Department of Environmental Conservation

Division of Hazardous Waste Remediation

Record of Decision

Deutsch Relays, Inc.
Inactive Hazardous Waste Site
Site Number 152003

March 1995

New York State Department of Environmental Conservation
GEORGE E. PATAKI, *Governor* MICHAEL D. ZAGATA, *Commissioner*

DECLARATION STATEMENT - RECORD OF DECISION

Deutsch Relays, Inc. Inactive Hazardous Waste Site
East Northport, Suffolk County, New York
Site No. 152003

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedial action for the Deutsch Relays, Inc., inactive hazardous waste disposal site which was chosen in accordance with the New York State Environmental Conservation Law (ECL). The remedial program selected is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300).

This decision is based upon the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the Deutsch Relays, Inc., inactive hazardous waste site and upon public input to the Proposed Remedial Action Plan (PRAP) presented by the NYSDEC. A bibliography of the documents included as a part of the Administrative Record is included in Appendix A of the ROD.

Assessment of the Site

Actual or threatened release of hazardous waste constituents from this site, if not addressed by implementing the response action selected in this ROD, presents a current or potential threat to public health and the environment.

Description of Selected Remedy

Based upon the results of the Remedial Investigation/Feasibility Study (RI/FS) for the Deutsch Relays, Inc. site and the criteria identified for the evaluation of alternatives, the NYSDEC has selected Alternative 6A as the remedy for this site which is to be implemented in a phased approach. The components of the remedy are as follows:

- A remedial design program to verify the components of the conceptual design (Phase 1).

- The installation of the necessary groundwater extraction wells (both on-site and off-site to the southwest) and associated piping in a phased approach to meet the remedial goals, to the extent feasible. The first phase would include the installation of an extraction well (well that can remove large amounts of groundwater) on the southwest corner of the Deutsch Relay site. This well would be pumped at approximately 250 gpm. Based on the performance and monitoring data from Phase 1, Phase 2 will proceed. Phase 2 will consist of a minimum of one additional extraction well (to capture total VOCs greater than 500 ppb and to facilitate contaminant mass removal from the aquifer) to the southwest of the site in the vicinity of the MW-12B location and the possible installation of an additional extraction well on-site (to facilitate the removal of significant contaminant mass from the aquifer) (Phase 1 & 2).

- The installation of the necessary air stripping system(s) designed to remove Volatile Organic Compounds (VOC) from the extracted groundwater and the installation of necessary emission controls to comply with the NYSDEC air regulations (All Phases).

- The possible construction of additional recharge basin(s) as needed to allow for the discharge of the treated groundwater (All Phases).

- Long-term monitoring of approximately 10 existing monitoring wells (start during Phase 1).

- The installation of outpost monitoring wells that will be monitored for VOCs on a quarterly basis to protect public water supply wells (Phase 1).

- Connection to public water of any homes serviced by a private well that may be potentially impacted by site related contaminants in groundwater (Phase 1).

- The financial assurances to design, construct, operate, and maintain public water supply wellhead treatment systems, if necessary. If the evaluation of monitoring indicates that treatment is needed to comply with drinking water standards, an air stripping system would be upgraded for Greenlawn's Huntsman Lane supply well and constructed for Greenlawn's Wicks Road supply wells and Dix Hill's Colby Drive Plant No. 4 supply well in a time frame sufficient to protect the well(s) (Phase 1).

- Based on an annual review of the performance and monitoring data, the NYSDEC and the NYSDOH will determine whether subsequent phases of the remedial action will be necessary to meet the remedial goals. (All Phases)

Note: Phase 1 is to begin immediately after the Record of Decision is executed and Phase 2 construction will begin approximately one year later.

New York State Department of Health Acceptance

The New York State Department of Health concurs with the remedy selected for this site as being protective of human health.

Declaration

The selected remedy is protective of human health and the environment, complies with State and federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the statutory preference for remedies that reduce toxicity, mobility, or volume as a principal element.

3/30/95
Date

Michael J. O'Toole, Jr., Director
Division of Hazardous Waste Remediation

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RECORD OF DECISION

Deutsch Relays, Inc., Inactive Hazardous Waste Site
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SECTION 1: SITE DESCRIPTION

The Deutsch Relays facility is situated on approximately 22 acres in western Suffolk County, in the Town of Huntington, East Northport, (see Figures 1 & 2). The facility is bounded by Jericho Turnpike to the north and Daly Road to the south and west. Eight acres of the property bordering Jericho Turnpike are completely wooded and have never been used for manufacturing activities. Surrounding land use is primarily light industrial/commercial to the north and east and the remainder is residential. There are no other hazardous waste sites in the immediate vicinity of the site.

There are at least 33 public water supply well fields within a four mile radius of the Deutsch Relays, Inc. site. Greenlawn Water District's wellfields at Huntsman Lane and Wicks Road are within 4000 feet of the site (see Figure 5). The Huntsman Lane well currently has a water treatment system in operation as a precautionary measure.

SECTION 2: SITE HISTORY

2.1: Operational/Disposal History

Deutsch Relays was one of the major suppliers of relays, relay bases, and electronic devices for military and aerospace applications. Deutsch Relay utilizes the following chemicals in their manufacturing processes: oxidizing and non-oxidizing acids, non-halogenated organic chemicals, halogenated metals, caustics, cyanide, and oxidizers. The hazardous waste produced by Deutsch Relays includes cyanide solutions, various rinse water containing spent solvents, and spent freon.

Prior to August 1986, treated effluent from the hazardous wastewater treatment system was discharged to on-site leaching pools (see Figure 2). Since August 1986, Deutsch Relays has disposed of all hazardous wastes off site on a hold-and-haul basis.

The following is a brief history of the Deutsch Relays facility:

Date	Events
4/14/83	Suffolk County Department of Health Services (SCDHS) sent a Notice of Violation reporting 2,100 parts per million (ppm) of 1,2-dichloroethane in the stormwater basin.
9/13/83	Deutsch Relays, Inc. was notified that a SCDHS test of industrial waste taken on 8/10/83 showed excessive hydrocarbon contamination in the leaching lagoon of the old waste treatment system and in the tumbling waste discharge pool.
02/01/84	SCHDS reported detection of organic solvents in the sanitary (septic) system.
05/04/84	Deutsch Relays, Inc. contracted EcoTest to check the organic

	contamination of the sanitary system and the tumbling waste pool. Results confirmed the 2/1/84 SCHDS results.
06/22/84	EcoTest sampled the sanitary system's 12 leaching pools for organic contamination. Results indicated Freon 113 contamination in all pools.
09/12/84	SCDHS provided data concerning samples taken on 6/27/84 from three sanitary pools, the tumbling waste pool, and the industrial leaching pool. Volatile organic chemicals were detected.
10/01/84	Deutsch Relays, Inc. requested that EcoTest analyze composite samples of the sanitary system. Freon 113 was detected.
10/24/84	Deutsch Relays, Inc. received a letter from SCDHS containing data from samples taken from all sanitary pools. Volatile organic compounds and metals were reported, as well as elevated pH values.
08/88	Deutsch Relays, Inc. ceased on-site treatment of reactive hazardous waste and instituted a hold-and-haul system to dispose of these wastes.

2.2: <u>Remedial History</u>

06/80	The Deutsch Relays, Inc. site was identified in the NYSDEC's First Annual Report on Hazardous Waste Disposal Sites in New York State.
01/86	A NYSDEC Phase I Investigation Report was completed on the Deutsch Relays, Inc. site.
12/86	Deutsch Relays, Inc. site was classified a Class 2 (hazardous waste disposal confirmed, significant threat to public health and/or environment determined) in the NYSDEC Registry of Inactive Hazardous Waste Disposal Sites in New York State.
01/07/87	Deutsch Relays, Inc. cleaned nine sanitary leaching pools, one distribution pool, and one active septic tank in compliance with a SCDHS order.
01/20/87	Deutsch Relays, Inc. cleaned the old septic tanks in compliance with a SCDHS order.
10/05/89	Deutsch AL entered into an Order on Consent with the NYSDEC to conduct a remedial program at the site, including a RI/FS and design and implementation of the selected remedial alternative.
10/12/89	Deutsch's consultant submitted a RI/FS work plan to the NYSDEC.
2/17/93	A Phase II Groundwater Investigation work plan was submitted to the Department. Radial groundwater flow from the site has been confirmed.
01/05/94	A preliminary draft Feasibility Study (FS) was submitted to the NYSDEC.
09/30/94	A revised final draft FS was submitted the NYSDEC.

10/13/94 The final FS report was approved by the NYSDEC.

SECTION 3: CURRENT STATUS

Deutsch AL, under order on consent with the NYSDEC, initiated a RI/FS in **October, 1989** to address the contamination at the site.

3.1: Summary of the Remedial Investigation

The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site.

The RI was conducted in two phases. The first phase was conducted between October 1989 and June 1992 and a second phase between July, 1992 and November 1993. Reports entitled Draft Remedial Investigation Report, Deutsch Relays, East Northport, New York - June 1992 and Supplemental Site Investigation Report - September 1994 were submitted describing the field activities and findings of the RI in detail.

A summary of the RI activities consists of the following:

* An on-site soil gas survey to characterize the possible contamination of shallow on-site soils.
* The drilling of soil borings and sampling of these soils to characterize the possible contamination of soils to a depth of approximately 70 feet.
* The drilling and installation of groundwater monitoring wells and the collection of groundwater samples to identify the concentration levels of site-related contaminants.
* The collection and analysis of surface water and sediment samples from the on-site recharge basin and storm water sump to identify any possible site related contamination in these media.
* The collection of water level measurements from the monitoring wells to allow for the construction of groundwater contour maps.

The analytical data obtained from the RI was compared to Applicable Standards, Criteria, and Guidance values(SCGs) in determining remedial alternatives. Groundwater, drinking water, and surface water SCGs identified for the Deutsch Relays, Inc. site were based on NYSDEC Ambient Water Quality Standards and Guidance Values and Part V of NYS Sanitary Code. For the evaluation and interpretation of soil and sediment analytical results, NYSDEC soil clean-up guidelines for the protection of groundwater, background conditions, and risk-based remediation criteria were used to develop remediation goals for soil.

Based upon the results of the remedial investigation in comparison to the SCGs and potential public health and environmental exposure rates, the groundwater media both on and off site requires remediation.

A. Soil

As part of Phase I of the RI, a soil gas survey was conducted in May 1990 to check for possible residual soil contamination in the vicinity of the Deutsch Relay plant site. A soil gas survey can measure the concentrations of VOCs in the gas which collects in the unsaturated pore spaces between soil particles. The soil gas survey results assisted in the final placement of monitoring well and soil boring locations.

Of the 50 soil gas samples, Freon 113 was detected in six samples at estimated concentrations ranging from 478 to 4,000 parts per billion (ppb) on a volume basis (ppbv); tetrachloroethene was detected in seven samples at estimated concentrations of 54 to 720 ppbv;

and trichloroethene was detected in four samples at estimated concentrations of 32 to 929 ppbv. Chloroform and 1,1,1-trichloroethane were not detected.

Based on the soil gas results, final on-site locations for the seven Phase I RI soil borings were selected. These borings (B1 through B7) were completed in May, 1990 and ranged in depth from 2 to 67 feet (just above the water table). Soil samples from each boring were collected for chemical analysis (see Figure 3).

VOCs were not detected in the samples collected from B1 through B7. Metal concentrations in the soil samples were within published ranges for naturally occurring metals in soils. Cyanide was not detected in the soil samples. No on-site contaminant source areas were identified.

As part of the Phase II RI, six additional on-site soil borings (SB-1 through SB-6) were completed in November, 1992 and June, 1993 (see Figure 4). These soil borings were drilled to 70 feet below grade and soil samples collected at 10, 15, 20, 30, and 70 feet below grade from each boring. The samples were analyzed for VOCs, selected metals and cyanide.

VOCs were detected in some samples: Freon 113 at 4.4 ppb and 5.5 ppb in SB-5 at 15 feet and SB-6 at 70 feet, respectively; tetrachloroethane at 2.3 ppb in SB-6 at 70 feet; toluene at 18 ppb and total xylenes at 6.9 ppb in SB-5 at 10 feet. These concentrations were below the NYSDEC soil cleanup objectives of 210 ppb for Freon 113 and 341 ppb for total VOCs. Metals were detected at levels below the NYSDEC's proposed soil clean-up guidelines or were at levels characteristic of naturally occurring concentrations in soil.

Based on the RI on-site soil sampling results, the NYSDEC has determined that there are no remaining source areas and source control alternatives were not evaluated in the FS.

B. Stormwater and Sediment

As part of the Phase I RI, stormwater and sediment samples were collected from both the on-site recharge basin and stormwater sump (see Figure 3). Stormwater samples were analyzed for VOCs, metals and general water quality parameters. Sediment samples were analyzed for metals and total organic carbon.

VOCs were not detected in the stormwater samples. Metal concentrations were consistent with on-site background concentrations of metals in soils.

C. Groundwater

The Deutsch Relays, Inc. site is located over the regional groundwater divide (deep recharge zone) that extends east to west along the central part of Long Island. Regionally, the groundwater system is divided into three layers: (1) an unconfined shallow aquifer extending approximately 90 feet above to 80 feet below sea level; (2) an intermediate aquifer of varying thickness and depth, comprised of portions of the Upper Glacial and Magothy stratigraphic formations; and (3) a deep aquifer in the Lloyd member of the Raritan formation. Movement of water to deeper parts of the groundwater system originates from the recharge areas near the groundwater divide, where downward hydraulic gradients are the largest. Depth to the groundwater table beneath the site is approximately 70 feet. There is an appreciable downward vertical gradient beneath the site, which is increased by on-site pumpage (drawdown at depth) and subsequent discharge (water table mounding) of water. In conclusion, groundwater movement beneath the site is radially outward and downward (see Figure 5).

The groundwater quality, with respect to VOCs, in the vicinity of the Deutsch Relays site, has been determined to be impacted based on the collection and analysis of groundwater samples

from monitoring wells at and around the site. Two separate sampling rounds for VOCs were conducted and are described as follows:

1) Phase I Remedial Investigation

As part of the Phase I RI, nine monitoring wells were installed. During a supplemental Phase I RI well installation program performed between October 1991 and February 1992, six additional wells were installed. Wells screened at the water table were designated with numbers. The "A" wells in the same well clusters are screened at intermediate depths of the Upper Glacial aquifer and the "B" wells are screened at deeper zones in the Upper Glacial aquifer.

VOCs detected above the detection limits in the August 1990 round 1 groundwater samples consisted of Freon 113, 1,1,1-trichloroethane, trichloroethene, and tetrachloroethene, which are considered the Deutsch Relays, Inc. site's "fingerprint" compounds. The drinking water standard for all of these compounds is 5 parts per billion (ppb). Freon 113 was detected in all the water table wells (with the exception of MW-9) at 13 to 160 ppb and in one intermediate well, MW-11A, at an estimated concentration of 190 ppb. 1,1,1-trichloroethane at 17 ppb, tetrachloroethene at 30 ppb, trichloroethene at 31 ppb were also detected in MW-11A. Based on these results, it was determined that off-site groundwater monitoring wells were necessary.

Between October 1991 and February 1992, groundwater samples were collected from off-site wells MW-11B, MW-12A, MW-12B, MW-13, MW-13A, and MW-14B which are to the south and southwest of the site. Sampling results indicated the presence of VOC contamination in three of the wells: MW-11B, MW-12A, and MW-12B. VOCs were not detected in the sample from well MW-14B, the furthest downgradient well in the southwest direction from the site. The same six compounds (1,1-dichloroethene, 1,1-dichloroethane, 1,1,1-trichloroethane, trichloroethene, tetrachloroethene, and Freon 113) were detected in wells MW-11B, MW-12A, and MW-12B. The highest concentrations of total VOCs were detected in deep well MW-12B at 1,126 ppb.

All existing wells were sampled again in April 1992. The results from this round of sampling were similar to the results of the first round. The existence of an off-site groundwater contaminant plume moving in a southwest direction from the site was confirmed (see Table 1 for selected analytical results).

Groundwater samples were also collected from deep on-site production wells during this period. The southern on-site production water supply well (SW-1) contained carbon disulfide at an estimated concentration of 0.5 ppb. Trichloroethene was detected in sample SW-1 (South Supply Well) and SW-2 (North Supply Well), at estimated concentrations of 2 ppb and 3 ppb, respectively. Neither concentration exceeds the drinking water standard of 5 ppb. The South Supply Well (S-20746) is 452 feet deep and the North Supply Well (S-72579) is 457 feet deep; both wells are assumed to be screened in the Magothy Formation. No organic compounds were detected in the Diffusion Well Sample (DW-1).

2) Phase II Remedial Investigation

After review of the draft RI report, the NYSDEC and SCDHS requested that additional investigations be performed to further characterize the off-site groundwater contaminant plume. Due to the hydrologic mounding on and near the site, and the site's proximity to the regional groundwater divide, contaminated groundwater moving radially away from the site was suspected (see Figure 5).

In October 1993 all 15 original, plus 6 additional wells installed as part of the 1993 Phase II Groundwater Investigation, were

sampled and analyzed for VOCs (see Table 2 for selected analytical results).

The principal VOCs detected during the Phase II sampling were 1,1,1-trichloroethane (TCA), trichloroethene (TCE), tetrachloroethene (PCE), and Freon 113.

- In general, the same VOCs were found in the samples from MW-11A and MW-11B, however, the concentrations in the deeper well MW-11B were less than those at MW-11A. Further downgradient, VOCs were detected in higher concentrations in the sample from the deep well MW-12B than from the intermediate well MW-12A, which did not contain Freon 113. No VOCs were detected in MW-14B, which is downgradient of MW-12B. The results also confirm that contaminated groundwater is sinking as it moves downgradient from the site in a south and southwest direction.

- The highest VOC concentrations in the study area were found at the southwestern corner of the site in the groundwater sample from intermediate well MW-11A. The Freon 113 level was 992 ppb, which is approximately 9 to 10 times greater than the levels detected in the other monitoring wells. Total VOC concentrations were approximately 1,517 ppb. The VOC concentrations at MW-11A have increased consistently since this well was installed in 1990.

- No VOCs were detected in shallow wells MW-15 and MW-16 to the north of the site. This was expected in the shallow groundwater due to the relatively steep groundwater vertical gradient near the site.

- No VOCs were detected in deep well MW-17. This suggests that contaminated groundwater migrating from the site may not be moving northward to any significant extent.

- One VOC (TCA) was detected at 4 ppb (below the groundwater standard) at MW-18. This data suggests that the contaminated groundwater may not be moving to the northeast from the site to any significant extent.

- VOCs were detected at concentrations above the groundwater standards in the samples from deep monitoring wells MW-19 and MW-20 at 25 ppb and 40 ppb total VOCs, respectively. This data indicates that contaminated groundwater is moving east and southeast from the site. Although the laboratory did not confirm the presence of Freon 113 in the samples from MW-19 and MW-20, the VOCs detected correspond to other Deutsch fingerprint compounds (TCA, TCE) (see Figures 6, 7, and 8 for the extent of VOC concentrations in groundwater).

A federal maximum contaminant level (MCL) and a 6 NYCRR Part 703.5 Class GA groundwater standard have been set for trichloroethene at 5 ppb. Standards for Drinking Water Supplies 10 NYCRR Part 5 (New York State Department of Health MCLs) of 5 ppb are in effect for Principal Organic Contaminants (POCs), which include 1,1,1-trichloroethane, trichloroethene, Freon 113, 1,1-dichloroethane, and tetrachloroethene.

3.2: Interim Remedial Measures

Various on-site contaminated soil removals were conducted after the site was listed by the NYSDEC as an inactive hazardous waste disposal site. An Interim Remedial Measure (IRM) is implemented when a source of contamination or exposure pathway can be

effectively addressed before completion of the RI/FS.

The most recent removal consisted of removing the out-of-service septic tank and impacted soil, and cleaning out the leaching pools and in use septic tank. The removal was conducted in accordance with the NYSDEC approved work plan dated May 5, 1993.

The laboratory analytical results of post-excavation soil samples collected from the sanitary wastewater leaching pools and septic tanks indicated that the sanitary septic system wastewaters met the Suffolk County Department of Public Works (SCDPW) Bergen Point POTW Disposal Requirements. Based on the waste characterization data, the septic tank solids and sanitary wastewater leaching pools sediment were disposed of at a permitted nonhazardous waste facility. This work was completed between August 11 and 13, 1993.

On August 16, 1993, the out-of-service septic tank and the surrounding soils were removed. Representatives from the NYSDEC and the SCDHS were on site to observe this tank removal. Most of the soil removed with the tank was backfilled into the excavation, as agreed to by the NYSDEC and the SCDHS. The soil from the north end of the excavation (near the in-use distribution pool) had a faint septic odor and was stockpiled and covered by plastic sheeting. A sample of the backfilled soil, stockpiled soil, and six post-excavation samples were collected for laboratory analyses of VOCs and Freon 113.

Based on the 341 parts per billion (ppb) organic carbon content measured in the on-site sample, the adjusted soil clean-up objectives are 210 ppb for Freon 113 and 341 ppb for total VOCs in soil. The laboratory results for the soil samples were well below the adjusted soil clean-up objectives. The data indicated that the soils in and removed from the tank excavation are not a source of VOCs in groundwater. Therefore, the out-of-service septic tank area does not require additional remediation and source control alternatives were not evaluated in the FS.

3.3: Summary of Human Exposure Pathways

A screening level evaluation was conducted to determine the risks posed by exposure to site related compounds detected in the groundwater. The following hypothetical exposure scenario was evaluated:

- The receptor is exposed (via ingestion and inhalation) to the maximum VOC concentrations detected in groundwater monitoring wells during the site investigation.
- The compounds that were not detected in groundwater samples are assumed not to be present.
- The receptor ingests two liters of groundwater per day, 365 days per year for 70 years.

This scenario is not representative of actual conditions since groundwater recovered from monitoring wells is not used as a source of drinking water. In addition, private wells sampled during the investigation did not indicate the presence of site-related contaminants and the vast majority of homes in the area are supplied with public water. Public water supply wells are sampled on a quarterly basis to prevent exposure to chemical contaminants in concentrations which may represent a health concern. Risk characterization integrates exposure and toxicity assessments into a measurable expression of risk. The carcinogenic risk is expressed as a probability of a person developing cancer over the course of their lifetime. According to the United States Environmental Protection Agency (USEPA), a carcinogenic risk range of one in

ten thousand to one in a million, which represents one additional occurrence of cancer in ten thousand to one million people, is considered a reference level for evaluating acceptable risk at Federal Superfund sites. The noncarcinogenic risk is represented as a hazardous index. A hazardous index greater than one indicates that there may be concern for noncancer health effects resulting from exposure to a chemical hazard.

The total carcinogenic and noncarcinogenic risks were calculated using the guidelines presented in USEPA's Risk Assessment Guidance for Superfund Sites, based on discussions with the New York State Department of Health (NYSDOH). The estimated carcinogenic risk posed by the hypothetical groundwater ingestion and inhalation scenario is 2.2 occurrences in one thousand. The estimated hazard index for the noncarcinogenic risk posed by groundwater ingestion and inhalation is 2.46. The calculated ingestion risks were multiplied by two to account for the risks posed by chemicals in groundwater via the inhalation exposure route.

Based on this screening level evaluation, the carcinogenic risk is one order of magnitude greater than the USEPA benchmark value of one in ten thousand. The hazard index calculated for noncarcinogenic risks is greater than the USEPA benchmark value (1.0). The calculated risk and hazard indices are expected to decrease with time because there are no continuing on-site sources. Active groundwater remediation, natural attenuation, and dilution may reduce the volume of contaminants present in the groundwater. In addition, a private well survey has been conducted to eliminate the possibility of domestic well use in the study area and to preclude potable use of VOC contaminated groundwater (see Figure 9). Those found to be using groundwater in the study area were or will be connected to a public water supply to eliminate potential exposures.

3.4: Summary of Environmental Exposure Pathways

Approximately eight acres of the property bordering Jericho Turnpike are completely wooded and have never been used for manufacturing activities. The remainder of the property is covered by buildings, paved parking lots, and landscaped areas. No wetlands or surface water bodies have been identified on or within 0.25 miles of the site. The man-made recharge basin at the southwest corner of the site receives stormwater runoff from the facility. Surrounding land use is primarily light industrial/commercial to the north and east and the remainder is residential.

The RI determined that on-site soils are not a continuing source of contamination. Sediment samples collected from the recharge basin exhibited no evidence of contamination. Thus, the RI work indicates that groundwater is the only contaminant transport medium. There is no overland flow component of contaminant transport. Volatilization of VOCs into soil vapor and air is negligible due to the depth to groundwater (greater than 50 feet). Due to downward hydraulic gradients, groundwater does not recharge to any surface water bodies within one mile of the facility. Potential receptors of groundwater include public water supply and the on-site recharge basin. A fish and wildlife impact analysis is not required because there are no receptors via overland flow or groundwater recharge, and any surface removal of contaminated groundwater (concentrations above the drinking water standards) would be treated to meet applicable standards prior to use or discharge.

SECTION 4: ENFORCEMENT STATUS

The NYSDEC and Deutsch AL entered into a Consent Order on October 5, 1989. The Order obligates the responsible party to implement a full remedial program, consisting of a RI/FS,

remedial design and remedial action.

SECTION 5: SUMMARY OF THE REMEDIATION GOALS

Goals for the remedial program have been established through the remedy selection process stated in 6NYCRR 375-1.10. These goals are established under the guidelines of meeting all Standards, Criteria, and Guidance values (SCGs) and protecting human health and the environment.

At a minimum, the remedy selected should eliminate or mitigate all significant threats to the public health and to the environment presented by the hazardous waste disposed at the site through the proper application of scientific and engineering principles.

The goals selected for this site are:

- Mitigate the impacts of contaminated groundwater to the environment and public health.
- Provide for attainment of SCGs for groundwater quality to the extent feasible.

SECTION 6: SUMMARY OF THE EVALUATION OF ALTERNATIVES

Potential remedial alternatives for the Deutsch Relays, Inc. site were identified, screened, and evaluated in a Feasibility Study. An alternative for full plume containment and full aquifer restoration to the 5 ppb NYS drinking water standard was evaluated during the screening phase of the FS (Alternative 4). Conceptually, it was estimated that 55 extraction wells (13 on-site and 42 off-site) pumping a total combined rate of 12,100 gallons per minute (gpm), approximately 36 acres of additional recharge basins, and 54,000 feet of piping would be required for this alternative. Treatment would be by air stripping or activated carbon adsorption. The total present worth for this alternative using air stripping treatment was estimated to be $44,751,000. It was determined that this alternative was not technically or economically feasible and was therefore screened out for further consideration. This evaluation is presented in the report entitled Final Feasibility Study - September 1994. Five remaining alternatives were evaluated in the detailed analysis section of the FS. A summary of the detailed analysis follows.

6.1: Description of Remedial Alternatives

The potential remedies are intended to address the contaminated groundwater downgradient of the site.

Alternative 1 - No Further Action

The no further action alternative is evaluated as a procedural requirement and as a basis for comparison. This alternative recognizes the remediation of the site under the previously completed contaminated soil removals. It requires continued monitoring only to track plume migration and to evaluate the effectiveness of the remediation completed under the contaminated soil removals. Contaminant concentrations in the plume would be reduced by natural attenuation.

This is an unacceptable alternative as the contaminated groundwater would essentially remain in its present condition for an undetermined period of time, and the environment would not be adequately protected.

Alternative 2 - Limited Action

This alternative would require long-term monitoring of approximately ten existing monitoring wells, installation and monitoring of outpost monitoring wells upgradient of the Greenlawn's Wicks Road and Dix Hill's Colby

Drive wellfields (see Figure 11), the installation of an additional outpost well closer to the Greenlawn's Huntsman Lane wellfield if individual VOC concentrations exceed 50 ppb in MW-19. It would also provide financial assurances to design, construct, operate and maintain wellhead treatment at the Wicks Road and /or Colby Drive public supply wells and upgrade the existing treatment system at the Huntsman Lane public supply well, if necessary, to protect public health. Contaminant concentrations in the plume would be reduced by natural attenuation.

Present Worth:	$ 482,000
Capital Cost :	$ 130,500
Annual O&M (year 1):	$ 40,300

Alternative 3A & 3B - Pump and Treat Hotspot at Southwest Corner of Site

In addition to the long term monitoring, outpost wells and financial assurance provisions of Alternative 2, this alternative would attempt to reduce the mass of VOCs in groundwater at the hotspot identified at the southwest corner of the site. Contaminant concentrations in the remainder of the plume would be reduced by natural attenuation.

The conceptual design for this alternative calls for groundwater extraction from one extraction well at approximately 250 gallons per minute (gpm) at a location adjacent to the existing MW-11A monitoring well. Groundwater treatment would be by air stripping (Alternative 3A) or activated carbon adsorption (Alternative 3B). The actual pumping rate and treatment method would be determined during remedial design.

3A

Present Worth:	$ 1,620,000
Capital Cost:	$ 491,000
Annual O&M (year 1):	$ 115,000

3B

Present Worth:	$ 6,956,000
Capital Cost:	$ 578,000
Annual O&M (year 1):	$ 538,000

Alternative 5A & 5B - Partial Aquifer Restoration (50 ppb)

This alternative would attempt to restore a portion of the aquifer within the 50 ppb total VOC inferred contour to groundwater standards by reducing the mass of VOCs in the groundwater by recovering, treating, and discharging groundwater contaminated by the Deutsch plume with total VOCs greater than 50 ppb. Contaminant concentrations in the remainder of the plume would be reduced by natural attenuation.

This alternative contains all of the elements of Alternative 3A/3B. The conceptual design for this alternative calls for approximately 18 additional extraction wells (5 on-site and 13 off-site) pumping a total combined rate of 3,700 gpm and approximately 9700 feet of piping. The extracted groundwater would be treated by air stripping (Alternative 5A) or activated carbon adsorption (Alternative 5B). The conceptual design indicates that approximately 10 acres of additional recharge area may be required to discharge the treated groundwater.

5A

Present Worth:	$ 14,611,000
Capital Cost:	$ 4,976,000
Annual O&M (year 1):	$ 880,000

5B

Present Worth:	$ 28,708,000
Capital Cost:	$ 5,759,000
Annual O&M (year 1):	$ 1,952,000

Alternative 6A & 6B - Partial Aquifer Restoration (500 ppb)

This alternative would attempt to restore a

portion of the aquifer within the 500 ppb total VOC inferred contour to groundwater standards by reducing the mass of VOCs in the groundwater by recovering, treating, and discharging groundwater contaminated by the Deutsch plume with total VOCs greater than 500 ppb. Contaminant concentrations in the remainder of the plume would be reduced by natural attenuation.

This alternative contains all of the elements of Alternative 3A/3B. The conceptual design for the full implementation of this alternative calls for installation of approximately 13 additional extraction wells (5 on site and 8 off site) pumping a total combined rate of 2,150 gpm and approximately 6500 feet of piping. The extracted groundwater would be treated by air stripping (Alternative 6A) or activated carbon adsorption (Alternative 6B). The conceptual design indicates that approximately 5 acres of additional recharge area may be required to discharge the treated groundwater.

This alternative will be implemented in a phased approach. The actual number of extraction wells and associated costs to fully implement this alternative will not be determined until the first two phases are completed. Several rounds of data will need to be evaluated to determine whether further phases are required. Total costs if all wells were installed would be:

6A	
Present Worth:	$ 9,027,000
Capital Cost:	$ 3,089,000
Annual O&M (year 1):	$ 559,000

6B	
Present Worth:	$ 24,488,000
Capital Cost:	$ 3,386,000
Annual O&M (year 1):	$ 1,781,000

6.2: Evaluation of Remedial Alternatives

The criteria used to compare the potential remedial alternatives are defined in the regulation that directs the remediation of inactive hazardous waste sites in New York State (6NYCRR Part 375). For each of the criteria, a brief description is provided followed by an evaluation of the alternatives against that criterion. A detailed discussion of the evaluation criteria and comparative analysis is contained in the FS.

The first two evaluation criteria are termed threshold criteria and must be satisfied in order for an alternative to be considered for selection.

1. Compliance with New York State Standards, Criteria, and Guidance Values (SCGs). Compliance with SCGs addresses whether or not a remedy will meet applicable environmental laws, regulations, standards, and guidance.

None of the alternatives would comply with the NYS groundwater SCG values. Natural attenuation would restore the aquifer to the groundwater quality standards over an undeterminable period of time. The existing public water supply regulations are in effect to ensure that the drinking water standards are met at the wellhead under all alternatives. The existing air stripper at the Huntsman Lane wellfield would ensure compliance with the NYS drinking water standards. Alternatives 2, 3, 5, and 6 provide a contingency for wellhead treatment at the Wicks Road and/or Colby Drive wells to ensure compliance with the drinking water standards. VOC emissions from the air strippers would be controlled, if necessary, to comply with air regulations. The outpost monitoring wells sampled under Alternatives 2, 3,5, and 6 would be monitored for VOCs quarterly as specified in the public water supply regulations for wellhead sampling. Alternatives 3,5, and 6 would recover and treat groundwater to meet SPDES based limits for discharge to the recharge basins.

2. Protection of Human Health and the Environment. This criterion is an overall evaluation of the health and environmental impacts to assess whether each alternative is protective.

The no further action alternative does not include additional monitoring of outpost wells upgradient of the supply wells to provide early detection of impacts to the public water supplies, however, the water supplies would be protected under existing State regulations. Alternatives 2,3,5, and 6 would provide additional monitoring of outpost wells to indicate potential impacts on public supply wells prior to their occurrence so that actions could be taken to maintain compliance with the drinking water standards. As a precautionary measure, the Huntsman Lane wellfield is equipped with an air stripper. The untreated groundwater extracted by this public supply well currently meets the NYSDOH drinking water standards. Alternatives 2, 3, 5, and 6 would include wellhead treatment at the Wicks Road and Colby Drive wellfields as a contingency, with financial assurance to design, construct and operate an air stripping system provided by Deutsch.

Under all alternatives, contaminant concentrations in the groundwater would be reduced over time by natural attenuation. However, the plume would continue to migrate. Under Alternative 3, groundwater would be extracted from the hotspot at the southwest corner of the site, treated by air stripping (3A) or activated carbon adsorption (3B) and discharged to the on-site recharge basin. Thus, Alternative 3A or 3B would also provide active environmental protection. Alternatives 6A & 6B would provide greater environmental protection by recovering and treating groundwater with total VOCs greater than 500 ppb. Alternatives 5A & 5B would provide the most environmental protection by recovering and treating groundwater with total VOCs greater than 50 ppb.

The next five "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.

3. *Short-term Effectiveness*. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared with the other alternatives.

Worker exposure to VOCs in groundwater during implementation of all alternatives would be controlled through a site specific health and safety plan developed prior to implementation. Under Alternatives 2, 3, 5, and 6, outpost monitoring wells would be located upgradient of the Wicks Road, Huntsman Lane, and Colby Drive public supply wells to provide approximately two years advance notice to permit the design and construction of the treatment systems before VOC contamination impacts on drinking water quality.

Alternative 5 would create the most disturbance to the environment and surrounding neighborhood due to the need to install a large number of extraction wells and a possible need to construct many acres of additional recharge areas. This could be mitigated by locating the extraction wells adjacent to existing roads and the use of injection wells for disposing of the treated groundwater. Alternative 6 would have less impact on the environment and the surrounding neighborhood due to the fewer number of extraction wells needed. Alternate 3 would have even less impact to the environment and surrounding neighborhood since only one extraction well is required on site.

Alternatives 3, 5, and 6 include on-site hotspot remediation which could be implemented within a short time frame and reduce the time frame required to meet the remedial objectives in this

portion of the contaminated aquifer segment. Alternatives 5 and 6 include the installation of additional on-site and off-site extraction wells which would further reduce the time to meet the remedial goals.

4. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of alternatives after implementation of the response actions. If wastes or treated residuals remain on site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the controls intended to limit the risk, and 3) the reliability of these controls.

The private well survey will ensure that contaminated groundwater is not being recovered for potable use to preclude the human health risks by eliminating the exposure pathway. The existing Huntsman Lane air stripper would provide long-term permanent protection of the drinking water supplied by this well. The existing public water supply regulations are in place and would protect the drinking water supply to ensure that the drinking water standards are met. Alternatives 2, 3, 5, and 6 include additional outpost monitoring to track the plume and possible impacts on the supply wells. These alternatives also include a contingency to install wellhead treatment at the Wicks Road and/or Colby Drive wells, if necessary, and provide permanent, long-term protection of the drinking water supply.

The long-term monitoring program implemented under all of the alternatives would effectively track the migration and natural attenuation of VOCs in groundwater. Under Alternative 3, monitoring would indicate the effectiveness of the on-site hotspot pumping component. Monitoring would indicate the effectiveness of pumping the inferred 50 ppb and 500 ppb plumes under Alternatives 5 and 6, respectively, in addition to the on-site hotspot component. The pump and treat alternatives may be modified as technically and economically feasible, if necessary, to improve performance and would continue operating until the VOC concentrations in groundwater are reduced to the groundwater standards or to the minimum levels achievable. Performance evaluations of each alternative would be conducted annually.

5. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes at the site.

The no further action alternative would not employ additional treatment to reduce the toxicity, mobility, or volume of VOCs in groundwater. Alternatives 2,3,5, and 6 include a contingency to install wellhead treatment at the Wicks Road and/or Colby Drive wellfields and modify the Huntsman Lane air stripper, if necessary, to protect the drinking water supply. Alternatives 3,5, and 6 also include air stripping or activated carbon adsorption to treat groundwater pumped at the various extraction locations prior to discharge to recharge basins. The air stripping or carbon adsorption systems would be designed to remove approximately 99.9 percent of VOCs from the recovered groundwater and would reduce the toxicity, mobility, and volume of VOCs in groundwater through treatment. VOC emissions from air strippers would be controlled, if necessary, to comply with air regulations. Natural attenuation would also reduce the toxicity and volume of VOCs in groundwater that are not recovered by pumping, but over a much longer time frame than active remediation.

The groundwater extraction systems installed under Alternatives 3,5, and 6 would remove VOCs from the aquifer. Based on the conceptual design, Alternative 3 would pump an estimated 250 gpm from the on-site hotspot to remove approximately 4.5 lbs/day of VOCs

from the groundwater. Based on the conceptual design, Alternative 5 would pump an estimated 3,700 gpm from the on-site hotspot and the 50 ppb plume to remove approximately 6.6 lbs/day of VOCs. Based on the conceptual design, Alternative 6 would pump an estimated 2,150 gpm from the on-site hotspot and the 500 ppb plume to remove approximately 15.9 lbs/day of VOCs. The VOC removal rates assume that the total VOC concentrations within each contour are constant.

Based on the inferred contaminant concentration contours depicted in Figures 6,7, and 8, it is estimated that under ideal pumping conditions and an indeterminate time frame, that Alternative 3 could remove 4 to 17% of the dissolved contaminant mass (total VOCs) in the aquifer segment, Alternative 6 from 63 to 80%, and Alternative 5 from 94 to 95% (see Tables 3 and 4).

6. Implementability. The technical and administrative feasibility of implementing each alternative is evaluated. Technically, this includes the difficulties associated with the construction, the reliability of the technology, and the ability to monitor the effectiveness of the remedy. Administratively, the availability of the necessary personnel and material is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, etc.

Alternatives 1, 2, and 3 are readily implementable. Alternative 1 includes groundwater monitoring of existing monitoring wells. Alternative 2 includes installation of outpost wells upgradient from the Wicks Road and Colby Drive public supply wells, and a contingency for wellhead treatment at these supply wells, if necessary. Alternative 3 includes a new recovery well which can be installed adjacent to MW-11A within a short time frame. The on-site hotspot treatment system selected during the remedial design phase would be installed adjacent to the on-site recharge basin, and the treated effluent would be discharged to this recharge basin. No access constraints are associated with the on-site hotspot remediation activities because all pumping, treating, and discharging activities would be conducted on Deutsch property.

Alternatives 5 and 6 would be significantly more difficult to implement compared to Alternatives 1,2, and 3. The off-site implementation issues are common for Alternatives 5 and 6, although Alternative 6 would be somewhat easier to implement than Alternative 5 because it would involve fewer extraction locations. Implementation of these alternatives could disrupt traffic in the neighborhood, increase noise, and interfere with normal activities near the work areas.

Discharging the treated groundwater generated by Alternatives 5 and 6 to existing and new recharge basins would also require local approvals and property access. Controls would have to be provided to prevent overflow of town recharge basins designed to collect stormwater during precipitation events. Recharging significant volumes of groundwater may cause mounding and alter local groundwater flow patterns, which could increase VOC migration in groundwater.

Long-term groundwater monitoring would use wells from the monitoring network installed during the RI. Several additional monitoring wells may be installed at locations selected during the remedial design phase, if necessary, to track the effectiveness of the selected remedy. An air stripping system at the Wicks Road and/or Colby Drive wellfield would be designed and constructed, if necessary, using materials and labor available from local contractors. Under Alternatives 2,3,5, and 6, activities required to place an air stripper on-line at the Wicks Road and/or Colby Drive wellfields (if necessary, based on outpost monitoring results)

would be conducted in a way that would minimize interruption of service by the public wells.

The need for VOC emission controls on an air stripper (if air stripping is the selected treatment option) would be evaluated during the design phase. If carbon adsorption is selected to treat groundwater, carbon replacement would be required. Air stripping requires less O&M and would be easier to implement than activated carbon adsorption.

7. Cost. Capital and operation and maintenance costs are estimated for each alternative and compared on a present worth basis. Although cost is the last balancing criterion evaluated where two or more alternatives have met the requirements of the remaining criteria, cost effectiveness can be used as the basis for the final decision. The estimated costs for each alternative are presented in Table 5.

The financial assurance costs for wellhead treatment would be common to Alternatives 2, 3, 5, and 6. All alternatives except no further action rely on long-term outpost monitoring with the contingency for wellhead treatment to protect the drinking water supply. Costs are higher for Alternatives 5 and 6 because they include multiple groundwater extraction and treatment systems within the plume to reduce the remedial time frame.

This final criterion is considered a modifying criterion and is taken into account after evaluating those above. It is focused upon after public comments on the Proposed Remedial Action Plan have been received.

8. Community Acceptance - Concerns of the community regarding the RI/FS reports and the PRAP have been evaluated. A " Responsiveness Summary" has been prepared that describes the public comments received and the Department's responses to them (see Appendix B).

SECTION 7: SUMMARY OF THE SELECTED REMEDY

Based upon the results of the RI/FS and the evaluation presented in Section 6, the NYSDEC has selected Alternative 6A as a remedy for this site which is to be implemented in a phased approach.

This selection is based upon the fact that it is not economically or technically feasible to contain and treat all the contaminated groundwater migrating from the Deutsch Relays, Inc. site with concentrations greater than the NYS drinking water standard of 5 ppb. Public health will be protected by the connection of any home utilizing a private well to a public water supply. Public water supply wells will be protected by the monitoring of outpost wells upgradient of the water supply wells and a contingency to provide wellhead treatment, if necessary. The preference to permanently and significantly reduce the toxicity, mobility or volume of VOCs in groundwater is satisfied in that this remedy will attempt to reduce the mass of VOCs in the groundwater by recovering, treating, and discharging groundwater contaminated by the Deutsch plume with total VOCs greater than 500 ppb. The remedial goal to provide for attainment of the 5 ppb groundwater standard will be met in this aquifer segment, to the extent feasible. This remedy should capture and treat an estimated 63 to 80% of the dissolved contaminant mass in the plume. Additional contaminants that may be sorbed onto soil particles should also be captured and treated (see Figures 10, 11, and 12).

It is planned that the extraction wells and treatment system(s) installation component of the selected remedy be implemented in a phased approach. Phased approaches to groundwater remediation, where remedial components are implemented in stages based on system monitoring and performance data, enhance the effectiveness of pump and treat remedies.

Based on the components of the conceptual design, the estimated present worth cost to fully implement all elements of the selected remedy is $9,027,000. The cost to fully construct the selected remedy based on the conceptual design is estimated to be $3,089,000 and the estimated average annual operation and maintenance cost for 30 years is $559,000 for the first year and $472,000 for the remaining 29 years. The costs for the Phase 1 and 2 elements would be considerably less than these estimates.

The elements of the selected remedy with their implementation phase identified are as follows:

- A remedial design program to verify the components of the conceptual design and provide the details necessary for the construction, operation and maintenance, and monitoring of the remedial program. Uncertainties identified during the RI/FS will be resolved. This will include the installation of an additional monitoring well between MW-11A and MW-12, aquifer pump tests, and quantitative groundwater modelling. (Phase 1)

- The installation of the necessary groundwater extraction wells (both on-site and off-site to the southwest) and associated piping to meet the objectives of the remedy in removing contaminant mass with total VOCs greater than 500 ppb. This will include in Phase 1 the installation of an extraction well adjacent to the MW-11A "1500 ppb hotspot" which will be pumped at approximately 250 gpm (to facilitate the removal of significant contaminant mass from the aquifer). The associated air stripping treatment system will be constructed on-site and treated groundwater would be discharged to the on-site recharge basin. (Phase 1)

- Based on the performance and monitoring data from Phase 1, the installation in Phase 2 of a minimum of one additional extraction well (to capture total VOCs greater than 500 ppb and to facilitate contaminant mass removal from the aquifer) to the southwest of the site in the vicinity of MW-12B location and the possible installation of an additional extraction well on-site (to facilitate the removal of significant contaminant mass from the aquifer). Phase 2 construction would begin no more than one year from the signing of the Record of Decision. (Phase 2)

- The installation of the necessary air stripping system(s) designed to remove VOCs in the extracted groundwater to meet the SPDES discharge limitations. To eliminate a possible nuisance to the surrounding neighborhood, noise reduction devices will be installed on the intakes to the air stripper(s). (All Phases)

- The installation of necessary emission controls to comply with the NYSDEC air regulations. (All Phases)

- The possible construction of additional recharge basin(s) as needed to allow for the discharge of the treated groundwater. Use of existing recharge basins will be evaluated. Alternative technology to dispose of the treated groundwater, such as injection wells or use as the plant process water, will be considered during remedial design. (All Phases)

- The long-term monitoring of approximately ten existing monitoring wells semi-annually for the first year and annually thereafter. (All Phases)

- After consultation with the NYSDEC,

NYSDOH, SCDHS and the water district, the installation and quarterly monitoring for VOCs of an outpost monitoring well cluster between MW-20 and the Greenlawn Water District's (GWD) Wicks Road public supply wells. The new outpost well cluster will consist of two wells and be located approximately two years upgradient (based on the rate of groundwater movement in this area) of the Wicks Road public water supply well field. (Phase 1)

- After consultation with the NYSDEC, NYSDOH, SCDHS, and the water district, the installation and quarterly monitoring for VOCs of an outpost well between MW-12B and the Dix Hill Water District's (DHWD) Plant No. 4 public supply well at Colby Drive. It will be located at least two years upgradient (based on the rate of groundwater movement in this area) of the Plant No. 4 public water supply well field. (Phase 1)

- A contingency to install an additional outpost well closer to the Greenlawn Water District's Huntsman Lane public supply well if individual VOC concentrations exceed 50 ppb in the existing outpost well MW-19. (Phase 1)

- An evaluation during remedial design of whether the sampling of the monitoring well network, including the new outpost wells, will be sufficient to detect possible further migration of the Deutsch related contaminates in the groundwater towards the Dix Hill Water District's well sites No. 1, No. 3, and future site No. 11. (Phase 1)

- The financial assurances with the water districts for the full costs to design, construct, operate, and maintain wellhead treatment system(s), if necessary. If the evaluation of monitoring indicates that the treatment of contaminants from the Deutsch site is needed to comply with drinking water standards at the GWD's Wicks Road and Huntsman Lane and DHWD's Colby Drive public water supply well(s), the necessary air stripping system will be designed and constructed (upgraded at the GWD Huntsman Lane facility) in a time frame sufficient to protect the well(s). Any detection of 1 ppb or more of any individual Deutsch related contaminant in the outpost well samples will "trigger" Deutsch AL to evaluate the rate of movement of the Deutsch contaminants towards the public supply wells. If VOC concentrations in the outpost well(s) exceed the respective standards, a minimum of one to a maximum of three confirmatory samples will be collected within 30 days and the results evaluated by the NYSDEC and State and County Health Departments. If the NYSDEC's and Health Department's evaluation indicates that treatment is necessary to comply with drinking water standards, the financial assurances will be released to the water district to begin the design phase on a well head treatment system (Phase 1).

- A performance evaluation conducted at least annually to determine whether the remedial goals have been or can be achieved and whether remediation and monitoring should continue. To meet the remedial goals in this aquifer segment, the objective is to pump and treat groundwater with total VOCs greater than 500 ppb until the contaminant concentrations in the groundwater are below the groundwater standard of 5 ppb, to the extent feasible. Based on the

review of the performance and monitoring data from Phases 1 & 2 (several rounds of data may be needed), the NYSDEC and the NYSDOH will determine whether subsequent phases of the remedial action will be necessary to meet the remedial goals (all Phases).

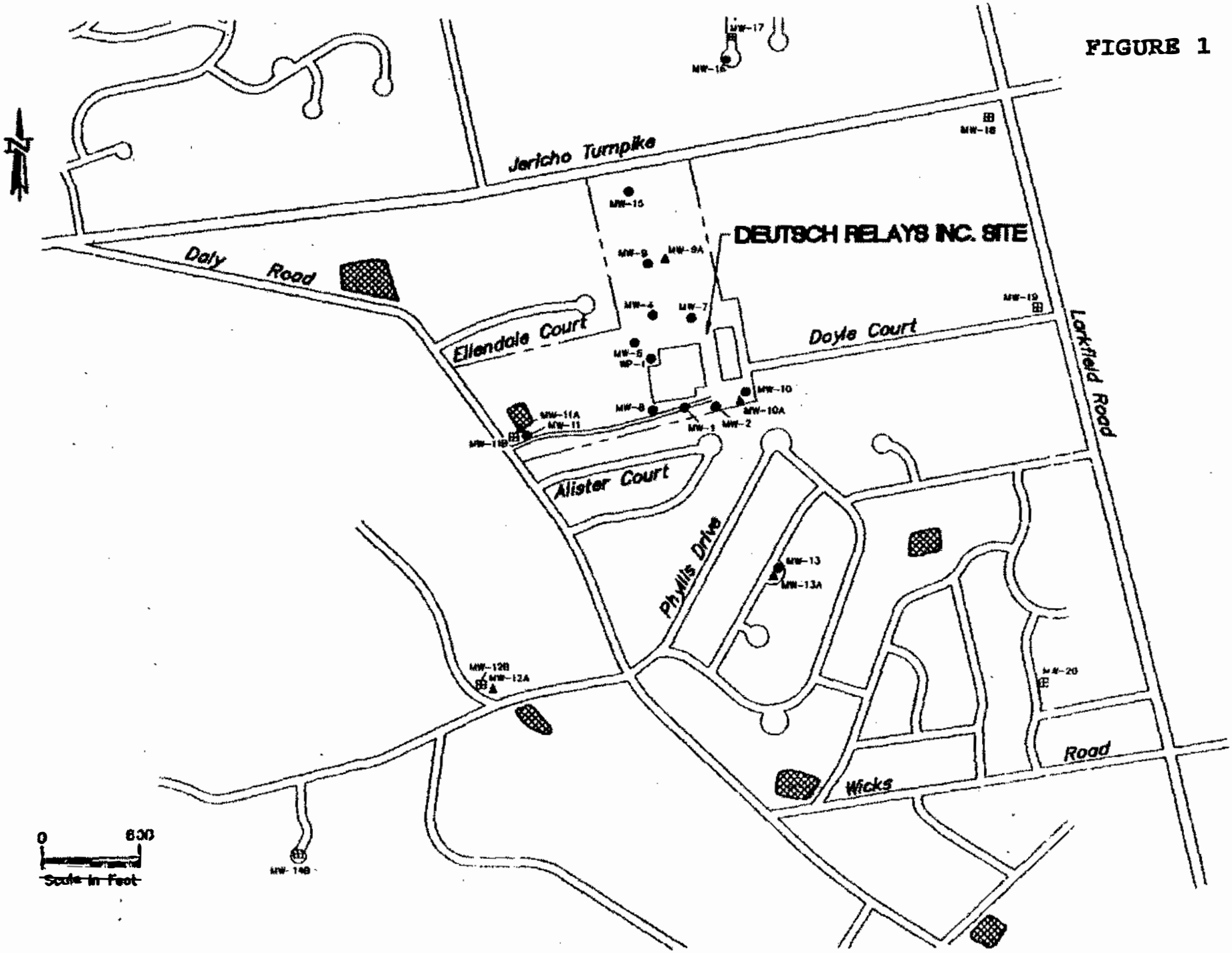
SECTION 8: HIGHLIGHTS OF COMMUNITY PARTICIPATION

The Citizen Participation (CP) activities are part of the NYSDEC's on-going efforts to ensure full, two-way communication with the public on the identification, investigation, and remediation of inactive hazardous waste sites. Previous activities for this site included the development of a site-specific CP plan, creation and maintenance of information repositories, a public contact list, and public informational meetings held on October 29, 1992, November 15, 1994, and January 25, 1995 to discuss the remedial program and answer questions posed by the public. Notification was through a meeting invitation/fact sheet distributed to the contact list and a public notice to the press.

The NYSDEC solicits input from the community for all of its proposals for remedial action. A public comment period extended from November 1, 1994 through February 10, 1995 during which the public was encouraged to participate in the remedy selection process for this site.

Comments and questions were summarized and the State's responses were provided in the Responsiveness Summary (Appendix B) of this Record of Decision.

FIGURE 1

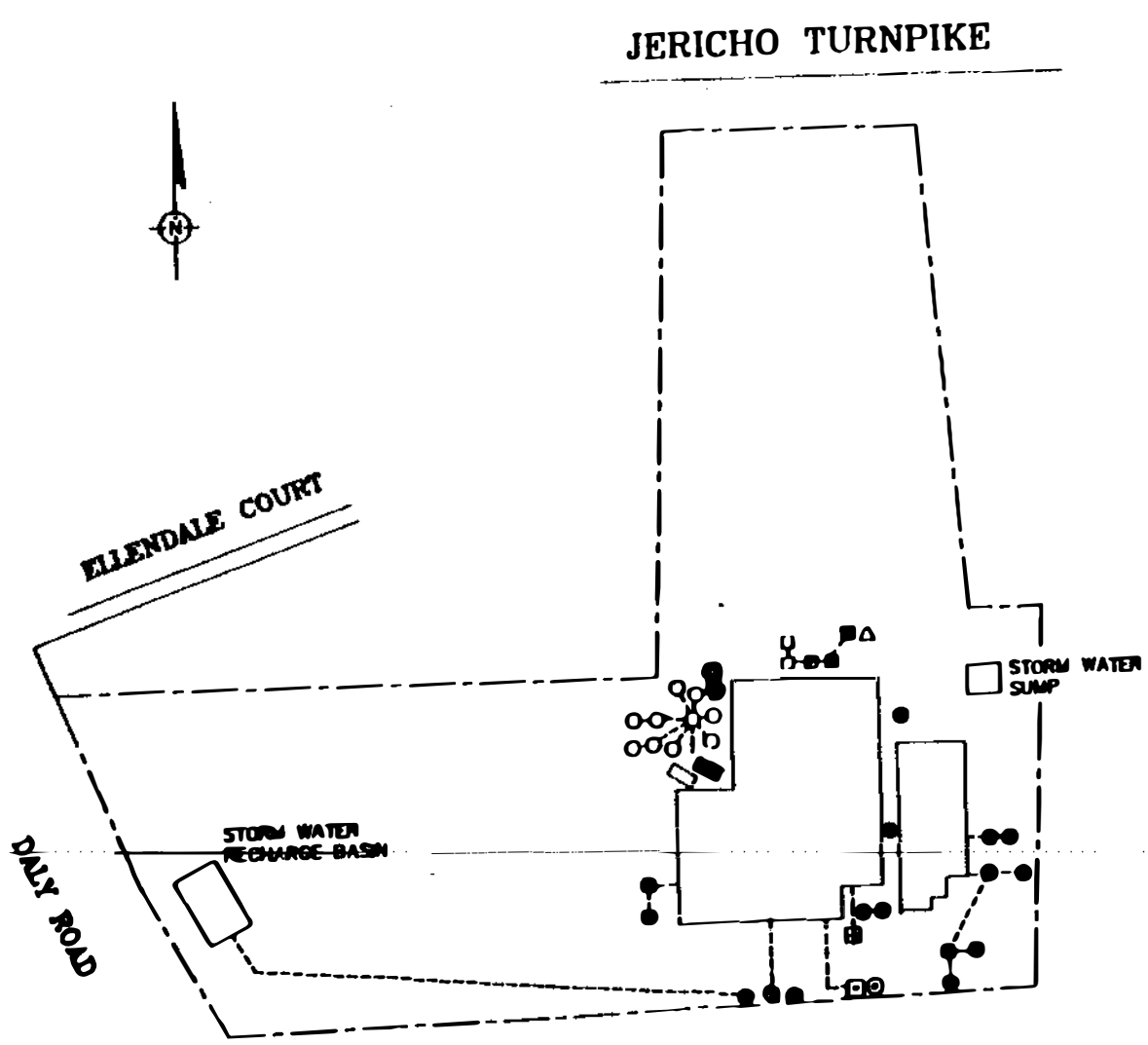


SITE LOCATION MAP

SK563-70

FIGURE 2

DEUTSCH RELAYS INC.
East Northport, New York



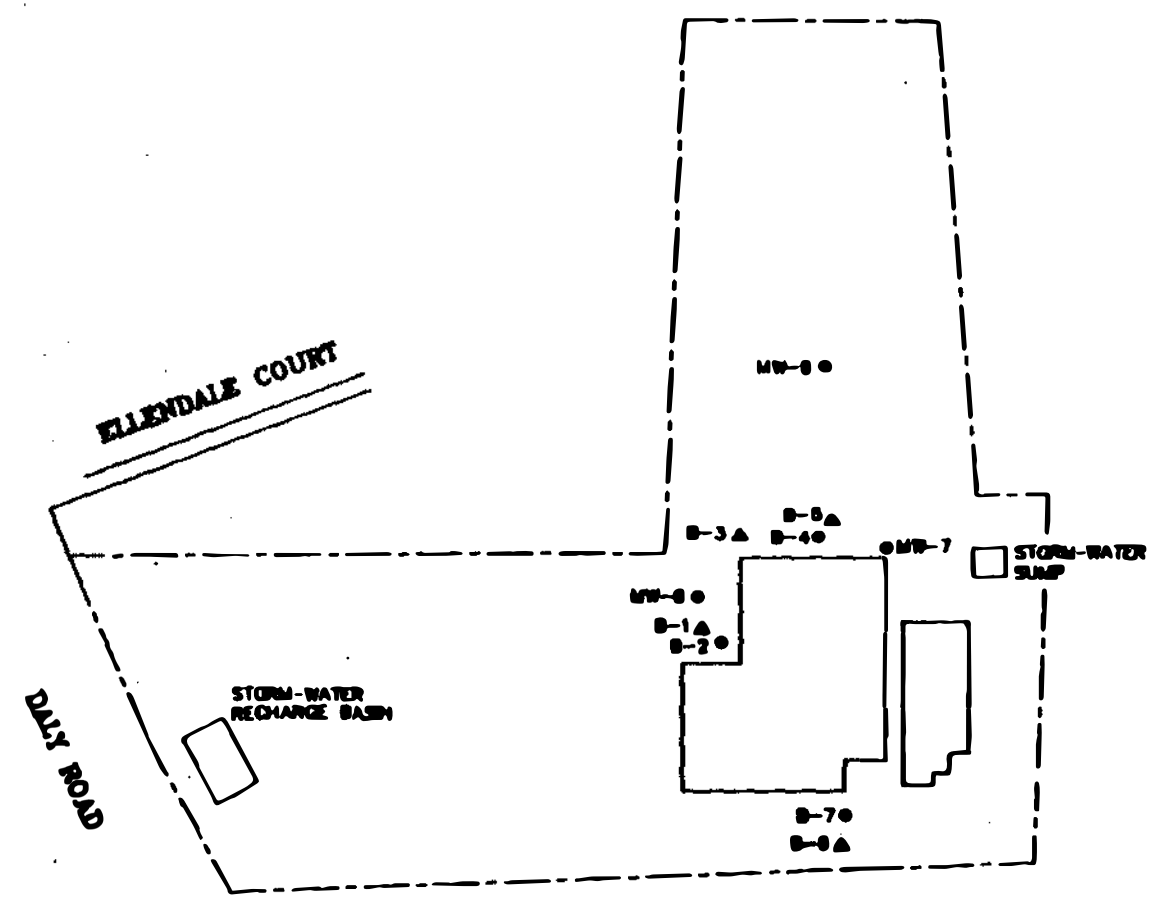
EXPLANATION

- FORMER INDUSTRIAL LEACHING POOL
- CLEARWELL
- CLARIFIER
- SLUDGE STORAGE TANK
- SPENT NITRIC ACID HOLDING TANK
- SANITARY SEPTIC SYSTEM
- FORMER SANITARY SEPTIC SYSTEM
- FORMER SETTLING LAGOON FOR TREATED PLATING WASTE
- STORM WATER DRYWELLS
- FORMER TUMBLING WASTE LEACHING POOL
- DRY WELL
- DIFFUSION WELL
- INACTIVE SEPTIC TANK
- ACTIVE SEPTIC TANK
- RECHARGE SUMP

0 300 FT

PLOT PLAN

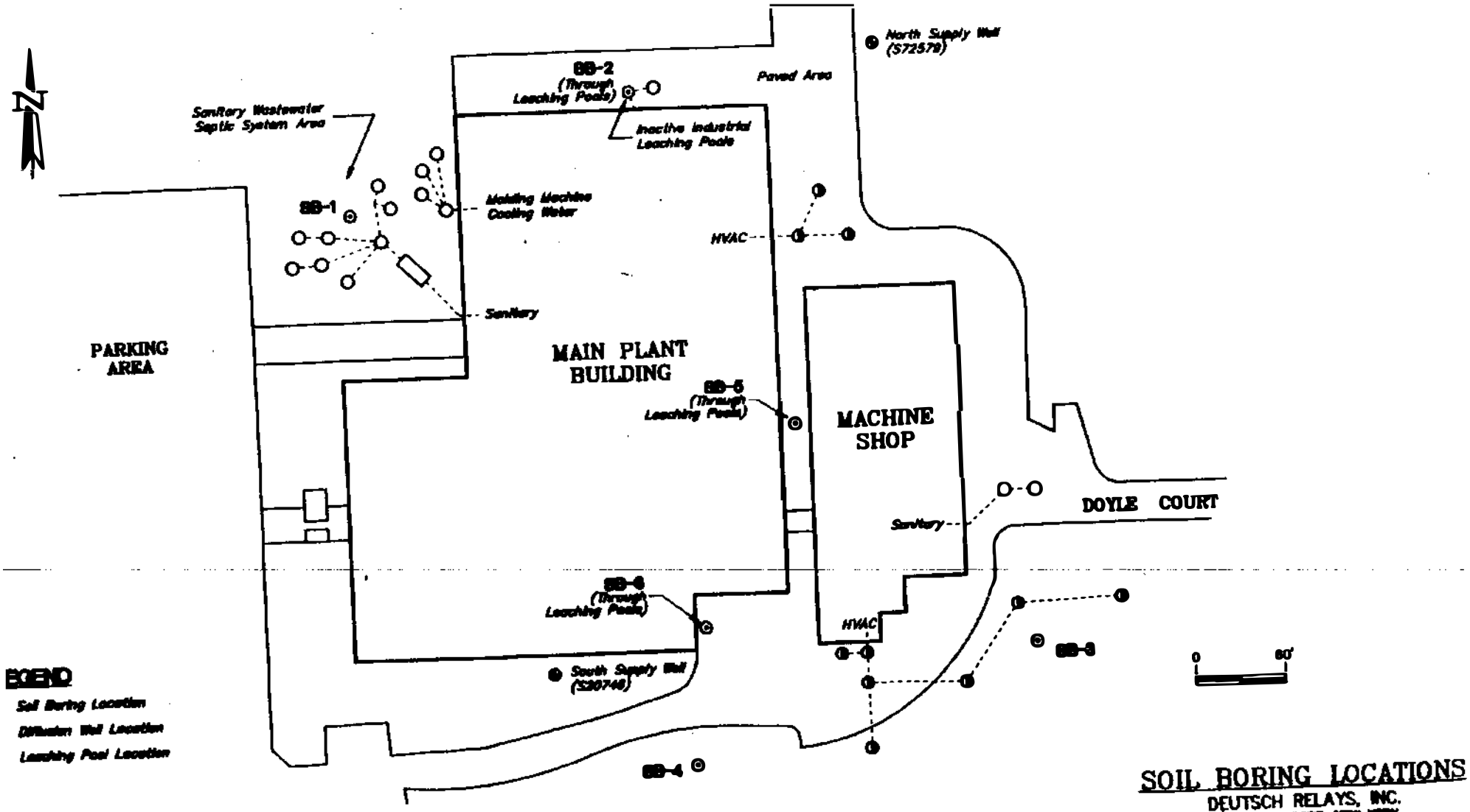
FIGURE 2



LOCATIONS OF SOIL BORINGS AND SAMPLING POINTS

DEUTSCH RELAYS, INC., EAST NORTHPORT, NEW YORK

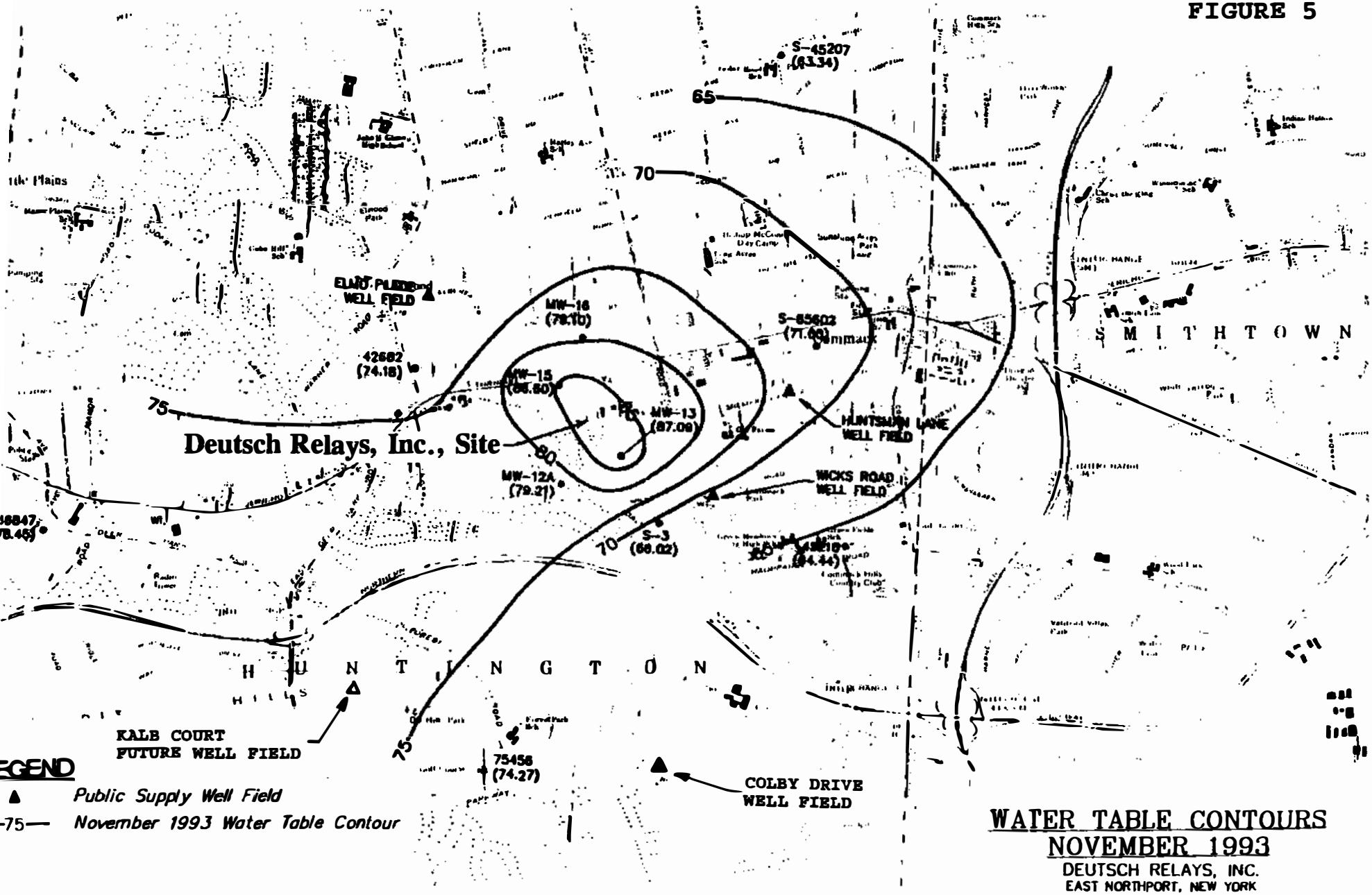
FIGURE 4



SOIL BORING LOCATIONS

DEUTSCH RELAYS, INC.
EAST NORTHPORT, NEW YORK

FIGURE 5



LEGEND

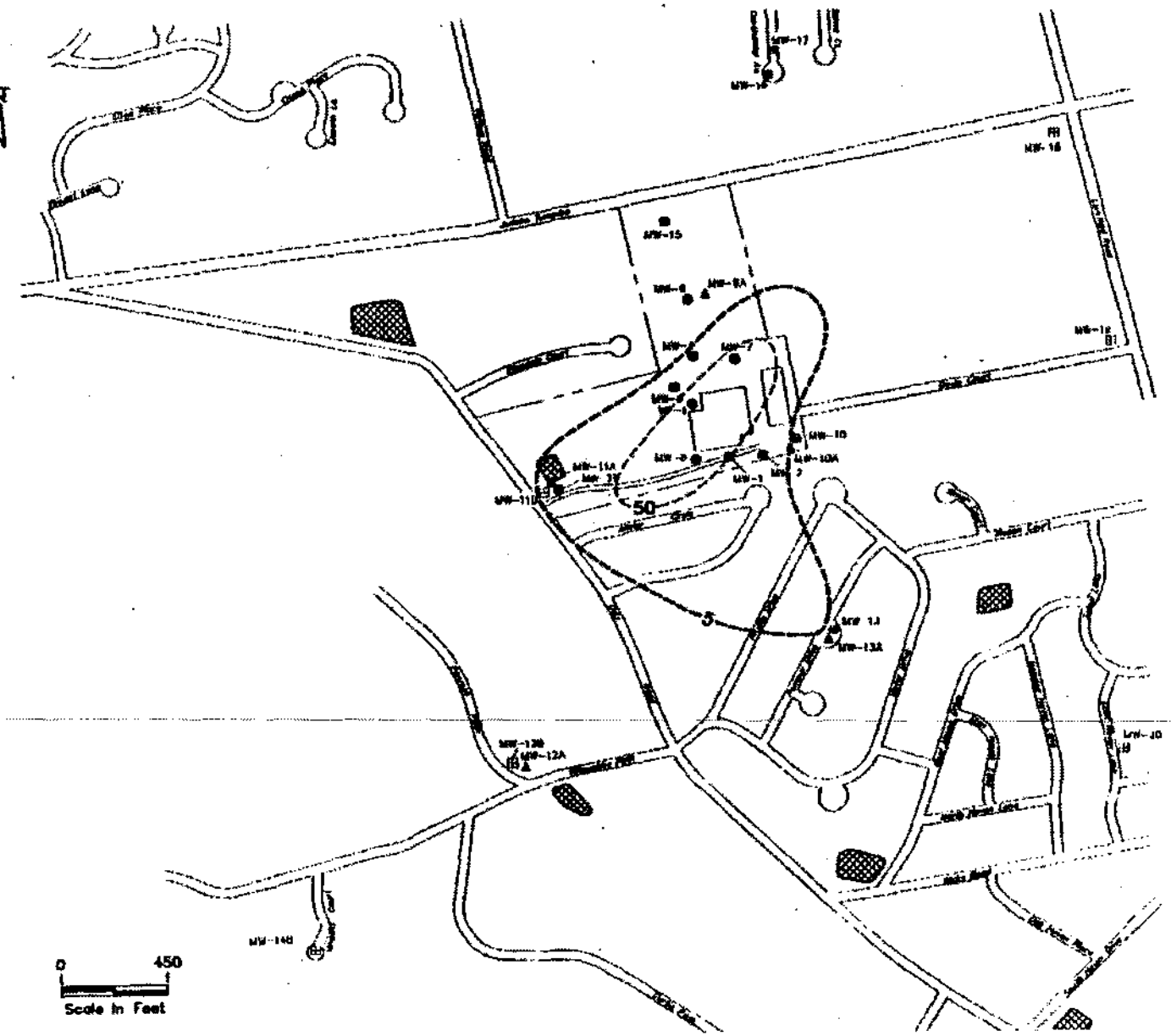
▲ *Public Supply Well Field*

-75— *November 1993 Water Table Contour*

WATER TABLE CONTOURS
NOVEMBER 1993

DEUTSCH RELAYS, INC.
EAST NORTHPORT, NEW YORK

FIGURE 6



LEGEND

- WP-1 — Well Point
- MW-11 — Water-Table Monitoring Well
- MW-11A — Intermediate Monitoring Well
- MW-11B (I) — Deep Monitoring Well
- Property Line
- 50 ——— Inferred 50ppb VOC Contour in Shallow Zone
- 5 ——— Inferred 5ppb VOC Contour in Shallow Zone
- Existing Recharge Basin

INFERRED TOTAL VOC CONTOURS IN SHALLOW ZONE

FIGURE 7

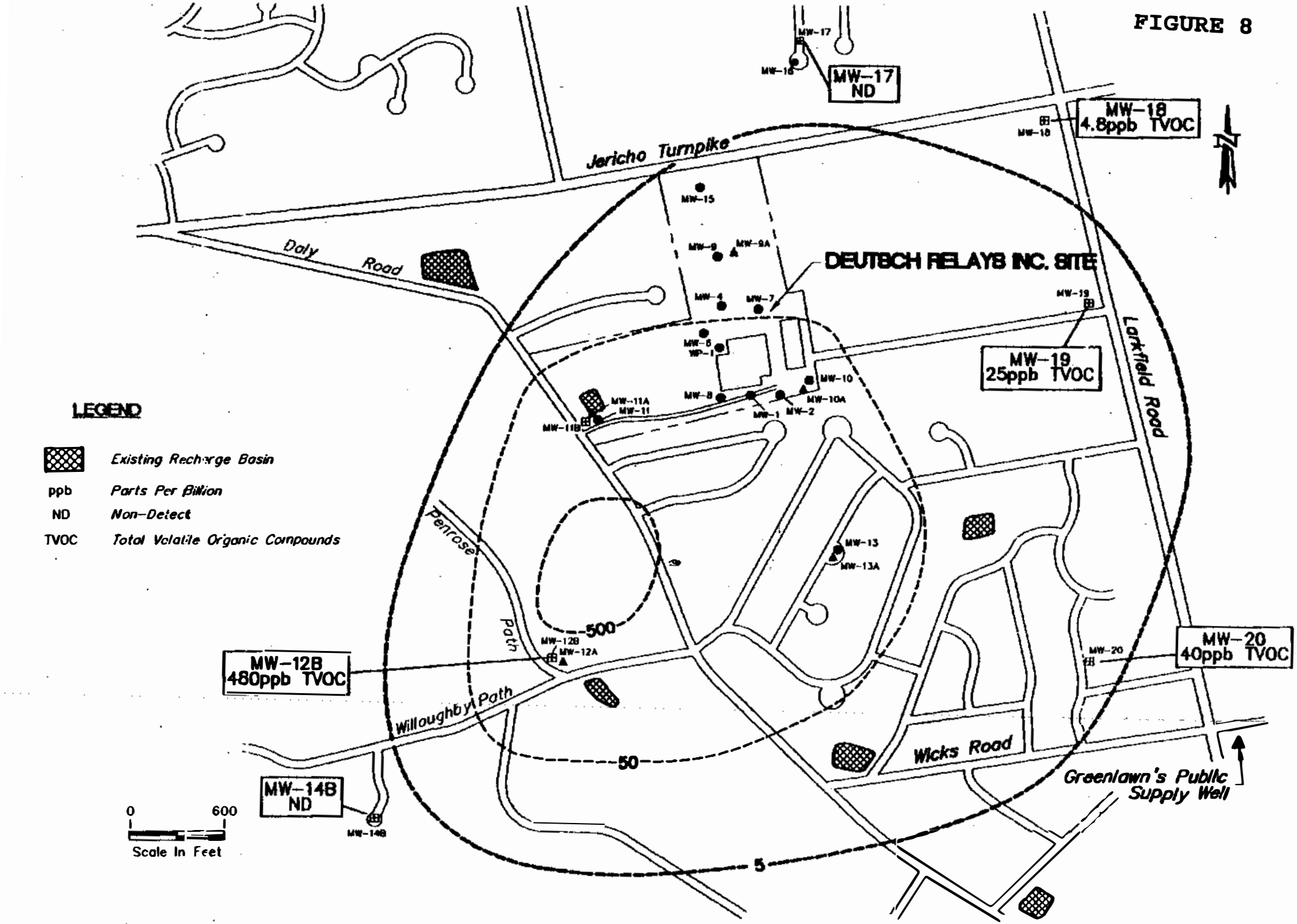
LEGEND

- Well Point
- Water-Table Monitoring Well
- Intermediate Monitoring Well
- Deep Monitoring Well
- Property Line
- 1500 — Inferred 1500ppb VOC Contour in Intermediate Zone
- 500 — Inferred 500ppb VOC Contour in Intermediate Zone
- 50 — Inferred 50ppb VOC Contour in Intermediate Zone
- 5 — Inferred 5ppb VOC Contour in Intermediate Zone
- Existing Recharge Basin

INFERRED TOTAL VOC CONTOURS IN INTERMEDIATE ZONE

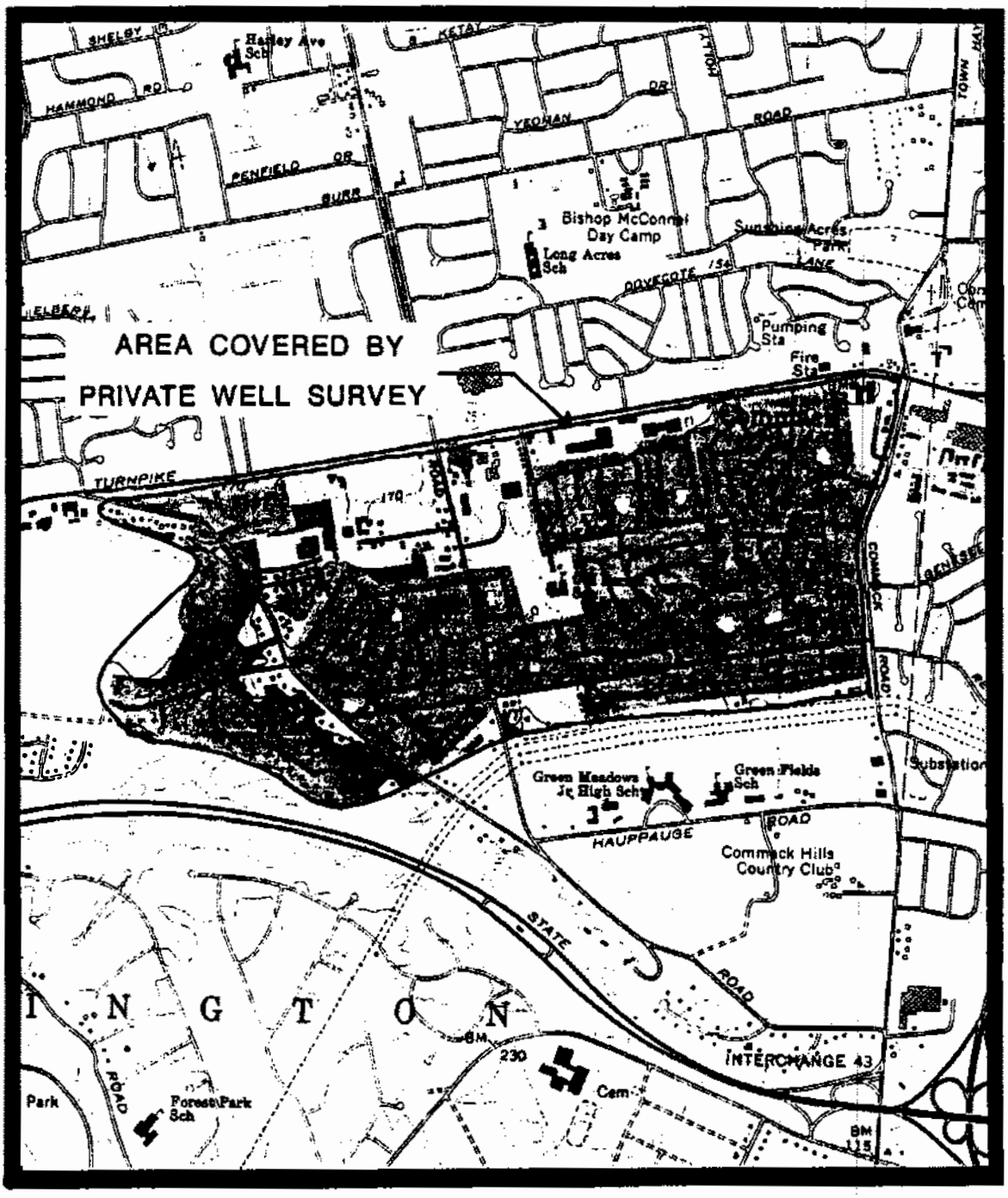
DEUTSCH RELAYS, INC.
EAST NORTHPORT, NEW YORK

FIGURE 8


MW-17
ND
MW-18
4.8ppb TVOC
Jericho Turnpike
Daly Road
DEUTSCH RELAYS INC. SITE
MW-19
25ppb TVOC
Larkfield Road
MW-20
40ppb TVOC
MW-12B
480ppb TVOC
MW-14B
ND
Willoughby Path
Penrose Path
Wicks Road
Greenlawn's Public Supply Well
500
50
5
0
600
Scale In Feet
LEGEND
Existing Recharge Basin
ppb Parts Per Billion
ND Non-Detect
TVOC Total Volatile Organic Compounds

DEUTSCH RELAYS, INC.

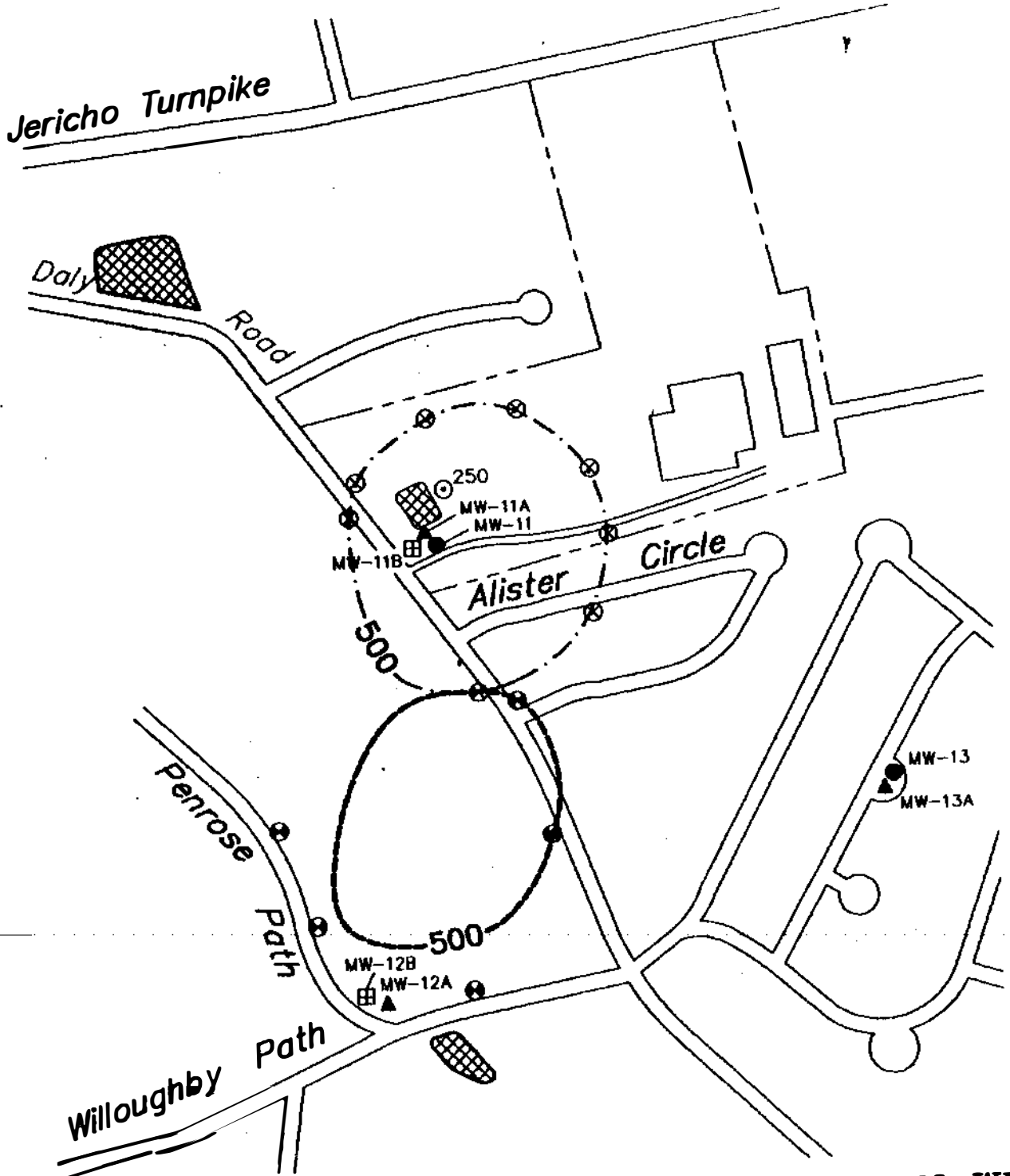
EAST NORTHPORT, NEW YORK



SCALE 1"=2000'

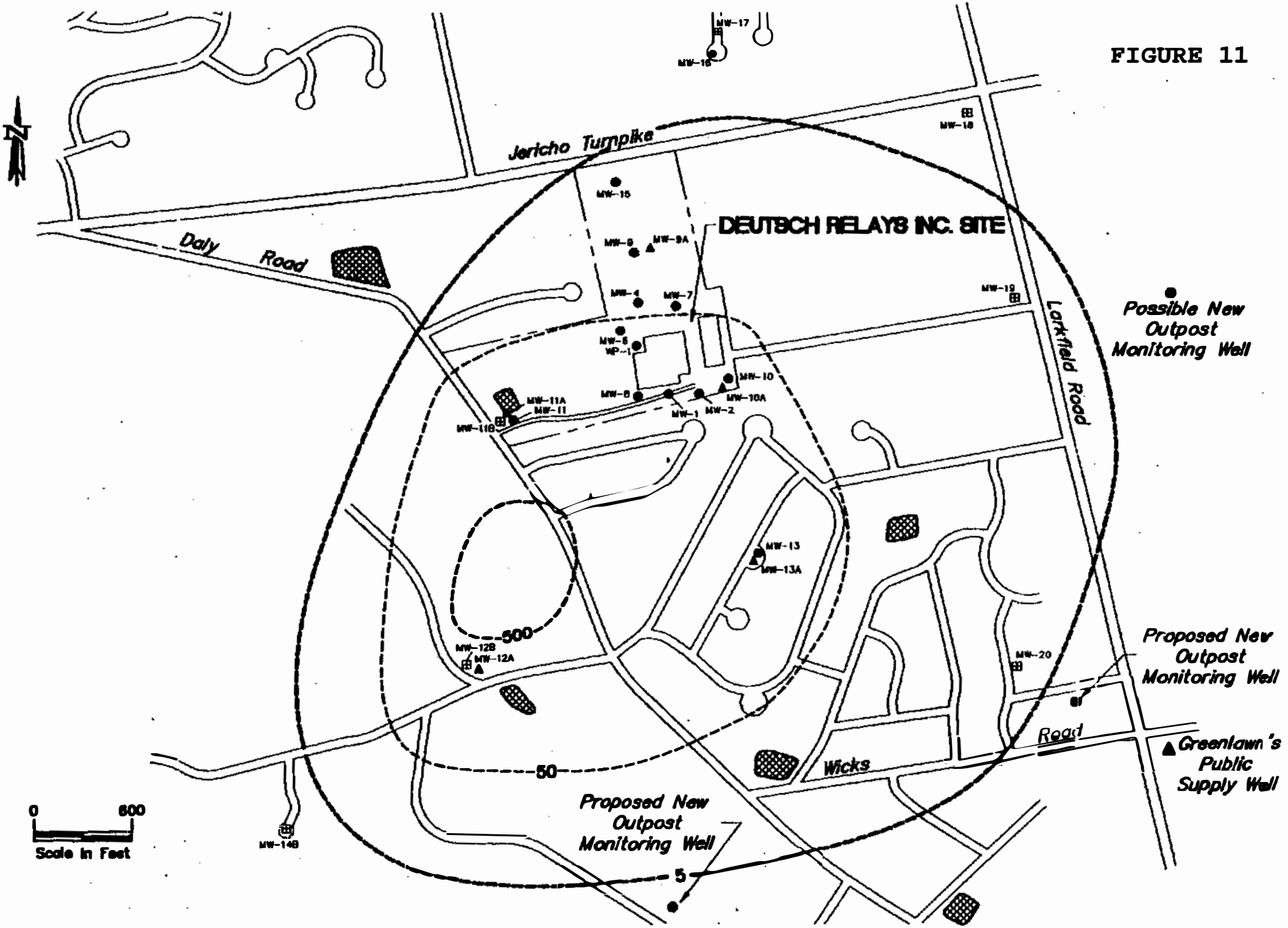
PRIVATE WELL SURVEY

FIGURE 10



ALTERNATIVE 6: CONCEPTUAL DESIGN EXTRACTION WELL LOCATIONS

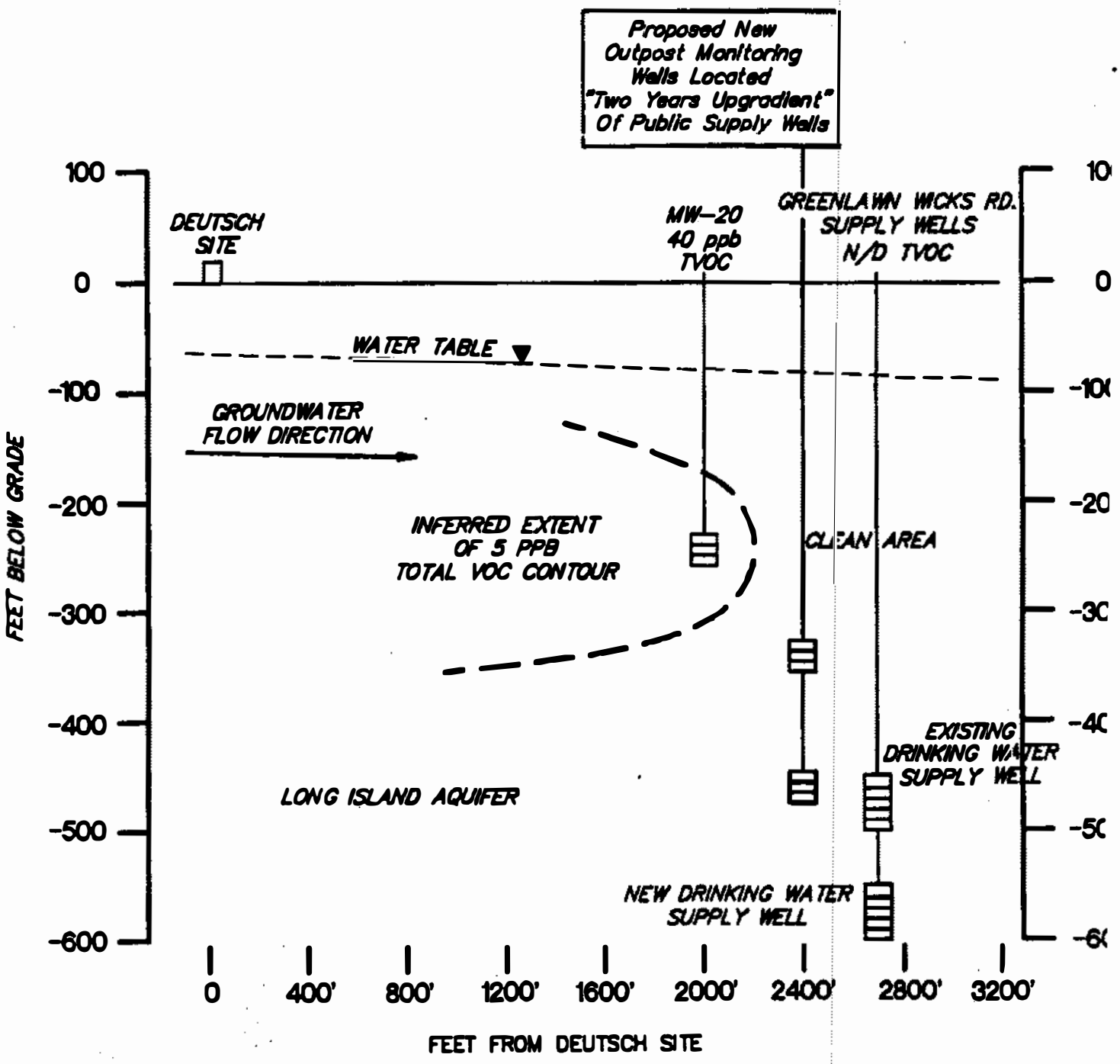
FIGURE 11



PROPOSED OUTPOST MONITORING WELL LOCATIONS

9K563-7M

FIGURE 12



AQUIFER CROSS-SECTION

SK563-7P
012095

TABLE 1

GROUNDWATER MONITORING RESULTS (ppb)
APRIL 1992

DEUTSCH RELAYS, INC., SITE

COMPOUNDS	MW-6	MW-7	MW-8	MW-9	MW-9A	MW-10	MW-10A
Freon 113	22.0E	R	160J	R	96J	12J	7J
1,1-Dichloroethane	<1.0J	<1.0J	<10J	<1.0J	<10J	<1.0J	<1.0J
Chloroform	<1.0J	<1.0	<10J	<1.0	<10J	<1.0J	<1.0
1,1,1-Trichloroethane	<1.0J	0.60J	16J	<1.0J	32J	<1.0J	<1.0J
Trichloroethene	0.6J	0.40J	6.9J	<1.0	13J	0.30J	<1.0J
Tetrachloroethene	0.20J	<1.0	48J	<1.0	13J	0.10J	<1.0

COMPOUNDS	MW-11	MW-11A	MW-11B	MW-12A	MW-12B	MW-13	MW-13A	MW-14B
Freon 113	R	780J	65	2.7	490EJ	R	11J	R
1,1-Dichloroethane	<1.0J	8.8J	2J	3.7	11J	<1.0J	0.50J	<1.0J
Chloroform	<2.9	<52J	<1.0J	<1.0	<20J	<1.0J	<1.0J	<1.0
1,1,1-Trichloroethane	0.60J	87J	18	5.5	170J	1.2J	4.4J	<1.0J
Trichloroethene	0.10J	59J	29	<1.0	92J	<1.0J	<1.0J	<1.0
Tetrachloroethene	<1.0	180J	16	<1.0	190J	<1.0	<1.0J	<1.0

Laboratory Data Qualifiers

J Estimated Value
E Value exceeds the calibration range
R Unusable value
B Compound found in blank

TABLE 2

GROUNDWATER MONITORING RESULTS (ppb)
OCTOBER - NOVEMBER 1993

DEUTSCH RELAYS, INC., SITE

COMPOUNDS	MW-6	MW-7	MW-8	MW-9	MW-9A	MW-10	MW-10A	MW-11	MW-11A	MW-11B
Freon 113	8.04	41.0	114	<2.0	24.8	<2.0	<2.0	2.56	992	27.0
1,1-Dichloroethane	<2.0	<2.0	<10.0	<2.0	<2.0	<2.0	<2.0	<2.0	5.89	<2.0
Chloroform	<2.0	<2.0	<10.0	<2.0	<2.0	<2.0	<2.0	4.45	81.8	2.0
1,1,1-Trichloroethane	<2.0	3.35	21.4	<2.0	2.55	<2.0	<2.0	2.62	80.8	10.2
Trichloroethene	<2.0	<2.0	1.76J	<2.0	1.18J	<2.0	<2.0	<2.0	78.4	12.9
Tetrachloroethene	<2.0	2.98	65.3	<2.0	<2.0	<2.0	<2.0	<2.0	276	8.25J

COMPOUNDS	MW-12A	MW-12B	MW-13	MW-13A	MW-14B	MW-15	MW-16	MW-17	MW-18	MW-19	MW-20
Freon 113	<2.0	160	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
1,1-Dichloroethane	8.74	2.69	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	9.66	12.2
Chloroform	<2.0	6.10	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
1,1,1-Trichloroethane	29.3	96.5	4.31	<2.0	<2.0	<2.0	<2.0	<2.0	4.77	10.8	23.8
Trichloroethene	<2.0	61.2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	5.17	4.59
Tetrachloroethene	<2.0	154	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0

TABLE 3

ESTIMATE OF DISSOLVED CONTAMINANT MASS (TOTAL VOCs) IN AQUIFER SEGMENT

DEUTSCH RELAYS, INC. SITE
EAST NORTHPORT, NEW YORK

Total Area Within	Mass (lbs)	Percent of Total	Applicable Remedial Alternative
1500 ppb	223 - 233	4 - 17%	3
500 ppb	860 - 4157	63 - 80%	6
50 ppb	1293 - 4983	94 - 95%	5
5 ppb	1372 - 5222	100%	4
1500 - 500 ppb	627 - 3934	46 - 75%	
500 - 50 ppb	433 - 826	16 - 31%	
50 - 5 ppb	79 - 349	5 - 6%	
Totals:	1372 - 5222	100%	

Notes:

1. Estimate is based on inferred contaminant concentration contours and certain assumptions on how to calculate area within.

2. Also assumes constant dissolved concentrations of total VOCs.

3. Does not account for sorbed contaminant mass within aquifer segment.

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TABLE 4

POTENTIAL CONTAMINANT MASS REMOVAL FROM GROUNDWATER FOR EACH ALTERNATIVE

DEUTSCH RELAYS, INC., SITE EAST NORTHPORT, NEW YORK

ALTERNATIVE	TOTAL PUMPING RATE (Mgd)	POTENTIAL MASS REMOVAL PER DAY (lbs)	POTENTIAL MASS REMOVAL PER YEAR (lbs)
1	0	0	0
2	0	0	0
3A & 3B	.360	4.5	1,643
5A & 5B	5.330	6.6	2,409
6A & 6B	3.100	15.9	5,804

TABLE 5
COST COMPARISON OF ALTERNATIVES

DEUTSCH RELAYS, INC. SITE EAST NORTHPORT, NEW YORK

ALTERNATIVE	CAPITAL COST (1)	ANNUAL OPERATING COST (YEAR 1)	ANNUAL OPERATING COST (YEAR 2-30)	TOTAL PRESENT WORTH (2)
1. No-Further Remedial Action	0	$ 25,500	$ 12,500	$ 167,000
2. Limited Action	$ 130,500	$ 40,300	$ 27,300	$ 482,000
3A. P&T Hotspot with air stripping	$ 491,000	$ 115,000	$ 89,000	$ 1,620,000
3B. P&T Hotspot with carbon adsorption	$ 578,000	$ 538,000	$ 512,000	$ 6,956,000
5A. P&T (50 ppb) with air stripping	$4,976,000	$ 880,000	$ 768,000	$14,611,000
5B. P&T (50 ppb) with carbon adsorption	$5,759,000	$1,952,000	$1,841,000	$28,708,000
6A. P&T (500 ppb) with air stripping	$3,089,000	$ 559,000	$ 472,000	$ 9,027,000
6B. P&T (500 ppb) with carbon adsorption	$3,386,000	$1,781,000	$1,694,000	$24,488,000

Notes:

(1) Treatment costs do not include emission controls. Costs associated with acquiring property/roadway access are not included

(2) Includes a 20% contingency factor
All costs are present worth using a discount rate of 7%
Conceptual design costs are assumed -30/+50 accurate and are not for remedial design

table4

APPENDIX A
ADMINISTRATIVE RECORD
DEUTSCH RELAYS, INC. SITE NO. 152003

A. Reports and Work Plans:

1. Phase I Report and Proposed Phase II Protocol for Deutsch Relays - Revised August 1985 prepared for Deutsch Relays, Inc by H2M.

2. Phase I Investigation Deutsch Relays, Inc. - January 1986 for the New York State Department of Environmental Conservation prepared by Woodward-Clyde Consultants, Inc.

3. Deutsch Relays, Inc., East Northport, New York Wastewater Treatment System Closure Certification - January 1990 by Eder Associates.

4. Revised Remedial Investigation/Feasibility Study (RI/FS) Work Plan Deutsch Relays, Inc. - January 1990 prepared for Deutsch Relays, Inc. by Geraghty & Miller, Inc.

5. Addendum to the Revised RI/FS Work Plan - March, 1990 by Geraghty & Miller, Inc.

6. Soil Boring Program and Monitoring Well Installation Deutsch Relays, Inc. - October 1990 prepared for Deutsch Relays, Inc. by Geraghty & Miller, Inc.

7. Water and Sediment Sampling Program Deutsch Relays, Inc. - November 1990 prepared for Deutsch Relays, Inc. by Geraghty & Miller, Inc.

8. Supplemental Remedial Investigation Work Plan Deutsch Relays, Inc., East Northport, New York - May 1991 prepared for Deutsch Relays, Inc. by Geraghty & Miller, Inc.

9. Draft Remedial Investigation Report Deutsch Relays, East Northport, New York (Volumes I & II) - June 1992 prepared for Deutsch Relays, Inc. by Geraghty & Miller, Inc.

10. Deutsch Relays, Inc. Site, East Northport, New York Phase II Groundwater Investigation Work Plan - May 5, 1993 prepared for Deutsch Relays, Inc. by Eder Associates Consulting Engineers, P.C.

11. Deutsch Relays, Inc. Site, East Northport, New York Revised Interim Remedial Measure Work Plan - May 4, 1993 prepared for Deutsch Relays, Inc. by Eder Associates Consulting Engineers, P.C.

12. Deutsch Relays, Inc. Site, East Northport, New York Supplemental Site Investigation Report - September 1994 prepared for Deutsch Relays, Inc. by Eder Associates.

13. Deutsch Relays, Inc. Site, East Northport, New York Feasibility Study - October 1994 prepared for Deutsch Relays, Inc. by Eder Associates.

14. Proposed Remedial Action Plan - Deutsch Relays, Inc., November 1994 prepared by the NYSDEC in consultation with the NYSDOH.

15. Proposed Remedial Action Plan - Deutsch Relays, Inc., Revised Section 8, January 1995 prepared by the NYSDEC in consultation with the NYSDOH.

16. Record of Decision - Deutsch Relays, Inc. Hazardous Waste Disposal Site, March, 1995 prepared by the NYSDEC in consultation with the NYSDOH.

B. Order on Consent:

1. "In the Matter of the Development and Implementation of a Remedial Program for an Inactive Hazardous Waste Disposal Site Under Article 27, Title 13 of the Environmental Conservation Law of the State of New York by Deutsch AL Respondent" Order on Consent, dated October 5, 1989 and as modified on April 30, 1992.

C. Correspondence:

1. Letter dated November 17, 1987 to Mr. John Lockyer, Deutsch Relays, Inc. from L. Riley, Asst. Regional Attorney, NYSDEC. Re: Request for Deutsch Relays, Inc. to negotiate an Order on Consent with the NYSDEC to perform the investigation and remediation at this Class 2 site.

2. Letter dated October 13, 1989 to M. Gandin, Esq. from A. McCarthy, Esq., NYSDEC. Re: Transmitting copy of full executed Order on Consent for remedial program at the site.

3. Letter dated November 13, 1989 to J. Lockyer, Deutsch Relays, Inc. from E. Blackmer, Project Manager, NYSDEC. Re: Comments on the draft remedial program documents.

4. Letter dated January 29, 1990 to L. Vignona, Geraghty & Miller, Inc. (G&M) from E. Blackmer, NYSDEC. Re: Approval of Revised RI/FS Work Plan contingent on final comments being addressed by addendum to the work plan.

5. Letter dated March 2, 1990 to E. Blackmer, NYSDEC from G&M. Re: Response to comments and submittal of Addendum to the Revised RI/FS Work Plan.

6. Letter dated April 19, 1991 to L. Vignona, G&M from E. Blackmer, NYSDEC. Re: Preliminary comments on the Supplemental RI work plan. Need for systematic approach for plume definition established.

7. Letter dated May 8, 1991 to L. Vignona, G&M from E. Blackmer, NYSDEC. Re: Final comments on Supplemental RI work plan. Off site monitoring wells required by NYSDEC and NYSDOH.

8. Letter dated June 13, 1991 to L. Vignona, G&M from E. Blackmer, NYSDEC. Re: Approval of Supplemental RI Work Plan.

9. Letter dated June 29, 1992 to M. O'Toole, NYSDEC from G&M. Re: Submittal of the draft RI report. Off site groundwater contamination confirmed.

10. Letter dated July 23, 1992 to E. Blackmer, NYSDEC from S. Robbins, Suffolk County Department of Health Services (SCDHS). Re: Comments on draft RI report. Investigation fails to adequately characterize groundwater contamination related to the site and identify all public supply wells in the area.

11. Letter dated September 10, 1992 to J. Carroll, Deutsch Relays, Inc. from E. Blackmer, NYSDEC. Re: Comments on Draft RI. Report contains data gaps and erroneous conclusions. FS must continue in a timely fashion. Additional on site borings and sampling required.

12. Letter dated October 26, 1992 to E. Blackmer, NYSDEC from J. Carroll, Deutsch Relays, Inc. Re: Deutsch agrees to address comments in FS and perform additional on site borings and sampling.

13. Letter dated November 10, 1992 to S. McCormick, NYSDEC from J. Crua, NYSDOH. Re: Request that 14 Penrose Path be hooked up to public water.

14. Letter dated December 18, 1992 to M. Komoroske, NYSDEC from N. Brew, Eder Associates (Eder). Re: Radial groundwater flow confirmed.

15. Letter dated January 12, 1993 to Eder from M. Komoroske, NYSDEC. Re: Due to radial groundwater flow, 4 additional off site monitoring wells required. Interim Remedial Measure (IRM) work plan required.

16. Letter dated June 18, 1993 to Eder from M. Komoroske, NYSDEC. Re: Approval of the Phase II Groundwater Investigation Work Plan. No additional on site investigation required.

17. Letter dated October 29, 1993 to Eder from M. Komoroske, NYSDEC. Re: IRM completed satisfactorily.

18. Letter dated March 1, 1994 to Eder from M. Komoroske, NYSDEC. Re: Comments on the Supplemental Site Investigation Report and draft FS Report.

19. Letter dated April 27, 1994 to M. Komoroske, NYSDEC from J. Crua, NYSDOH. Re: Conclusion made by Eder in risk assessment section of the FS is invalid.

20. Letter dated May 26, 1994 to J. Carroll, Deutsch Relays, Inc. from M. Komoroske, NYSDEC. Re: Information presented in draft FS insufficient to select a remedial alternative. Three additional alternatives outlined which included need for further protection of the public supply wells in the vicinity of the site.

21. Letter dated August 23, 1994 to J. Carroll, Deutsch Relays, Inc. from M. Komoroske, NYSDEC. Re: Comments on revised FS and introduction of phased approach to implement a "pump and treat" groundwater remedy.

22. Letter dated October 13, 1994 to Eder Associates from M. Komoroske, NYSDEC. Re: Acceptance of the FS contingent on a few final minor revisions being made.

23. Letter dated October 14, 1994 to M. Komoroske, NYSDEC from Eder Associates. Re: Submittal of Final FS and Eder's recommended groundwater remedy for the Deutsch Relays, Inc. site.

24. Letter dated November 2, 1994 to M. O'Toole, NYSDEC from G. A. Carlson, NYSDOH. Re: Elements of proposed remedial alternative are protective of public health and concurrence with the PRAP.

D. Citizen Participation

1. Community Relations Plan, Appendix G to the Revised Remedial Investigation/Feasibility Study Work Plan - January 1990, prepared by Geraghty & Miller, Inc.

2. Fact Sheet No. 1 Remedial Investigation/Feasibility Study - April 1990 mailed to public contact list.

3. Letter dated August 28, 1992 sent to public contact list with Environmental Fact Sheet on Remedial Program.

4. Public meeting held on October 29, 1992 to discuss the findings and status of the Remedial Investigation/Feasibility Study. Invitation mailed to public contact list prior to meeting.

5. Public meeting held on November 15, 1994 to discuss the Proposed Remedial Action Plan (PRAP) with the public and solicit comment.

6. November 15, 1994 - Public Meeting Transcript made available to the public for review in January, 1995.

7. Public meeting held on January 25, 1995 to further discuss the Proposed Remedial Action Plan. Meeting invitation mailed to the public contact list prior to the meeting.

8. Letter dated February 10, 1995 from Nora M. Brew (Eder Associates) to Mr. Michael Komoroske (NYSDEC). Re: Comments on the PRAP on behalf of their client, Deutsch AL.

9. Letter dated February 9, 1995 from S. Robbins (SCDHS) to M. Komoroske (NYSDEC). Re: County health department's position on providing public water to all homes and businesses with private wells that could potentially be impacted by

groundwater contamination from a Superfund site.

10. Letter dated January 26, 1995 from S. Magot (local resident) to M. Komoroske (NYSDEC), Re: Comments on the site history, remedial investigation, feasibility study, proposed remedy, and public meeting notification.

11. Letters dated January 19, 1995 and November 18, 1994 from B. Williams (local resident) to M. Komoroske (NYSDEC). Re: Request for assistance in providing public water.

12. Letter dated December 8, 1994 from P. Ponturo (SCDHS) to M. Komoroske (NYSDEC). Re: Letter in support of comments from local water districts and comments on the PRAP.

13. Letter dated December 2, 1994 from Senator Daniel P. Moynihan (United States Senate) to Commissioner Marsh (NYSDEC). Re: Constituent service.

14. Letter dated November 29, 1994 from C. Sporato (local resident) to M. Komoroske (NYSDEC). Re: Comments on public health issues and the PRAP.

15. Letter dated November 28, 1994 from A. Aversa (local resident) to M. Komoroske (NYSDEC). Re: Comments on public health issues, the PRAP, and site history and operation.

16. Letter dated November 26, 1994 from C. Mangold, et al (local residents) to M. Komoroske (NYSDEC). Re: Comments on the PRAP, site history, ownership, and citizen participation.

17. Letter dated November 23, 1994 from R. Santoriello (Greenlawn Water District) to M. Komoroske (NYSDEC). Re: Comments on the PRAP as it relates to the Greenlawn Water District's public supply wells.

18. Letters dated November 22 and November 14, 1994 from B. Bletsch (Town of Huntington) to M. Komoroske (NYSDEC). Re: Comments on the PRAP as it relates to the Dix Hills Water District's public supply wells.

19. Letter dated November 21, 1994 from A. Barker (local resident) to M. Komoroske (NYSDEC). Re: Request for second public meeting.

20. Letter dated November 15, 1994 from M. Plump (President, Elwood Taxpayers Association) to M. Komoroske (NYSDEC). Re: Request for project documents.

21. Letter dated November 9, 1994 from S. Robbins (SCDHS) to M. Komoroske (NYSDEC). Re: Concurrence with proposed remedy.

22. Postcard from F. Muller (local resident) to M. Komoroske (NYSDEC). Re: Request for second public meeting.

APPENDIX B
RESPONSIVENESS SUMMARY
DEUTSCH RELAYS, INC. SITE NO. 152003

The issues addressed below were raised during public meetings held on November 15, 1994 and January 25, 1995 at the Elwood Middle School in East Northport, New York and in various letters and phone calls received from the public. The purpose of the meetings was to present the Proposed Remedial Action Plan (PRAP) for the site and receive comments on the PRAP for consideration during the selection of a remedy. The transcript from the November 15, 1995 meeting and copies of the written comments are included in the administrative record for the site (Appendix A of the Record of Decision) which is available for public review at the site's document repositories. The public comment period for the PRAP extended from November 7, 1994 to February 10, 1995.

The following written comments were received regarding the proposed remedy:

1. Letter dated February 10, 1995 from Nora M. Brew (Eder Associates) to Mr. Michael Komoroske (NYSDEC). Re: Comments on the PRAP on behalf of their client, Deutsch AL.

2. Letter dated February 9, 1995 from S. Robbins (SCDHS) to M. Komoroske (NYSDEC). Re: County health department's position on providing public water to all homes and businesses with private wells that could potentially be impacted by groundwater contamination from a Superfund site.

3. Letter dated January 26, 1995 from S. Magot (local resident) to M. Komoroske (NYSDEC). Re: Comments on the site history, remedial investigation, feasibility study, proposed remedy, and public meeting notification.

4. Letters dated January 19, 1995 and November 18, 1994 from B. Williams (local resident) to M. Komoroske (NYSDEC). Re: Request for assistance in providing public water.

5. Letter dated December 8, 1994 from P. Ponturo (SCDHS) to M. Komoroske (NYSDEC). Re: Letter in support of comments from local water districts and comments on the PRAP.

6. Letter dated December 2, 1994 from Senator Daniel P. Moynihan (United States Senate) to Commissioner Marsh (NYSDEC). Re: Constituent service.

7. Letter dated November 29, 1994 from C. Sporato (local resident) to M. Komoroske (NYSDEC). Re: Comments on public health issues and the PRAP.

8. Letter dated November 28, 1994 from A. Aversa (local resident) to M. Komoroske (NYSDEC). Re: Comments on public health issues, the PRAP, and site history and operation.

9. Letter dated November 26, 1994 from C. Mangold, et al (local residents) to M. Komoroske (NYSDEC). Re: Comments on the PRAP, site history, ownership, and citizen participation.

10. Letter dated November 23, 1994 from R. Santoriello (Greenlawn Water District) to M. Komoroske (NYSDEC). Re: Comments on the PRAP as it relates to the Greenlawn Water District's public supply wells.

11. Letters dated November 22 and November 14, 1994 from B. Bletsch (Town of Huntington) to M. Komoroske (NYSDEC). Re: Comments on the PRAP as it relates to the Dix Hills Water District's public supply wells.

12. Letter dated November 21, 1994 from A. Barker (local resident) to M. Komoroske (NYSDEC). Re: Request for second public meeting.

13. Letter dated November 15, 1994 from M. Plump (President, Elwood Taxpayers Association) to M. Komoroske (NYSDEC). Re: Request for project documents.

14. Letter dated November 9, 1994 from S. Robbins (SCDHS) to M. Komoroske (NYSDEC). Re: Concurrence with proposed remedy.

15. Postcard from F. Muller (local resident) to M. Komoroske (NYSDEC). Re: Request for second public meeting.

Where the same or similar issues were raised either in writing or verbally during the public meetings or phone calls, they have been grouped together and are addressed once. The remaining issues were addressed individually. The issues raised have been grouped into the following categories: (I) Health Issues; (II) Groundwater Investigation Issues; (III) Proposed Remedial Action; (IV) Citizen Participation; and (V) Miscellaneous.

I. Health Issues

1. Am I being exposed to contaminated groundwater?

Based on the groundwater investigation conducted for the Deutsch Relays site, the private well survey completed in the community near the site, and the results of samples taken from the public drinking water supply wells servicing the community, exposure to site-related contaminants in groundwater is not occurring. To ensure that exposure to contaminated drinking water does not occur in the future, public drinking water supply wells are sampled every three months and must meet New York State Department of Health public drinking water standards. Site-related contamination was not detected in the private wells identified during the private well survey. We encourage any individual who is aware of a private well in the area of concern to contact the NYSDOH so that the well can be sampled.

2. How will the proposed remedial action prevent exposure to contaminated drinking water?

Groundwater monitoring wells (outpost wells) will be placed in between the leading edge of the groundwater contaminant plume and the public drinking water supply wells to act as an early warning system. If the contaminant plume migrates towards the drinking water wells, (i.e., if contamination is detected in the outpost wells) measures will be taken to prevent the distribution of contaminated drinking water to the community. The proposed remedial action includes a contingency plan to provide treatment of the public water supply wells, if necessary. In addition, all individuals with homes serviced by a private well potentially affected by the contaminant plume will be offered connection to public water.

3. **The VOCs in groundwater at and downgradient of the site do not pose a human health risk to area residents (regardless of location) or to the public drinking water supply because there is no pathway for the exposure to the contaminants (submitted by Eder Associates on behalf of Deutsch AL).**

The State and County Health Department representatives explained in detail at the last public meeting that the public water supply wells are currently not contaminated by Deutsch related compounds. If, in the future, public supply wells do become further threatened by Deutsch related contaminants, treatment will be placed on the public supply wells to ensure that the public is not exposed to the contaminants.

4. **Page 6 of the PRAP indicates that "groundwater movement beneath the site is radially outward and downward" due to water table mounding at the site. The mounding effects, and thus the vertical gradient diminish with distance from the site, and the public drinking supply wells are on the order of 200 feet deeper than groundwater containing VOCs at the leading edge of the plume. The potential for water supply well impacts (which will be addressed by outpost monitoring and the contingency for wellhead treatment) is not a significant concern for these reasons (submitted by Eder Associates on behalf of Deutsch AL).**

The NYSDEC does not agree. The potential for water supply well impacts is a significant concern as evidenced by the data contained in the Final Supplemental Site Investigation Report. Until the outpost wells or well clusters are installed and sampled, there is no basis for lessening this concern.

5. **Can we be exposed to contaminants that migrate up through the soil from the groundwater?**

Because of the great depth from the ground surface to the contaminated groundwater (70 feet or more), it is highly unlikely that there would be any exposure to contaminants volatilizing (evaporating) out of the groundwater. During the remedial investigation, contaminants were not detected in soil gas (soil gas is the air between the soil particles) samples taken on the edge of Deutsch Relays property. Also, borings into the ground were completed beyond the Deutsch property for the purpose of installing groundwater monitoring wells. The soil from these borings were analyzed with a field instrument that is able to detect contaminants that may be volatilizing off the soil. The results from this analysis indicate that the groundwater contaminants from the Deutsch site are not present at the ground surface.

6. **Are there contaminants remaining in the soil on the Deutsch property in concentrations which could represent a health concern?**

Not to our knowledge. Based on the review of the results of extensive on-site sampling, the NYSDEC and the SCDHS have concluded that there are no remaining on-site sources of contamination. All contamination in the soils has been removed during past cleanups on the Deutsch property. In addition, the general public is restricted from access to the areas on Deutsch property where contaminated soil was removed.

7. **At the public meeting, it was stated that the water is safe, according to Federal standards - but at the same time it was noted that DDT was considered safe by Federal standards in the past. I am not sure how a statement can be made that the water is safe. I would be curious to compare the Elwood water supply against the Dix Hills water supply and the Smithtown water supply. The number and percents that I have are meaningless since I do not have anything to compare them with except for the standards and standards can be wrong.**

As indicated by the both the State and County health departments, the public drinking water is safe because no VOCs have been detected in the water distributed to the public. The public drinking water supply wells are sampled every three months and must meet NYSDOH public drinking water standards. These standards are set very conservatively by the NYSDOH.

II. Groundwater Investigation Issues

1. **At what rate is the contaminated groundwater spreading down and outward from beneath the Deutsch site?**

Once the contaminants leach down through the soil to the groundwater table (approximately 70 feet from the ground surface at the Deutsch property), they begin to dissolve into the groundwater. In the center part of Long Island near the groundwater divide, horizontal and vertical groundwater velocities in the upper glacial portion of the aquifer are approximately 1 foot per day (or 300 - 400 feet per year) and 6 feet per year, respectively. Due to the lower permeabilities of the Magothy portion of the aquifer, groundwater velocities decrease significantly in the Magothy.

The findings of the remedial investigation indicate that contaminated groundwater containing Freon 113 and chlorinated volatile organic compounds (VOCs) has migrated approximately 2,100 feet from beneath the site. Most of the contaminated groundwater is moving in a southwest direction from the site. Contaminated groundwater related to the site has also been detected in a monitoring well 2,100 feet southeast from the site at 40 parts per billion of total VOCs (1,1,1-trichloroethane at 24 ppb, 1,1-dichloroethane at 12 ppb, and trichloroethene at 4 ppb).

2. **Why are the Total VOC levels in monitoring well MW-11A increasing if there is no remaining contaminant source on the Deutsch Property?**

The apparent increasing levels of Total VOCs in MW-11A is attributable to a mass or "slug" of contaminated groundwater moving through this location. As stated above, groundwater moves relatively slowly both horizontally and vertically and may take years to move through a particular area in the aquifer. Therefore, even though there is not any further contaminant sources at the ground surface, the contamination that is already in the groundwater will take years to migrate away from the site which may result in increasing contamination levels in monitoring wells close to the site.

3. **Why haven't the contaminants in the groundwater beneath the Deutsch Relay site migrated further in the groundwater?**

In general, although the dissolved contaminants migrate with the natural groundwater flow rate, their progress is retarded due to natural attenuation (contaminant concentrations in groundwater

are reduced by dilution, adsorption onto soil particles, etc.). Therefore, the combination of the lower groundwater velocities in the deeper portions of the aquifer and natural attenuation processes has limited the spread of the contaminants in the groundwater.

4. **Has the plume migrated to the southwest or west? This could impact Dix Hills Plants No. 1, 3, and 11.**

The plume is migrating to the southwest as evidenced by monitoring well data collected from MW-12A&B and MW-14B. Both of these well locations are to the southwest of the site. Groundwater contamination is migrating to the southwest (MW-12B impacted), but has not reached MW-14B as yet. MW-14B is upgradient of Dix Hill's Plants No. 1,3, and 11.

5. **Although it was stated that groundwater on Long Island (past the median line or groundwater divide) flows in a southwest direction, that is not totally accurate. Once again using your Figure 4 as a reference, we see that while it appears that the "hot spot" is moving in a southwesterly direction, the pollution is spreading also in a northeasterly direction - past Larkfield Road, and even as far north as MW-18.**

The contamination detected at MW-18 was below the 5 ppb groundwater standard. Only one VOC was detected, 1,1,1-trichloroethane, which may or may not be associated with the groundwater contamination migrating from the Deutsch site. None the less, this monitoring well will be included in the long-term sampling plan for the site. If VOC levels increase in the monitoring well, steps will be taken to protect public water supply wells downgradient of this location.

III. Proposed Remedial Action

A. Questions/Comments on Alternative 6A and Rationale for Selection

1. **Why is Alternative 6A being proposed as the remedial action for the site?**

Alternative 6A calls for the pumping and treatment of the contaminated groundwater migrating from beneath the Deutsch site which has total VOC concentrations greater than 500 parts per billion. It is proposed that this remedial action would be implemented in a phased approach. This alternative satisfies the preference to permanently and significantly reduce the toxicity, mobility or volume of VOCs in groundwater. It is estimated the proposed alternative should capture and treat an estimated 63% to 80% of the dissolved contaminant mass that is now in the groundwater in the most effective manner. The remaining portion of the contaminated groundwater migrating from beneath the Deutsch site will be reduced by natural attenuation processes. Alternative 6A also calls for the installation and monitoring of additional monitoring wells upgradient of the public supply wells and provision for treatment at public supply wells, if necessary, to protect the public health.

2. **Why not implement Alternative 5A rather than Alternative 6A?**

Based on calculations made when preparing the conceptual designs for each of the alternatives in the Feasibility Study, in the initial years of operation Alternative 5A would remove approximately 50% less contamination from the aquifer than Alternative 6A, if fully

implemented. This is because the extraction wells in Alternative 5A would be pumping and treating groundwater with approximately 50 ppb or greater Total VOCs, while the extraction wells in Alternative 6A will be pumping and treating groundwater with approximately 500 ppb or greater Total VOCs. In addition, Alternative 5A would be more difficult to implement and be more disruptive to the community. Based on the conceptual designs, it was estimated that Alternative 5A if fully constructed would cost $4,976,00 to construct while Alternative 6A would cost $3,089,000.

3. **You use the 500 ppb level as the critical level for treatment. As you displayed, the three levels of Total VOCs makes it seem as if they were immediate drop points. Further investigation of Figure 4 of your hand out points out that this is not the fact. For example, MW-12B has recorded levels of 480 ppb which is not really significantly different from 500 ppb. MW-12B is southwest of the 500 ppb hot spot and a distance in front of it. Similarly, MW-20 shows a Total VOC concentration of 40 ppb and yet it is just as close to the 5 ppb border. Considering these facts, would it not be more meaningful if the hot spot border was considered at the 300 or 200 ppb level?**

As indicated on the figures, the total Volatile Organic Compounds (VOC) contours are only inferred. As discussed in the public meetings, these lines are based on limited data points and can be used for planning purposes only. It is estimated that 63% to 80% of the dissolved VOCs in the groundwater migrating from the Deutsch site is within the inferred 500 ppb contour. Based on the conceptual designs, Alternative 6 should remove a greater mass of VOCs then Alternative 5. Based on the conceptual designs, Alternative 6 also has approximately 38% less in estimated construction cost. This increased removal rate, at less cost, is a function of an order of magnitude greater concentration of total VOCs between the 50 ppb and 500 ppb concentration levels as well as the much larger area within the 50 ppb contour as opposed to the 500 ppb contour. A simple interpolation of costs between the 50 ppb and 500 ppb alternatives, with consideration of the area involved, indicates that an alternative which called for pumping at an inferred 300 or 200 ppb contour would be less effective at total VOC mass removal than Alternative 6 at a greater cost.

4. **The proposed remedy (Alternative 6A) would not be fully implementable due to a number of significant constraints which include 1) construction equipment accessibility restrictions and the lack of available public property, 2) disruption of traffic in the neighborhood and increased noise, 3) the construction of an estimated five acres of additional recharge basins. and 4) not possible to use treated groundwater at the Deutsch plant due to significant downsizing of plant operations (submitted by Eder Associates on behalf of Deutsch AL).**

Nowhere in the conceptual design of the Final Feasibility Study (FS) does it indicate that Alternative 6A would not be fully implementable. If this was the case, it would have been screened out in Section 3 of the FS as was Alternative 4.

Although Alternative 6A's conceptual design would be more difficult to implement then Alternative 3A's conceptual design, it "would be somewhat easier to implement than Alternative 5A's conceptual design because it would involve fewer off-site extraction locations" as indicated on page 120 of the Final FS.

Although it is correct that there will be some disruption in the neighborhood, this is typical for any construction activity and appropriate mitigating measures will need to be undertaken by

Deutsch AL's contractor to minimize this disruption. The noise associated with air strippers can be essentially eliminated by the installation of baffles on the intake as was done at the Greenlawn Water District's (GWD) Huntsman Lane installation.

The statement that it is not feasible to construct an estimated five acres of additional recharge basins..." as called for in Alternative 6A's conceptual design is in contradiction to the final FS. If this was true, then this component of Alternative 6A would have been screened out in Section 3 of the FS. It was not.

Reuse of the treated groundwater at the Deutsch plant was not a component of Alternative 6A, as presented in the Final FS. This comment will be considered by the design engineer during the design phase of the remedial action.

Finally, the components of Alternative 6A and the other alternatives presented in the final FS are conceptual in nature to allow for a comparison between the alternatives. The actual components of the remedial action will be determined during remedial design and be selected to achieve the remedial goals, to the extent possible, in the most cost effective, least disruptive manner possible.

5. **Page 14 should indicate that Alternative 5 would create the most disturbance, not Alternative 6. (Submitted by Eder Associates on behalf of Deutsch AL).**

Agreed. This has been corrected in the Record of Decision.

6. **Page 16 and Table 4 should indicate that the mass removal rates assume that the VOC concentrations within each contour are constant (submitted by Eder Associates on behalf of Deutsch AL).**

This is true and it is stated in the notes on Table 3.

7. **Page 16 and Table 3 should explain the basis for the dissolved contaminant mass removal calculations (submitted by Eder Associates on behalf of Deutsch AL).**

The basis of these numbers was certain assumptions which are listed at the base of Table 3. Assuming constant dissolved concentrations of total VOCs within each contour, the volume of the saturated pore space within the aquifer segment (area within the inferred contaminant concentration contour) is multiplied by the concentration to obtain a mass.

8. **What was Alternative 4 and what did it provide?**

Alternative 4 called for the full containment and treatment of the contaminated groundwater migrating from beneath the Deutsch site and restoration of this portion of the aquifer to groundwater standards. This alternative was considered in the Feasibility Study. It was estimated that 55 groundwater extraction wells pumping approximately 17.4 million gallons per day from the aquifer and approximately 54,000 feet of piping would be needed to implement this remedy. This type of remedy would be very disruptive to the community due to the large number of groundwater extraction wells, treatment systems and approximately 36 acres of additional recharge basins that would need to be built. This alternative would not provide more protection

to public health than Alternative 6A. The cost benefit ratio also showed Alternative 4 to be impracticable.

B. Questions/Comments on the Proposed Outpost Wells and Private Residential Wells

1. **Additional evaluation is required to select appropriate locations and screened depths for the outpost monitoring wells to be installed between the leading edge of the plume and the public drinking water supply wells at Wicks Road and Colby Drive (submitted by Eder Associates on behalf of Deutsch AL).**

   It is agreed that an additional evaluation will be needed to select appropriate locations for the outpost wells. The Suffolk County Department of Health Services (SCDHS) has requested the inclusion of quantitative groundwater modelling in the remedial design process. It is planned that the SCDHS and the appropriate water district representatives be involved in this selection. Finally, it will serve the interest of the public that these outpost wells or well clusters be installed and sampled as soon as possible, especially the one upgradient of the GWD's Wicks Road public supply wells.

2. **With the intent of outpost monitoring wells to serve as sentinels, we suggest that specific criteria (such as detection levels) be established for both Wicks Road and Huntsman Lane that would trigger the release of funds to the Water District in order for the District to begin the design phase on a well head treatment system. The established trigger levels should be less than those levels which would result in closure in the well.**

   It is proposed in the Feasibility Study (FS) that the outpost wells be located two years upgradient (based on the rate of groundwater movement in the area) of the public supply wells. Any detection of 1 ppb or more of any individual Deutsch related contaminant in the outpost well samples will "trigger" Deutsch AL to evaluate the rate of movement of the Deutsch contaminants towards the public supply wells. If VOC concentrations in the outpost well(s) exceed the respective standards, a minimum of one to a maximum of three confirmatory samples will be collected within 30 days and the results evaluated by the NYSDEC and the State and County Health Departments. If the NYSDEC's and Health Department's evaluation indicates that treatment is necessary to comply with drinking water standards, the financial assurances will be released to the water district to begin the design phase on a well head treatment system.

3. **Page 12 should clarify that MW-19 would be the outpost monitoring well upgradient of the Huntsman Lane supply well. MW-19 would be replaced with an outpost well closer to the supply well if the concentrations of individual VOCs at MW-19 exceed 50 ppb (submitted by Eder Associates on behalf of Deutsch AL).**

   This has been clarified in the Record of Decision.

4. **There was a request for public water to be provided to five residences located on Daly Road which still have private wells for a drinking water supply. There is a concern that these wells may potentially be impacted in the future by groundwater contamination migrating from the Deutsch Relays site.**

   Deutsch AL (the responsible party) has been requested to make the necessary arrangements with

the affected homeowners as soon as possible to provide public water to them unless their consultant can demonstrate (to the satisfaction of the NYSDEC, NYSDOH, and SCDHS) that the private wells in this area will not be impacted by the contamination in groundwater which has originated from the Deutsch Relays site.

C. Questions/Comments on Remedial Technology

1. What is the difference between air stripping and carbon adsorption, both of which can be used to clean contaminated groundwater?

Air stripping is a mass transfer process in which VOCs in water are transferred into an air stream. Air stripping is frequently accomplished in a packed tower equipped with an air blower. Mass transfer of VOCs from the water to the air is facilitated by mixing contaminated water and uncontaminated air in a countercurrent flow pattern. The VOCs volatilize into the air stream. After the VOCs are stripped from the water, the air containing the VOCs would be pumped through emission controls to comply with NYSDEC air regulations prior to discharge to the atmosphere.

Carbon adsorption removes soluble contaminants from a water or gas waste stream and binds the contaminants to the surface of a solid activated carbon adsorbent. The adsorbent can be powdered or granular carbon. Activated carbon can adsorb VOCs such as the ones associated with the Deutsch site. Carbon adsorption treatment produces treated water and contaminated spent carbon. The contaminated carbon must be either regenerated or disposed of in a secure landfill, which adds significant cost to this treatment method and generally makes this a more expensive treatment option than air stripping.

2. Why was air stripping proposed as a treatment method for the contaminated groundwater rather than carbon adsorption? Is carbon adsorption a more inclusive clean up?

Air stripping and carbon adsorption are both proven and reliable technologies to remove VOCs from contaminated groundwater. The construction costs for both types of treatment systems are relatively the same. Air stripping is commonly used by water districts to meet drinking water standards. The biggest limitation of the activated carbon process is the high operating cost to replace the contaminated carbon. Because of this, the operation and maintenance (O&M) costs for the treatment of large volumes of water are lower for air stripping than activated carbon. The difference in O&M can be significant for long-term operation. Carbon adsorption may be a more inclusive method, but is susceptible to clogging from high organic and suspended solids loading.

It should be noted that carbon adsorption technology may be used to treat the emissions from the air stripper prior to discharge to the atmosphere. This combination of treatment technologies combines the advantages of both types of treatment in the most cost-effective manner.

3. Our experience with VOC removal and GAC filters seems to indicate that the costs associated with the filter maintenance are high. How were they derived at?

The preliminary cost estimate for the carbon treatment option for Alternative 6 is presented in Appendix B of the Feasibility Study (FS). These estimates will be verified during remedial design.

D. Questions/Comments on the Discharge of the Treated Groundwater

1. **What will be done with the treated groundwater?**

   The clean water will be pumped into new or existing groundwater recharge basins or reinjected into the aquifer.

2. **It was suggested that the treated groundwater be recharged back to the aquifer outside the perimeter of extraction wells planned for in Alternative 6A. The commentator's reasoning was that this approach may create a "hydro-vacuum" (groundwater flowing into the area rather than out) and those potentially prevent the further spread of contamination in the groundwater.**

   If feasible and implemented, although a "hydro-vacuum" may prevent the further migration of the contamination, it would lengthen the time frame required to remediate the aquifer segment inside the inferred 500 ppb Total VOC concentration contour. By recharging the water within the contour, this should create an increased flow or velocity in the aquifer segment and facilitate the desorption of contaminants from soil particles and speed cleanup. Both approaches will be evaluated during the remedial design phase of the project.

3. **Why did you not include in Alternative 6A the recharge basin that is on Daly Road and southwest of the Deutsch Relays opposite the southern Alister Court?**

   The ownership and possible use of this recharge basin will be investigated during the remedial design phase of the project.

4. **Why is the recharge basin on Willoughby Path always full of water? Late in the 1970's this recharge basin became full of water, and has not really dried out since. This question becomes very important, especially concerning the level of the water table, and the location of the 500 ppb hot spot.**

   The recharge basin in question is owned by the Town of Huntington. From discussion with Town officials, this recharge basin has silted in. In other words, fine soil material which is carried along with the stormwater settles out in the bottom of the basin. This reduces the ability of rainwater to infiltrate (migrate) through and it becomes perched or ponded in the basin. This water is not in hydraulic contact with the groundwater table which is approximately 70-80 feet below ground surface. If this basin is needed to recharge treated groundwater, the basin will first need to be rehabilitated to increase it's ability to recharge water to the subsurface.

5. **The existing recharge basins identified under the various alternatives are already overtaxed. In particular, during severe storm situations and especially during hurricanes, some of these basins overflow. The pumping of any additional water into these basins is not acceptable in these situations. In addition, the recharge basin at Willoughby and Penrose does not work at all; and, in fact if you look at it today it is full of water. Who will pay for necessary maintenance to these basins if they are used?**

   The need for and use of the Town of Huntington's recharge basins will be addressed by Deutsch AL's consultant during the remedial design phase of the project. The existing recharge basin on

Deutsch's property will be used initially during Phase I of the remedial action.

E. Questions/Comments of Financing the Remedy

1. Who will pay for the remedial action?

The Deutsch AL Corporation is the responsible party and has signed a consent order with the NYSDEC for the remediation of the groundwater contamination. They will be paying for the design and construction of the remedy as well as the contingency for the public water supply wellhead protection program. They have also paid for all of the previous investigations and clean ups at the site. If Deutsch AL Corporation decides not to fund the remedial action, it would be eligible for funding under the Environmental Quality Bond Act monies (State Superfund) and New York State would seek cost recovery from Deutsch AL.

The NYSDEC will be reviewing and approving the remedial design to be completed by Deutsch AL's consultant. The NYSDEC will also oversee all aspects of the construction to ensure that it is completed correctly.

2. If some type of treatment is installed at any Dix Hills facility who will pay for the necessary training? If the District determines that it needs an additional employee to operate the treatment plant, who will pay this on-going cost?

These items will need to be addressed during the negotiations for the financial assurances. The financial assurances are to cover the design, construction, operation and maintenance of treatment systems, if necessary in the future.

3. It is not necessary to provide financial assurances to fully construct and implement Alternative 6A (submitted by Eder Associates on behalf of Deutsch AL).

Paragraph XXIII of the Order on Consent (as modified on April 30, 1992) between NYSDEC and Deutsch AL, Respondent, requires that Deutsch AL shall provide a letter of credit or performance bond in the sum of an amount equal to 100% of projected remedial costs as reflected by the remedial design approved by the NYSDEC. The current letter of credit for $1,000,000 will need to be adjusted at the end of remedial design and revised annually to reflect remaining remedial costs and estimated annual operation and maintenance costs.

4. It is not necessary to provide financial assurances related to wellhead treatment systems at the GWD's Wicks Road and/or Dix Hills' public supply wells at this time (submitted by Eder Associates on behalf of Deutsch AL).

This is in contradiction to the Final FS (see pages 62 and 88) and verbal statements made by Deutsch AL's representative. In addition, the two water districts affected have both been concerned how these financial assurances will be established to guarantee the construction of treatment systems at the supply wells, if necessary, in the future. The financial assurances from Deutsch AL for the full design and capital costs for well head treatment must be established during Phase 1 of the remedy. The amount will need to be updated annually to reflect expected construction cost increases due to inflation. If treatment systems are installed in the future, financial assurances will then be adjusted to provide long term operation and maintenance costs.

The NYSDEC's role will be to ensure that these financial assurances are established.

F. Questions/Comments on the Project Remedial Schedule

1. How long will it take to clean up the contaminated groundwater?

Calculations indicate that it may take as little as 2 to 3 years to clean up the most contaminated portion of the aquifer. The less contaminated groundwater will be remediated through natural attenuation over a period of years which cannot be predicted accurately. The public drinking water supply wells will be continually monitored and your drinking water will remain safe.

2. Page 19 indicates that "Phase 2 construction would begin no more than one year from signing the "Record of Decision." This schedule would not provide sufficient time for the data to be collected and evaluated during Phase 1 implementation to support the design, approval and installation of Phase 2 remediation system(s). (Submitted by Eder Associates on behalf of Deutsch AL).

In a letter dated November 23, 1994 to the Deutsch AL representative and repeatedly since, the NYSDEC has requested that Deutsch AL proceed with the design and implementation of the on-site 250 gpm "pump and treat" system. Deutsch AL had previously authorized their consultant (in letter dated September 20, 1994) to proceed with this design, but later rescinded that authorization. Deutsch AL's consultant has indicated that the initial phase pump and treat system could be readily installed and operated because all remedial operations could be implemented on-site. The key performance data that will be collected from Phase 1 that will be used to design Phase 2 components (pump test data and removal rates and efficiency) could be collected in a matter of a couple months from the time of Phase 1 start-up. The need to proceed with Phase 2 of the remedy (to meet remedial goals) has already been established. There is no reason to further delay the design and implementation of Phase 1 and soon there after, Phase 2 of the remedy. A delay of one year to determine the need to proceed with Phase 2 design is clearly unacceptable and would not be responsive to the SCDHS's, the water district's, and the public's concerns and interests.

3. A number of people at the public meeting stated that they wanted Alternative 6A fully implemented immediately, rather than in a phased approach.

There has been much criticism of "pump and treat" groundwater remedies which have been in operation for a number of years due to the expense incurred and the length of time required to meet remedial goals. The primary reason for this criticism is the expectation that chemicals that have contaminated an aquifer over years or decades can be cleaned up to parts per billion concentrations in a short time frame. Groundwater "pump and treat" remedies that are implemented without a full understanding of the aquifer characteristics, have resulted in the remedial goals not being achieved due the misplacement of extraction wells.

By implementing a groundwater "pump and treat" remedy in a phased approach, the system monitoring and performance data from one phase is used to design the next phase. Phase 1 can be used to obtain site specific information on the geology, hydrology and chemistry of the aquifer that can be used to design a groundwater flow model. It can also be used to perform source remediation which will serve to quickly extract the greatest contaminant mass and decrease the

time necessary to achieve cleanup standards. Phase 2 will involve placing an extraction well(s) near the 500 ppb concentration contour (in the vicinity of MW-12B) to contain this portion of the contaminant mass. Phase 2 may also include placing an additional extraction well(s) on site to reduce zones of stagnation and optimize the performance of the "pump and treat' groundwater remedy. After a review of the performance and monitoring data from Phases 1 & 2, the NYSDEC and the NYSDOH will determine whether subsequent phases will be necessary to achieve the remedial goals. If correctly implemented, use of the phased approach, rather than fully implementing Alternative 6A immediately, should ultimately reduce the time frame to reach the remedial goals, to the extent feasible.

IV. Citizen Participation

1. How will we be informed of the final remedy that is selected and of the construction activities associated with implementing the remedy?

There will be a press notice to announce the final remedy that the NYSDEC has selected. Comments and questions have been summarized and the State's responses have been provided in this Responsiveness Summary. Moreover, this Record of Decision including the Responsiveness Summary has been placed in the information repositories. The Responsiveness Summary will also be mailed to interested parties upon request. During the design phase of the remedy, there will be additional public outreach to keep you informed of the Department's progress. The construction schedule will be discussed at that time.

2. Considering the fact that the hot spot is moving in a southwest direction, why weren't people who live in its projected path notified about the meeting this past week, such as residents on Willoughby Path.

Residents on Willoughby Path, Penrose Path, Curtis Path, and Vincent Court were all included in the mailing to notify the public of the January 25, 1995 meeting. If there are errors in the public notification process or mailing, the NYSDEC will attempt to correct them for future mailings.

V. Miscellaneous

1. Considering the fact that Deutsch Relays, Inc., stopped using its hazardous waste site about 12 years ago, meaning that it has theoretically been inactive for over a decade, how badly has the area been contaminated in the past?

The Deutsch Relays, Inc. in fact is still an operating manufacturing facility. In 1986 they went to a "hold and haul" process where all wastewaters from their manufacturing operations are held within the plant for pickup by a licensed hauler. The NYSDEC has no knowledge of any burial of drums or landfilling on the Deutsch property. Prior to 1986, Deutsch did release low levels of spent solvents in the effluent from their wastewater treatment system in violation of their state permit. These violations constituted hazardous waste disposal as defined in New York State law. There have been a number of cleanups at the site in the past, and the NYSDEC is not aware of any remaining on-site sources of contamination. The NYSDEC has no knowledge of any landfilling of hazardous wastes on the Deutsch Relays property.

2. **The PRAP indicates that there was a prior occupant on this site - Filters, Inc. What type of operations were performed by them? Does the results of the testing that has been done satisfactorily cover these operations?**

Filtors, Inc. had the plant built in the early 1960s to manufacture relays which a company engineer had designed. Deutsch Relays, Inc. bought the plant in 1964 and continued the manufacturing of relays. The remedial investigation has therefore addressed all previous operations at the site.

3. **Some people wanted the Deutsch Relays plant closed and the structure removed from the neighborhood in a belief that this would improve their health.**

Based on the results of the remedial investigation and previous cleanups on the Deutsch Relays property, the NYSDEC is not aware of any remaining sources of contamination on the Deutsch Relays property. Deutsch Relays paid a substantial fine for violations of the ECL in 1986 concerning industrial waste disposal. Currently, Deutsch Relays disposes of all industrial waste off-site by a licensed hauler. They are inspected by both the NYSDEC and the Suffolk County Department of Health Services. There have been no documented violations of state or county laws and regulations since 1986. Finally, the NYSDEC has no reason or authority to request the closure of the plant. Closure of the plant would not correct past practices at the plant and would only serve to eliminate the jobs of the people currently employed there.

4. **There are other light industrial uses on Doyle Court. Have they been investigated as possible contributing factors to this problem?**

Businesses on Doyle Court have been investigated as possible contributing factors by the Suffolk County Department of Health Services. No additional sources to the groundwater contamination were identified.

5. **The PRAP does not address Dix Hill Water District (DHWD) well sites No. 1 and No. 3. Have they been investigated for future impacts by the plume?**

The DHWD's Plants No. 1 and No. 3 are not within the impacted area. These sites are one to two miles outside the 5 ppb total VOC inferred contour line as depicted in Figure 8 of the PRAP. The existing and proposed additions to the monitoring well network for the Deutsch Relays, Inc. site should be sufficient to determine any possible future impacts from the contaminated groundwater migrating from the Deutsch site. This will be confirmed during the remedial design phase of the project. In addition, these public supply wells are monitored quarterly, as required by the State Health Department regulations.

6. **The DHWD also owns an undeveloped well site, Plant No. 11, at the intersection of Kalb Court and Hunting Hill Drive. Is this site no longer usable as a future well site?**

Monitoring well MW-14B is approximately 5,000 feet upgradient of the undeveloped well site at Kalb Court. This monitoring well has not been impacted to date from the Deutsch related groundwater contamination. The adequacy of this monitoring well to serve as an "outpost well" for the Kalb Court site will be evaluated during remedial design as well. There are no plans as yet to provide financial assurances for treatment at this future well site.

7. **Will the NYSDEC issue a well drilling permit for the DHWD Plant No. 11 site, if we request one in the near future, knowing that the site is downgradient from Deutsch?**

Being downgradient of the Deutsch site should not be a factor in issuing a well drilling permit for the Kalb Court site. A permit was issued by the NYSDEC for the Greenlawn Water District's Wicks Road site which is also downgradient and much closer to the Deutsch site.