	Lake Hill Farms Water District	360.	Wells
35	Lake Linda	30.	Wells
36	Lake Vue Park Water District	160.	Wells
37	Lakewood Homes	60.	Wells
38	Lincoln Park	32.	Wells
39	Lorelei Lake	150.	Wells
40	Maple Brook	160.	Wells
41	Maybrook Village	2500.	Wells
42	Merriwold Water Company	1600.	Wells
43	Middletown City	21454.	Monhagen, Highland & Shawangunk Lakes
44	Monroe Hills Estates	120.	Wells
45	Monroe Village	6000.	Lake Mombasha
46	Monroe Water District #1 (High Ridge)	NA.	Lake Mombasha
47	Monroe Water District #2 (Sterling Manor)	90.	Wells
48	Montgomery Village	2320.	Wells
49	Mountain Lodge Park Development	1600.	Wells
50	Mountain View Estates	250.	Wells
51	New Vernon Estates	150.	Wells
52	New Windsor Consolidated Water District	12000.	Wells
53	Newburgh City	23488.	Lake Washington
54	Newburgh Consolidated Water District	9000.	Chadwick Lake
55	Orange Lake Development Company	20.	Wells
56	Orchard Hill	174.	Wells
57	Orchard Hill Water District	80.	Wells
58	Orchard Lake Park	250.	Wells
59	Painted Apron Village	16.	Wells
60	Pheasant Hill	150.	Wells
61	Pine Bush Water District	1500.	Wells
62	Pine Island Water Company	50.	Wells
63	Port Jervis City	8500.	Reservoirs
64	Ridgebury Lake Acres	60.	Wells
65	Robin Meadows	126.	Wells
66	Rural Ridge Water District	300.	Wells
67	Scheller Water Supply	25.	Wells
68	Scotchtown Park	180.	Wells
69	Scott Acres	120.	Wells
70	Skyview Hills	450.	Wells
71	Slate Hill (Green)	40.	Wells
72	Squirrel Hills	78.	Wells
73	Star Industries	NA.	Wells
74	Stone Hedge Water Company	160.	Wells
75	Sugar Loaf Hills	125.	Wells
76	Surrey Meadow Water District	900.	Wells
77	Tappan Homes	536.	Wells
78	Tuxedo Park Village	1800.	We-Wah Lake
79	Unionville Village	576.	Wells
80	Walden Village	5500.	Wells
81	Wallkill Heights	48.	Wells
82	Wallkill Water District #1	12000.	Wells
83	Walton Lake Estates	500.	Wells
84	Warwick Village	4320.	Warwick Reservoir
85	Washingtonville Village	NA.	Wells
86	Wawayanda Development Corporation	125.	Wells
87	West Side Greenwood Lake Water District	1800.	Wells
88	Whitlock Farms	120.	Wells
89	Wickham Village	1100.	Wells
90	Woodbury Water District #1	4500.	Wells
91	Woodbury Water District #6 (Amdor Park)	360.	Wells
92	Woodland Acres	100.	Wells
	Non-Municipal Community		
93	Bear Mountain State Park (Rockland Co, Page 74)		Turkey Lake, Queensboro Lake
94	Bel-Air Trailer Park	59.	Wells
95	Brittany Terrace	150.	Wells
96	Butler Mobile Homes	200.	Wells
97	Campbell Water Supply	35.	Wells
98	Candlestick Mobile Park	324.	Wells
99	Castle High Trailer Park	130.	Wells
100	Crystal Run Village Inc.	100.	Wells
101	Dicker's Bungalow Colony	30.	Wells
102	Dombal Trailer Park	70.	Wells
103	Donovan's Place	20.	Wells
104	Doodletown Water System (Rockland Co, Page 74)		Queensboro Lake
105	Fair Mead Farm	15.	Wells
106	Fairlawn Mobile Village	60.	Wells
107	Falkirk Hospital	45.	Wells
108	Fancher Trailer Court	55.	Wells
109	Federal Correctional Institute	500.	Wells
110	Gillen Trailer Park	16.	Wells
111	Goshen Center for Boys	250.	Wells
112	Greenwood Mobile Home Court	125.	Wells
113	H A Harris, Inc.	25.	Wells
114	Hampton Realty Trailer Park	23.	Wells
115	Hill and Dale Mobile Home Park	55.	Wells
116	Hilltop Haven Trailer Park	NA.	Wells
117	Hogencamps Trailer Court	6.	Wells
118	Holiday Mobile Park Inc.	225.	Wells
119	Hudson Valley Trailer Park	25.	Wells
120	Hudson View Terrace (Lower Section)	120.	Wells
121	Hudson View Terrace (Upper Section)	150.	Wells
122	Huguenot Estates East	125.	Wells
123	K & M Mobile Home Park	46.	Wells
124	Kaylake Lodge	30.	Wells
125	Kimball Farms	83.	Wells
126	Lage Country Homes	NA.	Wells
127	Lamplight Village	260.	Wells
128	M G U Realty	NA.	Wells
129	Mary Crest Convent	40.	Wells
130	Mason's Trailer Park & Apartments	60.	Wells
131	Mid-Hudson Psychiatric Center	400.	Reservoir
132	Mid-Lake Park	15.	Wells
133	Mid-Orange Correctional Facility	1200.	Wells
134	Montgomery Nursing Home	100.	Wells
135	Mt Airy Trailer Court	240.	Wells
	Non-Municipal Community		
136	Mt Hope Foundation-Residence	35.	Wells
137	Mt Orange Trailer Park	40.	Wells
138	NYU Housing Sterling Forrest	120.	Wells
139	Old 9-W Realty Corp.	30.	Wells
140	Otisville Rehabilitation Center	NA.	Bear Swamp Reservoir
141	Pine Grove Trailer Park	250.	Wells
142	Pius XII School	95.	Wells
143	Rock Terrace Trailer Park	110.	Wells
144	Schefcick Trailer Park	36.	Wells
145	Silver Stream Trailer Court	105.	Wells
146	Sleepy Hollow Mobile Park	620.	Wells
147	Sosa Water Supply	25.	Wells
148	South Maple Estates	50.	Wells
149	Southfields Heights Apartments	200.	Wells
150	Spruce Lodge	350.	Wells
151	St Patrick's Villa Group	42.	Wells
152	St Patrick's Semi-Military Academy	122.	Wells
153	Stoney Ford Trailer Park	30.	Wells
154	Sunset Haven	NA.	Wells
155	Sunset Trailer Court	36.	Wells
156	Thompsons Trailer Court	35.	Wells
157	Tri-State Trailer Park	35.	Wells
158	U S M A - Stony Lonesome System	12000.	Long Pond, Stillwell Lake
159	US Military Academy Lusk System	NA.	Popolopen Lake, Queensboro Lake
160	Valley View Park	150.	Wells
161	Walden Mobile Home Association	36.	Wells
162	Walters Trailer Village	225.	Wells
163	Warwick Garden Apartments	33.	Wells
164	Wawayanda Trailer Park	35.	Wells

REFERENCE NO. 10

NUS CORPORATION
SUPERFUND DIVISION

PROJECT NOTES

TO: S.R. Report **DATE:** January 16, 1989

FROM: Joseph Murtaugh **COPIES:**

SUBJECT: 3-mile vicinity map

REFERENCE:

The NUS Corp 3-mile vicinity map for the Champion International / Retail Packaging Division site is located in the packet at the end of the Site Inspection Report background information.

NUS 443A 58 1182

REFERENCE NO. 11

4-27-74
1-525
GS-MD

REFERENCE NO. 12

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NUS CORPORATION

II

0049

Champion International Corp.
TDD# 02-8703-45
Project Manager: Denise Horgan
Logbook# 0049
March 24, 1987

02-8763-45

04/15/87

12

CHAMPION INTERNATIONAL CORP/RETAIL PKG DIV

WALDEN, ORANGE COUNTY, NY

$ I

NUS PERSONNEL:

D.H. 4/15/87 DENISE HORGAN

Alan Cherepon ALAN CHEREPON

Andrea McClung 4/15/87 ANDREA McCLUNG

Scott Engle SCOTT ENGLE

Susan Kennedy 4/15/87 SUSAN KENNEDY

Gerald V. Gilliland 4-15-87 GERRY GILLILAND

THE ABOVE HAVE READ AND UNDERSTOOD THE WORKPLAN. THE ABOVE CREW MEMBERS ALSO ATTENDED THE TAILGATE SAFETY MEETING

WEATHER CONDITIONS: 50°F, cloudy
primarily northerly light winds

INSTRUMENTS:

	EPA #	
OVA D	428696	
HNU F	307146	Probe 307139
MINI RAD	428604	

CAMERAS:

CANON AF35ML	428662
CHINON	469773

Denise Horgan 4/23/87

Andrea McClung 4/27/87

04/10/87

02-8703-45

8:25 Arrived at Champion Intl. Met with Harold Judd, Ralph Willis, John DeFillips and Mike Cody. Discussed samples that will be taken. Will split samples w/ Mike Cody from ERM

8:55 Arrived in Parking Area and began Command Post set-up

9:00 Scott Engle began Tailgate Health and Safety meeting. All crew members attended: D.H., G.G., A.C., S.K., A.M.
Will sample in Level D, if any hits above background are ~~detected~~ then sampling will continue in Level B

9:20 Samplers A.M and S.K. begin suiting up for S.W. sampling
A.C. and G.G. will begin the Magnetometer Survey and utilize the HNU for continuous air monitoring
D.H., S.E., A.M., S.K., will leave the site to the Tin Brook to take the S.W and Sed. samples

9:40 S.E., A.C. D.H. enter the Trench Area for an initial air monitoring survey using the HNU and OVA no. Hits are detected. The Magnetometer will follow the survey

Dennis Hazzard [signature] Andrea McClung 4/27/87

04/15/87

02-8703-45

9:43 Picture of A.C + S.E. monitoring Pending Area
No Hits on the OVA or HNU

9:47 No signs of stressed vegetation.

9:49 S.E and A.C. monitor the pending area at the base of the slope to the North of the Trench Area. No Hits on the OVA or HNU
No soil discoloration.
Ground Hog Hole in the side of the slope

9:55 Monitoring the North Eastern part of the property where air photos demonstrated a gully region.
Swamp-like vegetation
No Hit on the OVA or HNU

9:58 A.C, S.E, and D.H return to decon area

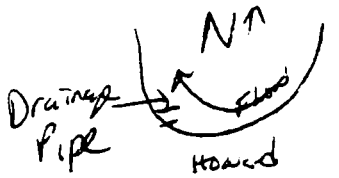
10:10 G.G. AND A.C. go to Trench Area to stake out the Mag. survey Area
A.M S.E, D.H, SK leave site for SW sampling

Denise Horsman 4/23/87

Andrea McClung 4/27/87

04/15/87

10 50 S.E. D.H., A.M., S.K., Arrive at Brook Area.
S.E. & D.H. will survey the area using an HNU and OVA. ~~TT~~ will determine locations for S.W and Sed Sampling



No Readings on HNU or OVA
Brooks Flows IN A Northern direction

1105 Crew will drive to other side of Brook for further evidance for sampling

11:18 Howard GAS Co gave permission to S.E. to enter on property. The Co. is located directly at the Bend in the Brook
There are two storm drains at the road side that lead into the culvert that empties into the Brook. Therefore no surface water samples will be collected since due to the storm drains contaminant migration could not be pinpointed to Champion Intl.

11:24 Saw children fishing off a bridge [illegible] Tin Brook. Demonstrates recreational use.

1129 Crew Returns to Command Post at Champion
Laurie Bond Pauline D. arrived.

Dennis Horgan 4/23/87

Andrea McClung 4/27/87

04/15/87

02-5703-41

1130 A.C. The trench area to be surveyed is 300 ft x 175 ft. The grid intervals will be 20 ft. apart. Each small square on the grid represents 5 ft.

1140 AM SK SE DH 26 PD leave the command post to take the sed samples The Northern Wooded sector of Champion Swamp like area.

1200 (DH) Arrive at Sample location #1 approximately 30 yds. Due East of the Fence post at the Northern boundary of the site.

1208 Collecting SW1 from water flowing towards off-site locations

1225 Finished SW-1 sampling

1237 Begin sediment sampling at same location NYQ1SED1. NYQ1-SED1 is equivalent to (same as) NYQ1-S1

1245 Finished Sampling

1250 Begin sampling at 2nd S.W. location Picture of A. McClung collecting NYQ1SW2 91 ft. South of Fence Post at Northern Border and 103 ft. Due east of that point 91 ft. South from the fence

Dennis Hagan 4/27/87

Andrea McClung 4/27/87

04/15/87 22-SPD-45

1313 A.M begins NYQ1 SED 2 sample collection
NYQ1 SED2 IS SAME AS NYQ1S-2

Denise Horgan feels ill and turns over the Project manager duties to Scott Engle. Denise Horgan leaves site ill and goes home w/ L.G. AND P.D. Scott Engle now assumes P.M. duties

1425 Mike & Scott Engle return to burial area to check progress on magnetometer survey. Al Cherepon reports no significant readings that would indicate a large quantity of metal objects.
Joe has reported that the drums were covered by only a couple feet of soil.

1445 Harold and John arrived suggested we do a close-spaced line across the middle of the transect. Said trenches are rather narrow.

1515 Al and Gerry conduct a final close-spaced transect in a perpendicular pattern across the middle of the suspected burial area. The ~~readings~~ readings were taken at 5-foot intervals.

1525 Completed the magnetometer survey. All staff return to decon area to package samples. All soil samples will be taken tomorrow after evaluating the magnetometer results.

1547 The drum that was provided by Champion for our decon water contained a clear pastey liquid on the bottom. This was

Denise Horgan 04/15/87 Andrea McClung 4/27/87

noted to avoid possible future allegations of contaminants in the decon materials.

1600 All NUS personnel leave Champion site.

1625 All samples delivered to Federal Express in Newburgh.

4/15/87

4/16/87 Champion International 02-8703-45 1

NUS Personnel

Scott Engle - Project Manager
Andrea McClung - Health & Safety
Al Cherepan - Sampler
Sue Kennedy - Sampler
Gerry Gilliland - SHO

ERM - Michael Cody

Weather Conditions - Cloudy, 52° F, Light winds variable in direction.

Instruments:

HNU ~~OVA~~ F 307146 Probe 307139
OVA ~~HNU~~ D 428696
Minirad 428601
Chinon Camera 469772 Data Back 469773
Canon Camera 428662

SCBA's 307168
307171

0700 - Morning discussion - Magnetometer survey showed no conclusive results for locating the burial site. Will base sample location selection on the following

(1) Definite disturbed area defined by vegetation development and historical photography (Air Photos on file at NUS)
(2) Depressions in field surface where subsurface has sunken or given away.
(3) Dead tree in middle of suspect area
(4) Pond located immediately below lip of suspected burial area.

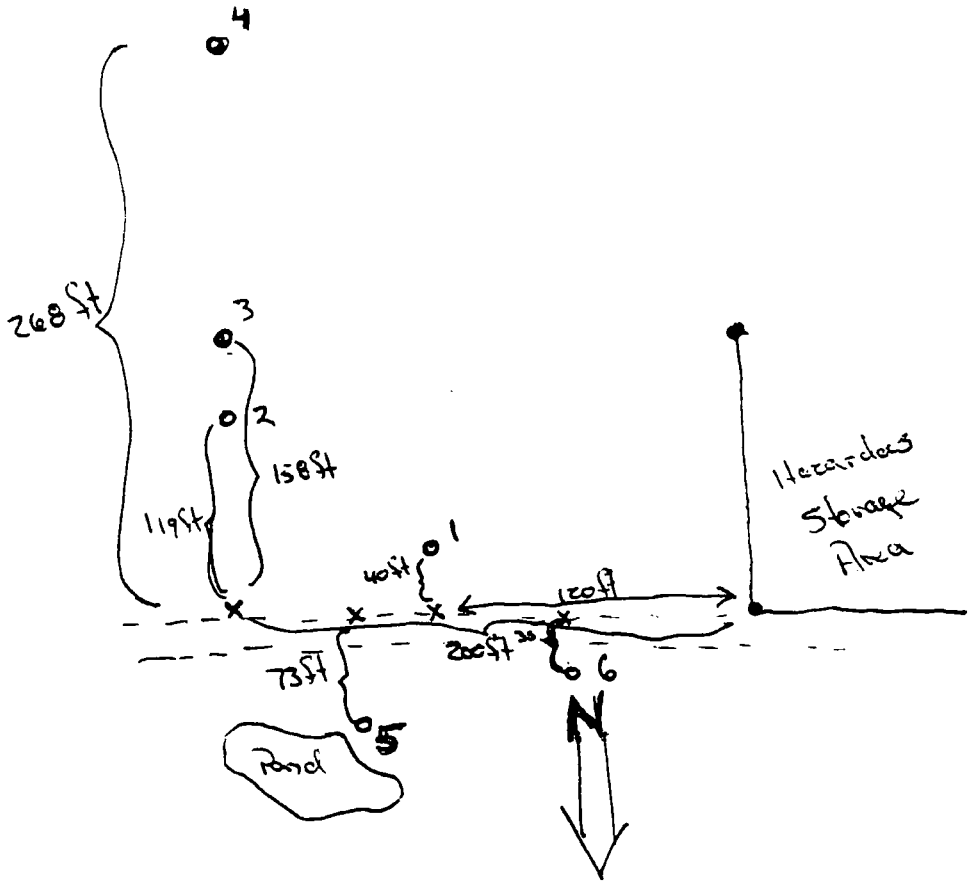
[signature] 4/16/87 Andrea McClung 4/27/87

0740 NUS personnel arrive at Champion
We are at reception area. Going up
on hill behind plant to do further recon.
0751 Locate half buried drum in woods at
extreme rear of disposal area.
0752 On Hill, above hazardous storage area
Gerry Gilliland photographer.
0756 Picture of half-buried drum at rear of
disposal area. Gerry Gilliland photographer
0800 Signed in at front office - confirmed
with Ralph Willis that we would be setting
up at the same location as yesterday.
0805 Begin to set up decon area on
northeast side of plant area.
0817 Mike from ERM arrives on site.
0820 A. McClung fires up OVA and HNU
both instruments respond to the marker test.
0834 A. McClung conducts health and safety
briefing. S. Engle reviews site activities
The signed below have received the health
and safety briefing.

Scott Engle
Andrea McClung
Alan Thompson
Susan Kennedy
Gerald V. Gilliland

0843 A. Thompson, A. McClung and S. Engle
go with Mike C. to establish sample
locations.

Scott T. Engle 4/14/87 Andrea McClung 4/27/87



4/14/87

Andrea McCluny

4/16/87 02-8703-45 NYQ1

0851 NUS personnel enter suspect burial area place one stake at the location of the magnetometer anomaly. 120 feet east of gate (haz storage area) and 40 feet south.

0856 - 2nd Location will be adjacent to small dead tree in center of suspect area.

0858 3rd location on westward edge of rectangular depression in middle of suspected dump area

0905 4th sample location is on edge of treeline on south side of suspect disposal area.

0916 Establish last sample location on south side of small pond at foot of slope on north side of suspect disposal area. Sample location 5

0920 A 6th Sample location established on what appears to be an old storage or staging area 78 feet eastward in line with fence on north side of staging area and 35 feet northward perpendicular to that line. Origin of all measurements, Northeast fence post of hazardous waste storage area.

0930 A. McClung, A Cheepan measuring sample location distances.

0938 Sample 2B is 200 feet east of post & 119 ft south
Sample 1 is 120 feet east and 40 ft south
Sample 3 is 200 feet east of post & 158 ft south
Sample 4 is 200 feet east of post & 268 ft south
Sample 5 by pond is 146 ft east and 73 ft northward

0957 All crew return to ~~sample location~~ decon area

1000 All crew taking a warm up break.

[signature] 4/16/87 Andrea McClung 4/27/87

4/16/87 02-8703-45 NYQ1

Sample Location Table

		Projected Depth
NYQ1 - S3	Location 1	5 ft
NYQ1 - S4	Location 2	5 ft
NYQ1 - S5	Location 3	5 ft
NYQ1 - S6	Location 4	5 ft
NYQ1 - S7	Location 6	0-1 ft
NYQ1 - S8	Location 5	~~5 ft~~ 0-1 ft
NYQ1 - S9	Location ~~10~~ 5	~~0-1 ft~~ 5 ft

1026 Sample crew ready to go.
S Kennedy & A. Cherepon samplers
A. McClung H&S
S Engle Documentation

1034 Arrive at NYQ1-S3 - No readings on the OVA or HNu with initial soil extractions at 0-12 inches. Soil is light brown - medium texture. 50% clay 50% silt & sand 12 inches encounter darker soil and rocks start second hole 2 feet east of first hole. encounter same dark material at 1 ft level.

1049 Begin collecting sample at 2.6 feet in a stainless steel bowl. Bottom of sample at 3.1 feet. Pebbles and stones are discoloured a dark color.

1056 Picture of Sample.

1106 Begin sampling NYQ1-S4. No HNu readings OVA Battery is shot.
Soil material is very light - about 80% fine clays.
Composition remains consistant to 2 feet.

1117 Sample collected at 2.2 - 2.7 feet
Taking picture. Soil has been composited
ERM is getting samples alternately.

Scott W Engle 4/16/87 Andrea McClung 4/27/87

1124 Continuing down in sample location S-4 to examine soil composition at auger handle depth. No change noted - final depth was 3.8 ft. No HNu readings throughout.

1131 Ready to Begin at sample location NYQ1-S5 Harold and Mike leave sampling site. No HNu readings in top 6 inches. Soil is very light, silty clay composition

1145 Begin collecting sample NYQ1-S5 at 2.5 ft. Bottom of sample 3.2 ft

1147 Sample has been composited and filling sample jars.

1152 Complete sampling and refill hole. Return to Decon area.

1237 Begin sampling at sample location NYQ1-S6 HNu readings of 2.3 ppm at 12 inches No readings off of extracted material. Continuous readings of 1 ppm down in the hole only. Material is moist - medium brown - clay and silt.

1250 Begin sampling at 2.5 feet. - some water beginning to enter the hole. Water running into hole making it impossible to collect sample. will collect sample from material from 0-2.5 feet

DEPTH TO Groundwater

1257 Picture collecting sample

1309 At sample location NYQ1-~~S9~~ SW, S7 Sample collected ~~0-12 ft~~ 0-1.75 ft light brown, medium texture, silt and clay.

1323 Begin augering at S8/S9 location

1328 Collect sample from 0-8 inches no readings above background on the HNu.

[signature] 4/16/87 Andrea McClung 4/27/87

1334 Collecting sample material for S9.
Depth ↑ D 2.6 ft
1340 Putting sample S9 in jars. Picture
1345 Exit area of suspected drum burial.
Mike C. & Ezra sign document certifying
his receipt of the sample materials.
1350 Return to decon area to begin clean up and
sample shipment preparations.
1425 A. McClung and S. Engle go to hazardous
storage area to document labeling on the stored
materials. All drums within curbing have
hazardous materials label. All drums outside
curbing have no label and appear empty.
Labels on all hazardous materials says
Waste Alcohol NOS
UN # 1987
They all appear to be ink dyes.

1435 Leave Hazardous Storage area
1441 Go to west side of facilities empty drums
with the markings PENNESOLV 100 were
noted. Some had their lids off. Approximately
40 drums were noted. Discolored runoff water
(brilliantly colored oily stream) was noted
entering the ditch bordering the property
and the train tracks. Returned to Decon area
1455 Ralph Willis met us back at the decon area
at our request, so he could escort us around the
west side of the plant facilities. Although we had been
given permission by Harold Judd to go anywhere
and take any pictures we wanted, due to the nature
of the activities already noted, I felt that a
company representative should be present.

Scott Engle 4/16/86 Andrea McClung 4/27/87

1500 Pictures of empty drums and glue encasements. Ralph Wilks reports that all drums stored in this area are washed in a drum washer prior to being set out for storage.
3- Pictures (1) Glue label (2) Drums w/ ~~the~~ liquid runoff beneath them (3) Overall view of drum and glue encasement storage area.
Ralph reported that he had no knowledge of any disposal activities associated with the gulley running alongside the storage area.

1510 Returned to decon area. All materials have been put away and decon water placed in the drum provided for us by Champion. Harold Judd had requested earlier we let him know the sample results as soon as possible so he can decide how to dispose of it.

1525 All NUS personnel leave Champion site.

1550 All samples delivered to Federal Express at Newburgh.

Additional Notes:

Harold Judd requested copies of all photos. I told him they would be available through Carol Petersen at EPA as would the sample results.

Andrea McCluney 4/27/87

4/14/87

WORKPLAN / SAMPLING PLAN AMENDMENTS:

A FIELD DECISION WAS MADE NOT TO COLLECT SURFACE WATER SAMPLES FROM THE TIN BROOK. STORM DRAINS WERE OBSERVED ALONG SHERMAN AVE., WHICH IS ADJACENT TO TIN BROOK. THOSE STORM DRAINS EMPTY INTO THE BROOK AND THEREFORE NEGATED COLLECTING SURFACE WATER SAMPLES. SURFACE RUN-OFF FROM THE ROAD WOULD INTERFERE WITH PINPOINTING THE SOURCE OF POLLUTANTS POSSIBLY DETECTED IN THE BROOK.

THE MAGNETOMETER SURVEY DETECTED NO ANOMALIES THAT WOULD INDICATE THE PRESENCE OF TRENCHES WITH BURIED DRUMS. SINCE THE TRENCHES WERE UNABLE TO BE DELINEATED, FIELD DECISIONS WERE MADE FOR SOIL SAMPLE LOCATIONS. DURING THE SITE INSPECTION A SMALL STREAM WAS OBSERVED FLOWING NORTHWARD OFF SITE ONTO PRIVATE PROPERTY. TWO SURFACE WATER AND TWO SEDIMENT SAMPLES WERE COLLECTED FROM A NORTHEASTERN AREA OF THE SITE. THIS IS A LOW-LYING AREA WHERE PONDING AND A SMALL STREAM FLOWING NORTHWARD WERE OBSERVED.

THE REMAINING 7 SOIL SAMPLES WERE COLLECTED NEAR THE SUSPECT TRENCH AREA IN AN ATTEMPT TO CHARACTERIZE IT. THE NORTHEASTERN MOST FENCE POST OF THE HAZARDOUS STORAGE AREA WAS USED AS THE POINT OF REFERENCE IN MEASURING OUT THE SAMPLE LOCATIONS. THE SAMPLE LOCATIONS ARE PREVIOUSLY EXPLAINED IN THE TEXT OF THE LOGBOOK. COMPOSITE SAMPLES WERE COLLECTED AT VARIOUS DEPTHS. BUCKET AUGERS WERE USED.

THE GRID INTERVALS IN THE MAGNETOMETER SURVEY PERFORMED WERE 40 FEET DUE TO THE THICK GROWTH AND LARGE AREA OF THE SURVEY.

[illegible] 5/18/87

Andrea McClung 6/10/87

04/15/87

02-5703-45

CHAMPION INTERNATIONAL CORP SI PHOTOLOG

ALL PHOTOS TAKEN BY DENISE MORGAN

FF	TIME	PHOTO ID #	SAMPLE #	SAMPLER	DATE	DESCRIPTION
0P 1S	943	1			4/15/87	S.E. and HC air monitoring equipment in Tremont Area prior to Magnetometer survey
1P 2S	1120	2			4/15	STREAM ORIGINATING FROM CHAMPION FLOWING N TO TIN BROOK. STORM DRAIN IN FOREGROUND
2P 3S	1208	3	NYQI-SW1		4/15	SW1 FROM flowing water leaving off site NYQI-SW1
3P 4S	1237	4	NYQI-S1	S. KENNEDY	4/15	NYQISED1 = NYQI-S1 SAME LOCATION AS SW1
4P 5S	1250	5	NYQI-SW2	A. McCLUNG	4/15	NYQISW2 / LOCATED 91 Ft. SOUTH OF NORTHEAST MOST FENCE POST AND 103 Ft. EAST OF THAT POINT (91 Ft. SOUTH)
5P 6S	1313	6	NYQI-S2	A. McCLUNG	4/15	NYQISED2 = NYQI-S2 SAME LOCATION AS SW2
		~~7~~				
04/16/87		~~8~~	All FOLLOWING PHOTOS			TAKEN BY SCOTT ENGLE
6P 7S	0751	7			4/16	VIEW OF ACTIVE HAZARDOUS WASTE CMPD. LOOKING ~~NORTHWARD~~
7P 8S	0756	8			4/16	VIEW OF TOP THIRD OF A DRUM
8P 9S	1052	9	NYQI-S3	A. CHEREPON	4/16	COLLECTION OF NYQI-S3
9P 10S	1057	10	NYQI-S3	A. CHEREPON	4/16	ANOTHER VIEW OF COLLECTION OF NYQI-S3
10P 11S	1112	11	NYQI-S4	S. KENNEDY	4/16	COLLECTION OF NYQI-S4
11P 12S	1142	12	NYQI-S5	S. KENNEDY A. CHEREPON	4/16	COLLECTION OF NYQI-S5
12P 13S	1257	13	NYQI-S6	S. KENNEDY A. CHEREPON	4/16	COLLECTION OF NYQI-S6
13P 14S	1315	14	NYQI-S7	S. KENNEDY A. CHEREPON	4/16	COLLECTION OF NYQI-S7

Denise Morgan 6/10/87

Andrea McClung

04/16/87

02-8703-45

CHAMPION INTL CORP II PHOTOLOG CONTINUED

ALL PHOTOS TAKEN BY SCOTT ENGLE

#	TIME	PHOTO #	SAMPLE #	SAMPLER	DATE	DESCRIPTION
14P 15S	1328	15	NYQ1-58	S. KENNEDY	4/16/87	COLLECTION OF NYQ1-58
15P 16S	1340	16	NYQ1-59	S. KENNEDY	4/16	COLLECTION OF NYQ1-59
16P 17S	1430	17			4/16	VIEW OF ACTIVE HAZARDOUS WASTE CMPD. LOOKING EASTWARD
17P 18S	1430	18			4/16	VIEW OF DRUM LOCATED IN HAZARDOUS WASTE CMPD.
18P 19S	1430	19			4/16	VIEW OF CONCRETE ~~DO~~ CURB LOCATED IN THE HAZARDOUS WASTE CMPD.
19P 20S	1500	20			4/16	VIEW OF DRUMS LOCATED ON WESTERN SIDE OF BUILDING.
20P 21S	1500	21			4/16	VIEW OF DRUMS LOCATED ON WESTERN SIDE OF FACILITY
21P 22S	1501	22			4/16	VIEW OF GLUE CONTAINER LOCATED ON WESTERN SIDE OF THE FACILITY WITH DRUMS

[signature] 5/8/87

Andrea McClung 6/10/88

05/04/87 02-8703-NJ

CHAMPION INTERNATIONAL CORP.

SAMPLE MANAGEMENT

CASE # 7136

SAMPLING DATES: 04/15/87 AND 04/16/87

ORGANIC LAB
NANCO LABS INC.
RD 6 ROBINSON LANE
WAPPINGERS FALLS, NY 12590
914-221-2485
ATTN GEORGE O'DELL

INORGANIC LAB
ASSOCIATED LABORATORIES INC.
806 N. BATAVIA
ORANGE, CA 92668
714-771-6900
ATTN: BRUCE WARDEN

4/15/87

ORGANIC AIRBILL # 3498025462 INORGANIC AIRBILL # 3498025451

SAMPLE #	ORGANIC TR#	INORGANIC TR#
NYQ1-B1	BK 221	MBJ 119
NYQ1-SW1	BK 222	MBJ 120
NYQ1-SW2	BK 223	MBJ 121
NYQ1-S1	BK 224	MBJ 122
NYQ1-S2	BK 225	MBJ 123

TIME: 1700 HOURS

4/16/87

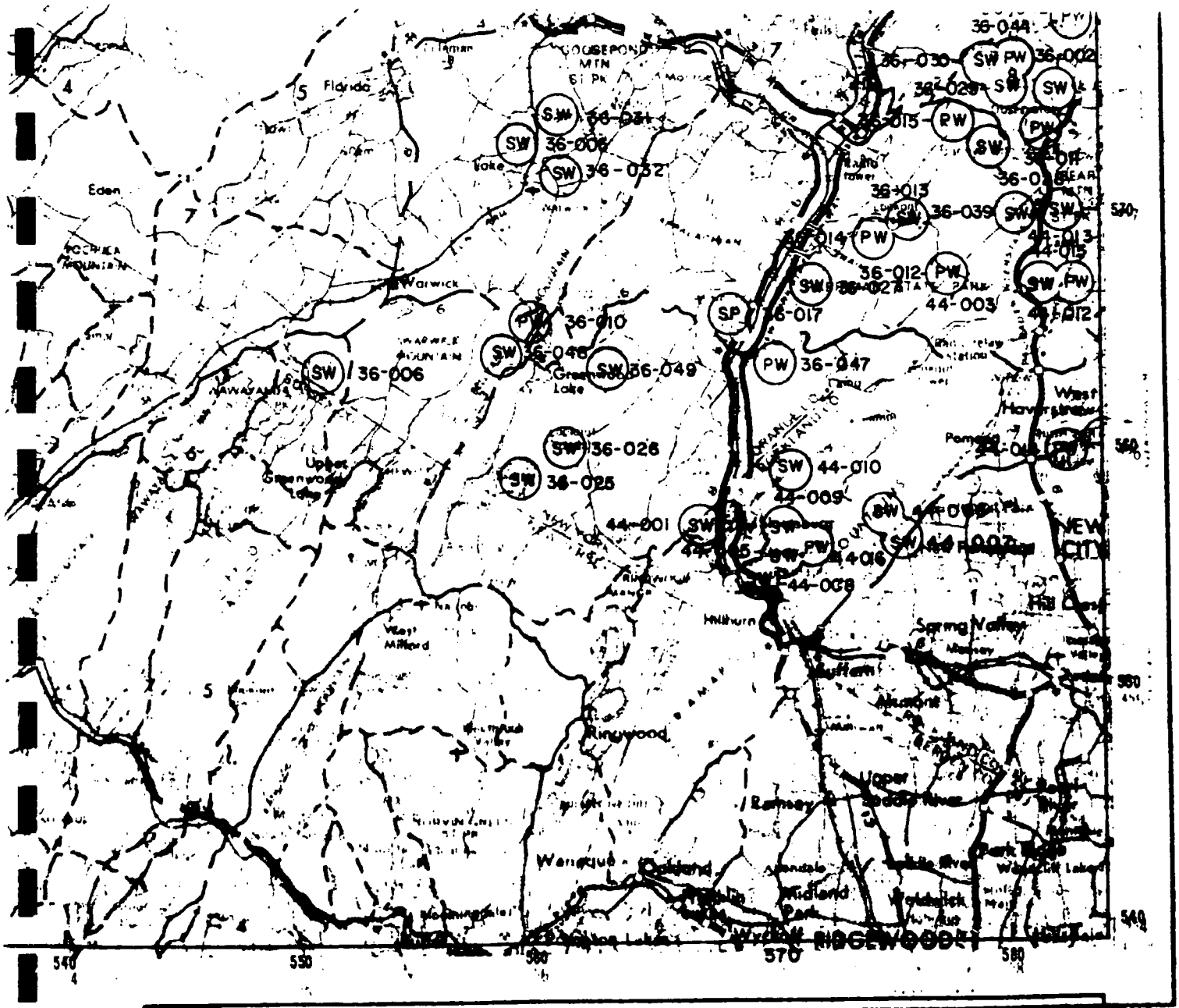
ORGANIC AIRBILL # 125462665 INORGANIC AIRBILL # 125462676

SAMPLE #	ORGANIC TR#	INORGANIC TR#
NYQ1-B2	BK 233	MBJ —
NYQ1-S3	BK 226	MBJ 124
NYQ1-S4	BK 227	MBJ 125
NYQ1-S5	BK 228	MBJ 176
NYQ1-S6	BK 229	MBJ 177
NYQ1-S7	BK 230	MBJ 178
NYQ1-S8	BK 231	MBJ 179
NYQ1-S9	BK 232	MBJ 180

TIME: 1500 HOURS

[illegible signature] 05/04/87 Andrea McClung 05/04/87

REFERENCE NO. 13



SIGNIFICANT HABITAT OVERLAY NO. 1 OF 2

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

DIVISION OF FISH AND WILDLIFE
BUREAU OF WILDLIFE

PREPARED FOR: SIGNIFICANT HABITAT UNIT
WILDLIFE RESOURCES CENTER
DELMAR, NEW YORK 12054
(518) 457-5782

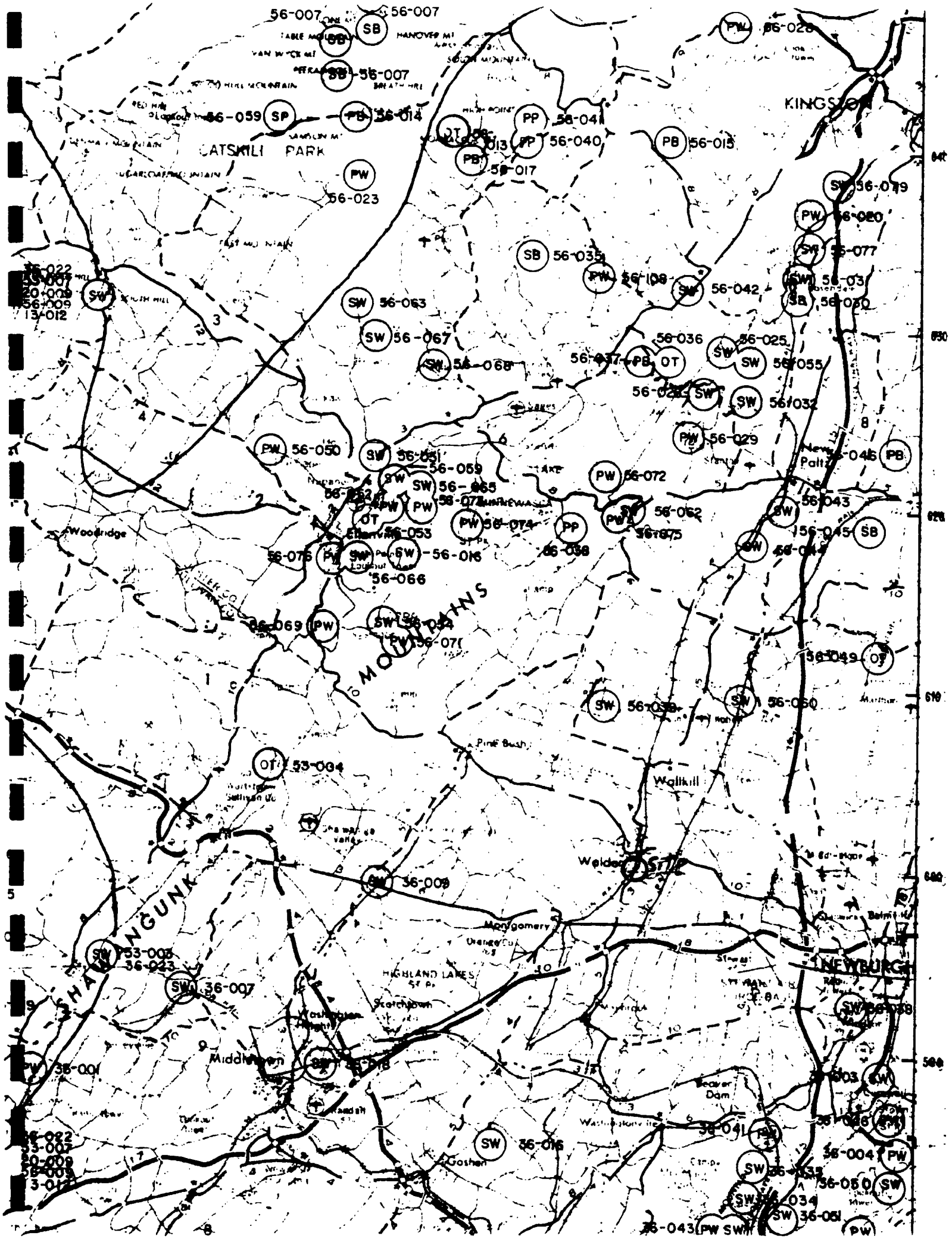
PREPARED BY: HABITAT INVENTORY UNIT

QUAD: SCRANTON, PA.

SCALE: 1:250,000

MARCH, 1981

REVISED: 11/6/85



CATSKILL PARK
KINGSTON
MOUNTAINS
SHAWANGUNK
NEWBURGH
Woodridge
Wallkill
Walden
Montgomery
Middletown
Goshen
Washington Heights
Scotchtown
Beaver Dam
Pine Bush
HIGHLAND LAKES
56-007
56-059
56-014
56-023
56-041
56-040
56-015
56-017
56-035
56-042
56-063
56-067
56-068
56-036
56-025
56-055
56-032
56-029
56-050
56-051
56-059
56-065
56-072
56-062
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56-045
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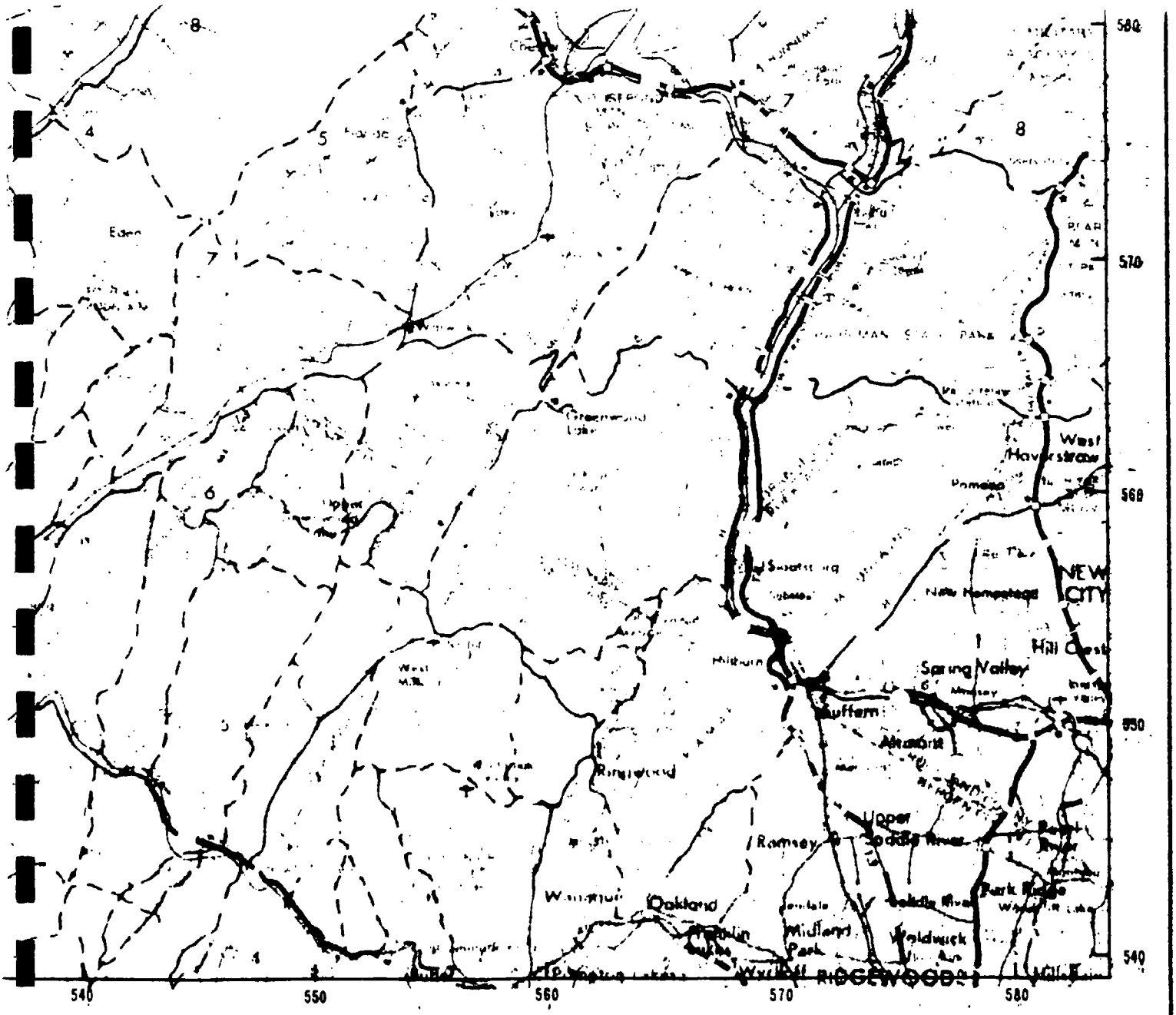
36-043



SIGNIFICANT HABITAT OVERLAY NO. 2 OF 2

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

DIVISION OF FISH AND WILDLIFE
BUREAU OF WILDLIFE

PREPARED FOR: SIGNIFICANT HABITAT UNIT
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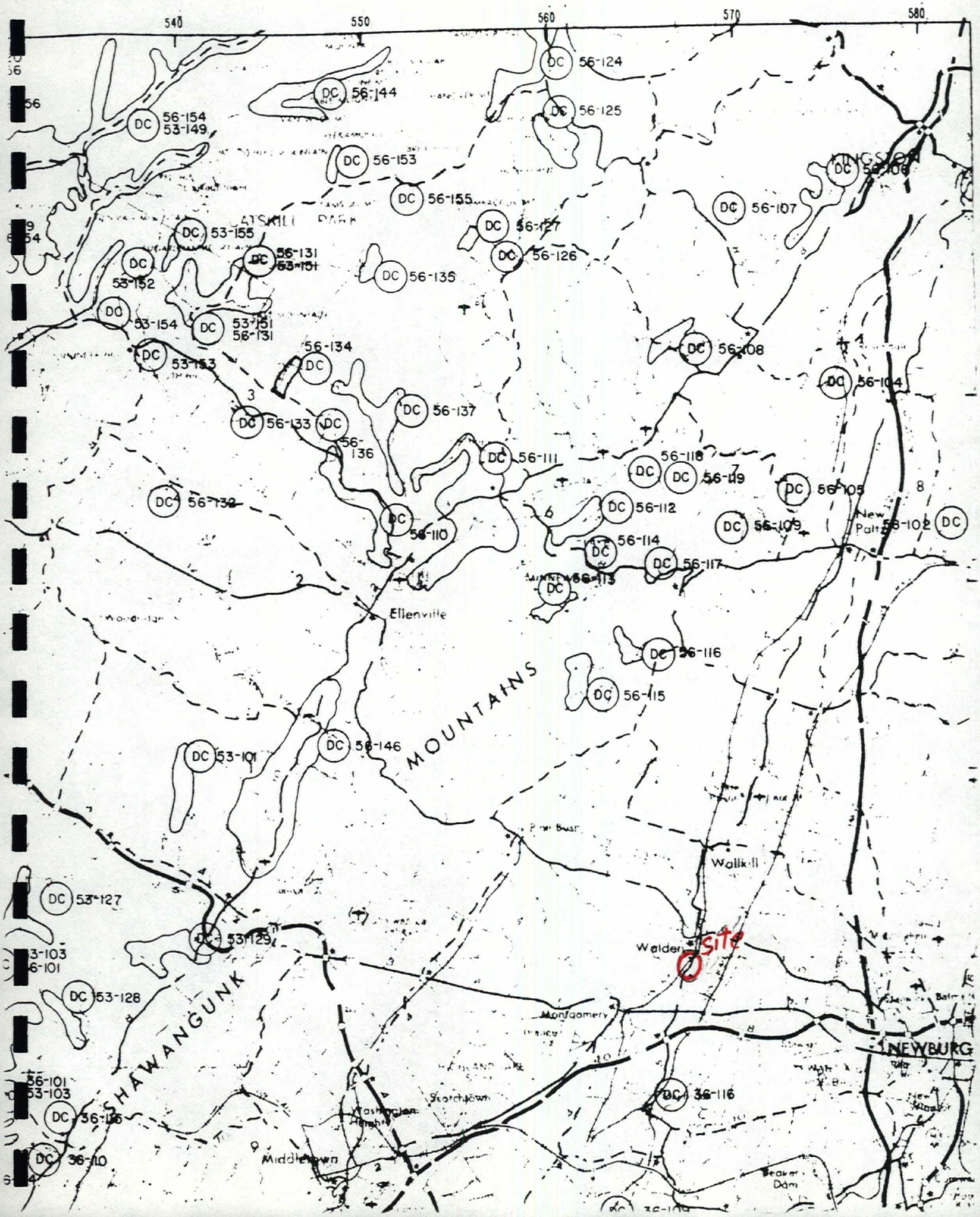
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Ellenville
DC 56-116
DC 56-115
MOUNTAINS
DC 53-101
DC 56-146
Wallkill
DC 53-127
DC 53-129
Walden
Site
DC 53-128
SHAWANGUNK
Montgomery
NEWBURG
DC 56-101
53-103
DC 56-116
DC 56-105
DC 56-110
Middletown
Beaver Dam

REFERENCE NO. 14

NUS CORPORATION — TELECON NOTE

CONTROL NO:	DATE: 06/19/87	TIME: 900

DISTRIBUTION: CHAMPION INTERNATIONAL CORP.

BETWEEN:	OF: NYS DEC in White Plains	PHONE: (914) 761-6660

AND: Denise Horgan (NUS)

DISCUSSION:

RE: Know of no surface water intakes along the Wallkill river. There are wells along the River.

Possibly some surface water intakes in Ulster County.

Know of no irrigation around Walden, but can't be sure (irrigation either from the surface water or supply wells).

ACTION ITEMS:

NUS 067 REVISED 0581

REFERENCE NO. 15

Press RETURN tGO

Data List of Dataset: DENISE   Number of Records = 6

REC #	POP	HOUSE	DISTANCE	SECTOR
1	1716	612	0.400000	1
2	2290	936	0.810000	1
3	1653	593	1.60000	1
4	3313	1185	3.20000	1
5	1455	465	4.80000	1
6	8934	2854	6.40000	1

Distance	Population	Total Houses
1 mile	5659	2141
2 miles	8972	3326
3 miles	10,427	3791
4 miles	19,361	6645

COI

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ZDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDE
32.  Locate Area of Interest by Latitude/Longitude                  (CDLAT)
3
3Enter an option number or a procedure name (in parentheses)
3or a command: HELP, HELP option, BACK, CLEAR, EXIT, TUTOR
3? 2
3
3MENU: Process Census Data by Latitude and Longitude
3
3ref par-name          parameter description              value              inde
3--- --------  ----------------------------------  -----------------  -----
31.  LAT       latitude (DDMMSS or degree)         413318
32.  LON       longitude (DDDMMSS or degree)       741108
33.  RINGDIST  ring distances in km                6.4                (6)
34.  NSECTORS  number of sectors                   1
35.  DATASET   Name of the output dataset          DENISE
36.  TAG       tag field of the output dataset     *
3
3Enter one or more combinations of: reference or parameter name and value(s)
3[ref1 value1, ref2 value2, ...] or a command: HELP,NEXT,BACK,END,CLEAR,EXIT
3?
TMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMAIN
 18-Mar-87  09:07 AM              OnLine                        Cap
```

REFERENCE # 16

SYNS:
1-DODECANETHIOL
M-DODECYL MERCAPTAN
1-DODECYL MERCAPTAN
M-LAURYL MERCAPTAN
1-MERCAPTODODECANE
NCI-C60935

TOXICITY DATA:
cyt-rat-ihl 5020 ug/m3/16W

CODEN:
BZARAZ 27,102,74

Reported in EPA TSCA Inventory, 1980.
THR: See mercaptans. MUT data.
Fire Hazard: Low.
To Fight Fire: Alcohol foam.
Disaster Hazard: When heated to decomp it emits tox fumes of SO_x.

LAURYLPYRIDINIUM LAURYLXANTHATE

CAS RN: 14917965
NIOSH #: UU 5775000
mf: $C_{17}H_{30}N \cdot C_{13}H_{25}OS_2$; mw: 509.98

TOXICITY DATA: 2
skn-rbt 500 mg/24H MOD
eye-rbt 20 mg/24H SEV
orl-rat LD50:802 mg/kg

CODEN:
28ZPAK -,174,72
28ZPAK -,174,72
28ZPAK -,174,72

THR: MOD orl. A skn, eye irr.
Disaster Hazard: When heated to decomp it emits very tox fumes of NO_x and SO_x.

LAURYL SULFATE, SODIUM SALT, CONDENSED WITH 3 MOLES OF ETHYLENE OXIDE

NIOSH #: OF 5725000

SYNS:
SODIUM SALT OF SULFATED BROAD-CUT COCONUT ETHOXY(3EO) ALCOHOL
SODIUM SALT OF SULFATED ETHOXYLATE OF BROAD-CUT LAURYL ALCOHOL

TOXICITY DATA: 2
skn-rbt 10 mg MLD
skn-rbt 230 mg/5W open MLD
skn-gpg 115 mg/5W open MLD

CODEN:
JSCCA5 22,411,71
JSCCA5 22,411,71
JSCCA5 22,411,71

THR: A skn irr.
Disaster Hazard: When heated to decomp it emits tox fumes of SO_x.

LAVANDIN OIL

CAS RN: 8022159
NIOSH #: OF 6097500

Main constituent is Linalool; found in plant Lavanoula Hybrida Reverchon; prepared by steam distillation of the flowering stalks of the plant.

SYN: OIL OF LAVANDIN

TOXICITY DATA: 2
skn-rbt 500 mg/24H MLD

CODEN:
FCTXAV 14,443,76

Reported in EPA TSCA Inventory, 1980.
THR: A skn irr.
Disaster Hazard: When heated to decomp it emits acrid smoke and fumes.

LAVATAR

NIOSH #: OF 6097840

Coal tar distillates in a shampoo base.

TOXICITY DATA:
mma-sat 25 ug/plate

CODEN:
TOLED5 3,325,79

THR: MUT data.
Disaster Hazard: When heated to decomp it emits acrid smoke and fumes.

LAVENDER ABSOLUTE

NIOSH #: OF 6100000

Found in the flowers of Lavandula Officinalis chaix. The main constituent is Linalyl Acetate; prepared from alcoholic extract of a residue, which is extracted from plant material using an organic solvent; a dark green liquid.

TOXICITY DATA: 1
skn-rbt 500 mg/24H MLD
orl-rat LD50:4250 mg/kg

CODEN:
FCTXAV 14,443,76
FCTXAV 14(5),443,76

THR: LOW orl; A skn irr.
Disaster Hazard: When heated to decomp it emits acrid smoke and fumes.

LAVENDER OIL

CAS RN: 8000280
NIOSH #: OF 6110000

Main constituent is linalyl acetate. Found in the plant Lavandulaofficinalif choix (Fam. Labiate). Prepared by steam distillation of the flowering stalks of the plant.

SYNS:
LAVENDEL OEL (GERMAN)
OIL OF LAVENDER

TOXICITY DATA: 1
skn-rbt 500 mg/24H MLD
orl-rat LD50:9040 mg/kg

CODEN:
FCTXAV 14,443,76
PHARAT 14,435,59

Reported in EPA TSCA Inventory, 1980.
THR: LOW orl. A skn irr.
Disaster Hazard: When heated to decomp it emits acrid smoke and fumes.

LD-813

CAS RN: 64083052
NIOSH #: OF 6730000

Commercial mixture of aromatic amines containing approx. 40% MOCA

TOXICITY DATA: 3
orl-rat TDLo:37 gm/kg/2Y-C:CARC

CODEN:
TXAPA9 31,159,75

THR: An exper CARC. See also aromatic amines.
Disaster Hazard: When heated to decomp it emits tox fumes of NO_x.

LEAD

CAS RN: 7439921
NIOSH #: OF 7525000
mf: Pb; mw: 207.19

Bluish-gray, soft metal. mp: 327.43°, bp: 1740°, d: 11.34 @ 20°/4°. vap. press: 1 mm @ 973°.

SYNS:
C.I. 77575
LEAD FLAKE
LEAD S2
OLOW (POLISH)

TOXICITY DATA: 3	CODEN:
orl-rat TDLo:790 mg/kg (MGN)	AEHLAU 23,102,71
orl-rat TDLo:1140 mg/kg (14D pre-21D post)	PHMCAA 20,201,78
orl-mus TDLo:1120 mg/kg (MGN)	AEHLAU 23,102,71
orl-mus TDLo:6300 mg/kg (1-21D preg)	EXPEAM 31,1312,75
orl-mus TDLo:12600 mg/kg (1-21D preg)	EXPEAM 31,1312,75
orl-mus TDLo:4800 mg/kg (1-16D preg)	BECTA6 18,271,77
ivn-ham TDLo:50 mg/kg/(8D preg):TER	EXPEAM 25,56,69
orl-dom TDLo:662 mg/kg (1-21W preg)	TXAPA9 25,466,73
ivn-ham TDLo:50 mg/kg/(8D preg):TER	EXPEAM 25,56,69
orl-wmn TDLo:450 mg/kg/6Y:CNS	JAMAAP 237,2627,77
ipr-rat LDLo:1000 mg/kg	EQSSDX 1,1,75
orl-pgn LDLo:160 mg/kg	HBAMAK 4,1289,35

Carcinogenic Determination: Indefinite IARC** 23, 325,80.

TLV: AIR: 0.15 mg/m3 DTLVS* 4,243,80; *Toxicology Review:* TRBMAV 33(1),85,75; PGMJAO 51(601),783,75; JDSCAE 58(12),1767,75; IRXPAT 12,1,73; CTPHBG 55,147,71; CTOXAO 6(3),377,73; QURBAW 7(1),75,74; RREVAH 54,55,75; JAVMA4 164(3),277,74; AEMBAP 40,239,73; CTOXAO 5(2),151,72; FOREAE 7,313,42; KOTTAM 11(11),1300,75; GEIGAI 20(3),291,73; STEVA8 2(4),341,74; CLCHAU 19,361,73; AJMEAZ 38,409,65; 85DHAX PB,254,72; PDTNBH 6,204,77; AMTODM 3,209,77. OSHA Standard: Air: TWA 200 ug/m3 (SCP-O) FEREAC 39,23540,74. Occupational Exposure to Inorganic Lead recm std: Air: TWA 0.10 mg(Pb)/m3 NTIS**. "NIOSH Manual of Analytical Methods" VOL 1 102,191,195,200,208,214,262, VOL 3 S341. Reported in EPA TSCA Inventory, 1980.

THR: See lead compounds. A hmn CNS. HIGH orl; MOD irr. A common air contaminant. It is a ± CAR of the lungs and kidney and an exper TER.

Fire Hazard: Mod, in the form of dust when exposed to heat or flame. See also powdered metals.

Explosion Hazard: Mod, in the form of dust when exposed to heat or flame.

Incomp: NH_4NO_3, ClF_3, H_2O_2, NaN_3, Na_2C_2, Zr. disodium acetylide; oxidants.

Disaster Hazard: Dangerous; when heated, emits highly tox fumes; can react vigorously with oxidizing materials.

For further information see Vol. 1, No. 1 of *DPIM Report.*

LEAD ACETATE

CAS RN: 301042 NIOSH #: AI 5250000
mf: $C_4H_6O_4 \cdot Pb$; mw: 325.29

Trihydrate, colorless crystals or white granules or powder. Slightly acetic odor; slowly effloresces; d: 2.55; mp: 75° when rapidly heated. Decomp above 200°; very sol in glycerol. Keep well closed.

SYNS:

ACETIC ACID LEAD (2+) SALT
ACETATE DE PLOMB (FRENCH)
BLEIACETAT (GERMAN)
LEAD (2+) ACETATE
LEAD(II) ACETATE
LEAD DIACETATE
LEAD DIBASIC ACETATE
NORMAL LEAD ACETATE
PLUMBOUS ACETATE
SALT OF SATURN
SUGAR OF LEAD

TOXICITY DATA: 3	CODEN:
dns-rat-ipr 50 ug/kg	PSEBAA 143,446,73
spm-mus-par 1 gm/kg	ARTODN 46,159,80
orl-rat TDLo:7854 mg/kg (6-16D preg)	FCTXAV 13,629,75
orl-rat TDLo:1800 mg/kg (1-22D preg/14D post)	TOLED5 7,373,80
orl-rat TDLo:113 gm/kg (70D pre-21D post)	PBBHAU 8,347,78
orl-mus TDLo:3150 mg/kg (1-21D preg)	CRSBAW 170,1319,76
orl-mus TDLo:4800 mg/kg (1-8D preg)	CRSBAW 172,1037,78
orl-mus TDLo:9 gm/kg (7-21D preg)	CRSBAW 170,1319,76
ipr-mus TDLo:35 mg/kg (8D preg)	BIMDB3 30,223,79
ivn-ham TDLo:50 mg/kg/(8D preg):TER	EXMPA6 7,208,67
ivn-ham TDLo:50 mg/kg (8D preg)	EXPEAM 25,56,69
ipr-pgn LDLo:150 mg/kg	ARTODN 46,265,80
cyt-hmn:lym 1 mmol/L/24H	TXCYAC 10,67,78
cyt-mus-orl 16800 mg/kg/4W	JTEHD6 2,619,77
cyt-mky-orl 5760 mg/kg/64W	MUREAV 45,77,77
ipr-mus TDLo:15 mg/kg/(8D preg):TER	BIMDB3 30,223,79
ivn-ham TDLo:50 mg/kg/(8D preg):TER	EXMPA6 7,208,67
orl-rat TDLo:250 gm/kg/47W-C:ETA	BJCAAI 16,283,62
ipr-rat LDLo:204 mg/kg	JPETAB 38,161,30
ipr-mus LD50:120 mg/kg	COREAF 256,1043,63
orl-dog LDLo:300 mg/kg	HBAMAK 4,1289,35
scu-dog LDLo:80 mg/kg	HBAMAK 4,1289,35
ivn-dog LDLo:300 mg/kg	EQSSDX 1,1,75
scu-cat LDLo:100 mg/kg	HBAMAK 4,1289,35
scu-rbt LDLo:300 mg/kg	HBAMAK 4,1289,35
ivn-rbt LDLo:50 mg/kg	EQSSDX 1,1,75
scu-frg LDLo:1600 mg/kg	HBAMAK 4,1289,35

Carcinogenic Determination: Animal Positive IARC** 23,325,80; Human Suspected IARC** 23,325,80. *Toxicology Review:* ADTEAS 5,51,72; ENVRAL 13,36,77; 85DHAX Pb,256,72. OSHA Standard: Air: TWA 200 ug(Pb)/m3 (SCP-O) FEREAC 29,23540,74. Occupational Exposure to Inorganic Lead recm std: Air: TWA 0.10 mg(Pb)/m3 NTIS**. Reported in EPA TSCA Inventory, 1980.

THR: MUT data. An exper + CARC, TER, ETA. A susp hmn CARC; HIGH ipr, orl, scu, ivn. See also lead compounds. A poison. An insecticide.

Disaster Hazard: When heated to decomp it emits tox fumes of Pb.

Incomp: $KBrO_3$; acids, sol sulfates, citrates, tartrates, chlorides, carbonates, alkalies, tannin phosphates, resorcinol, salicylic acid, phenol, chloral hydrate, sulfites, vegetable infusions, tinctures.

For further information see Vol. 1, No. 4 of *DPIM Report.*

LEAD ACETATE, BASIC

CAS RN: 1335326 NIOSH #: OF 8750000
mf: $C_4H_{10}O_8Pb_3$; mw: 807.71

THR: MOD orl. See also tin compounds.
Disaster Hazard: When heated to decomp it emits tox fumes of SO_x.

DIOCTYLOXOSTANNANE

CAS RN: 870086 NIOSH #: WH 7620000
mf: $C_{16}H_{34}OSn$; mw: 361.19

SYNS:
DIOCTYLTIN OXIDE
DI-N-OCTYLTIN OXIDE
DI-N-OCTYL-ZINN OXYD (GERMAN)

TOXICITY DATA: 2 CODEN:
orl-rat LD50:2500 mg/kg ARZNAD 19,934,69

Occupational Exposure to Organotin Compounds recm std: Air: TWA 0.1 mg(Sn)/m3 NTIS**. Reported in EPA TSCA Inventory, 1980.
THR: MOD orl. See also tin compounds.
Disaster Hazard: When heated to decomp it emits acrid smoke and fumes.

n-DIOCTYL PHTHALATE

CAS RN: 117817 NIOSH #: TI 1925000
mf: $C_{24}H_{38}O_4$; mw: 390.62

SYNS:
O-BENZENEDICARBOXYLIC ACID, DIOCTYL ESTER
DIOCTYL-O-BENZENEDICARBOXYLATE
DIOCTYL PHTHALATE
OCTYL PHTHALATE

TOXICITY DATA: 3 CODEN:
ipr-rat TDLo:15 gm/kg/(5-15D preg) TFX:TER JPMSAE 61,51,72
ipr-rat TDLo:5 gm/kg (5-15D preg) JPMSAE 61,51,72
orl-mus LD50:6513 mg/kg GTPZAB 17(10),51,73
ihl-mus LC50:5000 ug/m3 GTPZAB 17(10),51,73
skn-rbt 500 mg/24H MLD 28ZPAK -,48,72
eye-rbt 5 mg SEV AJOPAA 29,1363,46
ipr-rat TDLo:15 gm/kg/(5-15D preg):TER JPMSAE 61,51,72
ipr-mus LD50:65 gm/kg JSCCA5 28,667,77

TLV: Air: 5 mg/m3 DTLVS* 3,96,71. *Toxicology Review:* RREVAH 54,1,75; EVHPAZ 4,3,73; ESKHA5 93, 1,75; 27ZTAP 3,114,69. Reported in EPA TSCA Inventory, 1980.
THR: An exper TER. LOW ipr acute. A skn, eye irr. See also esters.
Disaster Hazard: When heated to decomp it emits acrid smoke and fumes.

DIOCTYL(1,2-PROPYLENEDIOXYBIS (MALEOYLDIOXY))STANNANE

CAS RN: 69226455 NIOSH #: WH 7640000
mf: $C_{27}H_{42}O_8Sn$; mw: 613.38

SYNS:
DI-N-OCTYLTIN DI(1,2-PROPYLENEGLYCOLMALEATE)
DI-N-OCTYL-ZINN-DI-(1,2-PROPYLENGLYKOLMALEINAT) (GERMAN)

TOXICITY DATA: 3-1 CODEN:
orl-rat LD50:4775 mg/kg ARZNAD 19,934,69
ipr-rat LD50:50 mg/kg ARZNAD 19,934,69

Toxicology Review: EVHPAZ 4,61,73.
Occupational Exposure to Organotin Compounds recm std: Air: TWA 0.1 mg(Sn)/m3 NTIS**.
THR: HIGH ipr; LOW orl. See also tin compounds.
Disaster Hazard: When heated to decomp it emits acrid smoke and fumes.

DIOCTYLTHIOXOSTANNANE

CAS RN: 3572472 NIOSH #: WH 7690000
mf: $C_{16}H_{34}SSn$; mw: 377.25

SYN: DI-N-OCTYLTIN SULFIDE

TOXICITY DATA: 3 CODEN:
ivn-mus LD50:180 mg/kg CSLNX* NX#01771

Occupational Exposure to Organotin Compounds recm std: Air: TWA 0.1 mg(Sn)/m3 NTIS**. Reported in EPA TSCA Inventory, 1980.
THR: HIGH ivn; See also sulfides and tin compounds.
Disaster Hazard: When heated to decomp it emits tox fumes of SO_x.

DI-n-OCTYLTIN BIS(BUTYL MERCAPTOACETATE)

CAS RN: 27107886 NIOSH #: XP 7700000
mf: $C_{28}H_{56}O_4S_2Sn$; mw: 639.65

SYN: BIS(MERCAPTOACETATE)DIOCTYLTIN BIS(BUTYL) ESTER

TOXICITY DATA: 2 CODEN:
orl-mus LD50:1140 mg/kg ATXKA8 26,196,70

Toxicology Review: EVHPAZ 4,61,73. OSHA Standard: Air: TWA 100 ug(Sn)/m3 (skin) (SCP-X) FEREAC 39,23540,74. Occupational Exposure to Organotin Compounds recm std: Air: TWA 0.1 mg(Sn)/m3 NTIS**.
THR: MOD orl. See also tin compounds.
Disaster Hazard: When heated to decomp it emits tox fumes of SO_x.

DI-n-OCTYLTIN BIS(DODECYL MERCAPTIDE)

CAS RN: 22205307 NIOSH #: XP 8225000
mf: $C_{44}H_{88}O_4S_2Sn$; mw: 864.13

SYN: TIN, BIS(MERCAPTO)DIOCTYL-, BIS(DODECYL) ESTER

TOXICITY DATA: 2 CODEN:
orl-mus LD50:4000 mg/kg ATXKA8 26,196,70

Toxicology Review: EVHPAZ 4,61,73. OSHA Standard: Air: TWA 100 ug(Sn)/m3 (skin) (SCP-X) FEREAC 39,23540,74. Occupational Exposure to Organotin Compounds recm std: Air: TWA 0.1 mg(Sn)/m3 NTIS**. Reported in EPA TSCA Inventory, 1980.
THR: MOD orl. See also tin compounds and sulfides.
Disaster Hazard: When heated to decomp it emits tox fumes of SO_x.

DI-n-OCTYLTIN BIS(2-ETHYLHEXYL MALEATE)

CAS RN: 10039335 NIOSH #: XP 7525000
mf: $C_{40}H_{72}O_8Sn$; mw: 799.81

TOXICITY DATA: 1 CODEN:
skn-rbt 10 mg/24H open MLD AIHAAP 23,95,62
orl-rat LD50:25 gm/kg AIHAAP 23,95,62

THR: A skn irr. LOW orl. See also esters.
Disaster Hazard: When heated to decomp it emits tox fumes of PO_x.

DI-n-BUTYL PHTHALATE

CAS RN: 84742 NIOSH #: TI 0875000
mf: $C_{16}H_{22}O_4$; mw: 278.38

Oily liquid, mild odor. bp: 340°, fp: −35°, flash p: 315°F (CC), d: 1.047-1.049 @ 20°/20°, autoign. temp.: 757°F, vap. d: 9.58.

SYNS:
O-BENZENEDICARBOXYLIC ACID, DIBUTYL ESTER
BENZENE-O-DICARBOXYLIC ACID DI-N-BUTYL ESTER
DIBUTYL-1,2-BENZENEDICARBOXYLATE
DIBUTYL PHTHALATE

TOXICITY DATA: 3 CODEN:
ipr-rat TDLo:874 mg/kg/(5-15D preg) TFX:TER JPMSAE 61,51,72
orl-rat TDLo:8400 ug/kg (7D male) TXAPA9 53,35,80
ipr-rat TDLo:1017 mg/kg (5-15D preg) JPMSAE 61,51,72
ipr-rat TDLo:305 mg/kg (5-15D preg) JPMSAE 61,51,72
orl-mus TDLo:1440 mg/kg (1-18D preg) ENVRAL 22,245,80
orl-mus TDLo:12 gm/kg (1-18D preg) ENVRAL 22,245,80
orl-mus TDLo:38 gm/kg (1-18D preg) ENVRAL 22,245,80
ihl-rat LC50:7900 ug/m3 GTPZAB 17(10),51,73
orl-mus LD50:5282 ug/kg GTPZAB 17(10),51,73
ihl-mus LC50:2100 ug/m3 GTPZAB 17(10),51,73
cyt-ham:fbr 30 mg/L/24H MUREAV 48,337,77
ipr-rat TDLo:874 mg/kg/(5-15D preg):TER JPMSAE 61,51,72
orl-hmn TDLo:140 mg/kg:EYE SMWOAS 84,1243,54
orl-rat LD50:12000 mg/kg SPEADM 74-1,-,74
ipr-rat LD50:3050 mg/kg JPMSAE 61,51,72
unk-rat LD50:10000 mg/kg GTPZAB 24(3),25,80
ipr-mus LD50:3570 mg/kg JSCCA5 28,667,77
unk-mus LD50:10000 mg/kg GTPZAB 24(3),25,80
unk-gpg LD50:10000 mg/kg GTPZAB 24(3),25,80
ihl-mam LC50:9620 mg/m3 GTPZAB 24(3),25,80

Aquatic Toxicity Rating: TLm96:1000-100 ppm WQCHM* 4,-,74.
TLV: Air: 5 mg/m3 DTLVS* 4,124,80. *Toxicology Review:* RREVAH 54,1,75; EVHPAZ 4,3,73; CMTVAS 10(3),49,73; ESKHA5 93,1,75; 27ZTAP 3,28,69. OSHA Standard: Air: TWA 5 mg/m3 (SCP-D) FEREAC 39,23540,74. "NIOSH Manual of Analytical Methods" VOL 2 S33. Reported in EPA TSCA Inventory, 1980. EPA TSCA 8(a) Preliminary Assessment Information Proposed Rule FERREAC 45,13646,80.
THR: MUT data. An exper TER. A hmn EYE. MOD ipr. LOW orl, unk, ihl. See esters, phthalic acid and butyl alcohol.
Fire Hazard: Slight, when exposed to heat or flame; can react with oxidizing materials. Violent reaction with Cl_2.
To Fight Fire: CO_2, dry chemical.
Incomp: Chlorine.

N,N-DIBUTYLPROPIONAMIDE

CAS RN: 1187333 NIOSH #: UE 3500000
mf: $C_{11}H_{23}NO$; mw: 185.35

TOXICITY DATA: 3 CODEN:
ipr-mus LDLo:125 mg/kg CBCCT* 5,288,53

Reported in EPA TSCA Inventory, 1980.
THR: HIGH ipr.
Disaster Hazard: When heated to decomp it emits tox fumes of NO_x.

DIBUTYL SEBACATE

CAS RN: 109433 NIOSH #: VS 1150000
mf: $C_{18}H_{34}O_4$; mw: 314.52

Clear liquid. bp: 180° @ 3 mm, fp: −11°, flash p: 353°F (COC), d: 0.936 @ 20°/20°, vap. d: 10.8.

SYNS:
SEBACIC ACID, DIBUTYL ESTER
BIS(N-BUTYL)SEBACATE
DECANEDIOIC ACID, DIBUTYL ESTER
DI-N-BUTYL SEBACATE

TOXICITY DATA: 1 CODEN:
orl-rat TDLo:418 g/kg (10W male/10D pre) AMIHBC 7,310,53
orl-rat LD50:16000 mg/kg NPIRI* 2,22,75

Reported in EPA TSCA Inventory, 1980.
THR: LOW orl. See esters and butyl alcohol.
Fire Hazard: Slight, when exposed to heat or flame; can react with oxidizing materials.
To Fight Fire: CO_2, dry chemical.

DIBUTYL(TETRACHLOROPHTHALATO) STANNANE

CAS RN: 23535899 NIOSH #: DF 4500000
mf: $C_{16}H_{18}Cl_4O_4Sn$; mw: 534.83

SYNS:
DIBUTYLTIN TETRACHLOROPHTHALATE
DIBUTYL(TETRACHLOROPHTHALATO)STANNANE

TOXICITY DATA: 3 CODEN:
ivn-mus LD50:180 mg/kg CSLNX* NX#02077

Occupational Exposure to Organotin Compounds recm std: Air: TWA 0.1 mg(Sn)/m3 NTIS**.
THR: HIGH ivn. See also tin compounds.
Disaster Hazard: When heated to decomp it emits tox fumes of Cl^-.

1,3-DIBUTYLTHIOUREA

CAS RN: 109466 NIOSH #: YS 8400000
mf: $C_9H_{20}N_2S$; mw: 188.37

White to light tan powder; mp: 60°; vap d: 6.5.

SYNS:
N,N'-DIBUTYLTHIOUREA
1,3-DI-N-BUTYL-2-THIOUREA
USAF EK-2138

TOXICITY DATA: 3-2 CODEN:
orl-rat LD50:350 mg/kg JPETAB 90,260,47
ipr-mus LD50:800 mg/kg NTIS** AD277-689

REFERENCE NO. 17

SAMPLE DESCRIPTIONS
CHAMPION INTERNATIONAL CORP.
CASE #7136

Sample ID Number	Organic Traffic Report #	Inorganic Traffic Report #
NYQ1-B1	BK221	MBJ119
NYQ1-B2	BK233	N/A
NYQ1-SW1	BK222	MBJ120
NYQ1-SW2	BK223	MBJ121
NYQ1-S1	BK224	MBJ122
NYQ1-S2	BK225	MBJ123
NYQ1-S3	BK226	MBJ124
NYQ1-S4	BK227	MBJ125
NYQ1-S5	BK228	MBJ176
NYQ1-S6	BK229	MBJ177
NYQ1-S7	BK230	MBJ178
NYQ1-S8	BK231	MBJ179
NYQ1-S9	BK232	MBJ180

ANALYTICAL DATA
NAME: CHAMPION INT'L.
SAMPLING DATE: 4/16/87
CASE NUMBER: 7136

VOLATILES

SAMPLE NUMBER	NYQ1-S3	NYQ1-S4	NYQ1-S5	NYQ1-S6	NYQ1-S7	NYQ1-S8	NYQ1-S9	NYQ1-B2	NYQ1-B1	NYQ1-SW1	NYQ1-SW2	NYQ1-S1	NYQ1-S2
TRAFFIC REPORT NUMBER	BK226	BK227	BK228	BK229	BK230	BK231	BK232	BK233	BK221	BK222	BK223	BK224	BK225
MATRIX	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	AQUEOUS	AQUEOUS	AQUEOUS	AQUEOUS	SEDIMENT	SEDIMENT
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/L	UG/L	UG/L	UG/L	UG/KG	UG/KG
DILUTION FACTOR	1	1	1	1	1	1	1	1	1	1	1	1	1
Chloromethane													
Bromomethane													
Vinyl Chloride													
Chloroethane													
Methylene Chloride	280B	Q	Q	320B	410B	Q	Q	JB	21B	Q	Q	Q	Q
Acetone	Q	Q	Q	Q	Q	Q	Q	230B	51B	Q	Q	Q	Q
Carbon Disulfide													
1,1-Dichloroethene													
1,1-Dichloroethane													
Trans-1,2-Dichloroethene													
Chloroform	6.6		J	J									
1,2-Dichloroethane													
2-Butanone													
1,1,1-Trichloroethane													
Carbon Tetrachloride													
Vinyl Acetate							J						
Bromodichloromethane													
1,1,2,2-Tetrachloroethane													
1,2-Dichloropropane													
Trans-1,3-Dichloropropene													
Trichloroethene													
Dibromochloromethane													
1,1,2-Trichloroethane													
Benzene													
Cis-1,3-Dichloropropene													
2-Chloroethylvinylether													
Bromoform													
2-Hexanone						J							
4-Methyl-2-Pentanone													
Tetrachloroethene													
Toluene						190		J					
Chlorobenzene													
Ethylbenzene													
Styrene													
Total Xylenes								J					

NOTES TO ORGANICS DATA:
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Q - analysis did not pass QA/QC requirements
J - compound present above the instrument detection limit, but below the contract-specified detection limit.
B - compound found in laboratory blank as well as the sample, and indicates possible/probable blank contamination
NR - analysis not required

ANALYTICAL DATA
NAME: CHAMPION INT'L.
SAMPLING DATE: 4/16/87
CASE NUMBER: 7136

SEMI-VOLATILES

SAMPLE NUMBER	NY01-S3	NY01-S4	NY01-S5	NY01-S6	NY01-S7	NY01-S8	NY01-S9	NY01-B2	NY01-B1	NY01-SW1	NY01-SW2	NY01-S1	NY01-S2
TRAFFIC REPORT NUMBER	BK226	BK227	BK228	BK229	BK230	BK231	BK232	BK233	BK221	BK222	BK223	BK224	BK225
MATRIX	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	AQUEOUS	AQUEOUS	AQUEOUS	AQUEOUS	SEDIMENT	SEDIMENT
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/L	UG/L	UG/L	UG/L	UG/KG	UG/KG
DILUTION FACTOR	2	2	2	2	2	2	2		1	1	1	2	2
Phenol								NR					
Bis(2-Chloroethyl)Ether								NR					
2-Chlorophenol								NR					
1,3-Dichlorobenzene								NR					
1,4-Dichlorobenzene								NR					
Benzyl Alcohol								NR					
1,2-Dichlorobenzene								NR					
2-Methylphenol								NR					
Bis(2-Chloroisopropyl)Ether								NR					
4-Methylphenol								NR					
N-Nitroso-Di-n-Propylamine								NR					
Hexachloroethane								NR					
Nitrobenzene								NR					
Isophorone								NR					
2-Nitrophenol								NR					
2,4-Dimethylphenol								NR					
Benzoic Acid								NR					
Bis(2-Chloroethoxy)Methane								NR					
2,4-Dichlorophenol								NR					
1,2,4-Trichlorobenzene								NR					
Naphthalene								NR					
4-Chloroaniline								NR					
Hexachlorobutadiene								NR					
4-Chloro-3-Methylphenol								NR					
2-Methylnaphthalene								NR					
Hexachlorocyclopentadiene								NR					
2,4,6-Trichlorophenol								NR					
2,4,5-Trichlorophenol								NR					
2-Chloronaphthalene								NR					
2-Nitroaniline								NR					
Dimethyl Phthalate								NR					
Acenaphthylene								NR					
3-Nitroaniline								NR					
Acenaphthene								NR					
2,4-Dinitrophenol								NR					
4-Nitrophenol								NR					
Dibenzofuran								NR					
2,4-Dinitrotoluene								NR					
2,6-Dinitrotoluene								NR					
Diethylphthalate								NR					
4-Chlorophenylphenyl ether								NR					
Fluorene								NR					
4-Nitroaniline								NR					
4,6-Dinitro-2-Methylphenol								NR					
N-Nitrosodiphenylamine								NR					
4-Bromophenylphenyl ether								NR					
Hexachlorobenzene								NR					

ANALYTICAL DATA
NAME: CHAMPION INT'L.
SAMPLING DATE: 4/16/87
CASE NUMBER: 7136

SEMI-VOLATILES

SAMPLE NUMBER	NY01-S3	NY01-S4	NY01-S5	NY01-S6	NY01-S7	NY01-S8	NY01-S9	NY01-B2	NY01-B1	NY01-SW1	NY01-SW2	NY01-S1	NY01-S2
TRAFFIC REPORT NUMBER	BK226	BK227	BK228	BK229	BK230	BK231	BK232	BK233	BK221	BK222	BK223	BK224	BK225
MATRIX	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	AQUEOUS	AQUEOUS	AQUEOUS	AQUEOUS	SEDIMENT	SEDIMENT
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/L	UG/L	UG/L	UG/L	UG/KG	UG/KG
DILUTION FACTOR	2	2	2	2	2	2	2		1	1	1	2	2
Pentachlorophenol								NR					
Phenanthrene								NR					
Anthracene								NR					
Di-n-Butylphthalate	3500				40000			NR					
Fluoranthene								NR					
Pyrene								NR					
Butylbenzylphthalate	1500							NR					
3,3'-Dichlorobenzidine								NR					
Benzo(a)Anthracene								NR					
Bis(2-Ethylhexyl)Phthalate					4200			NR	12				
Chrysene								NR					
Di-n-Octyl Phthalate					950			NR					
Benzo(b)Fluoranthene								NR					
Benzo(k)Fluoranthene								NR					
Benzo(a)Pyrene								NR					
Indeno(1,2,3-cd)Pyrene								NR					
Dibenzo(a,h)Anthracene								NR					
Benzo(ghi)Perylene								NR					

NOTES TO ORGANICS DATA:

Blank space - compound analyzed for but not detected
Q - analysis did not pass QA/QC requirements
T - compound present above the instrument detection limit, but below the contract-specified detection limit.
B - compound found in laboratory blank as well as the sample, and indicates possible/probable blank contamination
NR - analysis not required

ANALYTICAL DATA
NAME: CHAMPION INT'L.
SAMPLING DATE: 4/16/87
CASE NUMBER: 7136

PESTICIDES/PCBs													
SAMPLE NUMBER	NY01-S3	NY01-S4	NY01-S5	NY01-S6	NY01-S7	NY01-S8	NY01-S9	NY01-B2	NY01-B1	NY01-SW1	NY01-SW2	NY01-S1	NY01-S2
TRAFFIC REPORT NUMBER	BK226	BK227	BK228	BK229	BK230	BK231	BK232	BK233	BK221	BK222	BK223	BK224	BK225
MATRIX	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	AQUEOUS	AQUEOUS	AQUEOUS	AQUEOUS	SEDIMENT	SEDIMENT
UNITS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/L	UG/L	UG/L	UG/L	UG/KG	UG/KG
DILUTION FACTOR	2	2	2	2	2	2	2		1	1	1	2	2
Alpha-BHC								NR					
Beta-BHC								NR					
Delta-BHC								NR					
Gamma-BHC (Lindane)								NR					
Heptachlor								NR					
Aldrin								NR					
Heptachlor Epoxide								NR					
Endosulfan I								NR					
Dieldrin								NR					
4,4'-DDE								NR					
Endrin								NR					
Endosulfan II								NR					
4,4'-DDD							J	NR					
Endosulfan sulfate		Q		Q	Q	Q	Q	NR				Q	Q
Endrin Aldehyde								NR					
4,4'-DDT		Q	Q	Q	Q	Q	Q	NR				Q	Q
Methoxychlor								NR					
Endrin Ketone								NR					
Chlordane								NR					
Toxaphene								NR					
Aroclor-1016								NR					
Aroclor-1221								NR					
Aroclor-1232								NR					
Aroclor-1242								NR					
Aroclor-1248								NR					
Aroclor-1254								NR					
Aroclor-1260								NR					

NOTES TO ORGANICS DATA:
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Q - analysis did not pass QA/QC requirements
J - compound present above the instrument detection limit, but below the contract-specified detection limit.
B - compound found in laboratory blank as well as the sample, and indicates possible/probable blank contamination
NR - analysis not required

ANALYTICAL DATA
NAME: CHAMPION INT'L.
SAMPLING DATE: 4/16/87
CASE NUMBER: 7136

INORGANICS													
SAMPLE NUMBER	NYQ1-S3	NYQ1-S4	NYQ1-S5	NYQ1-S6	NYQ1-S7	NYQ1-S8	NYQ1-S9	NYQ1-B2	NYQ1-B1	NYQ1-SW1	NYQ1-SW2	NYQ1-S1	NYQ1-S2
TRAFFIC REPORT NUMBER	MRJ124	MRJ125	MRJ176	MRJ177	MRJ178	MRJ179	MRJ180	N/A	MRJ119	MRJ120	MRJ121	MRJ122	MRJ123
MATRIX	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	AQUEOUS	AQUEOUS	AQUEOUS	AQUEOUS	SEDIMENT	SEDIMENT
UNITS	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	UG/L	UG/L	UG/L	UG/L	MG/KG	MG/KG
DILUTION FACTOR													
Aluminum	16800	17800	16300	17400	16100	18100	22500	NR	[58]	[144]	514	13100	14900
Antimony	[10]	[12]	[8.8]	[9.4]	[8.8]	[9.8]	[10]	NR				[7.4]	[8.0]
Arsenic	4.6	5.6	2.8	5.8	6.1	8.6	7.2	NR			[1.3]	[2.6]	8.4
Barium	43	100	83	48	137	51	98	NR	[2.8]	Q	[30]	72	[61]
Beryllium	1.0	1.2	[0.9]	1.3	[1.1]	[0.8]	1.7	NR					
Cadmium								NR					
Calcium	Q	2350	3140	Q	Q	Q	Q	NR	Q	42500	50100	7240	4290
Chromium	65	24	23	21	483	21	26	NR				22	23
Cobalt	11	15	16	13	12	14	13	NR				[8.8]	[11]
Copper	84	48	47	40	95	43	43	NR		[10]	[11]	24	33
Iron	25300	32400	31800	29600	22400	26300	26200	NR	Q	Q	Q	19000	26200
Lead	230	18	14	15	1240	14	22	NR		[1.4]	[4.0]	50	53
Magnesium	5570	6560	6530	6100	3690	5440	5220	NR	[96]	5590	6540	3690	5750
Manganese	679	1030	1090	900	1160	931	1060	NR		[6.1]	53	350	738
Mercury	Q	Q	Q	Q	Q	Q	Q	NR	1.1	Q	Q	Q	Q
Nickel	23	39	35	27	21	27	25	NR				20	20
Potassium	1040	[917]	[726]	[533]	[208]	1940	2520	NR					
Selenium								NR				[0.25]	
Silver								NR					
Sodium	Q	Q	Q	Q	Q	Q	Q	NR	Q	Q	Q	Q	Q
Thallium	[0.22]	[0.19]	[0.18]	[0.20]	[0.33]	[0.42]	[0.43]	NR				[0.18]	[0.25]
Vanadium	17 E	18 E	16 E	17 E	13 E	20 E	27 E	NR				[17]	[17]
Zinc	84	74	74	85	87	69	83	NR	Q	Q	Q	112	87

NOTES TO INORGANICS DATA:
Blank space - compound analyzed for but not detected
Q - analysis did not pass QA/QC requirements
[]- compound present above the instrument detection limit, but below the contract-specified detection limit.
B - compound found in laboratory blank as well as the sample and indicates possible/probable blank contamination
E - value estimated due to interference
NR - analysis not required

Date: 13 APR 1987
Number: HW-4
Revision: 1

Title: Attachment 4 - CLP Data Assessment Checklist
(GC and GC/MS Analysis)
PART II: MMB Review
DOCUMENTED RISK REVIEW

CASE # 7136 LAB NIAN Co SITE Champion Int

3.0 Conclusions: (NOTE: Reviewers must red-line unacceptable data on sample data sheets; red-line data does not imply the compound is not present) Only the MMB reviewer has the authority to red-line unacceptable data.

3.1 Data Assessment Method blanks measure laboratory contamination. Method blank contamination can be caused by dirty glassware, impure solvents etc. In order to be valid the concentration of an analyte in a sample must be at least 5 or 10 times (depending on the analyte) the concentration of that analyte in the method blank. The following samples had methylene chloride and acetone red-lined (rejected) for method blank contamination: BK 222, BK 223. The following samples had methylene chloride, acetone, Endosulfan Sulfate, DDT, Ethane 1,1,2 Trichloro 1,2,2 trifluoro, and ethanol 2-butoxy red lined for method blank contamination: BK 224, BK 225. The following sample had acetone, ethane 1,1,2 trichloro 1,2,2 trifluoro and ethanol 2-butoxy redlined for method blank contamination BK 226. The following sample had methylene chloride, acetone, endosulfan sulfate and DDT redlined for method blank contamination. BK 227. The following sample had acetone, methylene chloride, DDT, and 1,1,2 trichloro 1,2,2 trifluoro ethane redlined for method blank contamination BK 228

~~3.2 Contract Problems/Non-compliance~~ The following samples had acetone, DDT, and endosulfan sulfate redlined for MB contamination: BK 229, BK 230. The following samples had acetone, methylene chloride, DDT, endosulfan sulfate and ethane 1,1,2 trichloro 1,2,2 trifluoro redlined for MB contamination: BK 232, BK 231

3.3 ~~Contractor Review Problems/Errors~~ Problem with pesticide MB

Reviewer's Signature: [signature] Date: 9/18/87

Verified By: George Karras Date: 9/18/87

Champion International

Page ____ of ____

COVER SHEET

LABORATORY RESPONSE TO RESULTS OF
CONTRACT COMPLIANCE SCREENING (CCS)

RECEIVED
JUN 3 1987
S & M BRANCH

Response To: (check one) [X] Organics CCS

[ ] Inorganics CCS

Response materials sent to Organics CCS should be sent to the attention of Doris Ling, SMO.
Response materials sent to Inorganics CCS should be sent to the attention of Sa'ad Masri, SMO.

Laboratory Name NANCO LABS, INC

Response Date 6/01/87

EPA Contract No. 68-01-7102

Date Screening Results Received at Laboratory 6/01/87

Case No. 4136

Sample Nos.*

BK-224	BK-229
BK-225	BK-230
BK-226	BK-231
BK-227	BK-232
BK-228	

*Only list sample numbers that require reconciliation.

This form is used to identify materials sent in response to results of Contract Compliance Screening (CCS). A separate form must accompany the response for each Case.

Please indicate (on the attached continuation form) which fractions and/or which criteria correspond with your resubmission. Response materials sent to CCS should also be copied to the Region and to EMSL/LV, each with this blue Cover Sheet.

6/5/86

ORGANICS

LABORATORY RESPONSE TO RESULTS OF CCS (continued)

Sample	Fraction	Criterion	Comments
[illegible]-232	VOA	E	CORRECTED FORM VII
8K-224	PEST	K_1, K_2	RESUBMITTED ALL STANDARD AND
[illegible]-225	"	"	SAMPLES QUANT/CHROMATOGRAMS
[illegible]-226	"	"	BOTH COL. 1 and 2.
[illegible]-227	"	"	" " "
[illegible]-228	"	"	" " "
3K-229	"	"	" " "
[illegible]-230	"	"	" " "
3K-231	"	"	" " "
[illegible]-232	"	"	" " "
3K-224 MS	"	"	" " "
[illegible]-224 MSD	"	"	" " "

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

Date 5/19/87

COVER PAGE
INORGANIC ANALYSES DATA PACKAGE

Lab Name Associated Labs
Case No. 7136
SOW No. 785
Q.C. Report No. 13

Sample Numbers

EPA No.	Lab ID No.	EPA No.	Lab ID No.
MBJ 119	F32755-1	MBJ 176	F32755-8
MBJ 120	F32755-2	MBJ 177	F32755-9
MBJ 121	F32755-3	MBJ 178	F32755-10
MBJ 122	F32755-4	MBJ 179	F32755-11
MBJ 123	F32755-5	MBJ 180	F32755-12
MBJ 124	F32755-6		
MBJ 125	F32755-7		

Comments: Three Kid Mine results included in this case package.

ICP interelement and background corrections applied? Yes ✓ No ___.
If yes, corrections applied before ✓ or after ___ generation of raw data.

Footnotes:

NR - Not required by contract at this time
Form I:
Value - If the result is a value greater than or equal to the instrument detecion limit but less than the contract-required detection limit, report the value in brackets (i.e., [10]). Indicate the analytical method used with P (for ICP), A (for Flame AA) or F (for Furnace AA).
U - Indicates element was analyzed for but not detected. Report with the instrument detection limit value (e.g., 10U).
E - Indicates a value estimated or not reported due to the presence of interference. Explanatory note included on cover page.
S - Indicates value determined by Method of Standard Addition.
N - Indicates spike sample recovery is not within control limits.
* - Indicates duplicate analysis is not within control limits.
+ - Indicates the correlation coefficient for method of standard addition is less than 0.995
M - Indicates duplicate injection results exceeded control limits.

Indicate method used: P for ICP; A for Flame AA and F for Furnace.

Title: Appendix A.3: Data Acceptability Narrative

Case# 7136 Site _____
Lab ASSOCIATED LABS

A.3.1 Are all data of acceptable quality? Yes ____ No ✓

If no, list exceptions with reason(s) for rejection of qualification as estimated value (J).

① Ba; Sample MBJ 120 (Ag) Na; Samples MBJ 120-121 (
Fe; Samples MBJ 120-121 (Ag) Zn; Samples MBJ 120-121 (
Hg; Samples MBJ 120-121 (Ag)
: Concentration of field blank does not fall below two (2) times IDL; Data rejected (red-lined) for all data that has a concentration less than ten (10) times the field blank value and not flagged with 'u'.
Hg; Samples MBJ 122-125, 176-180 (so.1)
Na; Samples MBJ 122-125, 176-180 (so.1)
Ca; Samples MBJ 124, 177-180 (so.1)
: Concentration of field blank does not fall below two (2) times IDL; Data rejected (red-lined) for all data that has a concentration less than three (3) times the field blank value and not flagged with 'u'.

MMB Reviewer: Frank J. Mirine Date: 10-02-87
Signature

Verified by: [signature] Date: 10-2-87
Signature

5266b

A.3.1 (Continuation)

② Ca; Na; Samples MBJ 119 (Aq) Zn; Samples MBJ 119 (Aq)
Fe; Samples MBJ 119-121 (Aq) * See below
: Data rejected (red-lined); concentration of prep blank falls below two (2) times IDL; data with a concentration less than ten (10) times the prep blank value red-lined.

③ Ba; Samples MBJ 119; 121 (Aq) (Sample 120 previously red-lined* (1))
: Data flagged as estimated 'J'; Serial dilution RPD value is not within the 10% control limit but below 100% and not flagged with 'E'.

④ Fe; Samples MBJ 119-121 (Aq)

~~A.3.1.2 Contract Problems/Non-compliance~~

: Data rejected (red-lined) (Already done so previously* (2))
RPD value (Form VI) is outside the control limit; difference between sample and duplicate is greater than CRDL where sample and/or duplicate is less than (5) five times CRDL but greater than CRDL.

* Samples for Zn MBJ 120-121 (Aq) previously red-lined *(1)

Page ____ of ____

Champion Int'l

MMB

COVER SHEET

LABORATORY RESPONSE TO RESULTS OF CONTRACT COMPLIANCE SCREENING (CCS)

Response To: (check one)

- [ ] Organics CCS
- [x] Inorganics CCS

Response materials sent to Organics CCS should be sent to the attention of Doris Ling, SMO.
Response materials sent to Inorganics CCS should be sent to the attention of Sa'ad Masri, SMO.

Laboratory Name: ASSOCIATED LABS

Response Date: 6/26/87

Date Screening Results Received at Laboratory: 6/8/87

EPA Contract No.: 68-01-7308

Case No.: 7136

Sample Nos.*: MBJ 124

*Only list sample numbers that require reconciliation.

RECEIVED
JUN 29 1987
S & M BRANCH

This form is used to identify materials sent in response to results of Contract Compliance Screening (CCS). A separate form must accompany the response for each Case.

Please indicate (on the attached continuation form) which fractions and/or which criteria correspond with your resubmission. Response materials sent to CCS should also be copied to the Region and to EMSL/LV, each with this blue Cover Sheet.

6/5/86

INORGANICS
LABORATORY RESPONSE TO RESULTS OF CCS

Criterion	Comments
B	Appropriate "S" flag added to Form I for MBJ124
I	Sample EPA # changed from MJB124 to MBJ124. on Form ~~I~~ VIII.
M	This case was run before we were aware of our misinterpretation of the SOW. It has been corrected for future cases.

ORGANICS ANALYSIS DATA SHEET

(PAGE 1)

SAMPLE NUMBER

BK-221

Laboratory Name:NANCO LABORATORY INC.
Lab Sample ID No:>A0822
Sample Matrix: WATER
Data Release Authorized By: Sohal Gohan

Case No: 7136
QC Report No:097
Contract No:68-01-7102
Date Sample Received:04/16/87

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 04/18/87
Date Analyzed:04/18/87
Conc/Dil Factor: 1 pH:6.2
Percent Moisture:N/A

CAS Number		ug/l or ug/Kg (Circle One)	CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	10.0 U	79-34-5	1,1,2,2-Tetrachloroethane	5.0 U
74-83-9	Bromomethane	10.0 U	78-87-5	1,2-Dichloropropane	5.0 U
75-01-4	Vinyl Chloride	10.0 U	10061-02-6	Trans-1,3-Dichloropropene	5.0 U
75-00-3	Chloroethane	10.0 U	79-01-6	Trichloroethene	5.0 U
75-09-2	Methylene Chloride	21.0 B	124-48-1	Dibromochloromethane	5.0 U
67-64-1	Acetone	51.0 B	79-00-5	1,1,2-Trichloroethane	5.0 U
75-15-0	Carbon Disulfide	5.0 U	71-43-2	Benzene	5.0 U
75-35-4	1,1-Dichloroethene	5.0 U	10061-01-5	cis-1,3-Dichloropropene	5.0 U
75-34-3	1,1-Dichloroethane	5.0 U	110-75-8	2-Chloroethylvinylether	10.0 U
156-60-5	Trans-1,2-Dichloroethene	5.0 U	75-25-2	Bromoform	5.0 U
67-66-3	Chloroform	5.0 U	591-78-6	2-Hexanone	10.0 U
107-06-2	1,2-Dichloroethane	5.0 U	108-10-1	4-Methyl-2-Pentanone	10.0 U
78-93-3	2-Butanone	10.0 U	127-18-4	Tetrachloroethene	5.0 U
71-55-6	1,1,1-Trichloroethane	5.0 U	108-88-3	Toluene	5.0 U
56-23-5	Carbon Tetrachloride	5.0 U	108-90-7	Chlorobenzene	5.0 U
108-05-4	Vinyl Acetate	10.0 U	100-41-4	Ethylbenzene	5.0 U
75-27-4	Bromodichloromethane	5.0 U	100-42-5	Styrene	5.0 U
				Total Xylenes	5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

VALUE

f the result is a value greater than or equal to the detection imit, report the value.

U

ndicates compound was analyzed for but not detected. Report he minimum detection limit for the sample with the U(e.g.10U based on necessary concentration dilution actions. (This is not necessarily the instrument detection limit.) The footnote should ead U-Compound was analyzed for but not detected.The number is he minimum attainable detection limit for the sample.

J

ndicates an estimated value.This flag is used either when stimating a concentration for tentatively identified compounds where a 1 1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification riteria but the result is less than the specified detection limit ut greater than zero (e.g. 10J).

C

This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS

B

This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

OTHER

Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

ORGANIC ANALYSIS DATA SHEET
(PAGE 2)

LABORATORY NAME: NANCO LABS. INC.
CASE NO: 7136

SAMPLE NO.
BK-221

SEMIVOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 04/21/87
Date Analyzed: 05/01/87
Conc/Dil Factor:----------> 1
Percent Moisture: N/A

GPC Cleanup: Yes_____ No_X_
Separatory Funnel Extraction: Yes_X_
Continuous Liquid - Liquid Extraction: Yes___

CAS Number		ug/l or ug/Kg (Circle One)
108-95-2	Phenol	10.0 U
111-44-4	bis(-2-Chloroethyl)Ether	10.0 U
95-57-8	2-Chlorophenol	10.0 U
541-73-1	1,3-Dichlorobenzene	10.0 U
106-46-7	1,4-Dichlorobenzene	10.0 U
100-51-6	Benzyl Alcohol	10.0 U
95-50-1	1,2-Dichlorobenzene	10.0 U
95-48-7	2-Methylphenol	10.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	10.0 U
106-44-5	4-Methylphenol	10.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	10.0 U
67-72-1	Hexachloroethane	10.0 U
98-95-3	Nitrobenzene	10.0 U
78-59-1	Isophorone	10.0 U
88-75-5	2-Nitrophenol	10.0 U
105-67-9	2,4-Dimethylphenol	10.0 U
65-85-0	Benzoic Acid	50.0 U
111-91-1	bis(-2-Chloroethoxy)Methane	10.0 U
120-83-2	2,4-Dichlorophenol	10.0 U
120-82-1	1,2,4-Trichlorobenzene	10.0 U
91-20-3	Naphthalene	10.0 U
106-47-8	4-Chloroaniline	10.0 U
87-68-3	Hexachlorobutadiene	10.0 U
59-50-7	4-Chloro-3-Methylphenol	10.0 U
91-57-6	2-Methylnaphthalene	10.0 U
77-47-4	Hexachlorocyclopentadiene	10.0 U
88-06-2	2,4,6-Trichlorophenol	10.0 U
95-95-4	2,4,5-Trichlorophenol	50.0 U
91-58-7	2-Chloronaphthalene	10.0 U
88-74-4	2-Nitroaniline	50.0 U
131-11-3	Dimethyl Phthalate	10.0 U
208-96-8	Acenaphthylene	10.0 U
99-09-2	3-Nitroaniline	50.0 U

CAS Number		ug/l or ug/Kg (Circle One)
83-32-9	Acenaphthene	10.0 U
51-28-5	2,4-Dinitrophenol	50.0 U
100-02-7	4-Nitrophenol	50.0 U
132-64-9	Dibenzofuran	10.0 U
121-14-2	2,4-Dinitrotoluene	10.0 U
606-20-2	2,6-Dinitrotoluene	10.0 U
84-66-2	Diethylphthalate	10.0 U
7005-72-3	4-Chlorophenyl-phenylether	10.0 U
86-73-7	Fluorene	10.0 U
100-01-6	4-Nitroaniline	50.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	50.0 U
86-30-6	N-Nitrosodiphenylamine (1)	10.0 U
101-55-3	4-Bromophenyl-phenylether	10.0 U
118-74-1	Hexachlorobenzene	10.0 U
87-86-5	Pentachlorophenol	50.0 U
85-01-8	Phenanthrene	10.0 U
120-12-7	Anthracene	10.0 U
84-74-2	Di-n-Butylphthalate	10.0 U
206-44-0	Fluoranthene	10.0 U
129-00-0	Pyrene	10.0 U
85-68-7	Butylbenzylphthalate	10.0 U
91-94-1	3,3'-Dichlorobenzidine	20.0 U
56-55-3	Benzo(a)Anthracene	10.0 U
117-81-7	bis(2-Ethylhexyl)Phthalate	12.0
218-01-9	Chrysene	10.0 U
117-84-0	Di-n-Octyl Phthalate	10.0 U
205-99-2	Benzo(b)Fluoranthene	10.0 U
207-08-9	Benzo(k)Fluoranthene	10.0 U
50-32-8	Benzo(a)Pyrene	10.0 U
193-39-5	Indeno(1,2,3-cd)Pyrene	10.0 U
53-70-3	Dibenz(a,h)Anthracene	10.0 U
191-24-2	Benzo(g,h,i)Perylene	10.0 U

(1) - Cannot be separated from diphenylamine

ORGANICS ANALYSIS DATA SHEET

(PAGE 3)

SAMPLE NUMBER

LABORATORY NAME: NANCO LABS, INC.

CASE NO: 7136

BK 221

PESTICIDE/PCBs

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: 4/20/87

Date Analyzed: 4/30/87

Conc/Dil Factor: -----> 1

Percent Moisture: N/A

GPC Cleanup: Yes____ No_X___

Separatory Funnel Extraction: Yes__X__

Continuous Liquid-Liquid Extraction: Yes____

CAS Number		ug/l or ug/Kg (Circle One)
319-84-6	Alpha-BHC	0.05 U
319-85-7	Beta-BHC	0.05 U
319-86-8	Delta-BHC	0.05 U
58-89-9	Gamma-BHC (Lindane)	0.05 U
76-44-8	Heptachlor	0.05 U
309-00-2	Aldrin	0.05 U
1024-57-3	Heptachlor Epoxide	0.05 U
959-98-8	Endosulfan I	0.05 U
60-57-1	Dieldrin	0.10 U
72-55-9	4,4'-DDE	0.10 U
72-20-8	Endrin	0.10 U
33213-65-9	Endosulfan II	0.10 U
72-54-8	4,4'-DDD	0.10 U
7421-93-4	Endrin Aldehyde	0.10 U
1031-07-8	Endosulfan Sulfate	0.10 U
50-29-3	4,4'-DDT	0.10 U
53494-70-5	Endrin Ketone	0.10 U
72-43-5	Methoxychlor	0.50 U
57-74-9	Chlordane	0.50 U
8001-35-2	Toxaphene	1.00 U
12674-11-2	Aroclor-1016	0.50 U
11104-28-2	Aroclor-1221	0.50 U
11141-16-5	Aroclor-1232	0.50 U
53469-21-9	Aroclor-1242	0.50 U
12672-29-6	Aroclor-1248	0.50 U
11097-69-1	Aroclor-1254	1.00 U
11096-82-5	Aroclor-1260	1.00 U

Vi = Volume of extract injected (ul)

Vs = Volume of water extracted (ml)

Ws = Weight of sample extracted (g)

Vt = Volume of total extract (ul)

Vs 1000 or Ws _____ Vt 10000 Vi 3

FORM I

ORGANICS ANALYSIS DATA SHEET
(PAGE 4)

SAMPLE NUMBER
BK-221

LABORATORY NAME :NANCO LABS.INC.
CASE NO: 7136

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/Kg)
1	128	METHANE, TRICHLOROFULORO	VOA	158	7.0 J
2					
3					
4					
5					
6					
7					
8					
9					
10	123422	2-PENTANONE,4-HYDROXY-4-METHYL	BNA	83	24.0 J 50
11	-----	UNKNOWN	BNA	1429	18.0 J
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					

7136-02-005

FORM I

U.S. EPA Contract Laboratory Program
Sample Management Office
P,O, Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.

MBJ119

Date 5/19/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME ASSOCIATED LABORATORIES

CASE NO. 7136

SOW NO. 785

Lab Receipt Date 4/17/87

LAB SAMPLE ID. NO. F32755-1

QC REPORT NO. 13

Elements Identified and Measured

Concentration: Low X Medium ____

Matrix: Water X Soil ____ Sludge ____ Other ____

ug/L

1.	Aluminum	[58]	P	13.	Magnesium	[96]	P
2.	Antimony	16U (N)	P	14.	Manganese	2.8U	P
3.	Arsenic	0.7U	F	15.	Mercury	1.1 (N)	CV
4.	Barium	[2.8] J	P	16.	Nickel	16U	P
5.	Beryllium	3.4U	P	17.	Potassium	272U	P
6.	Cadmium	3.5U	P	18.	Selenium	0.5U	F
7.	Calcium	~~[626]~~	P	19.	Silver	4.6U (N)	P
8.	Chromium	5.2U	P	20.	Sodium	~~[868]~~	P
9.	Cobalt	7.1U	P	21.	Thallium	0.5U	F
10.	Copper	10U	P	22.	Vanadium	4.4U	P
11.	Iron	~~189~~ (*)	P	23.	Zinc	~~[16]~~ (E)	P
12.	Lead	0.5U (N)	F		Percent Solids (%)	0	

Cyanide NR

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: TRAVEL BLANK. pH 1.52

Lab Manager Ed Rohare

ORGANICS ANALYSIS DATA SHEET

(PAGE 1)

SAMPLE NUMBER

BK-233

Laboratory Name:NANCO LABORATORY INC.
Lab Sample ID No:>A0813
Sample Matrix: WATER
Data Release Authorized By: Sohal Johari

Case No: 7136
QC Report No:000
Contract No:68-01-7102
Date Sample Received:04/17/87

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 04/17/87
Date Analyzed:04/17/87
Conc/Dil Factor: 1 pH: 6.1
Percent Moisture:N/A

CAS Number		ug/l or ug/Kg (Circle One)	CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	10.0 U	79-34-5	1,1,2,2-Tetrachloroethane	5.0 U
74-83-9	Bromomethane	10.0 U	78-87-5	1,2-Dichloropropane	5.0 U
75-01-4	Vinyl Chloride	10.0 U	10061-02-6	Trans-1,3-Dichloropropene	5.0 U
75-00-3	Chloroethane	10.0 U	79-01-6	Trichloroethene	5.0 U
75-09-2	Methylene Chloride	4.9 JB	124-48-1	Dibromochloromethane	5.0 U
67-64-1	Acetone	230.0 B	79-00-5	1,1,2-Trichloroethane	5.0 U
75-15-0	Carbon Disulfide	5.0 U	71-43-2	Benzene	5.0 U
75-35-4	1,1-Dichloroethene	5.0 U	10061-01-5	cis-1,3-Dichloropropene	5.0 U
75-34-3	1,1-Dichloroethane	5.0 U	110-75-8	2-Chloroethylvinylether	10.0 U
156-60-5	Trans-1,2-Dichloroethene	5.0 U	75-25-2	Bromoform	5.0 U
67-66-3	Chloroform	5.0 U	591-78-6	2-Hexanone	10.0 U
107-06-2	1,2-Dichloroethane	5.0 U	108-10-1	4-Methyl-2-Pentanone	10.0 U
78-93-3	2-Butanone	10.0 U	127-18-4	Tetrachloroethene	5.0 U
71-55-6	1,1,1-Trichloroethane	5.0 U	108-88-3	Toluene	3.2 J
56-23-5	Carbon Tetrachloride	5.0 U	108-90-7	Chlorobenzene	5.0 U
108-05-4	Vinyl Acetate	10.0 U	100-41-4	Ethylbenzene	5.0 U
75-27-4	Bromodichloromethane	5.0 U	100-42-5	Styrene	5.0 U
				Total Xylenes	1.1 J

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

VALUE

If the result is a value greater than or equal to the detection limit, report the value.

U

Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U(e.g.10U based on necessary concentration dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.

J

Indicates an estimated value.This flag is used either when estimating a concentration for tentatively identified compounds where a 1 1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J).

C

This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS

B

This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

OTHER

Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

ORGANICS ANALYSIS DATA SHEET
(PAGE 4)

LABORATORY NAME :NANCO LABS.INC.
CASE NO: 7136

SAMPLE NUMBER
BK-233

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/Kg)
1	-----	NONE FOUND	VOA	---	-----
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					

FORM I, PART B

ORGANICS ANALYSIS DATA SHEET

(PAGE 1)

SAMPLE NUMBER

BK-222

Laboratory Name:NANCO LABORATORY INC.
Lab Sample ID No:>A0814
Sample Matrix: WATER
Data Release Authorized By: Sohail Jotani

Case No: 7136
QC Report No:097
Contract No:68-01-7102
Date Sample Received:04/16/87

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 04/17/87
Date Analyzed:04/17/87
Conc/Dil Factor: 1 pH: 7.0
Percent Moisture:N/A

S mber		ug/l or ug/Kg (Circle One)	CAS Number		ug/l or ug/Kg (Circle One)
-87-3	Chloromethane	10.0 U	79-34-5	1,1,2,2-Tetrachloroethane	5.0 U
-83-9	Bromomethane	10.0 U	78-87-5	1,2-Dichloropropane	5.0 U
-01-4	Vinyl Chloride	10.0 U	10061-02-6	Trans-1,3-Dichloropropene	5.0 U
-00-3	Chloroethane	10.0 U	79-01-6	Trichloroethene	5.0 U
-09-2	Methylene Chloride	~~6.3 B~~	124-48-1	Dibromochloromethane	5.0 U
7-64-1	Acetone	~~6.3 JB~~	79-00-5	1,1,2-Trichloroethane	5.0 U
-15-0	Carbon Disulfide	5.0 U	71-43-2	Benzene	5.0 U
-35-4	1,1-Dichloroethene	5.0 U	10061-01-5	cis-1,3-Dichloropropene	5.0 U
-34-3	1,1-Dichloroethane	5.0 U	110-75-8	2-Chloroethylvinylether	10.0 U
56-60-5	Trans-1,2-Dichloroethene	5.0 U	75-25-2	Bromoform	5.0 U
-66-3	Chloroform	5.0 U	591-78-6	2-Hexanone	10.0 U
7-06-2	1,2-Dichloroethane	5.0 U	108-10-1	4-Methyl-2-Pentanone	10.0 U
8-93-3	2-Butanone	10.0 U	127-18-4	Tetrachloroethene	5.0 U
-55-6	1,1,1-Trichloroethane	5.0 U	108-88-3	Toluene	5.0 U
-23-5	Carbon Tetrachloride	5.0 U	108-90-7	Chlorobenzene	5.0 U
08-05-4	Vinyl Acetate	10.0 U	100-41-4	Ethylbenzene	5.0 U
-27-4	Bromodichloromethane	5.0 U	100-42-5	Styrene	5.0 U
				Total Xylenes	5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

LUE

the result is a value greater than or equal to the detection mit, report the value.

dicates compound was analyzed for but not detected. Report e minimum detection limit for the sample with the U(e.g.10U sed on necessary concentration dilution actions. (This is not ecessarily the instrument detection limit.) The footnote should ad U-Compound was analyzed for but not detected.The number is e minimum attainable detection limit for the sample.

ndicates an estimated value.This flag is used either when stimating a concentration for tentatively identified compounds here a 1 1 response is assumed or when the mass spectral data ndicates the presence of a compound that meets the identification riteria but the result is less than the specified detection limit ut greater than zero (e.g. 10J).

C

This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS

B

This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

OTHER

Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

ORGANIC ANALYSIS DATA SHEET
(PAGE 2)

LABORATORY NAME: NANCO LABS. INC.
CASE NO: 7136

SAMPLE NO.
BK-222

SEMIVOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 04/21/87
Date Analyzed: 05/01/87
Conc/Dil Factor:----------> 1
Percent Moisture: N/A

GPC Cleanup: Yes_____ No_X_
Separatory Funnel Extraction: Yes_X_
Continuous Liquid - Liquid Extraction: Yes___

CAS Number		ug/l or ug/Kg (Circle One)
108-95-2	Phenol	10.0 U
111-44-4	bis(-2-Chloroethyl)Ether	10.0 U
95-57-8	2-Chlorophenol	10.0 U
541-73-1	1,3-Dichlorobenzene	10.0 U
106-46-7	1,4-Dichlorobenzene	10.0 U
100-51-6	Benzyl Alcohol	10.0 U
95-50-1	1,2-Dichlorobenzene	10.0 U
95-48-7	2-Methylphenol	10.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	10.0 U
106-44-5	4-Methylphenol	10.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	10.0 U
67-72-1	Hexachloroethane	10.0 U
98-95-3	Nitrobenzene	10.0 U
78-59-1	Isophorone	10.0 U
88-75-5	2-Nitrophenol	10.0 U
105-67-9	2,4-Dimethylphenol	10.0 U
65-85-0	Benzoic Acid	50.0 U
111-91-1	bis(-2-Chloroethoxy)Methane	10.0 U
120-83-2	2,4-Dichlorophenol	10.0 U
120-82-1	1,2,4-Trichlorobenzene	10.0 U
91-20-3	Naphthalene	10.0 U
106-47-8	4-Chloroaniline	10.0 U
87-68-3	Hexachlorobutadiene	10.0 U
59-50-7	4-Chloro-3-Methylphenol	10.0 U
91-57-6	2-Methylnaphthalene	10.0 U
77-47-4	Hexachlorocyclopentadiene	10.0 U
88-06-2	2,4,6-Trichlorophenol	10.0 U
95-95-4	2,4,5-Trichlorophenol	50.0 U
91-58-7	2-Chloronaphthalene	10.0 U
88-74-4	2-Nitroaniline	50.0 U
131-11-3	Dimethyl Phthalate	10.0 U
208-96-8	Acenaphthylene	10.0 U
99-09-2	3-Nitroaniline	50.0 U

CAS Number		ug/l or ug/Kg (Circle One)
83-32-9	Acenaphthene	10.0 U
51-28-5	2,4-Dinitrophenol	50.0 U
100-02-7	4-Nitrophenol	50.0 U
132-64-9	Dibenzofuran	10.0 U
121-14-2	2,4-Dinitrotoluene	10.0 U
606-20-2	2,6-Dinitrotoluene	10.0 U
84-66-2	Diethylphthalate	10.0 U
7005-72-3	4-Chlorophenyl-phenylether	10.0 U
86-73-7	Fluorene	10.0 U
100-01-6	4-Nitroaniline	50.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	50.0 U
86-30-6	N-Nitrosodiphenylamine (1)	10.0 U
101-55-3	4-Bromophenyl-phenylether	10.0 U
118-74-1	Hexachlorobenzene	10.0 U
87-86-5	Pentachlorophenol	50.0 U
85-01-8	Phenanthrene	10.0 U
120-12-7	Anthracene	10.0 U
84-74-2	Di-n-Butylphthalate	10.0 U
206-44-0	Fluoranthene	10.0 U
129-00-0	Pyrene	10.0 U
85-68-7	Butylbenzylphthalate	10.0 U
91-94-1	3,3'-Dichlorobenzidine	20.0 U
56-55-3	Benzo(a)Anthracene	10.0 U
117-81-7	bis(2-Ethylhexyl)Phthalate	10.0 U
218-01-9	Chrysene	10.0 U
117-84-0	Di-n-Octyl Phthalate	10.0 U
205-99-2	Benzo(b)Fluoranthene	10.0 U
207-08-9	Benzo(k)Fluoranthene	10.0 U
50-32-8	Benzo(a)Pyrene	10.0 U
193-39-5	Indeno(1,2,3-cd)Pyrene	10.0 U
53-70-3	Dibenz(a,h)Anthracene	10.0 U
191-24-2	Benzo(g,h,i)Perylene	10.0 U

(1) - Cannot be separated from diphenylamine

ORGANICS ANALYSIS DATA SHEET
(PAGE 3)

SAMPLE NUMBER

BK 222

LABORATORY NAME: NANCO LABS, INC.
CASE NO: 7136

PESTICIDE/PCBs

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 4/20/87
Date Analyzed: 4/30/87
Conc/Dil Factor: -----> 1
Percent Moisture: N/A

GPC Cleanup: Yes____ No_X___
Separatory Funnel Extraction: Yes__X__
Continuous Liquid-Liquid Extraction: Yes____

CAS Number		ug/l or ug/Kg (Circle One)
319-84-6	Alpha-BHC	0.05 U
319-85-7	Beta-BHC	0.05 U
319-86-8	Delta-BHC	0.05 U
58-89-9	Gamma-BHC (Lindane)	0.05 U
76-44-8	Heptachlor	0.05 U
309-00-2	Aldrin	0.05 U
1024-57-3	Heptachlor Epoxide	0.05 U
959-98-8	Endosulfan I	0.05 U
60-57-1	Dieldrin	0.10 U
72-55-9	4,4'-DDE	0.10 U
72-20-8	Endrin	0.10 U
33213-65-9	Endosulfan II	0.10 U
72-54-8	4,4'-DDD	0.10 U
7421-93-4	Endrin Aldehyde	0.10 U
1031-07-8	Endosulfan Sulfate	0.10 U
50-29-3	4,4'-DDT	0.10 U
53494-70-5	Endrin Ketone	0.10 U
72-43-5	Methoxychlor	0.50 U
57-74-9	Chlordane	0.50 U
8001-35-2	Toxaphene	1.00 U
12674-11-2	Aroclor-1016	0.50 U
11104-28-2	Aroclor-1221	0.50 U
11141-16-5	Aroclor-1232	0.50 U
53469-21-9	Aroclor-1242	0.50 U
12672-29-6	Aroclor-1248	0.50 U
11097-69-1	Aroclor-1254	1.00 U
11096-82-5	Aroclor-1260	1.00 U

Vi = Volume of extract injected (ul)

Vs = Volume of water extracted (ml)

Ws = Weight of sample extracted (g)

Vt = Volume of total extract (ul)

Vs 1000 or Ws _____ Vt 10000 Vi 3

FORM I

ORGANICS ANALYSIS DATA SHEET
(PAGE 4)

LABORATORY NAME :NANCO LABS.INC.
CASE NO: 7136

SAMPLE NUMBER
BK-222

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/Kg)
1	-----	NONE FOUND	VOA	-----	-----
2					
3					
4					
5					
6					
7					
8					
9					
10	123422	2-PENTANONE,4-HYDROXY-4-METHYL	BNA	84	12.0 J
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					

7136-02-005

FORM I

U.S. EPA Contract Laboratory Program
Sample Management Office
P,O, Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.

MBJ120

Date 5/19/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME ASSOCIATED LABORATORIES

CASE NO. 7136

SOW NO. 785

Lab Receipt Date 4/17/87

LAB SAMPLE ID. NO. F32755-2

QC REPORT NO. 13

Elements Identified and Measured

Concentration: Low X Medium ____

Matrix: Water X Soil ____ Sludge ____ Other ____

ug/L

1.	Aluminum	[144]		P	13.	Magnesium	5590		P
2.	Antimony	16U	(N)	P	14.	Manganese	[6.1]		P
3.	Arsenic	0.7U		F	15.	Mercury	~~1.2~~	(N)	CV
4.	Barium	~~[161]~~		P	16.	Nickel	16U		P
5.	Beryllium	3.4U		P	17.	Potassium	272U		P
6.	Cadmium	3.5U		P	18.	Selenium	0.5U		F
7.	Calcium	42500		P	19.	Silver	4.6U	(N)	P
8.	Chromium	5.2U		P	20.	Sodium	~~6990~~		P
9.	Cobalt	7.1U		P	21.	Thallium	0.5U		F
10.	Copper	[10]		P	22.	Vanadium	4.4U		P
11.	Iron	~~231~~	(*)	P	23.	Zinc	~~[20]~~	(E)	P
12.	Lead	[1.4]	(N)	F					

Cyanide NR

Percent Solids (%) 0

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: clear liquid. pH 1.41

Lab Manager Ed Behare

ORGANICS ANALYSIS DATA SHEET

(PAGE 1)

SAMPLE NUMBER

Laboratory Name:NANCO LABORATORY INC.
Lab Sample ID No:>A0815
Sample Matrix: WATER
Data Release Authorized By: Sohail Johani

Case No: 7136
QC Report No:097
Contract No:68-01-7102
Date Sample Received:04/16/87

BK-223

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 04/18/87
Date Analyzed:04/18/87
Conc/Dil Factor: 1 pH:6.9
Percent Moisture:N/A

AS umber		ug/l or ug/Kg (Circle One)
4-87-3	Chloromethane	10.0 U
4-83-9	Bromomethane	10.0 U
5-01-4	Vinyl Chloride	10.0 U
5-00-3	Chloroethane	10.0 U
5-09-2	Methylene Chloride	~~3.5 JB~~
7-64-1	Acetone	~~3.9 JB~~
5-15-0	Carbon Disulfide	5.0 U
5-35-4	1,1-Dichloroethene	5.0 U
5-34-3	1,1-Dichloroethane	5.0 U
56-60-5	Trans-1,2-Dichloroethene	5.0 U
7-66-3	Chloroform	5.0 U
07-06-2	1,2-Dichloroethane	5.0 U
8-93-3	2-Butanone	10.0 U
1-55-6	1,1,1-Trichloroethane	5.0 U
6-23-5	Carbon Tetrachloride	5.0 U
08-05-4	Vinyl Acetate	10.0 U
5-27-4	Bromodichloromethane	5.0 U

CAS Number		ug/l or ug/Kg (Circle One)
79-34-5	1,1,2,2-Tetrachloroethane	5.0 U
78-87-5	1,2-Dichloropropane	5.0 U
10061-02-6	Trans-1,3-Dichloropropene	5.0 U
79-01-6	Trichloroethene	5.0 U
124-48-1	Dibromochloromethane	5.0 U
79-00-5	1,1,2-Trichloroethane	5.0 U
71-43-2	Benzene	5.0 U
10061-01-5	cis-1,3-Dichloropropene	5.0 U
110-75-8	2-Chloroethylvinylether	10.0 U
75-25-2	Bromoform	5.0 U
591-78-6	2-Hexanone	10.0 U
108-10-1	4-Methyl-2-Pentanone	10.0 U
127-18-4	Tetrachloroethene	5.0 U
108-88-3	Toluene	5.0 U
108-90-7	Chlorobenzene	5.0 U
100-41-4	Ethylbenzene	5.0 U
100-42-5	Styrene	5.0 U
	Total Xylenes	5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

LUE

the result is a value greater than or equal to the detection mit, report the value.

ndicates compound was analyzed for but not detected. Report ie minimum detection limit for the sample with the U(e.g.10U ased on necessary concentration dilution actions. (This is not ecessarily the instrument detection limit.) The footnote should ead U-Compound was analyzed for but not detected.The number is he minimum attainable detection limit for the sample.

ndicates an estimated value.This flag is used either when stimating a concentration for tentatively identified compounds here a 1 1 response is assumed or when the mass spectral data ndicates the presence of a compound that meets the identification riteria but the result is less than the specified detection limit ut greater than zero (e.g. 10J).

C

This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS

B

This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

OTHER

Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

ORGANIC ANALYSIS DATA SHEET
(PAGE 2)

LABORATORY NAME: NANCO LABS. INC.
CASE NO: 7136

SAMPLE NO.
BK-223

SEMIVOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 04/21/87
Date Analyzed: 05/01/87
Conc/Dil Factor:----------> 1
Percent Moisture: N/A

GPC Cleanup: Yes_____ No_X_
Separatory Funnel Extraction: Yes_X_
Continuous Liquid - Liquid Extraction: Yes___

CAS Number		ug/L or ug/Kg (Circle One)
108-95-2	Phenol	10.0 U
111-44-4	bis(-2-Chloroethyl)Ether	10.0 U
95-57-8	2-Chlorophenol	10.0 U
541-73-1	1,3-Dichlorobenzene	10.0 U
106-46-7	1,4-Dichlorobenzene	10.0 U
100-51-6	Benzyl Alcohol	10.0 U
95-50-1	1,2-Dichlorobenzene	10.0 U
95-48-7	2-Methylphenol	10.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	10.0 U
106-44-5	4-Methylphenol	10.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	10.0 U
67-72-1	Hexachloroethane	10.0 U
98-95-3	Nitrobenzene	10.0 U
78-59-1	Isophorone	10.0 U
88-75-5	2-Nitrophenol	10.0 U
105-67-9	2,4-Dimethylphenol	10.0 U
65-85-0	Benzoic Acid	50.0 U
111-91-1	bis(-2-Chloroethoxy)Methane	10.0 U
120-83-2	2,4-Dichlorophenol	10.0 U
120-82-1	1,2,4-Trichlorobenzene	10.0 U
91-20-3	Naphthalene	10.0 U
106-47-8	4-Chloroaniline	10.0 U
87-68-3	Hexachlorobutadiene	10.0 U
59-50-7	4-Chloro-3-Methylphenol	10.0 U
91-57-6	2-Methylnaphthalene	10.0 U
77-47-4	Hexachlorocyclopentadiene	10.0 U
88-06-2	2,4,6-Trichlorophenol	10.0 U
95-95-4	2,4,5-Trichlorophenol	50.0 U
91-58-7	2-Chloronaphthalene	10.0 U
88-74-4	2-Nitroaniline	50.0 U
131-11-3	Dimethyl Phthalate	10.0 U
208-96-8	Acenaphthylene	10.0 U
99-09-2	3-Nitroaniline	50.0 U

CAS Number		ug/L or ug/Kg (Circle One)
83-32-9	Acenaphthene	10.0 U
51-28-5	2,4-Dinitrophenol	50.0 U
100-02-7	4-Nitrophenol	50.0 U
132-64-9	Dibenzofuran	10.0 U
121-14-2	2,4-Dinitrotoluene	10.0 U
606-20-2	2,6-Dinitrotoluene	10.0 U
84-66-2	Diethylphthalate	10.0 U
7005-72-3	4-Chlorophenyl-phenylether	10.0 U
86-73-7	Fluorene	10.0 U
100-01-6	4-Nitroaniline	50.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	50.0 U
86-30-6	N-Nitrosodiphenylamine (1)	10.0 U
101-55-3	4-Bromophenyl-phenylether	10.0 U
118-74-1	Hexachlorobenzene	10.0 U
87-86-5	Pentachlorophenol	50.0 U
85-01-8	Phenanthrene	10.0 U
120-12-7	Anthracene	10.0 U
84-74-2	Di-n-Butylphthalate	10.0 U
206-44-0	Fluoranthene	10.0 U
129-00-0	Pyrene	10.0 U
85-68-7	Butylbenzylphthalate	10.0 U
91-94-1	3,3'-Dichlorobenzidine	20.0 U
56-55-3	Benzo(a)Anthracene	10.0 U
117-81-7	bis(2-Ethylhexyl)Phthalate	10.0 U
218-01-9	Chrysene	10.0 U
117-84-0	Di-n-Octyl Phthalate	10.0 U
205-99-2	Benzo(b)Fluoranthene	10.0 U
207-08-9	Benzo(k)Fluoranthene	10.0 U
50-32-8	Benzo(a)Pyrene	10.0 U
193-39-5	Indeno(1,2,3-cd)Pyrene	10.0 U
53-70-3	Dibenz(a,h)Anthracene	10.0 U
191-24-2	Benzo(g,h,i)Perylene	10.0 U

(1) - Cannot be separated from diphenylamine

ORGANICS ANALYSIS DATA SHEET

(PAGE 3)

LABORATORY NAME: NANCO LABS, INC.

CASE NO: 7136

SAMPLE NUMBER

BK 223

PESTICIDE/PCBs

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: 4/20/87

Date Analyzed: 4/30/87

Conc/Dil Factor: -----> 1

Percent Moisture: N/A

GPC Cleanup: Yes____ No_X___

Separatory Funnel Extraction: Yes__X__

Continuous Liquid-Liquid Extraction: Yes____

CAS Number		ug/l or ug/Kg (Circle One)
319-84-6	Alpha-BHC	0.05 U
319-85-7	Beta-BHC	0.05 U
319-86-8	Delta-BHC	0.05 U
58-89-9	Gamma-BHC (Lindane)	0.05 U
76-44-8	Heptachlor	0.05 U
309-00-2	Aldrin	0.05 U
1024-57-3	Heptachlor Epoxide	0.05 U
959-98-8	Endosulfan I	0.05 U
60-57-1	Dieldrin	0.10 U
72-55-9	4,4'-DDE	0.10 U
72-20-8	Endrin	0.10 U
33213-65-9	Endosulfan II	0.10 U
72-54-8	4,4'-DDD	0.10 U
7421-93-4	Endrin Aldehyde	0.10 U
1031-07-8	Endosulfan Sulfate	0.10 U
50-29-3	4,4'-DDT	0.10 U
53494-70-5	Endrin Ketone	0.10 U
72-43-5	Methoxychlor	0.50 U
57-74-9	Chlordane	0.50 U
8001-35-2	Toxaphene	1.00 U
12674-11-2	Aroclor-1016	0.50 U
11104-28-2	Aroclor-1221	0.50 U
11141-16-5	Aroclor-1232	0.50 U
53469-21-9	Aroclor-1242	0.50 U
12672-29-6	Aroclor-1248	0.50 U
11097-69-1	Aroclor-1254	1.00 U
11096-82-5	Aroclor-1260	1.00 U

Vi = Volume of extract injected (ul)

Vs = Volume of water extracted (ml)

Ws = Weight of sample extracted (g)

Vt = Volume of total extract (ul)

Vs 1000 or Ws _____ Vt 10000 Vi 3

ORGANICS ANALYSIS DATA SHEET
(PAGE 4)

LABORATORY NAME :NANCO LABS.INC.
CASE NO: 7136

SAMPLE NUMBER
BK-223

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/Kg)
1	-----	NONE FOUND	VOA	---	-----
2					
3					
4					
5					
6					
7					
8					
9					
10	123422	2-PENTANONE,4-HYDROXY-4-METHYL	BNA	83	21.0 J
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					

7136-02-005

FORM I

U.S. EPA Contract Laboratory Program
Sample Management Office
P,O, Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.

MBJ121

Date 5/19/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME ASSOCIATED LABORATORIES

CASE NO. 7136

SOW NO. 785

Lab Receipt Date 4/17/87

LAB SAMPLE ID. NO. F32755-3

QC REPORT NO. 13

Elements Identified and Measured

Concentration: Low X Medium ____

Matrix: Water X Soil ____ Sludge ____ Other ____

ug/L

1.	Aluminum	514	P	13.	Magnesium	6540	P
2.	Antimony	16U (N)	P	14.	Manganese	53	P
3.	Arsenic	[1.3]	F	15.	Mercury	~~0.9~~ (N)	CV
4.	Barium	[30]	P	16.	Nickel	16U	P
5.	Beryllium	3.4U	P	17.	Potassium	272U	P
6.	Cadmium	3.5U	P	18.	Selenium	0.5U	F
7.	Calcium	50100	P	19.	Silver	4.6U (N)	P
8.	Chromium	5.2U	P	20.	Sodium	~~7030~~	P
9.	Cobalt	7.1U	P	21.	Thallium	0.5U	F
10.	Copper	[11]	P	22.	Vanadium	4.4U	P
11.	Iron	~~459~~ (*)	P	23.	Zinc	~~26~~ (E)	P
12.	Lead	[4.0] (N)	F				

Cyanide NR

Percent Solids (%) 0

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: clear liquid - pH 1.41

Lab Manager Ed Behare

ORGANICS ANALYSIS DATA SHEET

(PAGE 1)

SAMPLE NUMBER

Laboratory Name:NANCO LABORATORY INC.
Lab Sample ID No:>B1023
Sample Matrix: SOIL
Data Release Authorized By: Sohail Johari

Case No: 7136
QC Report No:098
Contract No:68-01-7102
Date Sample Received:04/16/87

BK-224

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 04/17/87
Date Analyzed:04/17/87
Conc/Dil Factor: 1 pH:6.7
Percent Moisture:52

ber		ug/l or ug/Kg (Circle One)	CAS Number		ug/l or ug/Kg (Circle One)
37-3	Chloromethane	10.0 U	79-34-5	1,1,2,2-Tetrachloroethane	5.0 U
33-9	Bromomethane	10.0 U	78-87-5	1,2-Dichloropropane	5.0 U
01-4	Vinyl Chloride	10.0 U	10061-02-6	Trans-1,3-Dichloropropene	5.0 U
00-3	Chloroethane	10.0 U	79-01-6	Trichloroethene	5.0 U
09-2	Methylene Chloride	22.0 B	124-48-1	Dibromochloromethane	5.0 U
64-1	Acetone	56.0 B	79-00-5	1,1,2-Trichloroethane	5.0 U
15-0	Carbon Disulfide	5.0 U	71-43-2	Benzene	5.0 U
35-4	1,1-Dichloroethene	5.0 U	10061-01-5	cis-1,3-Dichloropropene	5.0 U
34-3	1,1-Dichloroethane	5.0 U	110-75-8	2-Chloroethylvinylether	10.0 U
-60-5	Trans-1,2-Dichloroethene	5.0 U	75-25-2	Bromoform	5.0 U
56-3	Chloroform	5.0 U	591-78-6	2-Hexanone	10.0 U
-06-2	1,2-Dichloroethane	5.0 U	108-10-1	4-Methyl-2-Pentanone	10.0 U
93-3	2-Butanone	10.0 U	127-18-4	Tetrachloroethene	5.0 U
55-6	1,1,1-Trichloroethane	5.0 U	108-88-3	Toluene	5.0 U
23-5	Carbon Tetrachloride	5.0 U	108-90-7	Chlorobenzene	5.0 U
-05-4	Vinyl Acetate	10.0 U	100-41-4	Ethylbenzene	5.0 U
27-4	Bromodichloromethane	5.0 U	100-42-5	Styrene	5.0 U
				Total Xylenes	5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

E

he result is a value greater than or equal to the detection t, report the value.

cates compound was analyzed for but not detected. Report minimum detection limit for the sample with the U(e.g.10U d on necessary concentration dilution actions. (This is not ssarily the instrument detection limit.) The footnote should U-Compound was analyzed for but not detected.The number is minimum attainable detection limit for the sample.

icates an estimated value.This flag is used either when imating a concentration for tentatively identified compounds e a 1 1 response is assumed or when the mass spectral data icates the presence of a compound that meets the identification teria but the result is less than the specified detection limit greater than zero (e.g. 10J).

C

This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS

B

This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

OTHER

Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

ORGANIC ANALYSIS DATA SHEET
(PAGE 2)

LABORATORY NAME: NANCO LABS. INC.
CASE NO: 7136

SAMPLE NO.
BK-224

SEMIVOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 04/21/87
Date Analyzed: 05/02/87
Conc/Dil Factor:----------> 2
Percent Moisture: 52

GPC Cleanup: Yes ✓ No____
Separatory Funnel Extraction: Yes____
Continuous Liquid - Liquid Extraction: Yes__

CAS Number		ug/l or ug/Kg (Circle One)
108-95-2	Phenol	660.0 U
111-44-4	bis(-2-Chloroethyl)Ether	660.0 U
95-57-8	2-Chlorophenol	660.0 U
541-73-1	1,3-Dichlorobenzene	660.0 U
106-46-7	1,4-Dichlorobenzene	660.0 U
100-51-6	Benzyl Alcohol	660.0 U
95-50-1	1,2-Dichlorobenzene	660.0 U
95-48-7	2-Methylphenol	660.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	660.0 U
106-44-5	4-Methylphenol	660.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	660.0 U
67-72-1	Hexachloroethane	660.0 U
98-95-3	Nitrobenzene	660.0 U
78-59-1	Isophorone	660.0 U
88-75-5	2-Nitrophenol	660.0 U
105-67-9	2,4-Dimethylphenol	660.0 U
65-85-0	Benzoic Acid	3200.0 U
111-91-1	bis(-2-Chloroethoxy)Methane	660.0 U
120-83-2	2,4-Dichlorophenol	660.0 U
120-82-1	1,2,4-Trichlorobenzene	660.0 U
91-20-3	Naphthalene	660.0 U
106-47-8	4-Chloroaniline	660.0 U
87-68-3	Hexachlorobutadiene	660.0 U
59-50-7	4-Chloro-3-Methylphenol	660.0 U
91-57-6	2-Methylnaphthalene	660.0 U
77-47-4	Hexachlorocyclopentadiene	660.0 U
88-06-2	2,4,6-Trichlorophenol	660.0 U
95-95-4	2,4,5-Trichlorophenol	3200.0 U
91-58-7	2-Chloronaphthalene	660.0 U
88-74-4	2-Nitroaniline	3200.0 U
131-11-3	Dimethyl Phthalate	660.0 U
208-96-8	Acenaphthylene	660.0 U
99-09-2	3-Nitroaniline	3200.0 U

CAS Number		ug/l or ug/Kg (Circle One)
83-32-9	Acenaphthene	660.0 U
51-28-5	2,4-Dinitrophenol	3200.0 U
100-02-7	4-Nitrophenol	3200.0 U
132-64-9	Dibenzofuran	660.0 U
121-14-2	2,4-Dinitrotoluene	660.0 U
606-20-2	2,6-Dinitrotoluene	660.0 U
84-66-2	Diethylphthalate	660.0 U
7005-72-3	4-Chlorophenyl-phenylether	660.0 U
86-73-7	Fluorene	660.0 U
100-01-6	4-Nitroaniline	3200.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	3200.0 U
86-30-6	N-Nitrosodiphenylamine (1)	660.0 U
101-55-3	4-Bromophenyl-phenylether	660.0 U
118-74-1	Hexachlorobenzene	660.0 U
87-86-5	Pentachlorophenol	3200.0 U
85-01-8	Phenanthrene	660.0 U
120-12-7	Anthracene	660.0 U
84-74-2	Di-n-Butylphthalate	660.0 U
206-44-0	Fluoranthene	660.0 U
129-00-0	Pyrene	660.0 U
85-68-7	Butylbenzylphthalate	660.0 U
91-94-1	3,3'-Dichlorobenzidine	1320.0 U
56-55-3	Benzo(a)Anthracene	660.0 U
117-81-7	bis(2-Ethylhexyl)Phthalate	660.0 U
218-01-9	Chrysene	660.0 U
117-84-0	Di-n-Octyl Phthalate	660.0 U
205-99-2	Benzo(b)Fluoranthene	660.0 U
207-08-9	Benzo(k)Fluoranthene	660.0 U
50-32-8	Benzo(a)Pyrene	660.0 U
193-39-5	Indeno(1,2,3-cd)Pyrene	660.0 U
53-70-3	Dibenz(a,h)Anthracene	660.0 U
191-24-2	Benzo(g,h,i)Perylene	660.0 U

(1) - Cannot be separated from diphenylamine

ORGANICS ANALYSIS DATA SHEET

(PAGE 3)

SAMPLE NUMBER

LABORATORY NAME: NANCO LABS, INC.

CASE NO: 7136

BK 224

PESTICIDE/PCBs

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: 4/21/87

Date Analyzed: 5/13/87

Conc/Dil Factor: ----> 2

Percent Moisture: 52

GPC Cleanup: Yes_X_ No___

Separatory Funnel Extraction: Yes___

Continuous Liquid-Liquid Extraction: Yes___

CAS Number		ug/l or ug/Kg (Circle One)
319-84-6	Alpha-BHC	16.00 U
319-85-7	Beta-BHC	16.00 U
319-86-8	Delta-BHC	16.00 U
58-89-9	Gamma-BHC (Lindane)	16.00 U
76-44-8	Heptachlor	16.00 U
309-00-2	Aldrin	16.00 U
1024-57-3	Heptachlor Epoxide	16.00 U
959-98-8	Endosulfan I	16.00 U
60-57-1	Dieldrin	32.00 U
72-55-9	4,4'-DDE	32.00 U
72-20-8	Endrin	32.00 U
33213-65-9	Endosulfan II	32.00 U
72-54-8	4,4'-DDD	32.00 U
7421-93-4	Endrin Aldehyde	32.00 U
1031-07-8	Endosulfan Sulfate	~~68~~ B
50-29-3	4,4'-DDT	47 B
53494-70-5	Endrin Ketone	32.00 U
72-43-5	Methoxychlor	160.00 U
57-74-9	Chlordane	160.00 U
8001-35-2	Toxaphene	320.00 U
12674-11-2	Aroclor-1016	160.00 U
11104-28-2	Aroclor-1221	160.00 U
11141-16-5	Aroclor-1232	160.00 U
53469-21-9	Aroclor-1242	160.00 U
12672-29-6	Aroclor-1248	160.00 U
11097-69-1	Aroclor-1254	320.00 U
11096-82-5	Aroclor-1260	320.00 U

Vi = Volume of extract injected (ul)

Vs = Volume of water extracted (ml)

Ws = Weight of sample extracted (g)

Vt = Volume of total extract (ul)

Vs _____ or Ws 30 Vt 40000 Vi 4

FORM I

ORGANICS ANALYSIS DATA SHEET
(PAGE 4)

LABORATORY NAME :NANCO LABS.INC.
CASE NO: 7136

SAMPLE NUMBER
BK-224

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/Kg)
1	76131	ETHANE, 1,1,2-TRICHLORO-1,2,2-TRIFLUORO	VOA	161	78.0 J β
2	111762	ETHANOL, 2-BUTOXY	VOA	340	13.0 JB
3					
4					
5					
6					
7	123422	2-PENTANONE, 4-HYDROXY-4-METHYL	BNA	88	18000.0 JB
8	-----	UNKNOWN	BNA	187	800.0 J
9	-----	UNKNOWN	BNA	690	3800.0 J
10	-----	UNKNOWN	BNA	1100	1400.0 J
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					

7136-02-005

FORM I

U.S. EPA Contract Laboratory Program
Sample Management Office
P,O, Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.

MBJ122

Date 5/19/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME ASSOCIATED LABORATORIES CASE NO. 7136

SOW NO. 785 Lab Receipt Date 4/17/87

LAB SAMPLE ID. NO. F32755-4 QC REPORT NO. 13

Elements Identified and Measured

Concentration: Low X Medium ~~X~~ BED

Matrix: Water ____ Soil X Sludge ____ Other ____

mg/Kg dry weight

1.	Aluminum	13100 (*)	P	13.	Magnesium	3690	P
2.	Antimony	[7.4] (N)	P	14.	Manganese	350	P
3.	Arsenic	[2.6]	F	15.	Mercury	~~1.0~~ (N)	CV
4.	Barium	72	P	16.	Nickel	20	P
5.	Beryllium	1.2U	P	17.	Potassium	97U	P
6.	Cadmium	1.3U	P	18.	Selenium	[0.25]	F
7.	Calcium	7240	P	19.	Silver	1.7U (N)	P
8.	Chromium	22	P	20.	Sodium	~~[305]~~ (E)	P
9.	Cobalt	[8.8]	P	21.	Thallium	[0.18]	F
10.	Copper	24	P	22.	Vanadium	[17] (E)	P
11.	Iron	19000	P	23.	Zinc	112	P
12.	Lead	50	F		Percent Solids (%)	45.3	

Cyanide ____

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: very moist soil with roots interspersed

Lab Manager Ed Behane

ORGANICS ANALYSIS DATA SHEET

(PAGE 1)

SAMPLE NUMBER

Laboratory Name:NANCO LABORATORY INC.
Lab Sample ID No:>B1026
Sample Matrix: SOIL
Data Release Authorized By: Sohail Johnson

Case No: 7136
QC Report No:098
Contract No:68-01-7102
Date Sample Received:04/16/87

BK-225

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 04/17/87
Date Analyzed:04/17/87
Conc/Dil Factor: 1 pH:6.8
Percent Moisture:50

AS umber		ug/l or ug/Kg (Circle One)	CAS Number		ug/l or ug/Kg (Circle One)
4-87-3	Chloromethane	10.0 U	79-34-5	1,1,2,2-Tetrachloroethane	5.0 U
4-83-9	Bromomethane	10.0 U	78-87-5	1,2-Dichloropropane	5.0 U
5-01-4	Vinyl Chloride	10.0 U	10061-02-6	Trans-1,3-Dichloropropene	5.0 U
5-00-3	Chloroethane	10.0 U	79-01-6	Trichloroethene	5.0 U
5-09-2	Methylene Chloride	~~30.0 B~~	124-48-1	Dibromochloromethane	5.0 U
7-64-1	Acetone	80.0 B	79-00-5	1,1,2-Trichloroethane	5.0 U
5-15-0	Carbon Disulfide	5.0 U	71-43-2	Benzene	5.0 U
5-35-4	1,1-Dichloroethane	5.0 U	10061-01-5	cis-1,3-Dichloropropene	5.0 U
5-34-3	1,1-Dichloroethane	5.0 U	110-75-8	2-Chloroethylvinylether	10.0 U
56-60-5	Trans-1,2-Dichloroethene	5.0 U	75-25-2	Bromoform	5.0 U
7-66-3	Chloroform	5.0 U	591-78-6	2-Hexanone	10.0 U
07-06-2	1,2-Dichloroethane	5.0 U	108-10-1	4-Methyl-2-Pentanone	10.0 U
3-93-3	2-Butanone	10.0 U	127-18-4	Tetrachloroethene	5.0 U
1-55-6	1,1,1-Trichloroethane	5.0 U	108-88-3	Toluene	5.0 U
5-23-5	Carbon Tetrachloride	5.0 U	108-90-7	Chlorobenzene	5.0 U
08-05-4	Vinyl Acetate	10.0 U	100-41-4	Ethylbenzene	5.0 U
5-27-4	Bromodichloromethane	5.0 U	100-42-5	Styrene	5.0 U
				Total Xylenes	5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

LUE

the result is a value greater than or equal to the detection nit, report the value.

dicates compound was analyzed for but not detected. Report e minimum detection limit for the sample with the U(e.g.10U sed on necessary concentration dilution actions. (This is not cessarily the instrument detection limit.) The footnote should ed U-Compound was analyzed for but not detected.The number is e minimum attainable detection limit for the sample.

dicates an estimated value.This flag is used either when timating a concentration for tentatively identified compounds ere a 1 1 response is assumed or when the mass spectral data dicates the presence of a compound that meets the identification iteria but the result is less than the specified detection limit t greater than zero (e.g. 10J).

C

This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS

B

This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

OTHER

Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

ORGANIC ANALYSIS DATA SHEET
(PAGE 2)

LABORATORY NAME: NANCO LABS. INC.
CASE NO: 7136

SAMPLE NO.
BK-225

SEMIVOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 04/21/87
Date Analyzed: 05/01/87
Conc/Dil Factor:----------> 2
Percent Moisture: 50

GPC Cleanup: Yes X No____
Separatory Funnel Extraction: Yes____
Continuous Liquid - Liquid Extraction: Yes___

CAS Number		ug/l or ug/Kg (Circle One)
108-95-2	Phenol	660.0 U
111-44-4	bis(-2-Chloroethyl)Ether	660.0 U
95-57-8	2-Chlorophenol	660.0 U
541-73-1	1,3-Dichlorobenzene	660.0 U
106-46-7	1,4-Dichlorobenzene	660.0 U
100-51-6	Benzyl Alcohol	660.0 U
95-50-1	1,2-Dichlorobenzene	660.0 U
95-48-7	2-Methylphenol	660.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	660.0 U
106-44-5	4-Methylphenol	660.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	660.0 U
67-72-1	Hexachloroethane	660.0 U
98-95-3	Nitrobenzene	660.0 U
78-59-1	Isophorone	660.0 U
88-75-5	2-Nitrophenol	660.0 U
105-67-9	2,4-Dimethylphenol	660.0 U
65-85-0	Benzoic Acid	3200.0 U
111-91-1	bis(-2-Chloroethoxy)Methane	660.0 U
120-83-2	2,4-Dichlorophenol	660.0 U
120-82-1	1,2,4-Trichlorobenzene	660.0 U
91-20-3	Naphthalene	660.0 U
106-47-8	4-Chloroaniline	660.0 U
87-68-3	Hexachlorobutadiene	660.0 U
59-50-7	4-Chloro-3-Methylphenol	660.0 U
91-57-6	2-Methylnaphthalene	660.0 U
77-47-4	Hexachlorocyclopentadiene	660.0 U
88-06-2	2,4,6-Trichlorophenol	660.0 U
95-95-4	2,4,5-Trichlorophenol	3200.0 U
91-58-7	2-Chloronaphthalene	660.0 U
88-74-4	2-Nitroaniline	3200.0 U
131-11-3	Dimethyl Phthalate	660.0 U
208-96-8	Acenaphthylene	660.0 U
99-09-2	3-Nitroaniline	3200.0 U

CAS Number		ug/l or ug/Kg (Circle One)
83-32-9	Acenaphthene	660.0 U
51-28-5	2,4-Dinitrophenol	3200.0 U
100-02-7	4-Nitrophenol	3200.0 U
132-64-9	Dibenzofuran	660.0 U
121-14-2	2,4-Dinitrotoluene	660.0 U
606-20-2	2,6-Dinitrotoluene	660.0 U
84-66-2	Diethylphthalate	660.0 U
7005-72-3	4-Chlorophenyl-phenylether	660.0 U
86-73-7	Fluorene	660.0 U
100-01-6	4-Nitroaniline	3200.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	3200.0 U
86-30-6	N-Nitrosodiphenylamine (1)	660.0 U
101-55-3	4-Bromophenyl-phenylether	660.0 U
118-74-1	Hexachlorobenzene	660.0 U
87-86-5	Pentachlorophenol	3200.0 U
85-01-8	Phenanthrene	660.0 U
120-12-7	Anthracene	660.0 U
84-74-2	Di-n-Butylphthalate	660.0 U
206-44-0	Fluoranthene	660.0 U
129-00-0	Pyrene	660.0 U
85-68-7	Butylbenzylphthalate	660.0 U
91-94-1	3,3'-Dichlorobenzidine	1320.0 U
56-55-3	Benzo(a)Anthracene	660.0 U
117-81-7	bis(2-Ethylhexyl)Phthalate	660.0 U
218-01-9	Chrysene	660.0 U
117-84-0	Di-n-Octyl Phthalate	660.0 U
205-99-2	Benzo(b)Fluoranthene	660.0 U
207-08-9	Benzo(k)Fluoranthene	660.0 U
50-32-8	Benzo(a)Pyrene	660.0 U
193-39-5	Indeno(1,2,3-cd)Pyrene	660.0 U
53-70-3	Dibenz(a,h)Anthracene	660.0 U
191-24-2	Benzo(g,h,i)Perylene	660.0 U

(1) - Cannot be separated from diphenylamine

ORGANICS ANALYSIS DATA SHEET

(PAGE 3)

SAMPLE NUMBER

LABORATORY NAME: NANCO LABS, INC.

CASE NO: 7136

BK 225

PESTICIDE/PCBs

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: 4/21/87

Date Analyzed: 5/13/87

Conc/Dil Factor: -----> 2

Percent Moisture: 50

GPC Cleanup: Yes_X_ No___

Separatory Funnel Extraction: Yes___

Continuous Liquid-Liquid Extraction: Yes___

CAS Number		ug/l or ug/Kg (Circle One)
319-84-6	Alpha-BHC	16.00 U
319-85-7	Beta-BHC	16.00 U
319-86-8	Delta-BHC	16.00 U
58-89-9	Gamma-BHC (Lindane)	16.00 U
76-44-8	Heptachlor	16.00 U
309-00-2	Aldrin	16.00 U
1024-57-3	Heptachlor Epoxide	16.00 U
959-98-8	Endosulfan I	16.00 U
60-57-1	Dieldrin	32.00 U
72-55-9	4,4'-DDE	32.00 U
72-20-8	Endrin	32.00 U
33213-65-9	Endosulfan II	32.00 U
72-54-8	4,4'-DDD	32.00 U
7421-93-4	Endrin Aldehyde	32.00 U
1031-07-8	Endosulfan Sulfate	~~22 J~~ B
50-29-3	4,4'-DDT	27 J B
53494-70-5	Endrin Ketone	32.00 U
72-43-5	Methoxychlor	160.00 U
57-74-9	Chlordane	160.00 U
8001-35-2	Toxaphene	320.00 U
12674-11-2	Aroclor-1016	160.00 U
11104-28-2	Aroclor-1221	160.00 U
11141-16-5	Aroclor-1232	160.00 U
53469-21-9	Aroclor-1242	160.00 U
12672-29-6	Aroclor-1248	160.00 U
11097-69-1	Aroclor-1254	320.00 U
11096-82-5	Aroclor-1260	320.00 U

Vi = Volume of extract injected (ul)

Vs = Volume of water extracted (ml)

Ws = Weight of sample extracted (g)

Vt = Volume of total extract (ul)

Vs _____ or Ws 30 Vt 40000 Vi 4

FORM I

ORGANICS ANALYSIS DATA SHEET
(PAGE 4)

LABORATORY NAME :NANCO LABS.INC.
CASE NO: 7136

SAMPLE NUMBER
BK-225

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/Kg)
1	-----	UNKNOWN	VOA	104	15.0 J
2	76131	ETHANE, 1,1,2-TRICHLORO-1,2,2-TRIFLUORO	VOA	161	~~84.0 J~~
3	111762	ETHANOL, 2-BUTOXY	VOA	340	~~19.0 JB~~
4	-----	UNKNOWN	VOA	467	12.0 J
5					
6					
7	123422	2-PENTANONE, 4-HYDROXY-4-METHYL	BNA	84	14000.0 JB
8					
9					
10					
11					
12					
13					
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26					

7136-02-005

FORM I

U.S. EPA Contract Laboratory Program
Sample Management Office
P,O, Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.

MBJ123

Date 5/19/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME ASSOCIATED LABORATORIES CASE NO. 7136

SOW NO. 785 Lab Receipt Date 4/17/87

LAB SAMPLE ID. NO. F32755-5 QC REPORT NO. 13

Elements Identified and Measured

Concentration: Low X Medium ~~X~~ BEW

Matrix: Water ____ Soil X Sludge ____ Other ____

mg/Kg dry weight

1.	Aluminum	14900 (*)	P	13.	Magnesium	5750	P
2.	Antimony	[8.0] (N)	P	14.	Manganese	738	P
3.	Arsenic	8.4	F	15.	Mercury	~~0.03~~ (N)	CV
4.	Barium	[61]	P	16.	Nickel	20	P
5.	Beryllium	1.2U	P	17.	Potassium	96U	P
6.	Cadmium	1.2U	P	18.	Selenium	0.12U	F
7.	Calcium	4290	P	19.	Silver	1.6U (N)	P
8.	Chromium	23	P	20.	Sodium	~~[277]~~ (E)	P
9.	Cobalt	[11]	P	21.	Thallium	[0.25]	F
10.	Copper	33	P	22.	Vanadium	[17] (E)	P
11.	Iron	26200	P	23.	Zinc	87	P
12.	Lead	53	F		Percent Solids (%)	55.6	

Cyanide ____

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: moist soil with rocks interspersed

Lab Manager Ed Behare

ORGANICS ANALYSIS DATA SHEET

(PAGE 1)

SAMPLE NUMBER

BK-226

Laboratory Name:NANCO LABORATORY INC.
Lab Sample ID No:>B1027
Sample Matrix: SOIL
Data Release Authorized By: Sohail Johani

Case No: 7136
QC Report No:098
Contract No:68-01-7102
Date Sample Received:04/17/87

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 04/18/87
Date Analyzed:04/18/87
Conc/Dil Factor: 1 pH:4.5
Percent Moisture:17

CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	10.0 U
74-83-9	Bromomethane	10.0 U
75-01-4	Vinyl Chloride	10.0 U
75-00-3	Chloroethane	10.0 U
75-09-2	Methylene Chloride	280.0 B
67-64-1	Acetone	55.0 B
75-15-0	Carbon Disulfide	5.0 U
75-35-4	1,1-Dichloroethene	5.0 U
75-34-3	1,1-Dichloroethane	5.0 U
156-60-5	Trans-1,2-Dichloroethene	5.0 U
67-66-3	Chloroform	6.6
107-06-2	1,2-Dichloroethane	5.0 U
78-93-3	2-Butanone	10.0 U
71-55-6	1,1,1-Trichloroethane	5.0 U
56-23-5	Carbon Tetrachloride	5.0 U
108-05-4	Vinyl Acetate	10.0 U
75-27-4	Bromodichloromethane	5.0 U

CAS Number		ug/l or ug/Kg (Circle One)
79-34-5	1,1,2,2-Tetrachloroethane	5.0 U
78-87-5	1,2-Dichloropropane	5.0 U
10061-02-6	Trans-1,3-Dichloropropene	5.0 U
79-01-6	Trichloroethene	5.0 U
124-48-1	Dibromochloromethane	5.0 U
79-00-5	1,1,2-Trichloroethane	5.0 U
71-43-2	Benzene	5.0 U
10061-01-5	cis-1,3-Dichloropropene	5.0 U
110-75-8	2-Chloroethylvinylether	10.0 U
75-25-2	Bromoform	5.0 U
591-78-6	2-Hexanone	10.0 U
108-10-1	4-Methyl-2-Pentanone	10.0 U
127-18-4	Tetrachloroethene	5.0 U
108-88-3	Toluene	5.0 U
108-90-7	Chlorobenzene	5.0 U
100-41-4	Ethylbenzene	5.0 U
100-42-5	Styrene	5.0 U
	Total Xylenes	5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

VALUE

If the result is a value greater than or equal to the detection limit, report the value.

U

Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U(e.g.10U based on necessary concentration dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.

J

Indicates an estimated value.This flag is used either when estimating a concentration for tentatively identified compounds where a 1 1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J).

C

This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS

B

This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

OTHER

Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

ORGANIC ANALYSIS DATA SHEET
(PAGE 2)

LABORATORY NAME: NANCO LABS. INC.
CASE NO: 7136

SAMPLE NO.
BK-226

SEMIVOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 04/21/87
Date Analyzed: 05/01/87
Conc/Dil Factor:----------> 2
Percent Moisture: 17

GPC Cleanup: Yes X No____
Separatory Funnel Extraction: Yes____
Continuous Liquid - Liquid Extraction: Yes___

CAS Number		ug/l or ug/Kg (Circle One)
108-95-2	Phenol	660.0 U
111-44-4	bis(-2-Chloroethyl)Ether	660.0 U
95-57-8	2-Chlorophenol	660.0 U
541-73-1	1,3-Dichlorobenzene	660.0 U
106-46-7	1,4-Dichlorobenzene	660.0 U
100-51-6	Benzyl Alcohol	660.0 U
95-50-1	1,2-Dichlorobenzene	660.0 U
95-48-7	2-Methylphenol	660.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	660.0 U
106-44-5	4-Methylphenol	660.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	660.0 U
67-72-1	Hexachloroethane	660.0 U
98-95-3	Nitrobenzene	660.0 U
78-59-1	Isophorone	660.0 U
88-75-5	2-Nitrophenol	660.0 U
105-67-9	2,4-Dimethylphenol	660.0 U
65-85-0	Benzoic Acid	3200.0 U
111-91-1	bis(-2-Chloroethoxy)Methane	660.0 U
120-83-2	2,4-Dichlorophenol	660.0 U
120-82-1	1,2,4-Trichlorobenzene	660.0 U
91-20-3	Naphthalene	660.0 U
106-47-8	4-Chloroaniline	660.0 U
87-68-3	Hexachlorobutadiene	660.0 U
59-50-7	4-Chloro-3-Methylphenol	660.0 U
91-57-6	2-Methylnaphthalene	660.0 U
77-47-4	Hexachlorocyclopentadiene	660.0 U
88-06-2	2,4,6-Trichlorophenol	660.0 U
95-95-4	2,4,5-Trichlorophenol	3200.0 U
91-58-7	2-Chloronaphthalene	660.0 U
88-74-4	2-Nitroaniline	3200.0 U
131-11-3	Dimethyl Phthalate	660.0 U
208-96-8	Acenaphthylene	660.0 U
99-09-2	3-Nitroaniline	3200.0 U

CAS Number		ug/l or ug/Kg (Circle One)
83-32-9	Acenaphthene	660.0 U
51-28-5	2,4-Dinitrophenol	3200.0 U
100-02-7	4-Nitrophenol	3200.0 U
132-64-9	Dibenzofuran	660.0 U
121-14-2	2,4-Dinitrotoluene	660.0 U
606-20-2	2,6-Dinitrotoluene	660.0 U
84-66-2	Diethylphthalate	660.0 U
7005-72-3	4-Chlorophenyl-phenylether	660.0 U
86-73-7	Fluorene	660.0 U
100-01-6	4-Nitroaniline	3200.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	3200.0 U
86-30-6	N-Nitrosodiphenylamine (1)	660.0 U
101-55-3	4-Bromophenyl-phenylether	660.0 U
118-74-1	Hexachlorobenzene	660.0 U
87-86-5	Pentachlorophenol	3200.0 U
85-01-8	Phenanthrene	660.0 U
120-12-7	Anthracene	660.0 U
84-74-2	Di-n-Butylphthalate	3500.0
206-44-0	Fluoranthene	660.0 U
129-00-0	Pyrene	660.0 U
85-68-7	Butylbenzylphthalate	1500.0
91-94-1	3,3'-Dichlorobenzidine	1320.0 U
56-55-3	Benzo(a)Anthracene	660.0 U
117-81-7	bis(2-Ethylhexyl)Phthalate	660.0 U
218-01-9	Chrysene	660.0 U
117-84-0	Di-n-Octyl Phthalate	660.0 U
205-99-2	Benzo(b)Fluoranthene	660.0 U
207-08-9	Benzo(k)Fluoranthene	660.0 U
50-32-8	Benzo(a)Pyrene	660.0 U
193-39-5	Indeno(1,2,3-cd)Pyrene	660.0 U
53-70-3	Dibenz(a,h)Anthracene	660.0 U
191-24-2	Benzo(g,h,i)Perylene	660.0 U

(1) - Cannot be separated from diphenylamine

ORGANICS ANALYSIS DATA SHEET

(PAGE 3)

SAMPLE NUMBER

LABORATORY NAME: NANCO LABS, INC.

CASE NO: 7136

BK 226

PESTICIDE/PCBs

Concentration: Low / Medium (Circle One)

Date Extracted/Prepared: 4/21/87

Date Analyzed: 5/13/87

Conc/Dil Factor: -----> 2

Percent Moisture: 17

GPC Cleanup: Yes__X__ No____

Separatory Funnel Extraction: Yes____

Continuous Liquid-Liquid Extraction: Yes____

CAS Number		ug/l or ug/Kg (Circle One)
319-84-6	Alpha-BHC	16.00 U
319-85-7	Beta-BHC	16.00 U
319-86-8	Delta-BHC	16.00 U
58-89-9	Gamma-BHC (Lindane)	16.00 U
76-44-8	Heptachlor	16.00 U
309-00-2	Aldrin	16.00 U
1024-57-3	Heptachlor Epoxide	16.00 U
959-98-8	Endosulfan I	16.00 U
60-57-1	Dieldrin	32.00 U
72-55-9	4,4'-DDE	32.00 U
72-20-8	Endrin	32.00 U
33213-65-9	Endosulfan II	32.00 U
72-54-8	4,4'-DDD	32.00 U
7421-93-4	Endrin Aldehyde	32.00 U
1031-07-8	Endosulfan Sulfate	32.00 U
50-29-3	4,4'-DDT	32.00 U
53494-70-5	Endrin Ketone	32.00 U
72-43-5	Methoxychlor	160.00 U
57-74-9	Chlordane	160.00 U
8001-35-2	Toxaphene	320.00 U
12674-11-2	Aroclor-1016	160.00 U
11104-28-2	Aroclor-1221	160.00 U
11141-16-5	Aroclor-1232	160.00 U
53469-21-9	Aroclor-1242	160.00 U
12672-29-6	Aroclor-1248	160.00 U
11097-69-1	Aroclor-1254	320.00 U
11096-82-5	Aroclor-1260	320.00 U

Vi = Volume of extract injected (ul)

Vs = Volume of water extracted (ml)

Ws = Weight of sample extracted (g)

Vt = Volume of total extract (ul)

Vs _____ or Ws 30 Vt 40000 Vi 4

FORM I

ORGANICS ANALYSIS DATA SHEET
(PAGE 4)

LABORATORY NAME :NANCO LABS.INC.
CASE NO: 7136

SAMPLE NUMBER
BK-226

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/Kg)
1	79209	ACETIC ACID, METHYL ESTER	VOA	122	9.0 J
2	75310	2-PROPANAMINE	VOA	140	9.0 J
3	76131	ETHANE,1,1,2-TRICHLORO-1,2,2-TRIFLUORO	VOA	160	10.0 J β
4	110543	HEXANE	VOA	250	6.0 J
5	111762	ETHANOL, 2-BUTOXY	VOA	341	13.0 JB
6	-----	UNKNOWN	VOA	467	9.0 J
7					
8					
9					
10	123422	2-PENTANONE, 4-HYDROXY-4-METHYL	BNA	88	14000.0 JB
11	57158	2-PROPANOL, 1,1,1-TRICHLORO-2-METHYL	BNA	262	820.0 J
12	1740198	1-PHENANTHRENECARBOXYLIC ACID,1,2,3,4,	BNA	1381	1700.0 J
13		4A,9,10,10A-O CTAHBETA,10A. ALPHA			
14					
15					
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26					

7136-02-005

FORM I

U.S. EPA Contract Laboratory Program
Sample Management Office
P,O, Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.

MBJ124 3EG Resubmitted

Date 5/19/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME ASSOCIATED LABORATORIES CASE NO. 7136

SOW NO. 785 Lab Receipt Date 4/17/87

LAB SAMPLE ID. NO. F32755-6 QC REPORT NO. 13

Elements Identified and Measured

Concentration: Low X Medium ~~X~~ BELOW

Matrix: Water ____ Soil X Sludge ____ Other ____

mg/Kg dry weight

1. Aluminum	16800	(*)	P	13. Magnesium	5570		P
2. Antimony	[10]	(N)	P	14. Manganese	679		P
3. Arsenic	4.6		F	15. Mercury	0.54	(N)	CV
4. Barium	43		P	16. Nickel	23		P
5. Beryllium	1.0		P	17. Potassium	1040		P
6. Cadmium	.7U		P	18. Selenium	0.11U		F
7. Calcium	[315]		P	19. Silver	.9U	(N)	P
8. Chromium	65		P	20. Sodium	[172]	(E)	P
9. Cobalt	11		P	21. Thallium	[0.22]		F
10. Copper	84		P	22. Vanadium	17	(E)	P
11. Iron	25300		P	23. Zinc	84		P
12. Lead	230		F	Percent Solids (%)	87		
Cyanide							

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: brown soil with ~20% rocks

Lab Manager Ed Behan

7136-02-005

FORM I

U.S. EPA Contract Laboratory Program
Sample Management Office
P,O, Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.

MBJ124

Date 5/19/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME ASSOCIATED LABORATORIES CASE NO. 7136

SOW NO. 785 Lab Receipt Date 4/17/87

LAB SAMPLE ID. NO. F32755-6 QC REPORT NO. 13

Elements Identified and Measured

Concentration: Low X Medium ~~X~~ BEW

Matrix: Water ____ Soil X Sludge ____ Other ____

mg/Kg dry weight

1.	Aluminum	16800 (*)	P	13.	Magnesium	5570	P
2.	Antimony	[10] (N)	P	14.	Manganese	679	P
3.	Arsenic	4.6	F	15.	Mercury	~~0.54~~ (N)	CV
4.	Barium	43	P	16.	Nickel	23	P
5.	Beryllium	1.0	P	17.	Potassium	1040	P
6.	Cadmium	.7U	P	18.	Selenium	0.11U	F
7.	Calcium	~~[2151]~~	P	19.	Silver	.9U (N)	P
8.	Chromium	65	P	20.	Sodium	~~[1723]~~ (E)	P
9.	Cobalt	11	P	21.	Thallium	[0.22]	F
10.	Copper	84	P	22.	Vanadium	17 (E)	P
11.	Iron	25300	P	23.	Zinc	84	P
12.	Lead	230 (S)	F		Percent Solids (%)	87	
	Cyanide						

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: brown soil with ~20% rocks

Lab Manager Ed Behan

ORGANICS ANALYSIS DATA SHEET

(PAGE 1)

SAMPLE NUMBER

BK-227

Laboratory Name:NANCO LABORATORY INC.
Lab Sample ID No:>B1028
Sample Matrix: SOIL
Data Release Authorized By: Sohail Jafari

Case No: 7136
QC Report No:098
Contract No:68-01-7102
Date Sample Received:04/17/87

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 04/18/87
Date Analyzed:04/18/87
Conc/Dil Factor: 1 pH:5.7
Percent Moisture:12

CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	10.0 U
74-83-9	Bromomethane	10.0 U
75-01-4	Vinyl Chloride	10.0 U
75-00-3	Chloroethane	10.0 U
75-09-2	Methylene Chloride	~~110.0 B~~
67-64-1	Acetone	22.0 B
75-15-0	Carbon Disulfide	5.0 U
75-35-4	1,1-Dichloroethene	5.0 U
75-34-3	1,1-Dichloroethane	5.0 U
156-60-5	Trans-1,2-Dichloroethene	5.0 U
67-66-3	Chloroform	5.0 U
107-06-2	1,2-Dichloroethane	5.0 U
78-93-3	2-Butanone	10.0 U
71-55-6	1,1,1-Trichloroethane	5.0 U
56-23-5	Carbon Tetrachloride	5.0 U
108-05-4	Vinyl Acetate	10.0 U
75-27-4	Bromodichloromethane	5.0 U

CAS Number		ug/l or ug/Kg (Circle One)
79-34-5	1,1,2,2-Tetrachloroethane	5.0 U
78-87-5	1,2-Dichloropropane	5.0 U
10061-02-6	Trans-1,3-Dichloropropene	5.0 U
79-01-6	Trichloroethene	5.0 U
124-48-1	Dibromochloromethane	5.0 U
79-00-5	1,1,2-Trichloroethane	5.0 U
71-43-2	Benzene	5.0 U
10061-01-5	cis-1,3-Dichloropropene	5.0 U
110-75-8	2-Chloroethylvinylether	10.0 U
75-25-2	Bromoform	5.0 U
591-78-6	2-Hexanone	10.0 U
108-10-1	4-Methyl-2-Pentanone	10.0 U
127-18-4	Tetrachloroethene	5.0 U
108-88-3	Toluene	5.0 U
108-90-7	Chlorobenzene	5.0 U
100-41-4	Ethylbenzene	5.0 U
100-42-5	Styrene	5.0 U
	Total Xylenes	5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

ALUE

the result is a value greater than or equal to the detection mit, report the value.

dicates compound was analyzed for but not detected. Report e minimum detection limit for the sample with the U(e.g.10U sed on necessary concentration dilution actions. (This is not cessarily the instrument detection limit.) The footnote should ead U-Compound was analyzed for but not detected.The number is he minimum attainable detection limit for the sample.

ndicates an estimated value.This flag is used either when stimating a concentration for tentatively identified compounds here a 1 1 response is assumed or when the mass spectral data ndicates the presence of a compound that meets the identification riteria but the result is less than the specified detection limit ut greater than zero (e.g. 10J).

C

This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS

B

This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

OTHER

Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

ORGANIC ANALYSIS DATA SHEET
(PAGE 2)

LABORATORY NAME: NANCO LABS. INC.
CASE NO: 7136

SAMPLE NO.
BK-227

SEMIVOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 04/21/87
Date Analyzed: 05/01/87
Conc/Dil Factor:----------> 2
Percent Moisture: 12

GPC Cleanup: Yes X No____
Separatory Funnel Extraction: Yes____
Continuous Liquid - Liquid Extraction: Yes__

CAS Number		ug/l or ug/Kg (Circle One)
108-95-2	Phenol	660.0 U
111-44-4	bis(-2-Chloroethyl)Ether	660.0 U
95-57-8	2-Chlorophenol	660.0 U
541-73-1	1,3-Dichlorobenzene	660.0 U
106-46-7	1,4-Dichlorobenzene	660.0 U
100-51-6	Benzyl Alcohol	660.0 U
95-50-1	1,2-Dichlorobenzene	660.0 U
95-48-7	2-Methylphenol	660.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	660.0 U
106-44-5	4-Methylphenol	660.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	660.0 U
67-72-1	Hexachloroethane	660.0 U
98-95-3	Nitrobenzene	660.0 U
78-59-1	Isophorone	660.0 U
88-75-5	2-Nitrophenol	660.0 U
105-67-9	2,4-Dimethylphenol	660.0 U
65-85-0	Benzoic Acid	3200.0 U
111-91-1	bis(-2-Chloroethoxy)Methane	660.0 U
120-83-2	2,4-Dichlorophenol	660.0 U
120-82-1	1,2,4-Trichlorobenzene	660.0 U
91-20-3	Naphthalene	660.0 U
106-47-8	4-Chloroaniline	660.0 U
87-68-3	Hexachlorobutadiene	660.0 U
59-50-7	4-Chloro-3-Methylphenol	660.0 U
91-57-6	2-Methylnaphthalene	660.0 U
77-47-4	Hexachlorocyclopentadiene	660.0 U
88-06-2	2,4,6-Trichlorophenol	660.0 U
95-95-4	2,4,5-Trichlorophenol	3200.0 U
91-58-7	2-Chloronaphthalene	660.0 U
88-74-4	2-Nitroaniline	3200.0 U
131-11-3	Dimethyl Phthalate	660.0 U
208-96-8	Acenaphthylene	660.0 U
99-09-2	3-Nitroaniline	3200.0 U

CAS Number		ug/l or ug/Kg (Circle One)
83-32-9	Acenaphthene	660.0 U
51-28-5	2,4-Dinitrophenol	3200.0 U
100-02-7	4-Nitrophenol	3200.0 U
132-64-9	Dibenzofuran	660.0 U
121-14-2	2,4-Dinitrotoluene	660.0 U
606-20-2	2,6-Dinitrotoluene	660.0 U
84-66-2	Diethylphthalate	660.0 U
7005-72-3	4-Chlorophenyl-phenylether	660.0 U
86-73-7	Fluorene	660.0 U
100-01-6	4-Nitroaniline	3200.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	3200.0 U
86-30-6	N-Nitrosodiphenylamine (1)	660.0 U
101-55-3	4-Bromophenyl-phenylether	660.0 U
118-74-1	Hexachlorobenzene	660.0 U
87-86-5	Pentachlorophenol	3200.0 U
85-01-8	Phenanthrene	660.0 U
120-12-7	Anthracene	660.0 U
84-74-2	Di-n-Butylphthalate	660.0 U
206-44-0	Fluoranthene	660.0 U
129-00-0	Pyrene	660.0 U
85-68-7	Butylbenzylphthalate	660.0 U
91-94-1	3,3'-Dichlorobenzidine	1320.0 U
56-55-3	Benzo(a)Anthracene	660.0 U
117-81-7	bis(2-Ethylhexyl)Phthalate	660.0 U
218-01-9	Chrysene	660.0 U
117-84-0	Di-n-Octyl Phthalate	660.0 U
205-99-2	Benzo(b)Fluoranthene	660.0 U
207-08-9	Benzo(k)Fluoranthene	660.0 U
50-32-8	Benzo(a)Pyrene	660.0 U
193-39-5	Indeno(1,2,3-cd)Pyrene	660.0 U
53-70-3	Dibenz(a,h)Anthracene	660.0 U
191-24-2	Benzo(g,h,i)Perylene	660.0 U

(1) - Cannot be separated from diphenylamine

ORGANICS ANALYSIS DATA SHEET

(PAGE 3)

LABORATORY NAME: NANCO LABS, INC.

CASE NO: 7136

SAMPLE NUMBER

BK 227

PESTICIDE/PCBs

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: 4/21/87

Date Analyzed: 5/13/87

Conc/Dil Factor: -----> 2

Percent Moisture: 12

GPC Cleanup: Yes_X_ No___

Separatory Funnel Extraction: Yes___

Continuous Liquid-Liquid Extraction: Yes___

CAS Number		ug/l or ug/Kg (Circle One)
319-84-6	Alpha-BHC	16.00 U
319-85-7	Beta-BHC	16.00 U
319-86-8	Delta-BHC	16.00 U
58-89-9	Gamma-BHC (Lindane)	16.00 U
76-44-8	Heptachlor	16.00 U
309-00-2	Aldrin	16.00 U
1024-57-3	Heptachlor Epoxide	16.00 U
959-98-8	Endosulfan I	16.00 U
60-57-1	Dieldrin	32.00 U
72-55-9	4,4'-DDE	32.00 U
72-20-8	Endrin	32.00 U
33213-65-9	Endosulfan II	32.00 U
72-54-8	4,4'-DDD	32.00 U
7421-93-4	Endrin Aldehyde	32.00 U
1031-07-8	Endosulfan Sulfate	~~8.2 J~~ B
50-29-3	4,4'-DDT	~~21 J~~ B
53494-70-5	Endrin Ketone	32.00 U
72-43-5	Methoxychlor	160.00 U
57-74-9	Chlordane	160.00 U
8001-35-2	Toxaphene	320.00 U
12674-11-2	Aroclor-1016	160.00 U
11104-28-2	Aroclor-1221	160.00 U
11141-16-5	Aroclor-1232	160.00 U
53469-21-9	Aroclor-1242	160.00 U
12672-29-6	Aroclor-1248	160.00 U
11097-69-1	Aroclor-1254	320.00 U
11096-82-5	Aroclor-1260	320.00 U

Vi = Volume of extract injected (ul)

Vs = Volume of water extracted (ml)

Ws = Weight of sample extracted (g)

Vt = Volume of total extract (ul)

Vs _____ or Ws 30 Vt 40000 Vi 4

FORM I

ORGANICS ANALYSIS DATA SHEET
(PAGE 4)

LABORATORY NAME :NANCO LABS.INC.
CASE NO: 7136

SAMPLE NUMBER
BK-227

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/Kg)
1	-----	UNKNOWN	VOA	160	6.5 J B
2					
3					
4					
5	123422	2-PENTANONE,4-HYDROXY-4-METHYL	BNA	85	7100.0 JB
6	-----	UNKNOWN	BNA	262	400.0 J
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					

7136-02-005

FORM I

U.S. EPA Contract Laboratory Program
Sample Management Office
P,O, Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.

MBJ125

Date 5/19/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME ASSOCIATED LABORATORIES CASE NO. 7136

SOW NO. 785 Lab Receipt Date 4/17/87

LAB SAMPLE ID. NO. F32755-7 QC REPORT NO. 13

Elements Identified and Measured

Concentration: Low X Medium ~~X~~ BEW

Matrix: Water ____ Soil X Sludge ____ Other ____

mg/Kg dry weight

1. Aluminum	17800	(*)	P	13. Magnesium	6560		P
2. Antimony	[12]	(N)	P	14. Manganese	1030		P
3. Arsenic	5.6		F	15. Mercury	~~0.57~~	(N)	CV
4. Barium	100		P	16. Nickel	39		P
5. Beryllium	1.2		P	17. Potassium	[917]		P
6. Cadmium	.7U		P	18. Selenium	0.08U		F
7. Calcium	2350		P	19. Silver	1.0U	(N)	P
8. Chromium	24		P	20. Sodium	~~[248]~~	(E)	P
9. Cobalt	15		P	21. Thallium	[0.19]		F
10. Copper	48		P	22. Vanadium	18	(E)	P
11. Iron	32400		P	23. Zinc	74		P
12. Lead	18		F	Percent Solids (%)	84		
Cyanide							

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: brownish - yellow, clay type soil

Lab Manager Ed Bchan

ORGANICS ANALYSIS DATA SHEET

(PAGE 1)

SAMPLE NUMBER

Laboratory Name:NANCO LABORATORY INC.
Lab Sample ID No:>B1029
Sample Matrix: SOIL
Data Release Authorized By: Sohal Johani

Case No: 7136
QC Report No:098
Contract No:68-01-7102
Date Sample Received:04/17/87

BK-228

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 04/18/87
Date Analyzed:04/18/87
Conc/Dil Factor: 1 pH:6.0
Percent Moisture:17

CAS Number		ug/l or ug/Kg (Circle One)	CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	10.0 U	79-34-5	1,1,2,2-Tetrachloroethane	5.0 U
74-83-9	Bromomethane	10.0 U	78-87-5	1,2-Dichloropropane	5.0 U
75-01-4	Vinyl Chloride	10.0 U	10061-02-6	Trans-1,3-Dichloropropene	5.0 U
75-00-3	Chloroethane	10.0 U	79-01-6	Trichloroethene	5.0 U
75-09-2	Methylene Chloride	170.0 B	124-48-1	Dibromochloromethane	5.0 U
67-64-1	Acetone	~~44.0~~ B	79-00-5	1,1,2-Trichloroethane	5.0 U
75-15-0	Carbon Disulfide	5.0 U	71-43-2	Benzene	5.0 U
75-35-4	1,1-Dichloroethene	5.0 U	10061-01-5	cis-1,3-Dichloropropene	5.0 U
75-34-3	1,1-Dichloroethane	5.0 U	110-75-8	2-Chloroethylvinylether	10.0 U
156-60-5	Trans-1,2-Dichloroethene	5.0 U	75-25-2	Bromoform	5.0 U
67-66-3	Chloroform	2.4 J	591-78-6	2-Hexanone	10.0 U
107-06-2	1,2-Dichloroethane	5.0 U	108-10-1	4-Methyl-2-Pentanone	10.0 U
78-93-3	2-Butanone	10.0 U	127-18-4	Tetrachloroethene	5.0 U
71-55-6	1,1,1-Trichloroethane	5.0 U	108-88-3	Toluene	5.0 U
56-23-5	Carbon Tetrachloride	5.0 U	108-90-7	Chlorobenzene	5.0 U
108-05-4	Vinyl Acetate	10.0 U	100-41-4	Ethylbenzene	5.0 U
75-27-4	Bromodichloromethane	5.0 U	100-42-5	Styrene	5.0 U
				Total Xylenes	5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

ALUE

f the result is a value greater than or equal to the detection imit, report the value.

ndicates compound was analyzed for but not detected. Report he minimum detection limit for the sample with the U(e.g.10U ased on necessary concentration dilution actions. (This is not ecessarily the instrument detection limit.) The footnote should ead U-Compound was analyzed for but not detected.The number is he minimum attainable detection limit for the sample.

ndicates an estimated value.This flag is used either when stimating a concentration for tentatively identified compounds here a 1 1 response is assumed or when the mass spectral data ndicates the presence of a compound that meets the identification riteria but the result is less than the specified detection limit ut greater than zero (e.g. 10J).

C

This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS

B

This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

OTHER

Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

ORGANIC ANALYSIS DATA SHEET
(PAGE 2)

LABORATORY NAME: NANCO LABS. INC.
CASE NO: 7136

SAMPLE NO.
BK-228

SEMIVOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 04/21/87
Date Analyzed: 05/04/87
Conc/Dil Factor:----------> 2
Percent Moisture: 17

GPC Cleanup: Yes X No____
Separatory Funnel Extraction: Yes____
Continuous Liquid - Liquid Extraction: Yes__

CAS Number		ug/l or ug/Kg (Circle One)	CAS Number		ug/l or ug/Kg (Circle One)
108-95-2	Phenol	660.0 U	83-32-9	Acenaphthene	660.0 U
111-44-4	bis(-2-Chloroethyl)Ether	660.0 U	51-28-5	2,4-Dinitrophenol	3200.0 U
95-57-8	2-Chlorophenol	660.0 U	100-02-7	4-Nitrophenol	3200.0 U
541-73-1	1,3-Dichlorobenzene	660.0 U	132-64-9	Dibenzofuran	660.0 U
106-46-7	1,4-Dichlorobenzene	660.0 U	121-14-2	2,4-Dinitrotoluene	660.0 U
100-51-6	Benzyl Alcohol	660.0 U	606-20-2	2,6-Dinitrotoluene	660.0 U
95-50-1	1,2-Dichlorobenzene	660.0 U	84-66-2	Diethylphthalate	660.0 U
95-48-7	2-Methylphenol	660.0 U	7005-72-3	4-Chlorophenyl-phenylether	660.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	660.0 U	86-73-7	Fluorene	660.0 U
106-44-5	4-Methylphenol	660.0 U	100-01-6	4-Nitroaniline	3200.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	660.0 U	534-52-1	4,6-Dinitro-2-Methylphenol	3200.0 U
67-72-1	Hexachloroethane	660.0 U	86-30-6	N-Nitrosodiphenylamine (1)	660.0 U
98-95-3	Nitrobenzene	660.0 U	101-55-3	4-Bromophenyl-phenylether	660.0 U
78-59-1	Isophorone	660.0 U	118-74-1	Hexachlorobenzene	660.0 U
88-75-5	2-Nitrophenol	660.0 U	87-86-5	Pentachlorophenol	3200.0 U
105-67-9	2,4-Dimethylphenol	660.0 U	85-01-8	Phenanthrene	660.0 U
65-85-0	Benzoic Acid	3200.0 U	120-12-7	Anthracene	660.0 U
111-91-1	bis(-2-Chloroethoxy)Methane	660.0 U	84-74-2	Di-n-Butylphthalate	660.0 U
120-83-2	2,4-Dichlorophenol	660.0 U	206-44-0	Fluoranthene	660.0 U
120-82-1	1,2,4-Trichlorobenzene	660.0 U	129-00-0	Pyrene	660.0 U
91-20-3	Naphthalene	660.0 U	85-68-7	Butylbenzylphthalate	660.0 U
106-47-8	4-Chloroaniline	660.0 U	91-94-1	3,3'-Dichlorobenzidine	1320.0 U
87-68-3	Hexachlorobutadiene	660.0 U	56-55-3	Benzo(a)Anthracene	660.0 U
59-50-7	4-Chloro-3-Methylphenol	660.0 U	117-81-7	bis(2-Ethylhexyl)Phthalate	660.0 U
91-57-6	2-Methylnaphthalene	660.0 U	218-01-9	Chrysene	660.0 U
77-47-4	Hexachlorocyclopentadiene	660.0 U	117-84-0	Di-n-Octyl Phthalate	660.0 U
88-06-2	2,4,6-Trichlorophenol	660.0 U	205-99-2	Benzo(b)Fluoranthene	660.0 U
95-95-4	2,4,5-Trichlorophenol	3200.0 U	207-08-9	Benzo(k)Fluoranthene	660.0 U
91-58-7	2-Chloronaphthalene	660.0 U	50-32-8	Benzo(a)Pyrene	660.0 U
88-74-4	2-Nitroaniline	3200.0 U	193-39-5	Indeno(1,2,3-cd)Pyrene	660.0 U
131-11-3	Dimethyl Phthalate	660.0 U	53-70-3	Dibenz(a,h)Anthracene	660.0 U
208-96-8	Acenaphthylene	660.0 U	191-24-2	Benzo(g,h,i)Perylene	660.0 U
99-09-2	3-Nitroaniline	3200.0 U			

(1) - Cannot be separated from diphenylamine

ORGANICS ANALYSIS DATA SHEET

(PAGE 3)

SAMPLE NUMBER

LABORATORY NAME: NANCO LABS, INC.

CASE NO: 7136

BK 228

PESTICIDE/PCBs

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: 4/21/87

Date Analyzed: 5/13/87

Conc/Dil Factor: -----> 2

Percent Moisture: 17

GPC Cleanup: Yes_X_ No___

Separatory Funnel Extraction: Yes___

Continuous Liquid-Liquid Extraction: Yes___

CAS Number		ug/l or ug/Kg/ (Circle One)
319-84-6	Alpha-BHC	16.00 U
319-85-7	Beta-BHC	16.00 U
319-86-8	Delta-BHC	16.00 U
58-89-9	Gamma-BHC (Lindane)	16.00 U
76-44-8	Heptachlor	16.00 U
309-00-2	Aldrin	16.00 U
1024-57-3	Heptachlor Epoxide	16.00 U
959-98-8	Endosulfan I	16.00 U
60-57-1	Dieldrin	32.00 U
72-55-9	4,4'-DDE	32.00 U
72-20-8	Endrin	32.00 U
33213-65-9	Endosulfan II	32.00 U
72-54-8	4,4'-DDD	32.00 U
7421-93-4	Endrin Aldehyde	32.00 U
1031-07-8	Endosulfan Sulfate	32.00 U
50-29-3	4,4'-DDT	~~9.6 J~~ B
53494-70-5	Endrin Ketone	32.00 U
72-43-5	Methoxychlor	160.00 U
57-74-9	Chlordane	160.00 U
8001-35-2	Toxaphene	320.00 U
12674-11-2	Aroclor-1016	160.00 U
11104-28-2	Aroclor-1221	160.00 U
11141-16-5	Aroclor-1232	160.00 U
53469-21-9	Aroclor-1242	160.00 U
12672-29-6	Aroclor-1248	160.00 U
11097-69-1	Aroclor-1254	320.00 U
11096-82-5	Aroclor-1260	320.00 U

Vi = Volume of extract injected (ul)

Vs = Volume of water extracted (ml)

Ws = Weight of sample extracted (g)

Vt = Volume of total extract (ul)

Vs _____ or Ws 30 Vt 40000 Vi 4

FORM I

ORGANICS ANALYSIS DATA SHEET

(PAGE 4)

SAMPLE NUMBER

BK-228

LABORATORY NAME :NANCO LABS.INC.

CASE NO: 7136

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/Kg)
1	79209	ACETIC ACID, METHYL ESTER	VOA	121	10.0 J
2	76131	ETHANE, 1,1,2-TRICHLORO-1,2,2-TRIFLUORO	VOA	160	~~8.3 J~~ B
3					
4					
5	123422	2-PENTANONE,4-HYDROXY-4-METHYL	BNA	82	7700.0 JB
6	-----	UNKNOWN	BNA	259	380.0 J
7					
8					
9					
10					
11					
12					
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26					

7136-02-005

FORM I

U.S. EPA Contract Laboratory Program
Sample Management Office
P,O, Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.

MBJ176

Date 5/19/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME ASSOCIATED LABORATORIES

CASE NO. 7136

SOW NO. 785

Lab Receipt Date 4/17/87

LAB SAMPLE ID. NO. F32755-8

QC REPORT NO. 13

Elements Identified and Measured

Concentration: Low X Medium BEW

Matrix: Water ____ Soil X Sludge ____ Other ____

mg/Kg dry weight

1.	Aluminum	16300 (*)	P	13.	Magnesium	6530	P
2.	Antimony	[8.8] (N)	P	14.	Manganese	1090	P
3.	Arsenic	2.8	F	15.	Mercury	~~0.59~~ (N)	CV
4.	Barium	83	P	16.	Nickel	35	P
5.	Beryllium	[.9]	P	17.	Potassium	[726]	P
6.	Cadmium	.7U	P	18.	Selenium	0.08U	F
7.	Calcium	3140	P	19.	Silver	.9U (N)	P
8.	Chromium	23	P	20.	Sodium	~~[2241]~~ (E)	P
9.	Cobalt	16	P	21.	Thallium	[0.18]	F
10.	Copper	47	P	22.	Vanadium	16 (E)	P
11.	Iron	31800	P	23.	Zinc	74	P
12.	Lead	14	F		Percent Solids (%)	84	

Cyanide ____

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: brownish-yellow, clay type soil

Lab Manager Ed Behan

ORGANICS ANALYSIS DATA SHEET

(PAGE 1)

SAMPLE NUMBER

BK-229

Laboratory Name:NANCO LABORATORY INC.
Lab Sample ID No:>B1030
Sample Matrix: SOIL
Data Release Authorized By: Sohail Jahani

Case No: 7136
QC Report No:098
Contract No:68-01-7102
Date Sample Received:04/17/87

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 04/18/87
Date Analyzed:04/18/87
Conc/Dil Factor: 1 pH:4.8
Percent Moisture:16

CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	10.0 U
74-83-9	Bromomethane	10.0 U
75-01-4	Vinyl Chloride	10.0 U
75-00-3	Chloroethane	10.0 U
75-09-2	Methylene Chloride	320.0 B
67-64-1	Acetone	18.0 B
75-15-0	Carbon Disulfide	5.0 U
75-35-4	1,1-Dichloroethene	5.0 U
75-34-3	1,1-Dichloroethane	5.0 U
156-60-5	Trans-1,2-Dichloroethene	5.0 U
67-66-3	Chloroform	4.4 J
107-06-2	1,2-Dichloroethane	5.0 U
78-93-3	2-Butanone	10.0 U
71-55-6	1,1,1-Trichloroethane	5.0 U
56-23-5	Carbon Tetrachloride	5.0 U
108-05-4	Vinyl Acetate	10.0 U
75-27-4	Bromodichloromethane	5.0 U

CAS Number		ug/l or ug/Kg (Circle One)
79-34-5	1,1,2,2-Tetrachloroethane	5.0 U
78-87-5	1,2-Dichloropropane	5.0 U
10061-02-6	Trans-1,3-Dichloropropene	5.0 U
79-01-6	Trichloroethene	5.0 U
124-48-1	Dibromochloromethane	5.0 U
79-00-5	1,1,2-Trichloroethane	5.0 U
71-43-2	Benzene	5.0 U
10061-01-5	cis-1,3-Dichloropropene	5.0 U
110-75-8	2-Chloroethylvinylether	10.0 U
75-25-2	Bromoform	5.0 U
591-78-6	2-Hexanone	10.0 U
108-10-1	4-Methyl-2-Pentanone	10.0 U
127-18-4	Tetrachloroethene	5.0 U
108-88-3	Toluene	5.0 U
108-90-7	Chlorobenzene	5.0 U
100-41-4	Ethylbenzene	5.0 U
100-42-5	Styrene	5.0 U
	Total Xylenes	5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

LUE

the result is a value greater than or equal to the detection mit, report the value.

dicates compound was analyzed for but not detected. Report e minimum detection limit for the sample with the U(e.g.10U sed on necessary concentration dilution actions. (This is not cessarily the instrument detection limit.) The footnote should ad U-Compound was analyzed for but not detected.The number is e minimum attainable detection limit for the sample.

dicates an estimated value.This flag is used either when timating a concentration for tentatively identified compounds ere a 1 1 response is assumed or when the mass spectral data dicates the presence of a compound that meets the identification iteria but the result is less than the specified detection limit t greater than zero (e.g. 10J).

C

This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS

B

This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

OTHER

Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

ORGANIC ANALYSIS DATA SHEET
(PAGE 2)

LABORATORY NAME: NANCO LABS. INC.
CASE NO: 7136

SAMPLE NO.
BK-229

SEMIVOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 04/21/87
Date Analyzed: 05/04/87
Conc/Dil Factor:----------> 2
Percent Moisture: 16

GPC Cleanup: Yes X No____
Separatory Funnel Extraction: Yes____
Continuous Liquid - Liquid Extraction: Yes__

CAS Number		ug/l or ug/Kg (Circle One)
108-95-2	Phenol	660.0 U
111-44-4	bis(-2-Chloroethyl)Ether	660.0 U
95-57-8	2-Chlorophenol	660.0 U
541-73-1	1,3-Dichlorobenzene	660.0 U
106-46-7	1,4-Dichlorobenzene	660.0 U
100-51-6	Benzyl Alcohol	660.0 U
95-50-1	1,2-Dichlorobenzene	660.0 U
95-48-7	2-Methylphenol	660.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	660.0 U
106-44-5	4-Methylphenol	660.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	660.0 U
67-72-1	Hexachloroethane	660.0 U
98-95-3	Nitrobenzene	660.0 U
78-59-1	Isophorone	660.0 U
88-75-5	2-Nitrophenol	660.0 U
105-67-9	2,4-Dimethylphenol	660.0 U
65-85-0	Benzoic Acid	3200.0 U
111-91-1	bis(-2-Chloroethoxy)Methane	660.0 U
120-83-2	2,4-Dichlorophenol	660.0 U
120-82-1	1,2,4-Trichlorobenzene	660.0 U
91-20-3	Naphthalene	660.0 U
106-47-8	4-Chloroaniline	660.0 U
87-68-3	Hexachlorobutadiene	660.0 U
59-50-7	4-Chloro-3-Methylphenol	660.0 U
91-57-6	2-Methylnaphthalene	660.0 U
77-47-4	Hexachlorocyclopentadiene	660.0 U
88-06-2	2,4,6-Trichlorophenol	660.0 U
95-95-4	2,4,5-Trichlorophenol	3200.0 U
91-58-7	2-Chloronaphthalene	660.0 U
88-74-4	2-Nitroaniline	3200.0 U
131-11-3	Dimethyl Phthalate	660.0 U
208-96-8	Acenaphthylene	660.0 U
99-09-2	3-Nitroaniline	3200.0 U

CAS Number		ug/l or ug/Kg (Circle One)
83-32-9	Acenaphthene	660.0 U
51-28-5	2,4-Dinitrophenol	3200.0 U
100-02-7	4-Nitrophenol	3200.0 U
132-64-9	Dibenzofuran	660.0 U
121-14-2	2,4-Dinitrotoluene	660.0 U
606-20-2	2,6-Dinitrotoluene	660.0 U
84-66-2	Diethylphthalate	660.0 U
7005-72-3	4-Chlorophenyl-phenylether	660.0 U
86-73-7	Fluorene	660.0 U
100-01-6	4-Nitroaniline	3200.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	3200.0 U
86-30-6	N-Nitrosodiphenylamine (1)	660.0 U
101-55-3	4-Bromophenyl-phenylether	660.0 U
118-74-1	Hexachlorobenzene	660.0 U
87-86-5	Pentachlorophenol	3200.0 U
85-01-8	Phenanthrene	660.0 U
120-12-7	Anthracene	660.0 U
84-74-2	Di-n-Butylphthalate	660.0 U
206-44-0	Fluoranthene	660.0 U
129-00-0	Pyrene	660.0 U
85-68-7	Butylbenzylphthalate	660.0 U
91-94-1	3,3'-Dichlorobenzidine	1320.0 U
56-55-3	Benzo(a)Anthracene	660.0 U
117-81-7	bis(2-Ethylhexyl)Phthalate	660.0 U
218-01-9	Chrysene	660.0 U
117-84-0	Di-n-Octyl Phthalate	660.0 U
205-99-2	Benzo(b)Fluoranthene	660.0 U
207-08-9	Benzo(k)Fluoranthene	660.0 U
50-32-8	Benzo(a)Pyrene	660.0 U
193-39-5	Indeno(1,2,3-cd)Pyrene	660.0 U
53-70-3	Dibenz(a,h)Anthracene	660.0 U
191-24-2	Benzo(g,h,i)Perylene	660.0 U

(1) - Cannot be separated from diphenylamine

ORGANICS ANALYSIS DATA SHEET
(PAGE 3)

SAMPLE NUMBER

BK 229

LABORATORY NAME: NANCO LABS, INC.
CASE NO: 7136

PESTICIDE/PCBs

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 4/21/87
Date Analyzed: 5/13/87
Conc/Dil Factor: -----> 2
Percent Moisture: 16

GPC Cleanup: Yes_X_ No___
Separatory Funnel Extraction: Yes___
Continuous Liquid-Liquid Extraction: Yes___

CAS Number		ug/l or ug/Kg (Circle One)
319-84-6	Alpha-BHC	16.00 U
319-85-7	Beta-BHC	16.00 U
319-86-8	Delta-BHC	16.00 U
58-89-9	Gamma-BHC (Lindane)	16.00 U
76-44-8	Heptachlor	16.00 U
309-00-2	Aldrin	16.00 U
1024-57-3	Heptachlor Epoxide	16.00 U
959-98-8	Endosulfan I	16.00 U
60-57-1	Dieldrin	32.00 U
72-55-9	4,4'-DDE	32.00 U
72-20-8	Endrin	32.00 U
33213-65-9	Endosulfan II	32.00 U
72-54-8	4,4'-DDD	32.00 U
7421-93-4	Endrin Aldehyde	32.00 U
1031-07-8	Endosulfan Sulfate	~~8.5 J~~ B
50-29-3	4,4'-DDT	~~22 J~~ B
53494-70-5	Endrin Ketone	32.00 U
72-43-5	Methoxychlor	160.00 U
57-74-9	Chlordane	160.00 U
8001-35-2	Toxaphene	320.00 U
12674-11-2	Aroclor-1016	160.00 U
11104-28-2	Aroclor-1221	160.00 U
11141-16-5	Aroclor-1232	160.00 U
53469-21-9	Aroclor-1242	160.00 U
12672-29-6	Aroclor-1248	160.00 U
11097-69-1	Aroclor-1254	320.00 U
11096-82-5	Aroclor-1260	320.00 U

Vi = Volume of extract injected (ul)

Vs = Volume of water extracted (ml)

Ws = Weight of sample extracted (g)

Vt = Volume of total extract (ul)

Vs _____ or Ws 30 Vt 40000 Vi 4

FORM I

ORGANICS ANALYSIS DATA SHEET

(PAGE 4)

LABORATORY NAME :NANCO LABS.INC.

CASE NO: 7136

SAMPLE NUMBER

BK-229

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/Kg)
1	79209	ACETIC ACID, METHYL ESTER	VOA	121	20.0 J
2	-----	UNKNOWN	VOA	160	12.0 J B
3					
4					
5	123422	2-PENTANONE,4-HYDROXY-4-METHYL	BNA	85	8000.0 JB
6	57158	2-PROPANOL, 1,1,1-TRICHLORO-2-METHYL	BNA	259	480.0 J
7					
8					
9					
10					
11					
12					
13					
14					
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16					
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18					
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25					
26					

7136-02-005

FORM I

U.S. EPA Contract Laboratory Program
Sample Management Office
P,O, Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.

MBJ177

Date 5/19/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME ASSOCIATED LABORATORIES

CASE NO. 7136

SOW NO. 785

Lab Receipt Date 4/17/87

LAB SAMPLE ID. NO. F32755-9

QC REPORT NO. 13

Elements Identified and Measured

Concentration: Low X Medium ~~X~~ BEW

Matrix: Water ____ Soil X Sludge ____ Other ____

mg/Kg dry weight

1.	Aluminum	17400 (*)	P	13.	Magnesium	6100	P
2.	Antimony	[9.4] (N)	P	14.	Manganese	900	P
3.	Arsenic	5.8	F	15.	Mercury	~~[illegible]~~ (N)	CV
4.	Barium	48	P	16.	Nickel	27	P
5.	Beryllium	1.3	P	17.	Potassium	[533]	P
6.	Cadmium	.8U	P	18.	Selenium	0.10U	F
7.	Calcium	~~[5711]~~	P	19.	Silver	1.0U (N)	P
8.	Chromium	21	P	20.	Sodium	~~[2311]~~ (E)	P
9.	Cobalt	13	P	21.	Thallium	[0.20]	F
10.	Copper	40	P	22.	Vanadium	17 (E)	P
11.	Iron	29400	P	23.	Zinc	85	P
12.	Lead	15	F		Percent Solids (%)	84.1	

Cyanide ____

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: brownish-yellow soil with ~20% rocks

Lab Manager Ed Behan

ORGANICS ANALYSIS DATA SHEET

(PAGE 1)

SAMPLE NUMBER
BK-230

Laboratory Name:NANCO LABORATORY INC.
Lab Sample ID No:> B1031
Sample Matrix: SOIL
Data Release Authorized By: Sohail Johnson

Case No: 7136
QC Report No: 098
Contract No:68-01-7102
Date Sample Received: 04/17/87

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 04/18/87
Date Analyzed: 04/18/87
Conc/Dil Factor: 1 pH: 4.2
Percent Moisture: 22

CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	10.0 U
74-83-9	Bromomethane	10.0 U
75-01-4	Vinyl Chloride	10.0 U
75-00-3	Chloroethane	10.0 U
75-09-2	Methylene Chloride	410.0 B
67-64-1	Acetone	~~55.0 B~~
75-15-0	Carbon Disulfide	5.0 U
75-35-4	1,1-Dichloroethene	5.0 U
75-34-3	1,1-Dichloroethane	5.0 U
156-60-5	Trans-1,2-Dichloroethene	5.0 U
67-66-3	Chloroform	5.0 U
107-06-2	1,2-Dichloroethane	5.0 U
78-93-3	2-Butanone	10.0 U
71-55-6	1,1,1-Trichloroethane	5.0 U
56-23-5	Carbon Tetrachloride	5.0 U
108-05-4	Vinyl Acetate	10.0 U
75-27-4	Bromodichloromethane	5.0 U

CAS Number		ug/l or ug/Kg (Circle One)
79-34-5	1,1,2,2-Tetrachloroethane	5.0 U
78-87-5	1,2-Dichloropropane	5.0 U
10061-02-6	Trans-1,3-Dichloropropene	5.0 U
79-01-6	Trichloroethene	5.0 U
124-48-1	Dibromochloromethane	5.0 U
79-00-5	1,1,2-Trichloroethane	5.0 U
71-43-2	Benzene	5.0 U
10061-01-5	cis-1,3-Dichloropropene	5.0 U
110-75-8	2-Chloroethylvinylether	10.0 U
75-25-2	Bromoform	5.0 U
591-78-6	2-Hexanone	10.0 U
108-10-1	4-Methyl-2-Pentanone	10.0 U
127-18-4	Tetrachloroethene	5.0 U
108-88-3	Toluene	5.0 U
108-90-7	Chlorobenzene	5.0 U
100-41-4	Ethylbenzene	5.0 U
100-42-5	Styrene	5.0 U
	Total Xylenes	5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

'ALUE

f the result is a value greater than or equal to the detection imit, report the value.

J

ndicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U(e.g.10U based on necessary concentration dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.

J

Indicates an estimated value.This flag is used either when estimating a concentration for tentatively identified compounds where a 1 1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J).

C

This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS

B

This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

OTHER

Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

ORGANIC ANALYSIS DATA SHEET
(PAGE 2)

LABORATORY NAME: NANCO LABS. INC.
CASE NO: 7136

SAMPLE NO.
BK-230

SEMIVOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 04/21/87
Date Analyzed: 05/02/87
Conc/Dil Factor:----------> 2
Percent Moisture: 22

GPC Cleanup: Yes Y No____
Separatory Funnel Extraction: Yes____
Continuous Liquid - Liquid Extraction: Yes__

CAS Number		ug/l or ug/Kg (Circle One)
108-95-2	Phenol	660.0 U
111-44-4	bis(-2-Chloroethyl)Ether	660.0 U
95-57-8	2-Chlorophenol	660.0 U
541-73-1	1,3-Dichlorobenzene	660.0 U
106-46-7	1,4-Dichlorobenzene	660.0 U
100-51-6	Benzyl Alcohol	660.0 U
95-50-1	1,2-Dichlorobenzene	660.0 U
95-48-7	2-Methylphenol	660.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	660.0 U
106-44-5	4-Methylphenol	660.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	660.0 U
67-72-1	Hexachloroethane	660.0 U
98-95-3	Nitrobenzene	660.0 U
78-59-1	Isophorone	660.0 U
88-75-5	2-Nitrophenol	660.0 U
105-67-9	2,4-Dimethylphenol	660.0 U
65-85-0	Benzoic Acid	3200.0 U
111-91-1	bis(-2-Chloroethoxy)Methane	660.0 U
120-83-2	2,4-Dichlorophenol	660.0 U
120-82-1	1,2,4-Trichlorobenzene	660.0 U
91-20-3	Naphthalene	660.0 U
106-47-8	4-Chloroaniline	660.0 U
87-68-3	Hexachlorobutadiene	660.0 U
59-50-7	4-Chloro-3-Methylphenol	660.0 U
91-57-6	2-Methylnaphthalene	660.0 U
77-47-4	Hexachlorocyclopentadiene	660.0 U
88-06-2	2,4,6-Trichlorophenol	660.0 U
95-95-4	2,4,5-Trichlorophenol	3200.0 U
91-58-7	2-Chloronaphthalene	660.0 U
88-74-4	2-Nitroaniline	3200.0 U
131-11-3	Dimethyl Phthalate	660.0 U
208-96-8	Acenaphthylene	660.0 U
99-09-2	3-Nitroaniline	3200.0 U

CAS Number		ug/l or ug/Kg (Circle One)
83-32-9	Acenaphthene	660.0 U
51-28-5	2,4-Dinitrophenol	3200.0 U
100-02-7	4-Nitrophenol	3200.0 U
132-64-9	Dibenzofuran	660.0 U
121-14-2	2,4-Dinitrotoluene	660.0 U
606-20-2	2,6-Dinitrotoluene	660.0 U
84-66-2	Diethylphthalate	660.0 U
7005-72-3	4-Chlorophenyl-phenylether	660.0 U
86-73-7	Fluorene	660.0 U
100-01-6	4-Nitroaniline	3200.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	3200.0 U
86-30-6	N-Nitrosodiphenylamine (1)	660.0 U
101-55-3	4-Bromophenyl-phenylether	660.0 U
118-74-1	Hexachlorobenzene	660.0 U
87-86-5	Pentachlorophenol	3200.0 U
85-01-8	Phenanthrene	660.0 U
120-12-7	Anthracene	660.0 U
84-74-2	Di-n-Butylphthalate	40000.0
206-44-0	Fluoranthene	660.0 U
129-00-0	Pyrene	660.0 U
85-68-7	Butylbenzylphthalate	660.0 U
91-94-1	3,3'-Dichlorobenzidine	1320.0 U
56-55-3	Benzo(a)Anthracene	660.0 U
117-81-7	bis(2-Ethylhexyl)Phthalate	4200.0
218-01-9	Chrysene	660.0 U
117-84-0	Di-n-Octyl Phthalate	950.0
205-99-2	Benzo(b)Fluoranthene	660.0 U
207-08-9	Benzo(k)Fluoranthene	660.0 U
50-32-8	Benzo(a)Pyrene	660.0 U
193-39-5	Indeno(1,2,3-cd)Pyrene	660.0 U
53-70-3	Dibenz(a,h)Anthracene	660.0 U
191-24-2	Benzo(g,h,i)Perylene	660.0 U

(1) - Cannot be separated from diphenylamine

ORGANICS ANALYSIS DATA SHEET

(PAGE 3)

SAMPLE NUMBER

LABORATORY NAME: NANCO LABS, INC.

CASE NO: 7136

BK 230

PESTICIDE/PCBs

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: 4/21/87

Date Analyzed: 5/13/87

Conc/Dil Factor: -----> 2

Percent Moisture: 22

GPC Cleanup: Yes_X_ No___

Separatory Funnel Extraction: Yes___

Continuous Liquid-Liquid Extraction: Yes___

CAS Number		ug/l or ug/Kg (Circle One)
319-84-6	Alpha-BHC	16.00 U
319-85-7	Beta-BHC	16.00 U
319-86-8	Delta-BHC	16.00 U
58-89-9	Gamma-BHC (Lindane)	16.00 U
76-44-8	Heptachlor	16.00 U
309-00-2	Aldrin	16.00 U
1024-57-3	Heptachlor Epoxide	16.00 U
959-98-8	Endosulfan I	16.00 U
60-57-1	Dieldrin	32.00 U
72-55-9	4,4'-DDE	32.00 U
72-20-8	Endrin	32.00 U
33213-65-9	Endosulfan II	32.00 U
72-54-8	4,4'-DDD	32.00 U
7421-93-4	Endrin Aldehyde	32.00 U
1031-07-8	Endosulfan Sulfate	~~10 J~~ B
50-29-3	4,4'-DDT	~~10 J~~ B
53494-70-5	Endrin Ketone	32.00 U
72-43-5	Methoxychlor	160.00 U
57-74-9	Chlordane	160.00 U
8001-35-2	Toxaphene	320.00 U
12674-11-2	Aroclor-1016	160.00 U
11104-28-2	Aroclor-1221	160.00 U
11141-16-5	Aroclor-1232	160.00 U
53469-21-9	Aroclor-1242	160.00 U
12672-29-6	Aroclor-1248	160.00 U
11097-69-1	Aroclor-1254	320.00 U
11096-82-5	Aroclor-1260	320.00 U

Vi = Volume of extract injected (ul)

Vs = Volume of water extracted (ml)

Ws = Weight of sample extracted (g)

Vt = Volume of total extract (ul)

Vs _____ or Ws 30 Vt 40000 Vi 4

FORM I

ORGANICS ANALYSIS DATA SHEET
(PAGE 4)

LABORATORY NAME :NANCO LABS.INC.
CASE NO: 7136

SAMPLE NUMBER
BK-230

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/Kg)
1	79209	ACETIC ACID, METHYL ESTER	VOA	122	12.0 J
2					
3	123422	2-PENTANONE,4-HYDROXY-4-METHYL	BNA	83	9700.0 JB
4	1686620	1-PHENANTHRENECARBOXYLIC ACID,	BNA	1250	6300.0 J
5		7-ETHENYL-1,2,3,4,4A,,4B,5			
6	-----	UNKNOWN	BNA	1273	2200.0 J
7	1686620	1-PHENANTHRENECARBOXYLIC ACID,	BNA	1305	5900.0 J
8		7-ETENYL-1,2,3,4,4A,4B,5			
9	----	UNKNOWN	BNA	1310	4800 J
10	----	UNKNOWN	BNA	1317	4100.0 J
11	18492767	1-PHENANTHRENECARBOXYLIC ACID, 1,2,3,4,	BNA	1323	2300.0 J
12		4A,10A-HEXAHYDRO-1PHA,4A,BETA,10A.ALPHA			
13	----	UNKNOWN	BNA	1328	20000.0 J
14	----	UNKNOWN	BNA	1361	6900.0 J
15	----	UNKNOWN	BNA	1383	16000.0 J
16	----	UNKNOWN	BNA	1410	2200.0 J
17	----	UNKNOWN DICARBOXYLIC ACID	BNA	1418	3800.0 J
18	----	UNKNOWN DICARBOXYLIC ACID	BNA	1438	4000.0 J
19	----	UNKNOWN DICARBOXYLIC ACID	BNA	1441	5200.0 J
20	27554263	UNKNOWN	BNA	1449	22000.0 J
21	----	UNKNOWN	BNA	1454	4800.0 J
22	----	UNKNOWN	BNA	1457	3500.0 J
23	27554263	1-2-BENENEDICARBOXYLIC ACID,DIISOOCTYL ESTER	BNA	1467	9700.0 J
24	----	UNKNOWN	BNA	1475	15000.0 J
25	----	UNKNOWN	BNA	1480	4000.0 J
26					

FORM I

7136-02-005

U.S. EPA Contract Laboratory Program
Sample Management Office
P,O, Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.

MBJ178

Date 5/19/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME ASSOCIATED LABORATORIES

CASE NO. 7136

SOW NO. 785

Lab Receipt Date 4/17/87

LAB SAMPLE ID. NO. F32755-10

QC REPORT NO. 13

Elements Identified and Measured

Concentration: Low X Medium ~~X~~ BEW

Matrix: Water ____ Soil X Sludge ____ Other ____

mg/Kg dry weight

1.	Aluminum	16100 (*)	P	13.	Magnesium	3690	P
2.	Antimony	[8.8] (N)	P	14.	Manganese	1160	P
3.	Arsenic	6.1	F	15.	Mercury	~~0.57~~ (N)	CV
4.	Barium	137	P	16.	Nickel	21	P
5.	Beryllium	[1.1]	P	17.	Potassium	[208]	P
6.	Cadmium	.8U	P	18.	Selenium	0.11U	F
7.	Calcium	~~[290]~~	P	19.	Silver	1.1U (N)	P
8.	Chromium	483	P	20.	Sodium	~~[212]~~ (E)	P
9.	Cobalt	12	P	21.	Thallium	[0.33]	F
10.	Copper	95	P	22.	Vanadium	13 (E)	P
11.	Iron	22400	P	23.	Zinc	87	P
12.	Lead	1,240	F		Percent Solids (%)	81.2	

Cyanide ____

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: homogeneous clay type sample with some roots

Lab Manager Ed Behan

ORGANICS ANALYSIS DATA SHEET

(PAGE 1)

SAMPLE NUMBER

BK-231

Laboratory Name:NANCO LABORATORY INC.

Lab Sample ID No:>B1037

Sample Matrix: SOIL

Data Release Authorized By: Sohail Johari

Case No: 7136

QC Report No: 098

Contract No:68-01-7102

Date Sample Received: 04/17/87

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: 04/18/87

Date Analyzed: 04/18/87

Conc/Dil Factor: 1 pH: 5.0

Percent Moisture: 23

CAS Number		ug/l or ug/Kg (Circle One)	CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	10.0 U	79-34-5	1,1,2,2-Tetrachloroethane	5.0 U
74-83-9	Bromomethane	10.0 U	78-87-5	1,2-Dichloropropane	5.0 U
75-01-4	Vinyl Chloride	10.0 U	10061-02-6	Trans-1,3-Dichloropropene	5.0 U
75-00-3	Chloroethane	10.0 U	79-01-6	Trichloroethene	5.0 U
75-09-2	Methylene Chloride	120.0 B	124-48-1	Dibromochloromethane	5.0 U
67-64-1	Acetone	48.0 B	79-00-5	1,1,2-Trichloroethane	5.0 U
75-15-0	Carbon Disulfide	5.0 U	71-43-2	Benzene	5.0 U
75-35-4	1,1-Dichloroethene	5.0 U	10061-01-5	cis-1,3-Dichloropropene	5.0 U
75-34-3	1,1-Dichloroethane	5.0 U	110-75-8	2-Chloroethylvinylether	10.0 U
156-60-5	Trans-1,2-Dichloroethene	5.0 U	75-25-2	Bromoform	5.0 U
67-66-3	Chloroform	5.0 U	591-78-6	2-Hexanone	7.4 J
107-06-2	1,2-Dichloroethane	5.0 U	108-10-1	4-Methyl-2-Pentanone	10.0 U
78-93-3	2-Butanone	10.0 U	127-18-4	Tetrachloroethene	5.0 U
71-55-6	1,1,1-Trichloroethane	5.0 U	108-88-3	Toluene	190.0
56-23-5	Carbon Tetrachloride	5.0 U	108-90-7	Chlorobenzene	5.0 U
108-05-4	Vinyl Acetate	10.0 U	100-41-4	Ethylbenzene	5.0 U
75-27-4	Bromodichloromethane	5.0 U	100-42-5	Styrene	5.0 U
				Total Xylenes	5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

ALUE

f the result is a value greater than or equal to the detection imit, report the value.

ndicates compound was analyzed for but not detected. Report ne minimum detection limit for the sample with the U(e.g.10U ased on necessary concentration dilution actions. (This is not ecessarily the instrument detection limit.) The footnote should ead U-Compound was analyzed for but not detected.The number is ne minimum attainable detection limit for the sample.

ndicates an estimated value.This flag is used either when stimating a concentration for tentatively identified compounds here a 1 1 response is assumed or when the mass spectral data ndicates the presence of a compound that meets the identification riteria but the result is less than the specified detection limit ut greater than zero (e.g. 10J).

C

This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS

B

This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

OTHER

Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

ORGANIC ANALYSIS DATA SHEET
(PAGE 2)

LABORATORY NAME: NANCO LABS. INC.
CASE NO: 7136

SAMPLE NO.
BK-231

SEMIVOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 04/21/87
Date Analyzed: 05/02/87
Conc/Dil Factor:----------> 2
Percent Moisture: 23

GPC Cleanup: Yes X No____
Separatory Funnel Extraction: Yes____
Continuous Liquid - Liquid Extraction: Yes__

CAS Number		ug/l or ug/Kg (Circle One)
108-95-2	Phenol	660.0 U
111-44-4	bis(-2-Chloroethyl)Ether	660.0 U
95-57-8	2-Chlorophenol	660.0 U
541-73-1	1,3-Dichlorobenzene	660.0 U
106-46-7	1,4-Dichlorobenzene	660.0 U
100-51-6	Benzyl Alcohol	660.0 U
95-50-1	1,2-Dichlorobenzene	660.0 U
95-48-7	2-Methylphenol	660.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	660.0 U
106-44-5	4-Methylphenol	660.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	660.0 U
67-72-1	Hexachloroethane	660.0 U
98-95-3	Nitrobenzene	660.0 U
78-59-1	Isophorone	660.0 U
88-75-5	2-Nitrophenol	660.0 U
105-67-9	2,4-Dimethylphenol	660.0 U
65-85-0	Benzoic Acid	3200.0 U
111-91-1	bis(-2-Chloroethoxy)Methane	660.0 U
120-83-2	2,4-Dichlorophenol	660.0 U
120-82-1	1,2,4-Trichlorobenzene	660.0 U
91-20-3	Naphthalene	660.0 U
106-47-8	4-Chloroaniline	660.0 U
87-68-3	Hexachlorobutadiene	660.0 U
59-50-7	4-Chloro-3-Methylphenol	660.0 U
91-57-6	2-Methylnaphthalene	660.0 U
77-47-4	Hexachlorocyclopentadiene	660.0 U
88-06-2	2,4,6-Trichlorophenol	660.0 U
95-95-4	2,4,5-Trichlorophenol	3200.0 U
91-58-7	2-Chloronaphthalene	660.0 U
88-74-4	2-Nitroaniline	3200.0 U
131-11-3	Dimethyl Phthalate	660.0 U
208-96-8	Acenaphthylene	660.0 U
99-09-2	3-Nitroaniline	3200.0 U

CAS Number		ug/l or ug/Kg (Circle One)
83-32-9	Acenaphthene	660.0 U
51-28-5	2,4-Dinitrophenol	3200.0 U
100-02-7	4-Nitrophenol	3200.0 U
132-64-9	Dibenzofuran	660.0 U
121-14-2	2,4-Dinitrotoluene	660.0 U
606-20-2	2,6-Dinitrotoluene	660.0 U
84-66-2	Diethylphthalate	660.0 U
7005-72-3	4-Chlorophenyl-phenylether	660.0 U
86-73-7	Fluorene	660.0 U
100-01-6	4-Nitroaniline	3200.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	3200.0 U
86-30-6	N-Nitrosodiphenylamine (1)	660.0 U
101-55-3	4-Bromophenyl-phenylether	660.0 U
118-74-1	Hexachlorobenzene	660.0 U
87-86-5	Pentachlorophenol	3200.0 U
85-01-8	Phenanthrene	660.0 U
120-12-7	Anthracene	660.0 U
84-74-2	Di-n-Butylphthalate	660.0 U
206-44-0	Fluoranthene	660.0 U
129-00-0	Pyrene	660.0 U
85-68-7	Butylbenzylphthalate	660.0 U
91-94-1	3,3'-Dichlorobenzidine	1320.0 U
56-55-3	Benzo(a)Anthracene	660.0 U
117-81-7	bis(2-Ethylhexyl)Phthalate	660.0 U
218-01-9	Chrysene	660.0 U
117-84-0	Di-n-Octyl Phthalate	660.0 U
205-99-2	Benzo(b)Fluoranthene	660.0 U
207-08-9	Benzo(k)Fluoranthene	660.0 U
50-32-8	Benzo(a)Pyrene	660.0 U
193-39-5	Indeno(1,2,3-cd)Pyrene	660.0 U
53-70-3	Dibenz(a,h)Anthracene	660.0 U
191-24-2	Benzo(g,h,i)Perylene	660.0 U

(1) - Cannot be separated from diphenylamine

ORGANICS ANALYSIS DATA SHEET

(PAGE 3)

LABORATORY NAME: NANCO LABS, INC.

CASE NO: 7136

SAMPLE NUMBER

BK 231

PESTICIDE/PCBs

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: 4/21/87

Date Analyzed: 5/13/87

Conc/Dil Factor: -----> 2

Percent Moisture: 23

GPC Cleanup: Yes_X_ No___

Separatory Funnel Extraction: Yes___

Continuous Liquid-Liquid Extraction: Yes___

CAS Number		ug/l or ug/Kg (Circle One)
319-84-6	Alpha-BHC	16.00 U
319-85-7	Beta-BHC	16.00 U
319-86-8	Delta-BHC	16.00 U
58-89-9	Gamma-BHC (Lindane)	16.00 U
76-44-8	Heptachlor	16.00 U
309-00-2	Aldrin	16.00 U
1024-57-3	Heptachlor Epoxide	16.00 U
959-98-8	Endosulfan I	16.00 U
60-57-1	Dieldrin	32.00 U
72-55-9	4,4'-DDE	32.00 U
72-20-8	Endrin	32.00 U
33213-65-9	Endosulfan II	32.00 U
72-54-8	4,4'-DDD	32.00 U
7421-93-4	Endrin Aldehyde	32.00 U
1031-07-8	Endosulfan Sulfate	~~5.9~~ B
50-29-3	4,4'-DDT	~~13~~ B
53494-70-5	Endrin Ketone	32.00 U
72-43-5	Methoxychlor	160.00 U
57-74-9	Chlordane	160.00 U
8001-35-2	Toxaphene	320.00 U
12674-11-2	Aroclor-1016	160.00 U
11104-28-2	Aroclor-1221	160.00 U
11141-16-5	Aroclor-1232	160.00 U
53469-21-9	Aroclor-1242	160.00 U
12672-29-6	Aroclor-1248	160.00 U
11097-69-1	Aroclor-1254	320.00 U
11096-82-5	Aroclor-1260	320.00 U

Vi = Volume of extract injected (ul)

Vs = Volume of water extracted (ml)

Ws = Weight of sample extracted (g)

Vt = Volume of total extract (ul)

Vs _____ or Ws 30 Vt 40000 Vi 4

FORM I

ORGANICS ANALYSIS DATA SHEET
(PAGE 4)

LABORATORY NAME :NANCO LABS.INC.
CASE NO: 7136

SAMPLE NUMBER
BK-231

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/Kg)
1	76131	ETHANE, 1,1,2-TRICHLORO-1,2,2-TRIFLUORO	VOA	161	~~28.0 JB~~
2	----	UNKNOWN	VOA	341	20.0 J 56
3					
4					
5					
6	123422	2-PENTANONE, 4-HYDROXY-4-METHYL	BNA	88	9000.0 JB
7	----	UNKNOWN	BNA	263	600.0 J
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					

7136-02-005

FORM I

U.S. EPA Contract Laboratory Program
Sample Management Office
P,O, Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.

MBJ179

Date 5/19/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME ASSOCIATED LABORATORIES

CASE NO. 7136

SOW NO. 785

Lab Receipt Date 4/17/87

LAB SAMPLE ID. NO. F32755-11

QC REPORT NO. 13

Elements Identified and Measured

Concentration: Low X Medium ~~X~~ BEW

Matrix: Water ____ Soil X Sludge ____ Other ____

mg/Kg dry weight

1. Aluminum	18100 (*)	P	13. Magnesium	5440	P
2. Antimony	[9.8] ~~[10]~~ (N)	P	14. Manganese	931	P
3. Arsenic	8.6	F	15. Mercury	~~0.42~~ (N)	CV
4. Barium	51	P	16. Nickel	27	P
5. Beryllium	[.8]	P	17. Potassium	1940	P
6. Cadmium	.7U	P	18. Selenium	0.11U	F
7. Calcium	~~[539]~~	P	19. Silver	1.0U (N)	P
8. Chromium	21	P	20. Sodium	~~[255]~~ (E)	P
9. Cobalt	14	P	21. Thallium	[0.42]	F
10. Copper	43	P	22. Vanadium	20 (E)	P
11. Iron	26300	P	23. Zinc	69	P
12. Lead	14	F	Percent Solids (%)	81.1	
Cyanide					

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: clay type sample

Lab Manager Ed Behan

ORGANICS ANALYSIS DATA SHEET

(PAGE 1)

SAMPLE NUMBER

BK-232

Laboratory Name:NANCO LABORATORY INC.
Lab Sample ID No:>A0849
Sample Matrix: SOIL
Data Release Authorized By: Sotal Johan

Case No: 7136
QC Report No:098
Contract No:68-01-7102
Date Sample Received:04/17/87

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 04/26/87
Date Analyzed:04/26/87
Conc/Dil Factor: 1 pH:5.0
Percent Moisture:29

CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	10.0 U
74-83-9	Bromomethane	10.0 U
75-01-4	Vinyl Chloride	10.0 U
75-00-3	Chloroethane	10.0 U
75-09-2	Methylene Chloride	~~130.0 B~~
67-64-1	Acetone	~~110.0 B~~
75-15-0	Carbon Disulfide	5.0 U
75-35-4	1,1-Dichloroethene	5.0 U
75-34-3	1,1-Dichloroethane	5.0 U
156-60-5	Trans-1,2-Dichloroethene	5.0 U
67-66-3	Chloroform	5.0 U
107-06-2	1,2-Dichloroethane	5.0 U
78-93-3	2-Butanone	10.0 U
71-55-6	1,1,1-Trichloroethane	5.0 U
56-23-5	Carbon Tetrachloride	5.0 U
108-05-4	Vinyl Acetate	2.6 J
75-27-4	Bromodichloromethane	5.0 U

CAS Number		ug/l or ug/Kg (Circle One)
79-34-5	1,1,2,2-Tetrachloroethane	5.0 U
78-87-5	1,2-Dichloropropane	5.0 U
10061-02-6	Trans-1,3-Dichloropropene	5.0 U
79-01-6	Trichloroethene	5.0 U
124-48-1	Dibromochloromethane	5.0 U
79-00-5	1,1,2-Trichloroethane	5.0 U
71-43-2	Benzene	5.0 U
10061-01-5	cis-1,3-Dichloropropene	5.0 U
110-75-8	2-Chloroethylvinylether	10.0 U
75-25-2	Bromoform	5.0 U
591-78-6	2-Hexanone	10.0 U
108-10-1	4-Methyl-2-Pentanone	10.0 U
127-18-4	Tetrachloroethene	5.0 U
108-88-3	Toluene	5.0 U
108-90-7	Chlorobenzene	5.0 U
100-41-4	Ethylbenzene	5.0 U
100-42-5	Styrene	5.0 U
	Total Xylenes	5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

'ALUE

f the result is a value greater than or equal to the detection imit, report the value.

ndicates compound was analyzed for but not detected. Report he minimum detection limit for the sample with the U(e.g.10U ased on necessary concentration dilution actions. (This is not ecessarily the instrument detection limit.) The footnote should ead U-Compound was analyzed for but not detected.The number is he minimum attainable detection limit for the sample.

ndicates an estimated value.This flag is used either when stimating a concentration for tentatively identified compounds here a 1 1 response is assumed or when the mass spectral data ndicates the presence of a compound that meets the identification riteria but the result is less than the specified detection limit ut greater than zero (e.g. 10J).

C

This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS

B

This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

OTHER

Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

ORGANIC ANALYSIS DATA SHEET
(PAGE 2)

LABORATORY NAME: NANCO LABS. INC.
CASE NO: 7136

SAMPLE NO.
BK-232

SEMIVOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 04/21/87
Date Analyzed: 05/02/87
Conc/Dil Factor:----------> 2
Percent Moisture: 29

GPC Cleanup: Yes ✓ No____
Separatory Funnel Extraction: Yes____
Continuous Liquid - Liquid Extraction: Yes___

CAS Number		ug/l or ug/Kg (Circle One)
108-95-2	Phenol	660.0 U
111-44-4	bis(-2-Chloroethyl)Ether	660.0 U
95-57-8	2-Chlorophenol	660.0 U
541-73-1	1,3-Dichlorobenzene	660.0 U
106-46-7	1,4-Dichlorobenzene	660.0 U
100-51-6	Benzyl Alcohol	660.0 U
95-50-1	1,2-Dichlorobenzene	660.0 U
95-48-7	2-Methylphenol	660.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	660.0 U
106-44-5	4-Methylphenol	660.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	660.0 U
67-72-1	Hexachloroethane	660.0 U
98-95-3	Nitrobenzene	660.0 U
78-59-1	Isophorone	660.0 U
88-75-5	2-Nitrophenol	660.0 U
105-67-9	2,4-Dimethylphenol	660.0 U
65-85-0	Benzoic Acid	3200.0 U
111-91-1	bis(-2-Chloroethoxy)Methane	660.0 U
120-83-2	2,4-Dichlorophenol	660.0 U
120-82-1	1,2,4-Trichlorobenzene	660.0 U
91-20-3	Naphthalene	660.0 U
106-47-8	4-Chloroaniline	660.0 U
87-68-3	Hexachlorobutadiene	660.0 U
59-50-7	4-Chloro-3-Methylphenol	660.0 U
91-57-6	2-Methylnaphthalene	660.0 U
77-47-4	Hexachlorocyclopentadiene	660.0 U
88-06-2	2,4,6-Trichlorophenol	660.0 U
95-95-4	2,4,5-Trichlorophenol	3200.0 U
91-58-7	2-Chloronaphthalene	660.0 U
88-74-4	2-Nitroaniline	3200.0 U
131-11-3	Dimethyl Phthalate	660.0 U
208-96-8	Acenaphthylene	660.0 U
99-09-2	3-Nitroaniline	3200.0 U

CAS Number		ug/l or ug/Kg (Circle One)
83-32-9	Acenaphthene	660.0 U
51-28-5	2,4-Dinitrophenol	3200.0 U
100-02-7	4-Nitrophenol	3200.0 U
132-64-9	Dibenzofuran	660.0 U
121-14-2	2,4-Dinitrotoluene	660.0 U
606-20-2	2,6-Dinitrotoluene	660.0 U
84-66-2	Diethylphthalate	660.0 U
7005-72-3	4-Chlorophenyl-phenylether	660.0 U
86-73-7	Fluorene	660.0 U
100-01-6	4-Nitroaniline	3200.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	3200.0 U
86-30-6	N-Nitrosodiphenylamine (1)	660.0 U
101-55-3	4-Bromophenyl-phenylether	660.0 U
118-74-1	Hexachlorobenzene	660.0 U
87-86-5	Pentachlorophenol	3200.0 U
85-01-8	Phenanthrene	660.0 U
120-12-7	Anthracene	660.0 U
84-74-2	Di-n-Butylphthalate	660.0 U
206-44-0	Fluoranthene	660.0 U
129-00-0	Pyrene	660.0 U
85-68-7	Butylbenzylphthalate	660.0 U
91-94-1	3,3'-Dichlorobenzidine	1320.0 U
56-55-3	Benzo(a)Anthracene	660.0 U
117-81-7	bis(2-Ethylhexyl)Phthalate	660.0 U
218-01-9	Chrysene	660.0 U
117-84-0	Di-n-Octyl Phthalate	660.0 U
205-99-2	Benzo(b)Fluoranthene	660.0 U
207-08-9	Benzo(k)Fluoranthene	660.0 U
50-32-8	Benzo(a)Pyrene	660.0 U
193-39-5	Indeno(1,2,3-cd)Pyrene	660.0 U
53-70-3	Dibenz(a,h)Anthracene	660.0 U
191-24-2	Benzo(g,h,i)Perylene	660.0 U

(1) - Cannot be separated from diphenylamine

ORGANICS ANALYSIS DATA SHEET

(PAGE 3)

LABORATORY NAME: NANCO LABS, INC.

CASE NO: 7136

SAMPLE NUMBER

BK 232

PESTICIDE/PCBs

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: 4/21/87

Date Analyzed: 5/13/87

Conc/Dil Factor: -----> 2

Percent Moisture: 29

GPC Cleanup: Yes_X_ No___

Separatory Funnel Extraction: Yes___

Continuous Liquid-Liquid Extraction: Yes___

CAS Number		ug/l or ug/Kg (Circle One)
319-84-6	Alpha-BHC	16.00 U
319-85-7	Beta-BHC	16.00 U
319-86-8	Delta-BHC	16.00 U
58-89-9	Gamma-BHC (Lindane)	16.00 U
76-44-8	Heptachlor	16.00 U
309-00-2	Aldrin	16.00 U
1024-57-3	Heptachlor Epoxide	16.00 U
959-98-8	Endosulfan I	16.00 U
60-57-1	Dieldrin	32.00 U
72-55-9	4,4'-DDE	32.00 U
72-20-8	Endrin	32.00 U
33213-65-9	Endosulfan II	32.00 U
72-54-8	4,4'-DDD	1.6 J
7421-93-4	Endrin Aldehyde	32.00 U
1031-07-8	Endosulfan Sulfate	~~10 JB~~
50-29-3	4,4'-DDT	13 J B
53494-70-5	Endrin Ketone	32.00 U
72-43-5	Methoxychlor	160.00 U
57-74-9	Chlordane	160.00 U
8001-35-2	Toxaphene	320.00 U
12674-11-2	Aroclor-1016	160.00 U
11104-28-2	Aroclor-1221	160.00 U
11141-16-5	Aroclor-1232	160.00 U
53469-21-9	Aroclor-1242	160.00 U
12672-29-6	Aroclor-1248	160.00 U
11097-69-1	Aroclor-1254	320.00 U
11096-82-5	Aroclor-1260	320.00 U

Vi = Volume of extract injected (ul)

Vs = Volume of water extracted (ml)

Ws = Weight of sample extracted (g)

Vt = Volume of total extract (ul)

Vs _____ or Ws 30 Vt 40000 Vi 4

FORM I

ORGANICS ANALYSIS DATA SHEET
(PAGE 4)

LABORATORY NAME :NANCO LABS.INC.
CASE NO: 7136

SAMPLE NUMBER
BK-232

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/Kg)
1	76131	ETHANE, 1,1,2-TRICHLORO-1,2,2-TRIFLUORO	VOA	150	~~85.0 J~~
2					
3					
4					
5					
6	123422	2-PENTANONE, 4-HYDROXY-4-METHYL	BNA	86	10000.0 JB
7	----	UNKNOWN	BNA	261	660.0 J
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					

7136-02-005

FORM I

U.S. EPA Contract Laboratory Program
Sample Management Office
P,O, Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.

MBJ180

Date 5/19/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME ASSOCIATED LABORATORIES

CASE NO. 7136

SOW NO. 785

Lab Receipt Date 4/17/87

LAB SAMPLE ID. NO. F32755-12

QC REPORT NO. 13

Elements Identified and Measured

Concentration: Low X Medium BEW

Matrix: Water ____ Soil X Sludge ____ Other ____

mg/Kg dry weight

1.	Aluminum	22500 (X)	P	13.	Magnesium	5220	P
2.	Antimony	[10] (N)	P	14.	Manganese	1060	P
3.	Arsenic	7.2	F	15.	Mercury	~~0.59~~ (N)	CV
4.	Barium	98	P	16.	Nickel	25	P
5.	Beryllium	1.7	P	17.	Potassium	2520	P
6.	Cadmium	.9U	P	18.	Selenium	0.11U	F
7.	Calcium	~~[740]~~	P	19.	Silver	1.1U (N)	P
8.	Chromium	26	P	20.	Sodium	~~[309]~~ (E)	P
9.	Cobalt	13	P	21.	Thallium	[0.43]	F
10.	Copper	43	P	22.	Vanadium	27 (E)	P
11.	Iron	26200	P	23.	Zinc	83	P
12.	Lead	22	F		Percent Solids (%)	74.1	

Cyanide ____

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: homogeneous clay type sample

Lab Manager Ed Behare

REFERENCE NO. 18

CHEMICAL, PHYSICAL, AND BIOLOGICAL PROPERTIES OF COMPOUNDS PRESENT AT HAZARDOUS WASTE SITES

Final Report

Prepared for:

U.S. Environmental Protection Agency

Prepared by:

Clement Associates, Inc.
1515 Wilson Boulevard
Arlington, Virginia 22209

Under Subcontract to:

GCA Corporation
Bedford, Massachusetts 01730

September 27, 1985

CHROMIUM

Summary

Chromium is a heavy metal that generally exists in either a trivalent or hexavalent oxidation state. Hexavalent chromium (Cr VI) is rather soluble and is quite mobile in groundwater and surface water. However, in the presence of reducing agents it is rapidly converted to trivalent chromium (Cr III), which is strongly adsorbed to soil components and consequently is much less mobile. A number of salts of hexavalent chromium are carcinogenic in rats. In addition, an increased incidence of lung cancer was seen in workers occupationally exposed to chromium VI. Hexavalent chromium also causes kidney damage in animals and humans. Trivalent chromium is less toxic than hexavalent chromium; its main effect is contact dermatitis in sensitive individuals.

CAS Number: 7440-47-3

Chemical Formula: Cr

IUPAC Name: Chromium

Chemical and Physical Properties (Metal)

Atomic Weight: 51.996

Boiling Point: 2672°C

Melting Point: 1857 ± 20°C

Specific Gravity: 7.20 at 28°C

Solubility in Water: Insoluble; some compounds are soluble

Transport and Fate

Hexavalent Cr is quite soluble, existing in solution as a component of a complex anion. It is not sorbed to any significant degree by clays or hydrous metal oxides. The anionic form varies according to pH and may be a chromate, hydrochromate, or dichromate. Because all anionic forms are so soluble, they are quite mobile in the aquatic environment. Cr VI is efficiently

removed by activated carbon and thus may have some affinity for organic materials in natural water. Cr VI is a moderately strong oxidizing agent and reacts with reducing materials to form trivalent chromium. Most Cr III in the aquatic environment is hydrolyzed and precipitates as chromium hydroxide. Sorption to sediments and bioaccumulation will remove much of the remaining Cr III from solution. Cr III is adsorbed only weakly to inorganic materials. Cr III and Cr VI are readily interconvertible in nature depending on microenvironmental conditions such as pH, hardness, and the types of other compounds present. Soluble forms of chromium accumulate if ambient conditions favor Cr VI. Conditions favorable for conversion to Cr III lead to precipitation and adsorption of chromium in sediments.

In air, chromium is associated almost entirely with particulate matter. Sources of chromium in air include windblown soil and particulate emissions from industrial processes. Little information is available concerning the relative amounts of Cr III and Cr VI in various aerosols. Relatively small particles can form stable aerosols and can be transported many miles before settling out.

Cr III tends to be adsorbed strongly onto clay particles and organic particulate matter, but can be mobilized if it is complexed with organic molecules. Cr III present in minerals is mobilized to different extents depending on the weatherability and solubility of the mineral in which it is contained. Hexavalent compounds are not strongly adsorbed by soil components and Cr VI is mobile in groundwater. Cr VI is quickly reduced to CR III in poorly drained soils having a high content of organic matter. Cr VI of natural origin is rarely found in soils.

Health Effects

The hexavalent form of chromium is of major toxicological importance in higher organisms. A variety of chromate (Cr VI) salts are carcinogenic in rats and an excess of lung cancer has been observed among workers in the chromate-producing industry. Cr VI compounds can cause DNA and chromsome damage in animals and humans, and Cr (VI) trioxide is teratogenic in the hamster. Inhalation of hexavalent chromium salts causes irritation and inflammation of the nasal mucosa, and ulceration and perforation of the nasal septum. Cr VI also produces kidney damage in animals and humans. The liver is also sensitive to the toxic effects of hexavalent Cr, but apparently less so than the kidneys or respiratory system. Cr III is less toxic than Cr VI; its main effect in humans is a form of contact dermatitis in sensitive individuals.

Toxicity to Wildlife and Domestic Animals

Chromium is an essential nutrient and is accumulated in a variety of aquatic and marine biota, especially benthic organisms, to levels much higher than in ambient water. Levels in biota, however, usually are lower than levels in the sediments. Passage of chromium through the food chain can be demonstrated. The food chain appears to be a more efficient pathway for chromium uptake than direct uptake from seawater.

Water hardness, temperature, dissolved oxygen, species, and age of the test organism all modify the toxic effects of chromium on aquatic life. Cr III appears to be more acutely toxic to fish than Cr VI; the reverse is true in long term chronic exposure studies.

None of the plants normally used as food or animal feed are chromium accumulators. Chromium absorbed by plants tends to remain primarily in the roots and is poorly translocated to the leaves. There is little tendency for chromium to accumulate along food chains in the trivalent inorganic form. Organic chromium compounds, about which little is known, can have significantly different bioaccumulation tendencies. Little information concerning the toxic effects of chromium on mammalian wildlife and domestic animal species is available.

Regulations and Standards

Ambient Water Quality Criteria (USEPA):

Cr VI:

Aquatic Life (Proposed Criteria)

Freshwater

Acute toxicity: 11 µg/liter
Chronic toxicity: 7.2 µg/liter

Saltwater

Acute toxicity: 1,200 µg/liter
Chronic toxicity: 54 µg/liter

Human Health

Criterion: 50 µg/liter

Cr III:

Aquatic Life (Proposed Criteria)

Freshwater

Acute toxicity: $e^{(0.819[\ln(\text{hardness})]+3.568)}$ µg/liter

Chronic toxicity: $e^{(0.819\ [\ln(\text{hardness})])+0.537)}$ µg/liter

Saltwater

The available data are not adequate for establishing criteria.

Human Health

Criterion: 170 mg/liter

CAG Unit Risk for inhalation exposure to CR VI (USEPA): 41 $(\text{mg/kg/day})^{-1}$

National Interim Primary Drinking Water Standard: 50 µg/liter

NIOSH Recommended Standards for CR VI: 1 $\mu g/m^3$ carcinogenic
25 $\mu g/m^3$ noncarcinogenic TWA
50 $\mu g/m^3$ noncarcinogenic (15-min sample)

OSHA Standards: OSHA air standards have been set for several chromium compounds. Most recognized or suspected carcinogenic chromium compounds have ceiling limits of 100 $\mu g/m^3$.

ACGIH Threshold Limit Values: Several chromium compounds have TWAs ranging from 0.05 to 0.5 mg/m^3. Chromite ore processing (chromate), certain water insoluble Cr VI compounds, and chromates of lead and zinc are recognized or suspected human carcinogens and have 0.05 mg/m^3 TWAs.

REFERENCES

AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS (ACGIH). 1980. Documentation of the Threshold Limit Values. 4th ed. Cincinnati, Ohio. 488 pages

INTERNATIONAL AGENCY FOR RESEARCH ON CANCER (IARC). 1980. IARC Monograph on the Evaluation of the Carcinogenic Risk of Chemicals to Humans. Vol. 23: Some Metals and Metallic Compounds. World Health Organization, Lyon, France

n-DIOCTYL PHTHALATE

Summary

n-Dioctyl phthalate (DOP) was fetotoxic and caused developmental abnormalities in one study in rats. It is a severe eye irritant and a mild skin irritant in rabbits.

CAS Number: 117-84-0

Chemical Formula: $C_6H_4(COOC_8H_{17})_2$

IUPAC Name: Di-n-octyl phthalic acid

Important Synonyms and Trade Names: o-Benzenedicarboxylic acid, dioctyl ester, phthalic acid, dioctyl ester, DOP, octyl phthalate

Chemical and Physical Properties

Molecular Weight: 391.0

Boiling Point: 220°C at 5 mm Hg

Melting Point: -25°C

Specific Gravity: 0.978

Solubility in Water: 3 mg/liter at 25°C

Log Octanol/Water Partition Coefficient: 9.2

Vapor Pressure: Less than 0.2 at 150°C

Transport and Fate

Although relatively little specific information concerning n-dioctyl phthalate (DOP) is available, the environmental transport and fate of this compound can be largely inferred from data for phthalate esters as a group. DOP probably hydrolyzes in surface waters, but at such a slow rate that this process would not be significant under most conditions. Photolysis and oxidation do not appear to be important environmental fate processes. Some atmospheric dispersion of DOP that is vaporized during manufacture, use, or disposal can occur. However, volatilization does not appear to be a significant transport process, especially in aquatic systems.

Adsorption onto suspended solids and particulate matter, and complexation with natural organic substances are probably the most important environmental transport processes for DOP. The high log octanol/water partition coefficient for this compound suggests that it would be readily adsorbed onto particulates high in organic matter. This contention is supported by the fact that phthalate esters are commonly found in freshwater and saltwater sediment samples. DOP can be dispersed through aquatic and terrestrial systems by complexation with natural organic materials. It readily interacts with the fulvic acid present in humic substances in water and soil, forming a complex that is very soluble in water.

A variety of unicellular and multicellular organisms take up and accumulate DOP, and bioaccumulation is considered an important fate process. Biodegradation is also an important fate process in aquatic systems and soil. DOP is biodegraded under most environmental conditions, and it can be metabolized by multicellular organisms. It is unlikely that long-term bioaccumulation or biomagnification occurs.

Analysis based on EPA's Exposure Analysis Modeling System indicates that chemical and biochemical transformation processes for DOP are slow and that transport processes will predominate both in ecosystems that have long retention times (ponds, lakes) and those that have short retention times (rivers). If the input of DOP remains constant, its concentration is expected to increase in aquatic ecosystems. If input stops, the DOP present is expected to persist for an undetermined length of time. The oceans are the ultimate sink for DOP introduced into unimpeded rivers.

Health Effects

There is no evidence to suggest that DOP is carcinogenic or mutagenic. Fetotoxicity and developmental abnormalities were observed in the offspring of rats administered 5 g/kg intraperitoneal injections on days 5 to 15 of gestation. No other evidence for reproductive or teratogenic effects has been reported.

Very little information exists concerning the chronic and acute toxicity of DOP. A chronic LD_{50} value of 1.3 mg/kg was determined for mice receiving intraperitoneal injections of DOP 5 days/week for 10 weeks. DOP has a relatively low acute toxicity in mice with reported oral and intraperitoneal LD_{50} values of 6.5 and 65 g/kg, respectively. This chemical is a severe eye irritant and a mild skin irritant in rabbits.

Toxicity to Wildlife and Domestic Animals

Seven to eight-day LC_{50} values for freshwater species range from 690 to 42,000 ug/liter. A 26-day LC_{50} value of 149,200 µg/liter was reported for rainbow trout.

Freshwater snails and mosquito larvae were found to have bioconcentration factors of 13,600 and 9,400, respectively, in model ecosystems. The bioconcentration factor for a freshwater alga is 28,500.

Regulations and Standards

Ambient Water Quality Criteria (USEPA):

The available data are not adequate for establishing criteria.

REFERENCES

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH). 1984. Registry of Toxic Effects of Chemical Substances. Data Base. Washington, D.C. July 1984

NATIONAL TOXICOLOGY PROGRAM AND THE INTERAGENCY REGULATORY LIAISON GROUP. 1982. The Conference on Phthalates. Environ. Health Perspect. 45:1-153

U.S. ENVIRONMENTAL PROTECTION AGENCY (USEPA). 1979. Water-Related Environmental Fate of 129 Priority Pollutants. Washington, D.C. December 1979. EPA 440/4-79-029

U.S. ENVIRONMENTAL PROTECTION AGENCY (USEPA). 1980. Ambient Water Quality Criteria for Phthalate Esters. Office of Water Regulations and Standards, Criteria and Standards Division, Washington, D.C. October 1980. EPA 440/5-80-067

LEAD

Summary

Lead is a heavy metal that exists in one of three oxidation states, 0, +2, and +4. There is suggestive evidence that some lead salts are carcinogenic, inducing kidney tumors in mice and rats. Lead is also a reproductive hazard, and it can adversely affect the brain and central nervous system by causing encephalopathy and peripheral neuropathy. Chronic exposure to low levels of lead can cause subtle learning disabilities in children. Exposure to lead can also cause kidney damage and anemia, and it may have adverse effects on the immune system.

CAS Number: 7439-92-1

Chemical Formula: Pb

IUPAC Name: Lead

Chemical and Physical Properties

Atomic Weight: 207.19

Boiling Point: 1,740°C

Melting Point: 327.502°C

Specific Gravity: 11.35 at 20°C

Solubility in Water: Insoluble; some organic compounds are soluble

Solubility in Organics: Soluble in HNO_3 and hot, concentrated H_2SO_4

Transport and Fate

Some industrially produced lead compounds are readily soluble in water (USEPA 1979). However, metallic lead and the common lead minerals are insoluble in water. Natural compounds of lead are not usually mobile in normal surface or groundwater because the lead leached from ores is adsorbed by ferric hydroxide or combines with carbonate or sulfate ions to form insoluble compounds.

Movement of lead and its inorganic and organolead compounds as particulates in the atmosphere is a major environmental transport process. Lead carried in the atmosphere can be removed by either wet or dry deposition. Although little evidence is available concerning the photolysis of lead compounds in natural waters, photolysis in the atmosphere occurs readily. These atmospheric processes are important in determining the form of lead entering aquatic and terrestrial systems.

The transport of lead in the aquatic environment is influenced by the speciation of the ion. Lead exists mainly as the divalent cation in most unpolluted waters and becomes adsorbed into particulate phases. However, in polluted waters organic complexation is most important. Volatilization of lead compounds probably is not important in most aquatic environments.

Sorption processes appear to exert a dominant effect on the distribution of lead in the environment. Adsorption to inorganic solids, organic materials, and hydrous iron and manganese oxides usually controls the mobility of lead and results in a strong partitioning of lead to the bed sediments in aquatic systems. The sorption mechanism most important in a particular system varies with geological setting, pH, Eh, availability of ligands, dissolved and particulate ion concentrations, salinity, and chemical composition. The equilibrium solubility of lead with carbonate, sulfate, and sulfide is low. Over most of the normal pH range, lead carbonate, and lead sulfate control solubility of lead in aerobic conditions, and lead sulfide and the metal control solubility in anaerobic conditions. Lead is strongly complexed to organic materials present in aquatic systems and soil. Lead in soil is not easily taken up by plants, and therefore its availability to terrestrial organisms is somewhat limited.

Bioaccumulation of lead has been demonstrated for a variety of organisms, and bioconcentration factors are within the range of 100-1,000. Microcosm studies indicate that lead is not biomagnified through the food chain. Biomethylation of lead by microorganisms can remobilize lead to the environment. The ultimate sink of lead is probably the deep oceans.

Health Effects

There is evidence that several lead salts are carcinogenic in mice or rats, causing tumors of the kidneys after either oral or parenteral administration. Data concerning the carcinogenicity of lead in humans are inconclusive. The available data are not sufficient to evaluate the carcinogenicity of organic lead compounds or metallic lead. There is equivocal evidence that exposure to lead causes genotoxicity in humans and animals. The available evidence indicates that lead presents

a hazard to reproduction and exerts a toxic effect on conception, pregnancy, and the fetus in humans and experimental animals (USEPA 1977, 1980).

Many lead compounds are sufficiently soluble in body fluids to be toxic (USEPA 1977, 1980). Exposure of humans or experimental animals to lead can result in toxic effects in the brain and central nervous system, the peripheral nervous system, the kidneys, and the hematopoietic system. Chronic exposure to inorganic lead by ingestion or inhalation can cause lead encephalopathy, and severe cases can result in permanent brain damage. Lead poisoning may cause peripheral neuropathy in adults and children, and permanent learning disabilities that are clinically undetectable in children may be caused by exposure to relatively low levels. Short-term exposure to lead can cause reversible kidney damage, but prolonged exposure at high concentrations may result in progressive kidney damage and possibly kidney failure. Anemia, due to inhibition of hemoblobin synthesis and a reduction in the life span of circulating red blood cells, is an early manifestation of lead poisoning. Several studies with experimental animals suggest that lead may interfere with various aspects of the immune response.

Toxicity to Wildlife and Domestic Animals

Freshwater vertebrates and invertebrates are more sensitive to lead in soft water than in hard water (USEPA 1980, 1983). At a hardness of about 50 mg/liter $CaCO_3$, the median effect concentrations for nine families range from 140 µg/liter to 236,600 µg/liter. Chronic values for *Daphnia magna* and the rainbow trout are 12.26 and 83.08 µg/liter, respectively, at a hardness of about 50 mg/liter. Acute-chronic ratios calculated for three freshwater species ranged from 18 to 62. Bioconcentration factors, ranging from 42 for young brook trout to 1,700 for a snail, were reported. Freshwater algae show an inhibition of growth at concentrations above 500 µg/liter.

Acute values for twelve saltwater species range from 476 µg/liter for the common mussel to 27,000 µg/liter for the soft-shell clam. Chronic exposure to lead causes adverse effects in mysid shrimp at 37 µg/liter, but not at 17 µg/liter. The acute-chronic ratio for this species is 118. Reported bioconcentration factors range from 17.5 for the Quahog clam to 2,570 for the blue mussel. Saltwater algae are adversely affected at approximate lead concentrations as low as 15.8 µg/liter.

Although lead is known to occur in the tissue of many free-living wild animals, including birds, mammals, fishes, and invertebrates, reports of poisoning usually involve waterfowl. There is evidence that lead, at concentrations occasionally found near roadsides and smelters, can eliminate or reduce

populations of bacteria and fungi on leaf surfaces and in soil. Many of these microorganisms play key roles in the decomposer food chain.

Cases of lead poisoning have been reported for a variety of domestic animals, including cattle, horses, dogs, and cats. Several types of anthropogenic sources are cited as the source of lead in these reports. Because of their curiosity and their indiscriminate eating habits, cattle experience the greatest incidence of lead toxicity among domestic animals.

Regulations and Standards

Ambient Water Quality Criteria (USEPA):

Aquatic Life (Proposed Criteria)

The concentrations below are for active lead, which is defined as the lead that passes through a 0.45-µm membrane filter after the sample is acidified to pH 4 with nitric acid.

Freshwater

Acute toxicity: $e^{(1.34\ [\ln(\text{hardness})] - 2.014)}$ µg/liter

Chronic toxicity: $e^{(1.34\ [\ln(\text{hardness})] - 5.245)}$ µg/liter

Saltwater

Acute toxicity: 220 µg/liter
Chronic toxicity: 8.6 µg/liter

Human Health

Criterion: 50 µg/liter

Primary Drinking Water Standard: 50 µg/liter

NIOSH Recommended Standard: 0.10 mg/m^3 TWA (inorganic lead)

OSHA Standard: 50 µg/m^3 TWA

ACGIH Threshold Limit Values:

0.15 mg/m^3 TWA (inorganic dusts and fumes)
0.45 mg/m^3 STEL (inorganic dusts and fumes)

REFERENCE NO. 19

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

VILLAGE OF
WALDEN,
NEW YORK
ORANGE COUNTY

ONLY PANEL PRINTED

COMMUNITY-PANEL NUMBER
360635 0001 B

EFFECTIVE DATE:

AUGUST 15, 1984

Federal Emergency Management Agency

CORPORATE LIMITS

KEY TO MAP

500-Year Flood Boundary	
100-Year Flood Boundary	ZONE B
Zone Designations*	
100-Year Flood Boundary	ZONE B
500-Year Flood Boundary	
Base Flood Elevation Line With Elevation In Feet**	513
Base Flood Elevation in Feet Where Uniform Within Zone**	(EL 987)
Elevation Reference Mark	RM7×
Zone D Boundary	
River Mile	•M1.5

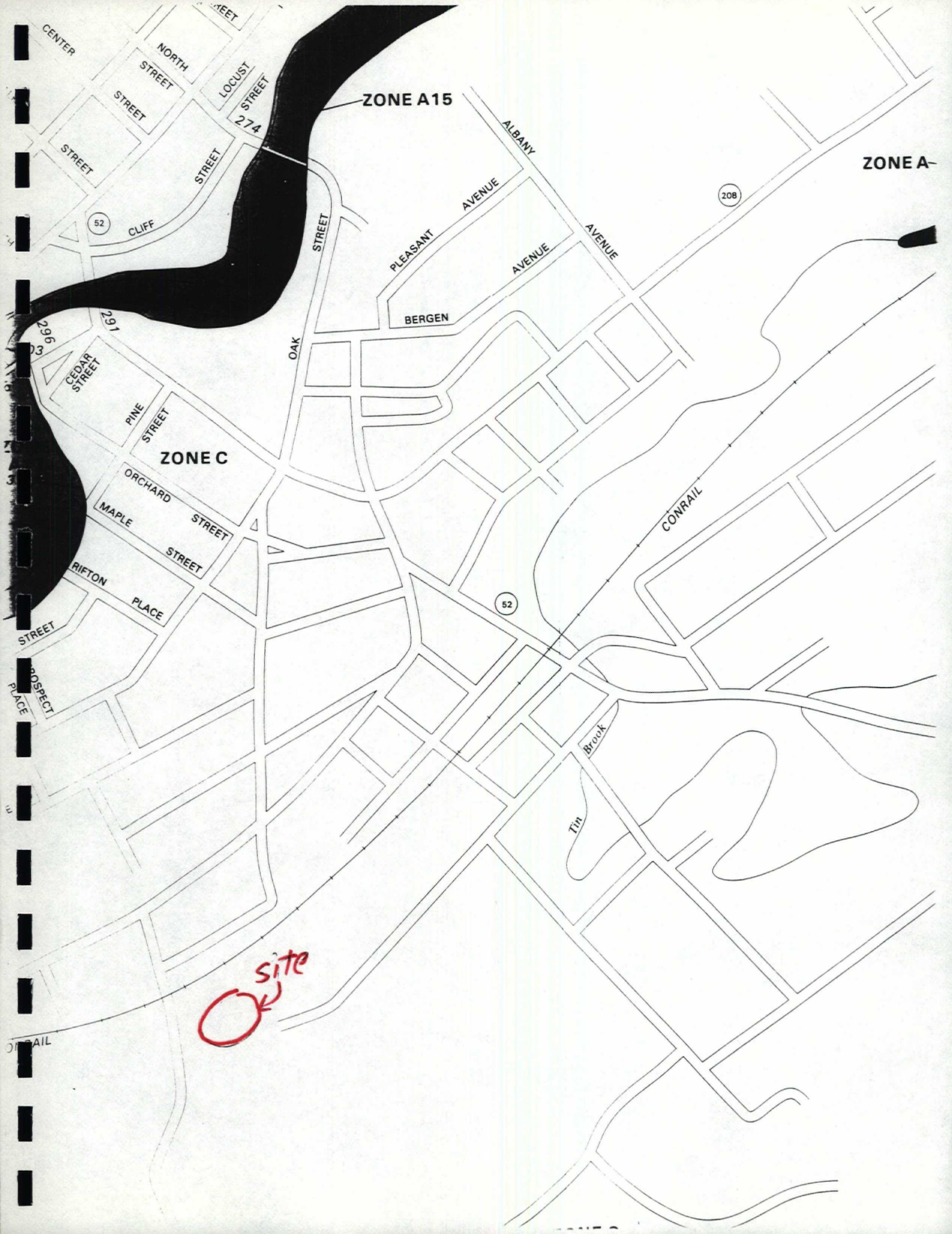
**Referenced to the National Geodetic Vertical Datum of 1929

*EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
AO	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

NOTES TO USER

Certain areas not in the special flood hazard areas (zones A and V)


ZONE A15
ZONE A-
ZONE C
CENTER
NORTH
STREET
STREET
LOCUST
STREET
274
STREET
STREET
CLIFF
52
ALBANY
AVENUE
208
PLEASANT
AVENUE
AVENUE
BERGEN
OAK
STREET
296
291
CEDAR
STREET
PINE
STREET
ORCHARD
STREET
MAPLE
STREET
RIFTON
PLACE
STREET
PROSPECT
PLACE
52
CONRAIL
Tin
Brook
site
CONRAIL

REFERENCE NO. 20

GROUND-WATER RESOURCES OF ORANGE AND ULSTER COUNTIES, NEW YORK

By Michael H. Frimpter

ABSTRACT

The ground-water resources of Orange and Ulster Counties, in southeastern New York, occur in Pleistocene sand and gravel deposits of glacial origin and in Precambrian and Paleozoic consolidated rocks.

The sand and gravel aquifers generally are small and restricted to the valley areas, but some can be recharged rapidly and, therefore, yield large quantities of water. The aquifer in the valleys of the Neversink River and Basher Kill between Port Jervis and Summitville, with an estimated ground-water yield of about 100 mgd (million gallons per day) could be the most productive aquifer in southeastern New York exclusive of Long Island. An additional 20 mgd might be produced from similar deposits between Phillipsport and Wawarsing. Numerous smaller sand and gravel aquifers are scattered throughout the valleys of the two counties. Major parts of the two larger stream valleys, the Wallkill River and Esopus Creek valleys, do not contain sand and gravel aquifers but are filled with relatively impermeable clay and silt.

The consolidated rock has secondary porosity and is a dependable aquifer for small domestic supplies, but not for municipal and industrial supplies. Notable exceptions are the brecciated fault zones in southeastern Orange County and in the carbonate rocks deep in the Rondout Creek and Sandburg Creek valleys.

Iron, manganese, and hydrogen sulfide are the most common and troublesome chemical pollutants of the ground water in Orange and Ulster Counties but the water is generally of good chemical quality for public water supplies.

INTRODUCTION

The basic water-supply problem facing Orange and Ulster Counties is the development of additional water sources capable of supporting the counties' rapidly increasing population and industrial activity. Of prime importance to the solution of this problem is the location and appraisal of the ground-water and surface-water resources of the two counties.

[redacted] yield aquifers of the two-county area are not evenly distributed, a situation which creates many of the problems faced by water-supply planners. A difficult problem that must be solved for the water-supply planner is the determination of the potential yields of the aquifers once they have been located.

Rural homes and farms throughout New York State rely on wells for dependable supplies of good quality water. Adequate domestic water supplies may be obtained from wells drilled almost anywhere in Orange and Ulster Counties; for the owner of a rural home, water-supply cost is a question of well depth.

PURPOSE AND SCOPE

This report presents the results of an investigation of the ground-water resources of Orange and Ulster Counties, N.Y., and is part of a continuing program of hydrologic investigations made in cooperation with the Water Resources Commission of the State of New York. The purpose of these studies is to provide the data needed for planning the development of the natural water resources of the State.

The aquifers discussed in this report were located and their potential yields determined through detailed geologic and hydrologic study. Greatest emphasis was placed on delineating and evaluating those areas where municipal and industrial supplies might be developed. The question of how deep to drill a well was explored by geologic investigation and by statistical analysis of data from existing wells. Water-quality problems, particularly that of hydrogen sulfide content, also were investigated.

An inventory of over 1,700 wells and springs was made during the course of study. Lithologic and hydrologic data were collected from more than 470 test borings, and chemical analyses were made of 128 samples of the ground water. Water-level fluctuations were recorded continuously in four wells, and periodic measurements were made in three additional wells. Rock and soil exposures throughout the two-county area, as well as drill cores and cuttings, were examined for geologic and hydrologic information. Records of the wells and springs, lithologic logs, and chemical analyses of water samples collected for this study are reported by Frimpter (1970) in "Ground-water basic data, Orange and Ulster Counties, New York."

ACKNOWLEDGMENTS

This report was prepared in cooperation with the New York State Conservation Department, Division of Water Resources, F. W. Montanari, Director, and under the supervision of Ralph C. Heath and Garald G. Parker, successive District Chiefs, U.S. Geological Survey, Albany, N.Y.

The many residents of Orange and Ulster Counties who supplied information on their wells and granted permission to measure water levels and the superintendents of municipal water systems and other public officials who supplied test data and records have contributed to the success of this study. The following well drillers gave freely from their valuable records and experience: Roy DeWitt, Sam DeWitt, David Tompkins, Bruce Tompkins, Andrew Wild, Ray Gillespie, William Diegel and James Eckerson. C. W. Lauman and Co., Inc.; Metcalf and Eddy, Engineers; Hazen and Sawyer, Engineers; Eustance and Horowitz, Engineers; and Artersian Well and Equipment Co., Inc., supplied well data. The New York City Board of Water Supply, the Port of New York Authority, and the New York State Department of Transportation supplied lithologic logs from test borings. Officials of the New York State Health Department supplied lists of public water supplies and their superintendents.

LOCATION AND PHYSICAL FEATURES OF THE AREA

Orange and Ulster Counties are located in the southeastern corner of New York (fig. 1) and are bounded by the Hudson River and Rockland County on the east and by the states of Pennsylvania and New Jersey on the south. Ulster County lies immediately north of Orange

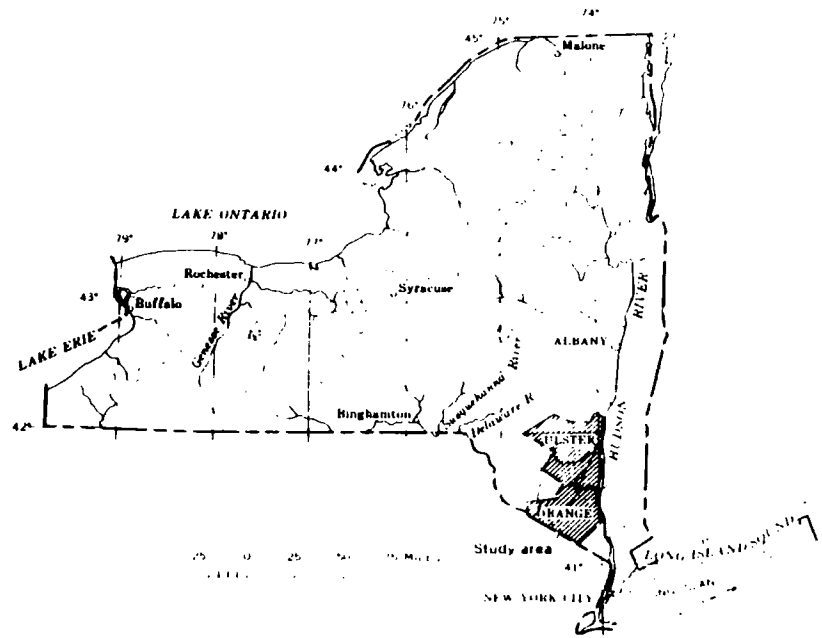


FIGURE 1.—Location of the study area.

[redacted] the [redacted]re b[redacted]ed o[redacted] wes[redacted] north by Sullivan, [redacted]ware, and Greene Counties. The area of Orange County is 834 [redacted]uare miles and the area of Ulster County is 1,137 square miles. The two-county area has been divided into three physiographic provinces (fig. 2): the New England, the Valley and Ridge, and the Appalachian Plateaus (Fenneman, 1938). Variations of bedrock lithology are responsible for the development of these distinct physiographic provinces and are shown on plate 1. The southeastern boundary of Orange County lies in the New England province and is mostly a forested area. This part of the New England province is known as the Hudson Highlands and consists mainly of a State-owned park and the Federal military reservation at West Point. Altitudes in the Highlands range

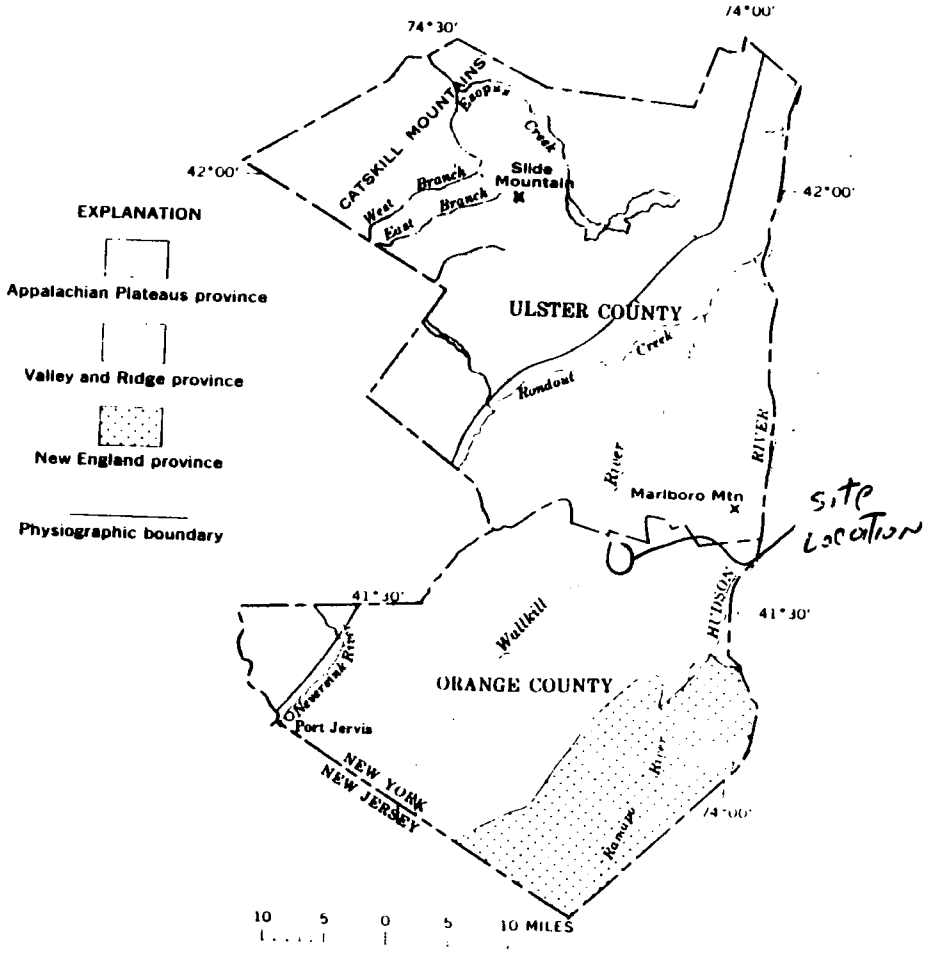


FIGURE 2.—Physiographic provinces.

from near sea level at the Hudson River to about 1,400 feet above mean sea level, and the terrain is composed of erosion-resistant granite and other crystalline rocks. Woodbury Creek and the Ramapo River, as well as numerous mountain brooks, drain this area and add to its scenic beauty.

North of the New England province, the Valley and Ridge province has a low rolling relief. Most of this land has been cleared for farms and orchards; only the more rugged and less tillable areas, such as Shawangunk and Marlboro Mountains, remain forested and sparsely populated. The Valley and Ridge province is underlain by alternating layers of hard sandstone and soft shale that were compressed and crumpled by pressure exerted from the southeast. The long axes of the wrinkle-like folds in the crumpled rock layers consequently trend northeast-southwest. Different rates of erosion of these tilted layers of hard and soft rock give rise to the sequence of narrow ridges and valleys typical of this province. Most of the low lying area of the province is drained northward by the Wallkill River. Along the northwest boundary of the province, the Neversink River, Rondout Creek and Esopus Creek drain narrow valleys developed over soluble limestone and dolostone bedrock. The valleys of these three streams form a trough extending from the southwest corner of Orange County at Port Pervis to the northeast corner of Ulster County.

The Appalachian Plateaus province lies in the western and northern parts of the study area and is a rugged, forested area that is sparsely populated. The plateau in Orange County, northwest of Port Jervis, is generally an area of elevated flatland and is underlain by nearly horizontal beds of sandstone and shale where a few streams have incised steep-walled valleys. In northwestern Ulster County, however, the sandstone and shale are thicker and the land rises higher than the rest of the plateau. In this area streams have eroded the plateau to a greater extent and no flatland lies between the steep-walled stream valleys. The uneroded remnants of the plateau form the high sharp-peaked Catskill Mountains. The peak of Slide Mountain, 4,204 feet above sea level, is the highest in the Catskill Mountains. Although the Catskill Mountain area is generally not suitable for farming or industry, it has enormous potential for recreation.

SURFACE-WATER RESOURCES

The largest single source of water in Orange and Ulster Counties is the Hudson River. The mean annual discharge at Poughkeepsie for the period 1947 to 1965 was 17,700 cfs (cubic feet per second) and the lowest mean monthly discharge was 3,030 cfs occurring in September 1964 (Giese and Barr, 1967, p. 14-15). During periods of low dis

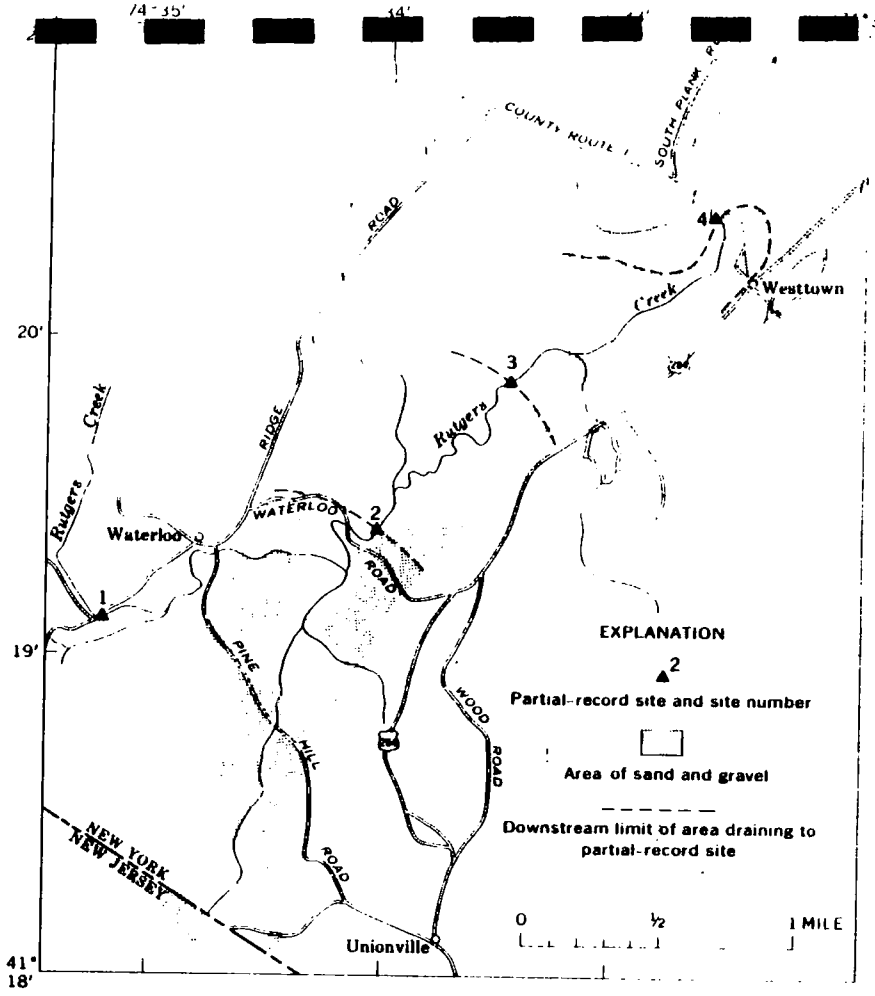


Figure 19.—Location of partial record sites and sand and gravel deposits in the Westtown to Unionville part of the Rutgers Creek basin.

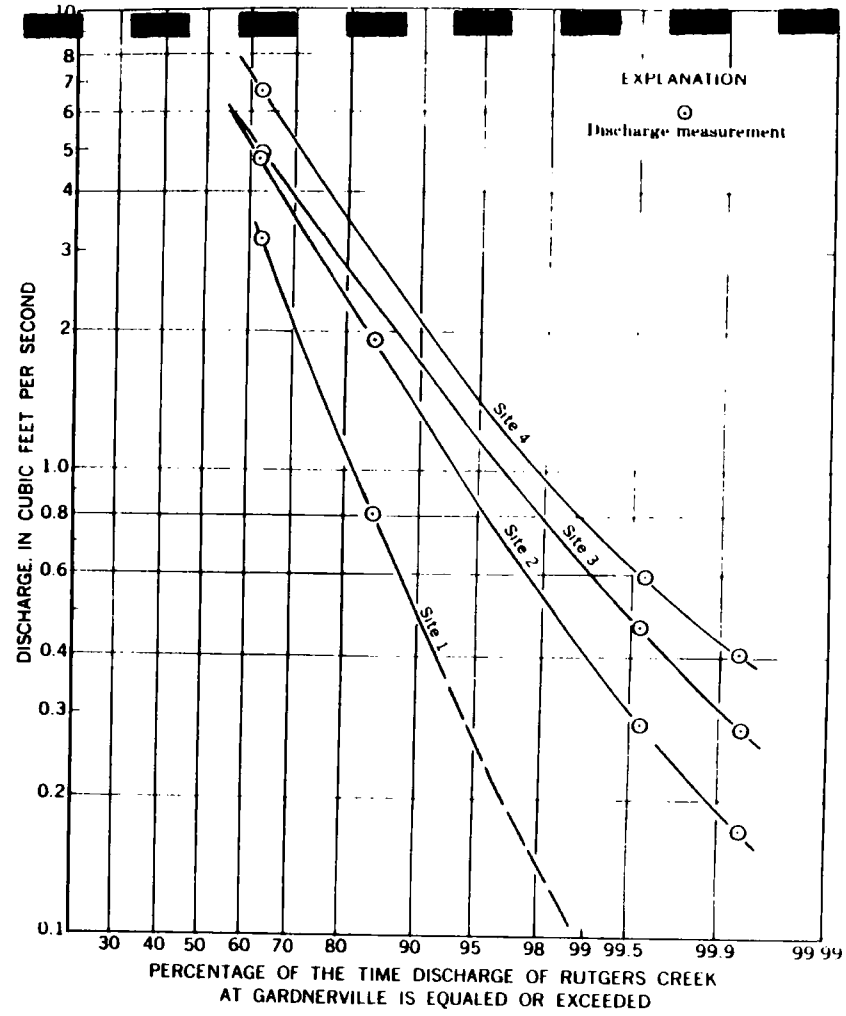


Figure 20.—Approximate duration curves for partial record sites on Rutgers Creek. Site numbers are those shown in figure 19 and in table 1.

This recharge rate of 1.6 mgd is also an estimate of the potential yield of these aquifers.

No screened wells have been constructed in the aquifers, but open-end wells 120–432–1 and –2 are domestic supply wells tapping the gravel at Westtown. The sand and gravel aquifer is preferred in this area because wells tapping the deeper shale bedrock frequently yield water containing hydrogen sulfide.

SOUTHERN WALLKILL RIVER VALLEY

The western side of the Wallkill River valley between Denton in Orange County and the New Jersey State line contains a sand and gravel aquifer under organic soil and clay (aquifer U, pl. 3). The aquifer is exposed at U.S. Route 6 near Denton, near Pellets Island, east of Breeze Hill, and at a few other locations (pl. 2). Test-boring data presented in figure 21 indicate the extent and geologic structure

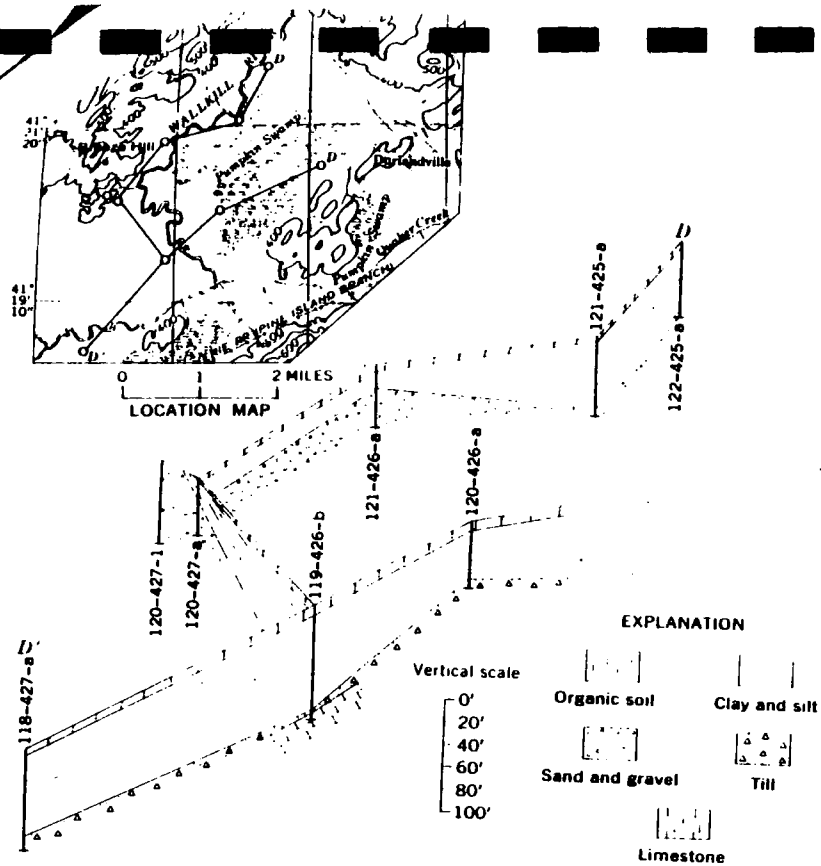


FIGURE 21.—Fence diagram of southern Wallkill River valley.

of the unconsolidated deposits in this area. The aquifer's eastern boundry is unboubtedly more irregular than indicated by the dashed line on plate 2.

The permeability of the aquifer is high, and individual wells may yield as much as 500 gpm. The rate of recharge, however, ultimately limits the safe yield of the aquifer. Recharge occurs primarily from precipitation falling directly on the limited surface exposures of sand and gravel. Based on the area of outcrop, the annual recharge rate from direct infiltration of precipitation to this aquifer is about 1 mgd.

The clay and silt lake sediments that cover most of the aquifer transmit water very slowly. In effect, these lake deposits are a barrier to water which might otherwise enter the aquifer. Very little water could be induced to flow from the streams to the buried aquifer because the streams rarely cross aquifer outcrops.

Under certain conditions the sand and gravel aquifer might receive a small amount of recharge from the organic soil. There is only a small zone where the organic soil and the aquifer are not separated by an impermeable clay layer. Normally, the water table slopes down from the sand and gravel recharge areas toward the areas of organic soil. This slope could be reversed by removing water from storage in the aquifer, and reversal of the gradient would cause water in the porous organic soil to flow into the aquifer (fig. 22). This situation was created by pumping well 121-416-1 in Chester, which is in a similar hydrogeologic situation. Withdrawing water and causing recharge in this manner would partly dewater the organic soil and have an undesirable effect on crops, as well as accelerate the rate of oxidation of the soil. As an example of the availability of water in organic soil, the city of Middletown was able to pump over 0.5 mgd from ditches dug in peat in a small basin near Shawangunk Lake during the drought in 1965.

Insufficient data are available to estimate the quantity of water which might enter the aquifer from the organic soil. Additional induced recharge could be obtained and aquifer yield increased by routing surface streams over areas where the aquifer is exposed.

Very few high-yield wells have been constructed in this aquifer. Screened wells 121-423-3 and -4 supply water for the New Hampton Training School Annex, but attempts to locate a large ground-water supply for the main campus of the New Hampton Training School in Denton have been unsuccessful. Dug wells and drainage ditches in the organic soil have been utilized as sources of irrigation water in the area.

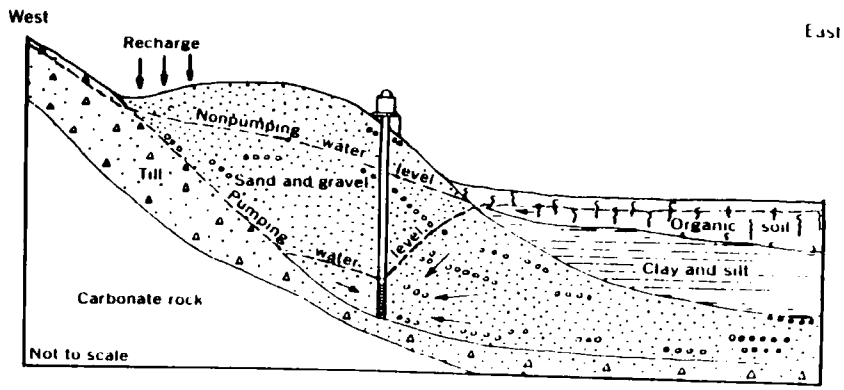


FIGURE 22. Idealized view of the hydrogeologic conditions in an aquifer in the Wallkill River valley.

REFERENCE NO. 21

NUS CORPORATION TELECON NOTE

CONTROL NO:	DATE:	TIME:
02-8703-45	09/22/88	1440

DISTRIBUTION:

File · Champion International

BETWEEN:	OF:	PHONE:
Theresa Harrison	NYSDEC Region 3	914 (255) 5453

AND: Joseph Murtaugh, Joseph Murtaugh (NUS)

DISCUSSION:

RE: verified the air permits for Champion International Corp. Permit No. A334205 0155 000311. Issued on 12/86. (application for permit to construct and operate).

Theresa Harrison will call me back later to verify the RCRA permit and SPDES permit.

ACTION ITEMS:

NUS 067 REVISED 0581

REFERENCE NO. 22

NUS CORPORATION TELECON NOTE

CONTROL NO:	DATE:	TIME:
02-8703-45	10/3/88	1130

DISTRIBUTION:

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BETWEEN:	OF:	PHONE:
Theresa Harrison / William More	NYSDEC Region 3	914 (255) 5453

AND: Joseph Murtaugh, Joseph Murtaugh (NUS)

DISCUSSION:

RE: verified the RCRA permit for Champion International Corp.
RCRA permit no: NYD089756234 0.
verified the SPDES permit for Champion International Corp.
SPDES permit no. NY0005720.
Issued on 8/1/82 and its Expiration date is 8/1/87

ACTION ITEMS:

NUS 067 REVISED 0581

REFERENCE NO. 23

NUS CORPORATION
SUPERFUND DIVISION

PROJECT NOTES

TO: File

DATE: January 3, 1989

FROM: Joseph Murtaugh

COPIES:

SUBJECT: Site Slope / Terrain average slope.

REFERENCE: Data for calculations are from the Walden quadrangle topographic map.

$$\text{Site slope} = \left(\frac{\Delta \text{ elevation between sampling pts}}{\Delta \text{ distance between sampling pts.}} \right) \times 100$$

$$= \left(\frac{385' - 355'}{1000'} \right) \times 100 = \left(\frac{30'}{1000'} \right) 100 = 3\%$$

$$\text{Terrain Average Slope} = \left[\frac{(\Delta \text{ elevation between sampling points and the Tin Brook.})}{(\Delta \text{ distance between sampling points and the Tin Brook.})} \right] \times 100$$

$$= \left[\frac{355' - 335'}{1000'} \right] 100 = \left[\frac{20'}{1000'} \right] 100 = 2\%$$

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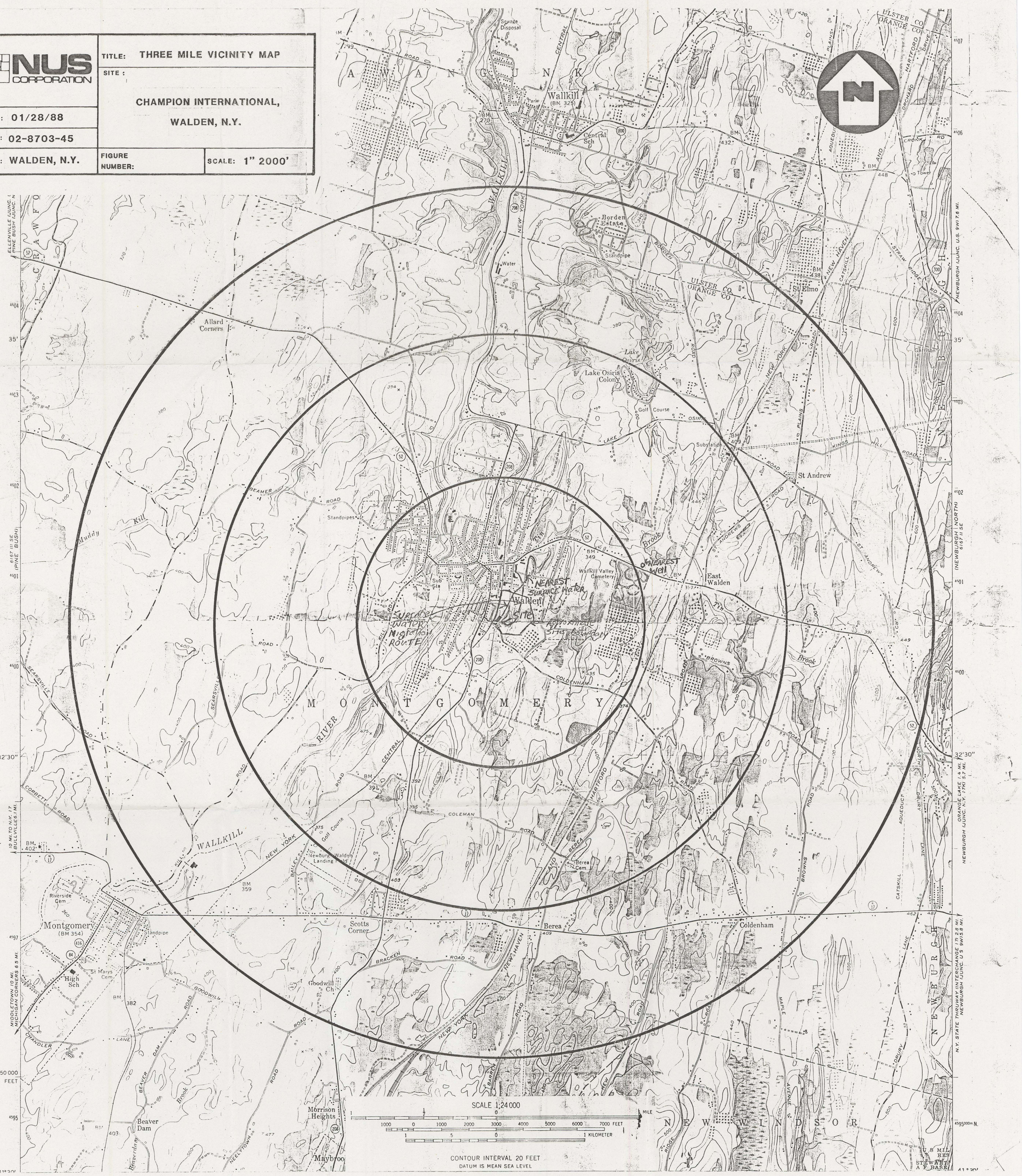
NUS CORPORATION	TITLE: THREE MILE VICINITY MAP	
	SITE: CHAMPION INTERNATIONAL, WALDEN, N.Y.	
DATE: 01/28/88		
TDD: 02-8703-45		
QUAD: WALDEN, N.Y.	FIGURE NUMBER:	SCALE: 1" 2000'