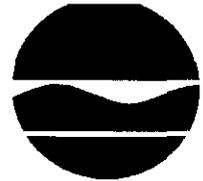


*New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233-7010*



**Langdon Marsh
Commissioner**

OCT -3 1994

Mr. James Colter
Northern Division
Naval Facilities Engineering Command
10 Industrial Highway
Lester, PA 19113-2090

RE: Grumman Corporation
Site Number: 130003A

Dear Mr. Colter:

Enclosed please find a copy of the Proposed Remedial Action Plan for the above-referenced site for your use.

If you have any questions regarding this matter, please feel free to contact me at (518) 457-3395.

Very truly yours,

John D. Barnes, P.E.
Environmental Engineer 2
Bureau of Eastern Remedial Action
Div. of Hazardous Waste Remediation

cc S. McCormick

**GRUMMAN AEROSPACE -
BETHPAGE FACILITY**

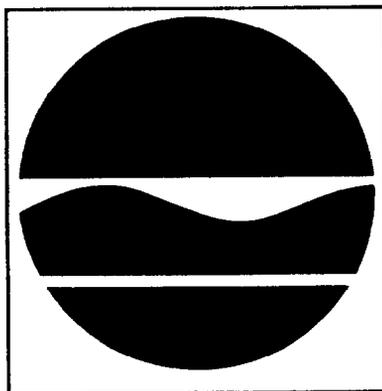
**INACTIVE HAZARDOUS WASTE SITE
OPERABLE UNIT 01**

BETHPAGE, NASSAU COUNTY

SITE NO. 1-30-003A

PROPOSED REMEDIAL ACTION PLAN

OCTOBER 1994



**PREPARED BY:
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF HAZARDOUS WASTE REMEDIATION**

PROPOSED REMEDIAL ACTION PLAN

GRUMMAN AEROSPACE - BETHPAGE FACILITY SITE OPERABLE UNIT 01

Bethpage, Nassau County, New York

Site Number 1-30-003A

October 1994

SECTION 1: PURPOSE OF THE PROPOSED PLAN:

The proposed remedy for addressing on-site source areas at the Grumman Aerospace - Bethpage Facility (Grumman) Inactive Hazardous Waste Site is presented in this Proposed Remedial Action Plan (PRAP). A summary of the Remedial Investigation (RI) conducted at the site is also presented in this PRAP. The proposed remedy for the on-site soils is no further action beyond the two Interim Remedial Measures (IRMs) which are currently underway. A soil vapor extraction system is in place at a source area at Plant 2 (see Figure 2). At the conclusion of the Plant 2 IRM, this system will be moved to Plant 15 if it is confirmed via additional investigation that a spill occurred at Plant 15 (see Figure 2).

This PRAP was prepared by the New York State Department of Environmental Conservation (NYSDEC) in consultation with the New York State Department of Health (NYSDOH). This PRAP is being issued as an integral component of the NYSDEC's citizen participation responsibilities as outlined in the New York State Environmental Conservation Law (ECL), Title 6 of the Official Compilation of Codes, Rules and Regulations (6 NYCRR) Part 375, and the Federal Comprehensive Environmental

Response, Compensation and Liability Act (CERCLA) as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986.

The NYSDEC may modify the proposed remedy or select another response action based on new information or public comments.

The public is encouraged to review the documents on file at the document repositories listed below in order to gain a more comprehensive understanding of the site and the investigations conducted there. The document repositories are located at the following locations:

NYSDEC Region 1 Office
SUNY - Building 40
Stony Brook, NY 11790-2356
Contact: Joshua Epstein, Ph.D
Phone: (516) 444-0249

Bethpage Public Library
47 Powell Avenue
Bethpage, NY 11714
Phone: (516) 931-3907
Hours: 9:30 am-9:00 pm M-F
9:30 am-5:30 pm Sat
12:00 pm-4:00 pm Sun
(closed Sundays from April-October)

NYSDEC Central Office
50 Wolf Road, Room 222
Albany, NY 12233-7010
Contact: John D. Barnes, P.E.
Phone: (518) 457-3395

Written comments on the PRAP may be submitted to Mr. John D. Barnes at the above address.

DATES TO REMEMBER

October 11, 1994 - November 30, 1994: Public comment period on the PRAP and the Remedial Investigation Report.

October 26, 1994, 7:30 pm: Public meeting at the Bethpage High School, Cafeteria B, Stewart Avenue, Bethpage, NY.

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 and the public contact list, and public informational meetings held in December 1990 and June 1992 to discuss this project and answer questions posed by the public. Notification was through a meeting invitation/fact sheet distributed to the contact list, a paid public notice, and notice to the press.

The NYSDEC solicits input from the community for all of its proposals for remedial action. A public comment period has been set for October 11, 1994 through November 30, 1994 during which the public is encouraged to participate in the remedy selection process for this site. A

public meeting is set for October 26, 1994 at 7:30 pm at the Bethpage Public High School. At that meeting, the NYSDEC will present the results of the Remedial Investigation (RI) and describe the proposed remedial plan. Following the presentation, representatives of the NYSDEC and NYSDOH will answer questions the community may have on the RI and the proposed remedial plan.

Comments and questions will be summarized and the State's responses will be provided in the Responsiveness Summary section of the Record of Decision (ROD). The ROD is the document in which the NYSDEC's final selected remedy for addressing on-site source areas at the Grumman site will be presented. To send written comments or obtain further information, contact:

Mr. John D. Barnes, P.E.
Environmental Engineer 2
NYSDEC
50 Wolf Road, Room 222
Albany, NY 12233-7010
Phone: (518) 457-3395
Hours: 8:30 am to 4:45 pm (M-F)

Detailed information and comments on the Citizen Participation Program and process may be directed to:

Mr. Joshua Epstein, PhD
Citizen Participation Specialist
NYSDEC Region 1
SUNY Building 40
Stony Brook, NY 11790-2356
Phone: (516) 444-0249

There are two other inactive hazardous waste sites adjacent to the Grumman site. The Naval Weapons Industrial Reserve Plant (NWIRP) site (# 1-30-003B) is located along the eastern boundary of the Grumman site. The Hooker/RUCO Federal Superfund site (# 1-30-004) is located along a portion of the western

boundary of the Grumman site. A total of four PRAPs and RODs are scheduled for these three sites:

1- Hooker/RUCO: A Record of Decision for the remediation of on-site source areas was issued by the United States Environmental Protection Agency (USEPA) in January 1994.

2 - Grumman: The proposed remedy for remediating on-site source areas is presented in this PRAP. A ROD is scheduled for December 1994.

3 - NWIRP: The proposed remedy for remediating on-site source areas will be issued in the Fall of 1994. A record of Decision is scheduled for January 1995.

4 - A regional solution for remediating the groundwater contamination attributable to the aforementioned sites will be developed. The PRAP in which this solution will be presented to the public is targeted for the Fall of 1995, with an anticipated ROD date of December 1995.

SECTION 2: SITE LOCATION AND DESCRIPTION

The Grumman site is approximately 500 acres in size and located in a mixed industrial/commercial/residential area in east central Nassau County (see Figure 1). The Bethpage High School is located opposite the northeast corner of the site. The site is bounded by Stewart Avenue to the north, Central Avenue and Harrison Avenue to the south, NY Route 107 to the southwest, South Oyster Bay Road to the west, and the Naval Weapons Industrial Reserve Plant (Site Number 1-30-003B) to the east. The Hooker/RUCO Federal Superfund site (NY ID# 1-30-004) is located immediately to the west of the site.

SECTION 3: SITE HISTORY

3.1: Operational History

The Grumman Aerospace Corporation was established in the early-1930s at the present site in Bethpage. The Naval Weapons Industrial Reserve Plant - Bethpage (NWIRP) was established in 1933. Several naval aircraft were developed and manufactured at the site since the 1930s. Other activities at the site included the manufacturing of naval amphibious craft, and the manufacturing of various satellites, etc. for the National Aeronautics and Space Administration (NASA).

3.2: Waste Handling, Treatment and Disposal Practices

From 1943-1949, Grumman disposed of their chromic acid wastes directly on the ground or in open seepage basins. In 1949, a chromic acid treatment system was put on-line at Plant 2.

Since the early 1950s, some of the wastes generated by Grumman have been taken to the NWIRP property for treatment or storage before being taken off-site by private haulers. These wastes are primarily chlorine-substituted hydrocarbons.

Grumman installed a cyanide treatment system circa 1962 to treat their cyanide wastes.

There are several locations on the Grumman site where wastes are/were stored, treated or disposed of. These areas are listed on Tables 1-3 (see also Figure 2). These areas were targeted for investigation during the RI/FS. The reader should also review Figures 2-3 and 4-15 of the Remedial Investigation Report for the exact locations of these storage, treatment or disposal areas and the sampling locations used to determine if these areas are source areas.

In addition to the chromic acid treatment system located at Plant 2, systems for treating phenols, oils, and other organic chemicals, and for recovering silver also exist at Plant 2.

3.3: Remedial History

The following is a chronology of the remedial history at the site:

December 1947

Grumman was notified that Well #3 of the Central Park Water District (predecessor of the present day Bethpage Water District) contained 1.4 parts per million (ppm) of hexavalent chromium.

1948-1949

Grumman designed and installed a chromic acid treatment system at Plant 2.

1973

An odor and taste problem was discovered in water pumped from some of Grumman's onsite production wells. The Nassau County Health Department (NCHD) was notified of this on or about December 12, 1973.

August 1975

After several rounds of sampling and laboratory analyses by various regulatory agencies, the State Health Department determined that chlorinated hydrocarbons were the cause of the odor and taste problems. The compounds that were isolated included vinyl chloride and tetrachloroethylene (PCE).

August 1975 - early 1980's

Sampling of wells on Grumman property and at public supply wells was conducted on numerous occasions. Sampling of wastewaters, primarily at Hooker/RUCO, was also conducted during this time.

1983

The Grumman site was added to the NYSDEC's Registry of Inactive Hazardous Waste Sites in New York State as a Class 2a site. This classification was assigned to this site because there was insufficient information to assign it one of the classifications set forth in the ECL. The NWIRP-Bethpage site was incorporated into the boundaries of the site.

1986 - 1989

The United States Geologic Survey (USGS) and the NCHD conducted a regional groundwater study in the Bethpage/Hicksville/Levittown area.

December 1987

The site was reclassified to Class 2. A Class 2 site is a site which poses a significant threat to human health and/or the environment, and which action is required.

October 1990

Grumman and the NYSDEC entered into an Order on Consent in which Grumman agreed to conduct an RI/FS at their Bethpage site.

December 1990

A public meeting was held at the Bethpage High School to present the RI/FS Work Plan to the public.

February 1991

The Phase I RI field work commenced.

January 1992

A report entitled: Data Report - Phase I Remedial Investigation, Grumman Aerospace Corporation, Bethpage New York was issued by Geraghty & Miller, Inc. (consultants to Grumman).

June 1992

A public meeting was held at the Bethpage Public Library to update the public of the progress of the RI.

August 1992

The Phase II RI field work commenced.

March 1993

The Grumman and NWIRP sites were listed separately in the NYSDEC's Registry of Inactive Hazardous Waste Sites in New York State as Class 2 sites.

March 1994

The design of the soil vapor extraction system for Plant 2 was approved by the NYSDEC. Construction activities were commenced.

September 1994

A report entitled: Remedial Investigation Report, Grumman Aerospace Corporation, Bethpage, New York, September 1994 was issued by Geraghty & Miller, Inc.

October 1994

The final construction activities for the soil vapor extraction system at Plant 2 to be completed.

[Note: Several parcels have been delisted from the Grumman site since 1991. Copies of the delisting petitions are on file at the document repositories.]

SECTION 4: ENFORCEMENT STATUS

The NYSDEC and Grumman Aerospace Corporation entered into an Order on Consent on October 25, 1990. By signing this Order, the Grumman Corporation agreed to conduct a Remedial Investigation/Feasibility Study at the site. The goal of the Remedial Investigation was to determine the nature and extent (both on-site and off-site) of contamination attributable to the site.

SECTION 5: CURRENT STATUS

Pursuant to the aforementioned order, Grumman conducted a Remedial Investigation (RI) at the site with oversight provided by the NYSDEC. The RI was conducted in two phases. The first phase of the RI was conducted between February 1991 and January 1992. The second phase of the RI was conducted between August 1992 and June 1994. The RI work is described in the following reports:

- Data Report - Phase I Remedial Investigation, Grumman Aerospace Corporation, Bethpage New York, January 1992, prepared by Geraghty & Miller, Inc.
- Remedial Investigation Report, Grumman Aerospace Corporation, Bethpage, New York, September 1994, prepared by Geraghty & Miller, Inc.

The RI activities consisted of the following tasks:

- A total of 87 soil gas samples were collected at eleven areas at the site. These samples underwent analyses for volatile organic compounds (VOCs). This was a tool for identifying source areas.
- More than 40 soil samples were collected and analyzed for the target compound list of analytes to further identify source areas.
- A total of 41 monitoring wells were installed on- and off-site at depths ranging from 55 to 550 feet deep. Groundwater samples were collected from a network of 75 wells and analyzed for VOCs and, in most cases, metals. The primary purpose of this task was to determine the quality of the groundwater below and downgradient of the site. The second purpose of this

task was to use the data generated from the water-table wells to locate potential source areas.

The analytical data generated during the RI were compared to the applicable Standards, Criteria, and Guidance values (SCGs) in determining the need for remedial action(s). Soil SCGs identified for this site were based on NYSDEC clean-up guidelines developed to protect groundwater resources. **[NOTE: As this PRAP is written to present the preferred remedy for addressing on-site source areas, there are only limited discussions in this PRAP regarding the groundwater quality data generated during the RI. This data, along with the preferred remedy for addressing groundwater remediation at the Grumman, Navy, and Hooker/RUCO sites, will be presented in a second PRAP tentatively scheduled to be issued in the fall of 1995 (the fourth PRAP and ROD referenced in Section I).]**

Brief summaries of the results of the soil gas surveys and of the analytical results of the soil sampling tasks are presented in the following sub-sections.

5.1: Results of the Soil Gas Surveys

Soil gas surveys were conducted at eleven locations on the site (see Figure 2). Based on these results, two areas -- an above ground trichloroethylene (TCE) tank adjacent to Plant 2 and an area at Plant 15 -- were identified as potential sources (see Table 4).

5.2: Soils Data

Four soil borings were drilled near the aforementioned above ground TCE tank in order to confirm that a spill occurred in this area (see Figure 2). Trichloroethylene was detected in subsurface soil samples collected from these borings at concentrations ranging from 0.044 to

130 parts per million (ppm). The clean-up goals for these contaminants in soils are: 0.7 ppm (in soil) for TCE and 1.4 ppm (in soil) for PCE. In addition, a monitoring well screened across the water-table was installed in this area. Trichloroethylene was detected in groundwater at this location at a concentration of 160 parts per billion (ppb) which is significantly higher than the groundwater standard of 5 ppb. Based upon this data and the soil gas data, it was determined that a spill occurred around the TCE tank, and this source area was targeted for remediation (see Section 7 of this PRAP).

One soil boring was drilled in the potential source area identified at Plant 15 during the soil gas survey. A sample collected from this boring contained no VOCs above the detection limit of the analysis. As in the case at Plant 2, a water-table well was installed and sampled at this location. No site-related contaminants were detected in this well. However, due to the high concentrations of VOCs (PCE) detected during the soil gas survey, this area is still considered to be a potential source, and additional investigation, and possibly remediation activities, will be conducted at this location.

Soil samples were collected in recharge basins and during the monitoring well installation process. No additional source areas were identified based upon a review of the analytical data.

[NOTE: Based on a review of the groundwater analytical data, no additional potential source areas were identified on the Grumman site.]

5.3: Summary of Human Exposure Pathways

Based upon a review of the data generated during the RI, two human exposure pathways were identified. The first pathway is the direct contact with contaminated soils. The contamination present at Plant 2 and (possibly)

Plant 15 is present in subsurface soils which, for the most part, are covered with asphalt. As a result, there are no human exposures via this pathway.

The second pathway is the ingestion of contaminated groundwater. At Plant 2, TCE is migrating down through the unsaturated zone into the Upper Glacial Aquifer (approximately 50 feet below grade). Once in this aquifer, TCE migrates along the groundwater flow paths as well as downward because it is more dense than water. There is, as a result, a strong possibility that TCE from Plant 2 is migrating into the Magothy Aquifer which is the primary source of drinking water in the area. Some of the public supply wells located due south of the site (Bethpage Water District) have been impacted by the plume(s) emanating from the Grumman, NWIRP, and Hooker/RUCO sites. Treatment systems have been installed at these wells, and the water distributed to the community is monitored on a routine basis to ensure that it meets the requirements of the NYSDOH. As a result of this treatment and monitoring, an ingestion pathway does not exist. This is further aided by implementing the SVE remedy at Plant 2 during which a source of groundwater contamination will be removed.

If it is confirmed that a source area exists at Plant 15, then there is a potential that this contamination could impact the Magothy Aquifer. Again, since the public supply wells are monitored on a routine basis and treated when required, an ingestion pathway does not exist. By removing the contamination at Plant 15 (assuming there is contamination), an additional threat to groundwater quality will be removed.

5.4: Summary of Environmental Exposure Pathways:

Based upon a review of the data generated during the RI, it was concluded that there is a negligible risk to wildlife at the site.

SECTION 6: SUMMARY OF REMEDIATION GOALS

Goals for the remedial program have been established through the remedy selection process presented in 6 NYCRR Part 375-1.10. These goals have been established under the guideline 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 of at the site through the proper application of scientific and engineering principles.

During the RI, one confirmed source area and one potential source area were identified. The remedial goal for these areas is the protection of groundwater from further impacts from these areas. The NYSDEC has developed clean-up goals for VOCs and other contaminants in soil with this goal in mind. These clean-up goals are presented in the NYSDEC Division of Hazardous Waste Remediation's Technical and Administrative Guidance Memorandum #HWR-94-4046 (January 1994). These clean-up goals are: 0.7 ppm (in soil) for TCE and 1.4 ppm (in soil) for PCE.

SECTION 7: INTERIM REMEDIAL MEASURES

Based upon the results of the soil gas survey, soil sampling and groundwater sampling at the Plant 2 TCE source area, it was determined that an Interim Remedial Measure (IRM) would be

conducted in this area to remediate the TCE-contaminated soils. The soil vapor extraction technology was selected as the remedial technology. This technology is considered to be a Presumptive Remedy by the United States Environmental Protection Agency (EPA) as this technology is commonly employed at sites where there is VOC contamination in unsaturated soils, such as was found at this site. A work plan for this action was prepared in August 1993. A pilot test was conducted at the source area on November 1, 1993. The system design is incorporated in a report entitled: Interim Remedial Measure, Grumman Aerospace Corporation, Bethpage, New York dated March 1994. These documents were prepared by Geraghty & Miller Inc. on behalf of Grumman. Construction activities began in March 1994 and concluded in October 1994.

A map of the source area and a schematic drawing of the soil vapor extraction (SVE) system are presented on Figures 4 and 3 respectively. A vacuum is created in the soils by a blower (pump) thus causing air to move through the pores of the soil matrix towards the extraction well (Figure 3). As the air moves through the soil, VOCs, in this case TCE, volatilize into the air and are thus extracted with the air in the extraction well. The extracted air, along with the VOCs, is then pushed through two carbon canisters, operating in series, where the VOCs adsorb onto granules of activated carbon. The cleaned air is vented into the atmosphere via the stack on the second carbon canister. These air emissions will be monitored on a regular basis to ensure that the emissions are in conformance with the emission limits given in the approved design. Once the SVE system is on-line, it is anticipated that the clean-up goals will be reached in less than a year.

SECTION 8: SUMMARY OF THE EVALUATION OF ALTERNATIVES

It has not been confirmed that there is a source area at Plant 15; therefore, additional investigatory tasks will be conducted in this area. The first task will be to conduct a soil gas survey in the area shown on Figure 5. Based upon the results of this survey, additional soil and groundwater sampling may be conducted. If this area is determined to be a source area, then, at the completion of the remedial program at the Plant 2 TCE source area, the SVE system used at Plant 2 will be installed and operated at Plant 15.

Due to the existing design for the Plant 2 TCE spill, and the similarity between the Plant 2 and Plant 15 source areas, there is no need to evaluate further potential remedial alternatives for addressing source areas at the Grumman Aerospace site at this time. A Feasibility Study to evaluate remedial alternatives for on-site source controls is, therefore, not necessary. Should the ongoing remediation not achieve the remediation goals, then the NYSDEC will require that additional remedial alternatives be evaluated.

A Feasibility Study to evaluate groundwater remediation at the Grumman, NWIRP-Bethpage, and Hooker/RUCO sites is being conducted, and it is anticipated that this will be completed by late-summer 1995.

Community Acceptance

Concerns of the community regarding the RI report and this Proposed Remedial Action Plan will be evaluated. A "Responsiveness Summary" will be prepared in which the comments received from the public are presented along with the State's responses to the comments. If the final remedy selected differs from the proposed remedy, notices to the public will be issued in which the selected remedy and the reasons for selecting it are presented.

SECTION 9: SUMMARY OF THE PROPOSED ALTERNATIVE

incorporated into the capital cost for the Plant 2 source area are not included in the capital cost for the Plant 15 source area.

Based upon the results of the Remedial Investigation, the NYSDEC is proposing that the soil vapor extraction IRM constitute the final remedy for the contaminated soils at the Plant 2 source area and that additional investigatory work be conducted at Plant 15. If it is confirmed that the Plant 15 area is a source area of VOC contamination, then, at the completion of the Plant 2 remedial work, the soil vapor extraction system will be installed and operated at the Plant 15 site.

This proposed remedy is in compliance with Federal and State requirements that are legally applicable or relevant and appropriate to the remedial action, and is cost effective. This proposed remedy is protective of public health and the environment, and is in compliance with New York State Standards, Criteria, and Guidance values (SCGs). Due to the nature of the soils, it is anticipated that VOC contamination in the soils will be reduced to levels below the clean up goals set for this site.

The costs for these remedies are presented below:

Plant 2 Source Area:

Capital Costs:	\$ 94,000
Operational Costs:	\$ 20,000
Present Worth Cost:	\$114,000

Plant 15 Source Area:

Capital Costs:	\$ 35,000
Operational Costs:	\$ 25,000
Present Worth Cost:	\$ 60,000

Engineering, sampling, and construction costs are included in the capital costs presented above. Since the same soil vapor extraction system will be used at both source areas, the design costs

GLOSSARY OF ACRONYMS

CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
ECL	Environmental Conservation Law
IRM	Interim Remedial Measure
NWIRP	Naval Weapons Industrial Reserve Plant
6 NYCRR	Title 6 of the Official Compilation of Codes, Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PCE	tetrachloroethylene
ppb	parts per billion (for water samples - $\mu\text{g/l}$)
ppm	parts per million (for water samples - mg/l , for soil samples - mg/kg)
ppmv	parts per million vapor (gas samples)
PRAP	Proposed Remedial Action Plan
RI/FS	Remedial Investigation/Feasibility Study
SARA	Superfund Amendments Reauthorization Act
SCGs	Standards, Criteria, and Guidance values
SVE	soil vapor extraction
TCE	trichloroethylene
USEPA	United States Environmental Protection Agency
VOCs	volatile organic compounds

Table 1

WASTE STORAGE, TREATMENT, AND DISPOSAL LOCATIONS, GRUMMAN CORPORATION, BETHPAGE, NEW YORK

Waste Storage, Treatment, or Disposal Locations	Owner	Operation and/or Process	Date	Wastes Stored, Treated, or Disposed	Estimated Quantity of Wastes Stored, Treated, or Disposed
Plant 02 Industrial Waste Treatment Plant	Grumman	Industrial waste-water treatment	Late 1940s to Present	Bethpage plant wastewater	50,000 to 250,000 gal/day
Plant 02 Waste TCE Storage/ Recycling Facility	Grumman	Storage/ Recycling of waste TCE	1940s to 1977	Waste TCE from degreasing tanks	Recycling Capacity of 50 gal/hour
South Recharge Basins	Grumman	Disposal of treated Bethpage plant wastewater	Mid-1940s to 1981	Treated Bethpage plant wastewater	50,000 to 250,000 gal/day

Source: Remedial Investigation Report, September 1994 prepared by Geraghty & Miller, Inc.

Table 2

Outside Solvent Storage Areas Investigated During the Initial On-Site Field Investigation, Grumman Aerospace Corporation, Bethpage, New York

Storage Area Number	Location of Storage Area	Material(s) Stored
S-14	Plant 1	Paint thinners and halogenated solvents
S-020	Plant 2	Turco 5351 thin stripper
S-022	Plant 2	Paint thinners, trichloroethylene, and halogenated solvents
S-41	Plant 4	Halogenated solvents, organic solvents CEEBEE C50 and varsol, methylbutyl ketone 1,1,1-trichloroethane, and monoethanolamine
S-42	Plant 4	Acrylic anti-corrosion solution
S-123	Plant 12	Halogenated solvents and ketones
S-125	Plant 12	Latex paint
S-126	Plant 12	Methylethyl ketone, methylene chloride, methanol, acetone, 1,1,1-trichloroethane, toluene, carbon tetrachloride, varsol (organic solvent), and laquer thinner
S-142	Plant 14	Isopropanol and halogenated solvents
S-151	Plant 15	Naptha perchloroethane
S-261	Plant 26	Varsol (organic solvent), ketone, trichloroethylene, acetone, isopropanol, halogenated solvents, and 1,1,1-trichloroethane

Source: Remedial Investigation Report, September 1994 prepared by Geraghty & Miller, Inc.

Table 3

Outside Solvent Storage Tanks Investigated During the Initial On-Site,
Field Investigation, Grumman Aerospace Corporation, Bethpage, New York

Tank Number	Location of Tank	Material(s) Stored
T-1111	Plant 1	Paint water (chrome)
T-10	Plant 2	Trichloroethylene
T-594	Plant 2	Kolene
T-209A	Plant 15	Waste photographic solution

Source: Remedial Investigation Report, September 1994 prepared by Geraghty & Miller, Inc.

Table 4

Results of Soil-Gas Survey, Phase 1 and 2 Remedial Investigations,
Grumman Aerospace Corporation, Bethpage, New York.

PLANT 2 SOURCE AREA

Sample Identification	Vinyl Chloride (ppmv)	trans-1,2-DCE (ppmv)	cis-1,2-DCE (ppmv)	TCE (ppmv)	PCE (ppmv)
SG-4A	<0.9	<0.3	9	100	0.5
SG-4B	<0.9	<0.3	10	100	<0.2
SG-4C	<0.9	<0.3	5	100	<0.2
SG-4D	<0.9	<0.3	10	60	<0.2

PLANT 15 SOURCE AREA

Sample Identification (1)	Vinyl Chloride (ppmv)	trans-1,2-DCE (ppmv)	cis-1,2-DCE (ppmv)	TCE (ppmv)	PCE (ppmv)
SG-10A	<0.9	<0.3	0.4	3	400
SG-10B	<0.9	<0.3	<0.4	2	300
SG-10C	<0.9	<0.3	<0.4	0.3	10
SG-11A	<0.9	<0.3	<0.4	<0.3	1
SG-11B	<0.9	<0.3	<0.4	<0.3	3
SG-11C	<0.9	<0.3	<0.4	<0.3	0.6

DCE = dichloroethylene

TCE = trichloroethylene

PCE = tetrachloroethylene

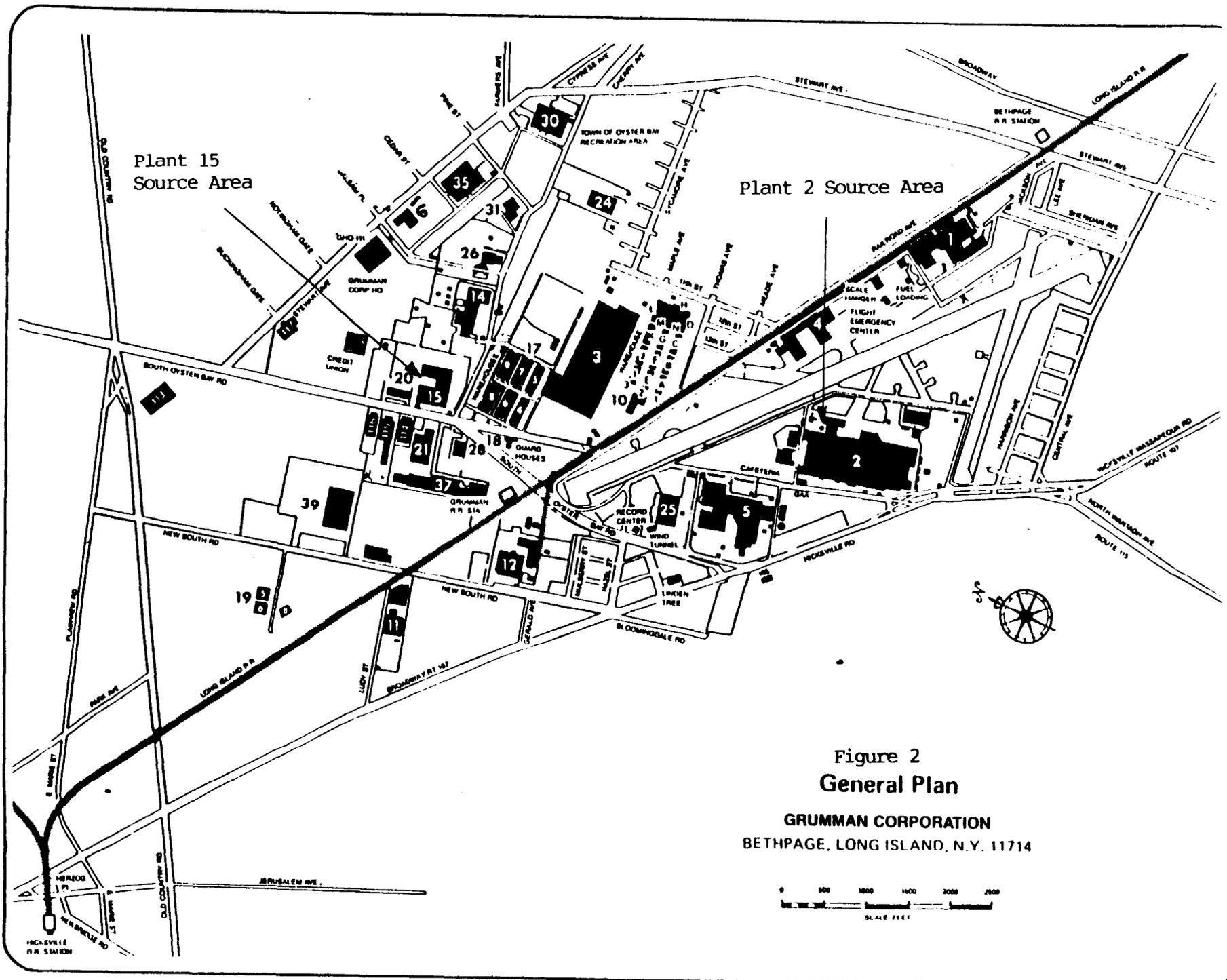


Figure 1:

Site Location.

1. Grunman Aerospace Corporation
2. Naval Weapons Industrial Reserve Plant - Bethpage
3. Hooker/RUCO Plant



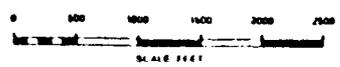


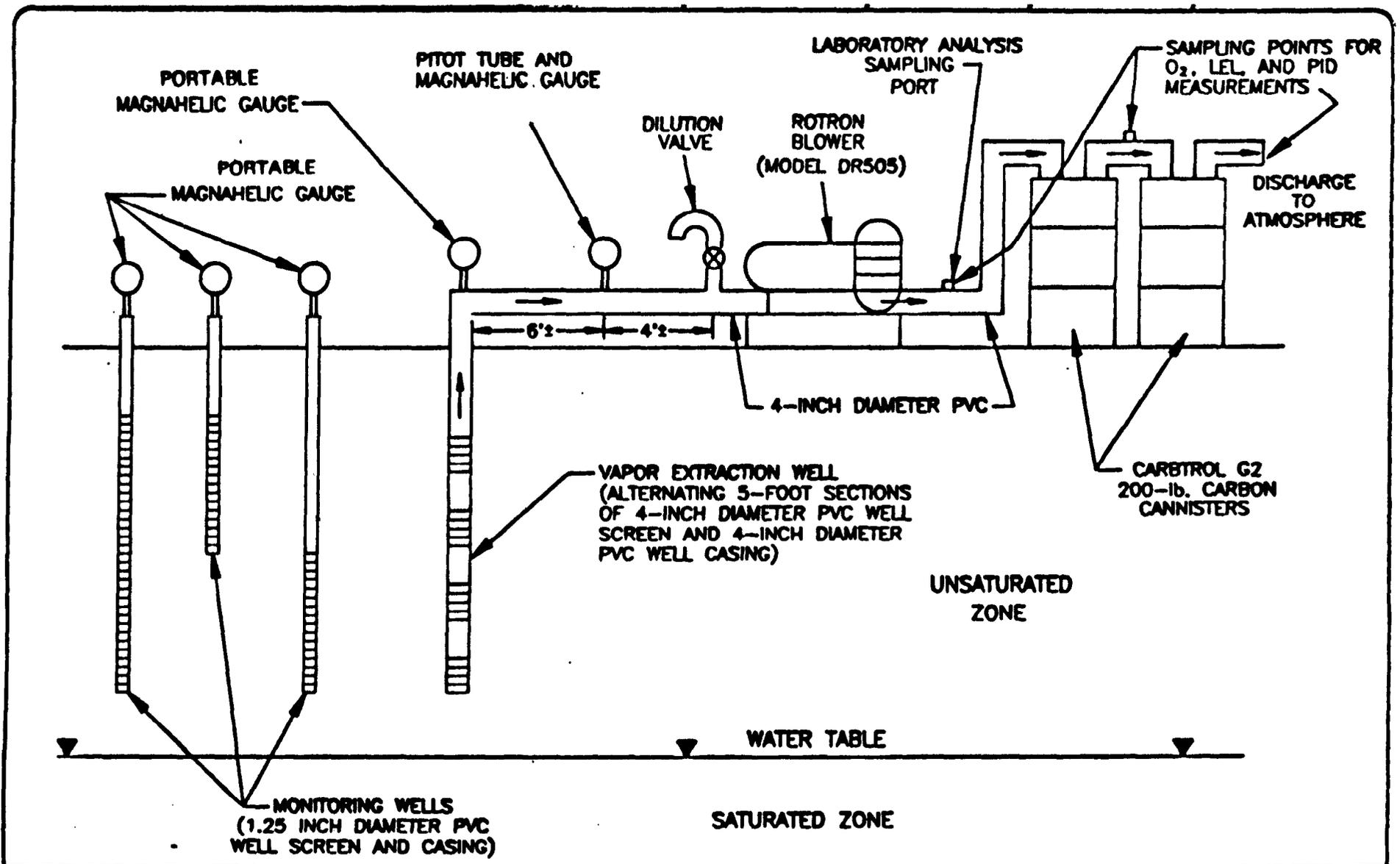
Plant 15
Source Area

Plant 2 Source Area

Figure 2
General Plan

GRUMMAN CORPORATION
BETHPAGE, LONG ISLAND, N.Y. 11714





SCALE: NONE

SOIL VAPOR EXTRACTION PILOT TEST EQUIPMENT CONFIGURATION

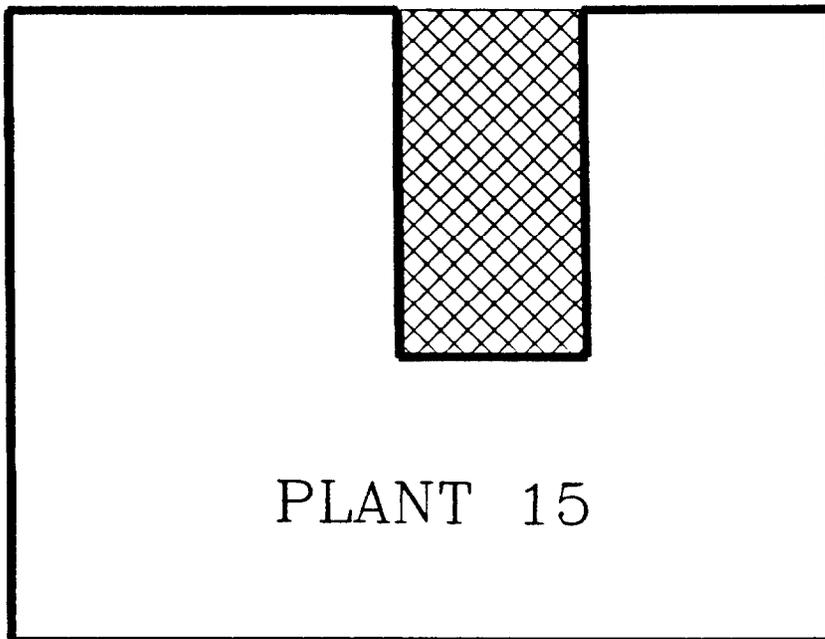
FIGURE

GERAGHTY & MILLER, INC.
Environmental Services

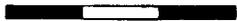
GRUMMAN AEROSPACE CORPORATION
BETHPAGE, NEW YORK

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DWG DATE: 9-13-94 | PRJCT NO.: NY0008049 | FILE NO.: 1469 | DRAWING: PLANT15 | CHECKED: JS | APPROVED: CSC | DRAFTER: GS



PLANT 15

0  300 FT

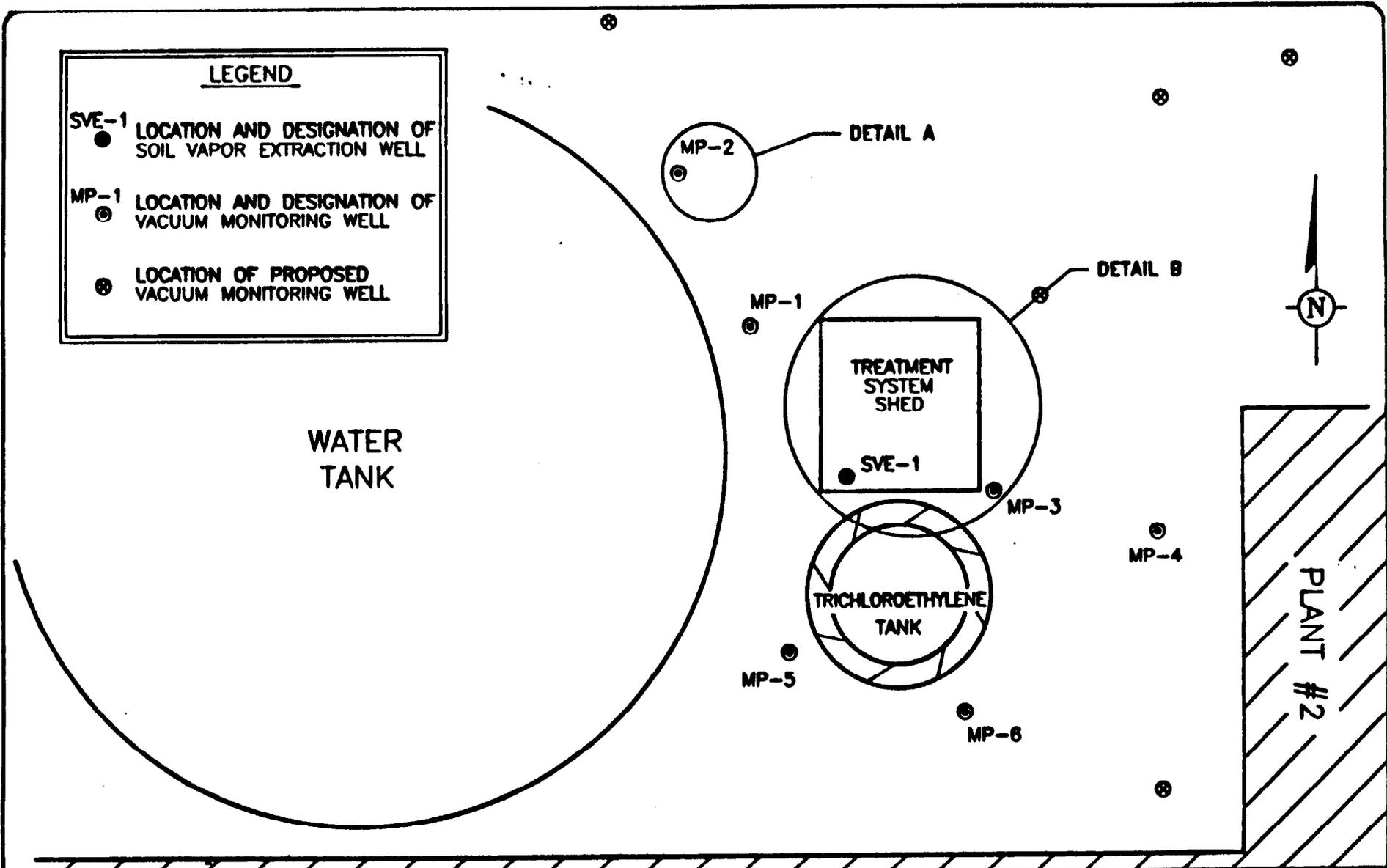
EXPLANATION	
	INVESTIGATION AREA FOR PHASE 2 SOIL-GAS SURVEY



PROPOSED SOIL-GAS SURVEY FOR PLANT 15

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FIGURE
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PROPOSED VACUUM MONITORING WELL LOCATIONS
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FIGURE
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