EA REPORT DEC63A

ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES IN THE STATE OF NEW YORK PHASE I INVESTIGATIONS

NTU CIRCUITS, INC.
TOWN OF BABYLON, SUFFOLK COUNTY
NEW YORK I.D. NO. 152086

Prepared for

Division of Solid and Hazardous Waste
New York State Department of Environmental Conservation
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A Division of EA Engineering, Science, and Technology, Inc.

June 1987

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1. EXECUTIVE SUMMARY

The NTU Circuits, Inc. site (New York I.D. No. 152086 and EPA I.D. No. "New") is the former business location of NTU Circuits, where they manufactured printed circuit boards for electric applications. NTU leased the eastern portion of a building located at 60 Dale Street, Town of Babylon, Suffolk County, New York (Figures 1-1 and 1-2 and Photos 1 through 7) between 1978 and 1983. Spectrum Finishing Corp. is the current owner of the building, having purchased the property from Mr. James Gray in 1981. The site is located in an industrial park.

Six leach pools were present at the site during NTU's operations. NTU Circuits was repeatedly notified by the Suffolk County Department of Health Services (SCDHS) that the contents of the leaching pools were in violation of ground-water effluent standards and NTU's SPDES permit. Samples collected from the pools by SCDHS from 1979 until 1982 contained elevated levels of copper, cadmium, lead, silver, iron, flouride, and total solids. Analyses also indicated that the pH of the leachate was often outside the NYS Ground-Water Standards. Site visits by SCDHS staff produced evidence that foamy, bluish liquids were being discharged into the SPDES pool. On two occasions, the pool SD-3 was observed to be overflowing onto the ground and/or into adjacent storm drains.

In 1982, a case was filed against NTU Circuits, Inc. by the New York State Attorney General. The settlement, which took place on 30 April 1982, resulted in NTU having to clean up all six of the existing pools at the site. The company moved to a new site in September of 1983. Approximately two months later, the clean-up plan was implemented based on the Stipulation of

Discontinuence written by the Attorney General. The contaminated liquid was removed from the leach pools and taken to NTU's new building where it was treated in their wastewater treatment system. Three pools (SP-A, SD-2, and SD-3) were then lime slurried, the pipes were concreted closed, and each pool backfilled and paved over. The other pools (SD-7, SD-8, and SD-N1) were allowed to remain open after 1-2 ft of the bottom material was removed and replaced with clean sand.

The cleanup was performed in the presence of SCDHS officials, who affirmed that the leaching pools were cleaned properly. During EA's site inspection on 22 January 1986, it was found that the closed, paved over SD-3 pool had since been reopened. The tampering with this closed pool reportedly occurred after cleaning and closure by NTU, and did not involve NTU.

The available data are not adequate to prepare a final score. Although there is analytical data for samples of the waste, ground-water quality data are lacking. The preliminary HRS scores for this site are as follows: Migration Score (S_M) = 31.03 (Ground Water Score (S_{gw}) = 53.69, Surface Water Score (S_{sw}) = 0, Air Score (S_a) = 0); Fire and Explosion Score S_{FE} = 0; Direct Contact Score (S_{DC}) = 0.

In order to confirm a release of contaminants from the site to the ground water, a Phase II investigation is recommended. The proposed Phase II study would include the installation of four test boring/monitoring wells, and the collection and analysis of ground-water samples. The estimated cost to complete the Phase II investigation is $50,700.

ordinates:

Latitude: 40° 43' 52"
Longitude: 73° 23' 23"

NTU CIRCUITS, INC.

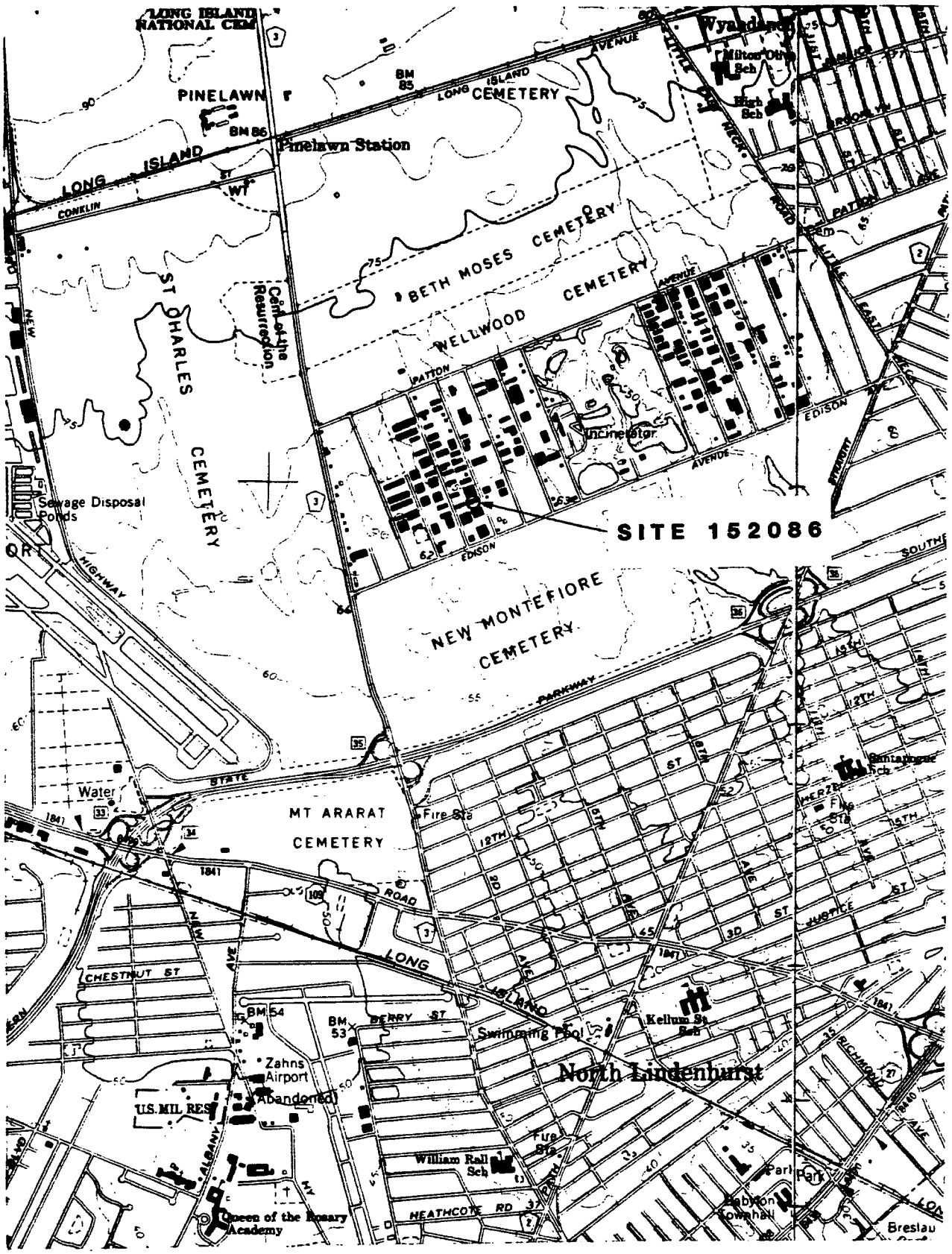
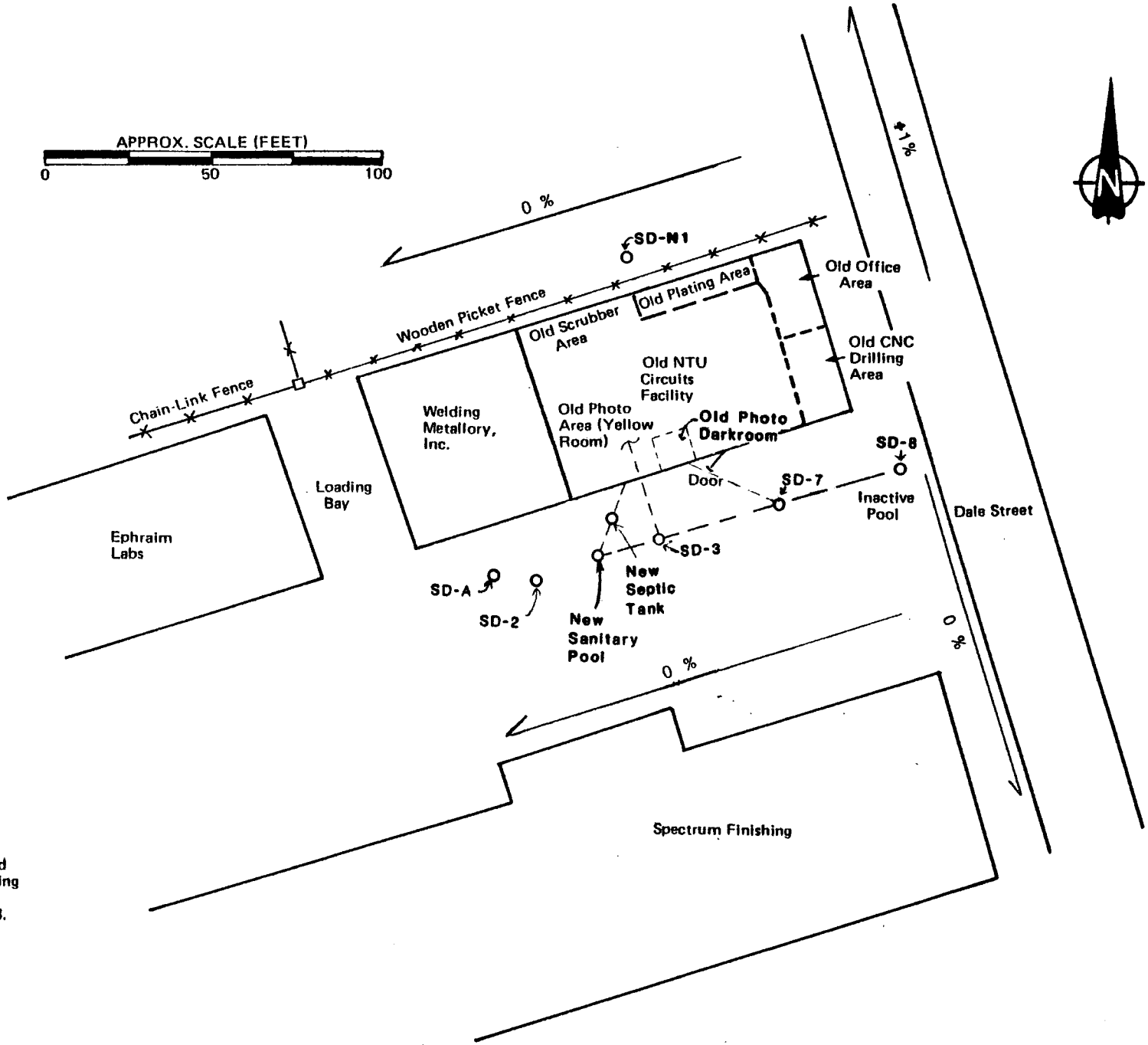


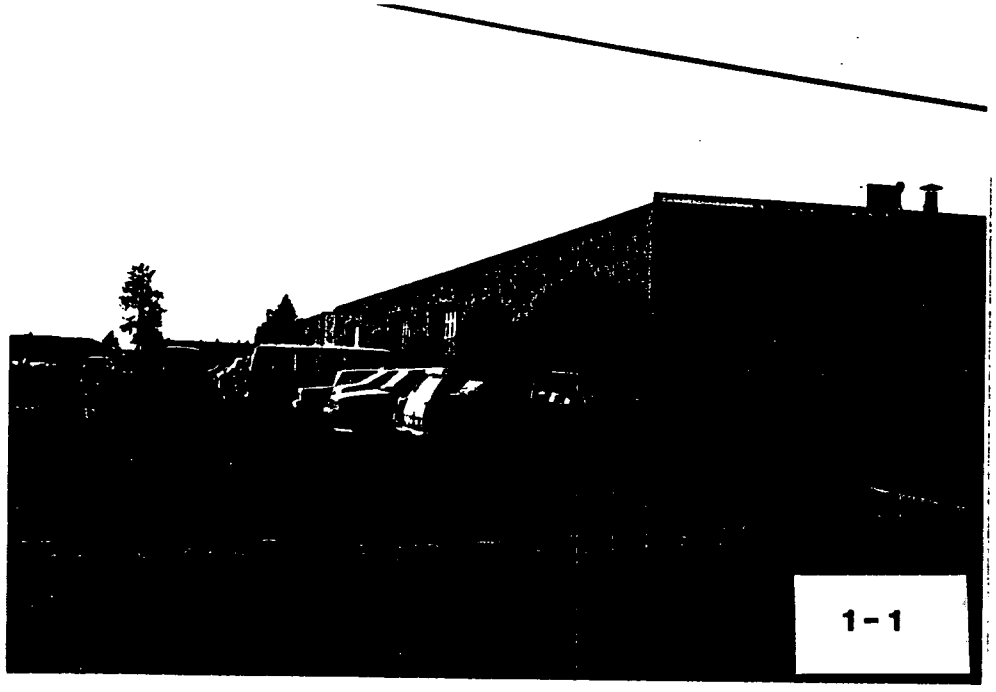
Figure 1-1. **AMITYVILLE & BAY SHORE WEST QUADS.**

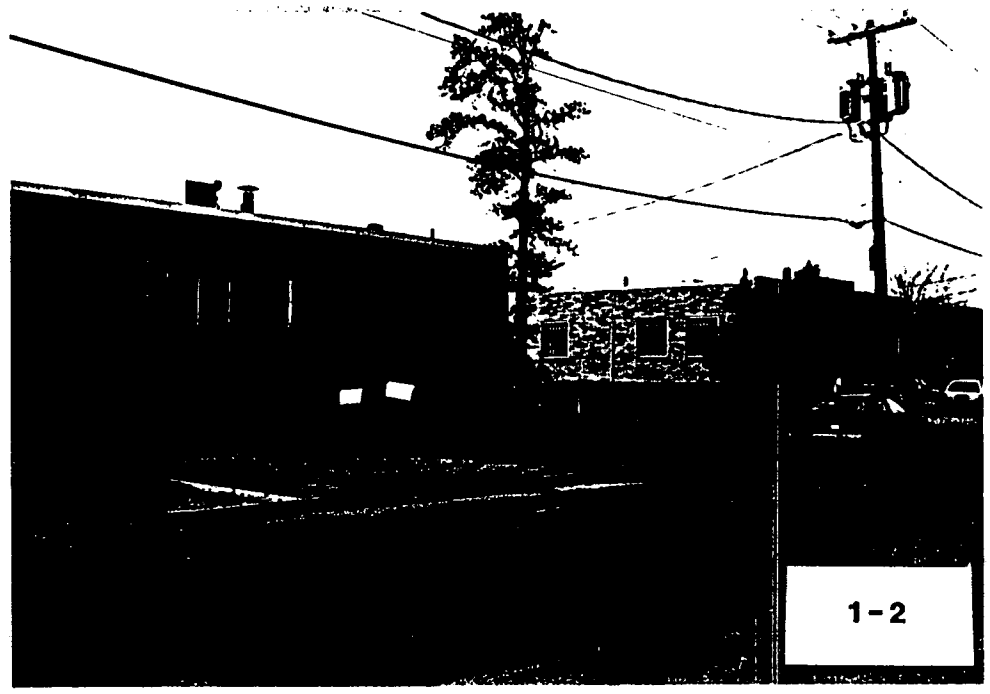
Scale 1: 24,000



NOTE: Base map enlarged from SCDOP Spring 1980 Air Photo No. E632, N4508.

Figure 1-2. Site sketch. NTU Circuits, Inc., 22 January 1986.


1-1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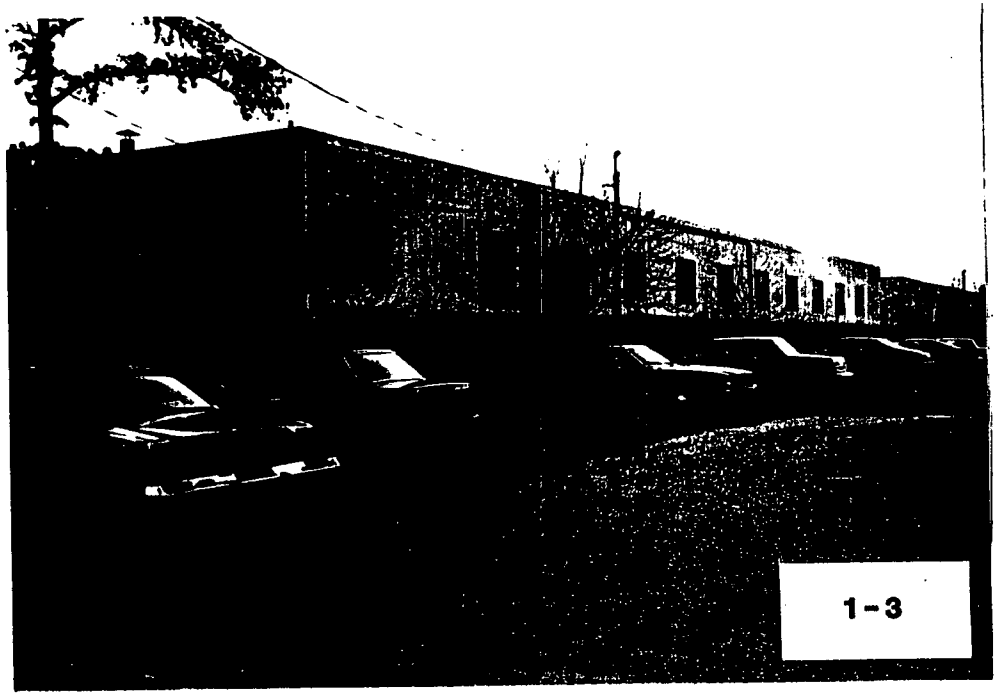
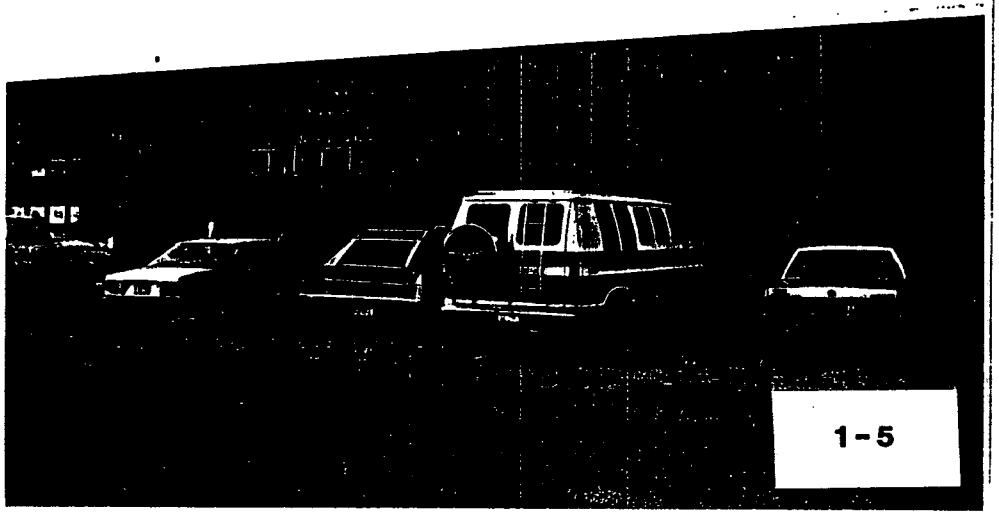
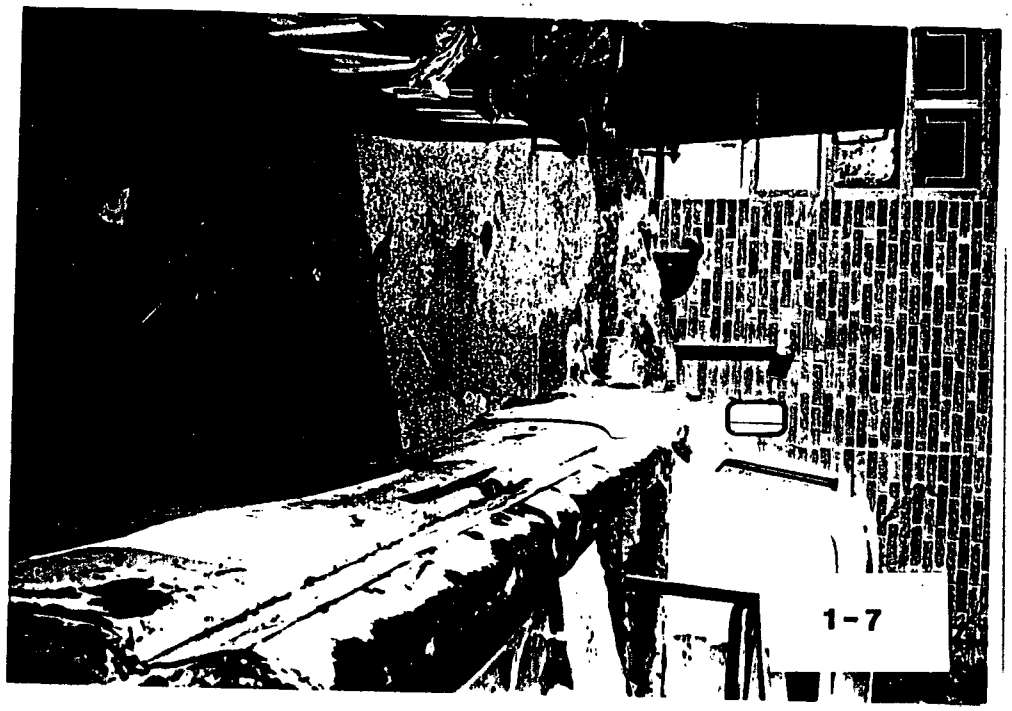

1-3

1-4



1-5

1-6



1-7

PHOTO LOG - NTU CIRCUITS

Photo	Description
1-1 and 1-2	A view approximately west across the south and east (Photo 1-2) sides of the former NTU building.
1-3	A view approximately southwest across the north side of the former NTU building.
1-4 thru 1-6	A panoramic view northwest to north of the south side of the former NTU building. Pool SD-3 is located between the white pickup truck and the dumpster on Photo 1-4. Pool SD-7 is located near the right rear tire of the van on Photo 1-5. Pool SD-8 is located beneath the rear liscense plate of the station wagon on Photo 1-6.
1-7	Close up of the re-exposed grate which covers Pool SD-3.

2. PURPOSE

The NTU Circuits, Inc. site was listed in the New York State Registry of Inactive Hazardous Wastes Sites because hazardous wastes were found in onsite leachpools.

The goal of the Phase I investigation of this site was to: (1) obtain available records on the site history from state, federal, county, and local agencies; (2) obtain information on site topography, geology, local surface water and ground-water use, previous contamination assessments, and local demographics; (3) interview site owners, operators, and other groups or individuals knowledgeable of site operations; (4) conduct a site inspection to observe current conditions; and (5) prepare a Phase I report. The Phase I report includes a preliminary Hazard Ranking Score (HRS), an assessment of the available information, and a recommended work plan for Phase II studies.

3. SCOPE OF WORK

The Phase I investigation of the NTU Circuits, Inc. site involved a site inspection by EA Science and Technology, as well as record searches and interviews. The following agencies or individuals were contacted:

Contact	Information Received
Mr. Wayne DeChirico Quality Control Manager Spectrum Finishing Corp. 50 Dale Street Babylon, New York 11704 (516) 694-0306	Site history/interview
Mr. Richard Gregorski Marketing Manager NTU Circuits, Inc. 1480 North Clinton Avenue Bay Shore, New York 11706 (516) 666-7211	Site history/interview
Mr. Errol Kitt Assistant Project Engineer Fanning, Phillips, and Molner Consulting Engineers 80 Skyline Drive Plainview, New York 11803 (718) 767-3337	Site history/interview
Mr. Dave Obrig/Mr. Bob Seaforth Public Health Sanitarians Suffolk County Department of Health Services Bureau of Environmental Health 15 Horseblock Place Farmingville, New York 11738 (516) 451-4633	Site interview

Contact	Information Received
Mr. Anthony Candela, P.E. Senior Sanitary Engineer New York State Department of Environmental Conservation Division of Solid Waste SUNY Campus - Building 40 Stony Brook, New York 11794 (516) 751-7900	Site file
Mr. James H. Pim, P.E. Suffolk County Department of Health Services Hazardous Materials Management 15 Horseblock Place Farmingville, New York 11738 (516) 451-4634	Interview and site file
Mr. Steve Carey/Mr. Dennis Moran Suffolk County Department of Health Services Bureau of Water Resources 225 Rabro Drive East Hauppauge, New York 11788 (516) 348-2893	Ground-water use; public water supplies and ground-water monitoring information
Mr. Dan Fricke Suffolk County Cooperative Extension Association 264 Griffing Avenue Riverhead, New York 11901 (516) 727-7850	Ground-water and surface water use for irrigation
Mr. William Schickler/Mr. Robert Bowen Suffolk County Water Authority Sunrise Highway and Pond Road Oakdale, New York 11769 (516) 589-5200	Public water supply and distribution
Mr. Doug Pica New York State Department of Environmental Conservation Division of Water SUNY Campus - Building 40 Stony Brook, New York 11794 (516) 751-7900	Ground-water use for irrigation
Mr. Allan S. Connell District Conservationist U.S. Department of Agriculture Soil Conservation Survey 127 East Main Street Riverhead, New York 11901	Ground-water use for irrigation

Contact	Information Received
Mr. Gil Hanse Chief Fire Marshal Town of Babylon 200 E. Sunrise Highway Lindenhurst, New York 11757 (516) 957-3069	Information regarding the threat of fire and/or explosion at the site
Mr. Kevin Walter, P.E. New York State Department of Environmental Conservation Division of Hazardous Waste Enforcement 50 Wolf Road Albany, New York 12233-0001 (518) 457-4346	No site file
Mr. John Iannotti, P.E. New York State Department of Environmental Conservation Bureau of Remedial Action 50 Wolf Road Albany, New York 12233-0001 (518) 457-5637	No site file
Mr. Earl Barcomb, P.E. New York State Department of Environmental Conservation Bureau of Municipal Wastes Section of Landfill Operations Vatrano Road Albany, New York 12205 (518) 457-2051	No site file
Mr. Peter Skinner, P.E. New York State Attorney General's Office Room 221 Justice Building Albany, New York 12224 (518) 474-2432	No site file
Mr. Ron Tramontano/Mr. Charlie Hudson New York State Department of Health Bureau of Toxic Substances Assessment Nelson A. Rockefeller Empire State Plaza Corning Tower Building, Room 342 Albany, New York 12237 (518) 473-8427	No site file

Contact	Information Received
Mr. James Covey, P.E. New York State Department of Health Nelson A. Rockefeller Empire State Plaza Corning Tower Building Albany, New York 12237 (518) 473-4637	Community Water Supply Atlas
Mr. Rocky Paggione, Atty./ Mr. Louis A. Evans, Atty. New York State Department of Environmental Conservation Division of Environmental Enforcement 202 Mamaroneck Avenue White Plains, New York 10601-5381 (914) 761-6660	No site file
Mr. Marsden Chen, P.E. New York State Department of Environmental Conservation Bureau of Site Control 50 Wolf Road Albany, New York 12233-0001 (518) 457-0639	Site file
Mr. John W. Ozard Senior Wildlife Biologist New York State Department of Environmental Conservation Wildlife Resources Center Significant Habitat Unit Delmar, New York 12054 (518) 439-7486	Significant habitats
Mr. Perry Katz U.S. Environmental Protection Agency Region II Room 757 26 Federal Plaza New York, New York 10278 (212) 264-4595	No site file
Mr. Johnson District Superintendent Farmingdale Village Water Authortity 361 Main Street Farmingdale, New York 11735 (516) 249-6770	Water district information
Mr. John Ferrari Senior Water Plant Operator E. Farmingdale Water District (516) 249-4211	Water district information

Contact	Information Received
Mr. Charles Guthrie Regional Fisheries Manager New York State Department of Environmental Conservation SUNY Campus-Building 40 Stony Brook, New York 11794 (516) 751-7900	Surface water use for recreation

4. SITE ASSESSMENT - NTU CIRCUITS, INC.

4.1 SITE HISTORY

The NTU Circuits, Inc. site is the former business location of NTU Circuits, where they manufactured printed circuit boards for electronic applications (Appendix 1.1-1). The site is located at 60 Dale Street, Town of Babylon, Suffolk County, New York. Spectrum Finishing Corp. (Mr. William DeChirico, Vice President) is the current owner of the property, having purchased the 14-year-old building from Mr. James Gray in 1981 (Appendix 1.1-2). The building is separated into two sections, the eastern portion (4,000 ft^2) of which was leased and operated by NTU Circuits, Inc. for a 6-year period from 1978 through September 1983 (Appendixes 1.1-1 and 1.1-3). Mr. Wayne DeChirico, Quality Control Manager for Spectrum, indicated that the site was occupied by a candy distributor for a 6-month period from April 1984 until September 1984. During EA's site reconnaissance, it was observed that the portion of the building, which had been leased by NTU was now being leased by a pipe organ manufacturer who had been there approximately 1 year. The western portion of the building was and still is occupied by Welding Metallurgy, Inc. (Appendixes 1.1-2 and 1.1-3).

Mr. Richard Gregorski, Marketing Manager for NTU Circuits, indicated that NTU's operation consisted of an office; a drilling room in the east portion; plating and scrubbers along the north wall; a yellow room (photodeveloping/printing) in the west section; a photodeveloping darkroom in the south-central area; and shipping, programming, and machine drilling in the southeastern portion

(Appendix 1.1-3 and Figure 1-2). The operation employed 10-15 people on a 6-day work week, drilling, cleaning, and electroplating 100 panels a day. According to a study performed at NTU in 1981, combined processes at the plant at that time produced an average effluent volume of 6,205 gal per day (Appendix 1.1-4). Although, all plating solutions were reportedly drummed and removed from the site for disposal by a liscensed hauler, some of the rinsewater was discharged to storm drain/industrial leach pools under a SPDES permit (Appendixes 1.1-1 and 1.1-5).

There are seven leach pools (cesspools) and one septic tank now located around the old NTU facility located at Dale Avenue. One pool (SD-N1) is located north of the building and reportedly received only storm runoff (Appendixes 1.1-2 and 1.1-3). The remaining pools and septic tank are located south of the building (Figure 1-2):

SP-A was the old (now abandoned and backfilled) sanitary pool which received sanitary waste from both NTU and Welding Metallurgy, Inc., plus waste from NTU's "slop sink" (Appendix 1.1-5).

SD-2 received roof drainage and surface runoff (Appendix 1.1-3).

New sanitary pool and new septic tank shown on Figure 1-2 are the current sanitary waste disposal system which replaced SP-A (Appendix 1.1-3).

SD-3 was permitted (SPDES) and received NTU's industrial wastewater (Appendix 1.1-3).

SD-7 received rinsewater from NTU's photoprinting operation and for an unknown period of time apparently beginning in July 1981 was connected to and received waste from SD-3 (Appendixes 1.1-3 and 1.1-5).

SD-8 received roof drainage and surface water runoff and for an unknown period was interconnected with and received waste from SD-3 and SD-7 (Appendix 1.1-3).

NTU Circuits was repeatedly notified by the Suffolk County Department of Health Services (SCDHS) that the contents of its leaching pools were in violation of NYS Ground-Water Standards and NTU's SPDES permit (Appendix 1.1-6). During site visits to NTU between 1979 and 1981 to perform site inspections and/or sampling activities, SCDHS personnel made a variety of observations including: (1) overflow of blusih liquids from SD-3 into the surrounding area, (2) presence of bluish liquids in SP-A, (3) presence of foamy fluid in SD-3, and (4) flow of a bluish, foamy liquid via a subsurface PVC pipe from SD-3 to SD-7 (Appendixes 1.1-5, 1.1-7 through 1.1-9). One inspector also noted blue-green stains on the floor inside the NTU building and outside the wall (Appendix 1.1-5). Although Welding Metallurgy also discharged sanitary wastewater into pool SP-A, SCDHS did not consider the company to be a contributor to the industrial waste found in the cesspool. No chemicals or prints were found on the Welding Metallurgy premises during a SCDHS site visit (Appendix 1.1-5).

NTU was the subject of a court action by the New York State Attorney General which was settled on 30 April 1982 (Appendixes 1.1-3, 1.1-10, and 1.1-11). The settlement of the case resulted in NTU having to clean up all of the existing

pools. During September 1983, NTU moved from the Dale Street facility in West Babylon to a new facility at 1480 North Clinton Avenue in Bayshore, New York. The new facility is located in a sewered area and includes an automated EPA-approved waste treatment system (Appendix 1.1-1).

In complying with the Stipulation of Discontinuance (Appendix 1.1-11), NTU performed drainage pool cleanup activities during 29 November and 1-2 December 1983 at the old Dale Street facility which they had already vacated. The cleanup work was supervised and approved by SCDHS personnel. The work included (Appendix 1.1-3):

SD-2 and SD-3 Pools - liquid removed and transported by a certified hauler to NTU's new (Clinton Street) facility for treatment in their wastewater treatment system. The bottom of each pool was lime slurried, the pipes cemented closed, and each pool filled with clean sand and paved over.

SP-A Pool - Cleaned out, filled in with clean sand, and paved over.

SD-7, SD-8, and SD-N1 Pools - Liquid removed and treated as stated previously for SD-2 and SD-3. The 1-2 ft of bottom material was removed for disposal by a certified waste hauler, and replaced with 1-2 ft of clean sand. These 3 pools were allowed to remain in use.

This remedial work involved only the cleanup of contaminated leach pools, and did not involve any ground-water monitoring to investigate the potential

migration of contaminants from the site. SCDHS has noted that such a ground-water investigation should still be performed under Superfund (Appendix 1.1-12).

During EA's January 1986 site reconnaissance, it was noted that someone had tampered with the SD-3 pool which NTU had closed and paved over. The over-paving had been removed and the grating exposed, through which an approximately 5-gal jerry can was observed just beneath the grating. Although, the source of this tampering is unknown, it occurred after NTU cleaned and paved it over and did not invvolve NTU (Appendix 1.1-3).

4.2 SITE TOPOGRAPHY

The NTU Circuits, Inc. site is situated along the southern side of Long Island, approximately 5 mi inland of Great South Bay (Appendix 1.2-1). The site is largely flat; however, the regional slope is approximately 0-2 degrees to the south.

NTU Circuits site is located in an industrial park on the west side of Dale Street. The NTU facility was located in the eastern portion of a building at 60 Dale Street. The western portion of the building was and still is occupied by Welding Metallory, Inc. The old NTU building is bordered by Dale Street to the east, commercial establishments to the north and west, and Spectrum Finishing Corp. (who owns the site property) to the south. Welding Metallory, Inc. is the nearest commercial establishment. The nearest private residence is located at the intersection of Dale Street and Edison Avenue, approximately 500 ft southeast of the site. The nearest well is in the SCWA Gordon Avenue

well field located approximately 1 mi southeast of the site. The nearest surface water is Neguntatogue Creek, a perennial stream located approximately 9,500 ft south-southeast of the site. However, there is no viable overland route to this surface waterbody because several highways, recharge basins, and a railroad interrupt the pathway. Also, surface water in the vicinity of the site is collected in storm drainage pools for subsurface discharge to the ground.

4.3 SITE HYDROGEOLOGY

The site is directly underlain by Pleistocene Age glacial outwash deposits. This deposit is then in turn underlain by Cretaceous Age Matawan Group-Magothy Formation (undifferentiated), the Clay Member and Lloyd Sand Member of the Raritan Formation and finally by Precambrian Age gneiss and schist bedrock (Appendix 1.3-1). The Pleistocene deposits are estimated to be 75 ft in thickness (ground surface elevation and Appendix 1.3-1) and largely comprised of stratified sand and gravel. The Matawan Group-Magothy Formation (undifferentiated) is estimated to be 800 ft in thickness in the vicinity of the site (Appendixes 1.3-1 and 1.3-2). The upper surface of this deposit is irregular because of considerable erosion during the Tertiary and Pleistocene times. Therefore, accurate prediction of formation thickness between control points (boreholes) is difficult. The most detailed description of this formation is provided by Soren (Appendix 1.3-3) and is as follows: generally composed of "beds and lenses of light gray fine to coarse sand and silt, intercalated with thin to thick beds and lenses of light- to dark-gray clay, silt, and clayey/silty sand." Thin beds of lignite are commonly found in the clay and silt beds, while disseminated lignite and pyrite are common in the sand beds.

Gravelly coarse sand is commonly present in the basal portion of the Magothy Formation, along with abundant interstitial clay and silt and lenses of clay, silt, and clayey/silty sand. The clay and silt beds are often apparently discontinuous lenses and not possible to correlate over significant distances as indicated on the geologic logs (Appendix 1.3-4) for two nearby deep water supply wells: Well S-51457 (733-ft total borehole depth) located approximately 2 mi east of the site; and Well S-20042 (585-ft total borehole depth) located about 2 mi northwest of the site.

Based upon Jensen and Soren (Appendix 1.3-2) it is estimated that in the vicinity of the site the Clay Member of the Raritan Formation is 150 ft in thickness, and the Lloyd Sand is estimated to be 350 ft in thickness. The most detailed stratigraphy information is provided by Soren (Appendix 1.3-3) and summarized in the following sentences. The Clay Member of the Raritan Formation consists mostly of beds/lenses of light- to dark-gray clay, silt, and clayey/silty fine sand and occasional thin-to-thick sandy lenses of limited lateral extent. Thin beds and disseminated particles of lignite and pyrite are common in the clay portion of this unit. The Lloyd Sand Member of the Raritan Formation "consists mostly of beds and lenses of light- to medium-gray sand and gravelly sand, commonly containing small to large amounts of interstitial clay and silt, that are intercalated with beds and lenses of light- to dark-gray clay, silt, and clayey/silty sand."

Water pumped from aquifers underlying Suffolk County is the sole source of water for public supply, agriculture, and industry (Appendix 1.3-2). The upper glacial and Magothy aquifers act as a single hydrological unit. However, only the Magothy portion is reportedly still developed by wells for water supply

within 3 mi of the site. Therefore, both the upper glacial and Magothy aquifers are designated as the aquifer of concern. The Lloyd aquifer, though moderately permeable (165 gpd/ft^2 estimated horizontal permeability at Brookhaven National Laboratory about 30 mi east of the site), has not been developed for water supply because more permeable aquifers are present at shallower depths, and water from the Lloyd commonly has undesirably high concentrations of iron. Additionally, the Lloyd aquifer is overlain by the extensive, thick, low permeability (confining) Raritan Clay (Appendix 1.3-3). Therefore, the Lloyd aquifer will not be considered further by this Phase I investigation.

The aquifers of Long Island are hydraulically interconnected and although beds and discontinuous layers of silt and clay within and between aquifers serve to confine water below them, they do not completely prevent the vertical movement of water through and around them. Soren (Appendix 1.3-3) presents data which reflect the high degree of hydraulic interconnection between the upper glacial and Magothy aquifers in the vicinity: (1) for wells completed in the upper glacial and Magothy aquifers in nearby Brentwood and Hauppauge, the head in these two aquifers decrease at a fairly uniform rate with increasing depth, and (2) water-level fluctuation in the same well groups were very similar. Soren also reports that the estimated downward velocity of water through the Magothy aquifer in the vicinity of the ground-water divide in 1968 (along which the site is located) was 0.006 ft/day (approximately 2.2 ft/year).

Recharge to the upper glacial aquifer is derived entirely from precipitation. Recharge to the Magothy and Lloyd aquifers is derived entirely from the downward movement of water from each overlying aquifer (Appendix 1.3-5). In

general, recharge to the lower aquifers occurs near the center of Long Island and discharge occurs along the edge of Long Island to the ocean and Long Island Sound. The average annual precipitation in the area is 46 in, of which 24 in. is estimated to infiltrate to the water table (Appendix 1.3-1). The remainder of the precipitation is returned to the atmosphere by evaporation and transpiration, except for a small amount of runoff to streams.

The upper glacial aquifer is the most permeable aquifer on Long Island with an estimated horizontal permeability of 1,000-1,500 gpd/ft^2 (Appendix 1.3-3). In 1968, it was estimated in the region that water in the upper glacial aquifer was moving horizontally at rates less than 0.5 ft/day in areas distant from centers of pumping and to hundreds of ft/day near the screens of pumping wells (Appendix 1.3-3). The permeability of the underlying Magothy aquifer ranges widely depending upon the presence and amount of clay and silt. In 1968, it was estimated in the region that water in the Magothy aquifer was moving horizontally at rates less than 0.2 ft/day in areas distance from pumping, and to hundreds of ft/day near screens of pumping wells.

Based upon the March 1985 ground-water table contour map (SCDHS), the depth to ground water is estimated to be approximately 15 ft below ground surface, and the regional ground-water natural (unaffected by pumping) flow direction appears to be toward the south southeast. Within 3 mi of the site, the Magothy portion of the aquifer of concern has been developed by eight Suffolk County Water Authority well fields, three East Farmingdale Water Authority well fields, and in Nassau County, one Farmingdale Village Water Authority well field. Appendix 1.3-6 provides a list of the municipal wells located within 3 mi of the site. The developed area within 3 mi of the site appears to be

served by four public water systems (Suffolk County Water Authority, East Farmingdale Water District, South Huntington Water District, and Dix Hills Water District) and two public water systems in Nassau County (Farmingdale Village Water Authority and South Farmingdale Water Authority).

4.4 SITE CONTAMINATION

Waste Types and Quantities

The average total industrial waste flow from NTU was estimated in 1981 to be 6,205 gal/day (Appendix 1.1-4). The SCDHS repeatedly sampled the contents of onsite leachpools from 1979 through 1982. Samples collected from all of the leach pools were found to be contaminated. The leach pool samples contained cadmium (0.03-0.07 mg/liter), silver (0.36-1.1 mg/liter), copper (3.8-440 mg/liter), iron (1.3-28 mg/liter), lead (0.2-4.6 mg/liter), hexavalent chromium (0.15 mg/liter), fluoride (3.2 mg/liter), and total solids (101-3,983 mg/liter) (Appendixes 1.1-6 and 1.4-1). The pH varied widely from 3 to 11 (Appendix 1.1-6). SCDHS inspectors observed a bluish and/or foamy liquid being discharged into the SD-3 pool and, from there, into adjoining pool SD-7 (Appendixes 1.1-5, and 1.1-7 through 1.1-9).

Ground Water

No data available.

Surface Water

No data available.

Soil

No data available.

Air

No HNU readings above background were detected from the old NTU building during EA's site inspection on 22 January 1986.

Facility name: NTU Circuits, Inc.

Location: Town of Babylon, Suffolk County

EPA Region: II

Person(s) in charge of the facility: Mr. William DeChirico, Owner
50 Dale Street
Babylon, New York 11704

Name of Reviewer: EA Science and Technology Date: 3 September 1986

General description of the facility:
(For example: landfill, surface impoundment, pile, container; types of hazardous substances; location of the facility, contamination route of major concern; types of information needed for rating; agency action, etc.)

The site is an inactive industrial site located on Dale Street, Town of Babylon, New York which operated from 1978 until 1983 and was involved in the production of circuit boards. NTU was repeatedly notified by the Suffolk County Department of Health Services that the contents of leaching pools on the premises were in violation of ground water effluent standards and NTU's SPDES permit. The liquid wastes contained heavy metals, flouride, and excessive total solids. In 1982, the New York State Attorney General filed a case against NTU. Based on the settlement, all leachpools at the site were cleaned by NTU in November-December 1983. In September 1983, NTU moved to a new location. During EA's site inspection, it was observed that the SD-3 leachpool, which had been paved over, was re-

Scores: S_M =31.03 S_{gw} =53.69 S_{sw} = 0 S_a = 0)
S_{FE} = N/A
S_{DC} = 0

Maximum S_M = 31.03

FIGURE 1
HRS COVER SHEET

opened. The tampering with this closed pool reportedly occurred after cleaning and closure by NTU and did not involve NTU.

Ground Water Route Work Sheet						Max. Possible
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)	
1 Observed Release	0 45	1	0	45	3.1	45
If observed release is given a score of 45, proceed to line 4. If observed release is given a score of 0, proceed to line 2.						
2 Route Characteristics					3.2	
Depth to Aquifer of Concern	0 1 2 3	2	6	6		
Net Precipitation	0 1 2 3	1	3	3		
Permeability of the Unsaturated Zone	0 1 2 3	1	3	3		
Physical State	0 1 2 3	1	3	3		
Total Route Characteristics Score			15	15		
3 Containment	0 1 2 3	1	3	3	3.3	
4 Waste Characteristics					3.4	
Toxicity/Persistence	0 3 6 9 12 15 18	1	18	18		
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1	1	8		
Total Waste Characteristics Score			19	26		19
5 Targets					3.5	
Ground Water Use	0 1 2 3	3	6	9		
Distance to Nearest Well/Population Served	0 4 6 8 10 / 12 16 18 20 / 24 30 32 35 40	1	30	40		
Total Targets Score			36	49		36
6 If line 1 is 45, multiply 1 x 4 x 5 / If line 1 is 0, multiply 2 x 3 x 4 x 5			30,780	57,330		30,780
7 Divide line 6 by 57,330 and multiply by 100		S_{gw} =	53.69			53.69

FIGURE 2
GROUND WATER ROUTE WORK SHEET

Surface Water Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max Score	Ref. (Section)
1 Observed Release	0 45	1	0	45	4.1
If observed release is given a value of 45, proceed to line 4. If observed release is given a value of 0, proceed to line 2.					
2 Route Characteristics					4.2
Facility Slope and Intervening Terrain	0 1 2 3	1	0	3	
1-yr. 24-hr. Rainfall	0 1 2 3	1	2	3	
Distance to Nearest Surface Water	0 1 2 3	2	0	6	
Physical State	0 1 2 3	1	3	3	
	Total Route Characteristics Score		5	15	
3 Containment	0 1 2 3	1	0	3	4.3
4 Waste Characteristics					4.4
Toxicity/Persistence	0 3 6 9 12 15 18	1	0	18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1	0	8	
	Total Waste Characteristics Score		0	26	
5 Targets					4.5
Surface Water Use	0 1 2 3	3	0	9	
Distance to a Sensitive Environment	0 1 2 3	2	0	6	
Population Served/Distance to Water Intake Downstream	0 4 6 8 10 12 16 18 20 24 30 32 35 40	1	0	40	
	Total Targets Score		0	55	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			0	64,350	
7 Divide line 6 by 64,350 and multiply by 100		S_{sw} = 0			

FIGURE 7
SURFACE WATER ROUTE WORK SHEET

Air Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. Section)
1 Observed Release	(0) 45	1	0	45	5.1
Date and Location:					
Sampling Protocol:					
If line 1 is 0, the S_a = 0. Enter on line 5. If line 1 is 45, then proceed to line 2.					
2 Waste Characteristics					5.2
Reactivity and Incompatibility	0 1 2 3	1		3	
Toxicity	0 1 2 3	3		9	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
	Total Waste Characteristics Score			20	
3 Targets					5.3
Population Within 4-Mile Radius	0 9 12 15 18 21 24 27 30	1		30	
Distance to Sensitive Environment	0 1 2 3	2		6	
Land Use	0 1 2 3	1		3	
	Total Targets Score			39	
4 Multiply 1 x 2 x 3				35,100	
5 Divide line 4 by 35,100 and multiply by 100		S_a = 0			

FIGURE 9
AIR ROUTE WORK SHEET

	S	S^2
Groundwater Route Score (S_{gw})	53.69	2,882.62
Surface Water Route Score (S_{sw})	0	0
Air Route Score (S_a)	0	0
$S_{gw}^2 + S_{sw}^2 + S_a^2$		2,882.62
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		53.69
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		31.03

FIGURE 10
WORKSHEET FOR COMPUTING S_M

Maximum $S_M = 31.03$

Fire and Explosion Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max Score	Ref. (Section)
1 Containment	1 3	1		3	7.1
2 Waste Characteristics					7.2
Direct Evidence	0 3	1		3	
Ignitability	0 1 2 3	1		3	
Reactivity	0 1 2 3	1		3	
Incompatibility	0 1 2 3	1		3	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
Total Waste Characteristics Score				20	
3 Targets					7.3
Distance to Nearest Population	0 1 2 3 4 5	1		5	
Distance to Nearest Building	0 1 2 3	1		3	
Distance to Sensitive Environment	0 1 2 3	1		3	
Land Use	0 1 2 3	1		3	
Population Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Buildings Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Total Targets Score				24	
4 Multiply 1 x 2 x 3				1,440	
5 Divide line 4 by 1,440 and multiply by 100		S_{FE} = N/A			

FIGURE 11
FIRE AND EXPLOSION WORK SHEET

Direct Contact Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Incident	0 45	1	0	45	8.1
If line 1 is 45, proceed to line 4 If line 1 is 0, proceed to line 2					
2 Accessibility	0 1 2 3	1	3	3	8.2
3 Containment	0 15	1	0	15	8.3
4 Waste Characteristics Toxicity	0 1 2 3	5	0	15	8.4
5 Targets					8.5
Population Within a 1-Mile Radius	0 1 2 3 4 5	4	20	20	
Distance to a Critical Habitat	0 1 2 3	4	0	12	
Total Targets Score			20	32	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			0	21,600	
7 Divide line 6 by 21,600 and multiply by 100	S_{DC} = 0				

FIGURE 12
DIRECT CONTACT WORK SHEET

NTU CIRCUITS, INC.
TOWN OF BABYLON, SUFFOLK COUTNY

The NTU Circuits, Inc. site is the former business location of NTU Circuits, where they manufactured printed circuit boards for electronic applications. NTU leased the eastern portion of a building located at 60 Dale Street, Town of Babylon, Suffolk County, New York between 1978 and 1983. Spectrum Finishing Corp. is the current owner of the building, having purchased the property from Mr. James Gray in 1981. The site is located in an industrial park.

Six leach pools were present at the site during NTU's operations. The Suffolk County Department of Health Services (SCDHS) repeatedly notified NTU Circuits that the contents of the leaching pools were in violation of ground-water effluent standards and NTU's SPDES permit. SCDHS collected samples from the pools from 1979 until 1982, and the samples contained elevated levels of copper, cadmium, lead, silver, iron, flouride, and total solids. On two occasions, the pool SD-3 was observed to be overflowing onto the ground and/or into adjacent storm drains.

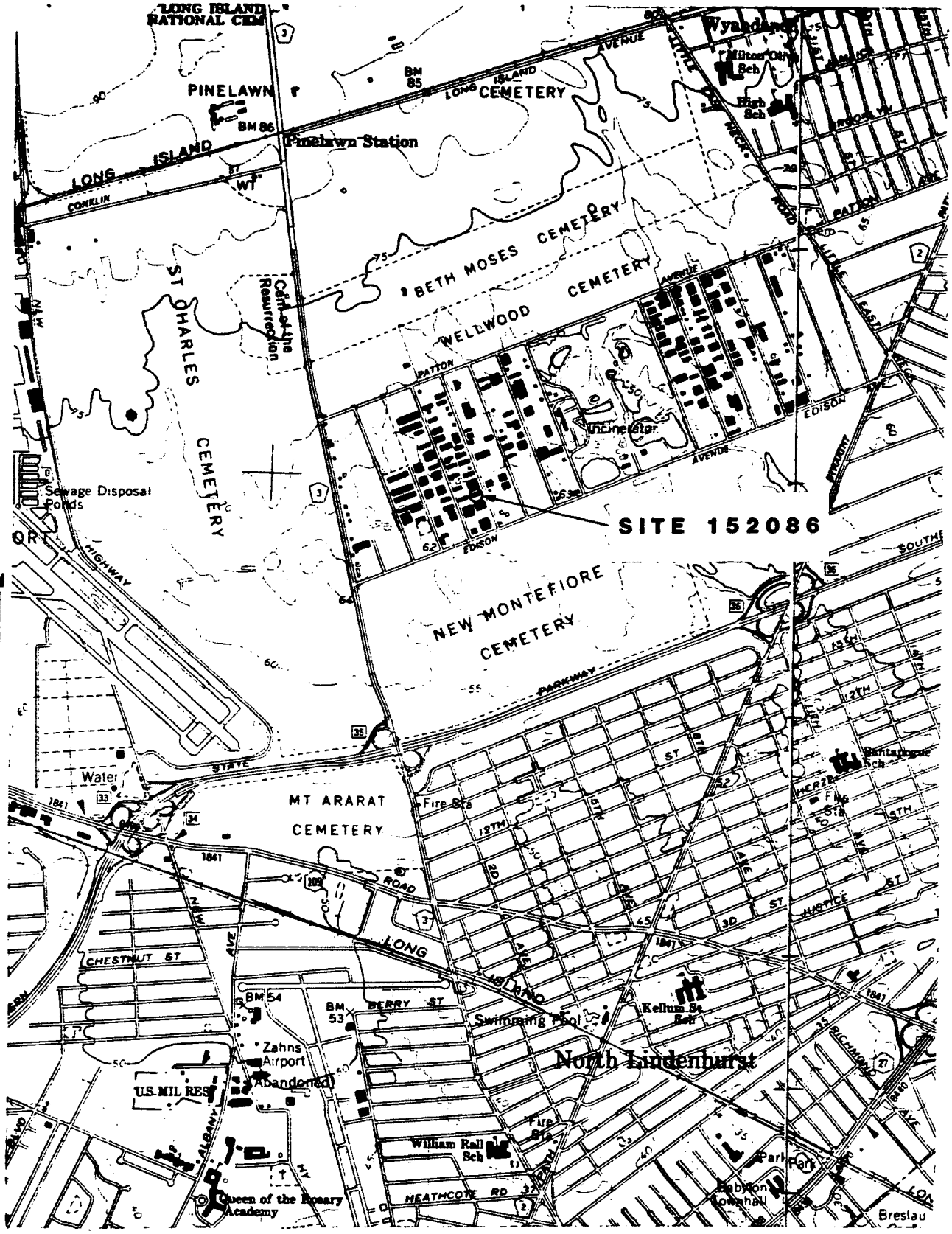
In 1982, the New York State Attorney General filed a case against NTU Circuits, Inc. The settlement took place on 30 April 1982, and resulted in NTU having to clean up all six of the existing pools at the site.

NTU Circuits performed the cleanup in the presence of SCDHS officials, who affirmed that the leaching pools were cleaned properly. In order to confirm a release of contaminants from the site to the ground water, further environmental study and sampling is recommended

oordinates:

Latitude: 40° 43' 52"
Longitude: 73° 23' 23"

NTU CIRCUITS, INC.



AMITYVILLE & BAY SHORE WEST QUADS.

Scale 1: 24,000

DOCUMENTATION RECORDS
FOR
HAZARD RANKING SYSTEM

INSTRUCTIONS: As briefly as possible, summarize the information you used to assign the score for each factor (e.g., "Waste quantity = 4,230 drums plus 800 cubic yards of sludges"). The source of information should be provided for each entry and should be a bibliographic-type reference. Include the location of the document.

FACILITY NAME: NTU Circuits, Inc.

LOCATION: Town of Babylon, Suffolk County

DATE SCORED: 3 September 1986

PERSON SCORING: EA Science and Technology

PRIMARY SOURCES(S) OF INFORMATION (e.g., EPA region, state, FIT, etc.)

Suffolk County Department of Health Services
Mr. Wayne DeChirico, Spectrum Finishing Corp.
Mr. Richard Gregorski; NTU Circuits, Inc.
Mr. Errol Kit; Fanning, Phillips, and Molner Engineers

FACTORS NOT SCORED DUE TO INSUFFICIENT INFORMATION:

Air Route
Confirmation of a release to ground water

COMMENTS OR QUALIFICATIONS:

Ambient and downgradient ground-water quality are unavailable. The ground-water route is scored on the basis of confirmed contamination in onsite cesspools. The local fire marshal does not consider the site to be an imminent fire or explosion threat.

Direct contact score is based upon release of the waste fluids directly to the subsurface via leach pools.

GROUND WATER ROUTE

1 OBSERVED RELEASE

Contaminants detected (5 maximum):

No analytical data available (Chapter 3).

Assigned value = 0.

Reference: 6.

Rationale for attributing the contaminants to the facility:

***

2 ROUTE CHARACTERISTICS

Depth to Aquifer of Concern

Name/description of aquifer(s) of concern:

The Pleistocene Age Upper Glacial deposits and the Cretaceous Age Magothy Formation.

References: 1, 2, and 3.

Depth(s) from the ground surface to the highest seasonal level of the saturated zone (water table[s]) of the aquifer of concern:

15 ft.

References: 4 and 5.

Depth from the ground surface to the lowest point of waste disposal/storage:

Unknown. Estimate 6-ft depth of cesspool.

Depth to aquifer of concern is estimated to be 9 ft.

Assigned value = 3.

Reference: 6.

Net Precipitation

Mean annual or seasonal precipitation (list months for seasonal):

Mean annual lake or seasonal evaporation (list months for seasonal):

Net precipitation (subtract the above figures):

24 in.

Reference: 1.

Assigned value = 3.

Reference: 6.

Permeability of Unsaturated Zone

Soil type in unsaturated zone:

Sand and gravel.

Reference: Report Section 4.3.

Permeability associated with soil type:

$>10^{-3}$ cm/sec.

Assigned value = 3.

Reference: 6.

Physical State

Physical state of substances at time of disposal (or at present time for generated gases):

Liquid.

References: 8 and 9.

Assigned value = 3.

Reference: 6.

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Wastes discharged via pipes to underground leach pools.

References: 8 and 9.

Method with highest score:

No containment in respect to ground water.

Assigned value = 3.

Reference: 6.

***

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

Cadmium, copper, iron, lead, hexavalent chromium, silver, flouride.

Reference: 10.

Compound with highest score:

Cadmium, copper, iron, lead, hexavalant chromium.

Reference = 6.

Assigned value = 18.

Reference: 6.

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

Unknown. According to a study performed by NTU in 1981, combined processes at the site at that time produced an average effluent volume of 6,205

gal/day; however, it is not clear how much of that effluent was actually discharged to the cesspools or how much of it was contaminated.

Reference: 26.

Basis of estimating and/or computing waste quantity:

Minimum quantity assumed.

Assigned value = 1.

Reference: 6.

***

5 TARGETS

Ground Water Use

Use(s) of aquifer(s) of concern within a 3-mile radius of the facility:

Drinking water with municipal water from alternate sources presently available.

References: 11, 12, 13, and 14.

Assigned value = 2.

Reference: 6.

Distance to Nearest Well

Location of nearest well drawing from aquifer of concern or occupied building not served by a public water supply:

Suffolk County Water Authority well located at the Gordon Avenue wellfield.

Reference: 14.

Distance to above well or building:

Approximately 6,400 ft from site.

References: 11 and 14.

Assigned value = 2.

Reference: 6.

Population Served by Ground Water Wells Within a 3-Mile Radius

Identified water-supply well(s) drawing from aquifer(s) of concern within a 3-mile radius and populations served by each:

Community Supplies:	Population:
Suffolk County Water Authority	207,689
Farmingdale Village Water Authority	10,000
E. Farmingdale Water Authority	5,700
	231,239

References: 11-14, 27, and 29.

Computation of land area irrigated by supply well(s) drawing from aquifer(s) of concern within a 3-mile radius, and conversion to population (1.5 people per acre):

Approimately 175 acres of land are used for agricultural purposes within a 3-mi radius of the site. However, irrigation wells on agricultural land in Suffolk County are not registered by any regulatory agency, so there are no lists or descriptions of the locations of these wells.

References: 15 through 19.

Total population served by ground water within a 3-mile radius:

225,539. Assigned value = 5. Combined assigned value = 35.

Reference: 6.

SURFACE WATER ROUTE

1 OBSERVED RELEASE

Contaminants detected in surface water at the facility or downhill from it (5 maximum):

No data available (Chapter 3).

Assigned value = 0.

Reference: 6.

Rationale for attributing the contaminants to the facility:

2 ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain

Average slope of facility in percent:

Zero. Site is a below-grade leaching pool.

Reference: 7.

Name/description of nearest downslope surface water:

Neguntatogue Creek.

Reference: 5.

Average slope of terrain between facility and above-cited surface water body in percent:

0-2 percent. Estimated using a Suunto clinometer and from topographic map.

References: 5 and 7.

Is the facility located either totally or partially in surface water?

No.

References: 5 and 7.

Is the facility completely surrounded by areas of higher elevation?

No.

References: 5 and 7.

Assigned value = 0.

Reference: 6.

1-Year, 24-Hour Rainfall in Inches

2.5 in.

Assigned value = 2.

Reference: 6.

Distance to Nearest Downslope Surface Water

2.3 mi.

Reference: 5

Assigned value = 0.

Reference: 6.

Physical State of Waste

Liquid.

References: 8 and 9.

Assigned value = 3.

Reference: 6.

***

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Wastes were discharged through pipes to underground leach pools, and even if a leach pool overflowed, the overflow would drain into another nearby catch basin/leach pool. Therefore, wastes were surrounded by diversion structures which were adequate to preclude runoff to a natural waterbody. In addition, the overland route for runoff to surface water is interrupted by several highways, recharge basins, and a railroad.

References: 5, 20, and 21.

Method with highest score:

Assigned value = 0.

Reference: 6.

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

Containment score = 0; therefore, waste characteristics are not evaluated.

Reference: 6.

Compound with highest score:

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

Basis of estimating and/or computing waste quantity:

***

5 TARGETS

Surface Water Use

Use(s) of surface water within 3 miles downstream of the hazardous substance:

Perennial stream. Not currently used.

Reference: 22.

Assigned value = 0.

Reference: 6.

Is there tidal influence?

No.

Reference: 5.

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

None within 2 mi.

Reference: 5.

Distance to 5-acre (minimum) freshwater wetland, if 1 mile or less:

None within 1 mi.

Reference: 5.

Distance to critical habitat of an endangered species or national wildlife refuge, if 1 mile or less:

None within 1 mi.

Reference: 23.

Assigned value = 0.

Reference: 6.

Population Served by Surface Water

Location(s) of water supply intake(s) within 3 miles (free-flowing bodies) or 1 mile (static waterbodies) downstream of the hazardous substance and population served by each intake:

None.

References: 12 and 16.

Assigned value = 0.

Reference: 6.

Computation of land area irrigated by above-cited intake(s) and conversion to population (1.5 people per acre).

None. The major source of irrigation water in Suffolk County is ground water from wells. Generally, surface water is not utilized for this purpose.

References: 15 and 16.

Total population served:

Zero.

References: 11, 12, 15, and 16.

Assigned value = 0.

Name/description of nearest of above waterbodies:

Distance to above-cited intakes, measured in stream miles:

AIR ROUTE

No data available from any of the agency files examined (Chapter 3). During EA's inspection (22 January 1986), total volatile organics were measured using a photoionization detector (HNU). No HNU readings above background were measured.

Assigned value = 0.

Reference: 6.

1 OBSERVED RELEASE

Contaminants detected:

Date and location of detection of contaminants

Methods used to detect the contaminants:

Rationale for attributing the contaminants to the site:

***

2 WASTE CHARACTERISTICS

Reactivity and Incompatibility

Most reactive compound:

Most incompatible pair of compounds:

Toxicity

Most toxic compound:

Hazardous Waste Quantity

Total quantity of hazardous waste:

Basis of estimating and/or computing waste quantity:

3 TARGETS

Population Within 4-Mile Radius

Circle radius used, give population, and indicate how determined:

0 to 4 mi 0 to 1 mi 0 to 1/2 mi 0 to 1/4 mi

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

Distance to 5-acre (minimum) freshwater wetland, if 1 mile or less:

Distance to critical habitat of an endangered species, if 1 mile or less:

Land Use

Distance to commercial/industrial area, if 1 mile or less:

Distance to national or state park, forest, or wildlife reserve if 2 miles or less:

Distance to residential area, if 2 miles or less:

Distance to agricultural land in production within past 5 years, if 1 mile or less:

Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

Is a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?

FIRE AND EXPLOSION

The local fire marshal has not certified that the site presents a significant fire or explosion threat (Reference: 24). There are no analytical data available in any of the agency files (Chapter 3).

1 CONTAINMENT

Hazardous substances present:

Type of containment, if applicable:

***

2 WASTE CHARACTERISTICS

Direct Evidence

Type of instrument and measurements:

Ignitability

Compound used:

Reactivity

Most reactive compound:

Incompatibility

Most incompatible pair of compounds:

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility:

Basis of estimating and/or computing waste quantity:

***

3 TARGETS

Distance to Nearest Population

Distance to Nearest Building

Distance to Sensitive Environment

Distance to wetlands:

Distance to critical habitat:

Land Use

Distance to commercial/industrial area, if 1 mile or less:

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

Distance to residential area, if 2 miles or less:

Distance to agricultural land in production within past 5 years, if 1 mile or less:

Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

Is a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?

Population Within 2-Mile Radius

Buildings Within 2-Mile Radius

DIRECT CONTACT

1 OBSERVED INCIDENT

Date, location, and pertinent details of incident:

No observed incident on record.

Reference: Section 3.

Assigned value = 0.

Reference: 6.

***

2 ACCESSIBILITY

Describe type of barrier(s):

Barriers do not completely surround the facility.

Reference: 7.

Assigned value = 3.

Reference: 6.

***

3 CONTAINMENT

Type of containment, if applicable:

Leachpools are adequately covered.

Reference: 7.

Assigned value = 0.

Reference: 6.

4 WASTE CHARACTERISTICS

Toxicity

Compounds evaluated:

Containment score = 0. Therefore, waste characteristics are not evaluated.

Reference: 6.

Compound with highest score:

***

5 TARGETS

Population Within 1-Mile Radius

10,962. Estimated 25 percent of the population of Wyandoch (3,304), 15 percent of West Babylon (6,522), and 20 percent of East Farmingdale (1,136).

Assigned value = 5.

References: 6 and 28.

Distance to Critical Habitat (of Endangered Species)

None within 1 mi.

Reference: 23.

Assigned value = 0.

Reference: 6.

REFERENCES

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2. Jenson, H.M., and J. Soren. 1974. Hydrogeology of Suffolk County, Long Island (Appendix 1.3-2.)

3. Soren, J. 1971. Results of Subsurface Exploration in the Mid-Island Area of Western Suffolk County, Long Island (Appendix 1.3-3.)

4. Suffolk County Department of Health Services (SCDHS). 1985. Contour Map of the Water Table and Location of Observation Wells in Suffolk County, New York.

5. U.S. Geological Survey. 1979. 7.5-Minute Series. Amityville and Bay Shore West Quads. (Figure 1-2.)

6. U.S. Environmental Protection Agency. 1984. Uncontrolled Hazardous Waste Site Ranking System. A Users Manual (HW-10). Originally published in the 16 July 1982 Federal Register.

7. EA Site Inspection. 22 January 1986.

8. Affadavit. 1981. David Obrig. Supreme Court of the State of New York. 16 November 1981. (Appendix 1.1-5.)

9. Affadavit. 1981. Robert-Carl Olsen. Supreme Court of the State of New York. August 1981. (Appendix 1.1-7.)

10. SCDHS. 1979-1982. Analytical Data on Field Sampling (Appendixes 1.1-6 and 1.4-1.)

11. SCDHS, Water Resources Division. Supply and Monitoring Well Location Maps.

12. New York State Department of Health. 1982. New York State Atlas of Community Water System Sources.

13. New York State Department of Health. 1984. Inventory-Community Water Systems.

14. Suffolk County Water Authority (SCWA). 1985. Distribution of System Plates: 25N, 16N, 14M, 25M, and 26M.

15. Letter from A. Connell, District Conservationist, USDA Soil Conservation Service, to Mr. W. Going, EA Science and Technology, regarding irrigation in Suffolk County. Dated 13 March 1986. (Appendix 1.5-1.)

16. Fricke, D. 1986. Suffolk County Cooperative Extension Association. Personal Communication. 7 April. (Appendix 1.5-2.)

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18. Pica, D. 1986. Water Unit, Region 1, NYSDEC. Personal Communication. 7 April (Appendix 1.5-4.)

19. Long Island Regional Planning Board (LIRPB). 1982. Land Use in 1981, Quantification and Analysis of Land Use for Nassau and Suffolk Counties. Plate 5. (Appendix 1.5-9)

20. Kitt, Errol S. 1986. Fanning, Phillips, and Molner, Consulting Engineers. Report Review and Verification of Interview Acknowledgement Form for NTU Circuits Site. (Appendix 1.1-3.)

21. Letter from Kevin J. Phillips, Consulting Engineer, to Mr. Robert Schneck, Senior Sanitary Engineer, NYSDEC, regarding cleanup at NTU Circuits Inc. site. Dated 11 March 1985. (Appendix 1.1-11.)

22. Guthrie, C. 1986. Regional Fisheries Manager, Region I; NYSDEC. Personal Communication. 17 September. (Appendix 1.5-5.)

23. Ozard, J.W. 1986. Senior Wildlife Biologist. NYSDEC Wildlife Resources Center, Significant Habitat Unit. Personal Communication. 26 February (Appendix 1.5-6.)

24. Hanse, G. 1986. Chief Fire Marshal, Town of Babylon. Personal Communication. 19 September. (Appendix 1.5-7.)

25. Sax, N. Irving. 1979. Dangerous Properties of Industrial Materials. Van Nostrand Reinhold Company, New York.

26. NTU Circuits, Inc. Undated. Plant and Process Description Source: Suffolk County Department of Health Services (1986). Unpublished. (Appendix 1.1-4.)

27. Mr. Johnson. 1986. District Superintendent, Farmingdale Village Water District. Personal Communication. 21 April. (Appendix 1.3-6.)

28. LIRPB. 1985. Population Survey 1985. Current Population Estimates for Nassau and Suffolk Counties. Hauppage, Long Island, New York.

29. SCWA. 1986. Active Service Estimates and Service Area Map. (Appendix 1.5-8.)

United States
Environmental Protection
Agency

Office of Emergency and
Remedial Response
Washington, DC 20460

EPA Form 2070-12
July, 1981

NTU Circuits, Inc.

EPA

Potential Hazardous Waste Site

Preliminary Assessment

EPA

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	New

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
NTU Circuits, Inc.	60 Dale Street

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Babylon	NY	11704	Suffolk	103	

09 COORDINATES LATITUDE	LONGITUDE
40° 43' 52"	73° 23' 23"

10 DIRECTIONS TO SITE (Starting from nearest public road)

Between Cabot Street, Edison Street, and 60 Dale Street in West Babylon (Town of Babylon) New York.

III. RESPONSIBLE PARTIES

01 OWNER (If known)	02 STREET (Business, mailing, residential)
William DeChirico Spectrum Finishing Corp.	50 Dale Street

03 CITY	04 STATE	05 ZIP CODE	06 TELEPHONE NUMBER
Babylon	NY	11704	(516) 694-0306

07 OPERATOR (If known and different from owner)	08 STREET (Business, mailing, residential)
(Former) NTU Circuits, Inc.	1480 North Clinton Avenue

09 CITY	10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER
Bay Shore	NY	11706	(516) 666-7211

13 TYPE OF OWNERSHIP (Check one)

☒ A. PRIVATE ☐ B. FEDERAL: _____ (Agency name) ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL

☐ F. OTHER: _____ (Specify) ☐ G. UNKNOWN

14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)

☐ A. RCRA 3001 DATE RECEIVED: ___/___/___ (MONTH DAY YEAR) ☐ B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RECEIVED: ___/___/___ (MONTH DAY YEAR) ☐ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION

☒ YES DATE 1/22/86 (MONTH DAY YEAR)
☐ NO

BY (Check all that apply)

☐ A. EPA ☐ B. EPA CONTRACTOR ☐ C. STATE ☒ D. OTHER CONTRACTOR
☐ E. LOCAL HEALTH OFFICIAL ☐ F. OTHER: _____ (Specify)

CONTRACTOR NAME(S): EA Science and Technology

02 SITE STATUS (Check one)

☐ A. ACTIVE ☒ B. INACTIVE ☐ C. UNKNOWN

03 YEARS OF OPERATION

1977 (BEGINNING YEAR) | 1983 (ENDING YEAR) ☐ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED

Industrial effluent containing excessive amounts of heavy metals discharged to underground cesspools.

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION

Potential ground-water contamination.

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents)

☐ A. HIGH (Inspection required promptly) ☐ B. MEDIUM (Inspection required) ☐ C. LOW (Inspect on time available basis) ☐ D. NONE (No further action needed, complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency, Organization)	03 TELEPHONE NUMBER
Rebecca Ligotino	EA Science and Technology	(914) 692-6706

04 PERSON RESPONSIBLE FOR ASSESSMENT	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NUMBER	08 DATE
William Going.		EA	(914) 692-6706	3/24/86 (MONTH DAY YEAR)

EPA FORM 2070-12 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	New

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

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

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

TONS _____

CUBIC YARDS _____

NO. OF DRUMS Unknown

03 WASTE CHARACTERISTICS (Check all that apply)

- ☒ A. TOXIC
- ☐ B. CORROSIVE
- ☐ C. RADIOACTIVE
- ☐ D. PERSISTENT
- ☐ E. SOLUBLE
- ☐ F. INFECTIOUS
- ☐ 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			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS	Unknown		

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

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
MES	Copper	7440-50-8	TK	32.0	mg/liter
MES	Cadmium	7440-43-9	TK	0.07	mg/liter
MES	Lead	7439-92-1	TK	4.6	mg/liter
MES	Silver	7440-22-4	TK	1.1	mg/liter
MES	Iron	7439-89-6	TK	10.6	mg/liter
IOC	Flouride	-	TK	3.2	mg/liter

V. FEEDSTOCKS (See Appendix for CAS Numbers) Unknown

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

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

Suffolk County Department of Health Services files.
EA site inspection, 22 January 1986.

United States
Environmental Protection
Agency

Office of Emergency and
Remedial Response
Washington, DC 20460

EPA Form 2070-13
July, 1981

NTU Circuits, Inc.

EPA

Potential Hazardous Waste Site

Site Inspection Report

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	New

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
NTU Curcuits, Inc.	60 Dale Street

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Babylon	NY	11704	Suffolk	103	

09 COORDINATES — LATITUDE: 40° 43' 52." — LONGITUDE: 73° 23' 23."

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

III. INSPECTION INFORMATION

01 DATE OF INSPECTION	02 SITE STATUS	03 YEARS OF OPERATION
1 / 22 / 86 (MONTH DAY YEAR)	☐ ACTIVE ☒ INACTIVE	1978 (BEGINNING YEAR) / 1983 (ENDING YEAR) ___ UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply): ☐ A. EPA ☐ B. EPA CONTRACTOR ___ (Name of firm) ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR ___ (Name of firm) ☐ E. STATE ☒ F. STATE CONTRACTOR EA Science & Tech. (Name of firm) ☐ G. OTHER ___ (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
James Shultz	Senior Geologist	EA	(914) 692-6706

09 OTHER INSPECTORS	10 TITLE	11 ORGANIZATION	12 TELEPHONE NO.
Rebecca Ligotino	Environmental Scientist	EA	(914) 692-6706
			( )
			( )
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
Mr. Wayne DeChirico	QC Manager	Spectrum Finishing Corp, 50 Dale Street	(516) 694-0306
		Babylon, New York 11704	( )
Mr. Richard Gregorski	Marketing Manager	NTU Circuits, Inc. 1480 North Clinton Avenue	(516) 666-7211
		Bay Shore, New York 11706	( )
Mr. Errol Kitt	Asst. Project Engineer	Fanning, Phillips & Molner Consulting Engineers	(718) 767-3337
		80 Skyline Drive Plainview, New York 11803	( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
☒ PERMISSION ☐ WARRANT	1430	Partly cloudy, no snow (temp. 40's).

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO.
Rebecca Ligotino	EA Science and Technology	(914) 692-6706

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
Rebecca Ligotino		EA	(914) 692-6706	09 / 03 / 86 (MONTH DAY YEAR)

EPA FORM 2070-13 (7-81)

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	New

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

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

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

TONS _____

CUBIC YARDS _____

NO. OF DRUMS Unknown

03 WASTE CHARACTERISTICS (Check all that apply)

- ☒ A. TOXIC
- ☐ B. CORROSIVE
- ☐ C. RADIOACTIVE
- ☒ D. PERSISTENT
- ☐ E. SOLUBLE
- ☐ F. INFECTIOUS
- ☐ 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			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS	Unknown		

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

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
MES	Copper	7440-50-8	TK	440.0	mg/l
MES	Cadmium	7440-43-9	TK	0.07	mg/l
MES	Silver	7440-22-4	TK	1.1	mg/l
MES	Iron	7439-89-6	TK	10.6	mg/l
MES	Lead	7439-92-1	TK	4.6	mg/l
MES	Hexavalent Chromium		TK	0.15	mg/l
IOC	Flouride		TK	3.2	mg/l

V. FEEDSTOCKS (See Appendix for CAS Numbers) Unknown

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

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

EA Site Inspection
Appendixes 1.1-6 and 1.4-1

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	New

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ A. GROUNDWATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: 231,239
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Samples taken of NTU Circuit's cesspool contents by SCDHS from 1979-1982 exceeded ground-water effluent standards and NTU's SPDES permit. There are 8 Suffolk County Water Authority well fields, 3 East Farmingdale Water Authority well fields, and 1 Farmingdale Village well field within 3 mi of the site.

01 ☐ B. SURFACE WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: _____
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

No potential. Intervening terrain precludes runoff from reaching surface water.

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

None reported.

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

None reported.

01 ☐ E. DIRECT CONTACT
03 POPULATION POTENTIALLY AFFECTED: _____
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None reported.

01 ☐ F. CONTAMINATION OF SOIL
03 AREA POTENTIALLY AFFECTED: _____ (Acres)
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None reported.

01 ☒ G. DRINKING WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: 231,239
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Only as a result from ground-water contamination.

01 ☐ H. WORKER EXPOSURE/INJURY
03 WORKERS POTENTIALLY AFFECTED: _____
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None reported.

01 ☐ I. POPULATION EXPOSURE/INJURY
03 POPULATION POTENTIALLY AFFECTED: _____
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None reported.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE NY	02 SITE NUMBER New

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

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

None known.

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

None known.

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

None known.

01 ☒ M. UNSTABLE CONTAINMENT OF WASTES (Spills/Runoff/Standing liquids, Leaking drums) — 02 ☒ OBSERVED (DATE: 1979-1986) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: Unknown
04 NARRATIVE DESCRIPTION

Liquid wastes were discharged to leachpools.

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

None known.

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

No potential because the area was not sewered.

01 ☒ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☒ OBSERVED (DATE: 1979-1986) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

NTU repeatedly violated its SPDES permit by discharging excessive levels of heavy metals into the SPDES cesspool.

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

III. TOTAL POPULATION POTENTIALLY AFFECTED: 231,239

IV. COMMENTS

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

EA Site Inspection
Appendixes 1.1-3, 1.1-5 through 1.1-11, 1.3-6, and 1.4-1.

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	New

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				
☐ C. AIR				
☐ D. RCRA				
☐ E. RCRA INTERIM STATUS				
☐ F. SPCC PLAN				
☒ G. STATE (Specify) SPDES	NY0108260			
☐ H. LOCAL (Specify)				
☐ I. OTHER (Specify)				
☐ 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		
☒ I. OTHER leachpool (Specify)	unknown	

04 TREATMENT (Check all that apply)

- ☐ A. INCENERATION
- ☐ B. UNDERGROUND INJECTION
- ☐ C. CHEMICAL/PHYSICAL
- ☐ D. BIOLOGICAL
- ☐ E. WASTE OIL PROCESSING
- ☐ F. SOLVENT RECOVERY
- ☐ G. OTHER RECYCLING/RECOVERY
- ☐ H. OTHER _____ (Specify)

05 OTHER

- ☒ A. BUILDINGS ON SITE

06 AREA OF SITE

0.02 (Acres)

07 COMMENTS

The industrial site repeatedly violated ground-water effluent standards and its SPDES permit by discharging heavy metals into its cesspools.

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

☐ A. ADEQUATE, SECURE ☐ B. MODERATE ☐ C. INADEQUATE, POOR ☒ D. INSECURE, UNSOUND, DANGEROUS

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

Leachpools

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: ☐ YES ☒ NO

02 COMMENTS

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

EA Site Inspection
Appendixes 1.1-1, 1.1-3, and 1.1-6.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	New

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)

	SURFACE	WELL
COMMUNITY	A. ☐	B. ☒
NON-COMMUNITY	C. ☐	D. ☐

02 STATUS Unknown

ENDANGERED	AFFECTED	MONITORED
A. ☐	B. ☐	C. ☐
D. ☐	E. ☐	F. ☐

03 DISTANCE TO SITE
A. 1.2 (mi)
B. _____ (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

☐ 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 231,239

03 DISTANCE TO NEAREST DRINKING WATER WELL 1.(2 (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
15 (ft)	SSE	15 (ft)	Unknown (gpd)	☒ YES ☐ NO

09 DESCRIPTION OF WELLS (Including usage, depth, and location relative to population and buildings) There are 8 Suffolk County Water Authority well fields, 3 E. Farmingdale Water Authority well fields, and one Farmingdale Village Water Authority well field within 3 mi of the site. They penetrate the Upper Glacial and the Magothy Aquifer.

10 RECHARGE AREA		11 DISCHARGE AREA	
☒ YES ☐ NO	COMMENTS	☐ YES ☐ NO	COMMENTS

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

☐ 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
Neguntatogue Creek	☐	2.3 (mi)
	☐	(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. 10,962 NO. OF PERSONS	B. 41,213 NO. OF PERSONS	C. 102,980 NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION 0.1 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE _____

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)

Site is located in an industrial park which is bordered on 3 sides by cemetaries. The site is situated in an area where there is medium to high density residential development.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION	
01 STATE: NY	02 SITE NUMBER: New

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

☐ A. $10^{-6} - 10^{-8}$ cm/sec ☐ 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) Unknown

☐ 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	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH
1,300 to 1,400 (ft)	Unknown (ft)	Unknown

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE: SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
24 (in)	2.5-3.0 (in)	0 %	NA	0-2 %

09 FLOOD POTENTIAL N/A

SITE IS IN _____ YEAR FLOODPLAIN

10 ☐ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum) None

ESTUARINE: A. _____ (mi)

OTHER: B. _____ (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species) _____ (mi)

ENDANGERED SPECIES: None

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. Adjacent (mi)	B. 0.1 (mi)	C. 2.2 (mi)	D. 2.2 (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

Site is located on the southern side of Long Island, about 5 mi inland of Great South Bay at an elevation of about 64 ft above mean sea level. The site is largely flat with a regional slope of 0-2 percent to the south.

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

EA Site Inspection, Sections 4.2 and 4.3; USGS. 1979. 7.5-Minute Planimetric Series. Amityville Quad. LIRPB. 1982. Quantification and Analysis of Land Use for Nassau and Suffolk Counties; LIRPB. 1985. Population Survey. 1985: Current Population Estimates for Nassau and Suffolk Counties. Happauge, NY. US Dept. of Interior Geological Survey. 1967. Map of Flood-Prone Areas. 7.5-Minute Series. Amityville Quad. Ozard, J. 1986. NYSDEC. Personal Communication. 6 March. NYSDOH. 1982. NYS Atlas of Community Water System Services. SCWA. 1986. Active Services Estimates.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	New

II. SAMPLES TAKEN None

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER			
SURFACE WATER			
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL			
VEGETATION			
OTHER			

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
Organic Volatiles	Measured with photoionozation-detection device; no levels above background were detected.
Slope	Estimated with Suunto Clinometer

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☐ GROUND ☒ AERIAL

02 IN CUSTODY OF EA Science and Technology (Name of organization or individual)

03 MAPS ☒ YES ☐ NO

04 LOCATION OF MAPS EA Science and Technology

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

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

EA Site Inspection

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	New

II. CURRENT OWNER(S)

01 NAME	02 D+B NUMBER
Spectrum Finishing, Inc.	

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

05 CITY	06 STATE	07 ZIP CODE
Babylon	NY	11704

01 NAME	02 D+B NUMBER

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

05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER

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

05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER

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

05 CITY	06 STATE	07 ZIP CODE

PARENT COMPANY (If applicable)

08 NAME	09 D+B NUMBER

10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE

12 CITY	13 STATE	14 ZIP CODE

08 NAME	09 D+B NUMBER

10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE

12 CITY	13 STATE	14 ZIP CODE

08 NAME	09 D+B NUMBER

10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE

12 CITY	13 STATE	14 ZIP CODE

08 NAME	09 D+B NUMBER

10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE

12 CITY	13 STATE	14 ZIP CODE

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

01 NAME	02 D+B NUMBER
Mr. James Gray	

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

05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER

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

05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER

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

05 CITY	06 STATE	07 ZIP CODE

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

01 NAME	02 D+B NUMBER

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

05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER

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

05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER

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

05 CITY	06 STATE	07 ZIP CODE

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

Appendixes 1.1-1, 1.1-2, and 1.1-3

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	New

II. CURRENT OPERATOR (Provide if different from 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				

OPERATOR'S PARENT COMPANY (If applicable)

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)

01 NAME		02 D+B NUMBER	10 NAME		11 D+B NUMBER
NTU Circuits, Inc.					
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, etc.)		13 SIC CODE
1480 North Clinton Avenue					
05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE
Bay Shore	NY	11706			
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD				
6	Mr. Timothy Wu				
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 DURING THIS PERIOD				
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 DURING THIS PERIOD				

PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)

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

Appendixes 1.1-1, 1.1-2 and 1.1-3.

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	New

II. ON-SITE GENERATOR N/A

01 NAME	02 D+B NUMBER
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
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
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)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	New

II. PAST RESPONSE ACTIVITIES

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

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

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

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

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

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

01 ☒ G. WASTE DISPOSED ELSEWHERE — 02 DATE 30 Nov 1986 — 03 AGENCY _____
04 DESCRIPTION Based on a Stipulation of Discontinuance, all liquid was removed from the leachpools and taken to NTU's new building where it was treated in their waste-*

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

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

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

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

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

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

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

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

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

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

EPA FORM 2070-13 (7-81) *water treatment system. Any sediment or sludge removed was taken by a licensed hauler for proper disposal.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE NY	02 SITE NUMBER New

II PAST RESPONSE ACTIVITIES (Continued)

01 ☐ R. BARRIER WALLS CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ S. CAPPING/COVERING — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ T. BULK TANKAGE REPAIRED — 02 DATE _____ — 03 AGENCY _____
04. DESCRIPTION

01 ☐ U. GROUT CURTAIN CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ V. BOTTOM SEALED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ W. GAS CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ X. FIRE CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ Y. LEACHATE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ Z. AREA EVACUATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 1. ACCESS TO SITE RESTRICTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 2. POPULATION RELOCATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 3. OTHER REMEDIAL ACTIVITIES — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

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

Section 4.1
Appendix 1.1-3

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	New

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☒ YES ☐ NO

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

NTU had to clean up all existing leach pools under a Stipulation of Discontinuance issued by the New York State Attorney General on 30 April 1982.

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

Appendixes: 1.1-2, 1.1-10, and 1.1-11.

6. ASSESSMENT OF DATA ADEQUACY AND RECOMMENDATIONS

6.1 ADEQUACY OF EXISTING DATA

The available data are considered insufficient to prepare a final HRS score for this site. Ground-water quality data are lacking.

6.2 RECOMMENDATIONS

In order to prepare a final HRS score for this site, analytical data regarding the quality of the ground water, surface water, leachate, and sediment will be necessary, thus requiring performance of a Phase II investigation. The proposed Phase II study would include the installation of four test borings/observation wells, and the collection and analysis of ground-water samples.

6.3 PHASE II WORK PLAN

6.3.1 Task 1 - Mobilization and Site Reconnaissance

Project mobilization includes review of the Phase I report and updating the site data base with any new information made available since completion of the Phase I report. Based on that review, a draft scope of work for this site will be agreed to and a project schedule developed. At this time, a draft Quality Assurance/Quality Control (QA/QC) document will be prepared in accordance with the most up-to-date NYSDEC guidelines.

Site reconnaissance will be performed to examine general site access for Phase II studies. Site reconnaissance will familiarize key project personnel with the site, enable the project geologists to evaluate potential boring/well locations, and enable the project Health and Safety Officer to develop specific health and safety requirements for the field activities. Emergency, fire, and hospital services will be identified. Standard practice during site reconnaissance is an air survey with a photoionization detector (HNU or similar instrument). The air survey would be performed around the site perimeter and throughout the site for safety purposes. Detection of releases to air during site reconnaissance may warrant further confirmation studies. Based on the Phase I study, it is expected that field activities will require only Level D health and safety protective measures.

6.3.2 Task 2 - Geophysics

Geophysical surveying is not receommneded at this site because of the site's small size, numerous buildings, and above ground and buried utilities.

6.3.3 Task 3 - Preparation of Final Sampling Plan

All data collected during Tasks 1 and 2 will be evaluated to finalize sampling and boring/well locations. The final sampling plan will be developed and submitted to NYSDEC for approval. The plan will include final sampling locations, boring and well specifications, and reference pertinent portions of the QA/QC Plan. A final budget will be developed to complete the drilling and sampling program.

6.3.4 Task 4 - Test Borings and Observation Wells

Because there are hundreds of feet of unconsolidated sediment underlying the site, EA recommends that the subsurface investigation be confined, at this time, to the shallow glacial aquifer to confirm if ground-water contamination is present. If ground-water contamination is detected, then the investigations could be expanded to include the installation and sampling of monitoring wells completed to greater depths. Based upon currently available information, EA recommends the installation of four test borings/observation wells. This work would be performed under the fulltime supervision of a geologist. It is anticipated that the hollow-stem auger drilling method will be used. Prior to the drilling of each boring/well, and at the completion of the last boring/well, the drilling equipment which comes in contact with subsurface materials will be steam-cleaned, as well as the split-spoon sampler after obtaining each sample. Soil sampling will be performed using a split-spoon sampler at approximately 5-ft intervals and at detected major stratigraphic changes. An HNU, or similar instrument, would be used to monitor the potential organic vapors emitted during drilling operations and from each soil sample. Samples of major soil/unconsolidated sediments will be collected for grain-size and/or Atterburg Limits analysis.

It is anticipated that the wells to be installed at this site will be completed in the unconsolidated sediment, approximately 10-20 ft below the ground-water table. Standard construction of such a well would include 10-20 ft of 2-in. diameter threaded-joint PVC screen and an appropriate length of PVC riser with a bottom plug cap, sand pack, bentonite seal, and protective surficial steel casing with a locking cap.

Upon completion and development of the wells by air surging/pumping, the vertical elevation of the upper rim of each well casing and the horizontal location will be surveyed in order to aid in evaluation of the ground-water flow direction. Depending upon the yield of each Phase II well, a short-term, low-yield pumping test will be performed in each well.

For cost estimating purposes, it is assumed that:

a. The depth of each of the four monitoring wells will be 25 ft below ground surface.

b. The four wells will require 9 days to install, develop, and test.

c. All drill sites are accessible by truck-mounted drilling rigs as determined by the driller.

d. There are no excessive amounts of cobbles/boulders which would increase drilling time.

e. Steam-cleaning of drilling/sampling equipment will be performed at each boring/well location. The fluids will be discharged to ground surface.

f. All drill cuttings, fluids, and development water will be left on, or discharged to, the ground surface in the immediate area of the activity.

g. That permission from appropriate land owners to drill borings/wells on their property will be a simple process (expedited by the NYSDEC, if necessary) so that delays during field operations are not incurred.

6.3.5 Task 5 - Sampling

All sampling and analysis will be conducted in accordance with the project QA/QC Plan. Analysis for the complete Hazardous Substance List parameters has not been performed on any of the samples collected at the site. Therefore, to more fully characterize the site, the analytical program for every sample will include the 130 organic and 25 inorganic parameters listed in Statement of Work No. 784, New York State Department of Environmental Conservation Superfund and Contract Laboratory Protocol, January 1985. Also, all additional non-priority pollutant GC/MS major peaks will be identified and quantified. Major peaks will be considered as those whose area is 10 percent or greater than the calibrating standard(s). Based upon the currently available information, collection and analysis of the following numbers and types of samples is recommended:

4 Ground-water samples (one from each Phase II well).

6.3.6 Task 6 - Contamination Assessment

EA will evaluate the data obtained during the records search and field investigation: prepare final HRS scores and documentation forms; complete EPA

Form 2070-13; summarize site history, site characteristics, available sampling and analysis data; and determine the adequacy of the existing data to confirm release, and if there is a population at risk.

6.3.7 Task 7 - Remedial Cost Estimate

EA will evaluate remedial alternatives for the site and develop a list of potential options given the information available on the nature and extent of contamination. Approximate cost estimates for the selected potential remedial options will be computed. This work is not intended to be, or a substitute for, a formal cost effectiveness analysis of potential remedial actions.

6.3.8 Task 8 - Final Phase II Report

In accordance with current (January 1985) NYSDEC guidelines, the Phase II report will include:

a. The results of the Phase II investigation, complete with boring logs, photos, and sketches developed as part of the Phase II field work.

b. Final HRS scores with detailed documentation.

c. Selected potential remedial alternatives and associated cost estimates.

In addition to the final Phase II report, the following raw data and resulting reduction would be provided to NYSDEC:

a. geophysical

b. well logs

c. all sampling forms and data

d. all analytical data

e. chain-of-custody forms

f. other pertinent collected information.

6.3.9 Task 9 - Project Management/Quality Assurance

A Project Manager will be responsible for the supervision, direction, and review of the project activities on a day-to-day basis. A Quality Assurance Officer will ensure that the QA/QC Program protocols are maintained and that the resultant analytical data are accurate.

6.4 PHASE II COST ESTIMATE

Based on the scope of work and assumptions described above, the estimated costs to complete the Phase II investigation of the NTU Circuits, Inc. site are as follows:

Consultant Costs (including labor, direct costs, fee)	$29,600
Drilling Contractor	13,700
Laboratory	7,400
Total	$50,700

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Appendix 1.1-1

NTU CIRCUITS, Inc.

1480 NORTH CLINTON AVE., BAY SHORE, N.Y. 11706 • 516/666-7211

p1-4

January 14, 1986

Ms. Rebecca Ligotino
E A Science and Technology
RD #2 Box 91
Goshen Turnpike
Middletown, NY 10940

Dear Ms. Ligotino

As per our telephone conversation of January 13, 1986, I am enclosing a copy of the report prepared by the Suffolk County Department of Health Services. This is the agency that supervised and approved the clean up and closing of the NTU Circuits facility at 60 Dale Street, West Babylon. This allowed the move into our new facility, which includes an automated E.P.A. approved waste treatment system.

A few facts that may be helpful with your investigation are as follows:

1) NTU Circuits leased 4000 sq. ft. of factory space from James Gray who later sold property to Spectrum Funding Inc.

2) NTU Circuits occupied this space for six years. During the first three only single sided printed circuit boards were manufactured. This process required no plating activities.

3) During the last three years, double sided printed circuit boards were produced, which required plating.

4) All plating solutions were drummed and hauled by Chemical Pollution Control Inc., 120 South Fourth Street, Bay Shore, NY 11706.

5) The discharge in question was running rinse tanks used after a series of still rinses. This discharge was put into a group of common storm drains located in the parking lot. It should be noted that these drains had grated tops so parking lot run off needs could be satisfied. These pools had periodic samples drawn by Suffolk County Department of Health Services.

6) NTU Circuits employed approximately 15 people at the Dale Street facility and manufactured proto type quantities only. Water consumption reports were submitted to qualify for a S.P.E.D.E.S. permit which was granted.

p.214

7) The Dale Street location was in an industrial park which housed many plating and coating companies as well as the Babylon Land Fill.

I hope this information is helpful. I have left my calandar open for January 22 at 2:30 PM for the site survey. If this date or time changes, please inform me so I may be available.

If you have any further questions, feel free to contact me.

Yours truly,

Richard E. Gregorski

Richard E. Gregorski
Operations Manager

cc: Fanning and Phillips Association
NYS Department of Environmental Conservation
Attn: Micheal Komorske

p 3of1

SUFFOLK COUNTY DEPARTMENT OF HEALTH SERVICES
INDUSTRIAL WASTE AND HAZARDOUS MATERIALS CONTROL
15 HORSEBLOCK PLACE, FARMINGVILLE, N.Y. 11738
(516) 451-4633

NAME OF FACILITY: NTU LABORATORIES	OWNER/OFFICER: Timothy Wu		PAGE 1 OF
COMPANY NAME: dBA NTU CIRCUITS, INC.	CONTACT		TEL.
PLANT ADDRESS: 60 DALE St.	VILLAGE: W. Babylon	TOWN: Babylon	ZIP: 11735
MAILING ADDRESS			
DATE: 2 Dec 83	TIME: 9:15 AM	ORIG. PERIODIC (RE.) (WASTE) NO WASTE H&H	SEWAGE SYSTEM: PUBLIC PRIVATE
INDUSTRY: Mfg. of Printed Circuit Boards			
SPDES OR NPDES PERMIT? YES NO PERMIT NO.		360 PERMIT? YES NO PERMIT NO.	
SCAVENGER: PATTERSON Chemical			TEL.
SCAVENGER APPROVED (YES) NO	PICK UP RECORDS AVAILABLE (YES) NO	RECORDS CONSISTENT WITH EXPECTED WASTE GENERATION YES NO	
HEATING SYSTEM-MFG. NAME			FUEL TYPE / FIRING RATE
INCIN. NAME			WASTE BURNED / RATE
DRUM STORAGE YES NO	NUMBER STORED INDOORS OUTDOORS	TYPE OF MATERIAL STORED WASTE RAW	
STORAGE TANKS YES NO	NUMBER OF TANKS ABOVEGROUND UNDERGROUND	TYPE OF MATERIAL STORED WASTE RAW	
OPEN PROCESS TANKS YES NO	NUMBER OF OPEN PROCESS TANKS	ANY ART. XII VIOLATIONS YES NO	

The following information is for the record of NTU Circuits concerning clean up of contaminated storm drains & sanitary pools as per consent order Index No. 81-16855.

(1) Patterson Chemical arrived at approx. 11:45 am to finish clean up at the NTU site. (A) SD-8 was inspected and completed clean out approved. (B) SP-A was cleaned & treated with lime and cleaned sand was filled to the top. Piping was concreted & pool paved over. (C) Sanitary drainage pools #2 & #3 were also treated as mentioned in (B). (D) SD-7, SD-8 & SD-11 were also treated in the same manner as (B). (These pool needed ≈ 1 ft of sand)

PERMISSION IS GRANTED BY THIS FACILITY TO THE SUFFOLK COUNTY DEPARTMENT OF HEALTH SERVICES TO CONDUCT ROUTINE SAMPLING OF CESSPOOLS, STORMDRAINS, AND OTHER DISCHARGE POINTS AT THE FACILITY.

REINSPECTION SCHEDULED ON OR AFTER _____. FAILURE TO CORRECT UNSATISFACTORY CONDITIONS BY REINSPECTION DATE MAY RESULT IN A HEARING AND/OR FINE.

SIGN. OF PERSON REC. REPORT	TITLE Pres.	INSPECTOR JoAnne Johnson

155-9/82 5/81 TJK

PAGE TWO

P.4 of 4

SUFFOLK COUNTY DEPARTMENT OF HEALTH SERVICES
INDUSTRIAL WASTE AND HAZARDOUS MATERIALS CONTROL
15 HORSEBLOCK PLACE, FARMINGVILLE, N.Y. 11738
(516) 451-4633

NAME OF FACILITY: NTU		OWNER/ OFFICER	PAGE 1 OF
COMPANY NAME		CONTACT	TEL.
PLANT ADDRESS: 60 DALE ST	VILLAGE: W BAB	TOWN: BABYLON	ZIP
MAILING ADDRESS			
DATE: 3 DEC 83	TIME: 10 AM	ORIG. PERIODIC RE WASTE NO WASTE H&H	SEWAGE SYSTEM PUBLIC PRIVATE
INDUSTRY			
SPDES OR NPDES PERMIT? YES NO	PERMIT NO.	360 PERMIT? YES NO	PERMIT NO.
SCAVENGER			TEL.
SCAVENGER APPROVED YES NO	PICK UP RECORDS AVAILABLE YES NO	RECORDS CONSISTENT WITH EXPECTED WASTE GENERATION YES NO.	

HEATING SYSTEM-MFG. NAME	FUEL TYPE	FIRING RATE
INCIN. NAME	WASTE BURNED	RATE

DRUM STORAGE YES NO	NUMBER STORED INDOORS OUTDOORS	TYPE OF MATERIAL STORED WASTE RAW
STORAGE TANKS YES NO	NUMBER OF TANKS ABOVEGROUND UNDERGROUND	TYPE OF MATERIAL STORED WASTE RAW
OPEN PROCESS TANKS YES NO	NUMBER OF OPEN PROCESS TANKS	ANY ART. XII VIOLATIONS YES NO

the 55 gallon drums containing toxic & or hazardous wastes were pumped dry & transported to New Jersey for disposal. (≅ 20 x 55 gallon drums)

PERMISSION IS GRANTED BY THIS FACILITY TO THE SUFFOLK COUNTY DEPARTMENT OF HEALTH SERVICES TO CONDUCT ROUTINE SAMPLING OF CESSPOOLS, STORMDRAINS, AND OTHER DISCHARGE POINTS AT THE FACILITY.

REINSPECTION SCHEDULED ON OR AFTER _____. FAILURE TO CORRECT UNSATISFACTORY CONDITIONS BY REINSPECTION DATE MAY RESULT IN A HEARING AND/OR FINE.

SIGN. OF PERSON REC. REPORT	TITLE	INSPECTOR
[illegible]	[illegible]	JoAnne Johnson

155-9/82 5/81 TJK

B. Ligotino

RECEIVED MAY 2 1986

Appendix 1.1-2

p. 1 of 2

INTERVIEW ACKNOWLEDGEMENT FORM

Site Name: NTU Circuits

I.D. Number: 152086

Person Contacted: Mr. Wayne DeChirico

Date: 22 January 1986

Title: Quality Control Manager

Affiliation: Spectrum Finishing Corp.

Phone No.: (516) 694-0306

Address: 50 Dale Street
Babylon, New York 11704

Persons Making Contact:
EA Representatives:

Shultz/Ligotino

Type of Contact: In Person

Interview Summary:

The site located at 60 Dale Street is currently owned by Spectrum Finishing Corp. (Mr. William DeChirico, Vice President). Spectrum purchased the building in 1981 from Mr. James Gray. The building was constructed in 1972. The building is separated into two sections, the eastern half of which was occupied by NTU Circuits, Inc. for a 6-year period from 1978 through 1983.
Mr. DeChirico indicated that for the 6-month period of April 1984-September 1984, the space was occupied by a distributor. It is currently being used by a pipe organ manufacturer, who has been there approximately 1 year. Information regarding prior occupancy of the building could not be provided at the time of EA's site visit. The western portion of the building is occupied by Welding Metallurgy, Inc.

Mr. Gregorski of NTU Circuits indicated that NTU's operation consisted of an office, a CNC drilling room in the east portion, plating and scrubbers along the north wall, a yellow room (photo printing) in the west section, and shipping and CNC programming in the southern portion. Three (possibly 4) leach pools used by NTU Circuits were located south of the building. The west leach pool was the SPDES pool receiving industrial waste. All three leach pools were interconnected, therefore, the other two pools also received industrial waste at one time or another. A sanitary cesspool was located west of the leach pools. This cesspool also received industrial waste. The SPDES leach pool and the sanitary cesspool were abandoned in 1983. The SPDES leach pool was scavanged, liquid and sludge removed below the bottom to clean soil, and backfilled with clean sand. The SPDES pool has since been reopened, and a "jerry jug" placed in the abandoned pool. The sanitary pool was emptied of liquid wastes, slurried with lime, filled in with clean sand, and paved over. The sludge and liquid were also removed from the remaining leach pools. The soil was removed two feet below the bottom and replaced with clean sand. The remaining leach pools have been allowed to be used. The removed sludge and liquid were removed to the present NTU treatment system. A new sanitary cesspool has been installed east of the abandoned cesspool along the old discharge line. Another leach pool is located in the north side of the building and receives surface runoff.

← see comment

During the site reconnaissance, Mr. DiChirico pointed out a ceiling to floor pipe which was modified by NTU Circuits as reported by Spectrum's maintenance personnel to Mr. DiChirico during cleanup of the building. Mr. DiChirico indicated that the pipe should run straight to the drain field with no joints.

Mr. Gregorski indicated that at one time there was automobile work going on around the site and transmission fluid was being dumped into the leach pools.

Acknowledgement:

I have read the above transcript and I agree that it is an accurate summary of the information verbally conveyed to EA Science and Technology interviewers, or as I have revised below, is an accurate account.

Revisions (please write in corrections to above transcript):

We know of no reopening of the SPDES pool. Appearance of pool is exactly the way Patterson Chemical left it when they backfilled it.

Signature: Wayne DeChirico Date: 4-30-86

Appendix 1.1-3

p. 1 of 30

FANNING, PHILLIPS & MOLNAR
Consulting Engineers
80 SKYLINE DRIVE
PLAINVIEW, NEW YORK 11803

RICHARD FANNING, P. E. (1931-1984)
KEVIN J. PHILLIPS, P. E., Ph. D.
GARY A. MOLNAR, P. E.

516/938-2200
718/767-3337

May 23, 1986

Ms. Rebecca Ligotino
EA Science and Technology
RD 2 Box 91
Goshen Turnpike
Middletown, New York 10940

Dear Rebecca:

Thank you for giving NTU and myself the extended time to properly address and comment on your Interview Acknowledgement Form. Our comments and revisions to the Form are discussed in the enclosed Interview Acknowledgement Form Review and Verification Report. As you will see, there are several important paragraphs and statements that should be clarified, modified and/or deleted from the Form's Interview Summary. In order to facilitate your understanding of where our comments have been made, I have numbered each paragraph and line and will address each correction in the text of the Interview Summary by the paragraph number (P1 - P4) and line number (Lines 1-38). For your convenience, I have enclosed a copy of your Interview Summary that has been numbered by paragraph and line. It has been incorporated into our Review and Verification Report as Appendix A. In addition, your Site Sketch should be slightly changed and coincide with the modified Interview Summary. A copy of the corrected Site Sketch is also enclosed in Appendix A of our Review and Verification Report.

To place this review into perspective, I would like to summarize chronologically NTU's case history:

- o 1979-1980 -Suffolk County and NTU sign Consent Order to treat its wastewater prior to discharging at the old site.

- o 1982 (March) -NTU decides to move from the old site to a sewered area (POTW).

p. 2830

- o 1982 (April) -New York State Attorney General writes Stipulation of Discontinuance with NTU for clean-up of old site prior to moving.

- o 1983 (Sept.) -NTU vacates the old site and moves into the new site in the Southwest Sewer District.

- o 1983 (Nov.-Dec.) -NTU complies with its Stipulation of Discontinuance on time by cleaning up all leaching pools in the presence of the Suffolk County Department of Health Services and Fanning, Phillips and Molnar

When describing the NTU site, I think that several major points should be kept in mind and perhaps given emphasis when writing your Interview Summary:

- o NTU had clean-up work done at the site
- o The clean-up was performed correctly and under good environmental engineering practice
- o The clean-up was supervised by the Suffolk County Department of Health Services
- o Photographs of the clean-up were taken and a report was written on the compliance of NTU to its Stipulation of Discontinuance
- o The New York State Attorney General approved the clean-up and NTU was deemed in complete compliance
- o Since NTU had vacated the premises in September, 1983 and entirely cleaned the site in December of 1983, anything that occurred at the site after NTU's departure and clean-up is not NTU's responsibility

If there are any questions, please feel free to contact me.

Thanks again for your time and attention to this important matter.

Very truly yours,

Errol S. Kitt

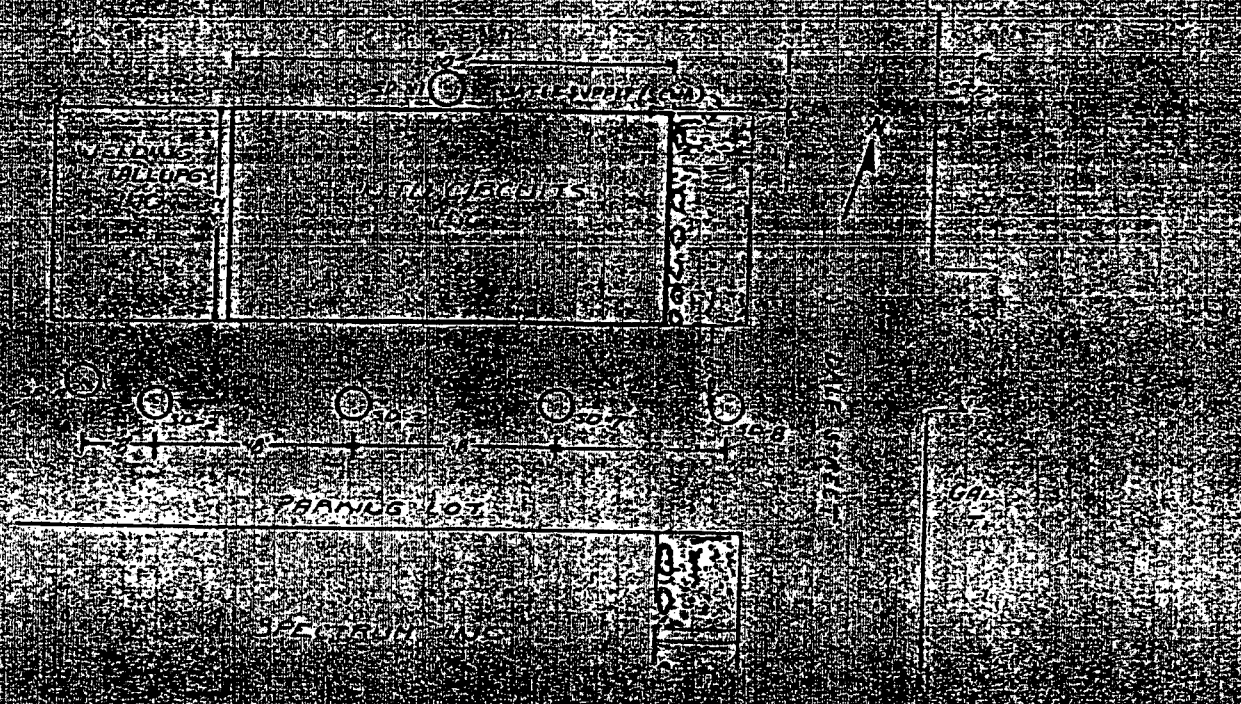
Errol S. Kitt
Assistant Project Engineer

ESK/kr
Enclosure

RECEIVED MAY 27 1986
p36 30

REPORT

REVIEW AND VERIFICATION OF INTERVIEW ACKNOWLEDGEMENT FORM FOR NTU CIRCUITS SITE



MAY 12, 1986

fanning, phillips & molnar
ENGINEERS
PLAINVIEW NEW YORK

REPORT ON THE REVIEW AND VERIFICATION OF THE INTERVIEW ACKNOWLEDGEMENT FORM FOR THE NTU CIRCUITS SITE

There are several important paragraphs and statements that should be clarified, modified and/or deleted from the Interview Summary in your Interview Acknowledgement Form. The following report outlines and discusses each of these corrections. In order to facilitate your understanding of where the corrections have been made, each paragraph and line of your Interview Summary has been numbered, and each correction to the text will be addressed by the paragraph number (P1-4) and line number (Lines 1-38). A copy of your numbered Interview Summary is enclosed in Appendix A. In addition, your Site Sketch has been modified and coincides with the corrections to the text. A copy of the corrected Site Sketch is also enclosed in Appendix A. The revisions to the Interview Summary are as follows:

1. Paragraph 1, Line 5: It should be written that NTU vacated the premises in September, 1983.
2. Paragraph 2, Lines 12-15: NTU's old operation and building layout was as follows:
    - Offices and Machine Shop (Drilling and Routing) in the eastern portion of the building
    - Plating and Scrubbers along the entire north wall of the building.
    - Photographic Developing/Printing (Yellow Room) in the western section of the building
    - Lavoratories in the southwestern portion of the building

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- o Photographic Developing Dark Room in south-central area near exit door on the south side of the building
- o Shipping, Programming and Machine Drilling in the southeastern portion of the building

3. Paragraph 2, Lines 15-20: These sentences pertain to the locations and usage of the leaching pools at the site. This information should be separated from the interior building description (in lines 12-15) and from the clean-up associated with each pool (lines 20-32), and should be described in its own paragraph. For clarity, it would be easier to number each of the pools utilizing the designations that were used under NTU's Stipulation of Discontinuance as recognized by the State Attorney General, the Suffolk County Department of Health Services, the New York State D.E.C., NTU and Fanning, Phillips and Molnar (see Appendix B for report on compliance to Stipulation of Discontinuance). Corrections to the locations and usage of each leaching pool are as follows:

   - o There were three (3) leaching pools officially used by NTU, namely, SP-A, SD-3 and SD-7. The locations of these pools are shown in the Site Sketch. Sanitary pool SP-A was used for sanitary wastewater by NTU, as well as NTU's neighbor, Welding Metallurgy. Drainage pool SD-3 was the SPDES pool that received industrial wastewater from NTU. Drainage pool SD-7 was used for photoprinting rinsewater by NTU. At one time, SD-3 was interconnected with SD-7 and SD-8, but connections were later sealed closed. Contaminants were found in all

p.60830

three of these pools and therefore, they were all cleaned and/or filled and closed as part of NTU's Stipulation of Discontinuance (see discussion of clean-up procedures associated with NTU's compliance to their Stipulation of Discontinuance)

- Three (3) other leaching pools existed at the site, namely, SD-2, SD-8 and SD-N1. The locations of these pools are shown in the Site Sketch. All three of these pools were drainage pools that received roof drainage and surface runoff. However, contaminants were found in these pools, and as a result, they were all cleaned and/or filled and closed as part of NTU's Stipulation of Discontinuance (see discussion of clean-up procedures associated with NTU's compliance to their Stipulation of Discontinuance).

4. Paragraph 2, Lines 20-32: These sentences basically describe the clean-up work done on each of the leaching pools by NTU to comply with their Stipulation of Discontinuance. Due to the importance of the clean-up and to clarify the work done on each of the leaching pools, a separate paragraph should be devoted to these clean-up proceedings. Each pool should be numbered, as designated in the Stipulation of Discontinuance, and the specific clean-up work described individualy for each pool. In addition, the paragraph should contain the dates that the clean-up occurred and any other pertinent information such as the supervision of the clean-up by the Suffolk County Department of Health Services

and Fanning, Phillips and Molnar Engineers; the clean-up was approved by Suffolk County and New York State, etc. A summary listing the major points and events that transpired during the site clean-up that should be included in your report is as follows (see Appendix B for report on compliance to Stipulation of Discontinuance):

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On November 29 and December 1 and 2 of 1983, in accordance with the clean-up plan under NTU's Stipulation of Discontinuance which was approved by the Suffolk County Department of Health Services and New York State, NTU performed the following clean-up operations to comply with the aforementioned Stipulation:

- Drainage pools SD-2 and SD-3 (SPDES pool) had their liquid removed and transported by a certified waste hauler to NTU's new building where it was treated in their wastewater treatment system. The bottom of each pool was lime slurried to precipitate any residual metal, the pipes were concreted closed, and the pools were filled in with clean sand and paved over to render the surfaces impervious and pools unusable.
- Drainage pools SD-7, SD-8 and SD-N1 had their liquid removed and transported by a certified waste hauler to NTU's new building where it was treated in their wastewater treatment system. In each pool, 1-2 feet of bottom material was removed and replaced with 1-2 feet of clean sand. The

bottom material was removed by the certified waste hauler to be disposed of an in environmentally safe manner.

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- Also, sanitary pool SP-A was cleaned, filled in with clean sand and paved over in accordance with the Stipulation.
- In summation, the only leaching pools that remained usable were drainage pools SD-7, SD-8 and SD-N1. Three pools were filled, paved over and rendered unusable, namely, SP-A, SD-2 and SD-3 (SPDES pool).
- Locations of all leaching pools are shown in the Site Sketch.
- In addition, all drums containing liquid waste that were on the premises were emptied, removed and transported by a certified waste hauler to a Treatment Storage and Disposal Facility to be disposed of in an environmentally safe manner.

5. Paragraph 2, Lines 23 and 24: This sentence mentions the discovery that the SPDES pool (known as SD-3 under the Stipulation of Discontinuance), which had been cleaned, filled in and paved over by NTU under their Stipulation of Discontinuance, had been re-opened and tampered with. This point should be addressed in a paragraph by itself and the wording clarified to show that the re-opening of the pool occurred after NTU had paved it over and left the site. In September of 1983, NTU vacated the premises and was in their new building at the time of the clean-up in November and

early December, 1983. Due to the cleanup proceedings, the SPDES pool, SD-3, had been cleaned, filled in and paved over to render the surface impervious and pool unusable. Sometime after this work, someone removed the asphalt/pavement and tampered with the pool. NTU was at that time, and at present, no longer responsible for any actions that occurred or may occur at these leaching pools. Any problems that take place should be the responsibility of the current owner of the site.

6. Paragraph 2, Line 28: This sentence pertains to the leaching pools that were allowed to be used after compliance with the Stipulation of Discontinuance. To clarify the pools that remained usable, it would be easier to number the pools and mention them in the text, utilizing the pool designations that were used in the Stipulation of Discontinuance. Thus, it should read that after the pools were cleaned in compliance with the Stipulation of Discontinuance, pools SD-7, SD-8 and SD-N1 remained open and usable. This information could be included in the paragraph that describes the Stipulation and clean-up proceedings.

7. Paragraph 2, Lines 28 and 29: This sentence mentions the removal of liquid and sludge from the leaching pools. It pertains to an action taken as part of NTU's clean-up and should be discussed together in the paragraph that addresses the other clean-up and Stipulation compliance actions. In addition, during the clean-up proceedings, <u>only</u> the liquid waste that was removed from the leaching pools was

transported to NTU's new building and treated in its wastewater treatment system. The sludge/bottom sandy material from the leaching pools was removed by the certified waste hauler to be disposed of in an environmentally safe manner. The sludge was not taken to NTU as written in your Interview Summary (see Appendix B for report on compliance to Stipulation of Discontinuance).

8. Paragraph 2, Lines 29-31: The new sanitary pool mentioned in this sentence should be discussed in a separate paragraph, rather than in the same paragraph as the old pools cleaned under the Stipulation of Discontinuance. The new sanitary pool was installed together with a new septic tank in September, 1982. It is located approximately midway between the two drainage pools, SD-2 and SD-3, that were filled in, paved over, and pipes concreted closed. The new pool and septic tank was hooked up to the lavatories. The old sanitary pool, SP-A, was cleaned, filled in and paved over as part of the clean-up plan. The location of the new pool and septic tank is shown in the Site Sketch.

9. Paragraph 2, Lines 31-32: The leaching pool on the north side of the building was officially designated as drainage pool SD-N1. It was cleaned as part of the Stipulation of Discontinuance and should be discussed in the paragraph that describes the clean-up and Stipulation of Discontinuance. The statement is correct in that it receives surface runoff.

10. Paragraph 3, Lines 33-36: This paragraph discusses the statement made by Mr. DiChirico that NTU modified a ceiling to floor pipe which leads to the drainage field. This

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paragraph inferes that NTU had illegally modified the piping and was involved in some wrongful action. Mr. DiChirico falsely accused NTU of foul play and therefore, we feel that this paragraph should be removed from your Interview Summary. We take exception to Mr. DiChirico's report and are willing to sign affidavits to show that the pipe was not tampered with while NTU was present at the building and that NTU is not responsible for this modified pipe. NTU's innocence was verified by David Obrig of the Suffolk County Department of Health Services, who had checked and inspected the building several times during NTU's occupancy and during the site/ building clean-up that occurred (under the Stipulation of Discontinuance) just after NTU had vacated the premises. The modified pipe did not exist at any of his inspections. Any modification to the pipe after NTU's departure is not NTU's problem, but is rather the responsibility of the owner. Perhaps Mr. DiChirico has confused NTU with another one of his tenants. In addition to the deletion of Mr. DiChirico's report from the text of the Interview Summary, it should also be removed from the Site Sketch as well.

11. Paragraph 4, Lines 37 and 38: This sentence relates to Mr. Gregorski's indication that, on several occasions, automobile work was performed near the leaching pools and that oils and transmission fluid was being dumped into the pools. This statement should be modified to point out that the automobile work was not occurring on NTU's property and

not done by NTU employees. The automobile work was being performed in the parking area of Welding Metallurgy Inc. (NTU's neighbor) in the vicinity of leaching pools SP-A and SD-2 (see Site Sketch for location).

p.120830

12. Site Sketch: As mentioned, the Site Sketch should be modified and coincide with the corrections to your Interview Summary. Areas that should be changed in the Site Sketch concern the locations and numbering of leaching pools, the locations of old operations inside the building, the notes regarding the clean-up of each leaching pool, and the removal of Mr. DiChirico's ceiling to floor pipe. Enclosed in Appendix A is a corrected version of your Site Sketch.

As you can see, several important corrections and modifications to your Interview Summary should be made. When describing the NTU site, I think that several major points should be kept in mind and perhaps given emphasis when writing your Interview Summary:

- NTU had clean-up work done at the site
- The clean-up was performed correctly and under good environmental engineering practice
- The clean-up was supervised by the Suffolk County Department of Health Services
- Photographs of the clean-up were taken and a report was written on the compliance of NTU to its Stipulation of Discontinuance
- The New York State Attorney General approved the clean-up and NTU was deemed in complete compliance

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- Since NTU had vacated the premises in September, 1983 and entirely cleaned the site in December of 1983, anything that occurred at the site after NTU's departure and clean-up is not NTU's responsibility

APPENDIX A

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INTERVIEW ACKNOWLEDGEMENT FORM

Site Name: NTU Circuits

I.D. Number: 152086

Person Contacted: Mr. Richard Gregorski

Date: 22 January 1986

Title: Marketing Manager

Affiliation: NTU Circuits, Inc.

Phone No.: (516) 666-7211

Address: 1480 North Clinton Avenue
Bay Shore, New York 11706

Persons Making Contact:
EA Representatives:

Shultz/Ligotino

Type of Contact: In Person

Interview Summary:

The site located at 60 Dale Street is currently owned by Spectrum Finishing Corp. (Mr. William DeChirico, Vice President). Spectrum purchased the building in 1981 from Mr. James Gray. The building was constructed in 1972. The building is separated into two sections, the eastern half of which was occupied by NTU Circuits, Inc. for a 6-year period from 1978 through 1983.

#1 Mr. DeChirico indicated that for the 6-month period of April 1984-September 1984, the space was occupied by a distributor. It is currently being used by a pipe organ manufacturer, who has been there approximately 1 year. Information regarding prior occupancy of the building could not be provided at the time of EA's site visit. The western portion of the building is occupied by Welding Metallurgy, Inc.

Mr. Gregorski of NTU Circuits indicated that NTU's operation consisted of an office, a CNC drilling room in the east portion, plating and scrubbers along the north wall, a yellow room (photo printing) in the west section, and shipping and CNC programming in the southern portion. Three (possibly 4) leach pools used by NTU Circuits were located south of the building. The west leach pool was the SPDES pool receiving industrial waste. All three leach pools were interconnected, therefore, the other two pools also received industrial waste at one time or another. A sanitary cesspool was located west of the leach

#2 pools. This cesspool also received industrial waste. The SPDES leach pool and the sanitary cesspool were abandoned in 1983. The SPDES leach pool was scavanged, liquid and sludge removed below the bottom to clean soil, and backfilled with clean sand. The SPDES pool has since been reopened, and a "jerry jug" placed in the abandoned pool. The sanitary pool was emptied of liquid wastes, slurried with lime, filled in with clean sand, and paved over. The sludge and liquid were also removed from the remaining leach pools. The soil was removed two feet below the bottom and replaced with clean sand. The remaining leach pools have been allowed to be used. The removed sludge and liquid were removed to the present NTU treatment system. A new sanitary cesspool has been installed east of the abandoned cesspool along the old discharge line. Another leach pool is located in the north side of the building and receives surface runoff.

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Interview Acknowledgement Form
Page 2

#3 33 During the site reconnaissance, Mr. DiChirico pointed out a ceiling to floor
34 pipe which was modified by NTU Circuits as reported by Spectrum's maintenance
35 personnel to Mr. DiChirico during cleanup of the building. Mr. DiChirico
36 indicated that the pipe should run straight to the drain field with no joints.

#4 37 Mr. Gregorski indicated that at one time there was automobile work going on
38 around the site and transmission fluid was being dumped into the leach pools.

Acknowledgement:

I have read the above transcript and I agree that it is an accurate summary of the information verbally conveyed to EA Science and Technology interviewers, or as I have revised below, is an accurate account.

Revisions (please write in corrections to above transcript):

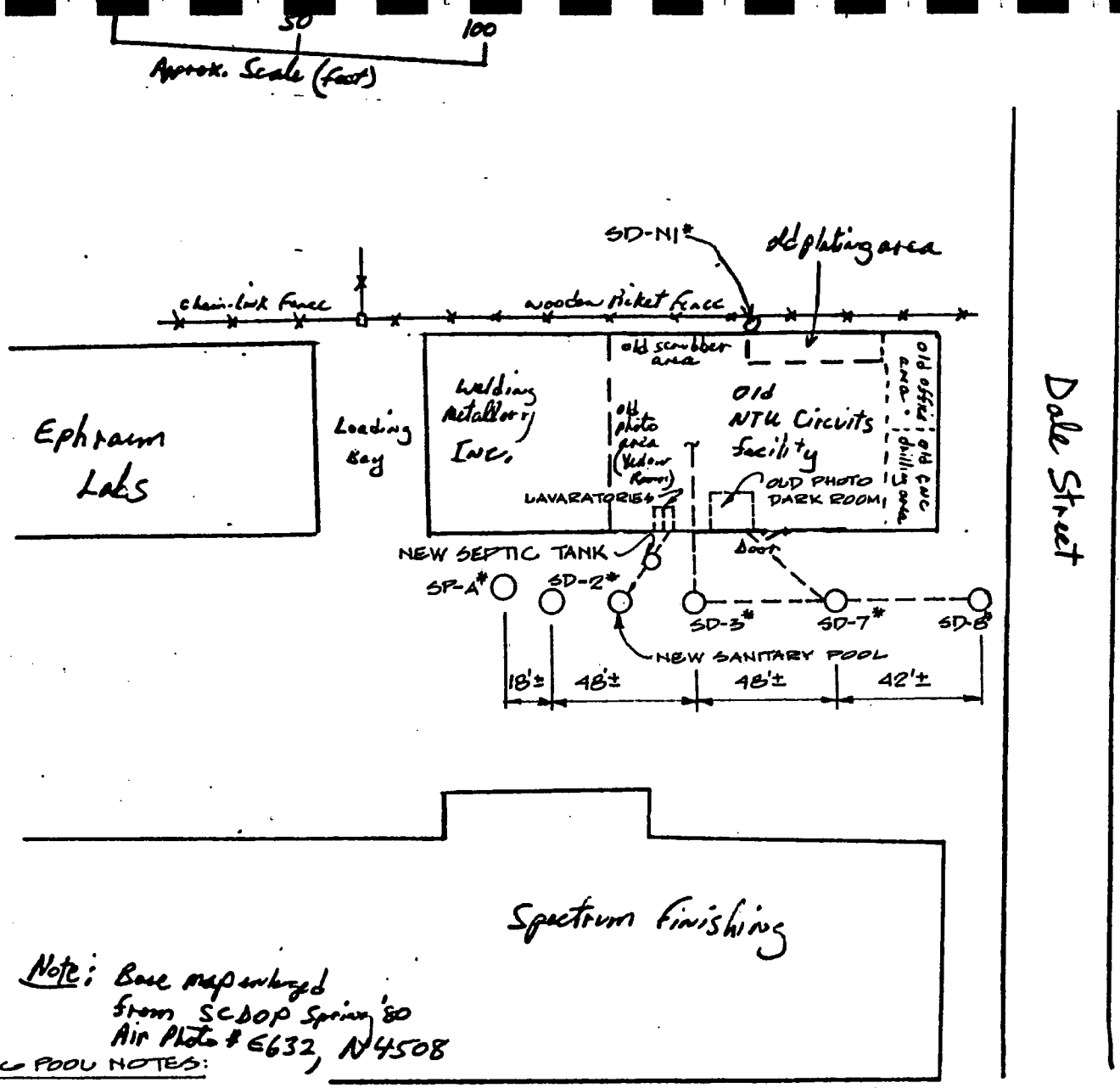
See attached report for corrections to the above transcript.

Signature: Earl S. Kurt **Date:** 5/12/1986

10. SITE SKETCH

Site Name: NTU Circuits

Date: 1-22-86



Note: Base map enlarged from SCDOP Spring '80 Air Photo # 6632, N4508

LEACHING POOL NOTES:

SP-A — SANITARY POOL THAT WAS CLEANED, FILLED & PAVED OVER TO RENDER SURFACE IMPERVIOUS & POOL UNUSABLE

SD-2 — DRAINAGE POOL THAT HAD LIQUID REMOVED, BOTTOM LIME SLURRIED, FILLED IN WITH CLEAN SAND, PIPES CONCRETED & PAVED OVER TO RENDER SURFACE IMPERVIOUS & POOL UNUSABLE

SD-3 — DRAINAGE POOL THAT HAD S.P.D.E.S. PERMIT TO RECEIVE INDUSTRIAL WASTEWATER. CLEAN UP PROCEDURES SAME AS FOR SD-2. AT FIELD RECONNAISSANCE, IT WAS DISCOVERED THAT THE ASPHALT HAD BEEN REMOVED & TOP OF POOL REOPENED. A 5 GAL. JERRY CAN WAS OBSERVED THRU THE SLOTTED MANHOLE COVER.

SD-7, SD-8, SD-N1 — DRAINAGE POOLS THAT EACH HAD LIQUID REMOVED, 1-2 FT. OF BOTTOM MATERIAL REMOVED AND REPLACED WITH 1-2 FT. OF CLEAN SAND.

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APPENDIX B

FANNING, PHILLIPS & MOLNAR
Consulting Engineers
80 SKYLINE DRIVE
PLAINVIEW, NEW YORK 11803

RICHARD FANNING, P.E.
KEVIN J. PHILLIPS, P.E., Ph.D.
GARY A. MOLNAR, P.E.

516/938-2200
212/767-3337

February 21, 1984

Robert Abrams, Esq.
Attorney General
State of New York
Two World Trade Center
New York, New York 10047

Dear Mr. Abrams:

This letter is to notify you that NTU Circuits, Inc. has complied with their Stipulation of Discontinuance (Index No. 81-16855), dated April 30, 1982. All of the items specified in the Stipulation were fully complied with on November 29th, December 1st, 2nd and 3rd of 1983. Enclosed are reports by Fanning, Phillips and Associates (currently Fanning, Phillips & Molnar) and by the Suffolk County Department of Health Services detailing the events that transpired.

If there are any questions, please contact myself or Mr. Timothy Wu of NTU Circuits, Inc.

Thank you again for your time and attention to this matter.

Very truly yours,

ESK/ks
Enclosures

Errol S. Kitt
Assistant Project Engineer

NTU CIRCUITS, INC.
COMPLIANCE TO STIPULATION OF DISCONTINUANCE

This report is in regard to the compliance of NTU Circuits, Inc. to its Stipulation of Discontinuance (Index No. 81-16855) dated April 30, 1982.

On November 29, December 1, 2, and 3 1983 Timothy Wu, President of NTU Circuits, Inc., David Obrig and Joann Johnson, Environmental Health Sanitarians from the Suffolk County Department of Health Services, and Errol Kitt, Assistant Project Engineer from Fanning, Phillips and Molnar (consulting engineers for NTU Circuits) were present to supervise all work done by the contractor, Patterson Chemical Company, a certified waste hauler. It was confirmed that the work was conducted in an environmentally safe manner, and that all of the items in the Stipulation were addressed and correctly complied with. The actual proceedings are described as follows:

1. On November 29, storm drainage pool SD-7, shown in Figure 1 (also see Appendix A), was emptied of its liquid waste contents (5,000 gallons) by Patterson Chemical Company. This wastewater was then transported by Patterson to NTU's new building in North Bay Shore, where it was treated in NTU's industrial wastewater treatment system.
2. On December 1, storm drainage pools SD-8 and SD-N1 (see Figure 1 and Appendix A) were emptied of their liquid waste (1000 gallons) and again this wastewater was removed by Patterson, transported to NTU's new building and treated in its wastewater treatment system.
3. Also on December 1, sanitary pools No. 2 and No. 3, located in Figure 1 attached (also see Appendix A) were emptied of their liquid wastes. The wastewater

was transported to NTU's industrial wastewater treatment system and treated.

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4. On December 2, over one foot of bottom sandy material was removed from each storm drainage pool (SD-7, SD-8 and SD-N1) and disposed of by Patterson in an environmentally acceptable manner. This bottom material was then replaced with approximately 1-2 feet of clean sand for each pool mentioned.
5. Also on December 2, both sanitary pools (No. 2 and No. 3) were slurried with lime to precipitate any residual metal. They were also filled in with clean sand and paved over so as to make the top surface impermeable. All of the existing piping for both pools was concreted as to render them unusable.
6. On December 3, all drums containing liquid waste that were on the premises were emptied, removed and transported by Patterson to a Treatment Storage and Disposal Facility (TSDF) to be disposed of in an environmentally safe manner.

Date: December 2, 1983
West Babylon, New York

Errol S. Kitt
Assistant Project Engineer
Fanning, Phillips and Molnar

Signed: _____

Timothy Wu
President, NTU Circuits, Inc.

Signed: _____

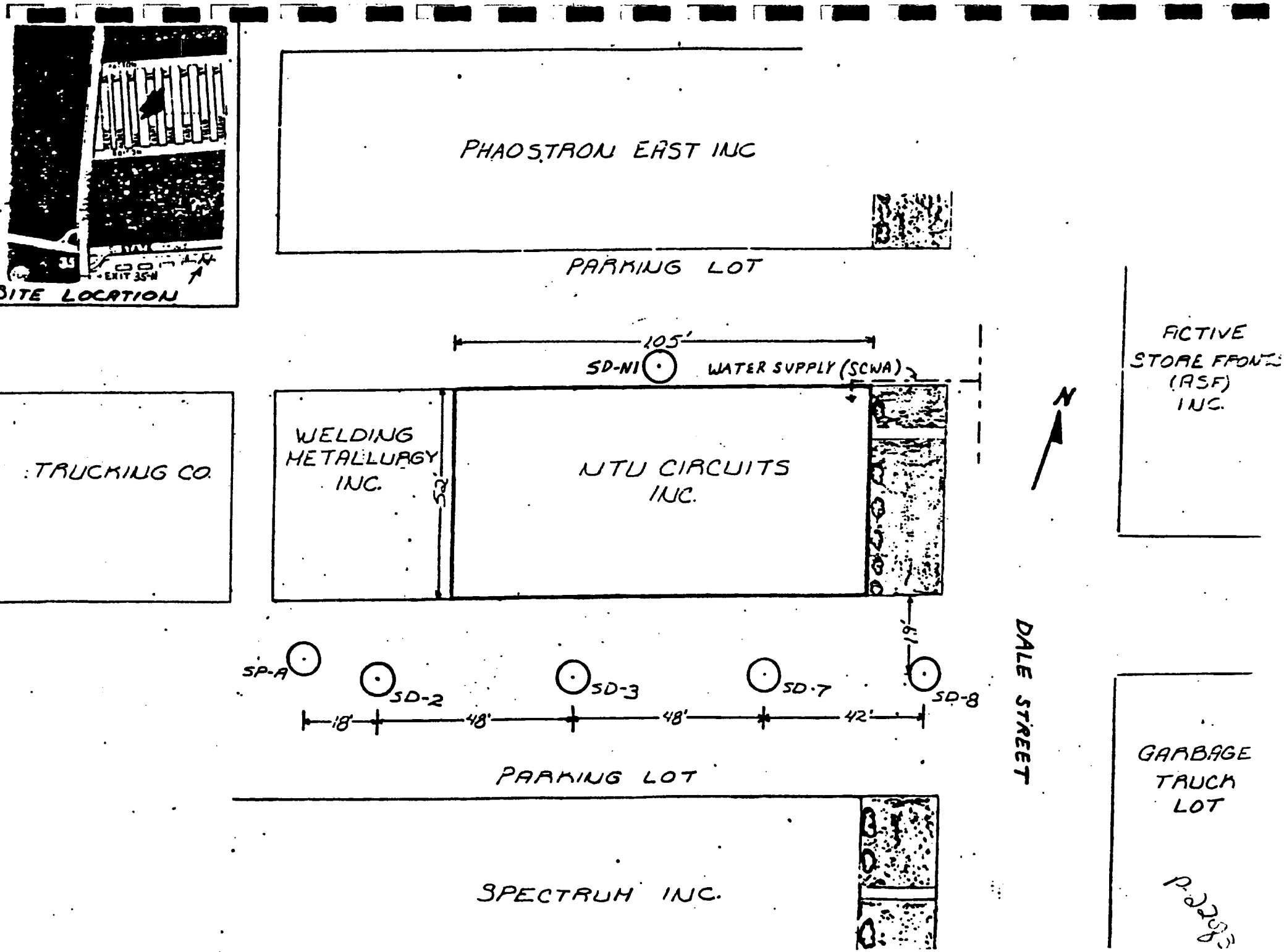
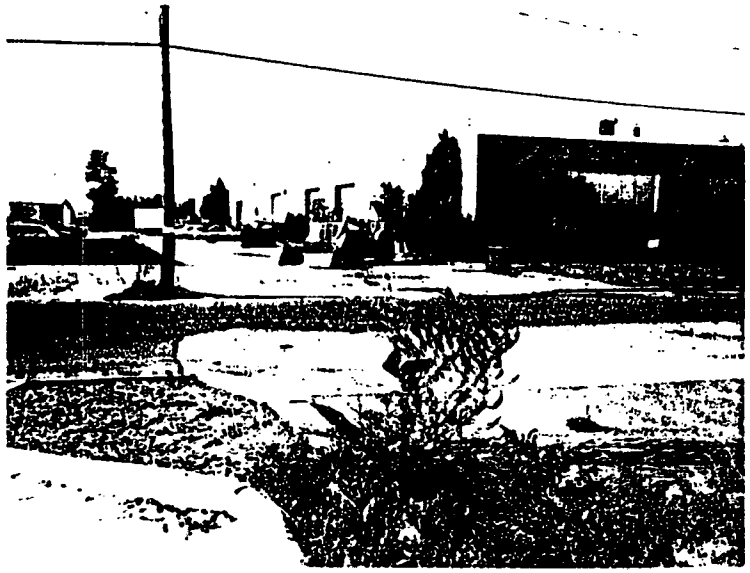


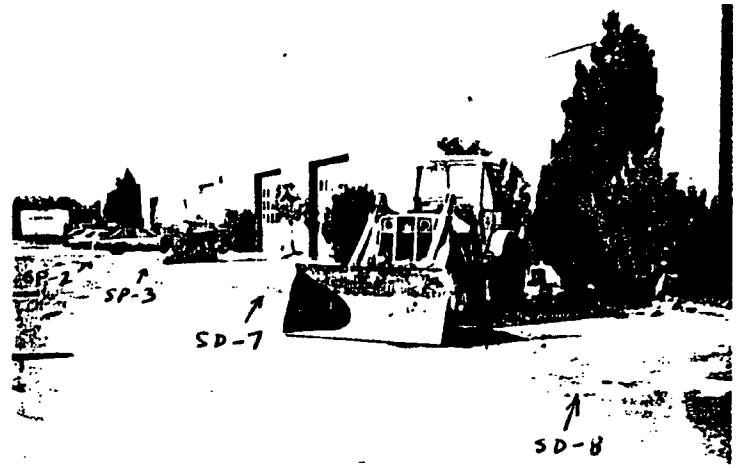
FIGURE 1- SANITARY POOL & STORM DRAIN LOCATIONS

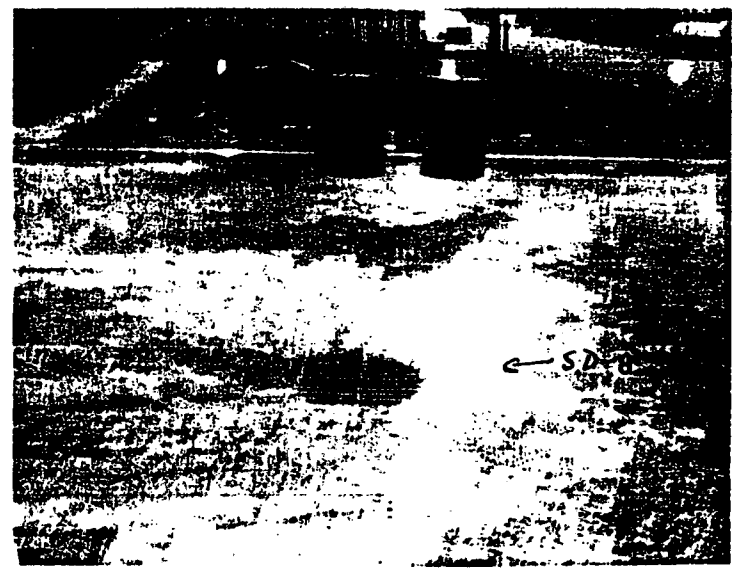
p.:230830

STIPULATION COMPLIANCE

APPENDIX A







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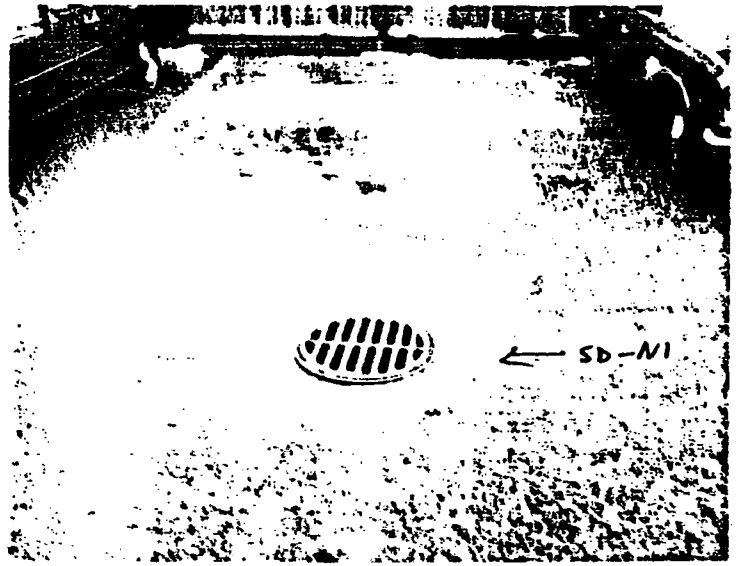

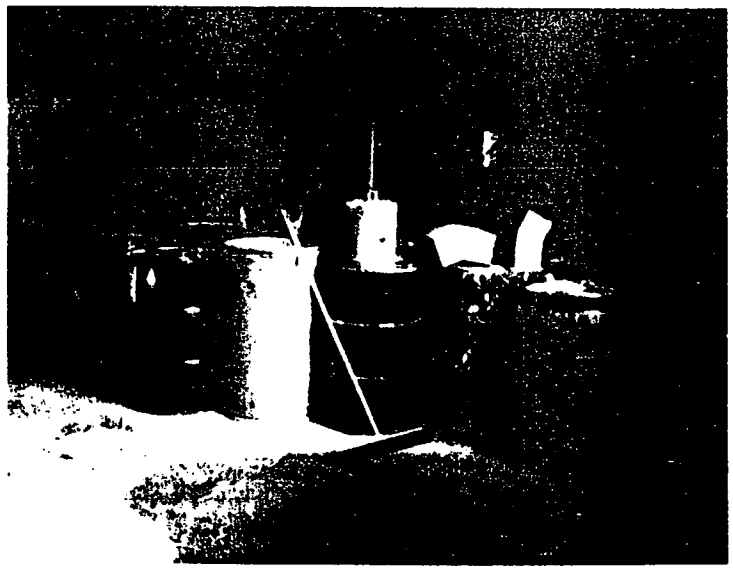

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SUFFOLK COUNTY DEPARTMENT OF HEALTH SERVICES
INDUSTRIAL WASTE AND HAZARDOUS MATERIALS CONTROL
15 HORSEBLOCK PLACE, FARMINGVILLE, N.Y. 11738
(516) 451-4633

AME OF ACILITY: NTU LABORATORIES	OWNER/ OFFICER: Timothy Wu	PAGE 1 OF
OMPANY AME: dBA NTU Circuits, Inc.	CONTACT	TEL.
ANT ODRESS: 60 Dale St.	VILLAGE: W Babylon TOWN: Babylon	ZIP: 11735
AILING ODRESS		

TE 2 Dec 83	TIME 9:15 AM	ORIG. PERIODIC (RE.)	(WASTE) NO WASTE H&H	SEWAGE SYSTEM	PUBLIC PRIVATE

OUSTRY: Mfg. of Printed Circuit Boards

DES OR DES PERMIT? YES NO PERMIT NO.	360 PERMIT? YES NO PERMIT NO

AVENGER: Patterson Chemical TEL.

AVENGER PROVED (YES) NO	PICK UP RECORDS AVAILABLE (YES) NO	RECORDS CONSISTENT WITH EXPECTED WASTE GENERATION YES NO

ATING SYSTEM-MFG. NAME	FUEL TYPE	FIRING RATE
IN. ME	WASTE BURNED	RATE

UM STORAGE YES NO	NUMBER STORED INDOORS OUTDOORS	TYPE OF MATERIAL STORED WASTE RAW
ORAGE TANKS YES NO	NUMBER OF TANKS ABOVEGROUND UNDERGROUND	TYPE OF MATERIAL STORED WASTE RAW
EN OCESS TANKS YES NO	NUMBER OF OPEN PROCESS TANKS	ANY ART. XII VIOLATIONS YES NO

The following information is for the record of NTU Circuits concerning clean up of contaminated storm drains & sanitary pools as per consent order Index No. 81-16855.

① Patterson Chemical arrived at approx. 11:45 AM to finish clean up at the NTU site. (A) SD-8 was inspected and completed clean out approved. (B) SP-A was cleaned & treated with lime and cleaned sand was filled to the top. Piping was concreted & pool paved over. ② Sanitary drainage pools #2 & #3 were also treated as mentioned in (B). (D) SD-7, SD-8 & SD-N1 were also treated in the same manner as (B). { These pool needed ≈ 1 ft of sand

RMISSION IS GRANTED BY THIS FACILITY TO THE SUFFOLK COUNTY DEPARTMENT OF HEALTH SERVICES TO CONDUCT ROUTINE SAMPLING OF SSPOOLS, STORMDRAINS, AND OTHER DISCHARGE POINTS AT THE FACILITY.

EINSPECTION SCHEDULED ON OR AFTER _____. FAILURE TO CORRECT UNSATISFACTORY CONDITIONS BY REINSPECTION DATE MAY ESULT IN A HEARING AND/OR FINE.

GN. OF PERSON C. REPORT [signature]	TITLE	INSPECTOR JoAnne Johnson

155: 9/82 5/81 TJK

Page Two

SUFFOLK COUNTY DEPARTMENT OF HEALTH SERVICES
INDUSTRIAL WASTE AND HAZARDOUS MATERIALS CONTROL
15 HORSEBLOCK PLACE, FARMINGVILLE, N.Y. 11738
(516) 451-4633

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NAME OF FACILITY: NTU		OWNER/ OFFICER	PAGE 1 OF
COMPANY NAME		CONTACT	TEL.
PLANT ADDRESS: 60 DALE ST	VILLAGE: W BAB	TOWN: BABYLON	ZIP
MAILING ADDRESS			

DATE: 3 Dec 83 | TIME: 10 AM | ORIG. | PERIODIC | RE | WASTE | NO WASTE | H&H | SEWAGE SYSTEM: PUBLIC / PRIVATE

INDUSTRY

SPDES OR SPDES PERMIT? YES NO PERMIT NO. | 360 PERMIT? YES NO PERMIT NO

GENERATOR | TEL.

GENERATOR APPROVED YES NO | PICK UP RECORDS AVAILABLE YES NO | RECORDS CONSISTENT WITH EXPECTED WASTE GENERATION YES NO

HEATING SYSTEM-MFG NAME | FUEL TYPE | FIRING RATE

INCIN. NAME | WASTE BURNED | RATE

BULK STORAGE YES NO | NUMBER STORED INDOORS OUTDOORS | TYPE OF MATERIAL STORED WASTE RAW

STORAGE TANKS YES NO | NUMBER OF TANKS ABOVEGROUND UNDERGROUND | TYPE OF MATERIAL STORED WASTE RAW

OPEN PROCESS TANKS YES NO | NUMBER OF OPEN PROCESS TANKS | ANY ART. XII VIOLATIONS YES NO

The 55 gallon drums containing toxic & or hazardous wastes were pumped dry & transported to New Jersey for disposal. (≅ 20 x 55 gallon drums)

PERMISSION IS GRANTED BY THIS FACILITY TO THE SUFFOLK COUNTY DEPARTMENT OF HEALTH SERVICES TO CONDUCT ROUTINE SAMPLING OF SESSPOOLS, STORMDRAINS, AND OTHER DISCHARGE POINTS AT THE FACILITY.

REINSPECTION SCHEDULED ON OR AFTER _____. FAILURE TO CORRECT UNSATISFACTORY CONDITIONS BY REINSPECTION DATE MAY RESULT IN A HEARING AND/OR FINE.

SIGN. OF PERSON REC. REPORT	TITLE	INSPECTOR: Jo Anne Johnson

155: 9/82

9/81 TJK

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FANNING, PHILLIPS & ASSOCIATES
Consulting Engineers
80 SKYLINE DRIVE
PLAINVIEW, NEW YORK 11803

RICHARD FANNING, P.E.
KEVIN J. PHILLIPS, P.E., Ph.D.

516/938-2200
212/767-3337

November 23, 1983

Attorney General, State of New York
Two World Trade Center
New York, New York 10047

Dear Sir:

This letter is to confirm my conversation today with Ezra Bialik, Assistant Attorney General, Environmental Protection Bureau of New York State regarding the compliance of NTU Circuits, Inc. to the Order of Consent-Stipulation of Discontinuance (Index No. 81-16855), dated April 30, 1982. In accordance with this Consent Order, NTU is notifying you that it will vacate the premises on December 1, 1983. It intends to fully comply with its order to clean and/or fill the drainage pools as specified in the aforementioned document. These activities are planned to occur at NTU's old building (60 Dale Street, West Babylon) on Monday, November 28 and Tuesday, November 29 at approximately 10 a.m. NTU would like to have a representative of the State be present at these procedures. We have contacted Suffolk County Health Department and have arranged for their representative to be there as well.

If there are any questions, please contact Mr. Timothy Wu of NTU Circuits or myself.

Thank you for your attention in this matter.

Very truly yours,

Kevin J. Phillips

Kevin J. Phillips, P.E., Ph.D.
Principal, Fanning, Phillips
and Associates
for NTU Circuits, Inc.

KJP/ks

cc: Timothy Wu

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Appendix 1.1-4

Received from:
Suffolk Co. Dept. of
Health

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SECTION I

PLANT AND PROCESS DESCRIPTION

General Description of NTU Circuits

NTU Circuits of West Babylon, New York produces high resolution printed circuit boards both single and double sided. The factory has been in operation since 1978. The operation at NTU involves drilling, cleaning and electro-plating of approximately 100 panels a day. The panels are carried through various unit processes and result in an average electro-plating production of approximately 50 square feet per day. NTU Circuits employs approximately 10-15 people and work is ongoing 6 days a week.

Figure I-1, shows the general plot plan of NTU Circuits' building. Note should be given to the fact that NTU shares the building equally with a welding shop. NTU Circuits has three sumps (see Figure I-1) one receives industrial waste, one photo wastes and one sanitary, as labeled.

General Description of Production and Wastewater Generation

Figure I-2, is a schematic flow diagram of NTU's production and wastewater generation. A process, flow description, corresponding to Figure I-2, follows:

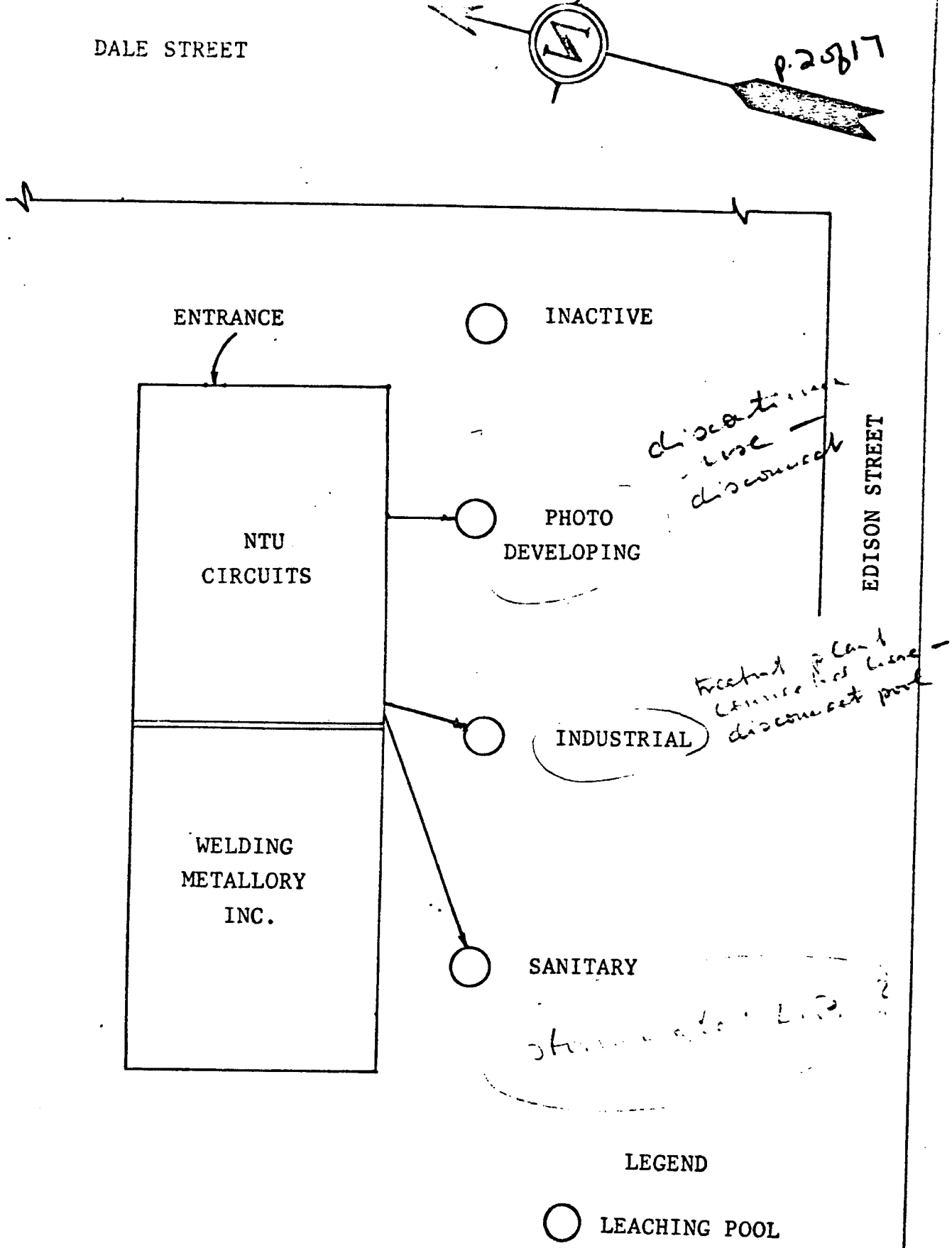

FIGURE I-1
PLOT PLAN OF NTU CIRCUITS

SCALE 1"=30 feet

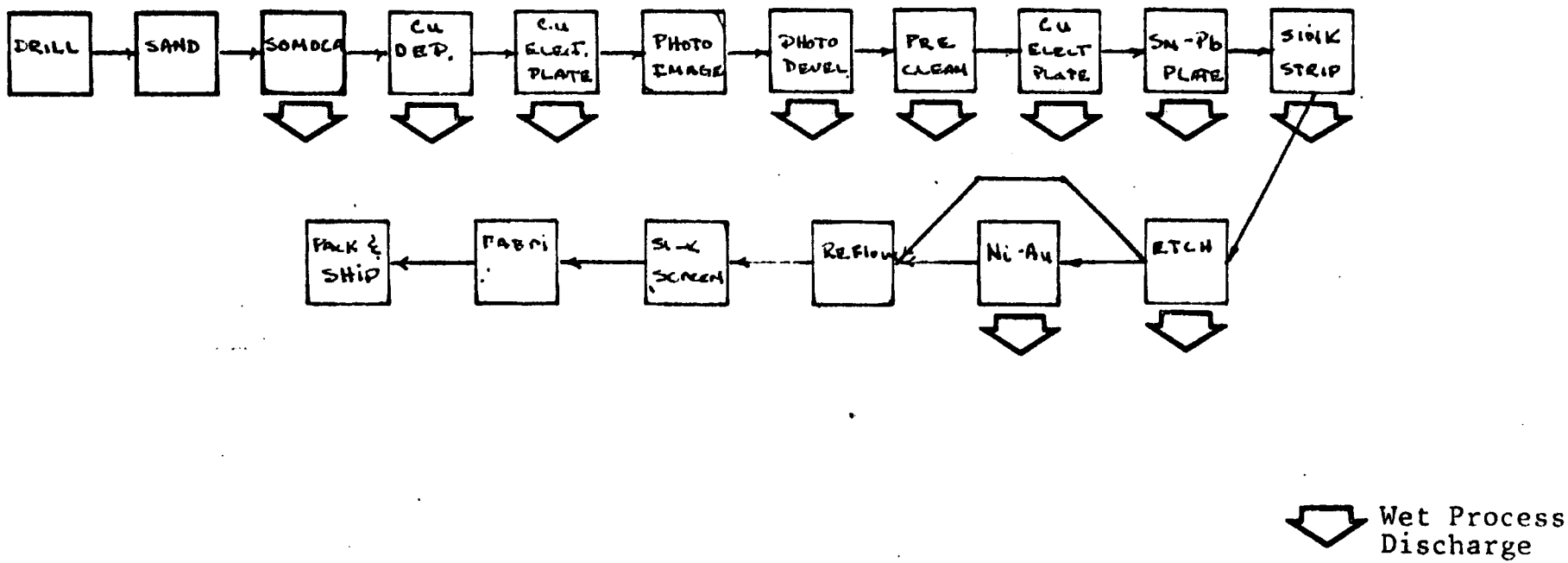

Figure I-2 NTU SCHEMATIC PROCESS FLOW DIAGRAM

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A. Drill -

Circuit board patterns are designed by outside companies and submitted to NTU for fabrication. The first process is to develop a template and drill holes to the specifications of the client. The boards are fiberglass with two thin sheets of copper on their exterior.

Chemical Used in Process:

None

Waste Generated:

Liquid: None

Solid: Fiberglass and copper, removed by refuse hauler.

B. Sanding -

The boards, now drilled, are physically sanded to remove any burrs or impurities from the surface of the copper.

Chemicals Used in Process:

None

Waste Generated:

Liquid: None

Solid: Copper particles swept-up, hauled by refuse hauler.

C. Somoca -

The boards are cleaned again with water and physically scrubbed.

Chemicals Used in Process:

None

C. Somoca (con't.) -

Waste Generated:

Liquid: Small amounts of copper in effluent.

Solid: Filter on Somoca is disposed of periodically by refuse hauler.

D. Copper Deposition -

The purpose of this process is to deposit a very fine layer of copper in the drilled hole so that there is a connection between both sides of the board through the holes. The copper deposition in the holes of the board requires 14 unit operations. This dip and dunk process is carefully timed for quality control.

Chemicals Used in Process:

Alkaline rinse, ammonia persulfate, sulfuric acid, hydrocloric acid, activator 9070,[1] accelerator 9071,[1] electroless copper.[1]

Waste Generated:

Liquid: The liquid's waste is generated from the counter-current rinses. Parameters of concern are total N, Cu and pH. In addition, drag-out tanks are utilized. These are drummed and carted by an approved carter.

Solid: None

[1] Propriatory, see Appendix for additional data.

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E. Copper Electro-Plating -

The purpose of the electro-plating is to build up the copper on the board and holes. As the holes are very small, this process also must be timed so as not to clog any holes. The boards are dipped in an electro-plating solution and an electric current causes the copper in solution to plate onto the boards. The panels are then dipped into a drag-out tub and then a rinse.

Chemicals Used in Process:

Copper plating solution.

Waste Generated:

Liquid: Drag-out used for concentrate make up excess drummed and hauled. Rinse water. Parameters of concern, copper.

Solid: None

F. Photo Imagery -

The circuit board has increased the thickness of the copper on the board from the previous steps. The board in this step has a UV sensitive laminate sealed onto the board. A template of the client's circuit is photo produced onto the board.

Chemicals Used in Process:

None

Waste Generated:

Liquid: None

Solid: Some laminate as it is trimmed from the boards. It is carted with refuse.

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G. Photo Developing -

The exposed laminate is developed with a special alkaline DuPont developer. The exposed laminate (circuit) is washed away in the developer leaving the circuit exposed.

Chemicals Used in Process:

Developer,[1] DuPont, Fixer,[1]

Waste Generated:

Liquid: Rinse water contains fixer and developer and dissolved laminate. Prior to rinse a drag-out tank removes the heavier contaminants and plastic solids. This is drummed and hauled by Chemical Pollution Control Inc.

Solid: None

H. Pre-Clean Line -

The pre-clean line makes the board ready for additional copper plating. The boards are chemically cleaned to remove copper oxide and finger prints.

Chemicals Used in Process:

acid, ammonia persulfate, sulfuric acid

Waste Generated:

Liquid: Rinse waters parameters of concern are: total nitrogen, copper and pH. Drag-out tank wastes are used to make up concentrate solution for copper plating, excess is drummed and hauled.

Solid: None

[1] Additional Data in Appendix

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I. Copper Electro-Plating -

This step is a repeat of an earlier step except the boards have a plastic laminate over all areas except the desired circuit. Hence, this step builds up the copper for the desired circuit.

Chemicals Used in Process:

Copper plate

Waste Generated:

Liquid: There is a drag-out added to the rinse operation. The drag-out tank is used to make up the concentrate tank and excess drummed and hauled by the rinse water have the following contaminants: copper and pH.

Solid: None

J. Solder Plating -

Following an acid dip (floraboric acid for cleaning the copper surface) electrolitic solder plating takes place only on the desired circuit.

Chemicals Used in Process:

Floraboric acid, solder plating.

Waste Generated:

Liquid: Rinse water. Parameters of concern are floride, copper, lead and tin. Drag-out tank is used to make up losses from the plating tank. The excess is drummed and hauled.

Solid: None

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K. Stripping -

Following the solder plating only on the desired circuit, the laminate is stripped from the board exposing the underneath copper panel.

Chemicals Used in Process:

Stripper

Waste Generated:

Liquid: Rinse waters contain some copper and dissolved laminate.

Solid: Much of the plastic laminate comes off as a solid which is collected in a tank and drummed and hauled.

L. Etching -

The boards which show the circuit in solder and the rest of the board in copper is etched to remove the copper. The process does not effect the solder but removes all the copper from the board.

Chemicals Used in Process:

Etcher,[1] HCL Acid.

Waste Generated:

Liquid: Rinse waters. Parameters of concern are TN, copper, tin and lead.

Solids: None.

[1] Additional Data in Appendix

p.10 of 17

M. Nickel/Gold -

Nickel and gold plating of small isolated parts of the board (fingers). Only a very small amount is done.

Chemicals Used in Process:

ammonia persulfate, sulfuric acid, hydrocloric acid, nickel and gold salts.

Waste Generated:

Liquid: Rinse waters. Parameters of concern Ni, Ag and pH.

Solid: None

N. Reflow -

Each board is passed under infrared light to purify and make the final circuit shiney.

Chemicals Used in Process:

None

Waste Generated:

Liquid: None

Solid: None

O. Silk Screening -

A silk screening process is used to insulate and label the final circuit. There is no liquid waste involved in this process.

Chemicals Used in Process: Silk Screen

Waste Generated:

Liquid: None

Solid: None

Table I-1

Summary of Process Waste Characteristics

Process	Purpose	Chemicals Used in Process	Parameters of Concern in Liq. Waste(Rinse Water)	Solid Waste Disposal
Drill	Holes for customer's pattern	None	None	yes
Sand	Clean Board	None	None	yes
Somoca	Clean Board	None	Cu	
CU Deposition	Deposit copper in holes	See Page 5	Cu,TN,ph	None
CU Electro-Plating	Deposit a heavier layer of copper on the boards	See Page 6	Cu,Ph	None
Photo Imagery	Place image of client's circuit on board	None	None	yes
Photo Developing	Develop image	Developer,fixer	See Page	None
Pre-Cleaning	Cleaning	Acids,$(NH_4)_2SO_4$	TN,Cu,ph	None
Solder Electro-Plating	Plating of solder over Cu	Acids & solder Plating	pH,Sn,Pb	None
Stripping	Laminate is stripped from board	Stripper(1)	pH,Sm,Pb,Cu,TN	None
Etching	Removal of copper from board	Etcher(1)	pH,Cu,Sn,Pb	None
Ni/Au Plating (Optional)	Plating of Ni & Au	AP, HCL, H_2SO_4	pH,Ni,Au	None
Reflow	Purify circuit	None	None	None
Silk Screening	Insulate board	Silk screen	None	yes
Fabrication	Final preparation	None	None	yes

(1) See Appendix

P.11917

p.12817

SECTION II

WASTE FLOWS

Introduction

During the period of March 23, 1981 through June 3, 1981 the wastewater generated at NTU Circuits was flow monitored. Suffolk County Water Authority meters were installed in the piping for long term accurate results. A total of 5 meters were installed and rotated on NTU 7 process wastewater lines.

Results

The detailed results are shown in Appendix B. Table II-1, and Figure II-1, show summarized results. Table II-1, shows the statistics of each of the waste processes. Of significance is the summation of the individual average flows compared with the total metered industrial flow. The diference is only 3%, indicating that all but 3% of the industrial water had been accounted for over a four month period.

Figure II-1, is of significance because it shows the flow variations of the total industrial flow by the day of the week. Note that NTU Circuits was open for business 6 days a week during the flow monitoring period. The average 6 day flow is 6230 gal/day. However, it is evident from Figure II-1, that the first 4 days of the week are different from the last 2. The 4 day average (Monday-Thursday) is 7300 gal/day. Maximum

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TABLE II-1

FLOW SUMMARY BY UNIT PROCESS

Unit Process	Maximum	Minimum	Std.Dev.	Average[1]
Plate Rinse	2,800	350	670	1,120
Photo Dev. & Ni/ Au	1,000	200	196	490
Deposition	1,200	100	296	520
Sink	1,600	900	240	1,140
Somacca	--	--	--	720[2]
Etcher	2,400	250	647	1,185
Pre-cleaner	2,400	200	573	1,030
Total Average Industrial Flow				6,205
Total Metered Industrial Flow	11,200	2,250	2,160	6,400
Difference				195
Percent Difference				3%

(1) Average 6 day flow (Monday-Saturday) in gal/day

(2) Calculated from total of sink and somacca - sink

FIGURE II-1

INDUSTRIAL FLOW SUMMARY BY DAY OF THE WEEK

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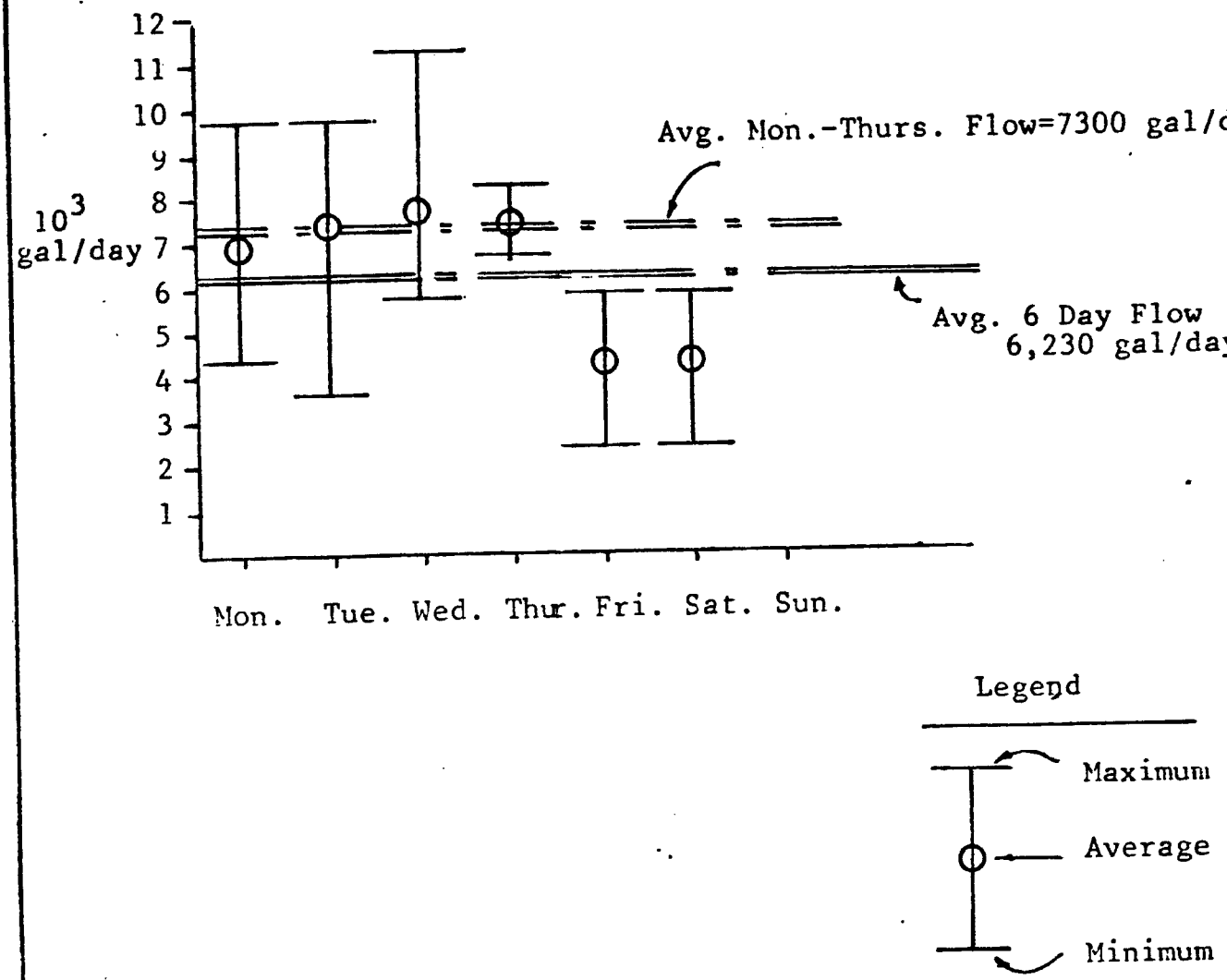

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daily flow during the period occurred on a Wednesday at approximately 11,500 gal/day. With the statistics developed in Table II-1, this corresponds to a greater than 95% confidence limitation that the flow would not exceed this. The minimum flow on a working day was approximately 3100 gal/day.

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SECTION III

WASTEWATER CHARACTERISTICS

Introduction

The wastewater characteristics of 7 wastewater generating porcesses were sampled along with the industrial sump and the raw water. Full day composites were taken during an 8 hour working shift from each source and preserved on-site according to Standard Methods. Samples were shipped to H2M Corporation's Laboratory the same day, on March 26, 1981.

Results

Table III-1, shows marginal or high metal concentration in all waste processes indicating that segregation from contaminent wastewater is not possible for any of the waste streams. Of note in Table III-1, is the high copper concentrations in the plating rinse (3.4 mg/L and deposition (8.7 mg/L). The copper concentration in the industrial pool (refecting the combination of all wastes) was 3.4 mg/L. Besides copper, lead and floride are above the standards in the industrial pool. The major source of lead appears to be the sink and may be coming from the previous solder plating step. The floride concentration also appears to be coming from the solder plating operation and the step directly after (sink strip). This floride is due to floroboric acid dip prior to plating.

TABLE III-1

WASTEWATER CHARACTERISTICS BY PROCESS

Sample ID Information	Copper	Lead	Tin	Silver	Flouride	T.Diss Solids
Ind Pool	5.80	0.40	1.00		3.50	160.
Ni/Au Plate	1.32					
Cu Plate #8	3.42	30.0 #	<0.20			
Etcher	0.91	1.00	<0.20		<0.10	72.0
Sink	1.04	3.30	1.70		1.00	922.
Somacca	1.66					
Pre Cleaner	1.38	50.0 #	<0.20	<0.20		
Deposition	8.67					
Photo Sump				0.98		129.
Raw	0.03	<20.0 #	<0.20		<0.10	110.
						40.0

Sample ID Information	T.KJEL NIT	NO2-N+ NO3-N	Total Nitrog.	Ammonia (NH3-N)	Nickel	Deterg. (MBAS)
Ind Pool	8.40	<0.10	8.50	4.50	0.12	0.60
Ni/Au Plate	20.7	<0.10	20.8	19.3	0.64	
Cu Plate	1.40	<0.10	1.50	0.70		
Etcher	6.40	<0.10	6.50	2.50		
Sink	9.00	0.10	9.10	1.70		1.04
Somacca						<0.04
Pre Cleaner	6.10	0.30	6.40	7.70	<0.02	
Deposition	3.20	0.30	3.50	3.20		
Photo Sump	4.80	<0.10	4.90	2.70		
Raw	<0.20	<0.10	0.30	<0.20	<0.02	

All results in (MG/L) except as noted by # (UG/L)

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Appendix 1.1-5

Received from: Suffolk Co. Dept. of Health

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SUPREME COURT OF THE STATE OF NEW YORK
COUNTY OF SUFFOLK

----------X

STATE OF NEW YORK,

Plaintiff,

-against-

NTU LABORATORIES, INC. d/b/a
NTU CIRCUITS, INC. and TIMOTHY WU

Defendants.

----------X

AFFIDAVIT
Index No.

STATE OF NEW YORK)
) SS.:
COUNTY OF SUFFOLK)

I, DAVID OBRIG, being duly sworn, depose and say:

1. I am a Public Health Sanitarian employed by the Suffolk County Department of Health Services, and I am making this affidavit in support of plaintiff's motion for a preliminary injunction to hault the discharge of industrial and hazardous wastes to the groundwater of Suffolk County.

2. I have been employed by Suffolk County in the field of pollution control for about two years, prior to which employment I worked for the New York State Department of Environmental Conservation for about seven years in the field of pollution control. I was awarded a B.A. in Natural Sciences from Adelphi University in 1978. Within the past two years, I have successfully completed a Sanitarian Training Course, a Hazardous Material Incident Handling Course, and a Kent-Moore Tank Testing Course.

3. During the course of my official duties and in performance thereof, I visited NTU Laboratories, Inc., located at 60 Dale Street, West Babylon, New York, on June 4, 1981. On this date during my visit, I observed a storm drain overflowing a light blue colored liquid onto the surrounding ground surface. This storm drain is denoted as Storm Drain #3 (SD #3) on the diagram affixed to this affidavit designated as Appendix A. I took a sample of the liquid as it lay in a puddle on the surface of the ground around the cover of Storm Drain #3 (Field Number 7 DO 6-4) at 11:20 AM. I placed a tag on this sample bottle with identifying information, and then I brought the sample to the County lab located at 65 Jetson Lane, in Hauppauge, and placed it in the control of the lab at about 12:30 PM on June 4, 1981.

4. During the course of my official duties and in performance thereof, I returned to the site of NTU Laboratories, Inc., and specifically to Storm Drain #3. On June 10, 1981, I observed an active discharge to this leaching facility on this date from a pipe which entered this leaching facility. I observed the liquid in Storm Drain #3 to be foaming. I took a sample of the liquid in this Storm Drain at about 10:40 AM (Field Number 6 DO 6-10), and I tagged the sample bottle in the field with identifying information and placed the sample in the trunk of my car and transported it to the County laboratory located at 65 Jetson Lane in Hauppauge. I placed the sample in the control of the lab at about 1:00 PM on June 10, 1981.

5. During the course of my official duties and in performance thereof, I returned to NTU Laboratories, Inc., on July 1, 1981. On this date:

a. I took a sample (Field Number 2 DO 7-1) of the contents of a leaching facility which is denoted as Storm Drain #2 (SD #2) on appendix A attached hereto. I took this sample at about 3:45 PM and tagged it in the field with identifying information and delivered it to the control of the County lab at about 4:47 PM on July 1, 1981.

b. I took a sample (Field Number 1 DO 7-1) of the contents of a leaching facility designated as Sanitary Pool - A (SP-A) on appendix A attached hereto. I took this sample at about 3:40 PM and tagged it in the field with identifying information and I delivered it to the control of the County lab at about 4:47 PM on July 1, 1981. I observed the liquid in SP-A to be bright blue in color, and I performed a pH test on this liquid in the field at the time of sampling and I measured the pH to be 11.

c. I took a sample (Field Number 4 DO 7-1) of the contents of a leaching facility designated as Storm Drain #7 (SD #7) in appendix A attached hereto. I took this sample at about 3:52 AM, and I tagged it in the field with identifying information, and I delivered it to the control of the County lab at about 4:47 PM, July 1, 1981. At the time of

sampling, I observed that there was only one pipe entering SD #7 and that it was actively discharging a liquid into this leaching facility. On this date, July 1, 1981, Mr. Tim Wu, who told me he was president of NTU Laboratories, Inc., said that this active discharge, that I was looking at, was from an interior roof drain within the control of NTU Laboratories, Inc., and that this roof drain system used to receive a photographic waste discharge from NTU Laboratories, Inc.

d. I took a sample (Field Number 3 DO 7-1) of the contents of a leaching facility designated as Storm Drain #3 (SD #3) on appendix A attached hereto. I took this sample at about 3:50 PM, and I tagged it in the field with identifying information and I delivered it to the control of the County laboratory at about 4:47 PM on July 1, 1981. At the time of this sampling, I saw an active discharge from the only pipe entering SD #3. Mr. Wu told me that the discharge I was looking at came from his plant's plating operation.

e. I spoke with a Dr. Kevin Phillips, who was represented to me to be an environmental engineering consultant retained by NTU Laboratories, Inc.. Dr. Phillips told me that the following processes

generated wastewaters which are discharged to what he described as the 007 leaching facility, which is designated as SD #3 on appendix A annexed hereto:

(i) Alkaline cleaner rinse

(ii) Ammonium persulfate rinse

(iii) Sulfuric acid rinse

(iv) Activator final rinse

(v) Accelerator final rinse

(vi) Pre-cleaner rinse

(vii) Copper plate tank rinse

(viii) Somaca scrubber wastewater

(ix) Photo resist stripping rinse

(x) Copper etch cooling water

(xi) Copper etch rinse

(xii) Nickel plating rinse

(xiii) Hydrochloric acid rinse

(xiv) Gold plating rinse

(xv) Plate wash rinse

f. Dr. Phillips also told me that wastewater from NTU Laboratories, Inc., photographic operation was discharged to a leaching facility which he called 004. Leaching facility 004 is designated as SD #7 on appendix A attached hereto.

g. While inspecting the room in which circuit boards were being etched and electroplated, I noticed blue-green stains on the floor, especially near the north exterior wall of the building close to the door

leading to the outside. I also notices a large blue-green stain on the exterior side of that wall starting at a small hole in the wall about six inches above ground level. Any fluid which would flow through the wall at this location would run onto the unpaved soil, and if the quantity were sufficient, would then run into nearby storm drains on the north side of the NTU Laboratories' plant, in one of which I saw similar blue-green stains.

h. At the exterior of the building, near the door above-mentioned, I saw three 55 gallon drums which Mr. Wu told me contained his industrial waste, and that they were being stored there until his industrial waste hauler picked them up. These drums were exposed to the elements and not protected from vandalism. On this date, July 1, 1981, there were no provisions in existence to prevent any spills or leaks from these drums from soaking into the ground.

6. During the course of my official duties and in performance thereof, I returned to NTU Laboratories, Inc., on July 13, 1981. On this date:

a. In the presence of Mr. Wu and Dr. Phillips, his consultant, I inserted yellow dye downstream of the copper etch machine into a 2 inch pipe that functioned as a rinse discharge line for the copper etch process, as explained to me by Dr. Phillips.

Water was run through the copper etch machine after the dye was inserted and after a few minutes, this dye began to discharge into SD #3 as so denoted in appendix A attached hereto. This dye discharge was seen by both Dr. Phillips and myself.

b. I placed yellow dye into a toilet in the men's room in NTU Laboratories, Inc., and then I flushed the toilet. I observed the dye subsequently enter the leaching facility designated as SP-A in appendix A attached hereto. This observation was seen by both Dr. Phillips and I.

c. I placed red dye into a slop sink located in NTU Laboratories, Inc. storage area, and I subsequently observed this dye being discharged into SP-A. This observation was seen by both Dr. Phillips and I.

d. I placed red dye into the sanitary system of Welding Metallurgy, Inc., an industry adjacent to NTU Laboratories, Inc.. I subsequently observed this dye discharge into SP-A. During my inspection of Welding Metallurgy, on July 8, 1981, in the performance of my official duties, I found that this firm only performs welding operations and that there were no industrial discharges therefrom into SP-A. In addition, during my July 8, 1981, inspection of Welding Metallurgy, Inc., I did not observe any paints or chemicals on the premises.

7. During the course of my official duties and in performance thereof, I returned to NTU Laboratories, Inc., on July , 1981. On this date:

a. I saw a path of recently excavated soil running between leaching facilities designated as SD #3 and SD #7 on appendix A attached hereto. This path was not present during any of my prior visits to NTU Laboratories, Inc.. I saw an active discharge of liquid into SD #3, and an active discharge into SD #7 from a pipe entering the latter facility from the direction of the path of recent excavation and SD #3. This pipe was not present during any of my prior observations of SD #3.

I have read the foregoing eight pages and state that the information and statements made therein are true and accurate to the best of my knowledge.

David Obrig

Sworn to before me this

16th day of November 1981.

Notary Public

DENNIS C. GOBBI
NOTARY PUBLIC, State of New York
No. 52-4527485 Suffolk County
Commission Expires March 30, 1982

C COUNTY OF SUFFOLK C

Appendix 1.1-6
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DEPARTMENT OF HEALTH SERVICES

NOTIFICATION OF UNSATISFACTORY INDUSTRIAL WASTE SAMPLING

Date July 25, 1979

NCU Laboratories, Inc.
60 Dale St.
W. Babylon, N.Y. 11704

Gentlemen:

On July 10, 1979 samples of your industrial waste were taken from your discharge into storm drain (s/s bldg. . Upon analysis, the following parameters were found to be unsatisfactory:

1. pH - 8.9
2.
3.
4.
5.
6.
7.
8.
9.
10.

The acceptable limits on each of these parameters, according to New York State Groundwater Standards are as follows:

1. pH - 6.5 - 8.5
2.
3.
4.
5.
6.
7.
8.
9.
10.

You should be aware that these unsatisfactory conditions constitute violations of the N.Y.S. Environmental Conservation Law. Please see that they are corrected as soon as possible. If you have any questions or need any assistance, please do not hesitate to contact this office.

Stephen A. Costa

Stephen A. Costa, P.E.
Industrial Waste and Hazardous
Materials Control Section

(GW)

SON LANE • HAUPPAUGE, NEW YORK 11787 • (516) 234-2622

COUNTY OF SUFFOLK

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DEPARTMENT OF HEALTH SERVICES

NOTIFICATION OF UNSATISFACTORY INDUSTRIAL WASTE SAMPLING

Date Oct. 11, 1979

NTU Laboratories, Inc.
60 Dale Street
W. Babylon, N.Y. 11704

Gentlemen:

On Sept. 20, 1979 samples of your industrial waste were taken from your overflowing pool SPA see attached diagram. Upon analysis, the following parameters were found to be unsatisfactory:

1. pH - 3.6	6.
2. Copper - 32 mg/1	7.
3. Iron - 28 mg/1	8.
4. Cadmium - .07 mg/1	9.
5.	10.

The acceptable limits on each of these parameters, according to New York State Groundwater Standards are as follows:

1. pH - 6.5 - 8.5	6.
2. Copper - 1 mg/1	7.
3. Iron - .6 mg/1	8.
4. Cadmium - .06 mg/1	9.
5.	10.

You should be aware that these unsatisfactory conditions constitute violations of the N.Y.S. Environmental Conservation Law. Please see that they are corrected as soon as possible. If you have any questions or need any assistance, please do not hesitate to contact this office.

Stephen A. Costa

Stephen A. Costa, P.E.
Industrial Waste and Hazardous
Materials Control Section

(GW)

65 JETSON LANE • HAUPPAUGE, NEW YORK 11787 • (516) 234-2622

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COUNTY OF SUFFOLK

DEPARTMENT OF HEALTH SERVICES

NOTIFICATION OF UNSATISFACTORY INDUSTRIAL WASTE SAMPLING

Date Oct. 11, 1979

HTU Laboratories, Inc.
60 Dale Street
W. Babylon, N.Y. 11704

Gentlemen:

On Sept. 25,1979 samples of your industrial waste were taken from your SPA - see attached diagram. Upon analysis, the following parameters were found to be unsatisfactory:

1.	pH - 4.5	6.	
2.	Fluoride - 3.2 mg/l	7.	
3.	Copper - 13.7 mg/l	8.	
4.	Iron - 13 mg/l	9.	
5.		10.	

The acceptable limits on each of these parameters, according to New York State Groundwater Standards are as follows:

1.	pH - 6.5 - 8.5	6.	
2.	Fluoride - 3 mg/l	7.	
3.	Copper - 1 mg/l	8.	
4.	Iron - .6 mg/l	9.	
5.		10.	

You should be aware that these unsatisfactory conditions constitute violations of the N.Y.S. Environmental Conservation Law. Please see that they are corrected as soon as possible. If you have any questions or need any assistance, please do not hesitate to contact this office.

Stephen A. Costa

Stephen A. Costa, P.E.
Industrial Waste and Hazardous
Materials Control Section

(GW)

65 JETSON LANE • HAUPPAUGE, NEW YORK 11787 • (516) 234-2622

p. 4 of 28

COUNTY OF SUFFOLK

DEPARTMENT OF HEALTH SERVICES

NOTIFICATION OF UNSATISFACTORY INDUSTRIAL WASTE SAMPLING

Date Oct. 11, 1979

NTU Laboratories, Inc.
60 Dale Street
W. Babylon, N.Y. 11704

Gentlemen:

On Sept. 25, 1979 samples of your industrial waste were taken from your storm drain #2 - see attached diagram. Upon analysis, the following parameters were found to be unsatisfactory:

1. pH - 4.3
2. Copper - 9.2 mg/l
3. Iron - 2.1 mg/l
4.
5.
6.
7.
8.
9.
10.

The acceptable limits on each of these parameters, according to New York State Groundwater Standards are as follows:

1. pH - 6.5 - 8.5
2. Copper - 1 mg/l
3. Iron - .6 mg/l
4.
5.
6.
7.
8.
9.
10.

You should be aware that these unsatisfactory conditions constitute violations of the N.Y.S. Environmental Conservation Law. Please see that they are corrected as soon as possible. If you have any questions or need any assistance, please do not hesitate to contact this office.

Stephen A. Costa

Stephen A. Costa, P.E.
Industrial Waste and Hazardous
Materials Control Section

(GW)

(516) 234-2622
HAUPPAUGE, NEW YORK 11787
65 JETSON LANE

p. 5 of 28

COUNTY OF SUFFOLK

DEPARTMENT OF HEALTH SERVICES

NOTIFICATION OF UNSATISFACTORY INDUSTRIAL WASTE SAMPLING

Date Oct. 11, 1979

NTU Laboratories, Inc.
60 Dale Street
W. Babylon, N.Y. 11704

Gentlemen:

On Sept.25, 1979 samples of your industrial waste were taken from your storm drain #3 - see attached diagram . Upon analysis, the following parameters were found to be unsatisfactory:

1. Cadmium - .07 mg/l
2.
3.
4.
5.
6.
7.
8.
9.
10.

The acceptable limits on each of these parameters, according to New York State Groundwater Standards are as follows:

1. Cadmium - .02 mg/l
2.
3.
4.
5.
6.
7.
8.
9.
10.

You should be aware that these unsatisfactory conditions constitute violations of the N.Y.S. Environmental Conservation Law. Please see that they are corrected as soon as possible. If you have any questions or need any assistance, please do not hesitate to contact this office.

Stephen A. Costa

Stephen A. Costa, P.E.
Industrial Waste and Hazardous
Materials Control Section

(GW)

p. 6 of 28

COUNTY OF SUFFOLK

DEPARTMENT OF HEALTH SERVICES

NOTIFICATION OF UNSATISFACTORY INDUSTRIAL WASTE SAMPLING

Date Oct. 11, 1979

NTU Laboratories, Inc.
60 Dale Street
W. Babylon, N.Y. 11704

Gentlemen:

On Oct. 2, 1979 samples of your industrial waste were taken from your SPA - see attached diagram. Upon analysis, the following parameters were found to be unsatisfactory:

1. pH - 3.2
2. Dissolved Solids - 3,983 mg/l
3. Copper - 55 mg/l
4. Iron - 10.6 mg/l
5. Lead - 4.6 mg/l
6.
7.
8.
9.
10.

The acceptable limits on each of these parameters, according to New York State Groundwater Standards are as follows:

1. pH - 6.5 - 8.5
2. Dissolved Solids - 1,000 mg/l
3. Copper - 1 mg/l
4. Iron - .6 mg/l
5. Lead - .02 mg/l
6.
7.
8.
9.
10.

You should be aware that these unsatisfactory conditions constitute violations of the N.Y.S. Environmental Conservation Law. Please see that they are corrected as soon as possible. If you have any questions or need any assistance, please do not hesitate to contact this office.

Stephen A. Costa

Stephen A. Costa, P.E.
Industrial Waste and Hazardous
Materials Control Section

(GW)

65 JETSON LANE • HAUPPAUGE, NEW YORK 11787 • (516) 234-2628

COUNTY OF SUFFOLK

P.7828

DEPARTMENT OF HEALTH SERVICES

NOTIFICATION OF UNSATISFACTORY INDUSTRIAL WASTE SAMPLING

Date Oct. 11, 1979

NTU Laboratories, Inc.
60 Dale Street
W. Babylon, N.Y. 11704

Gentlemen:

On Oct. 2, 1979 samples of your industrial waste were taken from your SD 47 - see attached diagram. Upon analysis, the following parameters were found to be unsatisfactory:

1. Cadmium - .04 mg/l
2. Silver - .36 mg/l
3.
4.
5.
6.
7.
8.
9.
10.

The acceptable limits on each of these parameters, according to New York State Groundwater Standards are as follows:

1. Cadmium - .02 mg/l
2. Silver - .1 mg/l
3.
4.
5.
6.
7.
8.
9.
10.

You should be aware that these unsatisfactory conditions constitute violations of the N.Y.S. Environmental Conservation Law. Please see that they are corrected as soon as possible. If you have any questions or need any assistance, please do not hesitate to contact this office.

Stephen A. Costa

Stephen A. Costa, P.E.
Industrial Waste and Hazardous
Materials Control Section

(GW)

65 JETSON LANE • HAUPPAUGE, NEW YORK 11787 • (516) 234-2622

p. 8 of 28

COUNTY OF SUFFOLK

DEPARTMENT OF HEALTH SERVICES

NOTIFICATION OF UNSATISFACTORY INDUSTRIAL WASTE SAMPLING

Date Nov. 30, 1979

NTU Laboratories, Inc.
60 Dale St.
W. Babylon, N.Y. 11704

Gentlemen:

On 11/20/79 samples of your industrial waste were taken from your discharge point to S.P.A. . Upon analysis, the following parameters were found to be unsatisfactory:

1. Copper - 3.8 mg/l	6.
2. Iron - 2.3 mg/l	7.
3. Lead - 0.2 mg/l	8.
4.	9.
5.	10.

The acceptable limits on each of these parameters, according to New York State Groundwater Standards are as follows:

1. Copper - 1 mg/l	6.
2. Iron - .6 mg/l	7.
3. Lead - .05	8.
4.	9.
5.	10.

You should be aware that these unsatisfactory conditions constitute violations of the N.Y.S. Environmental Conservation Law. Please see that they are corrected as soon as possible. If you have any questions or need any assistance, please do not hesitate to contact this office.

Stephen A. Costa

Stephen A. Costa, P.E.
Industrial Waste and Hazardous
Materials Control Section

(GW)

65 JETSON LANE • HAUPPAUGE, NEW YORK 11787 • (516) 234-2622

FIELD

FIELD NO. 200

COL. BY Olson - Felix
NAME, NOT INITIALS

DATE COL. 11/20/79

TIME COL. 9:45am

LABORATORY

LAB NO. 11-79 - 239 p. 9828

TYPE SAMPLE Ind.

DATE REC'VD. 11/20/79

TIME REC'VD. 12:--

DATE COMPLETED 11/21/79

SUFFOLK COUNTY HEALTH SERVICES LABORATORY
CHEMICAL EXAMINATION OF WATER, SEWAGE, INDUSTRIAL WASTE

NAME OR FIRM N.T.U. Labs

ADDRESS OR LOCATION 60 Dale St. W.B.

POINT OF COLLECTION Point Discharge into S.P.A.

REMARKS/INSTRUCTIONS Heavy discharge at time of collection

	TEST	RESULT		TEST	RESULT mg./liter		TEST	RESULT mg./liter
	CONDUCT	umho		NITRATE-N		✓	COPPER	3.8 1.0
✓	pH	7.8		NITRITE-N		✓	IRON	2.3 .6
	TEST	RESULT m.g./liter		AMMONIA-N			MANGANESE	
	ph. ALKALINITY			TKN		✓	CHROMIUM	<.02
	T. ALKALINITY			O-PO_4-P			NICKEL	
	CHLORIDE					✓	ZINC	<0.1
	FLUORIDE						MAGNESIUM	
	CYANIDE			TOT. SOLIDS			CALCIUM	
				SUS. SOLIDS		✓	LEAD	0.2 .05
	SULFATE			DISS. SOLIDS		✓	CADMIUM	<.02
	MBAS					✓	SILVER	.02
✓	C.O.D.	3.1×10^1					SODIUM	
	T.O.C.						POTASSIUM	
							BARIUM	
				FIELD D.O.				
				FIELD TEMP				
				FIELD pH				
				FIELD COND.	umho			

8204-1

38-112

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COUNTY OF SUFFOLK

DEPARTMENT OF HEALTH SERVICES

NOTIFICATION OF UNSATISFACTORY INDUSTRIAL WASTE SAMPLING

Date ~~12/19/79~~

NTU Laboratories, Inc.
60 Dale Street
W. Babylon, New York
11704

Gentlemen:

On 9/25/79 samples of your industrial waste were taken from your ~~sanitary sewer receiving Ind. waste~~. Upon analysis, the following parameters were found to be unsatisfactory:

1. pH - 4.5
2. Fluoride - 3.2 mg/liter
3. Copper - 13.7 mg/liter
4. Iron - 13 mg/liter
5.
6.
7.
8.
9.
10.

The acceptable limits on each of these parameters, according to New York State Groundwater Standards are as follows:

1. pH range - 6.5-8.5
2. Fluoride - 3.0 mg/liter
3. Copper -13.7 mg/liter
4. Iron - .6 mg/liter
5.
6.
7.
8.
9.
10.

You should be aware that these unsatisfactory conditions constitute violations of the N.Y.S. Environmental Conservation Law. Please see that they are corrected as soon as possible. If you have any questions or need any assistance, please do not hesitate to contact this office.

Stephen A. Costa

Stephen A. Costa, P.E.
Industrial Waste and Hazardous
Materials Control Section

(GW)

65 JETSON LANE • HAUPPAUGE, NEW YORK 11787 • (516) 234-2622

FIELD

204

O BY Olsen
NAME, NOT INITIALS

A E COL. 09-25-79

I COL. 10:50AM

LABORATORY

LAB NO. 9-79-351 p.11 of 28

TYPE SAMPLE Ind.

DATE REC'VD. 9/25

TIME REC'VD. NOON

DATE COMPLETED 9/26 JQ

exc. F-?

MBAS 10/22

SUFFOLK COUNTY HEALTH SERVICES LABORATORY
CHEMICAL EXAMINATION OF WATER, SEWAGE, INDUSTRIAL WASTE

NAME OR FIRM NTU Laboratories

ADDRESS OR LOCATION 60 Dale St, West Babylon

POINT OF COLLECTION Sanitary Pool #A, being used

REMARKS/INSTRUCTIONS as an industrial pool

if possible

	TEST	RESULT		TEST	RESULT mg./liter		TEST	RESULT mg./liter
	CONDUCT	umho	✓	NITRATE-N	0.2	✓	COPPER 1.0	13.7
✓	pH 6.5-8.5	4.5	✓	NITRITE-N	.007	✓	IRON .6	13.
	TEST	RESULT m.g./liter	✓	AMMONIA-N	12.		MANGANESE	
	ph. ALKALINITY			TKN		✓	CHROMIUM	0.02
	T. ALKALINITY			0-PO_4-P		✓	NICKEL	0.5
✓	CHLORIDE	65				✓	ZINC	<0.1
✓	FLUORIDE 3.0	3.2					MAGNESIUM	
	CYANIDE		✓	TOT. SOLIDS	330.		CALCIUM	
			✓	SUS. SOLIDS	26.	✓	LEAD	<0.2
	SULFATE		✓	DISS. SOLIDS	304.	✓	CADMIUM	<0.02
✓	MBAS	.04				✓	SILVER	<0.02
✓	C.O.D.	9.X10'					SODIUM	
	T.O.C.						POTASSIUM	
							BARIUM	
				FIELD D.O.				
				FIELD TEMP				
				FIELD pH				
				FIELD COND.	umho			

8204-1

38-112:

p. 12828

COUNTY OF SUFFOLK

DEPARTMENT OF HEALTH SERVICES

NOTIFICATION OF UNSATISFACTORY INDUSTRIAL WASTE SAMPLING

Date Dec. 20, 1979

NTU Laboratories, Inc.
50 Dale St.
W. Babylon, N.Y. 11704

Gentlemen:

On 12/11/79 samples of your industrial waste were taken from your storm drain #2 (see diagram). Upon analysis, the following parameters were found to be unsatisfactory:

1. Copper - 6.9 mg/l	6.
2.	7.
3.	8.
4.	9.
5.	10.

The acceptable limits on each of these parameters, according to New York State Groundwater Standards are as follows:

1. Copper - 1 mg/l	6.
2.	7.
3.	8.
4.	9.
5.	10.

You should be aware that these unsatisfactory conditions constitute violations of the N.Y.S. Environmental Conservation Law. Please see that they are corrected as soon as possible. If you have any questions or need any assistance, please do not hesitate to contact this office.

Stephen A. Costa

Stephen A. Costa, P.E.
Industrial Waste and Hazardous
Materials Control Section

(GW)

65 JETSON LANE • HAUPPAUGE, NEW YORK 11787 • (516) 234-2622

FIELD

FIELD NO. 203

COL. BY Felice, J.P.
NAME, NOT INITIALS

DATE COL. 12/11/79

TIME COL. 11:05AM

Received from:
Suffolk Co. Dept. of Health

LABORATORY

LAB NO. 12-79-110 P. 13628

TYPE SAMPLE Ind.

DATE REC'VD. 12/11

TIME REC'VD. NOON

DATE COMPLETED 12/13 ja except Cr-6

SUFFOLK COUNTY HEALTH SERVICES LABORATORY
CHEMICAL EXAMINATION OF WATER, SEWAGE, INDUSTRIAL WASTE

NAME OR FIRM N.T.U. LABS

ADDRESS OR LOCATION 50 Dale Street, W. Babylon

POINT OF COLLECTION Storm Drain #2 - At the End of the Building furthest from Dale St. (Green Stain on Ground leading to this Drain.)

REMARKS/INSTRUCTIONS

	TEST	RESULT
	CONDUCT	umho
✓	pH	8.6
	TEST	RESULT mg/liter
	ph. ALKALINITY	
	T. ALKALINITY	
	CHLORIDE	
	FLUORIDE	
	CYANIDE	
	SULFATE	
	MBAS	
	C.O.D.	
	T.O.C.	

	TEST	RESULT mg/liter
	NITRATE-N	
	NITRITE-N	
	AMMONIA-N	
	TKN	
	O-PO_4-P	
✓	TOT. SOLIDS	167.
✓	SUS. SOLIDS	24.
✓	DISS. SOLIDS	143.
	FIELD D.O.	
	FIELD TEMP	
	FIELD pH	
	FIELD COND.	umho

	TEST	RESULT mg/liter
✓	COPPER 1.0	6.9
✓	IRON	.57
	MANGANESE	
✓	CHROMIUM	.24
✓	NICKEL	<0.1
✓	ZINC	.05
	MAGNESIUM	
	CALCIUM	
✓	LEAD	0.3
✓	CADMIUM	<.02
✓	SILVER	<.02
	SODIUM	
	POTASSIUM	
	BARIUM	
	Hex Cr	

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COUNTY OF SUFFOLK

DEPARTMENT OF HEALTH SERVICES

NOTIFICATION OF UNSATISFACTORY INDUSTRIAL WASTE SAMPLING

Date Dec. 20, 1979

NTU Laboratories, Inc.
50 Dale St.
W. Babylon, N.Y. 11704

Gentlemen:

On 12/11/79 samples of your industrial waste were taken from your storm drain #3 (see diagram). Upon analysis, the following parameters were found to be unsatisfactory:

1. Copper - 7.2 mg/l	6.
2.	7.
3.	8.
4.	9.
5.	10.

The acceptable limits on each of these parameters, according to New York State Groundwater Standards are as follows:

1. Copper - 1 mg/l	6.
2.	7.
3.	8.
4.	9.
5.	10.

You should be aware that these unsatisfactory conditions constitute violations of the N.Y.S. Environmental Conservation Law. Please see that they are corrected as soon as possible. If you have any questions or need any assistance, please do not hesitate to contact this office.

Stephen A. Costa

Stephen A. Costa, P.E.
Industrial Waste and Hazardous
Materials Control Section

(GW)

65 JETSON LANE • HAUPPAUGE, NEW YORK 11787 • (516) 234-2622

FIELD

FIELD NO. #202

COL. BY FELICE, J.P.
NAME, NOT INITIALS

DATE COL. 12/11/79

TIME COL. 10:55 AM

LABORATORY

LAB NO. 12-79-109 p.150828

TYPE SAMPLE Ind.

DATE REC'VD. 12/11

TIME REC'VD. NOON

DATE COMPLETED 12/13 Je

SUFFOLK COUNTY HEALTH SERVICES LABORATORY
CHEMICAL EXAMINATION OF WATER, SEWAGE, INDUSTRIAL WASTE

NAME OR FIRM N.T.U. LABS

ADDRESS OR LOCATION 50 Dale Street W. Babylon

POINT OF COLLECTION Storm Drain #2 #3 - Between side

REMARKS/INSTRUCTIONS Delivery Doors - new Pipe Leading To This Storm Drain - Heavy Flow At This Time From Pipe.

	TEST	RESULT		TEST	RESULT mg./liter		TEST	RESULT mg./liter
	CONDUCT	umho		NITRATE-N		✓	COPPER 1.0	7.2
✓	pH	7.05		NITRITE-N		✓	IRON	.27
	TEST	RESULT mg./liter		AMMONIA-N			MANGANESE	
	ph. ALKALINITY			TKN		✓	CHROMIUM	<.02
	T. ALKALINITY			O-PO_4-P		✓	NICKEL	0.1
	CHLORIDE					✓	ZINC	.03
	FLUORIDE						MAGNESIUM	
	CYANIDE		✓	TOT. SOLIDS	299.		CALCIUM	
			✓	SUS. SOLIDS	20.	✓	LEAD	<0.2
	SULFATE		✓	DISS. SOLIDS	279.	✓	CADMIUM	<.02
	MBAS					✓	SILVER	<.02
	C.O.D.						SODIUM	
	T.O.C.						POTASSIUM	
							BARIUM	
				FIELD D.O.				
				FIELD TEMP				
				FIELD pH				
				FIELD COND.	umho			

38

COUNTY OF SUFFOLK

Received from:
Suffolk Co. Dept. of
Health

DEPARTMENT OF HEALTH SERVICES

NOTIFICATION OF UNSATISFACTORY INDUSTRIAL WASTE SAMPLING

Date Dec. 20, 1979

NTU Laboratories, Inc.
50 Dale St.
W. Babylon, N.Y. 11704

Gentlemen:

On 12/11/79 samples of your industrial waste were taken from your storm drain #7 (see diagram). Upon analysis, the following parameters were found to be unsatisfactory:

1. Cadmium - .07 mg/l
2. Silver - 1.1 mg/l
3.
4.
5.
6.
7.
8.
9.
10.

The acceptable limits on each of these parameters, according to New York State Groundwater Standards are as follows:

1. Cadmium - .02 mg/l
2. Silver - .1 mg/l
3.
4.
5.
6.
7.
8.
9.
10.

You should be aware that these unsatisfactory conditions constitute violations of the N.Y.S. Environmental Conservation Law. Please see that they are corrected as soon as possible. If you have any questions or need any assistance, please do not hesitate to contact this office.

Stephen A. Costa

Stephen A. Costa, P.E.
Industrial Waste and Hazardous
Materials Control Section

(GW)

65 JETSON LANE • HAUPPAUGE, NEW YORK 11787 • (516) 234-2622

FIELD

FIELD NO. #201

COL. BY Felice, J.P.
NAME, NOT INITIALS

DATE COL. 12/11/79

TIME COL. 10:45 am

LABORATORY

LAB NO. 12-79-108 p.17 of 28

TYPE SAMPLE Ind.

DATE REC'VD. 12/11

TIME REC'VD. NOON

DATE COMPLETED 12/13 Jr

SUFFOLK COUNTY HEALTH SERVICES LABORATORY
CHEMICAL EXAMINATION OF WATER, SEWAGE, INDUSTRIAL WASTE

NAME OR FIRM N. T. U. LABS

ADDRESS OR LOCATION 50 Dale St. West BABYLON

POINT OF COLLECTION Storm Drain #17 Nearest Dale St. near

REMARKS/INSTRUCTIONS Side Entrance Door - (Slight Flow from inlet Pipe) at time of Collection).

	TEST	RESULT		TEST	RESULT mg./liter		TEST	RESULT mg./liter
	CONDUCT	umho		NITRATE-N		✓	COPPER	.07
✓	pH	6.9		NITRITE-N		✓	IRON	.37
	TEST	RESULT m.g./liter		AMMONIA-N			MANGANESE	
	ph. ALKALINITY			TKN		✓	CHROMIUM	<.02
	T. ALKALINITY			O-PO_4-P		✓	NICKEL	<0.1
	CHLORIDE					✓	ZINC	.09
	FLUORIDE						MAGNESIUM	
	CYANIDE		✓	TOT. SOLIDS	101.		CALCIUM	
			✓	SUS. SOLIDS	13.	✓	LEAD	<0.2
	SULFATE		✓	DISS. SOLIDS	88.	✓	CADMIUM .02	.07
	MBAS					✓	SILVER .1	1.1
	C.O.D.						SODIUM	
	T.O.C.						POTASSIUM	
							BARIUM	
				FIELD D.O.				
				FIELD TEMP				
				FIELD pH				
				FIELD COND.	umho			

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COUNTY OF SUFFOLK

DEPARTMENT OF HEALTH SERVICES

NOTIFICATION OF UNSATISFACTORY INDUSTRIAL WASTE SAMPLING

Date Feb. 5, 1980

NTU Laboratories, Inc.
50 Dale St.
W. Babylon, N.Y. 11704

Gentlemen:

On Dec. 11, 1979 samples of your industrial waste were taken from your storm drain at end of building* . Upon analysis, the following parameters were found to be unsatisfactory:

1. Hexavalent Chromium - .15 mg/l
2.
3.
4.
5.
6.
7.
8.
9.
10.

The acceptable limits on each of these parameters, according to New York State Groundwater Standards are as follows:

1. Hexavalent Chromium - .1 mg/l.
2.
3.
4.
5.
6.
7.
8.
9.
10.

*furthest from Dale St.

You should be aware that these unsatisfactory conditions constitute violations of the N.Y.S. Environmental Conservation Law. Please see that they are corrected as soon as possible. If you have any questions or need any assistance, please do not hesitate to contact this office.

Stephen A. Costa

Stephen A. Costa, P.E.
Industrial Waste and Hazardous
Materials Control Section

(GW)

65 JETSON LANE • HAUPPAUGE, NEW YORK 11787 • (516) 234-2622

p. 19 of 28

COUNTY OF SUFFOLK

DEPARTMENT OF HEALTH SERVICES

NOTICE OF VIOLATION: N.Y.S. ENVIRONMENTAL CONSERVATION LAW

N.T.U. Circuits Inc.
60 Dale Street
West Babylon, New York 11704

Date July 6, 1981
SPDES NO. NY0108260
Lab No. 6/81-74
Field No. 6 DO 6-10

entlemen:

n June 10, 1981 samples of industrial waste were taken from your storm drain receiving process water, southside of building. Upon analysis, the following parameters were found in concentrations above the maximum allowed in your SPDES permit or in groundwater effluent tandards:

1. Cadmium - 0.03 mg/L
2.
3.
4.
5.
6.
7.
8.
9.
10.

Please be advised that these unsatisfactory conditions constitute violations of the N.Y.S. Environmental Conservation Law. Please be further advised that the discharge of any water from an industrial process to the groundwater of Suffolk County without having first obtained a State ollutant Discharge Elimination System (SPDES) permit for that discharge is also a violation of the N.Y.S.E.C.L. and S.C. Sanitary Code, Art. 12.

f you do not already possess a valid SPDES permit for the above discharge, hen you should apply immediately, through this office, for said permit.

ince the above noted violations may subject you to legal action, it is xpected that these violations cease immediately. A reinspection in the near future will determine your compliance in this matter.

ery truly yours,

(SEE REVERSE SIDE FOR STANDARDS)

John H. Finkenberg
S. Sanitarian
Environmental Pollution Control
JHF/cc

Central Islip, N. Y. 11722

Box G

(516) 234-2622

FIELD

FIELD NO. GDO 6-10

COP. BY DAVID OBRIG
NAME, NOT INITIALS

DATE COL. 10 JUNE 81

TIME COL. 1040 AM

LABORATORY

LAB NO. 6/81-74 p.20 of 28

TYPE SAMPLE IND

DATE REC'VD. 6/10/81 Rej

TIME REC'VD. ~ 1PM

DATE COMPLETED 6/23/81 P.T.

SUFFOLK COUNTY HEALTH SERVICES LABORATORY
CHEMICAL EXAMINATION OF WATER, SEWAGE, INDUSTRIAL WASTE

NAME OR FIRM NTU

ADDRESS OR LOCATION DALE ST. FARMINGDALE (PINELAWN)

POINT OF COLLECTION SD recieving process water, South side of BID.

REMARKS/INSTRUCTIONS

	TEST	RESULT		TEST	RESULT mg./liter		TEST	RESULT mg./liter
	CONDUCT	umho		NITRATE-N		X	COPPER	8.0
	pH			NITRITE			IRON	
	TEST	RESULT m.g./liter		AMMONIA-N			MANGANESE	
	ph. ALKALINITY			TKN		X	CHROMIUM	.04
	T. ALKALINITY			$O\text{-}PO_4\text{-}P$		X	NICKEL	<.1
	CHLORIDE					X	ZINC	<.1
	FLUORIDE						MAGNESIUM	
	CYANIDE			TOT. SOLIDS			CALCIUM	
				SUS. SOLIDS		X	LEAD	.4
	SULFATE			DISS. SOLIDS		X	CADMIUM	.03
	MBAS					X	SILVER	<.02
	C.O.D.						SODIUM	
	T.O.C.						POTASSIUM	
							BARIUM	
				FIELD D.O.				
				FIELD TEMP				
				FIELD pH	7			
				FIELD COND.	umho			

8204-1

38-112

COUNTY OF SUFFOLK

DEPARTMENT OF HEALTH SERVICES

NOTICE OF VIOLATION: N.Y.S. ENVIRONMENTAL CONSERVATION LAW

N.T.U. Circuits Inc.
60 Dale Street
West Babylon, NY 11704

Date July 17, 1981
SPDES NO NY0108260
Lab No. 7-81-18
Field No. 1 DO 7-1

Gentlemen:

(July 1, 1981 samples of industrial waste were taken from your sani. pool #1 (pool 60 ft. southwest of N.T.U.) Upon analysis, the following parameters were found in concentrations above the maximum allowed in your SPDES permit or in groundwater effluent standards:

1. Copper - 440.0 mg/L
2. Iron - 4.4 mg/L
3. cadmium 0.06 mg/L
4. Lead - 1.2 mg/L
5. pH (field) - 11
6.
7.
8.
9.
10.

Please be advised that these unsatisfactory conditions constitute violations of the N.Y.S. Environmental Conservation Law. Please be further advised that the discharge of any water from an industrial process to the groundwater of Suffolk County without having first obtained a State Pollutant Discharge Elimination System (SPDES) permit for that discharge is also a violation of the N.Y.S.E.C.L. and S.C. Sanitary Code, Art. 12.

If you do not already possess a valid SPDES permit for the above discharge, then you should apply immediately, through this office, for said permit.

Since the above noted violations may subject you to legal action, it is expected that these violations cease immediately. A reinspection in the near future will determine your compliance in this matter.

Very truly yours,

(SEE REVERSE SIDE FOR STANDARDS)

John H. Finkenberg
Sr. Sanitarian
Environmental Pollution Control
JHF/cc

Central Islip, N. Y. 11722

FIELD

LABORATORY

p.22 of 28

FIELD NO. 1 DO9-1

BY DAVID OBHIGT R. OLSEN
NAME, NOT INITIALS

DATE COL. 1 JULY 81

TIME COL. 3:40 PM

LAB NO. 7-81-18

TYPE SAMPLE INDUSTRIAL

DATE REC'VD. 7/1/81

TIME REC'VD. 4:32 PM.

DATE COMPLETED 7/13/81 [illegible]

SUFFOLK COUNTY HEALTH SERVICES LABORATORY
CHEMICAL EXAMINATION OF WATER, SEWAGE, INDUSTRIAL WASTE

NAME OR FIRM NTU Circuits Inc.

ADDRESS OR LOCATION 60 Dale St. Wilbadylow

POINT OF COLLECTION SCWI POOL #1

REMARKS/INSTRUCTIONS DELIVERED TO SCDHS LAB 4:47 pm 1 JUL 81

TEST	RESULT		TEST	RESULT mg./liter		TEST	RESULT mg./liter
CONDUCT	umho		NITRATE-N		✓	COPPER	4.4 X 10²
pH			NITRITE		✓	IRON	4.4
TEST	RESULT m.g./liter		AMMONIA-N			MANGANESE	
ph. ALKALINITY			TKN		✓	CHROMIUM	.06
T. ALKALINITY			0-PO_4-P		✓	NICKEL	.2
CHLORIDE					✓	ZINC	1.3
FLUORIDE						MAGNESIUM	
CYANIDE			TOT. SOLIDS			CALCIUM	
			SUS. SOLIDS		✓	LEAD	1.2 ok
SULFATE			DISS. SOLIDS		✓	CADMIUM	.06
MBAS					✓	SILVER	<.02
C.O.D.						SODIUM	
T.O.C.						POTASSIUM	
						BARIUM	
			FIELD D.O.				
			FIELD TEMP				
			FIELD pH	ph 11			
			FIELD COND.	umho			

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COUNTY OF SUFFOLK

DEPARTMENT OF HEALTH SERVICES

NOTICE OF VIOLATION: N.Y.S. ENVIRONMENTAL CONSERVATION LAW

NTU Circuits, INc.
60 Dale Street
West Babylon, New York 11704

Date 12-28-81
SPDES NO. NY 0108260
Lab No. 9-81-337
Field No. 3 DO 9-30

Gentlemen:

On 9-30-81 samples of industrial waste were taken from your SPDES Discharge pool, receiving rinse water. Upon analysis, the following parameters were found in concentrations above the maximum allowed in your SPDES permit or in groundwater effluent standards:

1. Lead - 2.4,mg/L
2.
3.
4.
5.
6.
7.
8.
9.
10.

Please be advised that these unsatisfactory conditions constitute violations of the N.Y.S. Environmental Conservation Law. Please be further advised that the discharge of any water from an industrial process to the groundwater of Suffolk County without having first obtained a State Pollutant Discharge Elimination System (SPDES) permit for that discharge is also a violation of the N.Y.S.E.C.L. and S.C. Sanitary Code, Art. 12.

If you do not already possess a valid SPDES permit for the above discharge, then you should apply immediately, through this office, for said permit.

Since the above noted violations may subject you to legal action, it is expected that these violations cease immediately. A reinspection in the near future will determine your compliance in this matter.

Very truly yours,

(SEE REVERSE SIDE FOR STANDARDS)

John H. Finkenberg
Sr. Sanitarian
Environmental Pollution Control
JHF/cc

Central Islip, N. Y. 11722
65 JETSON LANE Box G
(516) 234-3622

FIELD

FIELD NO. 3DO930

COL. BY ~~30 Sept~~ DAVID OBRIG
NAME, NOT INITIALS

DATE COL. 30 Sept 81

TIME COL. 11^00 AM

LABORATORY

LAB NO. 981-337 P.24 of 28

TYPE SAMPLE 1ND

DATE REC'VD. 9/30 PM

TIME REC'VD. 12:20PM

DATE COMPLETED 10/6/81

SUFFOLK COUNTY HEALTH SERVICES LABORATORY
CHEMICAL EXAMINATION OF WATER, SEWAGE, INDUSTRIAL WASTE

NAME OR FIRM NTU CIRCUITS

ADDRESS OR LOCATION DALE ST, FARMINGDALE

POINT OF COLLECTION SPDES Discharge Pool, Receiving Rinse WATER

REMARKS/INSTRUCTIONS

TEST	RESULT		TEST	RESULT mg./liter		TEST	RESULT mg/liter
CONDUCT	umho		NITRATE-N		✓	COPPER	[redacted]
pH			NITRITE			IRON	
TEST	RESULT mg./liter		AMMONIA-N			MANGANESE	
ph. ALKALINITY			TKN		✓	CHROMIUM	<.02
MT. ALKALINITY			O-PO_4-P		✓	NICKEL	.2
CHLORIDE						ZINC	
FLUORIDE						MAGNESIUM	
CYANIDE			TOT. SOLIDS			CALCIUM	
			SUS. SOLIDS		✓	LEAD	[redacted] 2.4
SULFATE			DISS. SOLIDS		✓	CADMIUM	<.02
MBAS						SILVER	
C.O.D.						SODIUM	
T.O.C.						POTASSIUM	
						BARIUM	
			FIELD D.O.				
			FIELD TEMP				
			FIELD pH	pH 7			
			FIELD COND.	umho			

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38-112

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COUNTY OF SUFFOLK

DEPARTMENT OF HEALTH SERVICES

NOTICE OF VIOLATION: N.Y.S. ENVIRONMENTAL CONSERVATION LAW

Date 12-28-81
SPDES NO. NY 0108260
Lab No. 11-81-271
Field No. 5 DO 25-11

NTU Circuits Inc.
60 Dale Street
West Babylon, New York 11704

Gentlemen:

On 11-25-81 samples of industrial waste were taken from your SPDES discharge pool, southside of NTU, actively receiving process waste. Upon analysis, the following parameters were found in concentrations above the maximum allowed in your SPDES permit or in groundwater effluent standards:

1. Copper - 9.0 mg/L
2. Lead - 1.3 mg/L
3. pH - 3
4.
5.
6.
7.
8.
9.
10.

Please be advised that these unsatisfactory conditions constitute violations of the N.Y.S. Environmental Conservation Law. Please be further advised that the discharge of any water from an industrial process to the groundwater of Suffolk County without having first obtained a State Pollutant Discharge Elimination System (SPDES) permit for that discharge is also a violation of the N.Y.S.E.C.L. and S.C. Sanitary Code, Art. 12.

If you do not already possess a valid SPDES permit for the above discharge, then you should apply immediately, through this office, for said permit.

Since the above noted violations may subject you to legal action, it is expected that these violations cease immediately. A reinspection in the near future will determine your compliance in this matter.

Very truly yours,

(SEE REVERSE SIDE FOR STANDARDS)

John H. Finkenberg
Sr. Sanitarian
Environmental Pollution Control
JHF/cc

Central Islip, N. Y. 11722
Box G
(516) 234-2622

FIELD

FIELD NO. [illegible]

COL. BY [illegible]
NAME, NOT INITIALS

DATE COL. 25 NOV. 81

TIME COL. 945

LABORATORY

LAB NO. 11-81-271

TYPE SAMPLE IND

DATE REC'VD. 11/25 [illegible]

TIME REC'VD. 1PM

DATE COMPLETED 12/2/81

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SUFFOLK COUNTY HEALTH SERVICES LABORATORY
CHEMICAL EXAMINATION OF WATER, SEWAGE, INDUSTRIAL WASTE

NAME OR FIRM [illegible]

ADDRESS OR LOCATION DANE [illegible]

POINT OF COLLECTION [illegible], SOUTH SIDE OF

REMARKS/INSTRUCTIONS NTU, ACTIVITY [illegible]

TEST	RESULT		TEST	RESULT mg./liter		TEST	RESULT mg./liter
CONDUCT	umho		NITRATE-N		✓	COPPER	9.0
pH			NITRITE			IRON	
TEST	RESULT mg./liter		AMMONIA-N			MANGANESE	
ph. ALKALINITY			TKN		✓	CHROMIUM	<.02
T. ALKALINITY			O-PO_4-P		✓	NICKEL	<.1
CHLORIDE					✓	ZINC	.1
FLUORIDE						MAGNESIUM	
CYANIDE			TOT. SOLIDS			CALCIUM	
			SUS. SOLIDS		✓	LEAD	1.3 .05
SULFATE			DISS. SOLIDS		✓	CADMIUM	<.02
MBAS					✓	SILVER	<.02
C.O.D.						SODIUM	
T.O.C.						POTASSIUM	
						BARIUM	
			FIELD D.O.				
			FIELD TEMP				
			FIELD pH	pH = 3			
			FIELD COND.	umho			

8204-1

38-112

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COUNTY OF SUFFOLK

DEPARTMENT OF HEALTH SERVICES

NOTICE OF VIOLATION: N.Y.S. ENVIRONMENTAL CONSERVATION LAW

NTU Circuits
60 Dale Street
West Babylon, New York 11704

Date 1-19-82
SPDES NO.
Lab No. 12-81-116
Field No. 1 EJ 12-14

Gentlemen:

On 12-14-81 samples of industrial waste were taken from your storm drain on the south side of the building. Upon analysis, the following parameters were found in concentrations above the maximum allowed in your SPDES permit or in groundwater effluent standards:

1. Copper - 10 mg/L
2. Iron - 1.3 mg/L
3. Lead - 3.0 mg/L
4.
5.
6.
7.
8.
9.
10.

Please be advised that these unsatisfactory conditions constitute violations of the N.Y.S. Environmental Conservation Law. Please be further advised that the discharge of any water from an industrial process to the groundwater of Suffolk County without having first obtained a State Pollutant Discharge Elimination System (SPDES) permit for that discharge is also a violation of the N.Y.S.E.C.L. and S.C. Sanitary Code, Art. 12.

If you do not already possess a valid SPDES permit for the above discharge, then you should apply immediately, through this office, for said permit.

Since the above noted violations may subject you to legal action, it is expected that these violations cease immediately. A reinspection in the near future will determine your compliance in this matter.

Very truly yours,

(SEE REVERSE SIDE FOR STANDARDS)

John H. Finkenberg
Sr. Sanitarian
Environmental Pollution Control
JHF/cc

Central Islip, N. Y. 11722
65 JETSON LANE Box G
(516) 234-2622

FIELD		LABORATORY	
FIELD NO.	LET 12-14	LAB NO.	12-31-116
COL. BY (NAME, NOT INITIALS)	JOUNGBLOOD	TYPE SAMPLE	[illegible]
DATE COL.	12-14-81	DATE REC'VD.	12/14/81
TIME COL.	12:10 PM	TIME REC'VD.	
		DATE COMPLETED	1/11/82

LETTER p.28 of 28

SUFFOLK COUNTY HEALTH SERVICES LABORATORY
CHEMICAL EXAMINATION OF WATER, SEWAGE, INDUSTRIAL WASTE

NAME OR FIRM: NTU CIRCUITS

ADDRESS OR LOCATION: 60 DALE ST., W. BABYLON

POINT OF COLLECTION: STORM DRAIN # 3

REMARKS/INSTRUCTIONS: (NOT FIELD PRESERVED - FIELD PH=7)

	TEST	RESULT		TEST	RESULT mg./liter		TEST	RESULT mg./liter
	CONDUCT	umho		NITRATE-N		✓	COPPER	10 / 1.0
	pH			NITRITE		✓	IRON	1.3 / .6
	TEST	RESULT mg./liter		AMMONIA-N			MANGANESE	
	ph. ALKALINITY			TKN		✓	CHROMIUM	<.02
	T. ALKALINITY			0-PO_4-P		✓	NICKEL	.1
	CHLORIDE					✓	ZINC	.1
	FLUORIDE						MAGNESIUM	
	CYANIDE			TOT. SOLIDS			CALCIUM	
				SUS. SOLIDS		✓	LEAD	3. / .03
	SULFATE			DISS. SOLIDS		✓	CADMIUM	<.02
X	MBAS	.06				✓	SILVER	<.02
	C.O.D.						SODIUM	
	T.O.C.						POTASSIUM	
							BARIUM	
				FIELD D.O.				
				FIELD TEMP				
				FIELD pH				
				FIELD COND.	umho			

Appendix 1.1-7

Received from:
Suffolk Co. Dept. of
Health

p. 1 of 5

SUPREME COURT OF THE STATE OF NEW YORK
COUNTY OF SUFFOLK

----------X

STATE OF NEW YORK :

Plaintiff, :

-against- : AFFIDAVIT

NTU LABORATORIES, INC. d/b/a : Index No.
NTU CIRCUITS, INC. and TIMOTHY WU
:
Defendants.

----------X

STATE OF NEW YORK)
: SS.:
COUNTY OF SUFFOLK)

ROBERT OLSEN, being duly sworn, deposes and says:

I am a Public Health Sanitarian for the Industrial Wastes and Hazardous Materials Control Section of the Suffolk County Department of Health Services and make this affidavit in support of plaintiff's motion for a preliminary injunction to stop the discharge of hazardous wastes.

QUALIFICATIONS

I am employed as a Public Health Sanitarian by the Suffolk County Department of Health Services and have been employed by Suffolk County for 3 years as an environmental inspector. My official duties include the inspection of industrial facilities which generate hazardous waste and the taking of samples from such discharges to determine if they are in compliance

with applicable New York State and Suffolk County Law.

I have a B.A. degree from Southampton College with a major in Marine Research Biology, awarded in June, 1970. Over the past 2 years I have also attended training programs and courses such as a Hazardous Materials I, given by the National Fire Academy as well as a Sanitarian Training Course and a Hazardous Material Handling Course given by Suffolk County. In August 1980 I have served as an instructor for the National Fire Academy Hazardous Materials I course.

I first inspected NTU Laboratories in September 17, 1979. During the inspection, I was accompanied by Mr. Timothy Wu. During the inspection, I asked many direct questions of Mr. Wu. These questions were answered by less than accurate responses. I inquired about a photo operation. Mr. Wu stated that all his photo work was sent out. However, I walked into a "red light room" where I saw an extensive photo operation set up. This photo operation had automatic processors as well as tray type processing. I think I ruined some of Mr. Wu's film by opening the door.

Mr. Wu stated that he did not do any etching at all and did not use ferric chloride as we were standing alongside a ferric chloride etcher. When I identified the unit, Mr. Wu said, "Oh, I forgot about this one."

When I asked Mr. Wu about volume of printed circuit boards processed, he stated that he only operated a prototype

business and used his plating line about once a week for about 20 boards. During the inspection I noticed a large volume of boards on the drying racks and in the bins to be plated.

Mr. Wu stated that all rinses go to the sanitary pool. When I asked to see the pool, Mr. Wu showed me a storm drain in the driveway that was almost empty. When I inquired about the solid covers about 20 feet away, Mr. Wu stated that those "were somebody else's." It is physically impossible that the storm drain designed by Mr. Wu is NTU's sole discharge point since all rinses are free flowing and will accumulate general large volumes of waste water.

Mr. Wu consistently misidentified the contents of his tanks on the plating line as well as their final dischage point. Mr. Wu stated that he neutralizes his rinses prior to discharge. However, when I asked to see his neutralizing equipment and pH meter, Mr. Wu showed me a pH meter connected to a plating concentrate tank (not at the final effluent discharge line) and was unable to show me any other neutralizing equipment.

On September 20, 1979, I returned to the state and collected samples from the sanitary cesspool. At this time, I noted that the sanitary pool identified by Mr. Wu as receiving wastes from the printed circuit board line was overflowing into the parking lot and into adjacent storm drains. I collected a sample of the material overflowing the sanitary pool and submitted it to the Suffolk County Public Health Service laboratory for analysis.

On several later occasions, I returned to the facility to re-sample the leaching pools. These storm drains and sanitary pools are identified on the attached Figure 1. On September 15, 1979, I collected a sample from SPA, took additional samples from the storm drains identified as SD2 and SD3, and brought them to the laboratory for analysis. I returned on October 2, 1979 to take samples from SPA and SD7 and brought the samples to the laboratory. On November 20, 1979 I collected a sample from a pipe actively discharging into SPA and loading underground in the direction of NTU.

On July 1, 1981 I inspected NTU laboratories with Robert Olsen, Dan Levy, Timothy Wu, and Mr. Wu's engineer Lawrence Phillips. During that visit we were shown industrial waste scavenger receipts which indicated that approximately four 55-gallon wastewater drums were picked up every two months. It is my experience that firms which produce a volume of printed circuit boards similar to the output of NTU generate at least twenty 55-gallon drums of plating concentrates containing high concentrations of heavy metals, salts, or other materials not permitted in discharges to groundwaters. In the nearly two years between my first inspection and my most recent visit, I

p.5 of 5

have noticed large increases in production equipment and capacity, but little or no evidence of progress toward proper waste disposal practice.

ROBERT-CARL OLSEN

Sworn to before me this
day of August 1981.

Assistant Attorney General of
the State of New York

Appendix 1.1-8
ADD P. 1 of 2

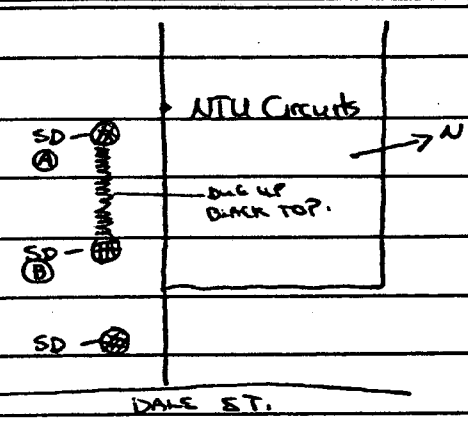
SUFFOLK COUNTY DEPARTMENT OF HEALTH SERVICES
INDUSTRIAL WASTE AND HAZARDOUS MATERIALS CONTROL
65 JETSON LA., P.O. BOX G, CENTRAL ISLIP, N.Y. 11722
(516) 234-2622

NAME OF FACILITY: NTU Circuits	OWNER/OFFICER: MR. T. WO	PAGE 1 OF
COMPANY NAME	CONTACT: —	TEL.
PLANT ADDRESS	VILLAGE: BAB. TOWN: BAB	ZIP
MAILING ADDRESS: DALE ST.		
DATE: 28 OCT 81	TIME: 10:00 AM	ORIG. PERIODIC (RE.) WASTE NO WASTE H&H SEWAGE SYSTEM PUBLIC (PRIVATE)
INDUSTRY: PC BOARD MANU.		
SPDES OR SPDES PERMIT? (YES) NO PERMIT NO.	360 PERMIT? YES NO PERMIT NO.	
SCAVENGER	TEL.	
SCAVENGER APPROVED YES NO	PICK UP RECORDS AVAILABLE YES NO	RECORDS CONSISTENT WITH EXPECTED WASTE GENERATION YES NO

HEATING SYSTEM-MFG. NAME	FUEL TYPE	FIRING RATE
INCIN. NAME	WASTE BURNED	RATE

DRUM STORAGE YES NO	NUMBER OF DRUMS STORED	TYPE OF MATERIAL STORED WASTE RAW BOTH
TANK STORAGE YES NO	ABOVE GROUND UNDER GROUND BOTH	TYPE OF MATERIAL STORED WASTE RAW BOTH
HAVE TANKS BEEN REGISTERED YES NO	CONDITION OF ABOVEGROUND TANKS GOOD FAIR POOR	ANY ART. XII VIOLATIONS YES NO

OBSERVED PVC PIPE (WHITE ≅4-6") WITH OPEN END DISCHARGING GREENISH BLUEISH, FOAMY LIQUID FROM SD A to SD B, STORM DRAIN (B) APPEARED TO BE APPROX. HALF FULL WITH LIQUID LEVEL APPROX. 6-8' FT. FROM GRADE, ACTUAL LEVEL WAS OBSCURED BY FOAM.



→ THIS PVC PIPE CONNECTION WAS THOUGHT TO HAVE BEEN CAPPED OFF, UNTIL PERMISSION TO DISCHARGE THRU SD (B) WAS OBTAINED FROM THE STATE.

PERMISSION IS GRANTED BY THIS FACILITY TO THE SUFFOLK COUNTY DEPARTMENT OF HEALTH SERVICES TO CONDUCT ROUTINE SAMPLING OF CESSPOOLS, STORMDRAINS, AND OTHER DISCHARGE POINTS AT THE FACILITY.

REINSPECTION SCHEDULED ON OR AFTER _____. FAILURE TO CORRECT UNSATISFACTORY CONDITIONS BY REINSPECTION DATE MAY RESULT IN A HEARING AND/OR FINE.

DAVID OBRIG

SIGN. OF PERSON REC. REPORT	TITLE	INSPECTOR

155: 6/81 5/81 TJK

p. 2 of 2

SUFFOLK COUNTY DEPARTMENT OF HEALTH SERVICES
INDUSTRIAL WASTE AND HAZARDOUS MATERIALS CONTROL
65 JETSON LA., P.O. BOX G, CENTRAL ISLIP, N.Y. 11722
(516) 234-2622

NAME OF FACILITY: NTU CIRCUITS INC.	OWNER/ OFFICER	PAGE 1 OF
COMPANY NAME	CONTACT	TEL.
PLANT ADDRESS	VILLAGE W. BAB. TOWN BAB	ZIP
MAILING ADDRESS: DALE ST.		
DATE 5 JAN. 82	TIME 11:15	ORIG. PERIODIC (RE.) WASTE NO WASTE (H&H) SEWAGE SYSTEM. PUBLIC PRIVATE
INDUSTRY: PC Board.		
SPDES OR UPDES PERMIT? YES NO PERMIT NO.	360 PERMIT? YES NO PERMIT NO.	
SCAVENGER	TEL.	
SCAVENGER APPROVED YES NO	PICK UP RECORDS AVAILABLE YES NO	RECORDS CONSISTENT WITH EXPECTED WASTE GENERATION YES NO
HEATING SYSTEM-MFG. NAME	FUEL TYPE	FIRING RATE
INCIN. NAME	WASTE BURNED	RATE
DRUM STORAGE (YES) NO	NUMBER OF DRUMS STORED 8 x 55 gal.	TYPE OF MATERIAL STORED (WASTE) RAW BOTH
TANK STORAGE YES NO	ABOVE GROUND UNDER GROUND BOTH	TYPE OF MATERIAL STORED WASTE RAW BOTH
HAVE TANKS BEEN REGISTERED YES NO	CONDITION OF ABOVEGROUND TANKS GOOD FAIR POOR	ANY ART. XII VIOLATIONS (YES) NO

1) 2x55gal. empty metal drums located outside NTU Southside,
2) (6x55gal.) plastic drums stored NORTH side NTU, full.

PERMISSION IS GRANTED BY THIS FACILITY TO THE SUFFOLK COUNTY DEPARTMENT OF HEALTH SERVICES TO CONDUCT ROUTINE SAMPLING OF CESSPOOLS, STORMDRAINS, AND OTHER DISCHARGE POINTS AT THE FACILITY.

REINSPECTION SCHEDULED ON OR AFTER _____. FAILURE TO CORRECT UNSATISFACTORY CONDITIONS BY REINSPECTION DATE MAY RESULT IN A HEARING AND/OR FINE.

DAVID OBRIG

SIGN. OF PERSON REC. REPORT	TITLE	INSPECTOR [signature]

-155: 6/81 5/81 TJK

Appendix 1.1-9

Received from:
Suffolk Co. Dept. of
Health

P 105

SUPREME COURT OF THE STATE OF NEW YORK
COUNTY OF SUFFOLK

----------X

STATE OF NEW YORK, :

Plaintiff, :

-against- : AFFODAVOT

NTU LABORATORIES, INC. d/b/a : Index No.
NTU CIRCUITS, INC. and TIMOTHY WU

:

Defendants.

----------X

STATE OF NEW YORK)
SS.:
COUNTY OF SUFFOLK)

JERRY P. FELICE, being duly sworn, deposes and says:

I am a Public Health Sanitarian for the Suffolk County Department of Health Services and make this affidavit in support of plaintiff's motion for a preliminary injunction to halt the discharge of industrial and hazardous wastes to the groundwater of Suffolk County.

On November 20, 1979, in the course of my employment as a Public Health Sanitarian in the Hazardous Waste Control Section of the Suffolk County Health Department, I visited NTU Circuits at 60 Dale Street with Robert-Carl Olsen. We collected a sample of the fluid in the sanitary pool designated SPA in Figure 1. We took the sample directly to the laboratory at 65 Jetson Lane and submitted it for analysis.

P.2085

I returned to NTU on December 11, 1979. During that inspection I took samples from several storm drains. At that time the numbers painted on the asphalt labeling the drains was so faded that I was forced to guess at the identifying numbers. Upon returning to my office and consulting my notes and the key map in the file, I was able to correctly identify the sampling points. The samples listed in Appendix A were taken from the appropriately labeled drains as displayed in Figure 1. All samples were immediately taken to the Department laboratory.

Jerry P. Felice

JERRY P. FELICE

Swore to before me this

_____ day of November, 1981.

_____

Notary Public

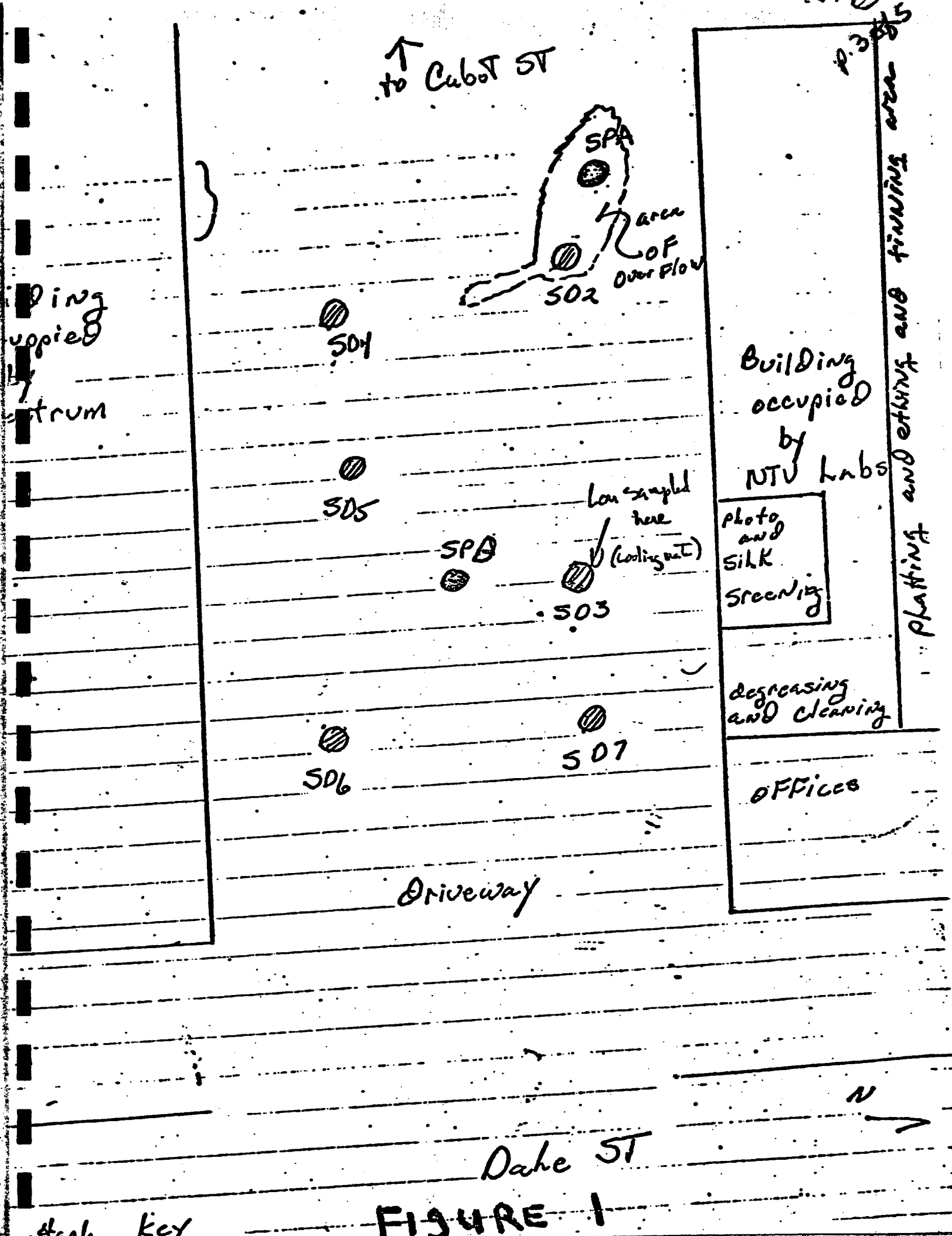
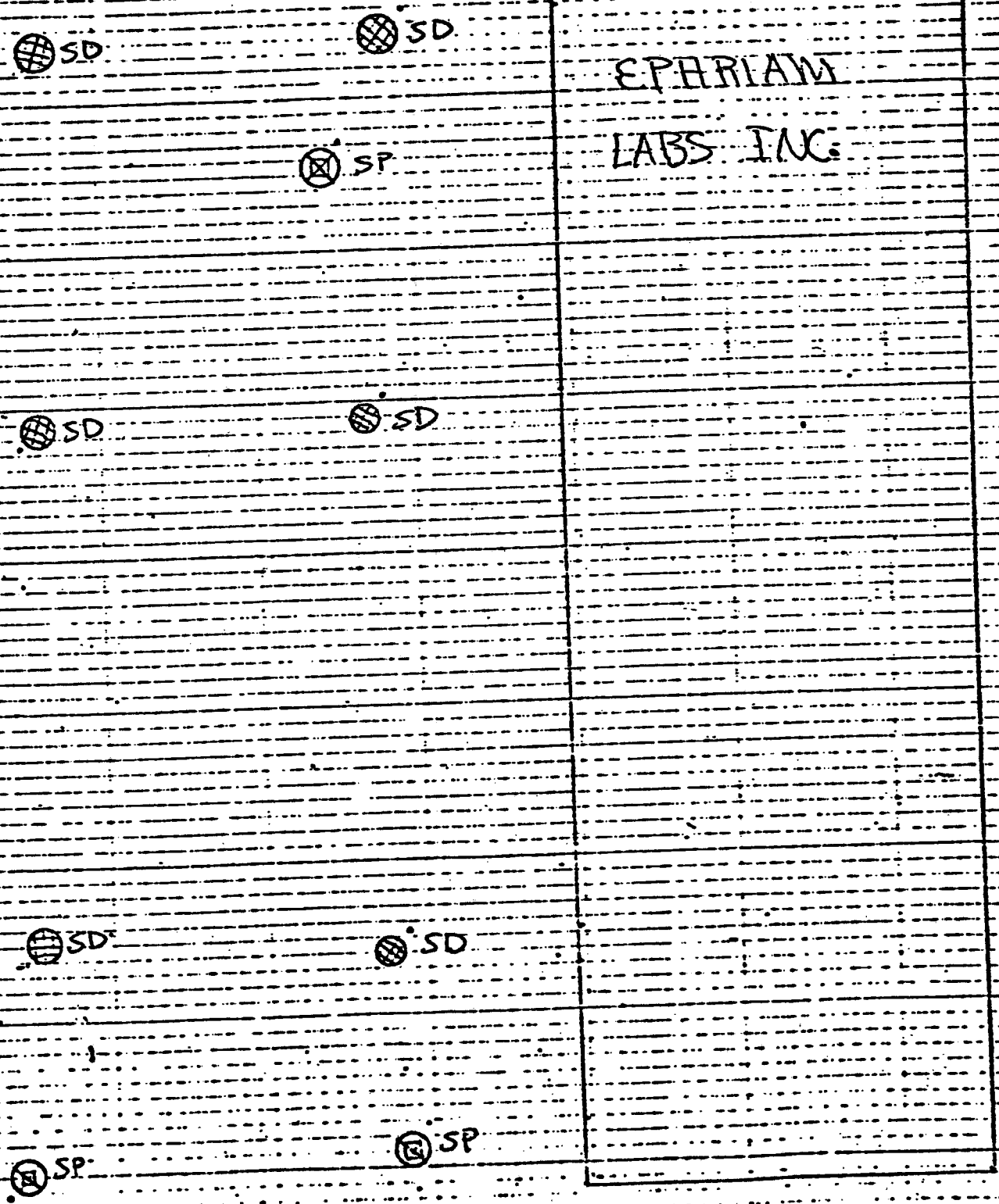
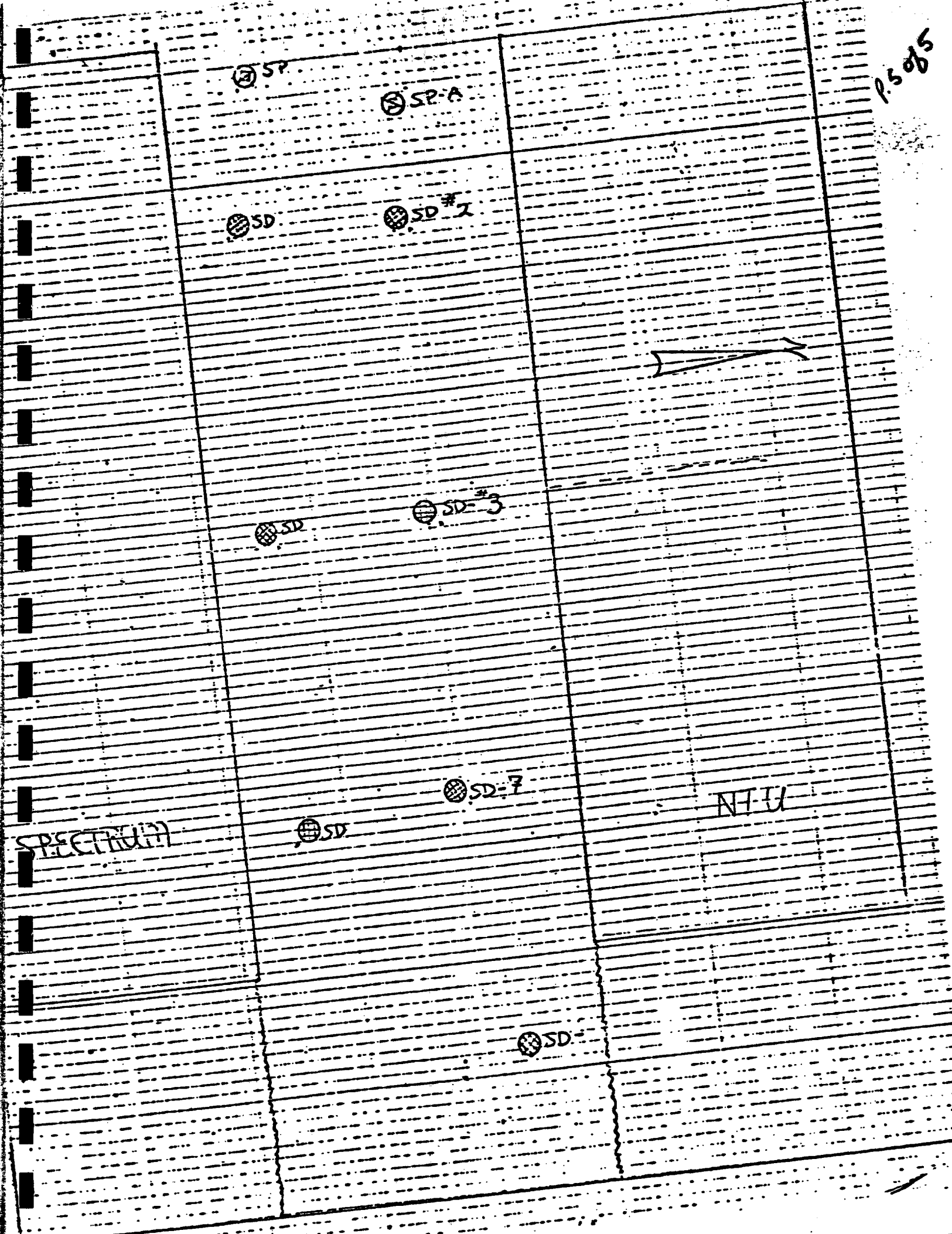

to Cabot ST
SPA
area of over flow
SD2
SD4
SD5
SPB
low sampled here (looking out)
SD3
SD6
SD7
Building occupied by NTV Labs
photo and silk screening
degreasing and cleaning
offices
plating and etching area
Driveway
N
Dake ST

FIGURE 1

Appendix A




SP
SP-A
SD
SD #2
SD-#3
SD
SD-7
SD
SD-
SPECTRUM
NTU

DRAFT

Appendix 1.1-10

Received from:
Suffolk Co. Dept. of
Health

P.15818

SUPREME COURT OF THE STATE OF NEW YORK
COUNTY OF SUFFOLK

THE STATE OF NEW YORK, Plaintiff,	:	
-against-	:	COMPLAINT
NTU LABORATORIES, INC. a/k/a NTU CIRCUITS, INC. and TIMOTHY WU	:	Index No.
Defendants.	:	

Plaintiff, THE STATE OF NEW YORK, by its attorney, ROBERT ABRAMS, the Attorney General of the State of New York, alleges:

PARTIES

FIRST: The State of New York ("State" hereinafter) is a body politic and a sovereign entity and brings this action on behalf of itself and, as parens patriae, on behalf of all residents and citizens of the State of New York, particularly those citizens who reside near defendants' premises in the Town of Babylon, County of Suffolk, or who utilize or are exposed to the groundwaters adjacent to such premises.

SECOND: That all times hereinafter mentioned defendant NTU LABORATORIES, INC. a/k/a NTU CIRCUITS, INC. (hereinafter "NTU") was and still is a corporation organized and

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existing under the laws of the State of New York and has its principal office and place of business at 60 Dale Street in the Town of Babylon, County of Suffolk and State of New York.

THIRD: That at all times hereinafter mentioned defendant TIMOTHY WU (hereinafter "WU") was and still is a resident of the State of New York, residing at 500 Little East Neck Road, West Babylon, New York, and is the president and principal of NTU LABORATORIES, INC.

VENUE

FOURTH: The basis for venue is that defendants' place of business, at which all actions described in this complaint took and are taking place, is located in Suffolk County.

FACTS

A. Defendants' Business and Activities

FIFTH: Sometime prior to 1979, defendants NTU and Wu leased premises at 60 Dale Street in the Town of Babylon, County of Suffolk and State of New York, hereinafter referred to as "the site" and set up a factory for the production of printed circuit boards for electronic equipment.

SIXTH: Defendants NTU and Wu have used the site continuously for their operation since 1979.

SEVENTH: In the regular course of their business, defendants operate a factory which produced printed cirucit boards

for electronic equipment. In the course of operating said factory, defendants have occasion to use photographing and plating processes which result in the discharge of various heavy metals and chemical compounds into the drains, storm drains and groundwaters in the area of their facility.

EIGHTH: From 1979 to the present effluent from defendants' industrial operations, some of which are continuous in nature, were and are discharged into same dry wells. Storm drains, which carry surface water runoff from the site, fed and feed into these same drywells. Other industrial wastes were and are discharged into sanitary waste cesspools. The dry wells, drains and cesspools are all located under the parking areas around the site.

NINTH: From 1979 to the present, the area under and around said dry wells and cesspools consisted and consists of bare earth, neither paved nor lined. There is no barrier to present pollutants from leaving the dry wells and cesspools.

TENTH: Defendants' operations at the site caused and causes the various chemicals and heavy metals used in said operation to leak, spill, seep, run, flow and otherwise be discharged into the environment.

ELEVENTH: From 1979 to the present, liquid wastes containing high concentrations of toxic materials from defendant's operations have been regularly discharged into sinks and drains

in the building which are directly connected to some of the storm and sanitary drains below the parking area. In addition, leaks and spills on the premises have been directed or allowed to flow onto the ground outside the building where they have sunk directly into the ground and flowed into the storm drains and thence into the soil and groundwater.

TWELFTH: Among the materials used and discharged in toxic concentrations are compounds containing copper, cadmium, lead, iron, and silver. When consumed in excessive quantities over long periods of time, these heavy metals cause severe damage to the kidneys. Other organs damaged by some or all of these metals include the liver, bone and bone marrow, heat, muscles, and nervous system. Cadmium, lead, and silver bioaccumulate, which means that once ingested they are excreted only slowly, or not at all, allowing high, toxic concentrations to build up within the body.

THIRTEENTH: Those chemicals and others used at the site by defendants have migrated and continue to migrate into and contaminate the soil and ground at and in the area of the site.

FOURTEENTH: These chemicals and others used at the site by defendants have migrated and continue to migrate into and contaminate nearby groundwater.

FIFTEENTH: At all times relevant hereto, defendants NTU and WU know or should have known the facts set forth in paragraph EIGHTH through FIFTEENTH hereof.

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SIXTEENTH: The site located at 60 Dale Street and used by defendants for their operation ("the site") consists of a single parcel of land identified as Section No. 074, Block No. 2, Lot No. 12 in the Town of Babylon, County of Suffolk, State of New York. It is approximately acre in size. A map of the premises is attached to this complaint as Exhibit A thereto.

SEVENTEENTH: The site is located in an area zoned and used for light industry surrounded by densely populated residential areas of Long Island.

EIGHTEENTH: The geological configuration of the area underlying the site consists of extensive, highly permeable sand and gravel beds, extending approximately 1200 feet down to bedrock.

NINETEENTH: The top approximately 15 feet below the ground surface at the site is an unsaturated zone, consisting of gravelled soil. From approximately 15 feet below the surface down to approximately 65 feet below the surface, the soil is saturated with flowing water; the groundwater in this zone is part of the Upper Glacial aquifer. Starting approximately 65 feet below the surface and extending downward approximately 750 feet, the soil is saturated with flowing water; the groundwater in this zone is part of the Magothy aquifer. Under the Magothy Aquifer, extending approximately 350 feet to the bedrock, the soil is saturated with flowing water; the groundwater in this zone is part of the Lloyd Aquifer.

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TWENTIETH: The Upper Glacial, Magothy and Lloyd aquifers form the major part of Long Island's groundwater system, which is the sole source of drinking water for the residents of Nassau and Suffolk County, which at the last national census numbered 1,329,106. These aquifers are interconnected such that each is supplied with water by the aquifer or soil above it.

TWENTY-FIRST: The major part of the drinking water currently consumed by the residents of Suffolk County is drawn from the Upper Glacial and Magothy aquifers.

TWENTY-SECOND: Contamination of the Upper Glacial and Magothy aquifers by hazardous materials, once it occurs, can irreparably damage Long Island's groundwater resources. The water in the aquifer moves so slowly that tens to hundreds of thousands of years are necessary to purge or dilute contamination.

TWENTY-THIRD: The groundwater under the site flows in a southerly direction.

TWENTY-FOURTH: Wells which draw water from the groundwater exist about 1/2 mile southwest of from the site.

TWENTY-FIFTH: The areas to the north and south of the site consist of paved parking areas with a thin strip of unpaved soil next to the building. Under the parking area are several drywells which receive storm drainage and sanitary wastes.

P 7818

TWENTY-SIXTH: The sanitary pools and storm drains are cylindrical pits with permeable bottoms, so that liquids placed in them can percolate into the surrounding soil. Material entering the soil is inevitably washed into the groundwater below.

INJURY

TWENTY-SEVENTH: By permitting the chemicals they used at the site to leak, spill, seep, flow, run, and otherwise be discharged into the environment, defendants caused and are causing hazardous chemicals to migrate into and contaminate the nearby ground and groundwater.

TWENTY-EIGHTH: Since 1979 and continuing to the present time, defendants have failed and continue to fail to monitor, safeguard, contain or remove the chemicals they allowed to flow and otherwise discharged into the ground and groundwater.

TWENTY-NINTH: The chemicals defendants NTU and Wu discharged and are discharging from the site into the ground and groundwater threaten harm to the people of the State of New York, including but not limited to, the harm and threat of harm these chemicals pose to the sole source of drinking water for the residents of Nassau and Suffolk Counties, and to the private wells southwest of the site.

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THIRTIETH: The chemicals defendants NTU and Wu discharged and are discharging from the site into the ground and groundwater threaten harm to the environment of the State of New York, including its land and water resources.

THIRTY-FIRST: The continuing presence of hazardous noxious and offensive chemicals in the groundwater at and near the site, including in and around the dry wells, and their migration and threat of migration from the site and the drywells, causing harm and threatening to cause harm to the health, safety, and well being of the people and to the land and water resources of the State of New York constitute a public nuisance, under the prevailing common law of the State of New York and New York Real Property Actions and Proceedings Law § 841, which is created and continued by the defendants' acts and omissions herein described.

FIRST CAUSE OF ACTION-
FOR PUBLIC NUISANCE

THIRTY-SECOND: Plaintiff the State of New York repeats and realleges paragraphs First through Thirty-First as if fully set forth herein.

THIRTY-THIRD: In using and otherwise dealing with chemicals in connection with their operation at the site defendants NTU and Wu permitted and continue to permit said chemicals to leak, spill, seep, flow, run, and otherwise be discharged into

nearby ground and groundwater.

THIRTY-FOURTH: Through the negligent acts and omissions set forth above, defendants negligently created and have maintained the continuing public nuisance described in paragraph Thirty-First.

THIRTY-FIFTH: As a result of the foregoing negligent acts and omissions, plaintiff, the State of New York, has suffered and continues to suffer the injuries set forth in paragraphs Twenty-Seventh through Thirty-First herein.

SECOND CAUSE OF ACTION
FOR PUBLIC NUISANCE

THIRTY-SIXTH: Plaintiff the State of New York repeats and realleges paragraphs First through Thirty-Second as is fully set forth herein.

THIRTY-SEVENTH: Since 1979, defendants have been repeatedly notified by the New York Department of Environmental Conservation (DEC) and by the Suffolk County Health Department that their conduct was in violation of Statute and possibly amounted to a public nuisance, and that it was necessary for them to apply for and receive required permits and otherwise correct the situation.

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THIRTY-EIGHTH: Defendants were summoned to a DEC hearing which resulted in an order on consent dated March 28, 1980, which imposed a compliance schedule on defendants and assessed a $2,500 penalty upon their failure to adhere to the said schedule. A copy of the said order is attached hereto as Exhibit B.

THIRTY-NINTH: As a result of the said notifications, hearing and order, as well as from their own knowledge, defendants NTU and Wu knew that chemicals at the site were leaking, spilling, flowing, running, and otherwise being discharged into the ground and groundwater and were otherwise migrating, or were substantially certain to migrate from the site into the ground and groundwater, thereby interfering substantially with the health, safety, and well being of the public and of the environment of the State of New York.

FORTIETH: Despite the knowledge set forth in paragraph Thirty-Ninth defendants failed and continue to fail to monitor safeguard, contain, or remove those chemicals so as to prevent migration of chemicals from the site and contamination of ground and groundwater.

FORTY-FIRST: Through the intentional acts and omissions set forth above, defendants have intentionally created and maintained the continuing public nuisance described in paragraph Thirty-First above.

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FORTY-SECOND: As a result of the foregoing intentional acts and omissions, plaintiff, the State of New York, has suffered and continues to suffer the injuries set forth in paragraphs Twenty-Seventh through Thirty-First.

THIRD CAUSE OF ACTION FOR VIOLATION
OF NEW YORK STATE ENVIRONMENTAL
CONSERVATION LAW § 17-0501

FORTY-THIRD: Plaintiff, the State of New York, repeats and realleges paragraphs First through Thirty-First as if fully set forth herein.

FORTY-FOURTH: New York State Environmental Conservation Law (hereinafter "ECL") § 17-0501 provides in pertinent part:

> 1. It shall be unlawful for any person, directly, to throw, drain, run or otherwise discharge into such waters organic or inorganic matter that shall cause or contribute to a condition in contravention of the standards adopted by the department ... pursuant to ECL § 17-0301.

FORTY-FIFTH: Pursuant to ECL § 17-0301, DEC has adopted standards which apply to the groundwaters in the vicinity of the site which have been duly classified as Class GA waters. 6 NYCRR § 703.5 =

FORTY-SIXTH: The discharge of chemicals by defendants NTU and Wu from the site into the groundwaters in the vicinity of the site constitutes an unlawful discharge which

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has caused or contributed to a condition in contravention of the standards imposed by ECL § 17-0501.

FORTY-SEVENTH: Pursuant to ECL 71-1929, defendants NTU and Wu are liable to the State of New York for a civil penalty of up to $10,000 per day for each day of violation of ECL § 17-0501.

FOURTH CAUSE OF ACTION FOR VIOLATION OF NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW §§ 17-0505 and 17-0511

FORTY-EIGHTH: Plaintiff, the State of New York repeats and realleges paragraphs First through Thirty-First as if fully set forth herein.

FORTY-NINTH: New York State Environmental Conservation Law § 17-0505 which deals specifically with the construction and operation of new outlets or disposal systems for wastes provides:

> b. The making or use of a new outlet into the waters of the State, and the operation or construction of disposal systems, without a valid permit as provided by section 17-0701 are prohibited.

§ 17-0511 of said law provides in pertinent part:

> c. The use of existing or new outlets which discharge sewage, industrial waste or other wastes into classified waters of this nature is prohibited unless the use of such outlet is in compliance with all rules and regulations promulgated by the department pursuant to authority provided in paragraph k of subdivision 5 section 17-0303.

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d. Except as provided in subdivision 5 of this section, it shall be unlawful for any person, until a written permit therefor has been granted by the commissioner, or by his designated representative, and unless such permit remains in full force and effect, to:

1. Make or cause to make or use any new outlet for the discharge of sewage, industrial waste or other wastes of the effluent therefrom, into the waters of this state, or

e. Nothwithstanding any other provision of this article, for the purposes of this title, the following definitions shall be applicable:

1. "Industrial waste" means any liquid, gaseous, solid or waste substance or a combination thereof resulting from any process of industry, manufacturing, trade, or business or from the development or recovery of any natural resources, which may cause or might reasonably be expected to cause pollution of the waters of the state.

FIFTIETH: Pursuant to ECL § 17-0303 DEC has adopted regulations providing for the proper use of outlets into the ground waters of the state and has issued such regulations as NYCRR §§ Part 703 et. seq.

FIFTY-FIRST: The use of the storm drains and other outlets on the site by defendants NTU and Wu constitute an unlawful activity which is in contravention of the provisions of ECL § 17-0505 and § 17-0511 and the regulations promulgated at NYCRR § 703 et. seq.

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FIFTY-SECOND: Pursuant to ECL § 71-1929, defendants NTU and Wu are liable to the State of New York for civil penalties of up to $10,000 per day for each day of violation, of § 17-0505 and for a similar penalty of up to $10,000 per day for each day of violation of § 17-0511.

FIFTH CAUSE OF ACTION FOR
VIOLATION OF NEW YORK STATE
ENVIRONMENTAL CONSERVATION
LAW § 17-0807

FIFTY-THIRD: Plaintiff, the State of New York repeats and realleges paragraphs First through Thirty-Second as if fully set forth herein.

FIFTY-FOURTH: New York State Environmental Conservation Law § 17-0807, which deals generally with the discharge of materials into the waters of the State, provides in pertinent part:

> f. The following discharges into the waters of the state are hereby prohibited.
>
> 1. Any discharge to which the federal government has objected pursuant to any right to object provided by the Act.
>
> 2. Any discharge not permitted by the provisions of this article, rules and regulations adopted or applicable pursuant hereto, the Act or provisions of a permit issued hereunder.

FIFTY-FIFTH: The chemicals defendants NTU and Wu discharged and are discharging from the site into the ground and

groundwater constitute unlawful activities which are in violation of ECL § 17-0807.

FIFTY-SIXTH: Pursuant to ECL § 71-1929, defendants NTU and Wu are liable to the State of New York for civil penalties of up to $10,000 per day for each day of violation of § 17-0807.

SIXTH CAUSE OF ACTION FOR VIOLATION OF NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW § 27-0913

FIFTY-SEVENTH: Plaintiff, the State of New York repeats and realleges paragraphs First through Thirty-Second as if fully set forth herein.

FIFTY-EIGHTH: New York State Environmental Conservation Law § 27-0913 reads in pertinent part:

> g. No person shall engage in storage, treatment or disposal, including storage at the site of generation, of hazardous wastes without first having obtained a permit pursuant to title seven of this article.

FIFTY-NINTH: The chemicals defendants NTU and Wu discharge and are discharging from the site into the ground and groundwater constitute hazardous wastes as indicated in paragraph Twelfth above.

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SIXTIETH: The actions of defendants in discharging said chemicals from the site into the ground and groundwater constitute unlawful activity which are in violation of ECL 27-0913.

SIXTY-FIRST: Pursuant to ECL § 71-2705, defendants NTU and Wu are liable to the State of New York for civil penalties of up to $50,000 per day for each day of violation of ECL § 27-0913.

SIXTY-SECOND: Plaintiff has been irreparably harmed by the aforedescribed acts and has no adequate remedy at law.

WHEREFORE, Plaintiff demands judgment:

a) Permanently restraining and enjoining the defendants, their officers, directors, agents, servants, employees, successors, and assigns from violating any of the aforesaid sections of the Environmental Conservation Law or regulations promulgated thereinunder as the same may be amended.

b) Permanently restraining and enjoining the defendants from creating or maintaining a public nuisance by discharging or releasing chemicals, chemical wastes, chemical compounds, or heavy metals into the drains, storm sewers, or groundwaters adjacent to or surrounding their premises without first applying for obtaining and complying with all necessary permits issued by the New York State Department of Environmental Conservation.

c) Directing the defendants to abate the existing public nuisance caused by their previous actions and to return the site to the condition it was in before their activities began as regards to pollution of the surrounding earth and groundwater.

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d) Directing that defendants pay to the State of New York a civil penalty in the amount of fifty-nine million, six hundred and seventy thousand dollars (59,670,000) pursuant to statute.

e) Paying to the New York State Department of Environmental Conservation the sum of $2500.00 as directed by the order on March 28, 1980.

f) Such other and further relief as to the Court may seem just and proper, together with the costs and disbursements of their action.

ROBERT ABRAMS
Attorney General of the
State of New York
Attorney for Plaintiff
CYRIL H. MOORE, JR.
Assistant Attorney General
2 World Trade Center
New York, New York 10047

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e) Paying to the New York State Department of Environmental Conservation the sum of $2500.00 as directed by the order on March 28, 1980.

f) Such other and further relief as to the Court may seem just and proper, together with the costs and disbursements of their action.

ROBERT ABRAMS
Attorney General of the
State of New York
Attorney for Plaintiff
CYRIL H. MOORE, JR.
Assistant Attorney General
2 World Trade Center
New York, New York 10047

Received from
NYSDEC Region 1

Appendix 1.1-11

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FANNING, PHILLIPS & MOLNAR
Consulting Engineers
80 SKYLINE DRIVE
PLAINVIEW, NEW YORK 11803

RICHARD FANNING, P.E.
KEVIN J. PHILLIPS, P.E., Ph.D.
GARY A. MOLNAR, P.E.

516/938-2200
212/767-3337

March 11, 1985

MAR 13 1985

Mr. Robert Schneck
Senior Sanitary Engineer
Solid and Hazardous Waste Department
New York State Department of
Environmental Conservation
Building 49
Stony Brook, New York 11790

RE: NTU CIRCUITS, INC. LISTING ON STATE SUPERFUND LIST OF HAZARDOUS WASTE SITES

Dear Mr. Schneck:

In our conversation on March 8, 1985 regarding NTU Circuits, Inc., you had indicated to me that NTU Circuits, Inc. had been placed upon the Superfund clean up list at the request of Suffolk County Health Services. I think, perhaps, that there might have been an oversight on Suffolk County Health Services regarding NTU. NTU was the subject of a court action (attached) that was settled in April 30, 1982, with NTU paying a fine of $2500.00 and having to clean up all of the existing pools that were used by NTU. Several of the pools had to be cleaned up, some had to be cleaned, filled in and never used again. Suffolk County Health Services supervised the final clean up of the pools and certified that they were clean (Attachment B). The basis of the court case was that NTU had discharged illegally into the groundwaters of Long Island and had contaminated the soil and groundwater. The settlement of the case (both the fine and the clean up by NTU) would seem to exonerate them from further litigation. Moreover, the County and the State agreed to the stipulations in the settlement, which ruled out groundwater sampling or other further investigations. This means that the County was satisfied with the limited extent of contamination and, therefore, agreed to, and help formulated, the final court decision. NTU completed the clean up which was supervised by the County. Hence, to place them on a Superfund List now, without any new evidence, is not only unfair but unwarranted.

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When considering this new information, please also consider the economic impact to the firms listed on this superfund site. Immediately upon being listed, they are published in Newsday. The consequences of this is automatic branding by their neighbors and clients, causing an obvious economic and personal impact both now and in the future.

I will be giving you a call around March 20 to follow up on the status of NTU.

Very truly yours,

Kevin J. Phillips

Kevin J. Phillips, P.E., Ph.d.
Principal, Fanning, Phillips
and Molnar

KJP/kr
Enclosure

cc: Tim Wu

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RECEIVED
MAR 13 1985
COLL DEC

ATTACHMENT A

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SUPREME COURT OF THE STATE OF NEW YORK
COUNTY OF SUFFOLK

MAR 13 1985

STATE OF NEW YORK, Plaintiff,	
- against -	STIPULATION OF DISCONTINUANCE
NTU LABORATORIES, INC., d/b/a NTU CIRCUITS, INC. and TIMOTHY WU, Defendants.	Index No. 81-16855

WHEREAS, the plaintiff has brought this proceeding against the defendants (hereinafter "NTU") for injunctive and monetary relief due to the alleged discharge of various heavy metals and chemical compounds from a factory used for the production of printed circuit boards for electronic equipment, and

WHEREAS, the parties, by their various authorized representatives, have met and agreed on a plan of settlement of the various disputed and differences between them, the effect of which is to make the continuation of this proceeding unnecessary.

IT IS THEREFORE, hereby stipulated and agreed, by and between the parties hereto and by their attorneys, that this proceeding is discontinued upon the following terms and conditions:

1. NTU CIRCUITS, INC. will immediately empty the sanitary pool adjacent to its factory at 60 Dale Street in the Town of Babylon, County of Suffolk, State of New York, designated

as SP-A in Figure 1 attached hereto. The existing sludge at the bottom of the SP-A pool will be removed, a sulfide or lime slurry will be deposited in the bottom of the pool and mixed with the existing sand. The pool will be filled in with clean sand and the top of the pool will be paved over so as to make an impervious surface, not allowing rain to enter the pool area. The pipes leading to the pool will be grouted or made unusable. A new sanitary pool will be constructed at a location deemed acceptable (in writing) by the Suffolk County Department of Health and will henceforth hold and dispose of all the sludge generated by the facility in a manner acceptable to the said Suffolk County Department of Health.

2. For the sanitary drainage pools No. 2 and No. 3 located in Figure 1 attached, NTU will do the following at the time of completion of its treatment facility (which is being constructed in accordance with current SPDES permit schedule).

a. Pump the liquid waste from the pool through the treatment facility;

b. slurry bottom of the pool with a sulfide or lime slurry to precipitate any residual metal;

c. fill in the pool with clean sand and pave over so as to make the top surface impermeable to rain;

d. the existing pipes will be concreted or grouted so as to make them unusable.

3. The storm draining pools indicated as SD-7,

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SD-8 and SD-N1 (the latter being the pool closest to plating room) at the time of completion of the NTU treatment facility will be:

a. emptied of liquid waste and that liquid waste passed through the treatment system;

b. One foot of bottom sandy material will be removed and disposed of in an environmentally acceptable manner;

c. bottom material will be replaced with clean sand (one to two feet in depth).

4. The NTU sanitary pool that receives waste from the water closet located in the northeast corner of the building will be exposed for sampling by the Suffolk County Department of Health. In the event such sampling reveals contamination, such pool will be treated as hereinbefore described for pools SD-7, SD-8, and SD-N1.

5. NTU agrees to obtain all necessary consents from its landlord which may be required in connection with the remedial measures hereinbefore set forth.

6. NTU hereby agrees to notify the Environmental Protection Bureau of the office of the Attorney General, State of New York, in writing, at such time as it either vacates the premises or in any other way alienates its interest, as tenant, therein, either by assignment of lease or otherwise.

7. All pipes leading to and from the pools to be

P. 7 of 8

terminated will be filled with grout or concrete by NTU.

8. NTU may install new storm and sanitary pools which are consistent with its needs and with the applicable regulations of the DEC, the Suffolk County Department of Health and any other appropriate agency. NTU agrees to obtain and exhibit to the Attorney General all licenses or permits which may be required in connection with such installation.

9. NTU will pay to the Attorney General the sum of $2,500.00, the amount agreed to in the consent order entered into on March 28, 1980.

10. This proceeding is terminated without prejudice to either party.

11. Each party is to bear its own costs and disbursements with regard to this proceeding.

Dated: Mineola, New York
April 30, 1982

ROBERT ABRAMS
Attorney General of the State
of New York
Attorney for Plaintiff
By:

~~CYRIL H. MOORE, JR.~~
Assistant Attorney General

HOWARD P. FRITZ
15 Roslyn Road
Mineola, New York 11501
Attorney for Defendants

NTU LABORATORIES, INC.
By:
TIMOTHY WU, President

ATTACHMENT B

p 90818

FANNING, PHILLIPS & MOLNAR
Consulting Engineers
80 SKYLINE DRIVE
PLAINVIEW, NEW YORK 11803

RICHARD FANNING, P.E.
KEVIN J. PHILLIPS, P.E., Ph.D.
GARY A. MOLNAR, P.E.

516 938-2200
212 767-3337

February 21, 1984

Robert Abrams, Esq.
Attorney General
State of New York
Two World Trade Center
New York, New York 10047

Dear Mr. Abrams:

This letter is to notify you that NTU Circuits, Inc. has complied with their Stipulation of Discontinuance (Index No. 81-16855), dated April 30, 1982. All of the items specified in the Stipulation were fully complied with on November 29th, December 1st, 2nd and 3rd of 1983. Enclosed are reports by Fanning, Phillips and Associates (currently Fanning, Phillips & Molnar) and by the Suffolk County Department of Health Services detailing the events that transpired.

If there are any questions, please contact myself or Mr. Timothy Wu of NTU Circuits, Inc.

Thank you again for your time and attention to this matter.

Very truly yours,

Errol S. Kitt

ESK/ks
Enclosures

Errol S. Kitt
Assistant Project Engineer

p.100f18

NTU CIRCUITS, INC.
COMPLIANCE TO STIPULATION OF DISCONTINUANCE

This report is in regard to the compliance of NTU Circuits, Inc. to its Stipulation of Discontinuance (Index No. 81-16855) dated April 30, 1982.

On November 29, December 1, 2, and 3 1983 Timothy Wu, President of NTU Circuits, Inc., David Obrig and Joann Johnson, Environmental Health Sanitarians from the Suffolk County Department of Health Services, and Errol Kitt, Assistant Project Engineer from Fanning, Phillips and Molnar (consulting engineers for NTU Circuits) were present to supervise all work done by the contractor, Patterson Chemical Company, a certified waste hauler. It was confirmed that the work was conducted in an environmentally safe manner, and that all of the items in the Stipulation were addressed and correctly complied with. The actual proceedings are described as follows:

1. On November 29, storm drainage pool SD-7, shown in Figure 1 (also see Appendix A), was emptied of its liquid waste contents (5,000 gallons) by Patterson Chemical Company. This wastewater was then transported by Patterson to NTU's new building in North Bay Shore, where it was treated in NTU's industrial wastewater treatment system.
2. On December 1, storm drainage pools SD-8 and SD-N1 (see Figure 1 and Appendix A) were emptied of their liquid waste (1000 gallons) and again this wastewater was removed by Patterson, transported to NTU's new building and treated in its wastewater treatment system.
3. Also on December 1, sanitary pools No. 2 and No. 3, located in Figure 1 attached (also see Appendix A) were emptied of their liquid wastes. The wastewater

p. 11 of 18

was transported to NTU's industrial wastewater treatment system and treated.

4. On December 2, over one foot of bottom sandy material was removed from each storm drainage pool (SD-7, SD-8 and SD-N1) and disposed of by Patterson in an environmentally acceptable manner. This bottom material was then replaced with approximately 1-2 feet of clean sand for each pool mentioned.
5. Also on December 2, both sanitary pools (No. 2 and No. 3) were slurried with lime to precipitate any residual metal. They were also filled in with clean sand and paved over so as to make the top surface impermeable. All of the existing piping for both pools was concreted as to render them unusable.
6. On December 3, all drums containing liquid waste that were on the premises were emptied, removed and transported by Patterson to a Treatment Storage and Disposal Facility (TSDF) to be disposed of in an environmentally safe manner.

Date: December 2, 1983
West Babylon, New York

Errol S. Kitt
Assistant Project Engineer
Fanning, Phillips and Molnar

Signed: Errol S. Kitt

Timothy Wu
President, NTU Circuits, Inc.

Signed: _____

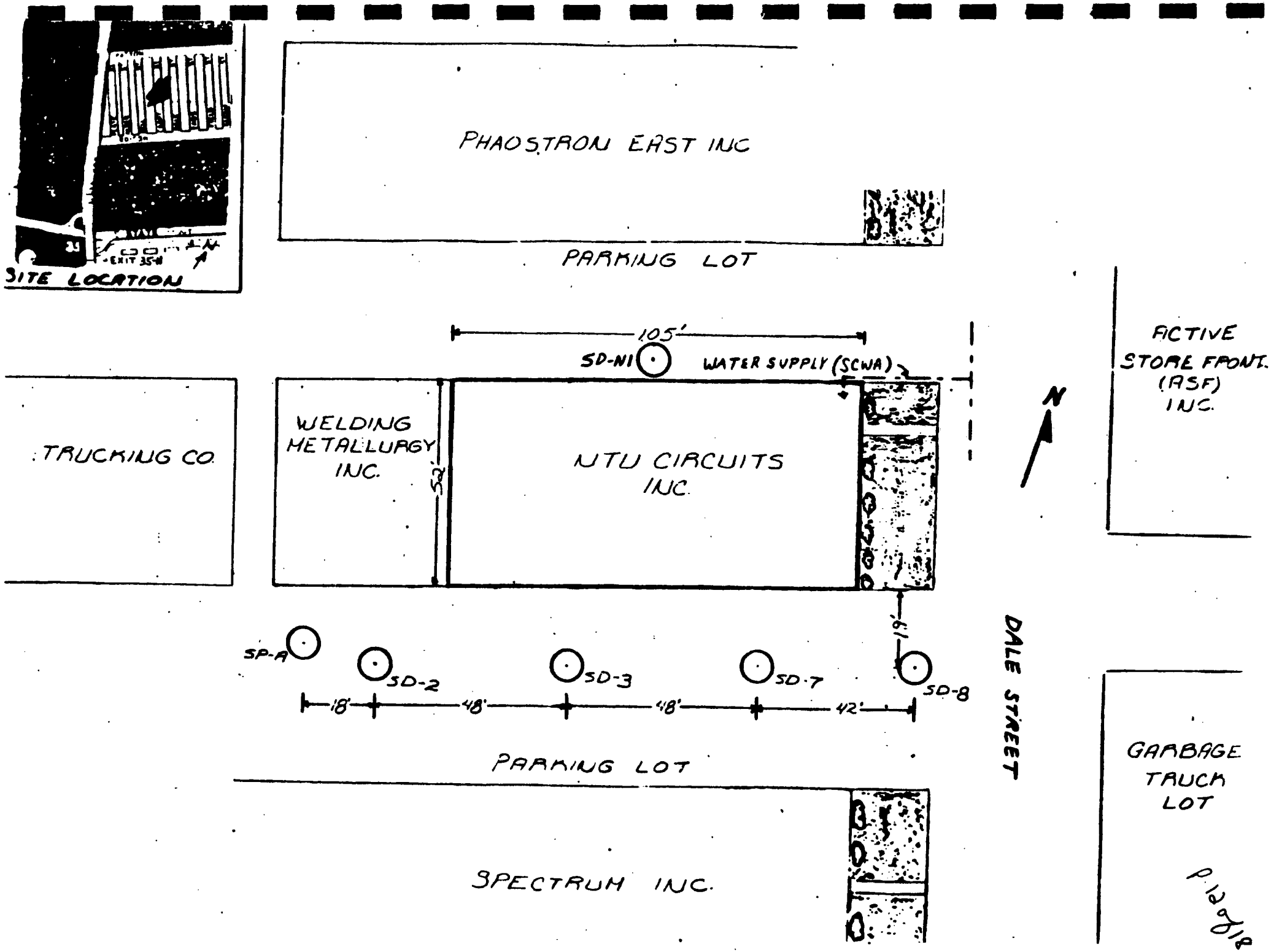
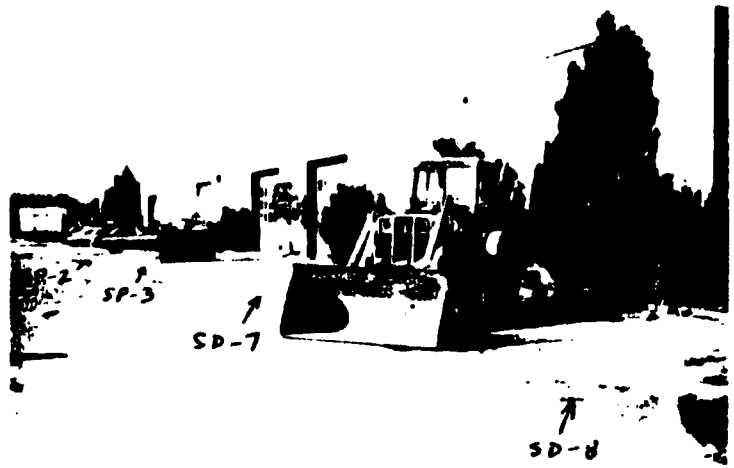


FIGURE 1- SANITARY POOL & STORM DRAIN LOCATIONS

APPENDIX A


SP-3
SD-7
SD-8

SD

SD

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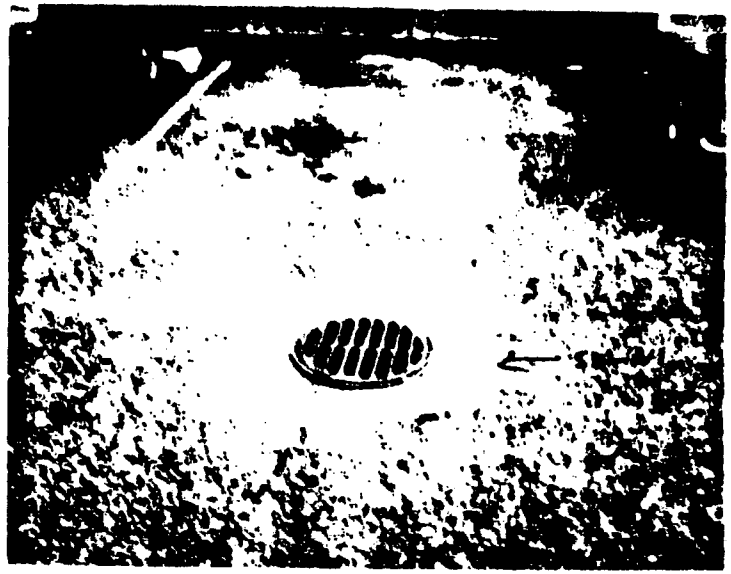

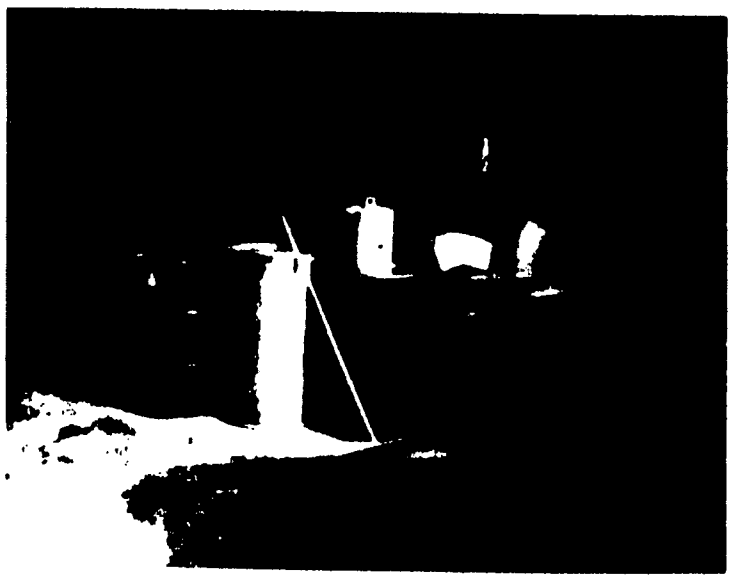

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SUFFOLK COUNTY DEPARTMENT OF HEALTH SERVICES
INDUSTRIAL WASTE AND HAZARDOUS MATERIALS CONTROL
15 HORSEBLOCK PLACE, FARMINGVILLE, N.Y. 11738
(516) 451-4633

NAME OF FACILITY: NTU LABORATORIES	OWNER/OFFICER: Timothy Wu	PAGE 1 OF
COMPANY NAME: dBA NTU CIRCUITS, INC.	CONTACT	TEL.
PLANT ADDRESS: 60 DAKE St.	VILLAGE: W. Babylon TOWN: Babylon	ZIP: 11735
MAILING ADDRESS		
DATE: 2 Dec 83	TIME: 9:15 AM	ORIG PERIODIC (RE.) (WASTE) NO WASTE H&H — SEWAGE SYSTEM PUBLIC PRIVATE

INDUSTRY: Mfg. of Printed Circuit Boards

SPDES OR NPDES PERMIT? YES NO PERMIT NO. — 360 PERMIT? YES NO PERMIT NO

SCAVENGER: Patterson Chemical — TEL.

SCAVENGER APPROVED (YES) NO — PICK UP RECORDS AVAILABLE (YES) NO — RECORDS CONSISTENT WITH EXPECTED WASTE GENERATION YES NO

HEATING SYSTEM-MFG NAME	FUEL TYPE	FIRING RATE
INCIN. NAME	WASTE BURNED	RATE

DRUM STORAGE YES NO	NUMBER STORED INDOORS OUTDOORS	TYPE OF MATERIAL STORED WASTE RAW
STORAGE TANKS YES NO	NUMBER OF TANKS ABOVEGROUND UNDERGROUND	TYPE OF MATERIAL STORED WASTE RAW
OPEN PROCESS TANKS YES NO	NUMBER OF OPEN PROCESS TANKS	ANY ART. XII VIOLATIONS YES NO

The following information is for the record of NTU Circuits concerning clean up of contaminated storm drains & sanitary pools as per consent order Index No. 81-16855.

(1) Patterson Chemical arrived at approx. 11:45 AM to finish clean up at the NTU site. (A) SD-8 was inspected and completed clean out approved. (B) SP-A was cleaned & treated with lime and cleaned sand was filled to the top. Piping was concreted & pool paved over. (C) Sanitary drainage pools #2 & #3 were also treated as mentioned in (B). (D) SD-7, SD-8 & SD-N1 were also treated in the same manner as (B). { These pool needed ≈ 1 ft of sand }

PERMISSION IS GRANTED BY THIS FACILITY TO THE SUFFOLK COUNTY DEPARTMENT OF HEALTH SERVICES TO CONDUCT ROUTINE SAMPLING OF CESSPOOLS, STORMDRAINS, AND OTHER DISCHARGE POINTS AT THE FACILITY.

REINSPECTION SCHEDULED ON OR AFTER _____. FAILURE TO CORRECT UNSATISFACTORY CONDITIONS BY REINSPECTION DATE MAY RESULT IN A HEARING AND/OR FINE.

SIGN. OF PERSON REC. REPORT	TITLE	INSPECTOR: JoAnne Johnson

18-155: 9/82 — 5/81

Page Two

p. 18 of 18

SUFFOLK COUNTY DEPARTMENT OF HEALTH SERVICES
INDUSTRIAL WASTE AND HAZARDOUS MATERIALS CONTROL
15 HORSEBLOCK PLACE, FARMINGVILLE, N.Y. 11738
(516) 451-4633

NAME OF FACILITY: NTU	OWNER/OFFICER		PAGE 1 OF
COMPANY NAME	CONTACT		TEL.
PLANT ADDRESS: 60 DALE ST	VILLAGE: W BAB	TOWN: Babylon	ZIP
MAILING ADDRESS			
DATE: 3 Dec 83	TIME: 10 AM	ORIG. PERIODIC (RE) (WASTE) NO WASTE H&H	SEWAGE SYSTEM PUBLIC PRIVATE
INDUSTRY			
SPDES OR SPDES PERMIT? YES NO PERMIT NO.		360 PERMIT? YES NO PERMIT NO	
SCAVENGER			TEL.
SCAVENGER APPROVED YES NO	PICK UP RECORDS AVAILABLE YES NO	RECORDS CONSISTENT WITH EXPECTED WASTE GENERATION YES NO	
HEATING SYSTEM-MFG NAME		FUEL TYPE	FIRING RATE
INCIN. NAME		WASTE BURNED	RATE
DRUM STORAGE YES NO	NUMBER STORED INDOORS OUTDOORS	TYPE OF MATERIAL STORED WASTE RAW	
STORAGE TANKS YES NO	NUMBER OF TANKS ABOVEGROUND UNDERGROUND	TYPE OF MATERIAL STORED WASTE RAW	
OPEN PROCESS TANKS YES NO	NUMBER OF OPEN PROCESS TANKS	ANY ART. XII VIOLATIONS YES NO	

The 55 gallon drums containing toxic & or hazardous wastes were pumped dry & transported to New Jersey for disposal. (≅ 20 x 55 gallon drums)

PERMISSION IS GRANTED BY THIS FACILITY TO THE SUFFOLK COUNTY DEPARTMENT OF HEALTH SERVICES TO CONDUCT ROUTINE SAMPLING OF CESSPOOLS, STORMDRAINS, AND OTHER DISCHARGE POINTS AT THE FACILITY.

REINSPECTION SCHEDULED ON OR AFTER _____. FAILURE TO CORRECT UNSATISFACTORY CONDITIONS BY REINSPECTION DATE MAY RESULT IN A HEARING AND/OR FINE.

SIGN OF PERSON REC REPORT	TITLE	Joanne Johnson INSPECTOR

18-155: 9/82

5/81 TJK

Appendix 1.1-12
Received from
NYSDEC Region 1

COUNTY OF SUFFOLK

PETER F. COHALAN
SUFFOLK COUNTY EXECUTIVE

DEPARTMENT OF HEALTH SERVICES

DAVID HARRIS, M.D., M.P.H.
COMMISSIONER

July 15, 1985

Mr. Robert Schneck
N.Y.S. Department of
Environmental Conservation
Region I - Bldg. #40
State University at Stony Brook
Stony Brook, N.Y. 11794

JUL 17 1985
DEC REGION 1

Re: NTU Circuits, Inc.

Dear Bob:

You asked for our position on NTU Circuits in light of a letter written to you on their behalf by Kevin Phillips dated March 11, 1985 (copy enclosed).

Our position is this: The consent order the company signed with the county only addressed the clean-up of the contaminated pools on the facility property. The subject of groundwater contamination and the need for investigation and clean-up was not mentioned. The purpose of Superfund involvement is to address this problem. Obviously, there have been heavy discharges from this facility in the past and there may have been serious groundwater damage. We must find out the extent of the damage, the potentially affected area and then restore the groundwater where the effort is warranted.

This facility should certainly continue as a Superfund site.

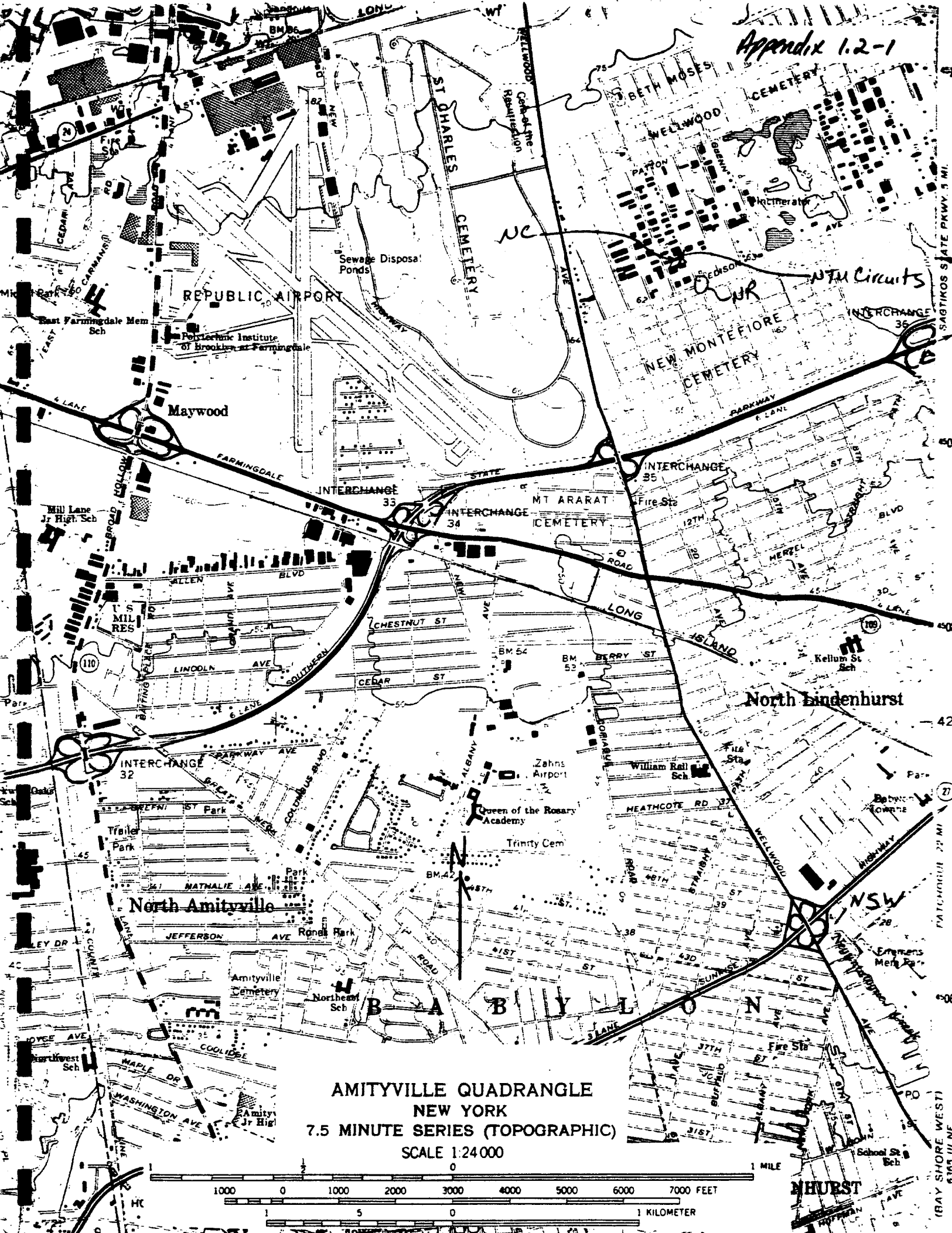
Very truly yours,

James H. Pim, P.E.
Hazardous Materials Management

JHP/rt
Encl.

15 HORSEBLOCK PLACE • FARMINGVILLE, NEW YORK 11738 • (516) 451-4634

Appendix 1.2-1



Appendix 1.3-1
1 of 5

Hydrology of the Babylon-Islip Area Suffolk County Long Island, New York

By E. J. PLUHOWSKI *and* I. H. KANTROWITZ

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1768

Prepared in cooperation with the Suffolk County Board of Supervisors, Suffolk County Water Authority, and the New York State Water Resources Commission

UNITED STATES GOVERNMENT PRINTING OFFICE, WASHINGTON : 1964

the development of the all-metal airplane created a need for metal-fabricating shops. The post-World War II boom in electronics and electrical equipment found Suffolk County well prepared for the new industry owing to its established aviation firms, and the presence of the required skilled personnel.

AGRICULTURE AND VEGETATION

Although the value of crops produced and marketed in Suffolk County ranks highest of all the counties in New York State, agricultural production in the Babylon-Islip area is relatively small. The soils in the southern and eastern parts of the area have been classified by Lounsberry and others (1928, p. 13) as Sassafras Sandy Loam and Dukes Loamy Sand. These soils are not as productive as the soils in the northern and eastern parts of the county. The Sassafras Loam soils in the northwestern and north-central parts of the area are fairly productive. Proximity of this area to metropolitan markets spurred the development of numerous truck farms. The major crops produced by these farms are tomatoes, cauliflower, corn, string beans, peas, and cucumbers. Intensive urbanization, however, has reduced farm acreage so sharply that only a few farms remained in 1961.

Extensive tracts of natural vegetation are limited principally to the northern and eastern parts of the area. Much of the hilly area of the Ronkonkoma terminal moraine is forested with well-developed stands of deciduous trees. Low moisture retention characterizes the sandy, well-drained soils of the eastern part of the area and thereby precludes extensive forest development. Stands of scrub oak or pitch pine are common here in conjunction with an undergrowth of huckleberry, sweetfern, and wintergreen.

GEOLOGY

The composition, thickness, and geologic history of the deposits underlying the Babylon-Islip area determine the water-bearing characteristics, and the lateral and vertical extent of aquifers and aquicludes that form the hydrologic environment. The stratigraphy of the geologic formations is known almost exclusively from well records and samples, as outcrops, especially those of Cretaceous age, are rare.

STRATIGRAPHY

The Babylon-Islip area is underlain by unconsolidated sediments of Cretaceous, Tertiary, and Quaternary age, which lie on crystalline bedrock of Precambrian or early Paleozoic(?) age (table 1 and pl. 1). Directly overlying the bedrock is the Raritan Formation of Cretaceous age consisting of the Lloyd Sand Member and an unnamed clay

member. Above the Raritan Formation is a thick sequence of deposits of late Cretaceous age which is in part, correlative with the Magothy Formation of New Jersey, but also includes some formations that are younger than the Magothy (Perlmutter and Crandell, 1959, p. 1066). Pending a more specific identification, these beds are referred to as the Magothy(?) Formation. Deposits of Quaternary, and possibly Tertiary age overlie the Cretaceous deposits. These consist, from oldest to youngest, of the Mannetto Gravel of doubtful Tertiary (Pliocene ?) age, the Gardiners Clay, and the upper Pleistocene and Recent deposits.

TABLE 1.—*Summary of stratigraphy of the Babylon-Islip area*

Era	Period	Epoch	Geologic unit		Remarks
Cenozoic	Quaternary	Recent	Recent deposits		Stream, beach, and marsh deposits; small areal extent.
		Pleistocene	Upper Pleistocene deposits		Till and outwash deposits of the Wisconsin Glaciation.
			Gardiners Clay		Fossiliferous marine clay of probable Sangamon age.
	Tertiary(?)	Pliocene(?)	Mannetto Gravel		Formerly believed to be an outwash deposit but now regarded as a stream-terrace deposit; small areal extent.
Mesozoic	Cretaceous	Late Cretaceous	Magothy(?) Formation		Interbedded sand, silt, and clay.
			Raritan Formation	Clay member	Dominantly clay but may contain some silty and sandy zones locally.
				Lloyd Sand Member	Sand, gravel, and interbedded clay and silt.
Precambrian and early Paleozoic(?)			Bedrock		Schist and gneiss containing some granitic intrusions.

THE BEDROCK

No wells in the Babylon-Islip area have reached bedrock. However, information obtained from wells in nearby parts of Long Island (Suter and others, 1949, p. 30–32, pls. 8 and 9) suggests that the bedrock in the area consists chiefly of schist and gneiss and contains some granitic intrusions. The bedrock is probably correlative in part with igneous and metamorphic rocks of Connecticut.

The bedrock surface dips southeastward at a rate of approximately 50 to 100 feet per mile. The altitude of the surface ranges from about 1,200 feet below sea level in the northwestern part of the area to about 1,800 feet below sea level in the extreme southeastern part. This bedrock surface represents the lower limit of the ground-water reservoir.

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(Brice, Whitaker, and Sawyer, 1956, p. 32). Infiltration rates apparently depend chiefly on the interval between successive floodings, depth of water, and permeability of the basin surface. There are now more than 80 storm-water recharge basins in the Babylon-Islip area, and the number may be expected to increase as urbanization continues. The effectiveness of the basins as a means of recharging storm water to the ground-water reservoir from a suburban area is probably comparable to that of natural surface conditions prior to urbanization (Brice, Whitaker, and Sawyer, 1956, p. 2).

Public sanitary-sewer systems on Long Island discharge their effluent directly into tidewater. Because there are no such systems in the Babylon-Islip area (1961), theoretically all water withdrawn from the ground-water reservoir is returned to the ground. Two large sewage-leaching beds serve Pilgrim and Central Islip State Hospitals, and several smaller ones are at other institutions. The balance of domestic sewage is returned to the ground through cesspools. Water pumped for industrial purposes is usually returned through diffusion wells and cesspools. A small amount of industrial pumpage containing contaminants is discharged into tidewater to avoid pollution of ground-water supplies.

Artificial recharge in the Babylon-Islip area counters the effect of urbanization by restoring the natural rate of infiltration of precipitation through the use of recharge basins and by returning most of the water pumped.

Because it is not practical to measure directly the rate of recharge to the ground-water reservoir, recharge must be determined by indirect methods. An approximate value for recharge is obtained by subtracting evapotranspiration losses and direct runoff from precipitation. The recharge to the ground-water reservoir in the Babylon Islip area as determined by this method is:

		Approximate annual rate (inches)
Precipitation		46
Evapotranspiration	21	
Direct runoff	1	
Total water loss		22
Recharge to ground-water reservoir		24

A recharge rate of 24 inches per year is equivalent to 1.1 mgd (million gallons per day) per sq mi or an annual total of about 215 mgd for the Babylon-Islip area. The bulk of this recharge occurs during late fall, winter, and early spring, when evapotranspiration is at a minimum.

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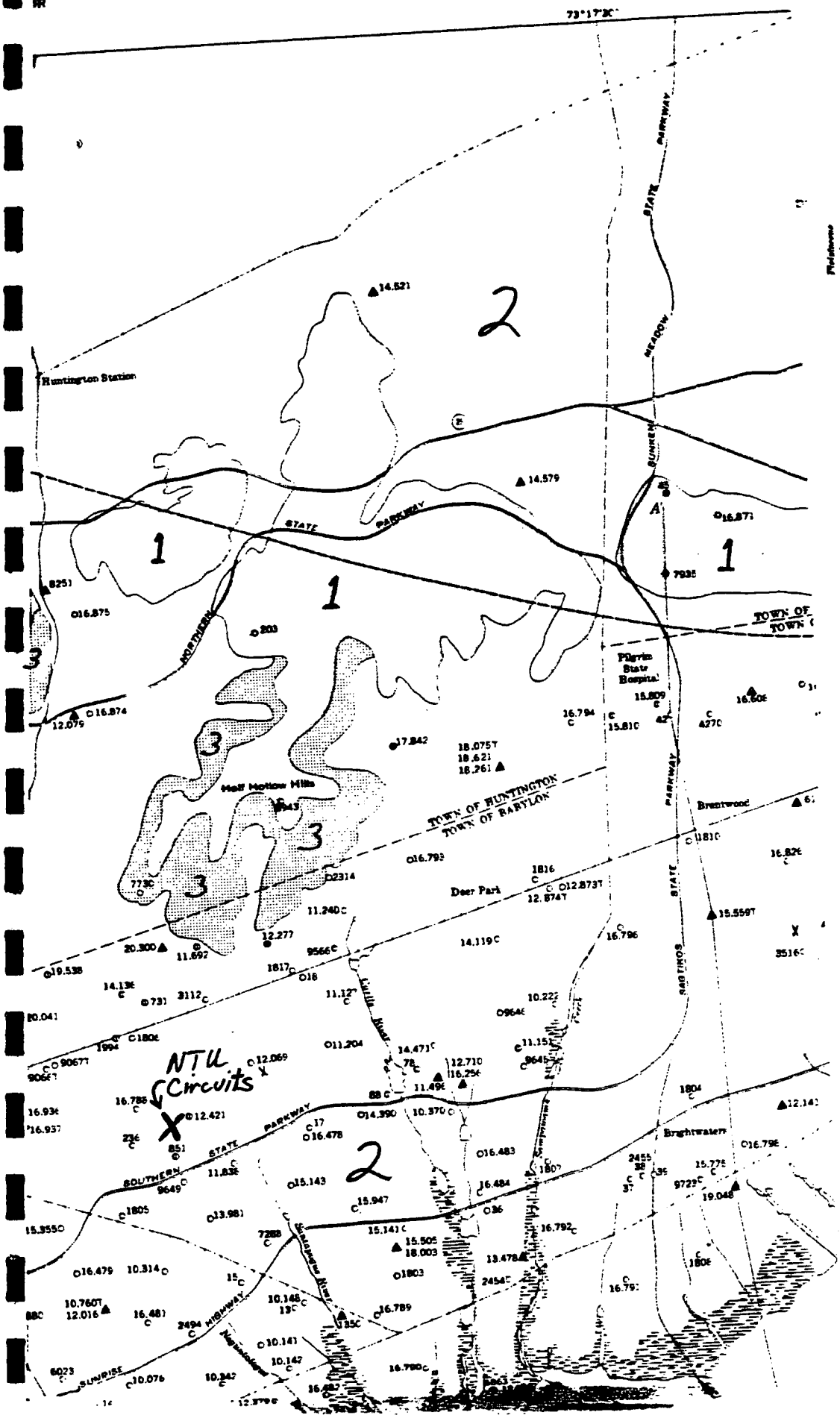
WATER-SUPPLY PAPER 1768
PLATE 1



EXPLANATION

Marsh deposits

Beach deposits

1 Till (largely Ronkonkoma terminal moraine)

2 Outwash

3 Mannetto Gravel

Recent

Pleistocene

Wisconsin Glaciation

Pliocene(?)

QUATERNARY

TERTIARY(?)

A——A' Line of geologic section

14.250 Well number (prefix S omitted)

Test well

Observation well

Industrial or institutional well

Irrigation well

Domestic supply well

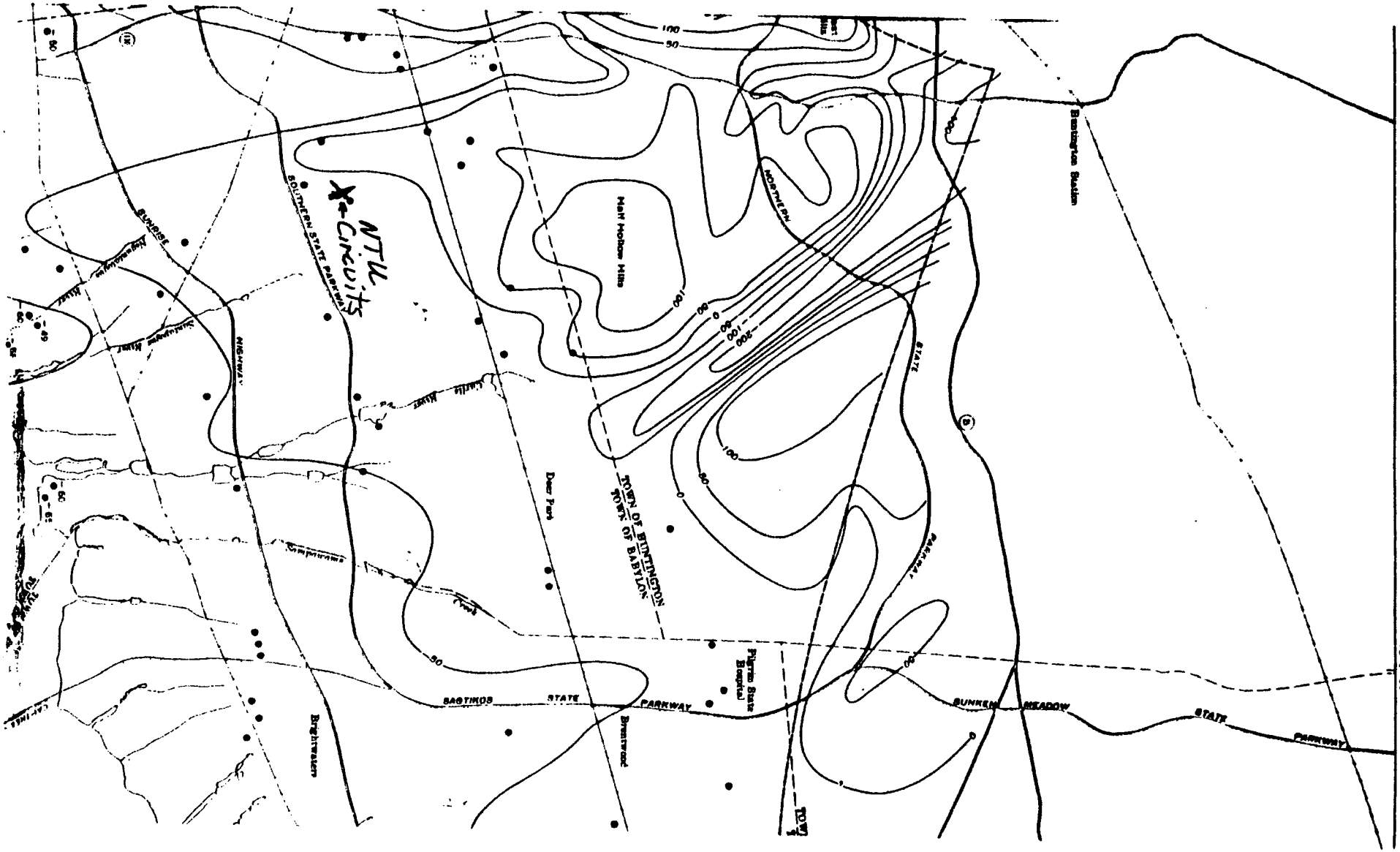
Public supply well

Route 25 is approximate limit of mapping

SCALE 1:62 500

1 ½ 0 1 2 3 MILES

MAP OF THE BABYLON-ISLIP AREA, SHOWING GENERALIZED SURFICIAL GEOLOGY, LOCATION OF WELLS, FROM FIRE ISLAND STATE PARK TO BRENTWOOD, SUFFOLK COUNTY, NEW YOR



MAP OF THE BABYLON-ISLIP AREA, SUFFOLK COUNTY, NEW YORK, SHOWING CONTOURS ON THE TOP OF THE MAGOTHY(?) FORMATION AND ALTITUDE OF THE TOP OF THE GARDINERS CLAY

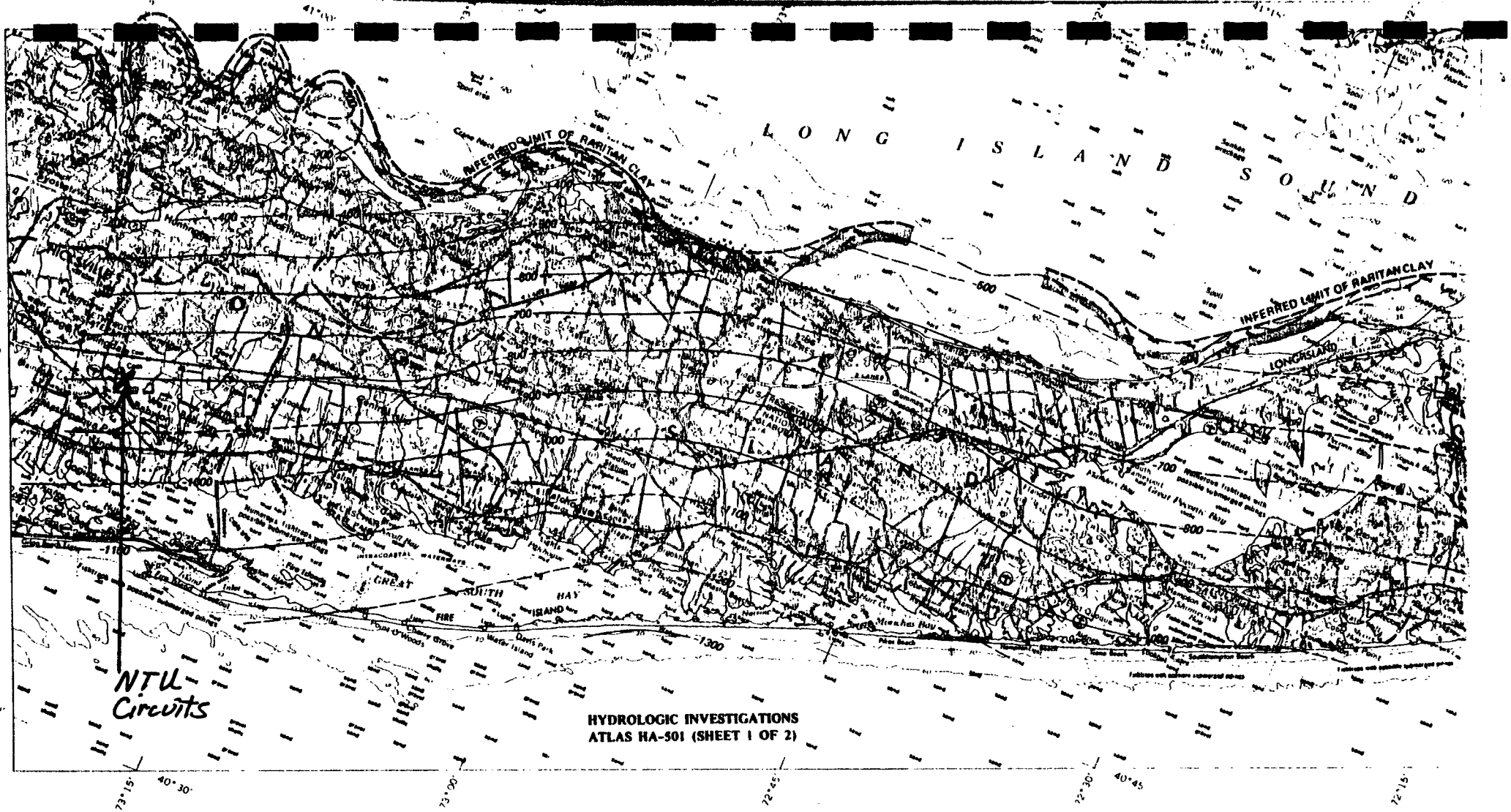
SCALE 1:62 500

1 ½ 0 1 2 3 MILES

EXPLANATION

Structure contours drawn on top of Magothy(?) Formation

Well penetrating Magothy(?) Formation



MAP SHOWING ALTITUDE OF TOP OF RARITAN CLAY

SCALE 1:250 000

5 0 5 10 15 20 25 MILES

5 0 5 10 15 20 25 30 35 KILOMETERS

CONTOUR INTERVALS 25, 50, AND 100 FEET
DATUM IS MEAN SEA LEVEL

Prepared in cooperation with the
SUFFOLK COUNTY WATER AUTHORITY
and
SUFFOLK COUNTY DEPARTMENT OF ENVIRONMENTAL CONTROL

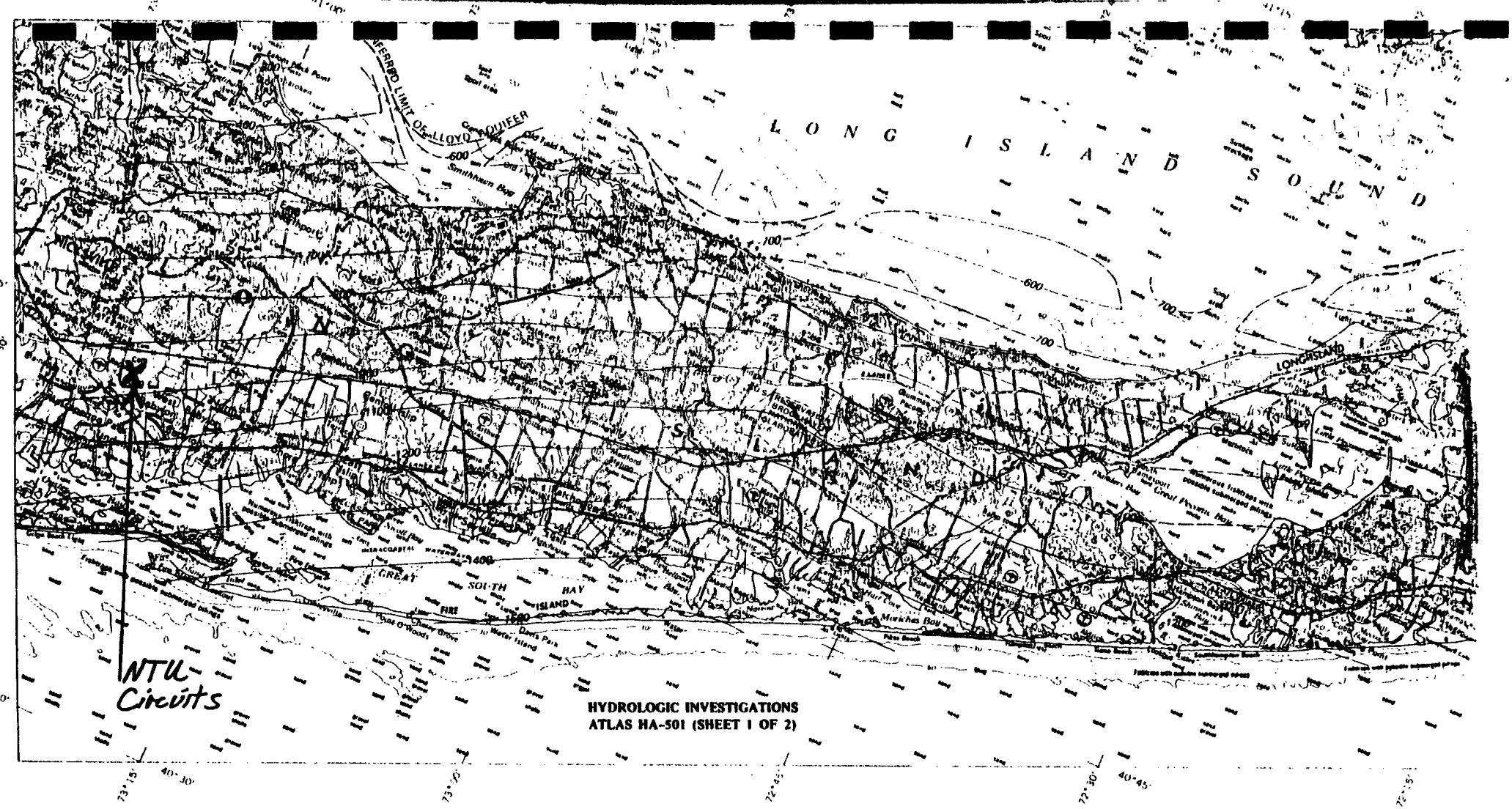
HYDROGEOLOGY OF SUFFOLK, COUNTY, LONG ISLAND, NEW YORK

By

H. M. Jensen and Julian Soren

1974

Appendix 13-2
1984



HYDROLOGIC INVESTIGATIONS
ATLAS HA-501 (SHEET 1 OF 2)

MAP SHOWING ALTITUDE OF TOP OF LLOYD AQUIFER

SCALE 1:250 000

5 0 5 10 15 20 25 MILES

5 0 5 10 15 20 25 30 35 KILOMETERS

CONTOUR INTERVALS 25, 50, AND 100 FEET
DATUM IS MEAN SEA LEVEL

Prepared in cooperation with the
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HYDROGEOLOGY OF SUFFOLK, COUNTY, LONG ISLAND, NEW YORK

By

H. M. Jensen and Julian Soren

1974

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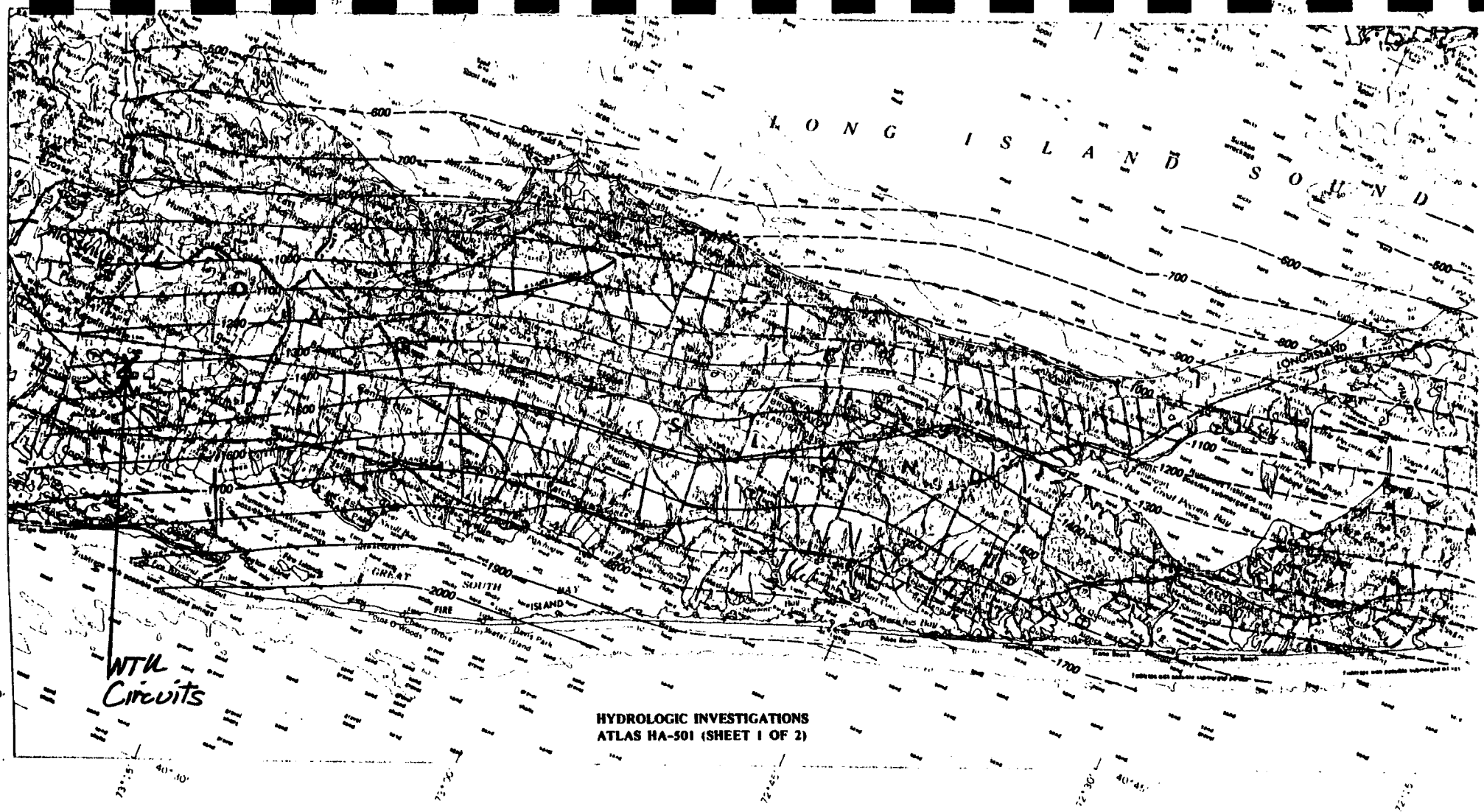

HYDROLOGIC INVESTIGATIONS
ATLAS HA-501 (SHEET 1 OF 2)

MAP SHOWING CONFIGURATION OF THE BEDROCK SURFACE

SCALE 1:250 000

5 0 5 10 15 20 25 MILES

5 0 5 10 15 20 25 30 35 KILOMETERS

CONTOUR INTERVALS 25, 50, AND 100 FEET
DATUM IS MEAN SEA LEVEL

Prepared in cooperation with the
SUFFOLK COUNTY WATER AUTHORITY
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By
H. M. Jensen and Julian Soren

1974

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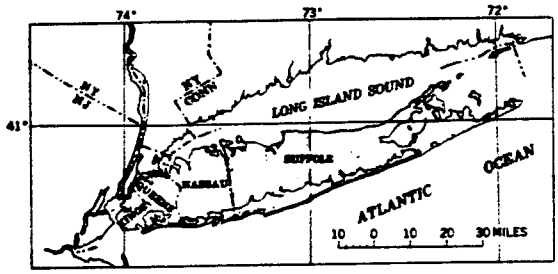
INTRODUCTION

WATER NEEDS OF SUFFOLK COUNTY

Water pumped from aquifers underlying Suffolk County (index map) is the sole source of water used for public supply, agriculture, and industry. The county's population grew from less than 200,000 in 1940 to 1.1 million in 1970. Most of the growth occurred after 1950. Ground-water pumpage increased from 40 mgd (million gallons per day) in 1950 to 155 mgd in 1970 (New York State Department of Environmental Conservation, written commun., June 1, 1971). The projected ground-water use for an anticipated population of 2 million in the county by 1990 is 300 mgd (New York State Conservation Department, 1970, p. 26–27).



INDEX MAP SHOWING LOCATION (SHADED) OF SUFFOLK COUNTY

PURPOSE AND SCOPE

The large and growing demand for ground water in Suffolk County has created a need for a detailed knowledge of the geometry and the hydrologic characteristics of the ground-water reservoir. Mapping of subsurface geology and hydraulic heads in the aquifers are important prerequisites to obtaining this information. Maps of the subsurface geologic units of Long Island were first shown in a report by Suter and others (1949, pls. VIII to XXI). But those maps were highly generalized, because there were few data on deep borings and wells in the county when the report was prepared. Since 1949, additional data from many deep borings and wells in the county have been collected.

In 1968, as part of a continuing cooperative program of water-resources studies with the Suffolk County Water Authority and Suffolk County Department of Environmental Control, the U.S. Geological Survey began an updating of the hydrogeologic and hydrologic maps of all the county. The basic data in Jensen and Soren (1971), the first product of the program, are the basis for the hydrologic maps in this report.

ACKNOWLEDGMENTS

The authors appreciate the cooperation of well-drilling companies, their employees, and the many officials of public and private water companies who furnished geologic and hydrologic data for use in this report.

GEOLOGIC AND HYDROGEOLOGIC UNITS

Pleistocene glacial drift generally mantles the county's surface. Pleistocene deposits overlie unconsolidated deposits of Late Cretaceous age. The Cretaceous strata lie on a peneplain that was developed on Precambrian(?) crystalline rocks.

Major landforms include ridges, valleys, and plains. These landforms are roughly oriented in belts parallel to the county's length. The northern and the central parts are traversed by irregular sandy and gravelly ridges of terminal moraine. The crest of the northern ridge ranges in height from 100 to 300 feet above sea level and the crest of the central ridge from 150 to 400 feet. The highest altitudes in the inter-ridge area range from 100 to 200 feet. Irregular plains and rolling hills, formed from sandy and gravelly ground moraine and outwash deposits of sand and gravel lie in the area between the ridges. An outwash plain slopes at a near-uniform gradient from the southern base of the central ridge, which is about 100 feet above sea level, southward to Great South Bay and the ocean. Along the north shore, steep bluffs as high as 100 feet and generally narrow sandy and gravelly beaches face Long Island Sound. The barrier-bar system at the southernmost side of the county is composed of sandy beach and dune deposits. The highest altitudes of the barrier bars generally range from 10 to 45 feet.

The ground-water reservoir system of Suffolk County is composed of hydrogeologic units that include lenses and layers of clay, silt, clayey and silty sand, sand, and gravel. A hydrogeologic unit consists of a geologic unit or a group of contiguous geologic units classified by hydraulic characteristics. These units include aquifers, which are principal water sources, and confining layers, which separate the aquifers. The aquifers are, from the land surface downward, the upper glacial aquifer, the Magothy aquifer, and the Lloyd aquifer. The major areal confining layers are, in descending order, the Gardiners Clay, the Monmouth greensand, and the Raritan clay. The base of the ground-water reservoir is the crystalline bedrock. Characteristics of the geologic and the hydrogeologic units are summarized in the table, and the following data of hydrologic significance are shown on the maps: base of ground-water reservoir, altitudes of aquifers, altitudes and limits of confining layers, and distribution of surficial deposits. The hydrogeologic sections show the vertical relations of the units to each other.

The sharp angular shapes of some of the contours reflect the fact that in places the contours are drawn on stratigraphic tops of the hydrogeologic units and in places the contours are drawn on erosional surfaces. The sharp angles result from the juncture of a stratigraphic top and an eroded surface.

Appendix 1.3-3
1 of 8

LONG ISLAND WATER RESOURCES
BULLETIN NUMBER 1

RESULTS OF SUBSURFACE EXPLORATION IN THE MID-ISLAND AREA OF WESTERN SUFFOLK COUNTY, LONG ISLAND, NEW YORK

BY
JULIAN SOREN
U. S. GEOLOGICAL SURVEY

WITH A SECTION ON
POTENTIAL DEVELOPMENT OF GROUNDWATER
IN THE MID-ISLAND AREA

BY
PHILIP COHEN
U. S. GEOLOGICAL SURVEY

PREPARED BY

U. S. GEOLOGICAL SURVEY

IN COOPERATION WITH

SUFFOLK COUNTY LEGISLATURE
SUFFOLK COUNTY WATER AUTHORITY

PUBLISHED BY

SUFFOLK COUNTY WATER AUTHORITY

1971

UPPER CRETACEOUS SERIES

Raritan Formation

Lloyd Sand Member

The Lloyd Sand Member of the Raritan Formation comprises the Lloyd aquifer on Long Island. This unit consists mostly of beds and lenses of light- to medium-gray sand and gravelly sand, commonly containing small to large amounts of interstitial clay and silt, that are intercalated with beds and lenses of light- to dark-gray clay, silt, and clayey and silty sand.

Only two drill holes are known to have penetrated the Lloyd in the mid-island area. One hole partly penetrated the unit at the Pilgrim State Hospital, in Brentwood. The second hole, which is in the village of Lake Ronkonkoma, and which was one of the test holes drilled as part of this study, fully penetrated the unit. A log of the test hole describing lithology of the Lloyd is shown in table 1, S33379.

The surface of the Lloyd is roughly parallel to the bedrock surface. The Lloyd surface dips from an altitude of about 550 feet below sea level in the northwestern part of the area, to an altitude of about 1,250 feet below sea level in the southeastern part (pl. 2), and the unit's thickness ranges from about 260 feet to 360 feet from northwest to southeast, respectively. Plate 2 shows contours on the Lloyd surface. Plate 2 also shows contours on the bedrock surface; therefore, the Lloyd's thickness, in any part of the area, can be estimated by computing the local difference between the altitudes of the bedrock and Lloyd surfaces.

The Lloyd aquifer is moderately permeable. Its average horizontal permeability has been estimated by Lusczynski and Swarzenski (1966, p. 19), Isbister (1966, p. 20), and Soren (in press) to range between 400 and 500 gpd per sq ft (gallons per day per square foot) in Queens and Nassau Counties, west of the mid-island area. Warren and others (1968, p. 102) estimated the Lloyd's horizontal permeability to be 165 gpd per sq ft at the Brookhaven National Laboratory, about 12 miles east of the mid-island area. The section of Lloyd penetrated by the test well near Lake Ronkonkoma was fairly sandy and gravelly (table 1, S33379), and at this site the average horizontal permeability of the Lloyd probably is considerably more than 500 gpd per sq ft. Wells tapping the Lloyd in other parts of Long Island have been pumped at rates of as much as 1,600 gpm (gallons per minute), and the specific capacities of these wells (pumpage, in gallons per minute, divided by drawdown, in feet) have been reported to range from 3 to 40 gpm per foot of drawdown.

At present, there is no pumpage from the Lloyd aquifer in the mid-island area, mainly because of the great depth of the aquifer, and because more permeable aquifers are found at shallower depths. In addition to being at a greater depth, the water from the Lloyd commonly has undesirably high concentrations of iron.

Clay Member

The clay member of the Raritan Formation (commonly referred to as the Raritan clay) completely covers the underlying Lloyd aquifer in the mid-island area, and confines water in that aquifer. The Raritan clay consists mostly of beds and lenses of light- to dark-gray clay, silt, and clayey and silty fine sand (table 1). Thin to thick sandy beds commonly occur in the unit from place to place, but these beds do not have great lateral extent. Laminae and thin beds of lignite and pyrite and disseminated particles of these substances are common in the clay beds of the unit. The thickness of the Raritan clay increases to the southeast, and ranges from about 150 feet in the northwestern part of the mid-island area to about 200 feet in the southeastern part.

The surface of the Raritan clay is roughly parallel to that of the underlying Lloyd Sand Member. The altitude of the surface of the Raritan clay ranges from about 300 feet below sea level in the northwestern part of the mid-island area, to about 1,050 feet below sea level in the southeastern part (pl. 3).

Matawan Group-Magothy Formation, Undifferentiated

The Matawan Group-Magothy Formation, undifferentiated, comprises the Magothy aquifer of Long Island. Deposits in this unit consist of beds and lenses of light-gray fine to coarse sand, containing traces to large amounts of interstitial clay and silt, intercalated with thin to thick beds and lenses of light- to dark-gray clay, silt, and clayey and silty sand (table 1). The clay and silt beds commonly contain laminae and thin beds of lignite. Disseminated lignite and pyrite also are common in the sand beds of the aquifer. Gravelly coarse sand is commonly found in the basal part of the aquifer. This coarse zone ranges in thickness from 100 to 150 feet west of the mid-island area to 150 to 200 feet in the mid-island area. The basal zone also commonly contains abundant interstitial clay and silt and many thin to thick beds and lenses of clay, silt, and clayey and silty sand.

The surface of the Magothy aquifer (pl. 4) is not planar as are the surfaces of the underlying units. The Magothy surface was deeply eroded during Tertiary time, and probably was considerably eroded in Pleistocene time. Consequently, the depth to the Magothy aquifer and the aquifer's thickness cannot be predicted as accurately as the depths and thicknesses of the underlying units. Many control points in addition to those already known are needed to accurately map the upper surface of the Magothy aquifer.

The highly irregular character of the surface of the Magothy aquifer is shown in plate 4. The upper surface of the aquifer ranges in altitude from as high as about 200 feet above sea level to as low as about 500 feet below sea level. The Magothy was completely removed by erosion in a buried valley near the South Huntington area, and in that area upper Pleistocene deposits lie directly on the Raritan clay. This buried valley was called the "Huntington buried valley" by Lubke (1964, pl. 3), and as mapped by Lubke, the valley extended about 2-1/2 miles south of the Northern State Parkway.

source of the rock materials in the outwash deposits is manifold. As the glaciers moved southward to Long Island, they plucked the bedrock and soils of the surfaces they slid over. Rock materials were incorporated into the ice in contact zones and were also pushed along the glacial front. As the ice melted in late Pleistocene time, the various rock materials were carried away by broad coalescing streams and sheets of water. Consequently, the outwash deposits are stratified, and because of the varied materials carried by the glacier, these deposits consist of a heterogeneous suite of rock types. The great diversity of rock and mineral suites in the Pleistocene deposits, along with the chemically unstable (easily decomposed) rocks and minerals, commonly facilitates differentiation of glacial from the Cretaceous deposits on Long Island.

Outwash deposits underlie the plain in the mid-island area south of the Ronkonkoma terminal moraine, where the major source of glacial deposition was material from the Ronkonkoma ice advance. A readvance of the glacial front followed recession of the Ronkonkoma ice front and resulted in the formation of the Harbor Hill terminal moraine. Lakes were formed in depressions and valleys between the Ronkonkoma and Harbor Hill terminal moraines, and clayey materials were deposited in these lakes. The intermorainal areas also contain recessional deposits of outwash and ground moraine (see the following section, "Ground-Moraine Deposits") from the Ronkonkoma and Harbor Hill deglaciations, and these materials buried the clayey lake deposits.

The outwash deposits are thickest in the buried valleys and thinnest where the Cretaceous surface is closest to land surface (pl. 5). These deposits generally extend below the water table, and are a major source of ground water. Outwash deposits comprise most of the so-called upper glacial aquifer of Long Island, and because these deposits of sand and gravel contain virtually no interstitial clay and silt, the upper glacial aquifer is the most permeable aquifer on Long Island. The estimated average horizontal permeability of the outwash deposits is about 1,000 to 1,500 gpd per sq ft (Lusczynski and Swarzenski, 1966, p. 17; and Soren, in press). Warren and others (1968, p. 75) computed the horizontal permeability of outwash to be about 1,300 gpd per sq ft at the Brookhaven National Laboratory, east of the mid-island area. A horizontal permeability for outwash as high as about 2,500 gpd per sq ft has been reported in Nassau County, west of the project area (Isbister, 1966, p. 29).

Public-supply and other high-capacity wells screened in glacial outwash on Long Island have yielded as much as 1,700 gpm, and reported specific capacities of such wells range from less than 10 gpm per foot of drawdown to as much as about 200 gpm per foot of drawdown; however, the specific capacities range mostly from 50 to 100 gpm per foot of drawdown. (See section "Yields of Individual Wells.")

the shorelines, the direction of flow is reversed, and ground-water movement is upward from the deeper aquifers toward the surface. Thus, because of the character of the flow system, under natural conditions virtually all the recharge to the Magothy and Lloyd aquifers in western Suffolk County originated in the mid-island area, and all of that recharge ultimately discharged from the ground-water system near the shorelines.

The movement of ground water through Long Island's aquifers in the horizontal direction is generally more rapid than movement in the vertical direction because of the occurrence of interbedded fine- and coarse-grained layers, and because the largest dimensions of unevenly shaped particles in the individual layers tend to be oriented horizontally. Approximate rates of ground-water movement can be computed from hydraulic gradients and estimated coefficients of permeability and porosities of the aquifers. In 1968, water in the upper glacial aquifers in the project area was moving horizontally at rates from less than 0.5 foot per day at points distant from centers of pumping, to hundreds of feet per day near the screens of pumping wells. At the same time, water in the Magothy aquifer was moving horizontally at rates from less than 0.2 foot per day at points distant from pumping, to hundreds of feet per day near the screens of pumping wells.

HYDRAULIC INTERCONNECTION OF AQUIFERS

The aquifers of Long Island are hydraulically interconnected. Layers of clay and silt within an aquifer or between aquifers serve to confine water below them, but they do not completely prevent the vertical movement of water through them. Ground water moves downward readily through coarse outwash deposits in the upper glacial aquifer. Vertical movement of water through the Magothy aquifer is impeded by beds and lenses of clay and silt. Because the clay and silt strata in the Magothy are not continuous, some water may move around lenses of this material in addition to moving slowly through the fine-grained strata.

The contact between the upper glacial and Magothy aquifers is not regular either in attitude or in composition of the contact surfaces. Glacial deposits in buried valleys are in lateral contact with truncated sandy beds in the Magothy. In the buried valleys water can laterally enter the Magothy at great depth directly from the glacial deposits, rather than the water having to move vertically to the same depth through less permeable Magothy beds. In the Huntington buried valley, glacial deposits extend completely through the Magothy aquifer to the underlying Raritan clay. (See plate 4.) In addition to the good hydraulic continuity between the upper glacial and Magothy aquifers in the buried valleys, good hydraulic continuity occurs between the aquifers outside the buried valleys where glacial sand and gravel deposits lie directly on Magothy sand beds. Thus, a fairly good hydraulic connection exists between the upper glacial and Magothy aquifers over large parts of the mid-island area, and the configuration of the piezometric surface of the Magothy aquifer is generally similar to that of the water table. However, in the mid-island area hydraulic heads in the Magothy are lower than those in the upper glacial aquifer because of the downward component of ground-water movement in the area.

The thick areally persistent Raritan clay that lies between the Magothy and Lloyd aquifers impedes but does not prevent downward movement of ground water into the Lloyd aquifer, and water in the Lloyd is tightly confined between the Raritan clay and bedrock. Downward leakage into the bedrock is negligible.

Figures 2 and 3 show hydrographs of wells screened in the upper glacial aquifer and the Magothy aquifer at the test-drilling sites in Brentwood and Hauppauge. At both sites, the heads in the deepest wells in the Magothy aquifer are about 2.5 to 3 feet lower than the heads in the shallowest wells in the upper glacial aquifer. The loss of head downward reflects the downward movement of ground water in the mid-island area. The hydrographs in figures 2 and 3 show that the heads in these two aquifers in the project area decrease at a fairly uniform rate with increasing depth. In addition, water-level fluctuations in the two groups of wells were very similar. Both of these facts, the uniform decrease in head and the similar water-level fluctuations, reflect the high degree of hydraulic interconnection between the upper glacial and Magothy aquifers.

The average vertical permeability of the Magothy aquifer is only poorly known. Estimates range from less than 1 to about 30 gpd per sq ft. Assuming that it averages about 5 gpd per sq ft in the mid-island area, the computed amount of downward ground-water movement through the Magothy aquifer in the vicinity of the ground-water divide in 1968 was about 0.4 mgd (million gallons per day) per square mile, and the estimated velocity of the downward movement was about 0.006 foot per day.

Because of the low permeability of the Raritan clay, the hydraulic-head loss across this unit is very much larger than the head loss across a comparable thickness of the Magothy and upper glacial aquifers. At the easternmost test site in the village of Lake Ronkonkoma, wells were screened near the base of the Magothy and near the top of the Lloyd aquifers (pl. 5, section A-A', S33379-80). In 1968, the head near the base of the Magothy aquifer (about 45.5 feet above sea level) was about 11.5 feet higher than the head in the Lloyd aquifer (about 34 feet above sea level). Head losses across the Raritan clay at localities east and west of the Lake Ronkonkoma area differ considerably. At Upton, about 12 miles east of the mid-island area, the head loss across the clay was about 6 feet in 1968; and at Plainview (in Nassau County), about 3 miles southwest of Melville, the head loss across the clay was about 42 feet. The differences in head loss from place to place are largely a result of differences in the vertical permeability and thickness of the Raritan clay.

The head in the Lloyd aquifer at Lake Ronkonkoma in 1968 (about 34 feet above sea level) was higher than either of the heads in the Lloyd at Upton (about 30.5 feet above sea level) and at the Suffolk-Nassau boundary (about 27.5 feet above sea level). The head in the Lloyd at Terryville, about 7 miles northeast of the Ronkonkoma area was about 21 feet above sea level in 1968, and it was 19 feet above sea level at Fire Island State Park in 1968, about 13 miles to the southwest. These data suggest that water in the Lloyd aquifer is moving radially from the Lake Ronkonkoma area. The estimated rate of horizontal movement of water in the Lloyd aquifer in the project area in 1968, was on the order of 0.1 foot per day.

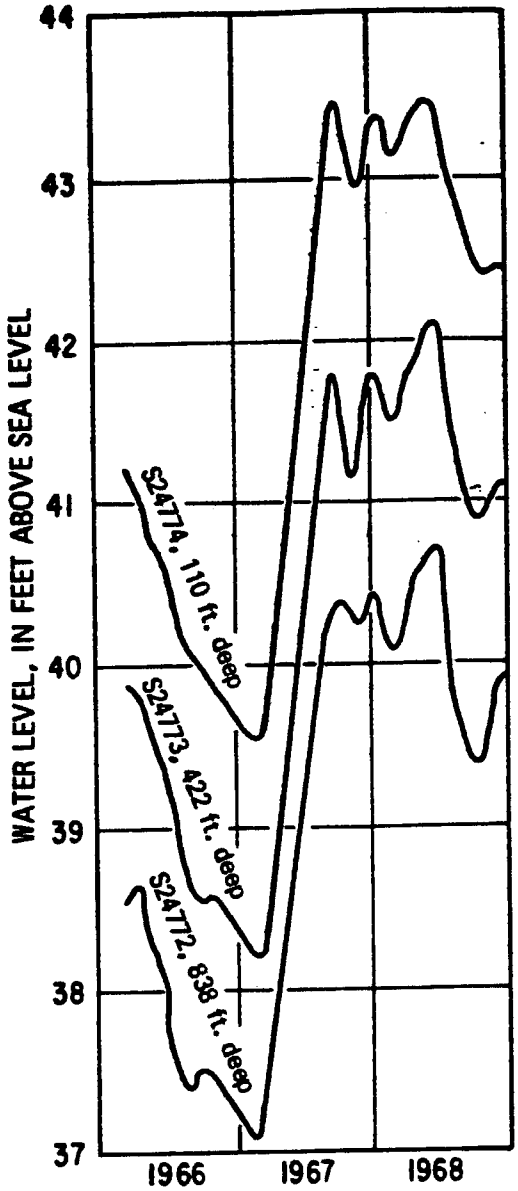


Figure 2.--Fluctuations of water levels in wells screened in the upper glacial aquifer and the Magothy aquifer at Brentwood, N. Y.

FLUCTUATIONS OF GROUND-WATER LEVELS

Fluctuations of water levels in the wells of the mid-island area reflect local variations in recharge to and discharge from the aquifers tapped by the wells. Therefore, changes in ground-water levels afford an insight into many aspects of the ground-water system. Furthermore, the information on water-level fluctuations can be used to help assess the impact of urbanization on the natural hydrologic system.

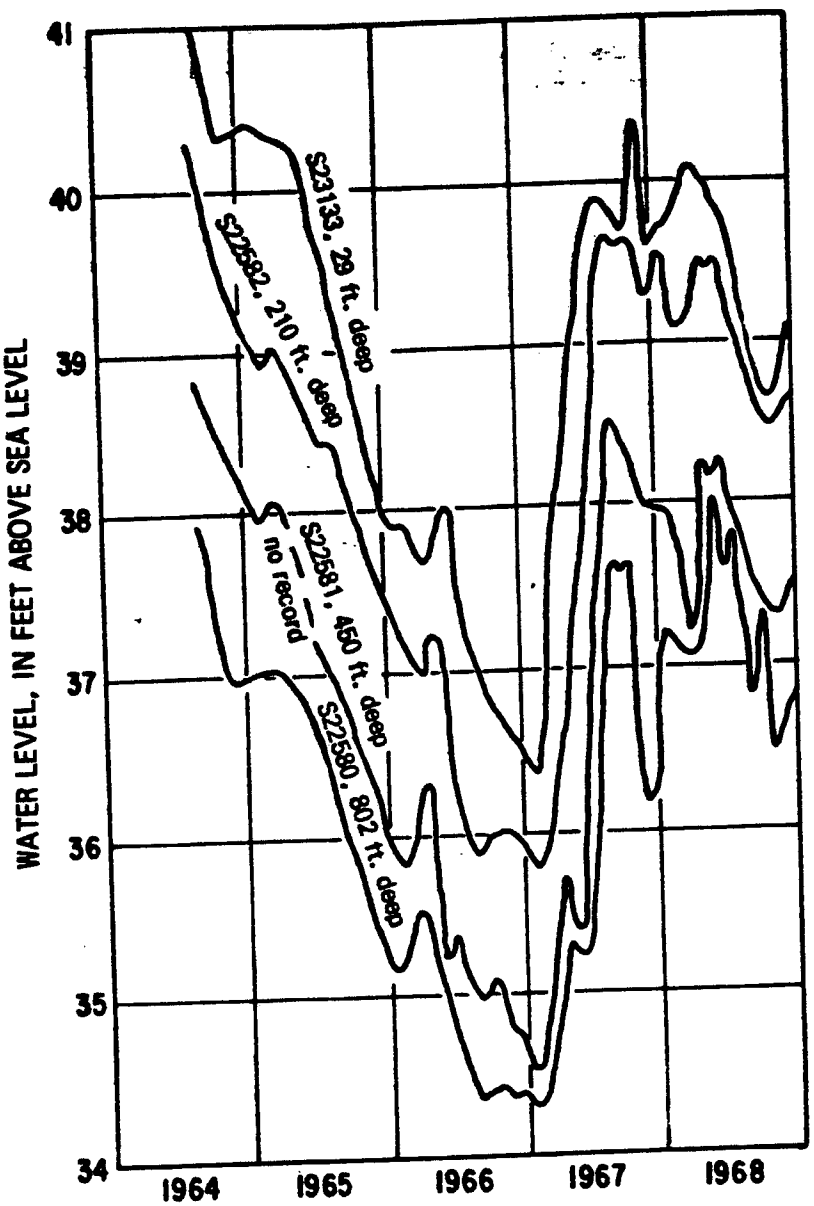


Figure 3.--Fluctuations of water levels in wells screened in the upper glacial aquifer and the Magothy aquifer at Hauppauge, N. Y.

Under natural conditions and in relatively undeveloped areas of Long Island, the water table fluctuates over a range of several feet during the year. Under such conditions, the water table has a rhythmic seasonal pattern; the lowest levels are in late autumn and highest levels are in early spring. This pattern of decline and recovery of the water table reflects the greatest losses of water through evapotranspiration during the growing season and the least such losses between growing seasons. The hydrologic systems in such undeveloped areas are in equilibrium, with inflow balancing outflow. However, if large amounts of water are continually pumped out of a ground-water system, the water table declines until equilibrium is reestablished at a lower level, reflecting a loss of ground water from storage and decreased subsurface and stream outflow from the system.

Appendix 1.3-4
1 of 8

County SUFFOLK

USA-C373

ORIGINAL—TO COMMISSION

State of New York
Department of Conservation
Division of Water Resources

Well No. S-57457
(on preliminary report)

LOG
Ground Surf., El. ..... ft. above s
^ ..... ft.
v
Top of Well

COMPLETION REPORT—LONG ISLAND WELL

SEE ATTACHED

Owner SUFFOLK COUNTY WATER AUTHORITY

Address POND ROAD, OAKDALE

Location of well 58' North of 12th ST., W. BABYLON

Depth of well below surface 623 feet

Depth to ground water from surface 11 feet

RECEIVED
JUN 17 1974
N.Y.S.D.E.C.
ENVIRONMENTAL ANALYSIS UNIT

CASINGS:
Diameter 20 in. ..... in. ..... in. ..... in.
Length 512 ft. ..... ft. ..... ft. ..... ft.
Sealing 50' CEMENT GROUT
Casings removed NONE

SCREENS: Make COOK 316 SS Openings #50 SLOT
Diameter 10" in. I.D in. ..... in. ..... in.
Length 90 ft. ..... ft. ..... ft. ..... ft.
Depth to top SLOT from top of casing 527' ft.

PUMPING TEST: Date 6/6/74 Test or permanent pump? TEST
Duration of Test ..... days 4 hours
Maximum Discharge 3002 gallons per minute
Static level prior to test 11 ft. 0 in. below top of casing
Level during Max. Pumping 79 ft. 0 in. below top of casing
Maximum Drawdown 68 ft.
Approx. time of return to normal level after cessation of pumping 1 hours 0 minutes

PUMP INSTALLED:
Type DWT Make ~~By OTHERS~~ Layne Model No. TLC
Motive power Elec Make U.S H.P. 100
Capacity 1400 g.p.m. against ..... ft. of discharge head
No. bowls or stages 5 } 218 ft. of total head

Pump 5/5 Submitted by Driller #5 on 11/10/75

DROP LINE: SUCTION LINE:
Diameter 10 in. 10 in.
Length 69'-9" ft. 9'-9" ft.

Method of Drilling (Rotary, cable tool, etc.) REVERSE ROTARY

Use of Water PUBLIC SUPPLY

Work started 10/16/74 3/27/74 Completed 10/18/74 6/6/74

Date 11/7/75 6/13/74 Driller STRATA WELL CORP Layne N.Y. Co. Inc

License No. 1080 5

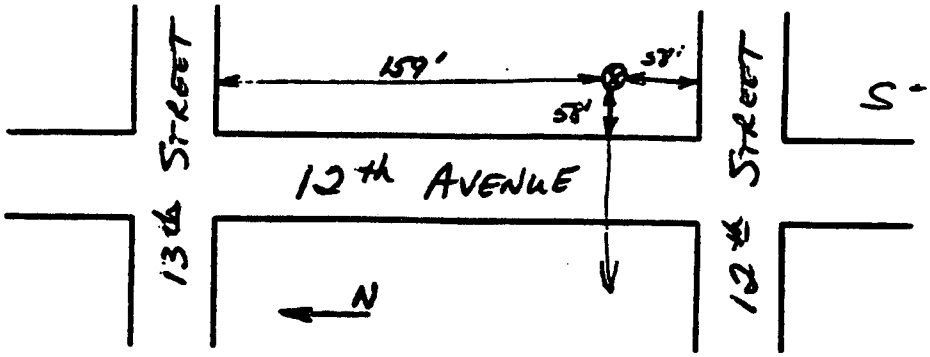
NOTE: Show log of well—materials encountered, with depth below ground surface, water bearing beds and water levels in each, casings, screens, pump, additional pumping tests and other matters of interest. Describe repair job.

See Instructions as to Well Drillers' Licenses and Reports—pp. 5-7.

2 of 8

S-51457

SKETCH OF LOCATION



Locate well with respect to at least two streets or roads, showing distance from corner and front of lot.

Show North Point

3 of 8

STRATA WELL CORP.

2 Beech St.
ISLIP, N. Y. 11751
Phone 516 581-7100

RECEIVED
JUN 17 1974
N.Y.S.D.E.C.
ENV. ... ANALYSIS UNIT

WELL LOG

NAME SCWA - 12th STREET #4

IN 12th ST., WEST BABYLON W.R.C. WELL NO. SF 51457

ENCE PT. GRACE S. W. L.

ARTED 4/19/74 COMPLETED DRILLER BANKER, BUTLER, [illegible]

SAMPLE No.	Actual Depth	Lgth	Blows	Formation	Thickness	Depth	Remarks
				COARSE SAND, STONES & GRAVEL	86	86	
				SANDY BLUE CLAY	12	98	
				MED/CSE GREY SAND W/LIGNITE & MICA	9	107	
				LAYERS of LIGNITE W/FINE GREY SAND & MICA	53	160	
				MED TO COARSE SAND	25	185	
				MED GREY SAND, CLAY STRIPS	43	228	
				BLUE CLAY & MICA	3	231	
				FI/MED GREY SAND, STREAKS of CLAY	76	307	
				SAND, STREAKS of CLAY, LIGNITE, PYRITE	6	313	
				DARK CLAY	3	316	
				FINE GREY SAND, STRIPS CLAY, CEMENTED STONE	30	346	
				DARK GREY CLAY WITH LIGNITE & FINE SAND	14	360	
				FINE GREY SAND, STREAKS CLAY & LIGNITE	26	386	
				SOLID GREY CLAY, LIGNITE, PYRITE	6	392	
				LAYERS of FI/MED. GREY SAND, STKS GR. CLAY	17	409	
				GREY CLAY, PYRITE & LIGNITE	7	416	
				FI/MED GREY SAND W/STKS of PYRITE & LIGNITE	29	445	
				SOLID DK GR CLAY W/STKS of MED. GREY SAND	3	448	
				FI/MED GREY SAND W/LAYERS of PYRITE	10	458	
				STKS of CLAY, LIGNITE, FINE SAND	3	461	
				SOLID GREY CLAY	7	468	
				FINE GREY SAND, CLAY STRIPS	22	490	
				SOLID GREY CLAY	3	493	
				FINE GREY SAND WITH CLAY STRIPS	14	507	
				SOLID GREY CLAY	7	514	
				FINE GREY SAND, STRIPS of CLAY	55	569	
				FI/MED GREY SAND W/CLAY & LIGNITE	39	608	
				MED-CSE GREY SAND - GR CLAY - LIGNITE	2	610	
				FINE GREY SAND	10	620	

STRATA WELL CORP.

2 Beech St.
ISLIP, N. Y. 11751
Phone 516 581-7100

RECEIVED
JUN 17 1974
N.Y.S.D.E.C.
ENVIRONMENTAL ANALYSIS UNIT

WELL LOG

NAME SCWA - 12th STREET #4 S-51457

ON 12th ST, WEST BABYLON W.R.C. WELL NO.

REFERENCE PT. GRADE S. W. L. 11'

STARTED 4/19/74 COMPLETED DRILLER BUTLER, BUTLER, TIMMANN

SAMPLE No.	Actual Depth	Lgth	Blows	Formation	Thickness	Depth	Remarks
				MED GREY SAND	5	625	
				GREY CLAY W/ STRS OF FI GR. SAND & PYRITE	7	632	
				FINE GREY CLAYIE SAND	13	645	
				MED TO CSE GREY SAND, SOME SMALL GRAVEL	14	659	
				MED TO CSE SAND, STRE & LIGNITE, GREY CLAY	2	661	
				FINE TO MEDIUM GREY SAND	8	669	
				LIGHT GREY SANDY CLAY & LIGNITE	2	671	
				FINE TO MEDIUM GREY SAND	23	694	
				SOLID GREY CLAY	4	698	
				FINE/MED. GREY SAND WITH STRIPS of CLAY	23	721	
				COARSE SAND / STRIPS of WHITE CLAY	2	723	
				SOLID WHITE CLAY			
				HOLE TERMINATED AT 733'			

518

Well 2-2

County Suffolk

ORIGINAL—TO COMMISSION

WA-4013

Well No. S-20042 (see preliminary report)

State of New York
Department of Conservation
Division of Water Power and Control

LOG

Ground Surf., El. ft. above sea

COMPLETION REPORT—LONG ISLAND WELL

ft.

Top of Well

LOG ATTACHED

Owner Town of Babylon-E. Farmingdale Water Dist.

Address 200 E. Sunrise Highway-Lindenhurst, L.I., N.Y.

Location of well Gazza Blvd.-E. Farmingdale, L.I.N.Y.

Depth of well below surface 585 feet

Depth to ground water from surface 25 feet

CASINGS:
Diameter 20" x 12 in. in. in. in.
Length 524 ft. ft. ft. ft.
Sealing
Casings removed

SCREENS: Make Johnson Everdur Openings 60 slot
Diameter 12 in. in. in. in.
Length 61 ft. ft. ft. ft.
Depth to top from top of casing 524 ft.

PUMPING TEST: Date 7/15/61 Test or permanent pump? Test
Duration of Test days 5 hours
Maximum Discharge 1450 gallons per minute
Static level prior to test 25 ft. in. below top of casing
Level during Max. Pumping 61 ft. in. below top of casing
Maximum Drawdown 36 ft.
Approx. time of return to normal level after cessation of pumping hours minutes

PUMP INSTALLED:
Type D.W.T. Make Johnston Model No. 12DC
Motive power elec. Make U.S. H.P. 100
Capacity 1400 g.p.m. against } ft. of discharge head
No. bowls or stages 5 stages } 240 ft. of total head

STATE OF NEW YORK
WATER RESOURCES
JUN 12 1962

DROP LINE: SUCTION LINE:
Diameter in. in.
Length ft. ft.

Use of water Municipal Supply

Work started 7/19/61 Completed 6/1/62

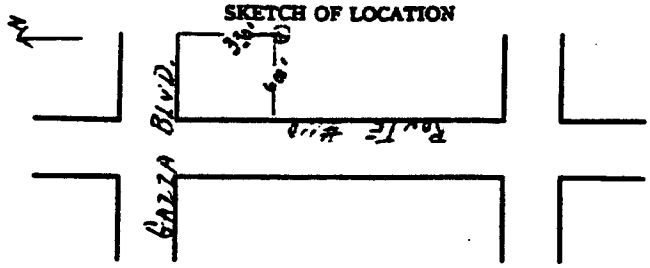
Date 6/11/62 Driller Mathies Well & Pump Co., Inc.

License No. 153

NOTE: Show log of well—materials encountered, with depth below ground surface, water bearing beds and water levels in each, casings, screens, pump, additional pumping tests and other matters of interest. Describe repair job.

See Instructions as to Well Drillers' Licenses and Reports—pp. 5-7.

SKETCH OF LOCATION



Locate well with respect to at least two streets or roads, showing distance from corner and front of lot.

Show North Point

Repair

5/6/75 Layne - Orifice tested well to determine if well pumping sand or gravel. Result - no sand condition. - Water level noted @ 33½ft.

7 of 8

SUPPLY WELL LOG

MATHIES WELL DRILLERS
LINDENHURST, N. Y.

WPCC No. S-20042

Job East Farmingdale Water Dist.-#2140 Well 2-2 Address Gazza Blvd.-E. Farmingdale, L.I.

Date Started July 19, 1961 Completed July 29, 1961 Driller J. Tucker C. Hyatt

Diameter 24 x 20 / 36 x 12 In.

Measured from Grade ☒ Yes ☐ No

Depth 585 Ft. In. Above Ft. In. Below Ft. In.

Static Level 25 Ft. In. Elevation Ft.

	STRATUM - Ft. THICKNESS	DEPTH	TEMPERATURE SAND	WATER
Top soil and brown clay	2	2		
Coarse brown sand-grits and gravel	76	78		
Fine brown sand	12	90		
Fine brown sand & brown clay	2	92		
Brown silty clay	18	110		
Fine brown sand-streaks of brown clay	10	120		
Fine brown sand (light)	15	135		
Fine to medium sand-streaks of clay	35	170		
Sand and gravel	20	190		
Heavy gravel & streaks of clay	10	200		
Sand	10	210		
Sand & clay	10	220		
Stone-gravel & hardpan	5	225		
Heavy stones	4	229		
Light gravel	11	240		
Heavy gravel	10	250		
Sand	8	258		
Gravel	2	260		
Sand & grits	35	295		
Fine brown sand & streaks of brown clay	9	304		
Heavy gravel & hardpan	6	310		
Fine sand & streaks of clay	9	319		
Fine sand with some grit	11	330		
Grits	2	332		
Gravel - clay - sand	5	337		
Clay & hardpan	13	350		

STATE OF NEW YORK
... SOURCES
JUN 1 1962
COMMISSION
RECEIVED

878

SUPPLY WELL LOG

MATHIES WELL DRILLERS
LINDENHURST, N. Y.

WPCC No. S-20042

Job East Farmingdale Water Dist. #2140 Well 2-2 Address Gazza Blvd.-E. Farmingdale, L.I.

Date Started July 19, 1961 Completed July 29, 1961 Driller J. Tucker C. Hyatt

Diameter 24 x 20 / 36 x 12 In. Measured from Grade ☒ Yes ☐ No

Depth 585 Ft. In. Above Ft. In. Below Ft. In.

Static Level 25 Ft. In. Elevation Ft.

	STRATUM - Ft.		TEMPERATURE	
	THICKNESS	DEPTH	SAND	WATER
Gravel & hardpan	10	360		
Hardpan - red clay - gravel	1	361		
Fine white sand	2	363		
Sand - pyrite - clay	11	374		
White clay and sand	8	382		
Fine sand - lot of mica	8	390		
Fine sand mixed with clay	20	410		
Fine to med. Gray sand-streaks of Hardpan & white clay	115	525		
Coarse gray sand-streaks of white clay & hardpan	16	541		
White clay and hardpan	3	544		
Fine gray sand, mica, hardpan & multi colored clay	4	548		
Coarse sand and grits	6	554		
Coarse sand - clay and pyrite	1	555		
Fine sand - mica - lignite - clay	1	556		
Clay - lignite - hardpan	1	557		
Fine sand - lignite - mica - clay strips	3	560		
Coarse gravel - sand	4	564		
Medium sand - grits	2	566		
Coarse sand with grits		5[illegible]		

Appendix 1.3-5
1 of 2

Hydrogeology of the Huntington-Smithtown area Suffolk County, New York

By E. R. LUBKE

CONTRIBUTIONS TO THE HYDROLOGY OF THE UNITED STATES

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1669-D

Prepared in cooperation with the Suffolk County Board of Supervisors, the Suffolk County Water Authority, and the New York Water Resources Commission

UNITED STATES GOVERNMENT PRINTING OFFICE. WASHINGTON : 1964

foot, and are commonly masked by fluctuations of larger amplitude. Cyclical fluctuations in pressure also result from ocean tides, particularly in wells screened in the intermediate and deep aquifers near Long Island Sound. For example, at well S2020 located on a promontory between Duck Island Harbor and Northport Bay and screened in the deep aquifer, water-level fluctuations caused by tidal loading have a daily amplitude of as much as 3 feet between high and low tide. Tidal changes in Lloyd and Cold Spring Harbors also influence the water levels of wells S9 and S4466, both of which are screened in the deep aquifer.

RECHARGE

All the fresh water in the ground-water reservoir of the project area, as well as the rest of Long Island, is derived from precipitation. However, only a part of the total precipitation that falls reaches the water table. The amount which percolates down to the water table and recharges the reservoir is the residual of the total precipitation not returned to the atmosphere by evapotranspiration or lost to the sea by overland runoff. Owing to the highly pervious nature of the soil and the substrata and to the gentle slopes of the land surface, infiltration is relatively high. Of an average annual precipitation on the project area of 49 inches, 21 inches, or about 43 percent, is estimated to reach the water table.

The catchment surface on which recharge presumably takes place includes most of the land area of the project, or about 146 square miles. This catchment includes Lloyd and Eatons Necks but does not include an additional 7 square miles of high water table and tidal marshes which fringe the northern shoreline. A considerable part of the catchment area, however, is made impervious by buildings and pavements, but much of the runoff from such covered areas is recovered in storm water disposal (recharge) basins or large-diameter diffusion wells. The natural recharge from precipitation on the project area, exclusive of the high water-table areas, the tidal marshes and of Lloyd and Eatons Necks, is estimated to average about 140 mgd (million gallons per day). In addition, the recharge on Lloyd Neck is estimated to average about 5 mgd and on Eatons Neck about 2 mgd. The total for the project area then would be about 147 mgd. The rate of natural recharge varies greatly from season to season and from year to year depending on such factors as evapotranspiration, air and soil temperatures, soil-moisture conditions, and the nature and seasonal distribution of precipitation. During dry years, recharge is substantially less than average, and conversely in wet years it is more.

Natural replenishment of the intermediate and deep aquifers takes place entirely by downward movement of water from the shallow aquifer through discontinuities in clayey and silty beds and probably directly by slow movement through these aquicludes. Recharge of the intermediate aquifer probably occurs chiefly in the areas where the water table lies above an altitude of about 60 feet (pl. 5). The deep aquifer, in turn, receives recharge by downward leakage from the intermediate aquifer through an extensive aquiclude formed chiefly by the clay member of the Raritan formation. This recharge, which probably proceeds at a very slow rate, occurs chiefly where the piezometric surface of the intermediate aquifer lies above an altitude of about 60 feet (fig. 6).

Artificial recharge of the ground-water reservoir is effected by means of cesspools and septic tanks, which ultimately receive most of the water pumped from public-supply and domestic wells. For example, during 1957 an estimated average of about 9.8 mgd was returned to the ground by this means in the project area, and at the same time about 2.5 mgd was discharged directly into Long Island Sound through sewage disposal systems at the villages of Huntington and Northport and at Kings Park State Hospital. Also, as required by law, an average of about 0.7 mgd of water pumped from privately owned wells for industrial and cooling purposes during 1957 was returned to the ground through sumps and diffusion wells.

MOVEMENT

In the ground-water reservoir, water moves vertically and laterally from points of high head to points of low head along flow lines whose direction is normal to the contour lines shown for the water table (pl. 5) and the piezometric surfaces (figs. 6 and 9). Water in the shallow aquifer flows away from the two major highs on the main watertable divide of Long Island, represented by areas above the 70-foot watertable contour in south-central Huntington and eastern Smithtown (pl. 5). The general directions of ground-water flow are north toward the Long Island Sound, south toward the Atlantic Ocean, and also a pronounced lateral movement toward the trough in the valley of the Nissequogue River. Local directions of flow, which may deviate substantially from these general directions, are indicated by arrows on the water-table contours (pl. 5). Also, the peninsulas of Lloyd, Eatons, and Little Necks each contain a ground-water mound in the shallow aquifer and from the crests of these mounds the shallow ground water moves laterally outward to bounding salt-water bodies. Within the area circumscribed by the 60-foot water-table contour (pl. 5), a downward head differential generally exists between the shallow and intermediate aquifers. Conse-

WORKSHEET: COMMUNITY WATER SUPPLIES WITHIN A 3-mi RADIUS OF THE SITE NTU Circuit

Community Water Supply	Water District	Well Field	Well	Depth (ft)	Aquifer
SCWA	Babylon	Circle Dr.	1S-20057	200	Glacial
			2S-20300	232	Magothy
			3S-30506	621	Magothy
			4S-48913	534	Magothy
		Tenety Dr.	2S-20460	495	Magothy
			3S-37681	574	Magothy
		N. Fifth St	1S-29491	499	Magothy
		Albany Ave.	4S-34515	482	Magothy
			5S-47886	507	Magothy
			6S-63205	419	Magothy
		Great Neck Rd.	1S-51214	395	Magothy
			2S-54568	423	Magothy
		Golden Ave.	1S-51298	652	Magothy
			2S-65505	660	Magothy
		Twelfth St.	2S-21487	337	Magothy
			3S-40330	328	Magothy
			4S-51457	623	Magothy
		Adams Ave.	1S-34030	538	Magothy
			2S-34031	515	Magothy
E. Farmingdale	E. Farmingdale	Gazza Blvd.	2-1S-20041	268	
			2-2S-20042	585	
		Route 109	4-1 S-30	702	
			4-2 S-66556		

WORKSHEET (cont.)

Community Water Supply	Water District	Well Field	Well	Depth (ft)	Aquifer
Farmingdale Village Water District	(See attached.)				

Sources:

SCDHS Water Resources Division. Supply and Monitoring Well Location Maps.
SCWA. 1984. Well Descriptions.
SCWA. 1985. Distribution System Plates.
SCWA. 1986. Active Services Estimates and Service Area Map.

EA SCIENCE AND TECHNOLOGY
A Division of EA Engineering, Science, and Technology, Inc.

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COMMUNICATIONS RECORD FORM

Distribution: (x) File, ( ) _____
( ) _____, ( ) _____
( ) Author

Person Contacted: Mr. Johnson **Date:** 21 April 1986

Phone Number: (516) 249-6770 **Title:** District Superintendent

Affiliation: Farmingdale Village Water District **Type of Contact:** _____

Address: 361 Main Street **Person Making Contact:** E. Bidwell
Farmingdale, New York 11735

Communications Summary:

WELL #	DEPTH	AQUIFER	
N-1937	150	Upper Glacial	Integrated - yes
N-6644	227	Upper Glacial	Population served - 10,000
N-7852	457	Magothy	Distribution Map - ordered

(see over for additional space)

Signature: _____

EA SCIENCE AND TECHNOLOGY
A Division of EA Engineering, Science, and Technology, Inc.

p.4 of 5

COMMUNICATIONS RECORD FORM

Distribution: (x) File, ( ) _____
( ) _____, ( ) _____
( ) Author

Person Contacted: Mr. John Ferrari Date: 28 February 1986

Phone Number: (516) 249-4211 Title: Senior Water Plant Operator

Affiliation: E. Farmingdale Water District Type of Contact: Telephone

Address: _____ Person Making Contact: E. Bidwell

Communications Summary: They have 3 wellfields, all of which fall within a 3-mile radius of the sites. Combined they serve a population of 5,700. All pull water from the Magothy Aquifer. They had one upper glacial well but closed it in 1974 due to high levels of trichloroethane.

Total pumpage in 1985 was 823,540,000 gallons.

Mr. Ferrari said nearly impossible to get a permit allowing you to pull out of the Lloyd Aquifer.

(see over for additional space)

Signature: Ellen Bidwell

NTU Grants
152086

Appendix 1.4-1

Received from:
Suffolk Co. Dept. of
Health

p. 10822

SUPREME COURT OF THE STATE OF NEW YORK
COUNTY OF SUFFOLK

STATE OF NEW YORK Plaintiff, NTU LABORATORIES, INC. d/b/a NTU CIRCUITS, INC. and TIMOTHY WU Defendants.	AFFIDAVIT Index No.

STATE OF NEW YORK)
:
COUNTY OF SUFFOLK)

I, RAJA A. KAVASERY, being duly sworn, depose and say:

1. I am acting Laboratory Director of the Environmental Health Laboratory of the Suffolk County Department of Health Services, which lab is located at 65 Jetson Lane, Central Islip, New York. I have been acting Laboratory Director for approximately two years. I was a Senior Chemist with the laboratory for four years immediately prior to becoming acting Laboratory Director. I was awarded a B.S. in Chemistry in 1964 from the University of Madras, Madras, India; a M.S. in Physical Chemistry from the Indian Institute of Technology in Madras in 1966; and a M.S. in Organic Chemistry from the University of Calgary in Alberta, Canada, in 1971. In addition, I have taken courses in Environmental Science at the State University of New York at Stony Brook.

2. My responsibilities as acting Laboratory Director include the overall supervision of all testing, analysis and record-keeping, and I am familiar with all of the procedures and techniques used in the Environmental Health Laboratory. The analytical methods employed by the Environmental Health Laboratory are those described in the 14th edition of STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, published by the American Public Health Association, the American Water Works Association, and the Water Pollution Control Federation. The analytical methods and procedures used by the Environmental Health Laboratory are standard and widely accepted by chemists throughout the United States.

3. All samples brought to the Environmental Health Laboratory for analysis, including those samples referred to in paragraph 4 below are logged in when received by the lab and are placed in a specific incoming sample area with identification tags affixed to each bottle, accompanied by sample sheets completed by field personnel containing instructions to the lab to analyze the particular sample specified therein for certain parameters. Until analysis of a sample is completed, the sample remains within the laboratory, which itself is locked during non-working hours. During working hours, the lab is never left unattended.

4. Attached hereto as Appendix "A" are copies of sample sheets reflecting laboratory analyses of chemical samples brought to the Environmental Health Laboratory by Suffolk County Department of Health Services field personnel. All of the analyses of

p. 30f22

these samples were performed by Environmental Health Laboratory personnel under my supervision according to the procedures and techniques described in the 14th edition of STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER. I have checked my records and I have compared them with the documents affixed hereto, and I affirm that the attached sample sheets truthfully and accurately reflect the results recorded in my laboratory's records for each of the samples respectively.

I have read the foregoing three pages and I affirm that the statements made therein are true and accurate.

Raja A. Kavasery
RAJA A. KAVASERY

Sworn to before me this
19th day of October 1981.

Dennis C. Gobbi
Notary Public

DENNIS C. GOBBI
NOTARY PUBLIC, State of New York
No. 52-4527485 Suffolk County
Commission Expires March 30, 1982

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APPENDIX A

(Summary of Sample Sheets)

	Date	Field No.	Lab. No.
1.	July 2, 1981	2 DO 7-2	7-81-23
2.	July 1, 1981	2 DO 7-1	7-81-19
3.	July 1, 1981	3 DO 7-1	7-81-20
4.	July 1, 1981	4 DO 7-1	7-81-21
5.	July 1, 1981	1 DO 7-1	7-81-18
6.	June 10, 1981	6 DO 6-10	6-81-74
7.	June 4, 1981	7 DO 6-4	6-81-42
8.	June 4, 1980	EJ 4-3	6-80-27
9.	June 4, 1980	EJ 4-4	6-80-28
10.	Dec. 11, 1979	202	12-79-109
11.	Dec. 11, 1979	203	12-79-110
12.	Dec. 11, 1979	201	12-79-108
13.	Nov. 20, 1979	200	11-79-239
14.	Oct. 2, 1979	201	10-79-31
15.	Oct. 2, 1979	200	10-79-30
16.	Sept. 25, 1979	205	9-79-352
17.	Sept. 25, 1979	206	9-79-353
18.	Sept. 20, 1979	209	9-79-301
19.	July 10, 1979	100	7-79-129

FIELD

LABORATORY

p.5 of 22

LD NO. 2 DO 7-2

BY DAVID OSBIG
NAME, NOT INITIALS

TE COL. 9 July 81

ME COL. 1 50 pm

True Copy
Ralph A. Kavanagh
10/19/81

LAB NO. 7-81-23

TYPE SAMPLE IND.

DATE REC'VD. 7/2 PPP

TIME REC'VD. 3PM

DATE COMPLETED 7/21/81

SUFFOLK COUNTY HEALTH SERVICES LABORATORY
CHEMICAL EXAMINATION OF WATER, SEWAGE, INDUSTRIAL WASTE

ME OR FIRM NTU Circuits Inc.

DRESS OR LOCATION 60 Dale St. N.Bab.

IN OF COLLECTION Storm drain North side of "NTU" 60 Ft.

MARKS/INSTRUCTIONS West of Dale St.

TEST	RESULT		TEST	RESULT mg./liter		TEST	RESULT mg./liter
CONDUCT	umho		NITRATE-N		X	COPPER	6.5
pH			NITRITE			IRON	
TEST	RESULT m.g./liter		AMMONIA-N			MANGANESE	
ph. ALKALINITY			TKN		X	CHROMIUM	<.02
T. ALKALINITY			0-PO_4-P		X	NICKEL	<.1
CHLORIDE					X	ZINC	.2
FLUORIDE						MAGNESIUM	
CYANIDE			TOT. SOLIDS			CALCIUM	
			SUS. SOLIDS		X	LEAD	.5
SULFATE			DISS. SOLIDS		X	CADMIUM	<.02
MBAS					X	SILVER	<.02
C.O.D.						SODIUM	
T.O.C.						POTASSIUM	
						BARIUM	
			FIELD D.O.				
			FIELD TEMP				
			FIELD pH	7			
			FIELD COND.	umho			

8204-1

38-112

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FIELD

LD NO. 4 PO 9-1

BY DAVID OBRIG, R. OLSEN
NAME, NOT INITIALS

TE COL. 1 JULY 81

E COL. 352 PM

True Copy
Raja A. Kavarsky
10/19/81

LABORATORY

LAB NO. 7-81-21

TYPE SAMPLE INDUSTRIAL

DATE REC'VD. 7/1/81

TIME REC'VD. 4:32 PM.

DATE COMPLETED 7/13/81 [illegible]

SUFFOLK COUNTY HEALTH SERVICES LABORATORY
CHEMICAL EXAMINATION OF WATER, SEWAGE, INDUSTRIAL WASTE

M OR FIRM NTU Circuits Inc.

DDRESS OR LOCATION 60 Dale St. W. Bab.

IN OF COLLECTION Storm drain # 7

EMARKS/INSTRUCTIONS Delivered to SCDHS LAB 4:47 PM 1 JUL 81

TEST	RESULT		TEST	RESULT mg./liter		TEST	RESULT mg./liter
CONDUCT	umho		NITRATE-N		✓	COPPER	.18
pH			NITRITE		✓	IRON	.6
TEST	RESULT m.g./liter		AMMONIA-N			MANGANESE	
ph. ALKALINITY			TKN		✓	CHROMIUM	.06
T. ALKALINITY			0-PO_4-P		✓	NICKEL	<.1
CHLORIDE					✓	ZINC	.2
FLUORIDE						MAGNESIUM	
CYANIDE			TOT. SOLIDS			CALCIUM	
			SUS. SOLIDS		✓	LEAD	<.2
SULFATE			DISS. SOLIDS		✓	CADMIUM	.19
MBAS					✓	SILVER	1.3
C.O.D.						SODIUM	
T.O.C.						POTASSIUM	
						BARIUM	
			FIELD D.O.				
			FIELD TEMP				
			FIELD pH	ph 7			
			FIELD COND.	umho			

38-112:

FIELD

LABORATORY

p. 7 of 22

LAB NO. 3 00 7-1

BY DAVID OBRIG, R. OLSEN
NAME, NOT INITIALS

TE COL. 1 July 81

ME COL. 3:50 pm

True Copy
Raja A. Karasey
10/13/81

LAB NO. 7-81-20

TYPE SAMPLE INDUSTRIAL

DATE REC'VD. 7/1/81

TIME REC'VD: 4:32 P.M.

DATE COMPLETED 7/13/81 RJ

SUFFOLK COUNTY HEALTH SERVICES LABORATORY
CHEMICAL EXAMINATION OF WATER, SEWAGE, INDUSTRIAL WASTE

ME OR FIRM NTU Circuits Inc.

DRESS OR LOCATION 60 Dale St. W. Bab.

IN OF COLLECTION Storm drain #3

EMARKS/INSTRUCTIONS Delivered to SCDOS LAB 4:47 pm 1 Jul 81

TEST	RESULT		TEST	RESULT mg./liter		TEST	RESULT mg./liter
CONDUCT	umho		NITRATE-N		✓	COPPER	7.5
H			NITRITE		✓	IRON	.8
TEST	RESULT m.g./liter		AMMONIA-N			MANGANESE	
h. ALKALINITY			TKN		✓	CHROMIUM	.06
T. ALKALINITY			0-PO_4-P		✓	NICKEL	<.1
CHLORIDE					✓	ZINC	<.1
FLUORIDE						MAGNESIUM	
CYANIDE			TOT. SOLIDS			CALCIUM	
			SUS. SOLIDS		✓	LEAD	<.2
SULFATE			DISS. SOLIDS		✓	CADMIUM	<.02
MBAS					✓	SILVER	<.02
C.O.D.						SODIUM	
T.O.C.						POTASSIUM	
						BARIUM	
			FIELD D.O.				
			FIELD TEMP				
			FIELD pH	ph 7			
			FIELD COND.	umho			

38-112:

FIELD

LABORATORY

p. 8 of 22

LAB NO. 2DO 7-1

BY DAVID OBRIG, R. OLSEN
NAME, NOT INITIALS

DATE COL. 1 JULY 81

TIME COL. 3 45 PM

True Copy
Raja A. Kavaney
10/19/81

LAB NO. 7-81-19

TYPE SAMPLE INDUSTRIAL

DATE REC'VD. 7/1/81

TIME REC'VD. 4:32 PM.

DATE COMPLETED 7/13/81 [illegible]

SUFFOLK COUNTY HEALTH SERVICES LABORATORY
CHEMICAL EXAMINATION OF WATER, SEWAGE, INDUSTRIAL WASTE

NAME OR FIRM NTU Circuits Inc.

ADDRESS OR LOCATION 60 Dale St. W. Bab.

POINT OF COLLECTION Storm drainer #2

REMARKS/INSTRUCTIONS DELIVERED TO SCOHS LAB 4 47 pm, 1 JUL. 81

TEST	RESULT		TEST	RESULT mg./liter		TEST	RESULT mg./liter
CONDUCT	umho		NITRATE-N		✓	COPPER	.26
pH			NITRITE		✓	IRON	.8
TEST	RESULT m.g./liter		AMMONIA-N			MANGANESE	
ph. ALKALINITY			TKN		✓	CHROMIUM	.09
T. ALKALINITY			0-PO_4-P		✓	NICKEL	.1
CHLORIDE					✓	ZINC	.3
FLUORIDE						MAGNESIUM	
CYANIDE			TOT. SOLIDS			CALCIUM	
			SUS. SOLIDS		✓	LEAD	<.2
SULFATE			DISS. SOLIDS		✓	CADMIUM	.50
MBAS					✓	SILVER	<.02
C.O.D.						SODIUM	
T.O.C.						POTASSIUM	
						BARIUM	
			FIELD D.O.				
			FIELD TEMP				
			FIELD pH	pH 7			
			FIELD COND.	umho			

38-112:

8204-1

FIELD

NO. 1 DO7-1

BY DAVID OBHLG + R. OLSEN
NAME, NOT INITIALS

TE COL. 1 JULY 81

ME COL. 3:40 PM

True copy
Raja A. Ramsey
10/19/81

LABORATORY

p. 9 of 22

LAB NO. 7-81-18

TYPE SAMPLE INDUSTRIAL

DATE REC'VD. 7/1/81

TIME REC'VD. 4:32 pm.

DATE COMPLETED 7/13/81 [illegible]

SUFFOLK COUNTY HEALTH SERVICES LABORATORY
CHEMICAL EXAMINATION OF WATER, SEWAGE, INDUSTRIAL WASTE

AME OR FIRM NTU Circuits Inc.

DDRESS OR LOCATION 60 Dale St. Wheatley

OINT OF COLLECTION SGNI POOL #1

EMARKS/INSTRUCTIONS DELIVERED TO SCDHS LAB 4:47 pm 1 JUL 81

TEST	RESULT		TEST	RESULT mg./liter		TEST	RESULT mg./liter
CONDUCT	umho		NITRATE-N		✓	COPPER	4.4 X 10²
pH			NITRITE		✓	IRON	4.4
TEST	RESULT m.g./liter		AMMONIA-N			MANGANESE	
ph. ALKALINITY			TKN		✓	CHROMIUM	.06
T. ALKALINITY			O-PO_4-P		✓	NICKEL	.2
CHLORIDE					✓	ZINC	1.3
FLUORIDE						MAGNESIUM	
CYANIDE			TOT. SOLIDS			CALCIUM	
			SUS. SOLIDS		✓	LEAD	1.2
SULFATE			DISS. SOLIDS		✓	CADMIUM	.06
MBAS					✓	SILVER	<.02
C.O.D.						SODIUM	
T.O.C.						POTASSIUM	
						BARIUM	
			FIELD D.O.				
			FIELD TEMP				
			FIELD pH	ph 11			
			FIELD COND.	umho			

38-112:

FIELD

O. GDO G-10

DAVID OBRIG
NAME, NOT INITIALS

O 10 JUNE 81

O 10^40 AM

True Copy
Roger A. Kavanagh
10/19/81

LABORATORY

LAB NO. 6/81-74 p. 10 of 22

TYPE SAMPLE IND

DATE REC'VD. 6/10/81 Roger

TIME REC'VD. ~ 1PM

DATE COMPLETED 6/23/81 Roger

SUFFOLK COUNTY HEALTH SERVICES LABORATORY
CHEMICAL EXAMINATION OF WATER, SEWAGE, INDUSTRIAL WASTE

OR FIRM NTU

RES OR LOCATION DALE ST. FARMINGDALE (PINELAWN)

T OF COLLECTION SD recieving process water, South side of Bld.

AR S/INSTRUCTIONS

TEST	RESULT		TEST	RESULT mg./liter		TEST	RESULT mg./liter
ONDUCT	umho		NITRATE-N		X	COPPER	8.0
pH			NITRITE			IRON	
TEST	RESULT m.g./liter		AMMONIA-N			MANGANESE	
ph. ALKALINITY			TKN		X	CHROMIUM	.04
T. ALKALINITY			O-PO_4-P		X	NICKEL	<.1
CHLORIDE					X	ZINC	<.1
FLUORIDE						MAGNESIUM	
CYANIDE			TOT. SOLIDS			CALCIUM	
			SUS. SOLIDS		X	LEAD	.4
SULFATE			DISS. SOLIDS		X	CADMIUM	.03
MBAS					X	SILVER	<.02
C.O.D.						SODIUM	
T.O.C.						POTASSIUM	
						BARIUM	
			FIELD D.O.				
			FIELD TEMP				
			FIELD pH	7			
			FIELD COND.	umho			

38-112:

FIELD

LABORATORY

LAB NO. 6-81-42 p.11 of 22

L NO. 7 DO G-4

BY DAVID OBRIG
NAME, NOT INITIALS

TYPE SAMPLE IND

DATE REC'VD. 6/4 PM

TE COL. 4 JUNE 81

TIME REC'VD. 12:30 PM

ME COL. 11:20 AM

DATE COMPLETED 6/25/81 [illegible]

True Copy
Raja A. Navarro
10/13/81

SUFFOLK COUNTY HEALTH SERVICES LABORATORY
CHEMICAL EXAMINATION OF WATER, SEWAGE, INDUSTRIAL WASTE

AM OR FIRM N.T.U. Circuits, Inc.

DDRESS OR LOCATION 60 DALE ST. W. BAB.

OI T OF COLLECTION S.D. puddler recieving material from 3" PVC pipe, between

EMARKS/INSTRUCTIONS garage doors, 60 West of Dale St.

TEST	RESULT		TEST	RESULT mg./liter		TEST	RESULT mg./liter
CONDUCT.	umho		NITRATE-N		X	COPPER	6.0
pH			NITRITE			IRON	
TEST	RESULT m.g./liter		AMMONIA-N			MANGANESE	
ph. ALKALINITY			TKN		X	CHROMIUM	<.02
T. ALKALINITY			0-PO_4-P		X	NICKEL	<.1
CHLORIDE						ZINC	
FLUORIDE						MAGNESIUM	
CYANIDE			TOT. SOLIDS			CALCIUM	
			SUS. SOLIDS		X	LEAD	.6
SULFATE			DISS. SOLIDS			CADMIUM	
MBAS						SILVER	
C.O.D.						SODIUM	
T.O.C.						POTASSIUM	
						BARIUM	
			FIELD D.O.				
			FIELD TEMP				
			FIELD pH	ph 7			
			FIELD COND.	umho			

38-112:

FIELD

LABORATORY

p. 12 of 22

NO. EJ 4-4

BY Youngblood
NAME, NOT INITIALS

E COL. 6-4-80

COL. 10:30 AM

True copy
Roja A. Lavery
10/13/81

LAB NO. 6-80-28

TYPE SAMPLE IND

DATE REC'VD. 6/4/80

TIME REC'VD. 11:15

DATE COMPLETED 6/7/80 Roja

SUFFOLK COUNTY HEALTH SERVICES LABORATORY
CHEMICAL EXAMINATION OF WATER, SEWAGE, INDUSTRIAL WASTE

OR FIRM NTU Laboratories Inc.

DRESS OR LOCATION 60 Dale St., W. Babylon

N OF COLLECTION storm drain #3 (slotted cover)

MARKS/INSTRUCTIONS

	TEST	RESULT		TEST	RESULT mg./liter		TEST	RESULT mg./liter
	CONDUCT	umho		NITRATE-N		X	COPPER	2.9
X	pH	5.8		NITRITE-N		X	IRON	.92
	TEST	RESULT m.g./liter		AMMONIA-N			MANGANESE	
	ph. ALKALINITY			TKN		X	CHROMIUM	<.02
	T. ALKALINITY			O-PO_4-P			NICKEL	
	CHLORIDE						ZINC	
	FLUORIDE						MAGNESIUM	
	CYANIDE			TOT. SOLIDS			CALCIUM	
				SUS. SOLIDS		X	LEAD	.2
	SULFATE			DISS. SOLIDS			CADMIUM	
	MBAS						SILVER	
	C.O.D.						SODIUM	
	T.O.C.						POTASSIUM	
							BARIUM	
				FIELD D.O.		X	Cr^{+6}	—
				FIELD TEMP				
				FIELD pH				
				FIELD COND.	umho			

38-112:

FIELD

LABORATORY

p. 13 of 22

NO. EJ 4-3

BY Youngblood
NAME, NOT INITIALS

TE COL. 6-4-80

ME COL. 10:15 AM

True Copy
Raja A. Kavarry
10/13/81

LAB NO. 6-80-27

TYPE SAMPLE IND

DATE REC'VD. 6/14/80

TIME REC'VD: 11:15

DATE COMPLETED 6/7/80 Raja

SUFFOLK COUNTY HEALTH SERVICES LABORATORY
CHEMICAL EXAMINATION OF WATER, SEWAGE, INDUSTRIAL WASTE

E OR FIRM NTU Laboratories, Inc.

DDRESS OR LOCATION 60 Dale St., W. Babylon

T OF COLLECTION Storm drain #7 (Slotted cover)

EMARKS/INSTRUCTIONS

TEST	RESULT		TEST	RESULT mg./liter		TEST	RESULT mg./liter
CONDUCT	umho		NITRATE-N		X	COPPER	.19
pH	6.2		NITRITE-N		X	IRON	.65
TEST	RESULT m.g./liter		AMMONIA-N			MANGANESE	
ph. ALKALINITY			TKN		X	CHROMIUM	.02
T. ALKALINITY			0-PO_4-P			NICKEL	
CHLORIDE						ZINC	
FLUORIDE						MAGNESIUM	
CYANIDE			TOT. SOLIDS			CALCIUM	
			SUS. SOLIDS		X	LEAD	<.2
SULFATE			DISS. SOLIDS			CADMIUM	
MBAS						SILVER	
C.O.D.						SODIUM	
T.O.C.						POTASSIUM	
						BARIUM	
			FIELD D.O.		X	Cr+6	—
			FIELD TEMP				
			FIELD pH				
			FIELD COND.	umho			

FIELD

NO. 203

BY Felice, J.P.
NAME, NOT INITIALS

COL. 12/11/79

COL. 11:05AM

NOTE Cr+6

True copy R. Kearney 10/13/81

LABORATORY

LAB NO. 12-79-110 p.14 of 22

TYPE SAMPLE Ind.

DATE REC'VD. 12/11

TIME REC'VD. NOON

DATE COMPLETED 12/13 h except Cr+6 1/15/80 - Cr+6

SUFFOLK COUNTY HEALTH SERVICES LABORATORY
CHEMICAL EXAMINATION OF WATER, SEWAGE, INDUSTRIAL WASTE

MAJOR FIRM N.T.V. LABS

ADDRESS OR LOCATION 50 Dale Street, W. Babylon

POINT OF COLLECTION Storm Drain #3 - At the End of the Building furthest from Dale St. (Green Stain on Ground leading to this Drain.)

REMARKS/INSTRUCTIONS

TEST	RESULT		TEST	RESULT mg./liter		TEST	RESULT mg./liter
CONDUCT	umho		NITRATE-N		✓	COPPER	6.9
✓ pH	8.6		NITRITE-N		✓	IRON	.57
TEST	RESULT m.g./liter		AMMONIA-N			MANGANESE	
ph. ALKALINITY			TKN		✓	CHROMIUM	.24
T. ALKALINITY			O-PO_4-P		✓	NICKEL	<0.1
CHLORIDE					✓	ZINC	.05
FLUORIDE						MAGNESIUM	
CYANIDE		✓	TOT. SOLIDS	167.		CALCIUM	
		✓	SUS. SOLIDS	24.	✓	LEAD	0.3
SULFATE		✓	DISS. SOLIDS	143.	✓	CADMIUM	<.02
MBAS					✓	SILVER	<.02
C.O.D.						SODIUM	
T.O.C.						POTASSIUM	
						BARIUM	
			FIELD D.O.				
			FIELD TEMP			Hex Cr	.15
			FIELD pH				
			FIELD COND.	umho			

FIELD

LABORATORY

p. 15 of 22

NO. #202

BY FELICE, J.P.
NAME, NOT INITIALS

COL. 12/11/79

COL. 10:55 AM

True Copy
Raja A. Kavasery
10/19/81

LAB NO. 12-79-109

TYPE SAMPLE Ind.

DATE REC'VD. 12/11

TIME REC'VD. NOON

DATE COMPLETED 12/13 JC

SUFFOLK COUNTY HEALTH SERVICES LABORATORY
CHEMICAL EXAMINATION OF WATER, SEWAGE, INDUSTRIAL WASTE

NAME OR FIRM N.T.U. LABS

ADDRESS OR LOCATION 50 Dale Street W. Babylon

POINT OF COLLECTION Storm Drain #2 - Between side

REMARKS/INSTRUCTIONS Delivery Doors - new Pipe Leading To This Storm Drain - Heavy Flow At This Time From Pipe.

TEST	RESULT		TEST	RESULT mg./liter		TEST	RESULT mg./liter
CONDUCT	umho		NITRATE-N		✓	COPPER	7.2
✓ pH	7.05		NITRITE-N		✓	IRON	.27
TEST	RESULT m.g./liter		AMMONIA-N			MANGANESE	
Ph. ALKALINITY			TKN		✓	CHROMIUM	<.02
T. ALKALINITY			O-PO_4-P		✓	NICKEL	0.1
CHLORIDE					✓	ZINC	.03
FLUORIDE						MAGNESIUM	
CYANIDE		✓	TOT. SOLIDS	299.		CALCIUM	
		✓	SUS. SOLIDS	20.	✓	LEAD	<0.2
SULFATE		✓	DISS. SOLIDS	279.	✓	CADMIUM	<.02
MBAS					✓	SILVER	<.02
C.O.D.						SODIUM	
T.O.C.						POTASSIUM	
						BARIUM	
			FIELD D.O.				
			FIELD TEMP				
			FIELD pH				
			FIELD COND.	umho			

FIELD

LABORATORY

LAB NO. 12-79-108 p.16 of 22

TYPE SAMPLE Ind.

DATE REC'VD. 12/11

TIME REC'VD. NOON

DATE COMPLETED 12/13 Jc

...NO. #201

...BY Felice, J.P.
NAME, NOT INITIALS

...TE COL. 12/11/79

...ME COL. 10:45 AM

True copy
Raja A Kavaney
10/19/81

SUFFOLK COUNTY HEALTH SERVICES LABORATORY
CHEMICAL EXAMINATION OF WATER, SEWAGE, INDUSTRIAL WASTE

...OR FIRM N. T. U. LABS

...DRESS OR LOCATION 50 Dale St. West BABYLON

...OF COLLECTION Storm Drain #1 Nearest Dale St. near

...EMARKS/INSTRUCTIONS Side Entrance Door - (Slight Flow from inlet Pipe) at time of Collection).

TEST	RESULT		TEST	RESULT mg./liter		TEST	RESULT mg./liter
CONDUCT	umho		NITRATE-N		✓	COPPER	.07
✓ pH	6.9		NITRITE-N		✓	IRON	.37
TEST	RESULT m.g./liter		AMMONIA-N			MANGANESE	
ph. ALKALINITY			TKN		✓	CHROMIUM	<.02
T. ALKALINITY			0-PO_4-P		✓	NICKEL	<0.1
CHLORIDE					✓	ZINC	.09
FLUORIDE						MAGNESIUM	
CYANIDE		✓	TOT. SOLIDS	101.		CALCIUM	
		✓	SUS. SOLIDS	13.	✓	LEAD	<0.2
SULFATE		✓	DISS. SOLIDS	88.	✓	CADMIUM	.07
MBAS					✓	SILVER	1.1
C.O.D.						SODIUM	
T.O.C.						POTASSIUM	
						BARIUM	
			FIELD D.O.				
			FIELD TEMP				
			FIELD pH				
			FIELD COND.	umho			

FIELD

201

Y Olsen
NAME, NOT INITIALS

COL. 10-2-79

COL. 9:40 AM.

LABORATORY

LAB NO. 10-79-31 p.17 of 22

TYPE SAMPLE Ind.

DATE REC'VD. 10/2

TIME REC'VD. 11:45

DATE COMPLETED 10/5 SQ

True Copy Raja A. Karasey 10/19/81

SUFFOLK COUNTY HEALTH SERVICES LABORATORY
CHEMICAL EXAMINATION OF WATER, SEWAGE, INDUSTRIAL WASTE

E OR FIRM NTU Labs

RESS OR LOCATION 60 Dale St, West Babylon

NT OF COLLECTION SD # 7 = receiving active discharge

MARKS/INSTRUCTIONS through roof drain pipe - discharge of sufficient magnitude to eliminate roof run off as source

TEST	RESULT		TEST	RESULT mg./liter		TEST	RESULT mg./liter
CONDUCT	umho		NITRATE-N		✓	COPPER	0.06
H	6.6		NITRITE-N		✓	IRON	0.3
TEST	RESULT m.g./liter		AMMONIA-N			MANGANESE	
h. ALKALINITY			TKN		✓	CHROMIUM	0.03
T. ALKALINITY			O-PO_4-P		✓	NICKEL	<0.2
CHLORIDE					✓	ZINC	0.08
FLUORIDE						MAGNESIUM	
CYANIDE			TOT. SOLIDS			CALCIUM	
			SUS. SOLIDS		✓	LEAD	<0.1
SULFATE			DISS. SOLIDS		✓	CADMIUM	0.04
MBAS					✓	SILVER	0.36
C.O.D.						SODIUM	
T.O.C.						POTASSIUM	
						BARIUM	
			FIELD D.O.				
			FIELD TEMP				
			FIELD pH				
			FIELD COND.	umho			

38-112:

FIELD

D O. 200

BY Ohsen
NAME, NOT INITIALS

TE COL. 10-2-79

IE COL. 9:15 AM.

True Copy
Raja A. Karaxy
10/13/81

LABORATORY

LAB NO. 10-79-30 p.18 of 22

TYPE SAMPLE Ind.

DATE REC'VD. 10/2

TIME REC'VD. 11:45

DATE COMPLETED 10/5 SQ

SUFFOLK COUNTY HEALTH SERVICES LABORATORY
CHEMICAL EXAMINATION OF WATER, SEWAGE, INDUSTRIAL WASTE

M OR FIRM NTU Labs.

DRESS OR LOCATION 60 Dale St,

OIN OF COLLECTION SPA - full with brown

EMARKS/INSTRUCTIONS liquid - receiving constant discharge from building

TEST	RESULT		TEST	RESULT mg./liter		TEST	RESULT mg./liter
CONDUCT	umho		NITRATE-N		✓	COPPER	55.
pH	3.2		NITRITE-N		✓	IRON	10.6
TEST	RESULT m.g./liter		AMMONIA-N			MANGANESE	
ph. ALKALINITY			TKN		✓	CHROMIUM	0.04
T. ALKALINITY			O-PO_4-P		✓	NICKEL	<0.2
CHLORIDE					✓	ZINC	0.21
FLUORIDE						MAGNESIUM	
CYANIDE		✓	TOT. SOLIDS	4031.		CALCIUM	
		✓	SUS. SOLIDS	48.	✓	LEAD	4.6
SULFATE		✓	DISS. SOLIDS	3983.	✓	CADMIUM	<0.02
MBAS					✓	SILVER	<0.02
C.O.D.						SODIUM	
T.O.C.						POTASSIUM	
						BARIUM	
			FIELD D.O.				
			FIELD TEMP				
			FIELD pH				
			FIELD COND.	umho			

38-112

FIELD

LD NO. 206

L BY OLSEN
NAME, NOT INITIALS

TE COL. 09-25-79

ME COL. 11:10 AM.

True copy
Ralph A. Kavanagh
10/13/81

LABORATORY

LAB NO. 9-79-353 p.19 of 22

TYPE SAMPLE Ind

DATE REC'VD. 9/25

TIME REC'VD. NOON

DATE COMPLETED 9/26 SQ

SUFFOLK COUNTY HEALTH SERVICES LABORATORY
CHEMICAL EXAMINATION OF WATER, SEWAGE, INDUSTRIAL WASTE

AME OR FIRM NTU Laboratories

DDRESS OR LOCATION 60 Aule St, West Babylon

OINT OF COLLECTION ~~SB~~ storm drain #3

EMARKS/INSTRUCTIONS receives discharge from building

	TEST	RESULT		TEST	RESULT mg./liter		TEST	RESULT mg./liter
	CONDUCT	umho		NITRATE-N		✓	COPPER	0.1
✓	pH	6.7		NITRITE-N		✓	IRON	0.5
	TEST	RESULT m.g./liter		AMMONIA-N			MANGANESE	
	ph. ALKALINITY			TKN		✓	CHROMIUM	0.04
	T. ALKALINITY			O-PO_4-P		✓	NICKEL	<0.1
	CHLORIDE					✓	ZINC	<0.1
	FLUORIDE						MAGNESIUM	
	CYANIDE		✓	TOT. SOLIDS	123.		CALCIUM	
			✓	SUS. SOLIDS	5.	✓	LEAD	<0.2
	SULFATE		✓	DISS. SOLIDS	118.	✓	CADMIUM	0.07
	MBAS					✓	SILVER	<0.02
✓	C.O.D. LIMIT-10						SODIUM	
	T.O.C.						POTASSIUM	
							BARIUM	
				FIELD D.O.				
				FIELD TEMP				
				FIELD pH				
				FIELD COND.	umho			

FIELD

NO. 205

Y Olsen
NAME, NOT INITIALS

TE COL. 09-25-79

E COL. 11:AM.

True Copy
Raja A. Karmarty
10/10/81

LABORATORY

LAB NO. 9-79-352 p.20 of 22

TYPE SAMPLE Ind.

DATE REC'VD. 9/25

TIME REC'VD. NOON

DATE COMPLETED 9/26 SK

exc. SO_4^{-2}

SUFFOLK COUNTY HEALTH SERVICES LABORATORY
CHEMICAL EXAMINATION OF WATER, SEWAGE, INDUSTRIAL WASTE

E OR FIRM NTU Laboratories

RESS OR LOCATION 60 Dale St, West Babylon.

T OF COLLECTION Storm Drain #2.

AR S/INSTRUCTIONS receives overflow from SP-A.

TEST	RESULT		TEST	RESULT mg./liter		TEST	RESULT mg./liter
CONDUCT	umho		NITRATE-N		✓	COPPER	9.2
pH	4.3		NITRITE-N		✓	IRON	2.1
TEST	RESULT m.g./liter		AMMONIA-N			MANGANESE	
h. ALKALINITY			TKN		✓	CHROMIUM	0.02
. ALKALINITY			0-PO_4-P		✓	NICKEL	0.15
HLORIDE					✓	ZINC	<0.1
LU RIDE						MAGNESIUM	
YA DE		✓	TOT. SOLIDS	206.		CALCIUM	
		✓	SUS. SOLIDS	5	✓	LEAD	<0.2
LF TE	28.	✓	DISS. SOLIDS	201.	✓	CADMIUM	<0.02
AS					✓	SILVER	<0.02
.D.	1.0×10^2					SODIUM	
.C						POTASSIUM	
						BARIUM	
			FIELD D.O.				
			FIELD TEMP				
			FIELD pH				
			FIELD COND.	umho			

FIELD

LD NO. 209

L Y Olsen
NAME, NOT INITIALS

T COL. 09-20-79

ME OL. 3:10 PM

True Copy
Raja A. Kenny
10/13/81

LABORATORY

LAB NO. 9-79-301 (p. 21 of 22

TYPE SAMPLE Ind.

DATE REC'VD. 9/20

TIME REC'VD. 3:30 PM

DATE COMPLETED 9/26 SQ

SUFFOLK COUNTY HEALTH SERVICES LABORATORY
CHEMICAL EXAMINATION OF WATER, SEWAGE, INDUSTRIAL WASTE

ME OR FIRM NTU Labs.

DD SS OR LOCATION Dale St, West Babylon

INT OF COLLECTION overflow from "sanitary" pool to

MARKS/INSTRUCTIONS storm drain (Pool receives PCB waste from NTU).

TEST	RESULT		TEST	RESULT mg./liter		TEST	RESULT mg./liter
ONDUCT	umho		NITRATE-N		✓	COPPER	32
✓ pH	3.6		NITRITE-N		✓	IRON	28.
TEST	RESULT m.g./liter		AMMONIA-N			MANGANESE	
ph. ALKALINITY			TKN		✓	CHROMIUM	0.03
T. ALKALINITY			O-PO_4-P		✓	NICKEL	<0.1
HLORIDE					✓	ZINC	0.15
FLUORIDE						MAGNESIUM	
YANIDE			TOT. SOLIDS			CALCIUM	
			SUS. SOLIDS		✓	LEAD	<0.2
SULFATE			DISS. SOLIDS		✓	CADMIUM	0.07
BAS					✓	SILVER	<.02
C.O.D.						SODIUM	
O.C.						POTASSIUM	
						BARIUM	
			FIELD D.O.				
			FIELD TEMP				
			FIELD pH				
			FIELD COND.	umho			

4-3

38-112

FIELD

LABORATORY

D NO. 100

BY Louis J. Copertino
NAME, NOT INITIALS

COL. 7/10/79

COL. 9:00am

True Copy
Raja A. Karamy
10/19/81

LAB NO. 7-79-129 p. 22 of 22

TYPE SAMPLE IND-

DATE REC'VD. 7/10

TIME REC'VD. 12:30

DATE COMPLETED 7/12 SQ

SUFFOLK COUNTY HEALTH SERVICES LABORATORY
CHEMICAL EXAMINATION OF WATER, SEWAGE, INDUSTRIAL WASTE

AME OR FIRM NTU LABORATORIES INC

DRESS OR LOCATION 60 DALE ST. W. BABYLON

OINT OF COLLECTION ALKALINE CLEANER RINSE

EMARKS/INSTRUCTIONS

TEST	RESULT		TEST	RESULT mg./liter		TEST	RESULT mg./liter
CONDUCT	umho		NITRATE-N		✓	COPPER	0.12
✓ pH	8.9		NITRITE-N		✓	IRON	0.2
TEST	RESULT m.g./liter		AMMONIA-N			MANGANESE	
ph. ALKALINITY			TKN		✓	CHROMIUM	<.02
T. ALKALINITY			0-PO_4-P		✓	NICKEL	<0.1
CHLORIDE					✓	ZINC	<0.1
FLUORIDE						MAGNESIUM	
CYANIDE			TOT. SOLIDS			CALCIUM	
			SUS. SOLIDS		✓	LEAD lamp not working	
SULFATE			DISS. SOLIDS		✓	CADMIUM	<.02
MBAS					✓	SILVER	<.02
C.O.D.						SODIUM	
T.O.C.						POTASSIUM	
						BARIUM	
			FIELD D.O.		✓	Cr+6	<.02
			FIELD TEMP				
			FIELD pH				
			FIELD COND.	umho			

204-3

38-112-

Appendix 1.5-1

United States Department of Agriculture

Soil Conservation Service

127 East Main Street
Riverhead, New York 11901

March 13, 1986

Mr. William L. Going, Manager
Environmental Assessment Studies
EA Science and Technology
R.D. 2, Box 91
Middletown, New York 10940

Dear Mr. Going:

This office has not compiled any information on the number of acres irrigated based on specific locations in Suffolk County. The 1982 Census of Agriculture estimates that 23,232 acres are irrigated on 500 farms, however, the specific locations of this acreage is not readily available.

The major source of irrigation water in Suffolk County is groundwater through wells. There are literally thousands of wells scattered throughout the county. To locate wells within a three mile radius of the inactive hazardous waste sites would be an impossible task.

Just to inventory the irrigated acres in proximity to these sites would be very time consuming. I do not have the manpower nor the time at present to accomplish such a task.

I would be more than willing to provide you with access to our aerial photographs, soil maps, topographic surveys and other technical information which might be helpful to you in making this inventory.

If you have any questions or I may be of further assistance, call me at 516-727-2315.

Sincerely,

Allan S. Connell

Allan S. Connell,
District Conservationist

3/28/86 Mr. Connell says that the 23,232 ac/500 farms represent the vast majority ... up to 90% ... for Suffolk Co. and that I can assume all irrigate ... so I will convert ag. land on color plates (land use) to irrigated acres.
William L. Going

Appendix 1.5-2

EA SCIENCE AND TECHNOLOGY
A Division of EA Engineering, Science, and Technology, Inc.

COMMUNICATIONS RECORD FORM

Distribution: ( ) Suffolk Co General ( ) _____
( ) _____ ( ) _____
( ) Author

Person Contacted: Mr. Dan Fricke Date: 4-7-86

Phone Number: 516 727 7850 Title: Coop Ext. Ag. Agent

Affiliation: Suffolk Co. Coop Ext. Assn. Type of Contact: Phone

Address: 264 Griffing Ave. Riverhead NY Person Making Contact: Bond

Communications Summary: I asked Dan questions about irrigation practices in Suffolk Co. i.e. could Coop Ext. identify sources of irrigation water (wells + surface) and tell me for all irrigated ~~acreage~~ acreage... which was in food production or dairy farms?

He said that all irrigation wells were supposed to be registered with the State and that perhaps SCDHS had the maps to indicate location and number (#) (Joe Bair?) or (Steve Carey)

* He said there was no surface water used for irrigation on the Island.

He said that once we had located all the wells within required distance of sites; we would have to talk to Coop Ext about each well to find out about the use of the land; very time consuming process.

(see over for additional space)

Signature: William Gorny

Appendix 1.5-3

EA SCIENCE AND TECHNOLOGY
A Division of EA Engineering, Science, and Technology, Inc.

COMMUNICATIONS RECORD FORM

Distribution: ( ) Suffolk Co. General Files
( ) _____, ( ) _____
( ) Author

Person Contacted: Steve Carey Date: 4-7-86

Phone Number: 516 348 2893 Title: Chief

Affiliation: SCDHS Groundwater Section Type of Contact: Phone

Address: 225 Rabro Dr. Hauppauge, NY Person Making Contact: Bud Goring

Communications Summary: I asked him questions about sources of irrigation water for farmland in food production ---

Steve said wells greater than 45 gpm were registered by NYSDEC Reg 1 except that farms were mostly exempted.

He suggested I contact Doug Pica NYSDEC for information.

(see over for additional space)

Signature: William Goring

Appendix 1.5-4

EA SCIENCE AND TECHNOLOGY
A Division of EA Engineering, Science, and Technology, Inc.

COMMUNICATIONS RECORD FORM

Distribution: ( ) Suffolk Co. General Files ( ) _____
( ) _____, ( ) _____
( ) Author

Person Contacted: Mr. Doug Pica Date: 4-7-86

Phone Number: 516 751-7900 Title: _____

Affiliation: NYSDEC Reg 1 Water Unit Type of Contact: Phone

Address: Stonybrook NY Person Making Contact: Bud Hong

Communications Summary: I asked questions about irrigation practices on Long Island and about regulations of wells (irrigation supply).

Doug said DEC regulated wells that supplied irrigation water to golf courses but did not regulate any farm supply wells because they are exempted from regulation. He therefore has no info on farmland irrigation sources.

(see over for additional space)

Signature: William Hong

EA SCIENCE AND TECHNOLOGY
A Division of EA Engineering, Science, and Technology, Inc.

Appendix 1.5-5

COMMUNICATIONS RECORD FORM

Distribution: ( ) _____, ( ) _____
( ) _____, ( ) _____
( ) Author

Person Contacted: Charles Guthrie **Date:** 9/17/86

Phone Number: (516) 751-7900 **Title:** Regional Fisheries Manager

Affiliation: NYSDEC Region I **Type of Contact:** phone

Address: SUNY Campus - Bldg 40 Stony Brook, NY 11794 **Person Making Contact:** L. Rogers

Communications Summary: Mr Guthrie stated that he knew of no use for Nesuntague Creek.

(see over for additional space)

Signature: Lori Rogers

EA SCIENCE AND TECHNOLOGY
A Division of EA Engineering, Science, and Technology, Inc.

Appendix 1.5-6

COMMUNICATIONS RECORD FORM

Distribution: ( ) DEC63A, ( ) _____
( ) _____, ( ) _____
( ) Author

Person Contacted: John Ozard Date: 3-6-86

Phone Number: 5184397486 Title: Sr. Wildlife Biologist

Affiliation: NYS DEC Type of Contact: Phone

Address: Delmar NY Person Making Contact: W. Going

Communications Summary: Called John for clarification of the letter, dated 26 February 1986, regarding "significant habitats"...

Q. Don't see any reference to Federally listed threatened or Endangered spp. on any of the 42 site locator maps you sent both w/ your letter... does this mean there is no habitat of concern for these spp.? A. yes... there is no critical habitat for (Federal spp) at any of the sites being examined.

Q. Are all the wetlands on LI in the vicinity of our sites (refer to locator maps) "coastal" wetlands? A. Yes. They all have varying amount of salt being that near the Sound or the Ocean, to be considered coastal wetlands... also refer to the ("Natural Heritage") wetlands marked in blue.

(see over for additional space)

Signature: William Going

EA SCIENCE AND TECHNOLOGY
A Division of EA Engineering, Science, and Technology, Inc.

Appendix 1.5-7

COMMUNICATIONS RECORD FORM

Distribution: ( ) NTU Circuits, Inc., ( ) _____
( ) _____, ( ) _____
( ) Author

Person Contacted: Gil Hanse Date: 9/19/86

Phone Number: 5169573069 Title: Chief Fire Marshal

Affiliation: Town of Babylon Type of Contact: Phone

Address: 200 East Sunrise Hwy Person Making Contact: Going
Lindenhurst NY 11757

Communications Summary: I explained the Phase I investigation process to Mr Hanse, and asked him if the NTU site (former uranium location) at 60 Dale St. in the Town of Babylon could be considered an imminent threat from fire or explosion.

He said No. He said he couldn't certify that it (the site) was either type of threat; certainly not imminent.

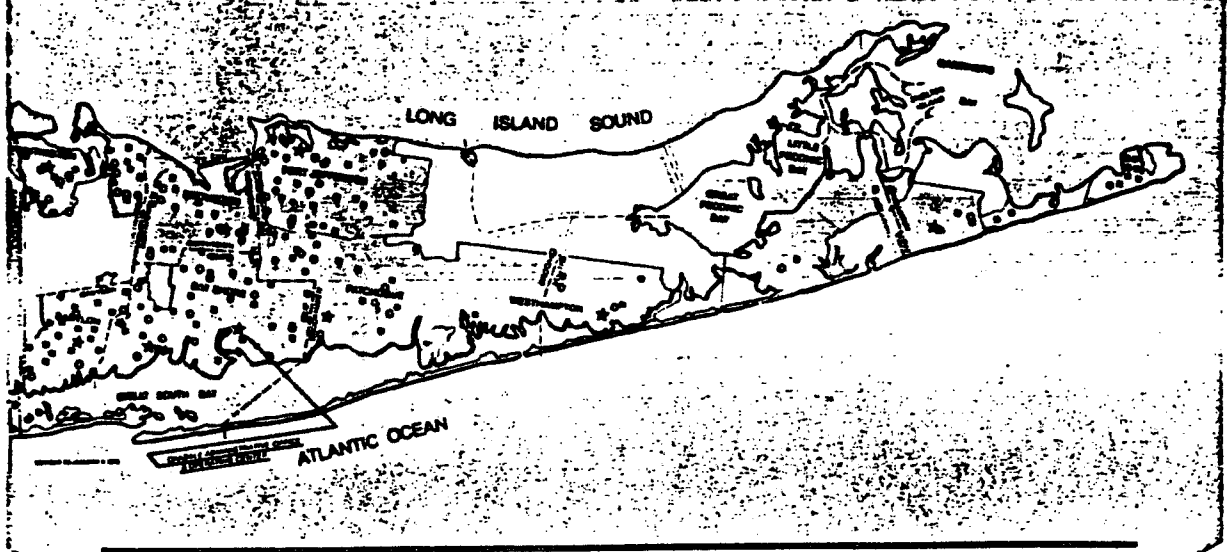
(see over for additional space)

Signature: William Going

Appendix 1.5-8

p. 1 of 3

Communities Served:



SCWA SERVICE AREAS ■ WELL FIELD & PUMP STATIONS ★ COMMERCIAL OFFICES ○ STORAGE FACILITY

BABYLON DISTRICT
Amity Harbor
Amityville
Babylon
Copiague
Deer Park
Dix Hills
Lindenhurst
North Amityville
North Babylon
North Lindenhurst
Pinelawn
West Babylon
Wheatley Heights
Wyandanch

BAY SHORE DISTRICT
Bay Shore
Brentwood
Brightwaters
Central Islip
East Islip
Edgewood
Great River
Islip
Islip Terrace
North Bay Shore
North Great River
Oakdale
West Bay Shore
West Islip

HUNTINGTON DISTRICT
Asharoken
Centerport
Cold Spring Harbor
Commack
Crab Meadow
East Huntington
East Neck
East Northport
Eatons Neck
Fort Salonga
Halesite
Huntington
Huntington Bay
Huntington Station
Lloyd Harbor
Northport

EAST HAMPTON DISTRICT
Amagansett
East Hampton
Freetown
Montauk
North Sea
Sag Harbor
Southampton

PATCHOGUE DISTRICT
Bayport
Bellport
Blue Point
Bohemia
Brookhaven
Coram
East Holbrook*
East Patchogue
Farmingville
Gordon Heights
Holbrook
Holtsville
Lakeland
Lake Ronkonkoma
Mastic
Mastic Beach
Medford
North Bellport
North Patchogue
Patchogue
Ronkonkoma
Sayville
Selden
Shirley
South Centereach
South Holbrook
South Yaphank
West Bellport
West Ronkonkoma
West Sayville
Yaphank

PORT JEFFERSON DISTRICT
Belle Terre
Centereach
Coram
East Setauket
Lake Grove
Middle Island
Miller Place
Mount Sinai
North Centereach
North Selden
Poquott
Port Jefferson
Port Jefferson Station
Ridge
Rocky Point
Setauket
South Setauket
Sound Beach
South Stony Brook
Stony Brook*
Strongs Neck
Terryville

SMITHTOWN DISTRICT
East Commack
Flowerfield*
Hauppauge
Kings Park
Nesconset
Saint James*
San Remo*
Smithtown
South Hauppauge
West St. James
West Smithtown*
Village of Head of The Harbor
Village of The Branch

WESTHAMPTON DISTRICT
Center Moriches
East Moriches
Eastport
East Quogue
Moriches
South Manor
Quiogue
Quogue
Westhampton
Westhampton Beach

* Included in Wholesale Water District

p.2 of 3

SUFFOLK COUNTY WATER AUTHORITY

Oakdale, New York

ACTIVE SERVICES

December 1985

DISTRICT OFFICES	1983	1984	1985	Increase or Decrease 1985/84
BABYLON	53 647	53 995	54 655	660
BAY SHORE	46 846	47 269	47 830	561
PATCHOGUE	49 408	51 412	55 104*	3692
HUNTINGTON	28 303	28 530	28 794	264
PORT JEFFERSON	32 881	33 524	34 440	916
SMITHTOWN	22 832	23 257	23 641	384
WESTHAMPTON	4 089	4 451	4 984	533
EAST HAMPTON	10 245	10 523	10 841	318
TOTAL FOR AUTHORITY	248 251	252 961	260 289	7328

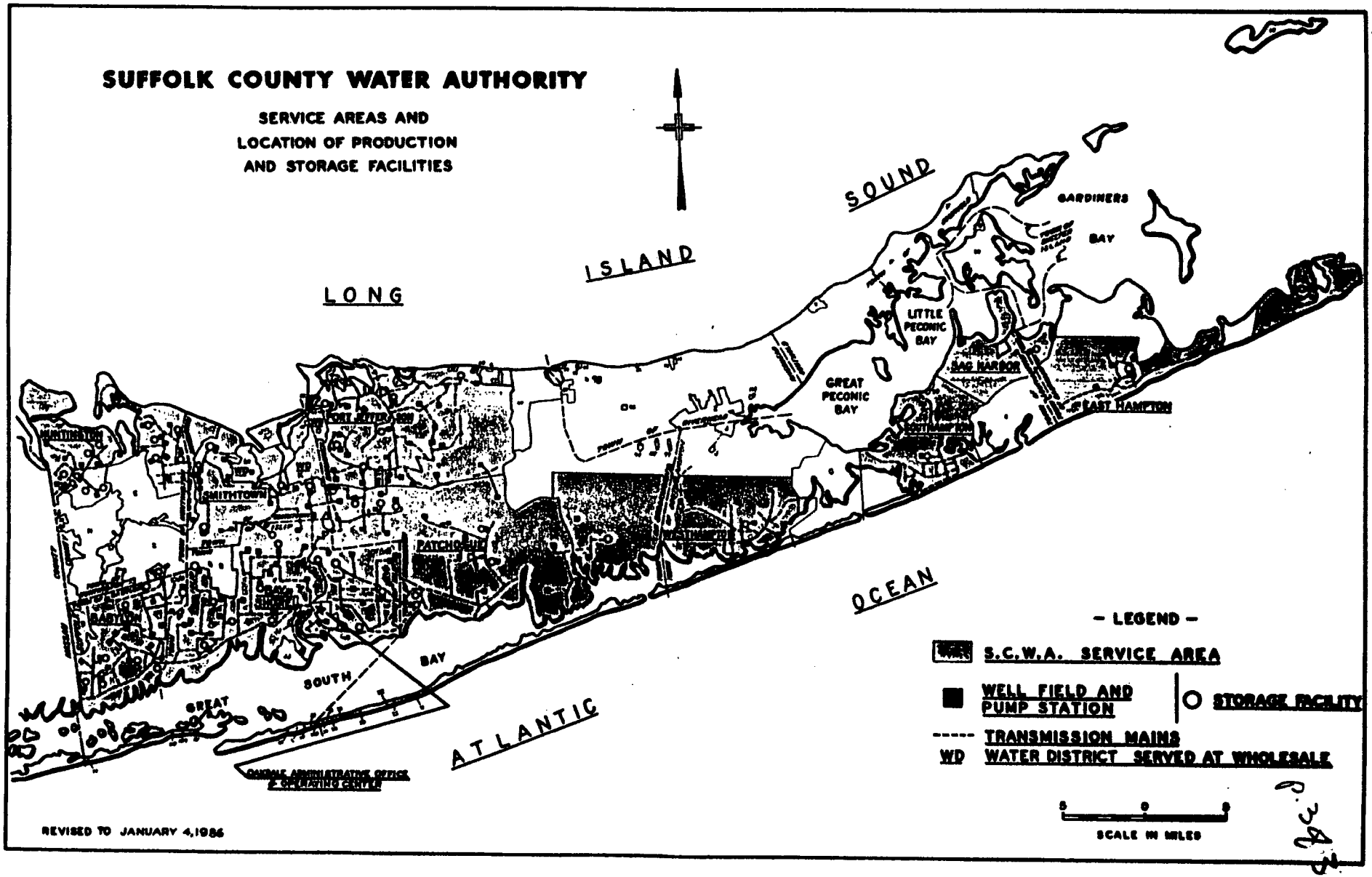
*Includes 970 Active Services Acquired from Shirley Water Works Co. 3/29/85

cc: Messrs. Hazlitt, Hanrahan, Sidoti, Schickler, Koehler, Dugan, Daly and Cannon
jh - 2/4/86

SP 3/24

SUFFOLK COUNTY WATER AUTHORITY

SERVICE AREAS AND
LOCATION OF PRODUCTION
AND STORAGE FACILITIES



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Appendix 1.5-9

LAND USE

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- 1981

Quantification and Analysis of Land Use for Nassau and Suffolk Counties

AREAWIDE
WASTE TREATMENT
MANAGEMENT

December 1982

Long Island Regional Planning Board

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LEGEND

RESIDENTIAL

1 D.U. & Less/Acre (low density)

2–4 D.U./Acre

5–10 D.U./Acre

11 D.U. & Over/Acre (high density)

Commercial

Commercial Recreation

Industrial

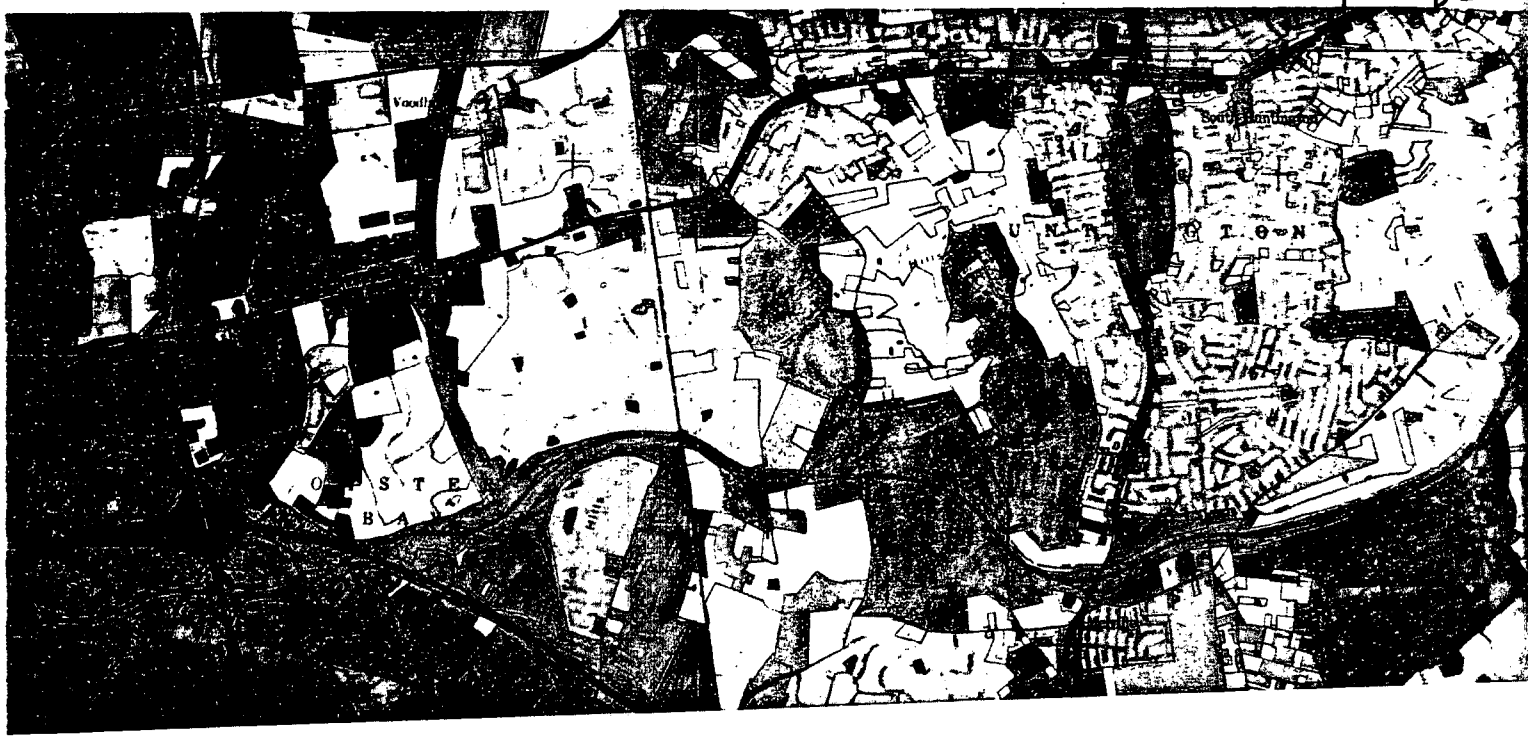
Institutional

Open Space & Recreational

Agricultural

Transportation & Utilities

Vacant



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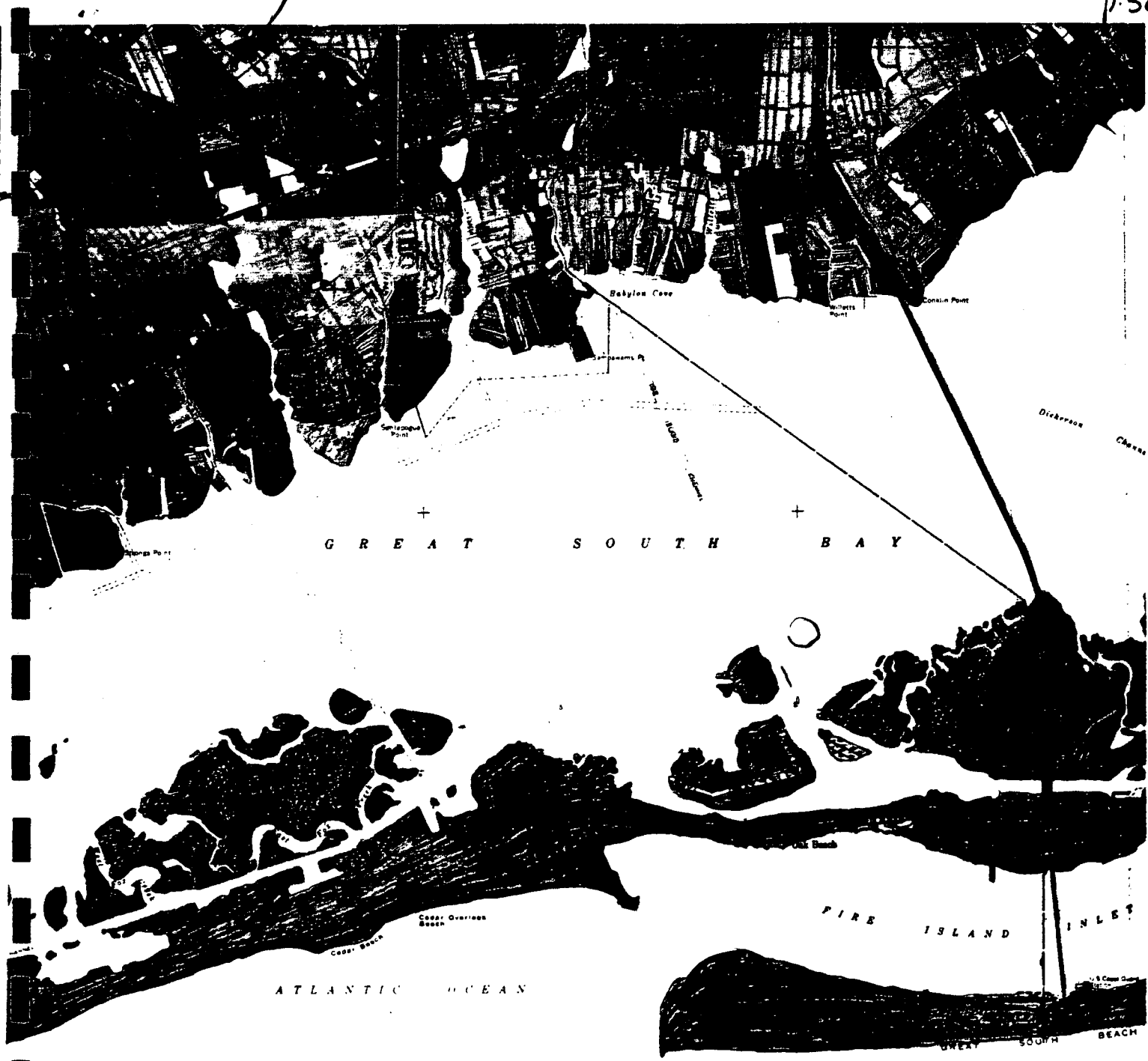
Babylon Cove
Conklin Point
Dickerson
GREAT SOUTH BAY
FIRE ISLAND INLET
Cedar Beach
ATLANTIC OCEAN
GREAT SOUTH BEACH

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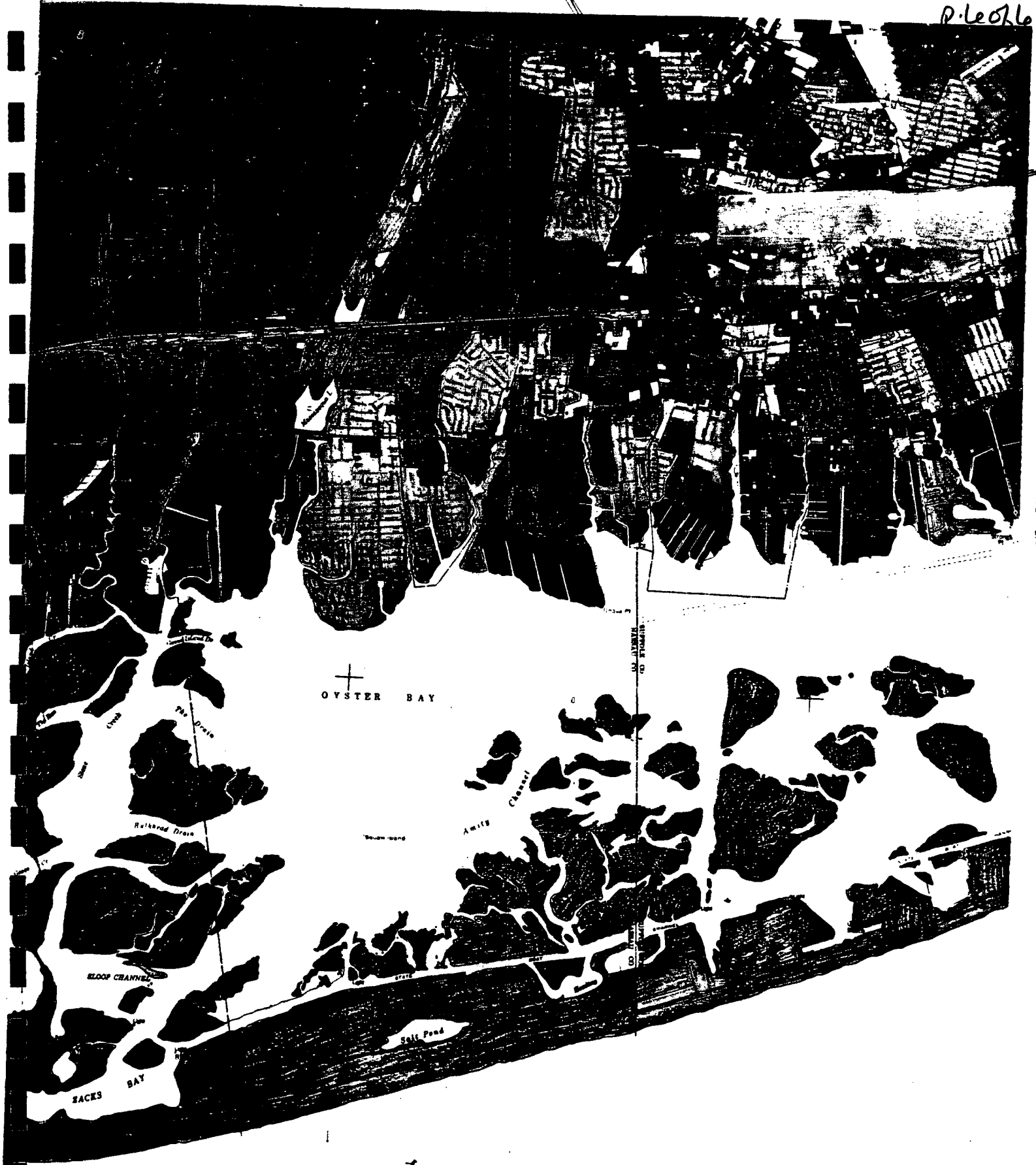
OYSTER BAY
The Drain
Rulkhead Drain
Amity Channel
SLOOP CHANNEL
Salt Pond
ZACKS BAY
SUFFOLK CO
NASSAU CO

(47-15-11 (10/83)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

DIVISION OF SOLID AND HAZARDOUS WASTE

INACTIVE HAZARDOUS WASTE DISPOSAL SITE REPORT

PRIORITY CODE: _____ SITE CODE: 152086

NAME OF SITE: NTU Curcuits, Inc. REGION: I

STREET ADDRESS: 60 Dale Street

TOWN/CITY: Babylon COUNTY: Suffolk

NAME OF CURRENT OWNER OF SITE: Mr. William DeChirico

ADDRESS OF CURRENT OWNER OF SITE: Dale Street, Babylon, New York 11704

TYPE OF SITE: OPEN DUMP [ ] STRUCTURE [X] LAGOON [ ]
LANDFILL [ ] TREATMENT POND [ ]

ESTIMATED SIZE: 0.02 ACRES

SITE DESCRIPTION:

The site is an inactive industrial site which was involved in the manufacture of printed circuit boards from 1978 until 1983. NTU repeatedly violated ground water effluent standards and its SPDES permit by discharging wastes that contained heavy metals and flouride into leachpools on the premises.

In November-December 1983, NTU Circuits cleaned up the leaching pools under a consent agreement. During September 1983, NTU moved to a new location.

HAZARDOUS WASTE DISPOSED: CONFIRMED [X] SUSPECTED [ ]

TYPE AND QUANTITY OF HAZARDOUS WASTES DISPOSED:

TYPE	QUANTITY (POUNDS, DRUMS, TONS, GALLONS)
Heavy Metals	Unknown
Fluo ride	Unknown

PAGE

TIME PERIOD SITE WAS USED FOR HAZARDOUS WASTE DISPOSAL:

_____, 19 78 TO _____, 19 83

OWNER(S) DURING PERIOD OF USE: Mr. James Gray, and Spectrum Finishing Corp.

SITE OPERATOR DURING PERIOD OF USE: NTU Circuits, Inc.

ADDRESS OF SITE OPERATOR: 1480 North Clinton Avenue, Bay Shore, New York 11706

ANALYTICAL DATA AVAILABLE: AIR [ ] SURFACE WATER [ ] GROUNDWATER [ ]
SOIL [ ] SEDIMENT [ ] NONE [ ] [XX] WASTE

CONTRAVENTION OF STANDARDS: GROUNDWATER [X] DRINKING WATER [ ]
SURFACE WATER [ ] AIR [ ]

SOIL TYPE: Sand

DEPTH TO GROUNDWATER TABLE: Approximately 15 feet

LEGAL ACTION: TYPE: Stipulation of Discontinuance STATE [ ] FEDERAL [ ]

STATUS: IN PROGRESS [ ] COMPLETED [X]

REMEDIAL ACTION: PROPOSED [ ] UNDER DESIGN [ ]
IN PROGRESS [ ] COMPLETED [X]

NATURE OF ACTION: 3 leach pools cleaned out, backfilled and paved over, and 3 leach pools cleaned out and still in use.

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

Potential ground-water contamination.

ASSESSMENT OF HEALTH PROBLEMS:

None known or documented.

PERSON(S) COMPLETING THIS FORM:

FOR NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION	NEW YORK STATE DEPARTMENT OF HEALTH
NAME EA Science and Technology	NAME
TITLE	TITLE
NAME	NAME
TITLE	TITLE
DATE: 3 September 1986	DATE: