-30-003A-001

Airborne Early Warning
and Electronic Warfare Systems

**Integrated Systems
and Aerostructures Sector**

Northrop Grumman Corporation
South Oyster Bay Road
Bethpage, NY 11714

NORTHROP GRUMMAN

ETC-01L-123
April 23, 2001

Ms. Rosalie K. Rusinko
Senior Attorney
Division of Environmental Enforcement
NYS Department of Environmental Conservation
200 White Plains Road – 5th Floor
Tarrytown, NY 10591-5805

Dear Ms. Rusinko:

Enclosed please find a copy of:

Major Modification
of the
Bethpage Facility Part 373 Permit
Removal of the 105-Acre GOCO Site

Statement of Basis

prepared for Northrop Grumman Corporation by Dvirka & Bartilucci.

If you have any questions, please call me at 516-575-4680.

Very truly yours,

NORTHROP GRUMMAN CORPORATION

John E. Cofman
Environmental Technology & Compliance
M/S: D08-01

cc: S. Scharf

NORTHROP GRUMMAN

BETHPAGE FACILITY

Major Modification
of the
Bethpage Facility Part 373 Permit
Removal of the 105-Acre GOCO Site

STATEMENT OF BASIS

NORTHROP GRUMMAN CORPORATION
BETHPAGE, NEW YORK

AUGUST 2000
REVISED FEBRUARY 2001

DVIRKA AND BARTILUCCI
CONSULTING ENGINEERS

Airborne Early Warning
and Electronic Warfare Systems

**Integrated Systems
and Aerostructures Sector**

Northrop Grumman Corporation
South Oyster Bay Road
Bethpage, NY 11714

NORTHROP GRUMMAN

ETC01L-046
February 23, 2001

Steve Kaminski, Chief
Eastern Engineering Section
Bureau of Radiation & Hazardous Site Management, Room 460
Division of Solid and Hazardous Material
NYS department of environmental Conservation
50 Wolf Road
Albany, NY 12233-7252

Re: Northrop Grumman Corporation
Bethpage Facility, New York
Part 373 Permit Termination Project
DEC Permit No. 1-2824-00112/00002-0
USEPA ID No. NYD002047976

Dear Mr. Kaminski:

Enclosed please find two copies of the document entitled:

"Major Modification of the
Bethpage Facility Part 373 Permit
Removal of the 105-Acre GOCO Site
Statement of Basis
Northrop Grumman Corporation
Bethpage, New York"

This document was revised to address comments provided by Mr. Henry Wilkie of the New York State department of Environmental Conservation (NYSDEC) in his letter dated November 24, 2000 on the original Statement of Basis dated August 2000. In addition, the current status of the Plant 20 hazardous waste storage area closure and the Record of Decision for Operable Unite #2 have been updated.

It should be noted that, in the NYSDEC's letter November 24, 2000, Plant 17 South Area of Concern (AOC) 8 (Former Leaching Chambers) was listed as having been remediated under the Resource Conservation and recovery Act (RCRA). No remediation was conducted at Plant 17 South AO8 under RCRA. However, Plant 17 South AOC 6 (Former Storm Water Dry Wells) was remediated under RCRA but was

not listed in the NYSDEC's letter. for this reason, remediation of Plant 17 South AOC 6 has been included in this revision and Plant 17 South AOC 8 has been omitted.

By copy of this letter, the Statement of Basis is also being submitted to the individuals identified at the end of this letter.

If you have any questions and/or comments regarding the enclosed, please do not hesitate to give me a call at (516) 575-2333.

Very truly yours,

NORTHROP GRUMMAN CORPORATION

Larry L. Leskovjan
Manager
Environmental, Safety, Health &
Medical Services
M/S: D08-01

cc: J. Colter (Navy)
J. Hare
J. Kaminski
H. Wilkie (NYSDEC – Albany)
J. Reidy (USEPA – Region 2)
A. Taormina
R. Walker

MAJOR MODIFICATION OF THE
BETHPAGE FACILITY PART 373 PERMIT
REMOVAL OF THE
105-ACRE GOCO SITE
STATEMENT OF BASIS

Prepared for:

NORTHROP GRUMMAN CORPORATION
BETHPAGE, NEW YORK

Prepared by:

DVIRKA AND BARTILUCCI CONSULTING ENGINEERS
WOODBURY, NEW YORK

AUGUST 2000

REVISED FEBRUARY 2001

MAJOR MODIFICATION OF THE BETHPAGE FACILITY
PART 373 PERMIT
REMOVAL OF THE 105-ACRE GOCO SITE
STATEMENT OF BASIS

TABLE OF CONTENTS

TABLE OF CONTENTS (continued)

List of Appendices

List of Figures

List of Tables

Section 1

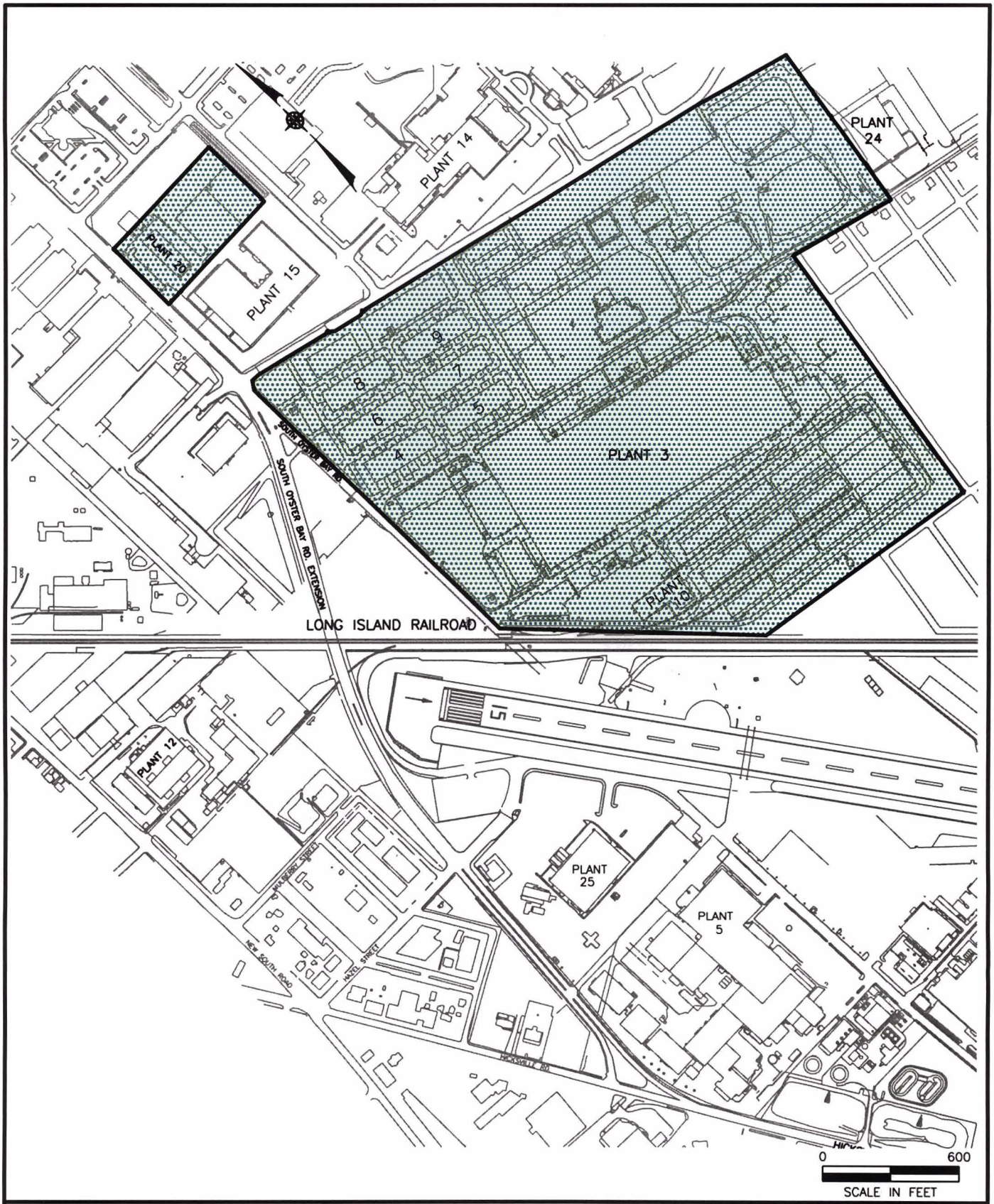
1.0 INTRODUCTION

This Statement of Basis has been prepared to support a request for a major modification of the existing Part 373 Permit for the Northrop Grumman Corporation facility located in Bethpage, Nassau County, New York. Specifically, it is the intent of the proposed permit modification to remove the parcel of land referred to as the 105-Acre Government-Owned Contractor-Operated (GOCO) Site from the Permit (see Figure 1-1).

In order to remove the 105-Acre GOCO Site from the existing Permit, a major permit modification application must be reviewed and approved by the New York State Department of Environmental Conservation (NYSDEC). The support for any such major modification is typically presented and discussed in what is termed a "Statement of Basis." This Statement of Basis will demonstrate to the NYSDEC that the requirements for corrective action pursuant to the Resource Conservation and Recovery Act (RCRA) and the authorized analogous state program included in the Permit have been addressed for the 105-Acre GOCO Site. This includes the identification of all solid waste management units (SWMUs) and areas of concern (AOCs), a compendium of all engineering studies and remedial investigations completed, a list of constituents of concern, a description of remedial actions implemented and a description of residual contamination, if any, that remains on-site.

As the Northrop Grumman Corporation Bethpage facility is also a New York State Superfund site, it is important to note that a Record of Decision (ROD) pursuant to New York State's Superfund Program was signed on July 5, 1995. That ROD describes remedial actions to be undertaken by the Department of the Navy within certain areas of concern identified at the 105-Acre GOCO Site. The Statement of Basis will also provide a brief summary of the remedial action requirements articulated in the ROD, as well as present a summary of the results of the remedial actions completed in those areas to date.

Section 2.0 of this document provides a description of the entire 105-Acre GOCO Site including a description of the major buildings and features located on the property. A description of the investigations leading up to the ROD is presented in Section 3.0 along with a



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NORTHROP GRUMMAN CORPORATION
BETHPAGE, NEW YORK
105-ACRE GOCO SITE

SITE LOCATION MAP

Dvirka and Bartilucci
Consulting Engineers
A Division of William F. Cosulich Associates, P.C.

FIGURE 1-1

description of the remedial activities required in the ROD and the status of the preparation of a second ROD to address groundwater quality at the entire Bethpage facility. Section 4.0 describes the SWMUs and AOCs identified in the Part 373 Permit which are located on the 105-Acre GOCO Site. A description of the various closure and decontamination programs undertaken at various waste storage areas located at the 105-Acre GOCO Site is provided in Section 5.0 along with a description of the investigation and remediation reports prepared for the property. Section 6.0 presents the conclusions of the Statement of Basis and requests a major modification of the existing Bethpage Facility Part 373 Permit to remove the 105-Acre GOCO Site.

Appendix A of this report contains a summary of environmental investigation and remediation reports prepared for the 105-Acre GOCO Site. Appendix B contains "No Further Action" letters from the NYSDEC to Northrop Grumman Corporation for each AOC remediated under RCRA.

Section 2

2.0 SITE DESCRIPTION

This section presents a general overview of the 105-acre GOCO site including a description of the property and the major buildings and structures located on the site.

2.1 Site Setting

The 105-Acre GOCO Site, also known as the Naval Weapons Industrial Reserve Plant (NWIRP), is owned by the United States Department of the Navy and operated by the Northrop Grumman Corporation. The site is located in the central portion of the Northrop Grumman Corporation Bethpage facility and is bordered by the Cherry Avenue Extension to the north; Plant 24, McKay Field and a residential area to the east; a residential area and the Long Island Rail Road to the south; and Northrop Grumman Corporation Parcel J (former Plant 18 location) to the west. A site location plan is provided as Figure 2-1.

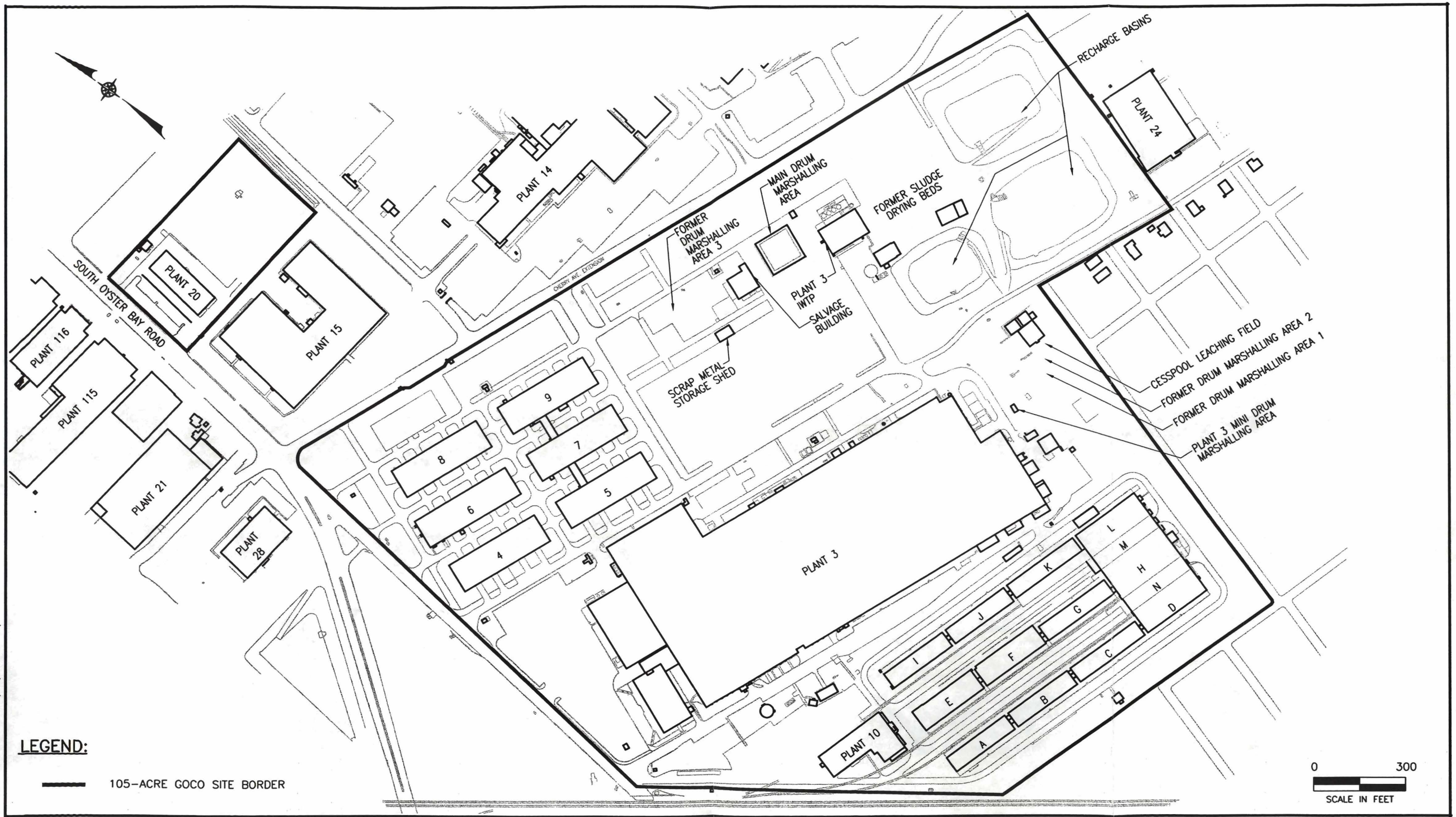
The 105-Acre GOCO Site was established in approximately 1933 with the majority of on-site buildings constructed during World War II. The site is relatively flat with a depth to groundwater of approximately 68 feet below grade.

2.2 Site Features

The major features located on the 105-Acre GOCO Site include the following buildings and operations: Plant 3, Plant 10, Plant 17-North, Plant 17-South and Plant 20, the Navy Installation Restoration (IR) Sites 1, 2, and 3, and the Plant 3 Industrial Wastewater Treatment Plant. A brief description of each of the major features follows.

Plant 3

Constructed in 1942 and located in the central portion of the 105-Acre GOCO Site, Plant 3 is a steel column and masonry wall structure where aircraft were manufactured from the period immediately following its construction until the late 1980s. The building houses over



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NORTHROP GRUMMAN CORPORATION
BETHPAGE, NEW YORK

105-ACRE GOCO SITE
SITE PLAN

Dvirka and Bartilucci
Consulting Engineers
A Division of William F. Cosulich Associates, P.C.

FIGURE 2-1

700,000 square feet of space, the majority of which was dedicated to manufacturing operations. The majority of the building is an open floor plan with a 22-foot high ceiling and concrete or wood block flooring. Numerous assembly, subassembly and manufacturing process operations were located within Plant 3. Several smaller buildings located adjacent to the exterior perimeter supported operations undertaken within Plant 3.

Plant 10

Constructed in 1943 and located along the central southern portion of the 105-Acre GOCO Site, Plant 10 served as the Quality Control laboratories for the entire Bethpage facility. Comprised of 24,900 square feet, Plant 10 originally functioned as the Central Inspection and Receiving Warehouse until the early 1960s. Presently, Plant 10 is utilized as a materials and environmental sample testing facility for NGC nationwide as well as for a variety of private clients. The building houses 25 individual laboratories and various support areas.

Plant 17-North

Constructed in 1943 and located in the northwestern portion of the 105-Acre GOGO Site, Plant 17-North is comprised of six individual warehouses which supported the manufacturing activities undertaken within Plant 3. Comprising over 193,000 square feet, the single-story concrete block and steel frame Plant 17-North warehouse buildings were utilized for the storage of various parts, components, supplies, chemicals and equipment to support aircraft manufacturing. The majority of the materials housed within Plant 17-North were stored on large ceiling-high metals racks within the warehouses. The six warehouses comprising Plant 17-North are denoted by the numbers 4 through 9 on Figure 2-1.

Plant 17-South

Constructed in 1943 and located in the southeastern corner of the 105-Acre GOCO Site, Plant 17-South is comprised of 14 individual warehouses which supported the manufacturing activities undertaken within Plant 3. Comprising over 165,000 square feet, the single-story wood

frame and concrete block Plant 17-South structure was utilized for the storage of various parts and supplies to support aircraft manufacturing. The warehouses are surrounded by concrete loading docks and asphalt roadways, and were once supplied by a Long Island Rail Road spur. The 14 warehouses comprising Plant 17-South are denoted by the letters A through N on Figure 2-1.

Plant 20

Located in the northwestern corner of the 105-Acre GOCO Site, Plant 20 is comprised of two main structures: the Transportation Garage and the Truck Washing Facility. Plant 20 is dedicated to the maintenance, repair and cleaning of trucks and other motor vehicles that have supported Northrop Grumman Corporation operations over the years.

Constructed in 1941, the Transportation Garage is a two-story brick and steel frame building comprised of over 25,000 square feet devoted to automotive and mechanical maintenance, repair and overhaul. The building is the central garage for NGC trucks and the corporate vehicle fleet. An area within the building was historically devoted to painting vehicles but was shutdown in 1995. An indoor car washing facility is located in the northwest portion of the building. Water from the car washing facility is conveyed through a floor drain to the Nassau County sewer system. Various storage areas for vehicle fluids and parts are located throughout the buildings.

Constructed in 1982, the Truck Washing Facility is located to the north of the Transportation Garage and consists of an aluminum-sheeted steel frame structure on a concrete pad surrounded by a concrete berm. In the center of the bermed area is a trench drain which discharges to an oil/water separator via a grit chamber. Oil from the oil/water separator is transferred to a waste oil underground storage tank and the water is discharged to the Nassau County sanitary sewer system. To the west of the Truck Washing Facility is a small storage building housing a steam generator which is utilized during the washing operations.

Navy Installation Restoration (IR) Site 1 – Former Drum Marshalling Area

IR Site 1 is located to the east of the Plant 3 building in the central eastern portion of the 105-Acre GOCO Site and is comprised of the Plant 3 Mini Drum Marshalling Area, the former drum marshalling areas and an abandoned leaching field. A figure showing the location of IR Site 1 is provided as Figure 2-2.

The Plant 3 Mini Drum Marshalling Area is a less-than-90-day storage area which was utilized for the temporary storage of hazardous and nonhazardous waste in 55-gallon drums and other containers. The waste material stored at this location typically included: waste oil and fuel, oil and fuel contaminated debris, halogenated solvents, non-halogenated solvents, as well as other miscellaneous waste generated within the Plant 3 building. The containers were placed on wooden pallets which rested on the 12-foot by 24-foot concrete pad. The area contained two solid bottom sumps, each measuring 5 feet by 11 feet which were designed to contain any spilled material. A gable roof, which pitches to the east and west, overhangs the entire pad by approximately 11 feet in the middle and prevents precipitation from collecting on the pad. The pad is enclosed by a sheet metal skin with two garage-type doors providing access on the western façade. In addition, doors are located near the eastern ends of the structure on both the north and south sides. Following temporary storage in this area, waste was transferred to the Main Drum Marshalling Area for proper off-site transportation and disposal.

Adjacent to the Plant 3 Mini Drum Marshalling Area to the south and east is a cesspool leaching field. The exact use of this leaching field is unknown but it may have been utilized to manage process wastewater from Plant 3. From the 1950's through 1974, the cinder-covered area overlying the leaching field was utilized for the storage of drums containing waste including various waste solvents, cadmium and cyanide residuals. Approximately 200 to 300 drums were stored within this area at any given time. In addition, heavy equipment including transformers were stored in this area. In 1978, the drum storage area was relocated a few yards to the south to an uncovered, unbermed, 100-foot square concrete pad. In 1982, the drum storage area was again relocated to the Main Drum Marshalling Area.

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NORTHROP GRUMMAN CORPORATION
BETHPAGE, NEW YORK

NAVY INSTALLATION RESTORATION (IR) SITES 1, 2, AND 3
LOCATION PLAN

FIGURE 2-2

Dvirka and Bartilucci
Consulting Engineers
A Division of William F. Cosulich Associates, P.C.

Navy Installation Restoration (IR) Site 2 – Recharge Basin Area

IR Site 2 is located to the north and east of the Plant 3 building in the northeastern corner of the 105-Acre GOCO Site and is comprised of three recharge basins and the former sludge drying beds.

Three recharge basins are located in the northeast portion of the Site to the east of the Plant 3 Industrial Wastewater Treatment Plant. The two southern recharge basins were constructed prior to 1953 and the third was constructed in 1966. Prior to 1984, these recharge basins received rinse water from industrial processes which may have contained aluminum, nitric acid, phosphoric acid and sulfuric acid. All discharges were in accordance with a New York State Department of Environmental Conservation State Pollutant Discharge Elimination System Permit.

Following construction of the Plant 3 Industrial Wastewater Treatment Plant in 1984, the only discharges to the recharge basins have been non-contact cooling water and storm water runoff from paved parking areas and roadways.

Located adjacent and to the west of the northern-most recharge basin are the former sludge drying beds which were utilized prior to 1980 for dewatering conditioned sludge generated within Plants 2 and 3 prior to off-site disposal. In 1980, the sludge drying beds were cleaned out and removed from service.

Navy Installation Restoration (IR) Site 3 – Salvage Storage Area

IR Site 3 is located to the north of the Plant 3 building in the central northern portion of the 105-Acre GOCO Site and is comprised of the Salvage Building and associated storage areas, a parking lot and the Main Drum Marshalling Area.

Constructed in 1983, the Salvage Building measures approximately 100 feet square and is utilized for recycling metals, paper and aircraft-related equipment. South of the Salvage Building is the Scrap Metal Storage Shed which is used to store metal shavings.

The area surrounding the Salvage Building is utilized for the storage of various materials. The northwest portion of the area stores scrap aircraft and aircraft parts and the southern portion is a former parking lot utilized for the storage of wood and scrap metal. Two buildings once stood in the southern portion of the area but were demolished in 1986 and 1993.

The Main Drum Marshalling Area was utilized as the central on-site hazardous waste storage area for the entire Bethpage facility. Constructed in 1983 and located in the north central portion of the Site, the Main Drum Marshalling Area consists of a concrete pad measuring approximately 100 feet square surrounded by a 6-inch wide, 1-foot high curb (as measured from grade). The pad is elevated 6 inches from the surrounding area, and a ramp along the east side provides vehicle access. A sheet metal roof, which pitches to the north and south, overhangs the entire pad by approximately 25 feet and prevents precipitation from falling on the pad. The roof is supported by seven girders on both the north and south sides, the center five of which are labeled A through E consecutively in an east to west fashion. Chemically-sealed expansion joints divide the pad into 20-foot square areas which are referred to by a girder letter and a number which appears on a fence forming the western border of the area. The entire pad pitches to a french drain which runs along the entire south side of the pad and empties into a solid bottom collection pit to the east. Any liquid spilled on the pad eventually drains to this collection pit. An aboveground storage tank housed on the pad served as a consolidation unit for oil/water waste prior to off-site transportation and disposal.

In the early 1950s through 1969, prior to the construction of the Main Drum Marshalling Area, a drum storage area existed in approximately the same location. This cinder-covered, 100-foot square area was utilized to store approximately 200 to 300 drums of liquid waste including paint waste, halogenated solvents and non-halogenated solvents.

The Plant 3 Industrial Wastewater Treatment Plant and Associated Areas

Constructed in 1984 and located to the east of the Main Drum Marshalling Area, the Plant 3 Industrial Wastewater Treatment Plant (IWTP) was designed to process 250,000 gallons per day of industrial wastewater from Plant 3. The wastewater typically consisted of sulfuric acid, alodine, nitric acid rinse water, chromic acid anodize solution, hydrofluoric acid and oil and water waste. The IWTP effluent is discharged to the Nassau County sewer system.

Measuring approximately 140 feet by 90 feet, the IWTP housed various holding and process tanks as well as filters, pumps and presses. Outside, to the north of the building, were six chemical storage tanks within a concrete secondary containment system. A clarifier, equalization basin, reduction basin, holding tank, screen house, two gravity filters, pump house and flash mix tank were located to the south of the building.

To date, all of the tanks associated with the Plant 3 Industrial Wastewater Treatment Plant have either been removed or abandoned in-place in consultation with the Nassau County Department of Health. The only tank remaining at the Plant 3 IWTP facility is a 2,000-gallon underground storage tank (UST) containing No. 2 fuel oil which is used for heating purposes.

2.3 Current Site Status

NGC has been proceeding with the scheduled and systematic "shutdown" of major portions of the Bethpage facility. Toward that end, NGC has "subdivided" the entire facility and is in the process of selling buildings and land in the commercial real estate market.

As stated earlier, the 105-Acre GOCO Site is owned by the Navy. In preparation for returning the Site to the Navy, NGC has terminated manufacturing and testing operations undertaken on the Site and has removed all of its machinery and supplies. As a result, there are no longer any hazardous waste generating operations undertaken on the 105-Acre GOCO Site associated with manufacturing and production activities.

The vehicle maintenance operations performed within Plant 20 currently generate hazardous waste. These operations are conducted in support of maintaining the NGC Corporate fleet of trucks and other vehicles. Hazardous waste generated as a result of these activities is stored in a satellite accumulation area within Plant 20. When 55 gallons of any waste stream has collected in the satellite accumulation area, it is transported to the less-than-90-day hazardous waste storage area located at Plant 26. Plant 26 is not located on the 105-Acre GOCO Site.

In addition to the vehicle maintenance operations, hazardous waste is also generated on the 105-Acre GOGO Site as a result of remediation projects. These projects include the air sparging/soil venting operation performed by the Navy and various on-site soil remediation projects resulting from various environmental investigations. Any hazardous waste generated as a result of either of these operations is immediately transported off site for proper disposal. Hazardous waste is not stored on the 105-Acre GOCO Site.

and FS and present the Navy's and NYSDEC's proposed plan to the public for remediating on-site soil. All of these investigations and reports culminated in the preparation of the ROD which identified the areas to be remediated as well as the selected remedial technology/alternative.

The ROD presents seven alternatives for the remediation of contaminated soil located within IR Sites 1, 2 and 3. Following application of the nine criteria listed in the National Contingency Plan (NCP), the Navy and NYSDEC selected Alternative S6 for the remediation of on-site soil and, to a limited extent, shallow groundwater at the 105-Acre GOCO Site.

Description of Selected Remedial Alternative

The selected remedial design combines removal/treatment/disposal and in-situ response actions to be undertaken at Operable Unit #1. Prior to initiation of any remedial activities, a final Remedial Design report will be prepared which will completely describe and delineate the areas of remediation and include specific requirements for the remediation equipment to be installed and operated. The various remedial activities to be undertaken during the Remedial Action stage of the project include the following:

- Fixation of Arsenic: Soil present at IR Site 1 with arsenic concentrations exceeding the hazardous waste criteria as defined under 40 CFR 261.24 and 6 NYCRR Part 371.3(e)(1) will be excavated and chemically fixated either on-site or off-site using a suitable binder such as ferrous sulfate and/or lime to reduce the mobility of the arsenic. Following fixation, the arsenic-contaminated soil will be disposed of in an off-site non-hazardous waste landfill. Approximately 600 cubic yards of arsenic-contaminated soil will be excavated and fixated from IR Site 1 for off-site disposal.

- Incineration of >500 ppm PCB-contaminated Soil: Soil present at IR Site 1 with PCB concentrations exceeding 500 ppm will be excavated and transported from the Site for off-site incineration in accordance with all federal, state and local regulations. Approximately 300 cubic yards of >500 ppm PCB-contaminated soil will be excavated and removed from IR Site 1 for off-site incineration.

- Disposal of 10 to 500 ppm PCB-contaminated Soil: Soil present at IR Sites 1 and 2 with PCB concentrations ranging from 10 ppm to 500 ppm will be excavated and transported from the Site for off-site landfilling in accordance with all federal, state and local regulations. Approximately 3,700 cubic yards of 10 to 500 ppm

PCB-contaminated soil (~1,100 cubic yards from IR Site 1 and ~2,600 cubic yards from IR Site 2) will be excavated and removed from IR Sites 1 and 2 for off-site landfilling. The Navy may elect to incinerate this soil depending upon the final volume of soil excavated.

- Remediation of VOC-contaminated Soil: In-situ vapor extraction/air sparging will be utilized to remove VOCs from the unsaturated and vadose zone soil below IR Site 1 and beneath Plant 3. Vapor extraction involves an induced vacuum to pull air through the soil to collect VOCs. Upon withdrawal from the soil, the contaminated air stream is passed through an appropriate treatment process to remove the VOCs from the air stream. Air sparging involves pumping air into the upper 10 to 20 feet of the shallow groundwater aquifer. VOCs present in this zone would be stripped from the soil and groundwater by the air and captured by the vacuum extraction system. Approximately 87,000 cubic yards of VOC-contaminated soil in IR Site 1 and beneath Plant 3 will undergo in-situ vapor extraction/air sparging.

- Capping and Implementation of Deed Restrictions: Following the remediation activities, soil with residual contamination will be covered to eliminate exposure pathways. The cover will consist of either 6 inches of gravel or vegetated soil placed atop the residually-contaminated soil which is permeable to allow rainwater infiltration to promote natural attenuation of the residual VOCs. A deed restriction will also be necessary to restrict certain activities in the future such as the excavation of the cover for purposes other than remediation.

- Funding for Water Treatment at Bethpage Water District's Plant No. 5: This interim remedial measure (IRM) consists of the Navy reimbursing the Bethpage Water District (BWD) for costs associated with installing a groundwater treatment system for the public water supply wells located at BWD's Plant No. 5 to address the anticipated future impact to these wells from the VOC plume extending from the 105-Acre GOCO Site. The BWD will select the remedial alternative and provide plans and specifications to the Navy for review and negotiation prior to implementation.

3.2 Groundwater

An investigation program is currently underway to address groundwater quality at the NGC Bethpage facility. The investigation will ultimately culminate in the preparation of a ROD. Groundwater beneath the NGC Bethpage facility is referred to as Operable Unit #2. Due to the close proximity of the Hooker Chemical/Ruco Polymer site to the Bethpage facility, remedial actions undertaken regarding groundwater quality will be coordinated between Ruco Polymer, the Navy and NGC. Ruco Polymer is a National Priority List (NPL) federal Superfund site.

The constituents of concern detected in the groundwater beneath the Bethpage facility which will be the focus of future remedial efforts are tetrachloroethene, trichloroethene, 1,1,1-trichloroethane, 1,1-dichloroethene, 1,1-dichloroethane and vinyl chloride. Elevated concentrations of these constituents have been detected at various monitoring wells located across the Bethpage facility as well as off-site monitoring wells downgradient of the Bethpage facility. As a result of these exceedances, the investigation process for groundwater was initiated.

An Order on Consent was issued by the NYSDEC on October 25, 1990 which provided for a RI/FS for the NGC Bethpage facility. In January 1992, a Phase 1 RI was completed which included an investigation of groundwater beneath the site. Based upon the results of the Phase 1 RI, a Phase 2 RI was proposed in April 1992. The results of both of these RI's are summarized in the Remedial Investigation Report dated May 1994 and revised in September 1994.

In 1996, an IRM was initiated by NGC which involves hydraulically containing and treating groundwater until a final remedial design can be developed and implemented. The IRM involves extracting groundwater through four wells located along the southern and southwestern boundaries of the NGC Bethpage facility. The cones of depression generated by these wells aid in achieving the hydraulic containment of groundwater within the NGC property lines. Once extracted, the groundwater is passed through one of two stripping towers to remove the VOCs. The treated groundwater is discharged to the recharge basins located along the southern boundary of the Bethpage facility or those located adjacent to Plant 5. The resulting air streams from the stripping towers are passed through activated carbon systems to remove the VOCs prior to discharge to the atmosphere. The activated carbon systems are regenerated on site by passing steam through the carbon, releasing the VOCs from the carbon into the steam. The collected steam is condensed and passed through a separator yielding liquid water and non-aqueous phase liquid. The non-aqueous phase liquid is sent off site for disposal and the condensed water is fed into the inlet of the stripping towers for treatment.

A feasibility study was prepared by Northrop Grumman Corporation for groundwater and submitted to the NYSDEC for review. Following NYSDEC acceptance of the feasibility study

in October 2000, a PRAP was prepared and issued by the NYSDEC in November 2000. A public hearing was held on the PRAP in December 2000. A ROD is currently being prepared by the NYSDEC which will describe the area and means of remediation chosen by the NYSDEC for Operable Unit #2

4.0 SOLID WASTE MANAGEMENT UNITS AND AREAS OF CONCERN

A total of 19 solid waste management units (SWMUs) and areas of concern (AOCs) identified in the existing Part 373 Permit are located at the 105-Acre GOCO Site. These SWMUs and AOCs include surface impoundments, container storage areas, wastewater treatment units and storage/treatment tanks. Table 4-1 presents a summary of these units and Figure 4-1 depicts the location of each. The sections that follow provide a brief description and the current regulatory status of each SWMU and AOC.

4.1 Surface Impoundments

The surface impoundments are located within IR Site 2 of the 105-Acre GOCO Site and consist of four sludge drying beds identified as SI-1, SI-2, SI-3 and SI-4. These beds are located adjacent to the western edge of the northern-most recharge basin in the northeast corner of the 105-Acre GOCO Site between the recharge basin and the industrial wastewater treatment plant. These beds were utilized from 1962 until 1980 to dewater conditioned sludge generated within Plants 2 and 3 prior to off-site transportation and disposal. The beds were utilized to dry approximately 400 to 500 tons of sludge per year and measure from approximately 110 to 135 feet in length and 55 to 75 feet in width. In 1980, these beds were cleaned-out and removed from service.

Current Status

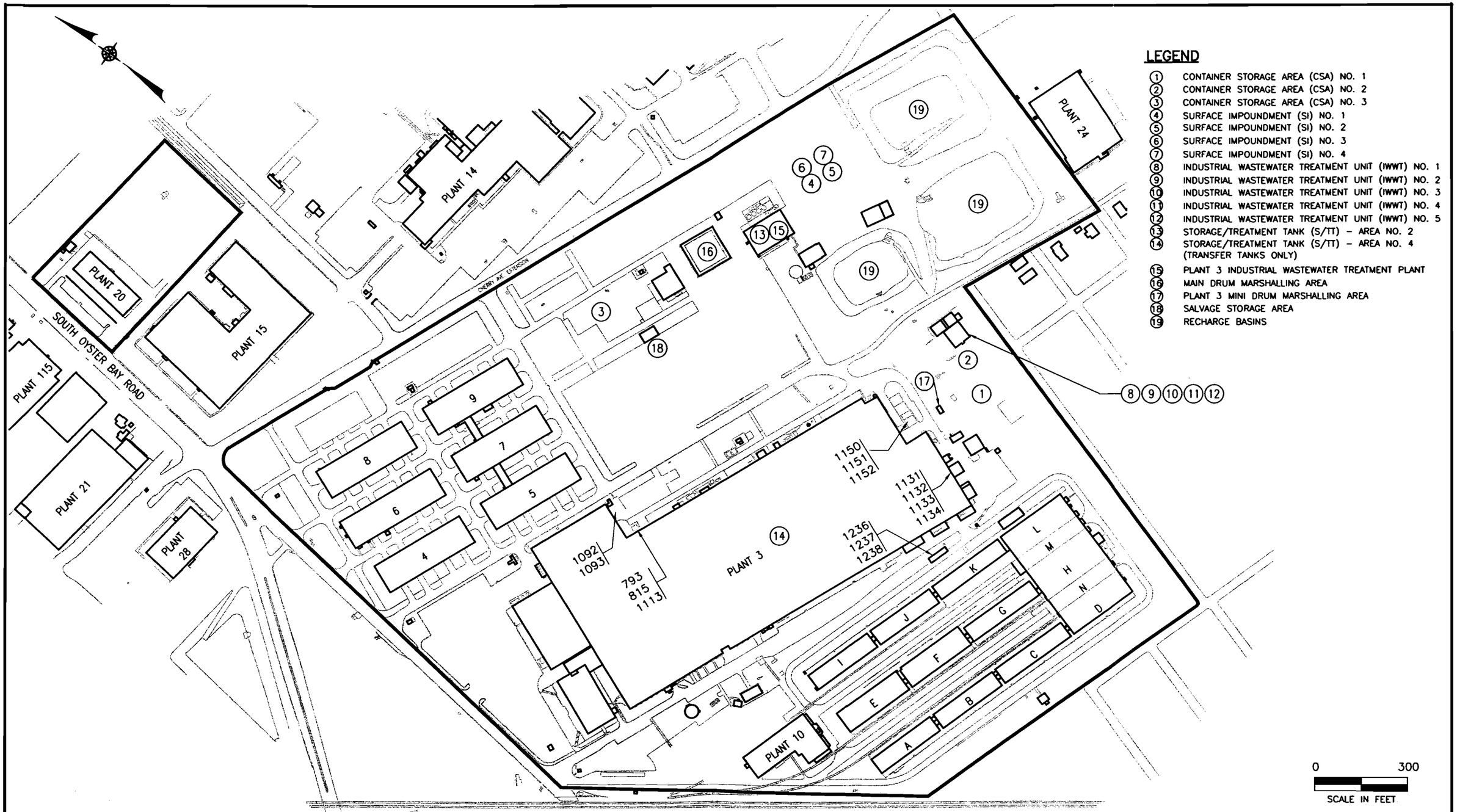
As stated above, the four sludge drying beds are located within IR Site 2 and were managed in accordance with the remedial actions described in the Record of Decision (ROD) dated July 5, 1995. Remedial actions associated with the four sludge drying beds have been completed and a Final Post Remedial Action Letter Report, dated June 1996, was prepared by the Navy and submitted to the NYSDEC.

Table 4-1

NORTHROP GRUMMAN CORPORATION
105-ACRE GOCO SITE
BETHPAGE, NEW YORK

SOLID WASTE MANAGEMENT UNIT AND AREA OF CONCERN SUMMARY

SWMU Class	Units	Module III Requirements	Status
Surface Impoundment	Sludge Drying Bed SI-1	No Action	Complete
	Sludge Drying Bed SI-2	No Action	Complete
	Sludge Drying Bed SI-3	No Action	Complete
	Sludge Drying Bed SI-4	No Action	Complete
Former Container Storage Area	CSA No. 1	RFA	Designated as IR Site 1 and managed in accordance with the Record of Decision dated July 5, 1995.
	CSA No. 2	RFA	Designated as IR Site 1 and managed in accordance with the Record of Decision dated July 5, 1995.
	CSA No. 3	RFA	Designated as IR Site 3 and managed in accordance with the Record of Decision dated July 5, 1995.
Wastewater Treatment Unit (Cyanide Treatment Unit)	IWWT No. 1	No Action	Complete
	IWWT No. 2	No Action	Complete
	IWWT No. 3	No Action	Complete
	IWWT No. 4	No Action	Complete
	IWWT No. 5	No Action	Complete
Storage/Treatment Tank	S/TT Area No. 2 (30 Tanks)	No Action	Complete
	S/TT Area No. 4 (15 Tanks)	No Action	Complete
Wastewater Treatment Unit	Industrial Waste Treatment Unit	No Action	Complete
Container Storage Area	Main Drum Marshalling Area	No Action	Complete
	Plant 3 Mini Drum Marshalling Area	No Action	Complete
	Salvage Storage Area	RFA	Designated as IR Site 3 and managed in accordance with the Record of Decision dated July 5, 1995.
Area of Concern-Recharge Basins	Recharge Basins	RFA/Corrective Action through Order on Consent	Designated as IR Site 2 and managed in accordance with the Record of Decision dated July 5, 1995.



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NORTHROP GRUMMAN CORPORATION
BETHPAGE, NEW YORK

SWMU & AOC LOCATION PLAN

Dvirka and Bartilucci
Consulting Engineers
A Division of William F. Cosulich Associates, P.C.

FIGURE 4-1

4.2 Former Container Storage Areas

There are three former container storage areas located at the 105-Acre GOCO Site identified as CSA No. 1, CSA No. 2 and CSA No. 3.

Former Container Storage Area CSA No. 1 was located to the east of Plant 3 in the east central portion of the 105-Acre GOCO Site and utilized for the storage of 200 to 300 drums of waste from 1978 through 1981. The area consisted of an uncovered, unbermed, 100-foot square concrete pad located within IR Site 1.

Former Container Storage Area CSA No. 2 was located a few yards to the north of CSA No. 1 and utilized for the storage of 200 to 300 drums of waste from the early 1950s through 1978. The area consisted of a 100-foot square cinder-covered area also located within IR Site 1.

Former Container Storage Area CSA No. 3 was located in the north central portion of the 105-Acre GOCO Site and utilized for the storage of 200 to 300 drums of waste from the early 1950s through 1969. The area consisted of a 100-foot square cinder-covered area located within IR Site 3.

Current Status

As stated above, Former Container Storage Areas No. 1 and No. 2 are located within IR Site 1 and are therefore being managed in accordance with the remedial actions described in the ROD dated July 5, 1995. Former Container Storage Area No. 3 is located within IR Site 3. There were no required remedial activities listed in the ROD dated July 5, 1995 for IR Site 3. Therefore, no further action is warranted regarding this Site or SWMU.

4.3 Wastewater Treatment Units (Cyanide Treatment Units)

The wastewater treatments units (cyanide treatment units) located at the 105-Acre GOCO Site consist of five tanks identified as IWWT No. 1 through No. 5. These tanks were formerly

located in a building to the east of Plant 3 and north of Container Storage Area CSA No. 2 in the east central portion of the 105-Acre GOCO Site. Four of the tanks measured 10 feet by 42 feet by 9 feet deep with a capacity of 28,000 gallons each and the fifth tank measured 6 feet by 8 feet by 4 feet deep. These tanks were utilized from the early 1950s through 1974 for the batch treatment of cyanide wastewater. Approximately 50 to 300 gallons of cyanide wastewater was processed per day. This area was located within IR Site 1.

Current Status

As stated above, Wastewater Treatment Units (Cyanide Treatment Units) IWWT No. 1 through No. 5 were located within IR Site 1. The area surrounding these tanks was investigated by the Navy in 1991. Cyanide was detected in the IR Site 1 soil and groundwater but not at concentrations which would pose a threat to human health or the environment. Therefore, no further action is warranted regarding this SWMU.

4.4 Storage/Treatment Tanks

There were two storage/treatment tank areas located at the 105-Acre GOCO Site identified as S/TT Area No. 2 and S/TT Area No. 4.

Storage/Treatment Tank S/TT Area No. 2

Storage/Treatment Tank S/TT Area No. 2 refers to the tanks which were located at the Plant 3 Industrial Wastewater Treatment Plant west of the recharge basins in the north central portion of the 105-Acre GOCO Site. This area contained 30 tanks which were utilized for treatment, storage, mixing, holding, reduction, equalization and clarifying.

It should be noted that all of these tanks were conditionally exempt from permit requirements pursuant to 6 NYCRR Part 373-1.1(d)(1)(xii) due to the fact that they meet the definition of a wastewater treatment unit.

Storage/Treatment Tank S/TT Area No. 4

Storage/Treatment Tank S/TT Area No. 4 refers to the tanks which were located along the north, east and south sides of the Plant 3 building in the central portion of the 105-Acre GOCO Site. This area contained 15 tanks which were utilized for the temporary storage of waste generated within Plant 3 prior to transfer for off-site disposal or on-site treatment. These tanks were constructed of either steel or stainless steel and some were furnished with internal linings or external paint coatings. A brief summary of the tanks follows:

- Tank 793 – 3,600-gallon paint water wash storage tank
- Tank 815 – 3,600-gallon alodine rinse storage tank
- Tank 1092 – 5,000-gallon Zyglo waste storage tank
- Tank 1093 – 5,000-gallon Zyglo waste storage tank
- Tank 1113 – 5,900-gallon paint rinse storage tank
- Tank 1131 – 9,743-gallon sodium hydroxide storage tank
- Tank 1132 – 9,743-gallon sodium hydroxide/chem-mill rinse storage tank
- Tank 1133 – 9,743-gallon nitric acid storage tank
- Tank 1134 – 9,743-gallon nitric acid storage tank
- Tank 1150 – 9,200-gallon chromic acid, nitric acid storage tank
- Tank 1151 – 9,200-gallon chromic acid, nitric acid storage tank
- Tank 1152 – 9,200-gallon chromic anodize rinse storage tank
- Tank 1236 – 9,200-gallon nitric acid, sulfuric acid storage tank
- Tank 1237 – 9,200-gallon nitric acid, sulfuric acid storage tank
- Tank 1238 – 9,200-gallon nitric acid, sulfuric acid storage tank

While all of these tanks have been removed, it should be noted that all of the tanks, with the exception of Tanks 1131, 1132 and 1133, are conditionally exempt from permit requirements

pursuant to 6 NYCRR Part 373-1.1(d)(1)(xii) due to the fact that they meet the definition of a wastewater treatment unit. Tanks 1131, 1132 and 1133 are hazardous waste storage tanks.

Current Status

The current status of Storage/Treatment Tanks S/TT Area No. 2 and S/TT Area No. 4 is discussed in Section 5 of this report. Currently, all tanks in both of these units have either been removed or abandoned in-place in consultation with either the Nassau County Department of Health or the Region 1 offices of the NYSDEC.

4.5 Wastewater Treatment Unit

This wastewater treatment unit is the Plant 3 Industrial Wastewater Treatment Plant (IWTP) located in the north central portion of the 105-Acre GOCO Site. The Plant 3 IWTP was constructed in 1984 and was designed to process 250,000 gallons of wastewater per day from Plant 3 prior to discharge to the Nassau County sewer system. The wastewater typically consisted of sulfuric acid, alodine, nitric acid rinse water, chromic acid anodize solution, hydrofluoric acid and oil and water waste.

Current Status

The current status of Wastewater Treatment Unit Plant 3 Industrial Wastewater Treatment Plant is discussed in Section 5 of this report. To date, all of the tanks associated with the Plant 3 IWTP have either been removed or abandoned in-place in consultation with the Nassau County Department of Health. The only tank remaining at the Plant 3 IWTP facility is a 2,000-gallon underground storage tank (UST) containing No. 2 fuel oil which is used for heating purposes.

4.6 Container Storage Areas

The container storage areas consist of three areas referred to as the Main Drum Marshalling Area, the Plant 3 Mini Drum Marshalling Area and the Salvage Storage Area.

The Main Drum Marshalling Area was constructed in 1983 and is located in the north central portion of the 105-Acre GOCO Site adjacent to the Plant 3 IWTP. This area served as the central, on-site, less-than-90-day storage area for drummed waste generated at the entire Bethpage facility and consists of a 100-foot square concrete pad surrounded by a curb and housed beneath a roof. The pad slopes to a trench drain which empties to a collection pit to contain any liquid spilled on the pad. A ramp located along the east side of the pad adjacent to the Director's Building provides vehicle access to the area. An aboveground storage tank located on the pad served as a consolidation unit for oil/water waste prior to off-site transportation and disposal. The Main Drum Marshalling Area is located within IR Site 3.

The Plant 3 Mini Drum Marshalling Area is located to the east of Plant 3 in the east central portion of the 105-Acre GOCO Site and served as a less-than-90-day storage area for waste generated within Plant 3 prior to transport to the Main Drum Marshalling Area. The area consists of a fully enclosed 12 by 24-foot concrete pad with sumps for containing any spilled liquids. The Plant 3 Mini Drum Marshalling Area is located within IR Site 1.

The Salvage Storage Area consists of the Salvage Building and the surrounding areas located north of the Plant 3 building in the north central portion of the 105-Acre GOCO Site. While this area is not, strictly speaking, defined as a Container Storage Area, it was utilized for the storage of materials including aluminum and titanium scraps and shavings prior to recycling. The Salvage Storage Area is located within IR Site 3.

During the Navy's Phase I Remedial Investigation (RI), volatile organic compounds (VOCs) were detected in the surface soil of the Salvage Storage Area at concentrations below the NYSDEC guidance values for remediation. In addition, PCBs were detected in the surface soil but at a maximum concentration of less than 1 part per million (ppm). As a precaution and to

guard against incidental direct contact exposure, the Navy was planning to cover the non-parking areas of IR Site 3 with a permeable cover. However, as part of Northrop Grumman Corporation's efforts to vacate the Navy's 105-Acre GOCO Site, NGC applied two inches of topsoil to the site along with a fast growing, erosion control grass seed. This action was in response to the Navy's request for NGC to remove all of the spare parts from the Salvage Storage Area and, as a final action, to clean, rake, regrade and reseed the area.

Current Status

The current status of the Container Storage Areas referred to as the Main Drum Marshalling Area and Plant 3 Mini Drum Marshalling Area is discussed in Section 5 of this report. In addition, as stated above, Container Storage Area Plant 3 Mini Drum Marshalling Area is located within IR Site 1 and is therefore being managed in accordance with the remedial actions described in the ROD dated July 5, 1995.

As stated above, the Container Storage Areas referred to as the Salvage Storage Area and Main Drum Marshalling Area are located within IR Site 3. There were no required remedial activities listed in the ROD dated July 5, 1995 for IR Site 3. However, a permeable cover has been applied to the Salvage Storage Area site to prevent exposure to any remaining residual contamination. It should be noted that all residual contamination has been determined to be below the NYSDEC remedial action guidance values.

4.7 Areas of Concern

The Areas of Concern located at the 105-Acre GOCO Site consist of the three recharge basins located in the northeast portion of the site to the east of the Plant 3 Industrial Wastewater Treatment Plant. The two southern recharge basins were constructed prior to 1953 and the third was constructed in 1966. Prior to 1984, these recharge basins received rinse water from industrial processes which may have contained aluminum, nitric acid, phosphoric acid and sulfuric acid in accordance with a New York State Department of Environmental Conservation State Pollutant Discharge Elimination System Permit. Prior to 1974, the discharge rate was

approximately seven to ten million gallons per week. Subsequent to the construction of the Plant 3 Industrial Wastewater Treatment Plant, only non-contact cooling water and runoff from paved parking areas and roadways were conveyed to these recharge basins. These three recharge basins are located within IR Site 2.

Current Status

As stated above, the Area of Concern designated as the Recharge Basins is located within IR Site 2 and was managed in accordance with the remedial action plan described in the ROD dated July 5, 1995. Remedial actions associated with the Recharge Basins have been completed.

Section 5

5.0 CLOSURES/DECONTAMINATION PROGRAMS AND REMEDIAL ACTIVITIES

In order for the 105-Acre GOCO Site to be removed from the Northrop Grumman Corporation Bethpage Facility Part 373 Permit, the closure and corrective action requirements specified in the current Permit and pertaining to the Site must be satisfied. In addition, the remedial activities specified in the Record of Decision (ROD) signed between the NYSDEC and the Navy on July 5, 1995 must be completed. Accordingly, a brief description of all investigation and/or remedial activities undertaken on-site has been included in this section to demonstrate that all areas of environmental concern at the Site have been, or are in the process of being, formally addressed.

The sections that follow present the closure, decontamination and investigation programs, as well as the remedial activities undertaken at the 105-Acre GOCO Site.

5.1 Closures

As specified in the current Permit, all permitted and less-than-90-day hazardous waste storage areas must be closed in accordance with the closure plan included in the Permit. In addition, a closure report must be prepared for each of these areas certified by an independent Professional Engineer. The completed closure report must then be submitted to the NYSDEC for review and acceptance in order for the closure of the area to be considered complete.

A total of eight permitted or permit-exempt less-than-90-day storage areas located at the 105-Acre GOCO Site are currently listed in the Permit. The following permitted or less-than-90-day storage areas have either been closed or require closure in accordance with the procedures listed in the Permit:

- Main Drum Marshalling Area
- Plant 3 Mini Drum Marshalling Area
- Tank 1131

- Tank 1132
- Tank 1133
- Plant 3 Area Adjacent to Facilities
- Plant 10 Drum Storage Area
- Plant 20 Drum Storage Area

The following sections provide a brief description of the closure activities undertaken at each of the above-mentioned areas. A summary of the applicable dates for the closures of these areas is provided as Table 5-1.

5.1.1 Main Drum Marshalling Area

NGC notified the NYSDEC of its intention to close the permitted Main Drum Marshalling Area in a letter dated February 9, 1998. Closure activities for the area were initiated on May 14, 1998 and completed on May 18, 1998 with soil sampling conducted on May 26, 1998. The decontamination activities undertaken at this area included sweeping, acid scrubbing and power washing. A representative of the NYSDEC was present on-site on May 14 and 26, 1998 to witness the closure and sampling activities, respectively.

A rinse water sample was collected to verify the effectiveness of the decontamination procedure and soil samples were collected adjacent to the perimeter of the area and compared to applicable criteria. Due to the fact that the samples indicated that the area had been successfully decontaminated and contamination was not found to be present (i.e., no exceedances of the comparison criteria detected), a closure report entitled, "Permanent Closure of the Main Drum Marshalling Area, Field Report, Northrop Grumman Corporation, Bethpage, New York" dated September 1998 was prepared by Dvirka and Bartilucci Consulting Engineers (D&B) and submitted to the NYSDEC for review. Approval of the closure activities and report was received from the NYSDEC in a letter dated March 10, 1999; the Main Drum Marshalling Area is now considered officially closed.

Table 5-1

NORTHROP GRUMMAN CORPORATION
105-ACRE GOCO SITE
BETHPAGE, NEW YORK

STATUS OF HAZARDOUS WASTE MANAGEMENT UNITS

Hazardous Waste Management Unit	Regulatory Status	Notification of Closure	Closure Activities Initiated	Closure Report Date	Closure Approved by NYSDEC
Main Drum Marshalling Area	Permitted	February 2, 1998	May 14, 1998	September 1998	March 10, 1999
Plant 3 Mini Drum Marshalling Area	Conditionally Exempt from Permit Requirements - Less than ninety day storage	July 14, 1998	September 2, 1998	December 1998	March 10, 1999
Tanks 1131, 1132, 1133 and 1134	Conditionally Exempt from Permit Requirements - Less than ninety day storage	April 23, 1997	September 4, 1997	October 1997	November 18, 1997
Plant 3 Area Adjacent to Facilities	Conditionally Exempt from Permit Requirements - Less than ninety day storage	July 14, 1998 and September 21, 1999	November 2, 1999	January 6, 2000	January 12, 2000
Plant 10 Drum Storage Area	Conditionally Exempt from Permit Requirements - Less than ninety day storage	Relocated between Plants 14 and 15	Area Active	Area Active	Area Active
Plant 20 Drum Storage Area	Conditionally Exempt from Permit Requirements - Less than ninety day storage	April 11, 2000	July 12, 2000	December 2000	January 10, 2001
Tanks 793, 815, 1092, 1093, 1113, 1150, 1151, 1152, 1236, 1237 and 1238	Conditionally Exempt from Permit Requirements - Wastewater Treatment Units	Closed in accordance with Closure Performance Standard - Notification not required	Not Applicable	Not Applicable	Not Applicable
Plant 3 Industrial Wastewater Treatment Plant	Conditionally Exempt from Permit Requirements - Wastewater Treatment Unit	Closed in accordance with Closure Performance Standard - Notification not required	Not Applicable	Not Applicable	Not Applicable

As described in the Permit, a less-than-90-day 5,000-gallon aboveground storage tank (Tank 575) was located in the southeast corner of the Main Drum Marshalling Area which was used to consolidate oil/water prior to off-site transportation and disposal. This tank was removed from the area and closed two years prior to the closure of the Main Drum Marshalling Area. NGC notified the NYSDEC of its intention to close this storage tank in a letter dated July 9, 1996 and approval of the modified closure procedure was received from the NYSDEC in a letter dated July 19, 1996. Closure activities were initiated on the tank on August 8, 1996. The decontamination activities undertaken involved completely submerging the tank in a solution of Parco Purge (6 percent sodium hydroxide, 3 percent gluconic acid) for two hours. Following submersion, the tank was submerged in a rinse bath for approximately five minutes. A representative of the NYSDEC was present on-site during the entire decontamination and sampling activities.

A rinse water sample was collected from the tank and compared to applicable criteria to verify the effectiveness of the decontamination procedure. Due to the fact that the rinse water sample indicated that the tank had been successfully decontaminated and no contamination was present (i.e., no exceedances of the comparison criteria detected), a closure report entitled, "Permanent Closure of the Storage Tank in the Main Drum Marshalling Area, Field Report, Grumman Aerospace Corporation, Bethpage, New York" dated November 1996 was prepared by D&B and submitted to the NYSDEC for review. Approval of the closure activities and report was received from the NYSDEC in a letter dated March 10, 1999; the storage tank in the Main Drum Marshalling Area is now considered officially closed.

5.1.2 Plant 3 Mini Drum Marshalling Area

NGC notified the NYSDEC of its intention to close the less-than-90-day Plant 3 Mini Drum Marshalling Area in a letter dated July 14, 1998. Closure activities for the area were initiated on September 2, 1998. The decontamination activities undertaken at this area included sweeping, power washing and acid scrubbing. Concentrated acid was poured directly on those areas showing visual signs of heavy staining.

A rinse water sample was collected from the pump pits within each sump and compared to applicable criteria to verify the effectiveness of the decontamination procedure. Due to the fact that the samples indicated that the area had been successfully decontaminated and no contamination was present (i.e., no exceedances of the criteria detected), a closure report entitled, "Permanent Closure of the Plant 3 Less-Than-90-Day Mini Drum Marshalling Area, Field Report, Northrop Grumman Corporation, Bethpage, New York" dated December 1998 was prepared by D&B and submitted to the NYSDEC for review. Approval of the closure activities and report was received from the NYSDEC in a letter dated March 10, 1999; the Plant 3 Mini Drum Marshalling Area is now considered officially closed.

5.1.3 Tanks 1131, 1132 and 1133

NGC notified the NYSDEC of its intention to close the less-than-90-day hazardous waste transfer tanks located at Plant 3 (Tanks 1131, 1132 and 1133) in a letter dated April 23, 1997. Closure activities for the area were initiated on September 4, 1997 and concluded on September 9, 1997. The decontamination activities undertaken at this area included sweeping, power washing and acid scrubbing the transfer tanks and secondary containment area.

Rinse water samples were collected from each tank, the pad and the sump and compared to applicable criteria to verify the effectiveness of the decontamination procedure. Due to the fact that the samples indicated that the area had been successfully decontaminated and no contamination was present (i.e., no exceedances of the comparison criteria detected), a closure report entitled, "Permanent Closure of the Plant 3 Hazardous Waste Transfer Tanks, Field Report, Northrop Grumman Corporation, Bethpage, New York" dated October 1997 was prepared by D&B and submitted to the NYSDEC for review. Approval of the closure activities and report was received from the NYSDEC in a letter dated November 18, 1997.

It should be noted that Tank 1134 was included as part of the closure activities even though this tank is conditionally exempt from permit requirements pursuant to 6 NYCRR Part 373-1.1(d)(1)(xii) due to the fact that it meets the definition of a wastewater treatment unit. However, due to its proximity to Tanks 1131, 1132 and 1133 and its location within the same

secondary containment area as these tanks, it was determined that Tank 1134 should be decontaminated following the same procedure utilized on the other tanks.

Subsequent to approval of the closure by the New York State Department of Environmental Conservation, Tanks 1131, 1132, 1133 and 1134 were removed by NGC as part of the Navy's deactivation requirements. The tank removals were conducted in consultation with the NYSDEC Region 1 offices.

5.1.4 Plant 3 Area Adjacent to Facilities

NGC notified the NYSDEC of its intention to close the less-than-90-day Area Adjacent to Facilities located within Plant 3 in a letter dated July 14, 1998. As stated in the notification letter, closure activities were to begin on or about July 30, 1998. However, during excavation activities at Plant 3 being undertaken as part of a separate program, an active storm water drainage line was compromised which led to extensive water damage throughout Plant 3. Due to the water damage, the warped woodblock floor within the Area Adjacent to Facilities was removed prior to the date the NYSDEC-approved closure activities were to be undertaken. The removed woodblock flooring was transported off-site for disposal as non-hazardous waste on July 15, 1998 following waste characterization sampling. The concrete slab beneath the woodblock floor was physically scraped and cleaned. Since no cracks/voids or visible staining was noticed on the concrete, a new concrete slab was poured over the existing slab to bring the floor level up to grade.

In consultation with the NYSDEC, it was determined that a boring should be advanced through the slab to collect soil samples. NGC prepared a closure plan to conduct this work and notified the NYSDEC of its intention to conduct the work in a letter dated September 21, 1999. The NYSDEC responded in a letter dated September 24, 1999 approving the planned work.

The analytical results of the soil samples were compared to the applicable criteria to determine if the underlying soil was impacted by past activities conducted within the area. Due to the fact that the samples indicated that contamination was not present (i.e., no exceedances of

the criteria detected), a closure report entitled, "Permanent Closure of the Plant 3 Less-Than-90-Day Storage Area Adjacent to Facilities, Northrop Grumman Corporation, Bethpage, New York" dated January 6, 2000 was prepared by D&B and submitted to the NYSDEC for review. Approval of the closure activities and report was received from the NYSDEC in a letter dated January 12, 2000.

5.1.5 Plant 10 Drum Storage Area

The Plant 10 Drum Storage Area was located on the east side of Plant 10 and served as a less-than-90-day storage area for waste generated within Plant 10. The building is a two compartment, prefabricated structure measuring 23.5 feet long by 10 feet wide and 9 feet high, with a storage capacity of 44 drums. One compartment was utilized for miscellaneous storage including liquid waste oil and fuel, oil contaminated debris, halogenated and non-halogenated solvents and other debris; the other compartment was utilized for the storage of raw materials and product including methanol, isopropyl alcohol, freon, methyl ethyl ketone, mineral spirits and lacquer thinner.

NGC notified the NYSDEC in a letter dated July 17, 1998 of its intention to relocate the storage structure to an area between Plants 14 and 15. Since the structure was to be utilized for waste storage at its new location, no decontamination activities were undertaken since the unit was not subject to closure requirements.

Following submission of the letter, the storage structure was relocated to an area between Plants 14 and 15. Although relocation is complete, as of the date of this report, NGC has not received final approval from the Nassau County Department of Health (NCDOH) to initiate waste storage in this structure at its new location.

The pre-engineered waste storage unit at its new location between Plants 14 and 15 is no longer on the 105-Acre GOCO Site.

5.1.6 Plant 20 Drum Storage Area

The Plant 20 Drum Storage Area is located along the interior west wall of the Plant 20 Building and was utilized for the less-than-90-day storage of waste generated within the building. These wastes included containers of waste oil, waste antifreeze, waste oil filters and oil-contaminated rags. Containers within the area were stored on grated secondary containment pallets atop a metal liner which provided secondary containment in the event of a spill.

NGC notified the NYSDEC of its intention to close the less-than-90-day Plant 20 hazardous waste storage area in a letter dated April 11, 2000. Approval of the closure plan was received from the NYSDEC in a letter dated July 10, 2000. Closure activities for the area were conducted on July 12, 2000. The decontamination activities undertaken included scrubbing and power washing the metal grates, secondary containment pallets, liner and underlying concrete floor with an environmentally-safe detergent followed by a potable water rinse. Following the decontamination activities, a rinse water sample was collected from the floor in order to verify the effectiveness of the procedures. Due to the fact that the rinse water sample indicated that the area had been successfully decontaminated and no contamination was present (i.e., no exceedances of the comparison criteria detected), a closure report entitled, "Permanent Closure of the Plant 20 Hazardous Waste Storage Area, Field Report, Northrop Grumman Corporation, Bethpage, New York" dated December 2000 was prepared by D&B and submitted to the NYSDEC for review. Approval of the closure activities and report was received from the NYSDEC in a letter dated January 10, 2001; the Plant 20 Drum Storage Area is now considered officially closed.

5.2 Decontamination Programs and Cleanup Criteria

Although not required in the Permit, following decommissioning, certain hazardous waste management units were decontaminated to remove any residual contamination. This is true for many of the SWMUs including the Storage/Treatment Tanks and the Wastewater Treatment Unit. Most of these SWMUs are considered conditionally exempt from permit requirements pursuant to 6 NYCRR Part 373-1.1(d)(1)(xii) due to the fact that they meet the definition of

wastewater treatment units and therefore do not require closure in accordance with the specifications detailed in the Permit.

However, following removal from service, NGC personnel undertook decontamination activities in order to comply with 6 NYCRR Part 373-3.7(b) – Closure Performance Standard.

The units decontaminated utilizing the Closure Performance Standard include the following:

- Storage/Treatment Tank S/TT Area No. 2 (all 30 tanks)
- Storage/Treatment Tank S/TT Area No. 4 (Tanks 793, 815, 1092, 1093, 1113, 1150, 1151, 1152, 1236, 1237 and 1238; Tanks 1131, 1132, 1133 and 1134 were closed in accordance with the permit closure plan)
- Plant 3 Industrial Wastewater Treatment Plant

A summary of the applicable dates for the closure of these areas is provided as Table 5-1.

The cleanup criteria utilized for the decontamination activities was based on the alternative treatment standards listed in 6 NYCRR Part 376.4(g) and consisted of physical extraction utilizing high pressure steam to render a clean debris surface.

5.3 Investigation Activities

As a result of Northrop Grumman Corporation's planned return of the 105-Acre GOCO Site to the Navy, numerous investigation activities were undertaken on-site to determine if soil contamination resulting from historic on-site operations was present. Following investigation, any contamination detected on the subject site was addressed in a remediation program. Subsequent to completion of each of these investigation and remediation programs, a report was prepared to discuss the findings and present any recommendations.

The following presents a summary of the major investigation and remediation reports prepared for various locations on the 105-Acre GOCO Site. A table presenting a brief summary of the findings by location and investigation and/or remediation report is provided in Appendix A. That table lists the AOCs, constituents of concern, constituents in exceedance of the NYSDEC recommended soil cleanup objectives, remedial action, residual contamination, remaining AOCs and potential off-site sources of contamination as presented in each report.

Phase I/Phase II Site Assessments

- Plant 3 Chem Mill Line Chromic Acid Spill Site Investigation – September 1995 (Miller)
- Plant 20 Tank 20-01-7 UST Site Assessment – March 1996 (D&B)
- Plant 20 Phase I Site Assessment – February 1997 (Radian)
- Plants 10 and 17 South Phase I Site Assessment – March 1997 (Radian)
- Plant 17 North Phase I Site Assessment – March 1997 (Radian)
- Recharge Basin Area Phase I Site Assessment – March 1997 (Radian)
- Salvage Area, Permitted Drum Storage Facility, and IWTP Phase I Site Assessment – March 1997 (Radian)
- Plants 10 and 17 South Sampling Work Plan for Phase II Site Assessment – March 1997 (Radian)
- Plant 17 North Sampling Work Plan for Phase II Site Assessment – March 1997 (Radian)
- Plant 20 Sampling Work Plan for Phase II Site Assessment – March 1997 (Radian)
- Salvage Area, Permitted Drum Storage Facility, and IWTP Sampling Work Plan for Phase II Site Assessment – March 1997 (Radian)
- Plant 3 Phase I Site Assessment – April 1997 (Radian)
- Plant 3 Sampling Work Plan for Phase II Site Assessment – May 1997 (Radian)
- Plant 3 Chem Mill Line Soil Remediation Report – June 1997 (ERM)
- Plant 20 Phase II Site Assessment – September 1997 (Radian)

- Salvage Area, Permitted Drum Storage Facility, and IWTP Phase II Site Assessment – September 1997 (Radian)
- Plant 17 North Phase II Site Assessment – December 1997 (Radian)
- Plant 17 North Phase II Addendum, 5th Round Sampling Results – January 1998 (Radian)
- Recharge Basin Area Phase I Site Assessment – March 1998 (ERM)
- Plants 10 and 17 South Phase II Environmental Site Assessment – March 1998 (Radian)
- Recharge Basin Area Phase II Site Assessment – April 1998 (ERM)
- Plant 3 Phase II Site Assessment – August 1998 (Radian)
- Plant 3 Old Alodine Area Remediation and Restoration – October 1998 (Radian)
- Plant 3 Old Sulfuric Anodize Area Remediation and Restoration – October 1998 (Radian)

Dry Well/UIC/Drain Program

- Plant 20 Class V/Type 5W20 Dry Wells Closure Plan – May 1996 (D&B)
- Plants 3, 10, 17-North, 17-South and Salvage and Treatment Area Drainage Discharge Determination – February 1998 (H2M)
- Plant 20 Class V/Type 5W20 Injection Well Closure Report – June 1998 (D&B)
- Plant 17 South Dry Wells 17S-06EA and 17S-06FA Remediation – June 22, 1998 (NGC)
- Plant 17 South Pump House Dry Well and Miscellaneous Remediation – July 7, 1998 (NGC)
- Plant 10, Room 39 – Drainage Determination Project – January 14, 1999 (H2M)

Hazardous Waste Storage Areas

- Permanent Closure of the Storage Tank in the Main Drum Marshalling Area – November 1996 (D&B)

- Permanent Closure of the Plant 3 Hazardous Waste Transfer Tanks – October 1997 (D&B)
- Permanent Closure of the Main Drum Marshalling Area – September 1998 (D&B)
- Permanent Closure of the Plant 3 Mini Drum Marshalling Area – December 1998 (D&B)

Remedial Investigations

- 105-Acre GOCO Site Final Remedial Investigation Report – May 1992 (NUS)
- 105-Acre GOCO Site Phase II Remedial Investigation Report – October 1993 (NUS)
- Plant 20 Soil and Groundwater Sampling – July 7, 1995 (G&M)
- Plant 20 Soil and Concrete Sampling and Analysis – November 2, 1995 (G&M)
- Plant 20 Tank 20-01-1 Soil Impact Investigation – March 1996 (G&M)
- Plant 17 South Warehouse Area Railroad Tie, Rail Support and Soil Sampling – January 21, 1997 (G&M)
- Plant 17 South Loading Docks, South Warehouse Complex – June 11, 1997 (G&M)
- Plant 17 North, AOC 2 and 12, Remediation Endpoint Sample Results – March 31, 1998 (NGC)
- Plant 10 Degreaser Pit Subsurface Investigation – May 1998 (D&B)
- Plant 10 and 17 South AOCs 1, 4, 6 and 8, Recommendation for No Further Action – March 30, 1998 (NGC)
- Plant 20 Waste Oil Tank No. 2013 – December 1998

Drainage Swale

- Drainage Swale North of the Main Drum Marshalling Area Subsurface Investigation – September 16, 1998 (D&B)

5.4 Remedial Activities Under RCRA

The intent of the RCRA Corrective Action program is to reduce the risk to human health and the surrounding environment presented by site contamination. Risk reduction can be accomplished by removing the toxicity associated with the site's contamination (e.g., through technically feasible and practical treatment or removal actions) or by preventing exposure (e.g., through physical controls, such as containment, and institutional controls, such as deed restrictions). Therefore, the level of risk reduction to be achieved at any given site should address the protection of human and environmental receptors that currently exist as well as those which may exist in the future.

As part of the investigation activities discussed in Section 5.3, soil sampling was conducted at the 105-Acre GOCO Site which confirmed the presence of volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs) and metals. The analytical results of the soil samples were compared to the NYSDEC Technical and Administrative Guidance Memorandum (TAGM) No. 4046 soil cleanup objectives in order to identify areas of concern which required remediation.

Under the existing Part 373 Permit, the scope of the RCRA Corrective Action performed at the 105-Acre GOCO Site included remediating Areas of Concern (AOCs) exhibiting exceedances of the TAGM 4046 soil cleanup objectives. The program entailed construction oversight, in-situ sidewall sampling, in-situ waste characterization, excavation of AOCs, transportation and disposal of excavated soil and concrete (both hazardous and nonhazardous), post-excavation sampling and site restoration of the AOCs.

Numerous AOCs located on the 105-Acre GOCO Site were remediated under the RCRA Corrective Action program. Table 5-2 presents the AOCs which were remediated, the total amount of soil and concrete removed, the constituent(s) of concern in excess of the TAGM 4046 criteria and the maximum concentration of selected constituents of concern. It should be noted that at each of the AOCs presented on Table 5-2, soil was excavated and removed with post excavation sampling conducted to confirm that the constituents of concern were below the

Table 5-2

NORTHROP GRUMMAN CORPORATION
105-ACRE GOCO SITE
SUMMARY OF RCRA REMEDIAL ACTIVITIES

Area of Concern			Constituent(s) of Concern (maximum concentration)	Remediation	
Location	Identification Number	Description		Concrete Removed (ft^2)	Soil Removed (yd^3)
Plant 3	1-05/06	Central Paint	Arsenic (16.8 mg/kg), chromium (519 mg/kg), nickel (25.6 mg/kg), phenol (120 ug/kg), selenium (9.1 mg/kg), thallium (10.9 mg/kg) and zinc (66.7 mg/kg).	777	115
	1-08	Flame Spray	Arsenic (20.3 mg/kg), benzo(a)anthracene (1,700 ug/kg), benzo(a)pyrene (1,100 ug/kg), chromium (233 mg/kg), chrysene (1,900 ug/kg), copper (1,630 mg/kg), dibenzo(a,h)anthracene (260 ug/kg), lead (1,160 mg/kg), mercury (0.13 mg/kg), methylene chloride (880 ug/kg), nickel (55.7 mg/kg), phenol (1,900 ug/kg), selenium (15.1 mg/kg), silver (18.3 mg/kg), thallium (13.8 mg/kg), trichloroethene (86,000 ug/kg) and zinc (660 mg/kg).	672	150
	1-20	Historic Paint Booth	Acetone (860 ug/kg), arsenic (24 mg/kg), benzo(a)pyrene (84 ug/kg), chloromethane (17 ug/kg), dibenzo(a,h)anthracene (27 ug/kg), methylene chloride (8,600 ug/kg), silver (14.7 mg/kg), thallium (7.6 mg/kg) and trichloroethene (250,000 ug/kg).	1,727	640
	1-29	Waste Paint Holding Tank	Benzo(a)anthracene (12,000 ug/kg), benzo(a)pyrene (10,000 ug/kg), benzo(b)fluoranthene (16,000 ug/kg), benzo(k)fluoranthene (3,400 ug/kg), carbazole (2,200 ug/kg), chrysene (9,400 ug/kg), dibenzo(a,h)anthracene (300 ug/kg) and indeno(1,2,3-cd)pyrene (4,900 ug/kg).	780	116
	1-30	Waste Paint Holding Mod	Antimony (2.8 mg/kg), arsenic (29.6 mg/kg), benzo(a)pyrene (160 ug/kg), dibenzo(a,h)anthracene (46 ug/kg), phenol (72 ug/kg) and zinc (97.8 mg/kg).	963	214
	2	Plating Area	Arsenic (15.2 mg/kg), cadmium (179 mg/kg), chromium (488 mg/kg), copper (71.8 mg/kg), cyanide (2.5 mg/kg), lead (3,720 mg/kg), selenium (7.4 mg/kg), silver (16 mg/kg) and zinc (203 mg/kg).	2,106	1,092
	3	Old Alodine	Antimony (25.7 mg/kg), arsenic (12.8 mg/kg), chromium (15,000 mg/kg), mercury (0.15 mg/kg), selenium (11.9 mg/kg), thallium (12 mg/kg) and zinc (88.3 mg/kg).	1,938	2,700
	6	Chem Mill Clean Area	Chromium (570 mg/kg), thallium (4.7 mg/kg) and zinc (280 mg/kg).	294	115
	9	Sulfuric Acid Anodize	Cadmium (10.8 mg/kg), chromium (1,690 mg/kg), copper (111 mg/kg), silver (12.1 mg/kg), thallium (2.9 mg/kg) and zinc (160 mg/kg).	225	55
	13	Former Honeycomb Pretreatment	Chromium (1,310 mg/kg) and zinc (51.4 mg/kg).	756	336
	14	Old Chem Mill Line	Chromium (1,190 mg/kg), copper (739 mg/kg), lead (515 mg/kg), mercury (0.26 mg/kg) and zinc (787 mg/kg).	445	130
	19	Former Dry Well	Antimony (2,740 mg/kg), beryllium (4.9 mg/kg), cadmium (54.4 mg/kg), chromium (7,210 mg/kg), copper (421 mg/kg), lead (1,190 mg/kg), mercury (0.21 mg/kg), selenium (8.3 mg/kg), thallium (3.8 mg/kg), trichloroethene (7,300 ug/kg) and zinc (25,400 mg/kg).	408	333
	21-21	Equipment Pit	Tetrachloroethene (430,000 ug/kg) and trichloroethene (10,000 ug/kg).	486	216

Table 5-2

NORTHROP GRUMMAN CORPORATION
105-ACRE GOCO SITE
SUMMARY OF RCRA REMEDIAL ACTIVITIES

Area of Concern			Constituent(s) of Concern (maximum concentration)	Remediation	
Location	Identification Number	Description		Concrete Removed (ft^2)	Soil Removed (yd^3)
Plant 3 (cont)	24	Drum Storage Area	Benzo(a)anthracene (13,000 ug/kg), benzo(a)pyrene (12,000 ug/kg), benzo(b)fluoranthene (13,000 ug/kg), benzo(k)fluoranthene (7,500 ug/kg), chrysene (11,000 ug/kg), dibenzo(a,h)anthracene (1,400 ug/kg), indeno(1,2,3-cd)pyrene (7,500 ug/kg), thallium (2.5 mg/kg) and zinc (55.5 mg/kg).	257	57
	27	Scrap Metal Storage Shed	Benzo(a)anthracene (18,000 ug/kg), benzo(a)pyrene (16,000 ug/kg), benzo(b)fluoranthene (23,000 ug/kg), benzo(k)fluoranthene (8,900 ug/kg), chrysene (15,000 ug/kg), dibenzo(a,h)anthracene (2,900 ug/kg) and indeno(1,2,3-cd)pyrene (11,000 ug/kg).	484	287
	33-09	Former Waste Accumulation Area	Benzo(a)anthracene (37,000 ug/kg), benzo(a)pyrene (30,000 ug/kg), benzo(b)fluoranthene (47,000 ug/kg), benzo(k)fluoranthene (14,000 ug/kg), 2-butanone (4,700 ug/kg), chrysene (41,000 ug/kg), dibenzo(a,h)anthracene (5,600 ug/kg), dibenzofuran (7,800 ug/kg), fluoranthene (98,000 ug/kg), indeno(1,2,3-cd)pyrene (21,000 ug/kg), phenanthrene (120,000 ug/kg), phenol (260 ug/kg), pyrene (82,000 ug/kg) and trichloroethene (350,000 ug/kg).	1,153	474
	33-11 and 33-12	Former Waste Accumulation Area	Arsenic (24 mg/kg), benzo(a)anthracene (3,500 ug/kg), benzo(a)pyrene (2,200 ug/kg), benzo(b)fluoranthene (2,700 ug/kg), benzo(g,h,i)perylene (64 ug/kg), benzo(k)fluoranthene (2,400 ug/kg), bis(2-ethylhexyl)phthalate (26 ug/kg), carbazole (2,000 ug/kg), chrysene (3,400 ug/kg), copper (86.8 mg/kg), dibenzo(a,h)anthracene (460 ug/kg), fluoranthene (93 ug/kg), indeno(1,2,3-cd)pyrene (54 ug/kg), mercury (0.39 mg/kg), nickel (39.7 mg/kg), phenanthrene (28 ug/kg), phenol (1,300 ug/kg), pyrene (88 ug/kg), selenium (7.2 mg/kg), silver (6.8 mg/kg), thallium (4.5 mg/kg) and zinc (127 mg/kg).	1,966	685
	33-19	Former Waste Accumulation Area	Benzo(a)anthracene (4,800 ug/kg), benzo(a)pyrene (3,600 ug/kg), benzo(b)fluoranthene (3,600 ug/kg), benzo(k)fluoranthene (3,700 ug/kg), butylbenzylphthalate (140,000 ug/kg), carbazole (360 ug/kg), chrysene (6,000 ug/kg) and dibenzo(a,h)anthracene (1,000 ug/kg).	195	73
	34	Old Autoclave Area	Benzo(a)anthracene (5,400 ug/kg), benzo(a)pyrene (230 ug/kg), benzo(b)fluoranthene (260 ug/kg), chrysene (6,900 ug/kg), dibenzo(a,h)anthracene (19 ug/kg) and PCBs (13,000 mg/kg).	1,952	1,592
	34 (West)	Old Autoclave Area	Benzo(a)anthracene (1,800 ug/kg), benzo(a)pyrene (1,700 ug/kg), benzo(b)fluoranthene (1,900 ug/kg), benzo(k)fluoranthene (1,200 ug/kg), chrysene (1,900 ug/kg), dibenzo(a,h)anthracene (630 ug/kg) and PCBs (2,200 mg/kg - concrete).	2,694	--
Plant 17 North	2	Former Oil Barrel Storage Area	Arsenic (38.5 mg/kg), benzo(a)anthracene (6,100 ug/kg), benzo(a)pyrene (6,000 ug/kg), benzo(b)fluoranthene (4,800 ug/kg), benzo(k)fluoranthene (3,800 ug/kg), chrysene (6,400 ug/kg), copper (84.7 mg/kg) and dibenzo(a,h)anthracene (76 ug/kg).	1,200	273
	12	Historic Drum Storage Area North of Warehouse 8	Arsenic (476 mg/kg), benzo(a)anthracene (460 ug/kg), benzo(a)pyrene (350 ug/kg), cadmium (23.5 mg/kg), chromium (407 mg/kg), lead (1,880 mg/kg), mercury (0.2 mg/kg), nickel (1,980 mg/kg), PCBs (14 mg/kg), selenium (7.6 mg/kg), trichloroethene (940 ug/kg) and zinc (680 mg/kg).	16,964	2,590

Table 5-2

NORTHROP GRUMMAN CORPORATION
105-ACRE GOCO SITE
SUMMARY OF RCRA REMEDIAL ACTIVITIES

Area of Concern			Constituent(s) of Concern (maximum concentration)	Remediation	
Location	Identification Number	Description		Concrete Removed (ft^2)	Soil Removed (yd^3)
Plant 10	2	Former Sanitary System	Benzo(a)pyrene (130 ug/kg), chromium (185 mg/kg), mercury (0.65 mg/kg), selenium (7.2 mg/kg), silver (11.4 mg/kg) and zinc (66.8 mg/kg).	511	435
	3	Wet Chemistry Laboratory	Benzo(a)anthracene (1,800 ug/kg), benzo(a)pyrene (26,000 ug/kg), benzo(b)fluoranthene (29,000 ug/kg), benzo(k)fluoranthene (15,000 ug/kg), chrysene (22,000 ug/kg), dibenzo(a,h)anthracene (3,400 ug/kg), fluoranthene (72,000 ug/kg), indeno(1,2,3-cd)pyrene (14,000 ug/kg), mercury (11.5 mg/kg), phenanthrene (54,000 ug/kg), selenium (5 mg/kg) and zinc (75 mg/kg).	169	50
Plant 17 South	6	Former Storm Water Dry Wells	Acetone (400 ug/kg), antimony (22.6 mg/kg), arsenic (30.3 mg/kg), benzo(a)anthracene (52,000 ug/kg), benzo(a)pyrene (48,000 ug/kg), benzo(b)fluoranthene (68,000 ug/kg), benzo(k)fluoranthene (26,000 ug/kg), cadmium (11.5 mg/kg), chromium (112 mg/kg), copper (138 mg/kg), dibenzo(a,h)anthracene (4,900 ug/kg), 1,2-dichloroethene (710 ug/kg), mercury (3.3 mg/kg), nickel (54.8 mg/kg), PCBs (34 mg/kg), selenium (12.7 mg/kg), silver (91.9 mg/kg) and zinc (472 mg/kg).	512	371

TAGM 4046 soil cleanup objectives. In addition, Appendix B presents "No Further Action" letters from the NYSDEC to Northrop Grumman Corporation for each AOC remediated under RCRA.

Section 6

6.0 CONCLUSIONS

As stated in the Introduction, the purpose of this Statement of Basis is to support a request for a major modification of the Northrop Grumman Corporation Bethpage Facility Part 373 Permit to remove the 105-Acre GOCO Site. Towards that end, the Statement of Basis has demonstrated that all the corrective action requirements identified in the Permit regarding the 105-Acre GOCO Site have been addressed. In addition, all SWMUs and AOCs have been identified with a list of constituents of concern prepared and a description of all remedial actions implemented included. Furthermore, a description of the remedial activities undertaken as required by the Record of Decision dated July 5, 1995 has been included.

As presented in the "105-Acre GOCO Site-wide Accounting" provided as Appendix A, a total of six areas of environmental concern have been identified as requiring additional investigation and/or remediation activities. As discussed with representatives of the New York State Department of Environmental Conservation, these areas will be addressed under the Navy's Installation Restoration (IR) Program. These include:

- AOC 22 – Petroleum Underground Storage Tanks (USTs)
- AOC 23 – Former Aboveground Storage Tanks (ASTs)
- AOC 30 – Three Storage Sheds
- AOC 35 – Former Sludge Drying Beds
- Dry Well 20-08
- Dry Well 34-07

The soil contamination present at each of the areas listed above is similar in nature to the contamination currently existing at IR Site 1. As such, remediation of these areas will be addressed as part of the actions outlined in the July 5, 1995 ROD for Operable Unit #1.

Appendix A

APPENDIX A

105-ACRE GOCO SITE-WIDE ACCOUNTING

Designation	Size (Acres)	Building Size (sq ft)	Current Ownership	Studies/References	AOCs	Constituents of Concern	Constituents in Exceedance of Applicable Regulatory Standards	Remedial Action	Residual Contamination	Remaining AOCs
I. Phase I / Phase II Site Assessments										
Plant 03 - Product Manufacturing	35.50	707,703	Navy	Site Investigation/Chem Mill Clean Line Chromic Acid Spill, September 1995	Plant 03 Chem Mill Clean Line	Chromium	Chromium	No remediation was conducted during this phase.	Chromium contamination was detected at various locations.	Recommended additional sampling to further delineate area of contamination. NYSDEC approved backfilling excavation.
Plant 20	5.00	25,243	Navy	UST Site Assessment Tank 20-01-7, March 1996	Soil surrounding the 2,000-gallon diesel UST	VOCs, PAHs, TPHC	Benzo(a)pyrene	Tank was removed and excavated soil was backfilled. Due to minor TAGM exceedances and NCDH "clean closure" designation, no further action was determined to be warranted.	- -	- -
Plant 20	5.00	25,243	Navy	Phase I Site Assessment, February 1997	Former paint shop floor drain and line, waste oil storage area, unused product storage area, oil dispensing area, hydraulic lift and associated hydraulic fluid reservoir, USTs and two random areas	Priority pollutant metals, VOCs, SVOCs, cyanide, TPHC, PCBs and selected glycols	No sampling conducted during this phase of the project.	Phase II Site Assessment recommended to include soil sampling in the listed AOCs for priority pollutant metals, VOCs, SVOCs, cyanide, TPHC, PCBs and selected glycols. Phase I Report approved by NYSDEC as the RFA Report/RFI Work Plan for soil and structures (date).	NA	NA
					Groundwater	TCE, PCE, 1,1,1-TCA, 1,1-DCE and vinyl chloride	No sampling conducted during this phase of the project.	Groundwater is currently being investigated under a separate program. Therefore, groundwater will not be addressed during the Phase II program.	NA	NA
Plant 10 & 17 South Warehouses	13.00	24,900 and 165,691	Navy	Phase I Site Assessment, March 1997	Former dry wells and leaching chamber, subsurface piping connecting interior drains to former dry wells, floor staining in machine shop, former chemical storage area, dry wells located on north side of warehouses, dry well located in Warehouse N and leaching chamber east of Warehouse M	Priority pollutant VOCs, SVOCs, metals, PCBs and TPHC.	No sampling conducted during this phase of the project.	Phase II Site Assessment recommended to include soil sampling in the listed AOCs for priority pollutant VOCs, SVOCs, metals, PCBs and TPHC. Phase I Report approved by NYSDEC as the RFA Report/RFI Work Plan for soil and structures (August 1998).	NA	NA
					Groundwater	TCE, PCE, 1,1,1-TCA, 1,1-DCE and vinyl chloride	No sampling conducted during this phase of the project.	Groundwater is currently being investigated under a separate program. Therefore, groundwater will not be addressed during the Phase II program. Monitoring wells will be proposed based upon the results of the soil sampling at the other AOCs.	NA	NA
Plant 17 - North Warehouses	12.86	193,979	Navy	Phase I Site Assessment, March 1997	Warehouse (W) 4 reported dry well, W4 former oil barrel storage area, W5 trench, W5 reported septic tank, W6 former pit, W8 drum storage area, W8 staining below air compressor, W8 staining in Chemical Storage Area, W8 septic tanks and leaching chambers, W8 historic drum storage on concrete pad, W9 dry sump, W9 router bench collection trenches, lead-based paint on all Plant 17 North.	Priority pollutant metals, VOCs, SVOCs, TPHC and PCBs.	No sampling conducted during this phase of the project.	Phase II Site Assessment recommended to include soil sampling in the listed AOCs for priority pollutant metals, VOCs, SVOCs, TPHC and PCBs. Phase I Report approved by NYSDEC as the RFA Report/RFI Work Plan for soil and structures (August 1998)	NA	NA
					Groundwater	TCE, PCE, 1,1,1-TCA, 1,1-DCE and vinyl chloride	No sampling conducted during this phase of the project.	Groundwater is currently being investigated under a separate program. Therefore, groundwater will not be addressed during the Phase II program.	NA	NA
Recharge Basin Area	13.00	2,500	Navy	Phase I Site Assessment, March 1997	Recharge basin and former sludge drying beds	PCBs	No sampling conducted during this phase of the project.	These areas were thoroughly investigated and remediated in accordance with the July 1995 Record of Decision. Therefore, no further action is recommended.	- -	- -
					Groundwater	TCE, PCE, 1,1,1-TCA, 1,1-DCE and vinyl chloride	No sampling conducted during this phase of the project.	Groundwater is currently being investigated under a separate program. Therefore, no further action is recommended.	NA	NA
Salvage Area, Permitted Drum Storage Facility and Industrial Waste Treatment Plant	16.00	NA	Navy	Phase I Site Assessment, March 1997	AOC 1 - UST 03-07-01 AOC 2 - UST 03-28-01	VOCs, TPHC and PCBs	No sampling conducted during this phase of the program.	Phase II site assessment recommended to include soil sampling in the listed AOCs with laboratory analysis for VOCs, TPHC and PCBs.	NA	NA
					Groundwater	TCE, PCE, 1,1,1-TCA, 1,1-DCE and vinyl chloride	No sampling conducted during this phase of the program.	Groundwater is currently being managed under a separate program. For this reason, no further action regarding groundwater is recommended.	NA	NA
Plant 10 & 17 South Warehouses	13.00	24,900 and 165,691	Navy	Sampling Work Plan / Phase II Site Assessment, March 1997	One dry well at Warehouse N	Metals, VOCs, SVOCs, TPHC and PCBs	No sampling conducted during this phase of the project.	One soil boring will be advanced to a depth of 10 feet below the bottom of the dry well with 2 samples collected from the boring.	NA	NA
					Nine former dry wells at Plant 17 South	Metals, VOCs, TPHC and PCBs	No sampling conducted during this phase of the project.	One soil boring will be advanced to a depth of 4 feet below the bottom of each dry well with 2 samples collected from the boring.	NA	NA
					AOC 2 - Two former leaching chambers at Plant 10	VOCs, TPHC and PCBs	No sampling conducted during this phase of the project.	One soil boring will be advanced in each leaching chamber to 10 feet below the bottom of the leaching chamber with 2 samples collected from each boring.	Phase II Report approved by NYSDEC as the RFI Report/ Focused CMS for contaminated soil and structures (August 1998). The CMS recommended the removal of contaminated soil and leaching chamber structures.	NA
					AOC 8 -Two former leaching chambers at Plant 17 South	Metals, VOCs, TPHC and PCBs	No sampling conducted during this phase of the project.	One soil boring will be advanced in each of the 2 leaching chambers to 10 feet below the bottom of the leaching chambers with 2 samples collected from each boring.	The CMS recommended the removal of contaminated soil and leaching chamber structures.	NA
					Loading dock	Metals, VOCs, SVOCs, TPHC, PCBs and cyanide	No sampling conducted during this phase of the project.	Two soil borings will be advanced to a depth of 4 feet below grade with 2 samples collected from each boring.	NA	NA
					Stained floor in the Machine Shop	Metals, VOCs, SVOCs, TPHC and PCBs	No sampling conducted during this phase of the project.	Two soil borings will be advanced to a depth of 4 feet below grade with 2 samples collected from each boring.	NA	NA
					Subsurface piping at Plant 10	VOCs, TPHC and PCBs	No sampling conducted during this phase of the project.	Six soil borings will be advanced near drains, elbows and fittings to a depth of 4 feet below grade with 2 samples collected from each boring.	NA	NA
					Three former dry wells at Plant 10	Metals, VOCs, TPHC and PCBs	No sampling conducted during this phase of the project.	One soil boring will be advanced in each dry well to 10 feet below the bottom of the dry well with 2 samples collected from the boring.	NA	NA
					Groundwater	NA	No sampling conducted during this phase of the project.	Groundwater is currently being investigated under a separate program. Therefore, groundwater will not be addressed during the Phase II program.	NA	NA

Designation	Size (Acres)	Building Size (sq ft)	Current Ownership	Studies/References	AOCs	Constituents of Concern	Constituents in Exceedance of Applicable Regulatory Standards	Remedial Action	Residual Contamination	Remaining AOCs
I. Phase I / Phase II Site Assessments (continued)										
Plant 17 - North Warehouses	12.86	193,979	Navy	Sampling Work Plan / Phase II Site Assessment, March 1997	AOC 1 - Reported dry well	Metals, VOCs, TPHC and PCBs	No sampling conducted during this phase of the project.	One soil boring will be advanced in the dry well to 10 feet below the bottom of the dry well with 2 samples collected from the boring.	NA	NA
					AOC 2 - Former oil barrel storage area at Warehouse 4	Metals, VOCs, SVOCs, TPHC and PCBs	No sampling conducted during this phase of the project.	Two soil borings will be advanced to a depth of 4 feet below grade with 2 samples collected from each boring.	NA	NA
					AOC 3 - Steam pipe trench in Warehouse 5	Metals, VOCs, TPHC and PCBs (soil) and TPHC and PCBs (concrete)	No sampling conducted during this phase of the project.	Two soil borings will be advanced to a depth of 4 feet below grade with 1 concrete and 2 soil samples collected from each boring.	NA	NA
					AOC 4 - Former septic tank and leaching chamber at Warehouse 5	Metals, VOCs, TPHC and PCBs	No sampling conducted during this phase of the project.	One soil boring will be advanced to a depth of 10 feet below the bottom of the leaching chamber with 2 samples collected from the boring.	NA	NA
					AOC 5 - Former pit at Warehouse 6	Metals, VOCs, SVOCs, TPHC and PCBs (soil) and TPHC and PCBs (concrete)	No sampling conducted during this phase of the project.	One soil boring will be advanced to a depth of 4 feet below the bottom of the pit with 1 concrete and 2 soil samples collected from the boring.	NA	NA
					AOC 6 - Drum storage area at Warehouse 8	Metals, VOCs, SVOCs, TPHC and PCBs (soil) and SVOCs, TPHC and PCBs (concrete)	No sampling conducted during this phase of the project.	Two soil borings will be advanced to a depth of 4 feet below the bottom of the dry well with 1 concrete and 2 soil samples collected from each boring.	NA	NA
					AOC 7 - Staining below the air compressor at Warehouse 8	TPHC and PCBs	No sampling conducted during this phase of the project.	One soil boring will be advanced to a depth of 4 feet below grade with 1 concrete and 2 soil samples collected from the boring.	NA	NA
					AOC 8 - Staining in the Chemical Storage Area at Warehouse 8	Metals, VOCs, SVOCs, TPHC and PCBs (soil) and SVOCs, TPHC and PCBs (concrete)	No sampling conducted during this phase of the project.	Six soil borings will be advanced to a depth of 4 feet below grade with 1 concrete and 2 soil samples collected from each boring.	NA	NA
					AOC 9 - Sump at Warehouse 9	Metals, VOCs, SVOCs, TPHC and PCBs (soil) and TPHC and PCBs (concrete)	No sampling conducted during this phase of the project.	One soil boring will be advanced to a depth of 4 feet below the bottom of the sump with 1 concrete and 2 soil samples collected from the boring.	NA	NA
					AOC 10 - Router bench collection trench in Warehouse 9	Metals, TPHC and PCBs (soil) and TPHC and PCBs (concrete)	No sampling conducted during this phase of the project.	Two soil borings will be advanced to a depth of 4 feet below the bottom of the trench with 1 concrete and 2 soil samples collected from each boring.	NA	NA
					AOC 11 - Former sanitary leaching chambers south of Warehouse 8	Metals, VOCs, TPHC and PCBs	No sampling conducted during this phase of the project.	One soil boring will be advanced to a depth of 10 feet below the bottom of each dry well with 2 soil samples collected from the boring.	NA	NA
					AOC 12 - Former drum storage area north of Warehouse 8	Metals, VOCs, SVOCs, TPHC and PCBs (soil) and SVOCs, TPHC and PCBs (concrete)	No sampling conducted during this phase of the project.	Six soil borings will be advanced to a depth of 4 feet below grade with 1 concrete and 2 soil samples collected from each boring.	NA	NA
					AOC 13 - Lead paint at all of the Plant 17 North Warehouses	Lead	No sampling conducted during this phase of the project.	Twenty-four soil borings will be advanced to a depth of 2 feet below grade with 1 sample collected from each boring.	NA	NA
Plant 20	5.00	25,243	Navy	Sampling Work Plan / Phase II Site Assessment, March 1997	AOC 1 - Paint shop floor drain and line	Metals, VOCs and SVOCs (soil) and metals and SVOCs (concrete)	No sampling conducted during this phase of the project.	Three borings will be advanced to a depth of 4 feet below grade with 2 soil samples collected from each boring. One concrete sample will also be collected.	NA	NA
					AOC 2 - Waste oil storage area AOC 3 - Unused product storage area AOC 4 - Oil dispensing area	Metals, VOCs, TPHC and PCBs	No sampling conducted during this phase of the project.	One boring will be advanced to a depth of 4 feet below grade with 2 samples collected from the boring.	NA	NA
					AOC 5 - Hydraulic lift and fluid reservoir	TPHC and PCBs	No sampling conducted during this phase of the project.	One boring will be advanced to a depth of 10 feet below grade with 2 samples collected from the 6 to 10-foot depth interval below grade from the boring.	NA	NA
					AOC 6 - Removed or abandoned underground storage tanks	VOCs, TPHC and PCBs	No sampling conducted during this phase of the project.	Four soil borings will be advanced to a depth of 20 feet below grade with 5 samples collected from the 10 to 20-foot depth interval below grade from each boring.	NA	NA
					Random sample locations (main bay area and north end of Building 20-01)	Metals, VOCs, TPHC, PCBs and select glycols	No sampling conducted during this phase of the project.	Two soil borings will be advanced to a depth of 4 feet below grade with 2 samples collected from each boring.	NA	NA
Salvage Area, Permitted Drum Storage Facility and Industrial Waste Treatment Plant	16.00	NA	Navy	Sampling Work Plan / Phase II Site Assessment, March 1997	AOC 1 - UST 03-07-01 (old)	VOCs, TPHC and PCBs	No sampling conducted during this phase of the program.	Two soil borings will be advanced to a depth of 20 feet below grade with 2 samples collected from the 10 to 20-foot depth interval below grade from each boring.	NA	NA
					AOC 2 - UST 03-28-01	VOCs, TPHC and PCBs	No sampling conducted during this phase of the program.	One soil boring will be advanced to a depth of 20 feet below grade with 2 samples collected from the 10 to 20-foot depth interval below grade.	NA	NA
Plant 03 - Product Manufacturing	35.50	707,703	Navy	Phase I Site Assessment, April 1997	Paint booths, plating area, old alodine area, heat treat area A, heat treat area B, chem mill clean, chem mill flowcoat area, chem mill etch, sulfuric acid anodize, chromic acid anodize, alodine/sulfuric anodize, penetrant inspection, honeycomb pretreatment area, old chem mill, printed circuit and engraving departments, machine shops, boiler room, router room, dry wells at columns GG7 and JJ2, diffusion galleries, equipment pits, petroleum storage USTs, waste oil AST storage area, and storage room	Metals, VOCs, SVOCs, TPHC, PCBs, cyanide and pesticides	No sampling conducted during this phase of the program.	Phase II Site Assessment recommended to include limited geophysical surveying and soil sampling in the listed AOCs for metals, VOCs, SVOCs, cyanide, TPHC, PCBs and pesticides. Phase I Report approved by NYSDEC as the RCRA Facility Assessment (RFA) Report/RCRA Facility Investigation (RFI) Work Plan for soil and structures (August 1998).	NA	NA
					Groundwater	TCE, PCE, 1,1,1-TCA, 1,1-DCE and vinyl chloride	No sampling conducted during this phase of the project.	Groundwater is currently being investigated under a separate program. Therefore, groundwater will not be addressed during the Phase II program.	NA	NA

Designation	Size (Acres)	Building Size (sq ft)	Current Ownership	Studies/References	AOCs	Constituents of Concern	Constituents in Exceedance of Applicable Regulatory Standards	Remedial Action	Residual Contamination	Remaining AOCs
I. Phase I / Phase II Site Assessments (continued)										
Plant 03 - Product Manufacturing	35.50	707,703	Navy	Sampling Work Plan / Phase II Site Assessment, May 1997	AOC 1 to AOC 36	Metals, VOCs, SVOCs, TPHC, PCBs, cyanide and pesticides	No sampling conducted during this phase of the project.	Backfilling of the pits approved by NYSDEC in Feb 1998 for AOCs 3 (old alodine area), 9 (sulfuric acid anodize process line), 16 partial (machine shop areas, transfer pump #16-14), 21 partial (pit number 21-18), 38 (water effluent sump pit #38) and 39 (water blow down pit #39).	NA	NA
Plant 03 - Product Manufacturing	35.50	707,703	Navy	Soil Remediation Report - Chem Mill Line, June 1997	Plant 03 Chem Mill Clean Line	Chromium	Chromium.	Soil was excavated for most AOCs and properly disposed of off-site; the excavation was then backfilled with certified clean fill and the area was restored to match the existing conditions.	Chromium contamination was detected at various locations at slightly above TAGM levels. NYSDEC approved backfilling excavation.	--
Plant 20	5.00	25,243	Navy	Phase II Site Assessment, September 1997	AOC 1 - Paint shop floor drain and line	Metals, VOCs and SVOCs (soil), and metals and SVOCs (concrete)	Copper, mercury and zinc in the concrete sample (when compared to soil cleanup criteria).	No further action recommended. Phase II Report approved by NYSDEC as the RFA Report for soil and structures (August 1998).	--	--
					AOC 2 - Waste oil storage area	Metals, VOCs, TPHC, PCBs and fuel-related constituents	None.	No further action recommended.	--	--
					AOC 3 - Unused product storage area	Metals, VOCs, TPHC, PCBs and fuel-related constituents	Mercury.	No further action recommended since delineation samples did not confirm the presence of mercury, the detected concentration was only slightly above criteria and the soil is located beneath a 5-inch thick concrete slab.	--	--
					AOC 4 - Oil dispensing area	Metals, VOCs, TPHC, PCBs, fuel-related constituents and STARS (Table 1 parameters)	TPHC (identified as gasoline).	No further action recommended since STARS parameters did not exceed applicable criteria.	--	--
					AOC 5 - Hydraulic lift and fluid reservoir	TPHC, PCBs, fuel-related constituents and (STARS Table 1 parameters)				
					AOC 6 - Removed or abandoned underground storage tanks	SVOCs, TPHC, PCBs, fuel-related constituents and STARS (Table 2 parameters)	TPHC (identified as No. 2 fuel oil and gasoline).	No further action recommended since STARS parameters did not exceed applicable criteria.	--	--
					Random sample locations (main bay area and north end of Building 20-01)	Metals, VOCs, TPHC, PCBs, fuel-related constituents and glycols	Mercury.	No further action recommended since delineation samples did not confirm the presence of mercury, the detected concentration was only slightly above criteria and the soil is located beneath a 5-inch thick concrete slab.	--	--
Salvage Area, Permitted Drum Storage Facility and Industrial Waste Treatment Plant	16.00	NA	Navy	Phase II Site Assessment, September 1997	AOC 1 - UST 03-07-01 (old)	VOCs, TPHC, PCBs, fuel-related constituents and STARS (Table 2 parameters)	TPHC (identified as 10W40 oil).	No further action recommended since STARS parameters were not detected in the second round sample above applicable criteria.	--	--
					AOC 2 - UST 03-28-01	VOCs, TPHC, PCBs and fuel-related constituents	None.	No further action recommended.	--	--
Plant 17 - North Warehouses	12.86	193,979	Navy	Phase II Site Assessment, December 1997	AOC 1 - Former stormwater dry well at Warehouse 4	Metals, VOCs, TPHC, PCBs and fuel-related constituents	None.	No further action recommended.	--	--
					AOC 2 - Former oil barrel storage area at Warehouse 4	Metals, VOCs, SVOCs, TPHC, PCBs, fuel-related constituents and STARS parameters.	Arsenic, benzo(a)anthracene, benzo(a)pyrene, chrysene, TPHC (identified as No. 2 fuel oil), CaPAHs, copper, benzo(b)fluoranthene, benzo(k)fluoranthene and dibenzo(a,h)anthracene.	Excavation and off-site disposal of shallow soil in the entire unpaved area of AOC 2 recommended. Endpoint soil samples recommended to be analyzed for arsenic, copper, mercury and SVOCs.	The CMS recommended the removal of contaminated soil and structures at AOC 2. Phase II Report approved by NYSDEC as the RFI Report/Focused CMS for contaminated soil and structures (August 1998).	NA
					AOC 3 - Steam pipe trench in Warehouse 5	Metals, VOCs, TPHC, PCBs and fuel-related constituents	None.	No further action recommended.	--	--
					AOC 4 - Former septic tank and leaching chambers at Warehouse 5	Metals, VOCs TPHC, PCBs and fuel-related constituents	None.	No further action recommended.	--	--
					AOC 5 - Former pit at Warehouse 6	Metals, VOCs, SVOCs, TPHC, PCBs and fuel-related constituents	None.	No further action recommended.	--	--
					AOC 6 - Drum storage area at Warehouse 8	Metals, VOCs, SVOCs, TPHC, PCBs and fuel-related constituents	None.	No further action recommended.	--	--
					AOC 7 - Staining below the air compressor at Warehouse 8	TPHC, PCBs and fuel-related constituents	None.	No further action recommended.	--	--
					AOC 8 - Staining in the Chemical Storage Area at Warehouse 8	Metals, VOCs, SVOCs, TPHC, PCBs and fuel-related constituents	Mercury (not confirmed in duplicate sample).	No further action recommended since no duplicate or delineation sample confirmed the presence of mercury. Also, the entire area is covered by a 7-inch thick concrete floor slab.	--	--
					AOC 9 - Sump at Warehouse 9	Metals, VOCs, SVOCs, TPHC, PCBs and fuel-related constituents	None.	No further action recommended.	--	--
					AOC 10 - Router bench collection trenches in Warehouse 9	Metals, TPHC, fuel-related constituents, PCBs and STARS parameters.	TPHC (identified as 10W40 motor oil), arsenic and zinc.	No further action recommended since STARS parameters were not detected above applicable criteria.	--	--

Designation	Size (Acres)	Building Size (sq ft)	Current Ownership	Studies/References	AOCs	Constituents of Concern	Constituents in Exceedance of Applicable Regulatory Standards	Remedial Action	Residual Contamination	Remaining AOCs
I. Phase I / Phase II Site Assessments (continued)										
Plant 17 - North Warehouses (continued)	12.86	193,979	Navy	Phase II Site Assessment, December 1997	AOC 11 - Former sanitary leaching chambers south of Warehouse 8	Metals, VOCs, SVOCs, TPHC, PCBs and fuel-related constituents	None.	No further action recommended.	- -	- -
					AOC 12 - Former drum storage area north of Warehouse 8	Metals, VOCs, SVOCs, TPHC, PCBs, fuel-related constituents and STARS parameters	TPHC (identified as gasoline and No. 2 fuel oil), arsenic, mercury, zinc, chromium, cadmium, lead, selenium, nickel, TCE, PCBs, benzo(a)anthracene, benzo(a)pyrene and chrysene.	Excavation and off-site disposal of soil to a depth of 4 feet below grade recommended for 1/2 of the AOC 12 area. Endpoint soil samples recommended to be analyzed for arsenic, chromium, cadmium, lead, nickel, selenium, zinc, PCBs, VOCs and SVOCs. No further action recommended for soil surrounding boring 17N-12D since arsenic only slightly exceeded criteria, no delineation sample confirmed the arsenic detection and STARS parameters were not detected above applicable criteria.	The CMS recommended the removal of contaminated soil and structures at AOC 12.	AOC 12.
					AOC 13 - Lead paint at all of the Plant 17 North Warehouses	Lead	None.	No further action recommended.	- -	- -
Plant 17 - North Warehouses	12.86	193,979	Navy	Addendum to Final Report - Phase II Environmental Site Assessment 5th Round Sampling Results, January 1998	AOC 12 - Former drum storage area north of Warehouse 8	Metals	Arsenic, chromium, selenium	Recommended including area around boring 17N-12H to the areas previously recommended for remediation under the Phase II ESA report.	Area around boring 17N-12H.	AOC 12 (Area around boring 17N-12H).
Plant 03 - Product Manufacturing	35.50	707,703	Navy	Recommendations for No Further Action January 30, 1998	AOC 9 (excluding eastern portion)	Chromium	None (endpoint sampling).	Excavated soil for off-site disposal. Recommended backfilling with clean bank-run sand.	- -	AOC 9 (Eastern portion)
Plant 03 - Product Manufacturing	35.50	707,703	Navy	Recommendations for No Further Action February 2, 1998	AOC 3 - Old Alodine Area	Chromium	Chromium detected above TAGM criteria.	Excavated 2700 cubic yards of soil for off-site disposal. Recommended backfilling with clean bank-run sand.	None (based on TCLP results).	- -
Plant 03 - Product Manufacturing	35.50	707,703	Navy	Recommendations for No Further Action February 10, 1998	AOC 16 (partial), AOC 21 (partial), AOC 38, AOC 39	Metals, VOCs, SVOCs, TPHC and PCBs	None.	Machine pits were decontaminated. No further action recommended.	- -	- -
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	IR Program Request for Inclusion, February 20, 1998	AOC 22, AOC 30, AOC 35	Metals	No sampling conducted.	NA	Requests referenced AOCs be included under Navy's IR program.	AOC 22, 30, 35.
Recharge Basin Area	13.00	2,500	Navy	Phase I Site Assessment, March 1998	Deep groundwater	TCE, PCE, 1,1,1-trichloroethane, 1,2-dichloroethene, 1,1-dichloroethene and 1,1-dichloroethane	No sampling conducted during this phase of the project.	Groundwater is currently being investigated under a separate program. Therefore, groundwater will not be addressed during the Phase II program.	NA	NA
					Three recharge basins and shallow groundwater	VOCs, base-neutral SVOCs, PCBs, priority pollutant metals and STARS TCLP VOCs and SVOCs	No sampling conducted during this phase of the project.	Phase II Site Assessment recommended to include surficial soil/sediment sampling in the recharge basins for the constituents listed. In addition, shallow groundwater samples will be collected and analyzed for the constituents listed.	NA	NA
Plant 10 & 17 South Warehouses	13.00	24,900 and 165,691	Navy	Phase II Environmental Site Assessment, March 1998	Dry well inside of Warehouse N at Plant 17 South	Metals, VOCs, SVOCs, TPHC, PCBs, fuel-related constituents, and STARS parameters	TPHC (identified as 10W40 motor oil and No. 2 fuel oil), zinc, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, total CaPAHs and benzo(k)fluoranthene.	No further action recommended because secondary sampling did not confirm zinc and STARS TCLP was below criteria.	- -	- -
					Former dry wells outside of the Plant 17 South Warehouses	Metals, VOCs, TPHC, PCBs, fuel-related constituents and STARS parameters	TPHC (identified as jet fuel and 10W40 motor oil), zinc, PCBs, selenium, arsenic, cadmium, chromium, copper, mercury, nickel, silver, acetone, 1,1-dichloroethene, TCE, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene and dibenzo(a,h)anthracene.	Soil excavation and removal recommended for dry wells 17S-06E and 17S-06FA to a depth of 16 feet below grade.	NA	NA
Plant 10 & 17 South Warehouses	13.00	24,900 and 165,691	Navy	Phase II Environmental Site Assessment, March 1998	Former leaching chambers east of Warehouses L and M at Plant 17 South	Metals, VOCs, TPHC, PCBs and fuel-related constituents	Arsenic.	No further action recommended because the arsenic concentrations were not excessive, soils above and below sample not impacted and difficulty of remediation of deep soil.	- -	- -
					Three former sanitary leaching chambers outside of Plant 10	Metals, VOCs, TPHC, PCBs, fuel-related constituents and STARS parameters	Chromium, mercury, zinc, silver, benzo(a)pyrene and selenium.	Removal of leaching chambers and impacted soil to 24 feet below grade recommended. The smaller septic tank and 2 settling tanks should also be removed along with the soil contained within.	NA	NA
					Hydraulic Pump	TPHC, PCBs and STARS parameters.	TPHC and benzo(a)pyrene.	No further action recommended because benzo(a)pyrene was present in very minor amounts.	- -	- -
					Loading dock at Plant 10	Metals, VOCs, SVOCs, TPHC, PCBs and fuel-related constituents	None.	No further action recommended.	- -	- -
					Railroad track site	VOCs				
					Stained floor in the Machine Shop at Plant 10	Metals, VOCs, SVOCs, TPHC, PCBs, fuel-related constituents and STARS parameters	TPHC (identified as No. 2 fuel oil), arsenic, chromium and some SVOCs in the concrete.	No further action recommended because STARS parameters were not detected above criteria and arsenic and chromium were not confirmed in additional samples.	- -	- -
					Subsurface piping at Plant 10	Metals, VOCs, SVOCs, TPHC, PCBs, fuel-related constituents, STARS parameters and mercury	TPHC (identified as 10W40 motor oil and No. 2 fuel oil), mercury. benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene and zinc.	Soil excavation and removal recommended within the 11 foot by 17 foot area to a depth of 8 feet below grade.	- -	- -
					Tensile strength machine pit	TPHC, PCBs and STARS parameters	TPHC and benzo(a)pyrene.	No further action recommended because benzo(a)pyrene was present in very minor amounts.	- -	- -
					Three former dry wells outside of Plant 10	Metals, VOCs, TPHC, PCBs, fuel-related constituents and STARS parameters	TPHC (identified as No. 2 fuel oil) and 1,2-dichloroethene.	No further action recommended because STARS parameters were not detected above criteria and 1,2-dichloroethene was not confirmed in additional samples.	- -	- -
Plant 03 - Product Manufacturing	35.50	707,703	Navy	Recommendations for No Further Action, March 23, 1998	AOC 1 (partial), AOC 3 (partial), AOC 6 (partial), AOC 15 (partial), AOC 16 (partial), AOC 20 (partial), AOC 21 (partial), AOC 24 (partial), AOC 33 (partial), AOC 34 (partial) AOC 36 (partial)	Metals, SVOCs	Chromium, copper, nickel, arsenic, selenium, zinc, mercury, lead, zinc, SVOCs, PAHs	NA	NA	NA
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Area of Concern 1-29 Remediation End Point Sample Results, March 24, 1998	AOC 1-29	SVOCs	None (endpoint sample).	Soil was excavated to depth of 4 feet and disposed off-site. No further action recommended. NYSDEC approved backfilling (May 1998).	- -	- -

Designation	Size (Acres)	Building Size (sq ft)	Current Ownership	Studies/References	AOCs	Constituents of Concern	Constituents in Exceedance of Applicable Regulatory Standards	Remedial Action	Residual Contamination	Remaining AOCs
I. Phase I / Phase II Site Assessments (continued)										
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Area of Concern 1-30 Remediation End Point Sample Results, March 24, 1998	AOC 1-30	Metals and SVOCs	SVOCs, arsenic, zinc.	Soil was excavated to depth of 6 feet and disposed off-site. No further action recommended based on minor TAGM exceedances. NYSDEC approved backfilling (May 1998).	--	--
Recharge Basin Area	13.00	2,500	Navy	Phase II Site Assessment, April 1998	Recharge basin soil/sediment	VOCs, base-neutral SVOCs, PCBs, priority pollutant metals, and STARS TCLP VOCs and SVOCs	Naphthalene, acenaphthene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, benzo(g,h,i)perylene, copper, mercury, zinc and PCBs.	No further action recommended since these constituents were detected at approximately the same concentrations during the Navy program and the NYSDEC did not require remediation in the ROD.	--	--
					Shallow groundwater	VOCs, SVOCs, PCBs and priority pollutant metals	TCE, antimony and PCBs.	Groundwater is currently being investigated under a separate program. Therefore, no further action is recommended.	NA	NA
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Area of Concern 1-05/06 Remediation End Point Sample Results, April 1, 1998	AOC 1-5/6	Metals	None (endpoint sample).	Soil was excavated to depth of 4 feet and disposed off-site. NYSDEC approved backfilling (May 1998).	--	--
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Area of Concern 13, 33-19 Remediation End Point Sample Results, April 17, 1998	AOCs 13, 33-19	Metals	None (endpoint sample).	Soil within the dry well was excavated and disposed off-site. No further action recommended. NYSDEC approved backfilling (May 1998).	--	--
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Area of Concern 24 Remediation End Point Sample Results, April 17, 1998	AOC 24	SVOCs	None (endpoint sample).	Soil within the dry well was excavated to a depth of 6 feet and disposed off-site. No further action recommended. NYSDEC authorized backfilling (June 1998).	--	--
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Area of Concern 9, 19, 27, 14 Remediation End Point Sample Results, April 28, 1998	AOCs 9, 19, 27, 14	Metals, SVOCs and VOCs	SVOCs, VOCs, zinc, chromium.	Soil was excavated at each location and disposed off-site. No further action recommend based on minor TAGM exceedances. NYSDEC authorized backfilling (June 1998).	--	--
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Area of Concern 22 Remediation End Point Sample Results, April 29, 1998	AOC 22	Cadmium	Cadmium.	Soil was excavated and disposed off-site. No further action recommend based on minor TAGM exceedance of one sample.	Cadmium.	Area to be further investigated/remediated under Navy's IR program.
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Area of Concern 1-08/20 Remediation End Point Sample Results, May 7, 1998	AOC 1-08/20	Metals and VOCs	None (endpoint samples).	Soil was excavated and disposed off-site. NYSDEC authorized backfilling (June 1998).	--	--
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Area of Concern 21-21 Remediation End Point Sample Results, May 7, 1998	AOC 21-21	PCE	PCE.	Soil was excavated to a depth of 12 feet. One floor sample exceeded TAGM criteria for PCE, however, TCLP analysis indicates material is not characteristically hazardous for PCE. Any potential groundwater impact will be addressed by the IRM system installed under ROD No. 1. NYSDEC authorized backfilling (June 1998).	PCE.	--
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Area of Concern 27 Scrap Metal Storage Shed, May 8, 1998	AOC 27	PAHs	PAHs.	Proposed addressing residual contamination by either further assessing the source and extent of contamination with additional soil removal, or demonstrating that cover will effectively isolate contaminated soil.	PAHs.	--
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	105 Acres NYSDEC Approval Letter, May 13, 1998	Plant 03: AOCs 1-29, 1-05/06, 13, 33-19, 19, 14; Plant 9: AOCs 1-30; Plant 10: AOC 3; Plant 17 North: AOCs 2 and 12	NA	NA	NYSDEC approved requests for no further action based upon achievement of TAGM criteria and backfilling of the excavations associated with the AOCs listed.	--	--
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Area of Concern 33-09,34, 33-11/12, 6 - Remediation End Point Sample Results, May 13, 1998	AOCs 33-09,34, 33-11/12, 6	Metals, VOCs, SVOCs and PCBs	SVOCs, chromium.	Contaminated soil at each AOC was excavated and disposed off-site. No further action recommended. NYSDEC authorized backfilling (June 1998).	Minor exceedances of TAGM criteria noted at AOC 33-09. SVOC TAGM exceedances at AOC 33-11/12 believed due to PAH interference. Chromium TAGM exceedance at AOC 6 warrants no further action since hexavalent chromium concentration well below chromium TAGM criteria.	--
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Area of Concern 20-24 Remediation End Point Sample Results, May 21, 1998	AOC 20-24	SVOCs	None.	Soil within the dry well was excavated to a depth of 16 feet and disposed off-site. No further action recommended. NYSDEC authorized backfilling (August 1998).	--	--
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Area of Concern 27 Remediation End Point Sample Results, May 21, 1998	AOC 27	PAHs	PAHs.	Soil was excavated and disposed of off-site. Recommended residual contamination be isolated with 3-foot soil cover and grass planting. No further action recommended. PAHs. NYSDEC authorized backfilling (June 1998).	--	--
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Authorization to Backfill Various Areas of Concern, NYSDEC, June 23, 1998	Plant 03: various AOCs (36), AOCs 24, 9, 27, 2, 21-21, 33-09, 1-08, 1-20, 6, 34; Plant 2: AOC 33-11/12; Plant 10/17 South: various AOCs (4)	NA	NA	Request for No Further Action (NFA) and/or backfilling approved.	NA	NA
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Bethpage NWIRP Record of Remediation or "No Further Action" Review, June 24, 1998	Plant 03: area of concern (AOC) 1-05 and 1-06 Record of Remediation (ROR), AOCs 1-29, 1-30, 3, 10, 13, 14, 19, 33-19, 9 ROR; Plant 10: AOC 3 ROR; Plant 17: AOC 12 and 2 ROR	Chromium, selenium, thallium, arsenic, zinc, copper, lead, mercury, antimony, beryllium, selenium, TCE, TPHC, total carcinogenic PAHs, total PCB, SVOCs	Chromium TAGM exceedance at AOC 3 (old alodine area). Chromium, copper & zinc TAGM exceedance at AOC 9 (sulfuric acid anodize).	Soil was excavated for most AOCs and properly disposed off-site; the excavation was then backfilled with certified clean bank-run sand and the area was restored to match the existing conditions.	--	--
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Area of Concern 20-06 and 20-28, Remediation End Point Sample Results, June 26, 1998	Dry well 20-06 & 20-28	Metals, VOCs, SVOCs and PCBs	None (endpoint sample).	Soil was excavated and disposed off-site. NYSDEC authorized backfilling (August 1998).	--	--

Designation	Size (Acres)	Building Size (sq ft)	Current Ownership	Studies/References	AOCs	Constituents of Concern	Constituents in Exceedance of Applicable Regulatory Standards	Remedial Action	Residual Contamination	Remaining AOCs
I. Phase I / Phase II Site Assessments (continued)										
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Recommendations for Additional Sampling at the NWIRP Bethpage Site, July 14, 1998	Ditch north of the 03-37 drum storage pad and IWTP, rooms 35, 36 &38 of Building 10-01, AOC 22, Building 3-15 floor, Building 03-08, 03-31 & 03-32 floor trenches, Building 03-38 & 03-43	Mercury (other compounds not identified)	No sampling conducted.	No remediation conducted.	Results of sampling of ditch north of the 03-37 drum storage pad and IWTP pending analytical results. AOC 22 (UST tanks to be investigated under Navy's IR program. Other areas not considered AOCs or were previously remediated.	AOC 22.
Plant 03 - Product Manufacturing	35.50	707,703	Navy	Phase II Site Assessment (6 Vols.), August 1998	AOC 1 - Paint Booths	Metals, VOCs and SVOCs	Zinc, selenium, arsenic, chromium, nickel, mercury, SVOCs, TCE, PAHs.	Recommended excavation of soil for off-site disposal at 6 of 30 areas.	Minor TAGM exceedances noted in 7 areas which do not warrant further action.	- -
					AOC 2 - Plating Area	Metals	Cadmium, arsenic, lead, zinc, chromium, selenium.	Recommended excavation of soil for off-site disposal in eastern area of plating room.	NA	NA
					AOC 3 - Old Alodine Area	Metals	Chromium.	Recommended excavation of soil for off-site disposal.	NA	NA
					AOC 4 - Heat Treat A	SVOCs and TPHC	benzo(a)pyrene.	No further action recommended.	Only minor TAGM exceedances were noted.	- -
					AOC 5 - Heat Treat B	TPHC	None.	No further action recommended.	- -	- -
					AOC 6 - Chem Mill Clean	Metals	Zinc, chromium.	Recommended excavation of soil outside the north wall of the process area for off-site disposal.	NA	NA
					AOC 7 - Chem Mill Flowcoat	Metals	None.	No further action recommended.	- -	- -
					AOC 8 - Chem Mill Etch	Metals	None.	No further action recommended.	- -	- -
					AOC 9 - Old Sulfuric Acid Anodize Area	Metals	Zinc, chromium.	Recommended excavation of soil within eastern portion of AOC for off-site disposal .	Further investigation and possible remediation of western process area to be evaluated under Navy's IR Program.	AOC 9 (Western process area).
					AOC 10 - Chromic Acid Anodize	Metals and TPHC	TPHC, Chromium, copper, selenium, zinc.	No further action recommended since no soil samples beneath impacted concrete exhibited any TAGM criteria exceedances.	- -	- -
					AOC 11 - Alodine/Sulfuric Acid Anodize	Metals and TPHC	None.	No further action recommended.	- -	- -
					AOC 12 - Penetrant Inspection	SVOCs and TPHC	benzo(a)pyrene, phenol.	No further action recommended.	No further investigation warranted due to isolated nature of solid and since only minor TAGM exceedances were noted.	- -
					AOC 13 - Honeycomb Pretreatment Area	Metals	Chromium.	Recommended excavation of soil for off-site disposal .	NA	NA
					AOC 14 - Old Chem Mill Line	Metals	Chromium, copper, lead, zinc.	Recommended excavation of soil for off-site disposal in the areas of Waste Transfer Tanks 83 and 84.	NA	NA
					AOC 15 - Printed Circuits and Engraving Depts.	Metals	None.	No further action recommended.	NA	NA
					AOC 16 - Machine Shop Areas	Metals and TPHC	Zinc, chromium.	No further action recommended.	Only minor TAGM exceedances were noted.	- -
					AOC 17 - Boiler Room	Metals and TPHC	No sampling conducted.	Floor drains being investigated under UIC Closure Program.	NA	NA
					AOC 18 - Router Room	Metals and TPHC	None.	No further action recommended.	- -	- -
					AOC 19 - Dry Wells at Columns GG7 and JJ2	Metals, VOCs and TPHC	Zinc, chromium, lead, cadmium, copper, mercury.	Recommended excavation of soil for off-site disposal in the areas of Column JJ2.	NA	NA
					AOC 20 - Diffusion Galleries and Dry Wells	Metals, VOCs, SVOCs, TPHC and PCBs	Chromium, copper, zinc, mercury, cadmium, PCBs, PAHs, benzo(a)pyrene, TCE, PCE, methylene chloride, acetone, trimethylbenzenes, n-butylbenzene, 1,2-dichloroethene.	Recommended excavation of soil for off-site disposal at 8 of 24 dry wells. Other dry wells and 2 diffusion galleries did not exhibit constituents of concern or contain elevated concentrations of contaminants to warrant further action. Dry wells 16, 19 and 26 were not sampled.	Minor TAGM exceedances noted in some areas which do not warrant further action.	- -
					AOC 21 - Equipment Pits	Metals, VOCs and TPHC	TCE, PCE.	Recommended excavation of soil for off-site disposal at Equipment Pit 21.	NA	NA
					AOC 22 - Petroleum USTs	Metals, SVOCs and TPHC	SVOCs, TPHC.	No further action recommended in areas north of the Roads and Ground Building and near the SE corner of Plant 3 main building, since only minor TAGM exceedances were noted.	Recommended further investigation of contamination in UST area south of Plant 3 building.	AOC 22.
					AOC 23 - Former ASTs	Metals, SVOCs, TPHC and PCBs	SVOCs, PCBs, cadmium, copper, chromium, zinc.	No further action recommended in SLs 01 - 05 since only exceedances were STARS SVOCs.	Further investigation and possible remediation to be evaluated under Navy's IR Program.	AOC 23.
					AOC 24 - Drum Storage Area	Metals, SVOCs and TPHC	Zinc, SVOCs, PAHs.	Recommended excavation of soil for off-site disposal in areas outside south wall of Plant 3 main building. No further investigation warranted in other areas since only one minor TAGM exceedance was noted.	- -	- -
					AOC 25 - Roads and Grounds Building	TPHC	TPHC.	No further action recommended since delineation sampling indicated no TAGM exceedances.	- -	- -
					AOC 26 - Chemical Storage Building 003-31 and 003-32	Metals and TPHC	TPHC, silver.	No further action recommended since secondary sampling indicated no TAGM exceedances.	- -	- -
					AOC 27 - Scrap Metal Storage Shed 003-41	SVOCs and TPHC	PAHs.	Recommended excavation of soil for off-site disposal.	NA	NA
					AOC 28 - Pesticide Storage Building 003-44	TPHC	STARS TPHC.	No further action recommended since delineation sampling indicated no TAGM exceedances.	- -	- -
					AOC 29 - Flammable Materials Storage Shed	TPHC	None.	No further action recommended.	- -	- -
					AOC 30 - Three Storage Sheds	Metals, VOCs, SVOCs and TPHC	Benzo(a)pyrene, dibenzo(a,h)anthracene, cadmium, chromium, copper, zinc.	NA	Further investigation and possible remediation to be evaluated under Navy's IR Program.	AOC 30.
					AOC 31 - Substrate Vault at Column AA11	Metals, VOCs, SVOCs and TPHC	None.	No further action recommended.	- -	- -
					AOC 32 - PCE & TCE Storage Tanks	Metals, VOCs, SVOCs and TPHC	None.	No further action recommended.	- -	- -
					AOC 33 - Waste Accumulation Areas	Metals, VOCs, SVOCs and TPHC	VOCs, SVOCs, PAHs, STARS TPHC, arsenic, copper, mercury, zinc.	Recommended excavation of soil for off-site disposal in 4 areas (33-9, 33-11, 33-12, 33-19). No further investigation warranted in other 20 areas since only minor TAGM exceedances were noted.	NA	NA
					AOC 34 - Old Autoclave Area	Metals, SVOCs, TPHC and PCBs	STARS TPHC, PCBs.	Recommended removal and off-site disposal of PCB-contaminated concrete and soil.	NA	NA

Designation	Size (Acres)	Building Size (sq ft)	Current Ownership	Studies/References	AOCs	Constituents of Concern	Constituents in Exceedance of Applicable Regulatory Standards	Remedial Action	Residual Contamination	Remaining AOCs
I. Phase I / Phase II Site Assessments (continued)										
Plant 03 - Product Manufacturing (continued)	35.50	707,703	Navy	Phase II Site Assessment (6 Vols.), August 1998	AOC 35- Former Sludge Drying Bed	Metals, VOCs, SVOCs and TPHC	Cadmium, arsenic, mercury, chromium, copper, zinc, STARS.	NA	Further investigation and possible remediation to be evaluated under Navy's IR Program.	AOC 35.
					AOC 36 - Unbiased Random Sample Locations	Metals, VOCs, SVOCs and TPHC	PCBs, TPHC, SVOCs, zinc.	Recommended removal and off-site disposal of soil for AOC 36-10 as part of AOC 34 remediation. No further investigation recommended in other areas since only minor TAGM exceedances were noted.	--	--
					AOC 37 - Cafeteria Elevator and Two PROM Elevators	TPHC	TPHC	No further action recommended.	--	--
					AOC 38 - Oil/Water Separator Sump	TPHC	TPHC	No further action recommended.	--	--
					AOC 39 - Sump Near Facility Maintenance Office	TPHC	None.	No further action recommended.	--	--
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Bethpage NWIRP Record of Remediation or "No Further Action" Review, August 24, 1998	Plant 03: dry well 3-33, 3-44, and 20-03, AOC 20-07, grease trap at AA5 and AA30-31, floor drain at KK1 to JJ2, steam pit drain at DD26 and DD36 to CC37, dry well at JJ1 to HH2, steam pit drain at JJ9 to HH10; Plant 03-01: AOCs 1-08, 1-20, 2, 6, 9, 21-21, 24, 33-09, 33-11/12, 34; Plant 10: AOC 4 partial, north dry well, leaching pool 10-02; Plant 10-01: settling tank C1, dry well C2; Plant 17 North: floor drain in warehouse #6; Plant 17 South: dry well 01, N1, N2 and dry well west of pump house	Total carcinogenic PAHs, zinc, arsenic, TCE, chromium, PCE, copper, mercury, phenol and NCDH UIC constituents	Minor TAGM exceedances at AOC 4 partial (Plant 10 machine shop).	Soil was excavated for most AOCs and disposed of off-site properly; the excavation was then backfilled with certified clean bank-run sand and the area was restored to match the existing conditions.	--	--
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	105 Acres NYSDEC Approval Letter, August 31, 1998	Plant 03: AOC 20-24, 20-06, 20-28; Plant 10: degreaser pit and AOC 2; Plant 17 South: AOC 6, dry wells 17S-06 EA and 17S-06 FA	NA	NA	NA	NYSDEC approved requests for no further action based upon achievement of TAGM criteria and backfilling of the excavations associated with the AOCs listed.	--
Plant 03 - Product Manufacturing	35.50	707,703	Navy	AOC 3 - Old Alodine Area Environmental Oversight Remediation & Restoration, October 1998	AOC 3 - Old Alodine Area	Metals	Chromium detected above TAGM criteria.	Soil and concrete were excavated and disposed of off-site. Samples were analyzed using TCLP to demonstrate compliance with regulatory limits. Backfilling of excavation area was approved by NYSDEC (February 24 1998).	--	--
Plant 03 - Product Manufacturing	35.50	707,703	Navy	AOC 9 - Old Sulfuric Anodize Area Environmental Oversight Remediation & Restoration, October 1998	AOC 9 - Old Sulfuric Acid Anodize Area	Metals (chromium)	None (endpoint sample).	Soil and concrete were excavated and disposed of off-site. Backfilling of excavation area was approved by NYSDEC (February 24 1998).	--	--
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Bethpage NWIRP Record of Remediation or "No Further Action" Review, October 14, 1998	Plant 03: compressor #3 floor drain at column ML14 to 15, compressor #1 at N12 to M13, grease trap at F42 and GG42, steam pit at KK37, AOCs 20-06 and 20-08, kitchen valve box, scrap metal storage shed 03-41, 36 various VOCs, cafeteria valve box, AOC 20-24; Plant 10: degreaser pit, AOC 2, AOC 1 partial, AOC 10-02, Plant 17 North: floor drain in Warehouse 5, leaching chamber north of Warehouse 5; Plant 17 South: AOC 6 partial, Warehouse M south interior trench drain, Warehouse M south interior dry well, Warehouse N south interior dry well, cesspool south of Warehouse C and AOC 8 partial	Total petroleum hydrocarbons, RCRA metals, VOCs and SVOCs	Minor TAGM exceedances at AOC 1 partial (former dry wells outside Plant 10) and AOC 8 (former sanitary leaching chambers east of warehouses L and M, Plant 17S).	Soil was excavated for most AOCs and disposed properly off-site; the excavation was then backfilled with certified clean bank-run sand and the area was restored to match the existing conditions.	--	--
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Post Termination Item Proposed Course of Action, January 15, 1999	Dry wells 20-08 and 34-07, AOCs 22, 23, 30 and 35	Metals and PCBs	No sampling conducted.	NA	Navy to conduct further investigations /remediation under the IR program.	Dry wells 20-08 and 34-07, AOCs 22, 23, 30 and 35.

Designation	Size (Acres)	Building Size (sq ft)	Current Ownership	Studies/References	AOCs	Constituents of Concern	Constituents in Exceedance of Applicable Regulatory Standards	Remedial Action	Residual Contamination	Remaining AOCs
II. Dry Well / UIC / Drain Program										
Plant 20	5.00	25,243	Navy	Closure Plan Class V/Type 5W20 Dry Wells, May 1996	Car Wash Line, Paint Shop Line, Boiler Room Line and associated drainage structures	Metals, SVOCs, TPHC, PCBs, volatile halogenated and aromatic compounds	No sampling conducted during this phase of the project.	Closure to be conducted in accordance with NCDH "Floor Drain and Dry Well Closure Procedures" and EPA Class V service bay drain closure procedures.	NA	NA
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	GOCO Facility Dry Well Closure Plan, June 1997	Dry Wells located within the GOCO portion of NGC's facility	Analyze endpoint samples for: RCRA Metals; TPHCs; Volatile Halogenated and Aromatic Compounds (Appendix A of NCDH)	Closure plan provides for the sealing of any floor drains and disconnecting slop sinks which are determined to discharge to the dry wells along with the decommissioning of any distribution/septic tanks and dry wells found to require closure in accordance with the referenced federal regulations.	NA	NA	NA
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Drain Inventory, September 1997	None (Investigated slop sinks, floor drains, grease traps, etc. to determine potential connection to structures which require closure under the UIC program)	None	No sampling conducted.	None identified. Recommended conducting physical and tracer testing of drainage structures to ascertain former use and determine whether chemical discharges may have occurred.	Recommended sampling of grease traps for potential residual contamination.	NA
Plants 03, 10, 17N, 17S & Salvage & Treatment Areas	NA	NA	Navy	Drainage Discharge Determination, February 1998	Plant 3 Areas 1, 2, 3, 4, 5 and 6, Plant 10, Plant 17 North, Plant 17 South, Industrial Wastewater Treatment Plant, Salvage Area and Drum Storage Area	Program conducted to determine the discharge point of various floor drains, slop sinks and trench pits/drains located within Plants 3, 10, 17-North, 17-South and the Salvage and Treatment Area	No sampling conducted during this project.	All 24 identified UIC discharge points recommended to be closed in accordance with the UIC program. All 7 identified indeterminate discharge points recommended to be further investigated and closed in accordance with the procedure specified. All identified floor drains and slop sinks discharging to the recharge basins recommended to be disconnected, grouted with an impervious material and sealed with concrete at the surface.	NA	NA
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Dry Well and Miscellaneous Remediation at the 105-Acre Navy Site, UIC Program Closure, September 1999	Eighteen dry wells, eight steam pit floor drains, four floor drains, three grease traps, three catch basins, two valve boxes, two leaching pools, one cesspool, one settling tank and one trench drain.	TPHCs, RCRA metals, VOCs, SVOCs and PCBs	PCBs (at locations 34-07 and 20-08).	All areas remediated by excavating and removal of impacted soil as detailed in the work plan. Areas backfilled and/or sealed with concrete. All UIC points now closed with the exception of 34-07 and 20-08, which require additional remediation.	None (with the exception of 34-07 and 20-08).	NA
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Dry Well and Miscellaneous Remediation Plant 03 Steam Pit Drain at Column JJ27 Remediation End Point Sample Results, April 13, 1999	Steam Pit Drain JJ27	Silver	None (endpoint sample).	Soil was excavated and disposed off-site. No further action recommended. Upon approval of the results by EPA, NGC will backfill the structure and cap with concrete.	- -	- -
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Dry Well & Misc. Remediation End Point Sample Results, May 14, 1998	Dry Well 3-44	RCRA metals, SVOCs, VOCs, TPHCs, PCBs, herbicides and pesticides	None in endpoint samples.	Soil was excavated and disposed off-site. No further action recommended. Backfilling of excavation areas awaiting approval from NYSDEC (May 1998). ROR/NFA filed on August 24, 1998. Approval for backfilling was received from the NCDOH on June 15, 1998.	- -	- -
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Dry Well and Miscellaneous Remediation End Point Sample Results, May 19, 1998	Dry Well O1 (Plant 17 South); north dry well (Plant 10); floor drain in warehouse #6 (Plant 17 North)	RCRA metals, VOCs, SVOCs and TPHCs	None (endpoint samples).	Soil was excavated and disposed off-site. No further action recommended. Backfilling of excavation areas awaiting approval from NYSDEC. ROR/NFA filed on August 24, 1998 for warehouse #6 floor drain.	- -	- -
Plant 20	5.00	25,243	Navy	Class V/Type 5X20 Dry Well Closure Program Plant 20, May 19, 1998	Storm Water Line, Sanitary Line, Car Wash Line, Paint Shop Line, Boiler Room Line and associated drainage structures	Metals, VOCs, SVOCs, TPHC, PCBs, glycol scan, total organic halides and inorganics	Lead (endpoint sampling).	All of the dry wells were properly closed or are being retrofitted for storm water drainage.	- -	- -
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Dry Well and Remediation End Point Sample Results, May 21, 1998	Plant 03: floor drain at KK1 to JJ2, steam pit drain at JJ9 to HH10, DD26, DD36 to CC37; compressor drain #1 at N12 to M13; dry well at JJ1 to HH2	RCRA metals, VOCs, SVOCs and TPHCs	None (endpoint samples).	Soil was excavated and disposed off-site. No further action recommended. Backfilling of excavation areas awaiting approval from NYSDEC. ROR/NFA filed on August 24, 1998 for floor drain at KK1 to JJ2, steam pit drain at JJ9 to HH10, DD26, DD36 to CC37; dry well at JJ1 to HH2. ROR/NFA filed on October 14, 1998 for compressor drain #1 at N12 to M13.	- -	- -
					Plant 03: grease trap at column AA5, AA30-31, FF42 and GG42	RCRA metals, VOCs, SVOCs and TPHCs	Minor exceedances of chrysene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene and benzo(a)pyrene in endpoint samples for grease traps at columns AA5 and FF42/GG42; however, the total SVOCs concentrations were below the total SVOCs TAGM criteria.	Soil was excavated and disposed off-site. No further action recommended. Further excavation at grease traps AA5 and FF42/GG42 not recommended since it would undermine the building foundation. Backfilling of excavation areas awaiting approval from NYSDEC. ROR/NFA filed on August 24, 1998 for grease trap at column AA5, AA30-31.	- -	- -
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Dry Well and Remediation End Point Sample Results, May 27, 1998	Plant 03: steam pit drain at column KK37; Plant 10: cesspool 10-02, leaching chamber 10-02	RCRA metals, VOCs, SVOCs and TPHCs	None (endpoint samples).	Soil was excavated and disposed off-site. No further action recommended. Backfilling of excavation areas awaiting approval from NYSDEC. ROR/NFA filed on October 14, 1998 for steam pit drain at column KK37. ROR/NFA filed on August 24, 1998 for leaching pool 10-02.	- -	- -
Plant 20	5.00	25,243	Navy	Closure Report Class V/Type 5W20 Injection Well, June 1998	Storm Water Line, Sanitary Line, Car Wash Line, Paint Shop Line, Boiler Room Line and associated drainage structures	Metals, VOCs, SVOCs, TPHC, PCBs, glycol scan, total organic halides and inorganics	Lead (endpoint sampling).	The sanitary water line was found to have been previously backfilled and closed (no further action required). Structures associated with the storm water and process lines were cleaned out and either closed or reused in accordance with UIC procedures. At Leaching pool LP-3 and LP-12, endpoint sampling and soil borings indicated presence of contamination. Leaching chambers were closed without further remediation due to the close proximity of adjacent structures (approved by USEPA August 1997).	- -	- -
Plant 20	5.00	25,243	Navy	Building 20 USEPA Approval Letter, June 1998	Class V/Dry wells	NA	NA	NA	NA	USEPA approved remediation and closure of the dry wells that have been closed.
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Dry Well and Remediation End Point Sample Results, June 2, 1998	Plant 03: dry well 3-33	RCRA metals, VOCs, SVOCs, TPHCs, PCBs, herbicides and pesticides	None (endpoint samples).	Soil was excavated and disposed off-site. Upon approval of the results by the NYSDEC, NGC will reinstall a leaching chamber at this location for continued storm drainage purposes.	No further action recommended.	ROR/NFA filed on August 24, 1998.

Designation	Size (Acres)	Building Size (sq ft)	Current Ownership	Studies/References	AOCs	Constituents of Concern	Constituents in Exceedance of Applicable Regulatory Standards	Remedial Action	Residual Contamination	Remaining AOCs
II. Dry Well / UIC / Drain Program (continued)										
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Dry Well and Remediation End Point Sample Results, June 8, 1998	Plant 03: compressor #3 floor drain at column ML14 to 15	No sampling conducted; however, sampling data from compressor #1 was used	None (based on endpoint sample from compressor #1).	Soil was excavated and disposed off-site. Backfilling of excavation areas awaiting approval from NYSDEC.	No further action recommended.	ROR/NFA filed on October 14, 1998.
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Dry Well and Remediation End Point Sample Results, June 17, 1998	Plant 03: dry well 20-03, kitchen valve box, cafeteria valve box; Plant 17S: dry well N2; Plant 10: dry well C2	RCRA metals, VOCs, SVOCs and TPHCs	None (endpoint samples for all AOCs except for the two valve boxes, soil samples).	Soil was excavated at all AOCs except the two valve boxes and disposed off-site. Backfilling of excavation areas awaiting approval from NYSDEC.	No further action recommended.	ROR/NFA filed on October 14, 1998 for kitchen valve box & cafeteria valve box. ROR/NFA filed on August 24, 1998 for dry well 20-03, N2 & C2.
Plant 10 & 17 South Warehouses	13.00	24,900 and 165,691	Navy	Building 17 South: Area of Concern 6 - Remediation End Point Sample Results, June 22, 1998	AOC 6 - dry wells 17S-06EA and 17S-06FA	RCRA metals, SVOCs, VOCs, and TCLP SVOCs	None.	Soil excavated to a depth of 24 feet below grade in each dry well. Endpoint soil samples collected. Excavated material transported off-site for disposal.	Endpoint soil sample did not detect any constituent in excess of the applicable criteria. No further action required. NGC plans to backfill excavation to grade with sand.	None.
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Dry Well and Miscellaneous Remediation Plant 03 Dry Well 34-07 - Remediation End Point Sample Results, June 25, 1998	Plant 03: dry well 34-07	RCRA metals, VOCs, SVOCs, TPHCs and PCBs	PCBs detected above TAGM criteria.	Soil was excavated and disposed off-site. A solid bottom catch basin will be installed in place of the dry well to further minimize PCB migration. No further action recommended. Backfilling of excavation area awaiting approval from NYSDEC.	To be further investigated under the Navy's IR Program.	Dry well 34-07
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Dry Well and Remediation End Point Sample Results, June 25, 1998	Plant 03: dry well 20-04 and 20-07; Plant 17S: dry well N1; Plant 10: settling tank C1	RCRA metals, VOCs, SVOCs, TPHCs and PCBs (dry well 20-04 only)	None (endpoint samples).	Soil was excavated and disposed off-site. No further action recommended. Site restoration activities awaiting approval from NYSDEC. ROR/NFA filed on August 24, 1998 for Dry Well 20-07, dry well N1 and settling tank C1.	- -	- -
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Dry Well and Miscellaneous Remediation Plant 03 Dry Well 20-08 & 20-13 - Remediation End Point Sample Results, June 26, 1998	Plant 03: dry well 20-08 and 20-13	RCRA metals, VOCs, SVOCs, TPHCs and PCBs.	PCBs detected above TAGM criteria (dry well 20-08).	Soil was excavated and disposed off-site. A solid bottom catch basin will be installed in place of dry well 20-08 to further minimize PCB migration. Additional remediation at dry well 20-08 (installation of a more permanent stormwater piping system requiring additional excavation of contaminated soil, backfill and cover) was conducted in February 1999 based on USEPA's comments in December 1998.	PCBs.	Dry Well 20-08
Plant 10 & 17 South Warehouses	105	24,900 and 165,691	Navy	Dry Well and Miscellaneous Remediation, Plant 17 South Dry Well West of Pump House Remediation End Point Sample Results, July 7, 1998	Plant 17 South pump house dry well	RCRA metals, VOCs, SVOCs, TPHC, PCBs, herbicides and pesticides	None.	Soil excavated from 8 to 10 feet below grade. Approximately 6 cubic yards of material transported off-site for disposal. Endpoint soil sample collected. No further action required. NGC plans to reuse this dry well for storm water drainage.	- -	- -
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	EPA Letter, August 4, 1998	Plant 03: dry wells 20-08 and 34-07	PCBs	Aroclor 1242 & 1248.	Recommends removal of soil containing greater than 13 mg/kg Aroclor 1242 at dry well 20-08 and greater than 1091 mg/kg of Aroclor 1248 at dry well 34-07.	NA	Dry wells 20-08 and 34-07
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Dry Well and Miscellaneous Remediation Plant 03 Steam Pit Drain at Columns DD10 & JJ27 Remediation End Point Sample Results, August 26, 1998	Plant 03: steam pit drain at columns DD10 and JJ27	RCRA metals, VOCs, SVOCs and TPHCs	Minor TAGM exceedances of chrysene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene and mercury in endpoint samples for the steam pit drain located at column JJ27.	Soil was excavated and disposed of off-site. Further excavation at drain JJ27 is not recommended since it would undermine the building foundation. Backfilling of excavation areas awaiting approval from NYSDEC (May 1998). Additional excavation at steam pit drain at column JJ27 was performed in March 1999 based on USEPA's comments in December 1998 regarding silver concentration.	- -	- -
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Dry Well and Miscellaneous Remediation Plant 03 Dry Wells 34-07 and 20-08, September 14, 1998	Plant 03: dry wells 20-08 and 34-07	PCBs	Aroclor 1016.	Further action not feasible or recommended due to data which indicates on-site groundwater not impacted by PCBs, depth of contamination, lack of mobility in groundwater, risks to additional structures from further excavation, excavation difficulty and financial hardship.	To be further investigated under the Navy's IR Program.	Dry wells 20-08 and 34-07
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Dry Well and Miscellaneous Remediation Plant 03 Slop Sink at Column NN03 Remediation End Point Sample Results, September 29, 1998	Plant 03: slop sink sump at column NN03	RCRA metals, VOCs, SVOCs and TPHCs	Exceedances of the TAGM criteria for mercury.	Soil was excavated and disposed off-site. Further excavation at slop sink sump NN3 is not recommended since it would undermine the building foundation. Filling and capping of the sump pit is awaiting approval from NYSDEC.	- -	- -
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	105 Acres Dry Well & Misc. Remediation Preliminary Drilling Program, September 30, 1998	Plant 03: Catch Basin 34-07	Metals, VOCs, SVOCs and PCBs	Aroclor 1016 & 1248.	NA	NA	NA
					Plant 03: Catch Basin 20-03	Metals, VOCs, SVOCs and PCBs	Aroclor 1016 & 1248, chrysene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a) pyrene.	NA	NA	NA
					Plant 03: Catch Basin 20-04	Metals, VOCs, SVOCs and PCBs	Aroclor 1016 & 1248, chrysene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a) pyrene, chromium, copper, zinc.	NA	NA	NA
					Plant 03: Dry well 20-06	Metals, VOCs, SVOCs and PCBs	Zinc.	NA	NA	NA
					Plant 03: Dry well 20-07	Metals, VOCs, SVOCs and PCBs	None.	NA	NA	NA
					Plant 03: Dry well 20-08	Metals, VOCs, SVOCs and PCBs	Aroclor 1016 & 1248, chrysene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a) pyrene, PCE.	NA	NA	NA
					Plant 03: Dry well 20-13	Metals, VOCs, SVOCs and PCBs	Aroclor 1016 & 1248, chrysene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a) pyrene, chromium, copper, zinc, arsenic, mercury, cadmium, naphthalene, phenanthrene, fluoranthene, pyrene, indeno (1,2,3-c,d)pyrene, dibenzofuran, dibenzo(a,h,)anthracene.	NA	NA	NA
					Plant 03: Dry well at JJ-1 & HH-2	Metals, VOCs, SVOCs and PCBs	Chrysene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a) pyrene, chromium, copper, zinc, cadmium.	NA	NA	NA
					Plant 03: Dry well exterior to Bldg. 3-33	Metals, VOCs, SVOCs and PCBs	Chromium, zinc, nickel.	NA	NA	NA
					Plant 03: Dry well exterior to Bldg. 3-44	Metals, VOCs, SVOCs and PCBs	None.	NA	NA	NA
					Plant 10: Dry well 10-2CA	Metals, VOCs, SVOCs and PCBs	Chrysene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a) pyrene, chromium, copper, zinc, mercury, dibenzo(a,h,)anthracene.	NA	NA	NA

Designation	Size (Acres)	Building Size (sq ft)	Current Ownership	Studies/References	AOCs	Constituents of Concern	Constituents in Exceedance of Applicable Regulatory Standards	Remedial Action	Residual Contamination	Remaining AOCs
II. Dry Well / UIC / Drain Program (continued)										
105 Acre - GOCO Facility (NWIRP) (continued)	105	NA	Navy	105 Acres Dry Well & Misc. Remediation Preliminary Drilling Program, September 30, 1998	Plant 10: West settling chamber	Metals, VOCs, SVOCs and PCBs	Chromium, copper, zinc, PCE, mercury, 1,1-dichloroethane, 1,1,1-trichloroethane, benzene, phenol, TCE.	NA	NA	NA
					Plant 10: East settling chamber	Metals, VOCs, SVOCs and PCBs	Chromium, mercury, phenol, TCE.	NA	NA	NA
					Plant 10: Septic tank	Metals, VOCs, SVOCs and PCBs	Arsenic.	NA	NA	NA
					Plant 10: North dry well	Metals, VOCs, SVOCs and PCBs	None.	NA	NA	NA
					Plant 10: Dry well C1	Metals, VOCs, SVOCs and PCBs	Zinc.	NA	NA	NA
					Plant 10: Dry well C2	Metals, VOCs, SVOCs and PCBs	Chrysene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a) pyrene, chromium, copper, zinc, mercury.	NA	NA	NA
					Plant 10: Cesspool 10-02	Metals, VOCs, SVOCs and PCBs	Copper, mercury.	NA	NA	NA
					Plant 10: Leaching Pool 10-02	Metals, VOCs, SVOCs and PCBs	Aroclor 1248.	NA	NA	NA
					Plant 17s: Dry well 17s-06EA	Metals, VOCs, SVOCs and PCBs	Chrysene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a) pyrene, zinc, mercury, dibenzo(a,h,)anthracene.	NA	NA	NA
					Plant 17s: Dry well 17s-06FA	Metals, VOCs, SVOCs and PCBs	Chrysene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a) pyrene, chromium, copper, zinc, arsenic, mercury, lead, dibenzo(a,h,)anthracene.	NA	NA	NA
					Plant 17s: Dry well 01 east of Warehouse D	Metals, VOCs, SVOCs and PCBs	Chrysene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a) pyrene.	NA	NA	NA
					Plant 17s: Dry well N1 east of Warehouse M	Metals, VOCs, SVOCs and PCBs	Chrysene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a) pyrene, copper, zinc, mercury, dibenzo(a,h,)anthracene.	NA	NA	NA
					Plant 17s: Dry well N2 east of Warehouse M	Metals, VOCs, SVOCs and PCBs	Chrysene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a) pyrene, copper, zinc, dibenzo(a,h,)anthracene.	NA	NA	NA
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	105 Acres Dry Wells 20-08 & 34-07, December 1998	Plant 03: dry wells 20-08 and 34-07	No sampling conducted	No sampling conducted.	EPA stated in August 1998 letter that remediation of soil in the dry wells is necessary because of contaminants found in endpoint soil samples for dry well 20-08 (PCB Aroclor 1242) and for dry well 34-07 (PCB Aroclor 1248).	NA	Dry wells 20-08 and 34-07.
					Plant 03: slop sink at column NN03	No sampling conducted	No sampling conducted.	EPA stated that certification from a licensed civil engineer is necessary to determine if remediation is complete (building undermining).	NA	NA
Plants 03, 10, 17N, 17S & Salvage & Treatment Areas	NA	NA	Navy	105 Acre Navy Site Drain Determination Project Plant 10, Room 39 Location, January 14, 1999	Floor drain within Plant 10 Room 39	Program conducted to determine the discharge point of the floor drain located within Room 39 of Plant 10	No sampling conducted during this project.	Flush/dye testing confirmed discharge of the floor drain to a sanitary lift station and the Nassau County sewer system. Since not subject to the UIC program, no further action is recommended. Floor drain and cleanout sealed with 6 inches of concrete level to existing floor grade.	--	--
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	105 Acre Site Dry Well Remediation, February 12, 1999	Plant 03: dry well 20-08	Metals, SVOCs, PCBs	Metals, SVOCs and PCBs.	Remediation was initially performed to excavate contaminated soil to a depth of 24 ft with off-site disposal of soil. Following temporary backfilling with clean fill, material excavated for installation of a more permanent stormwater piping system was disposed off-site.	Plan for final remediation to be developed.	20-08
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Plant 3 Dry Wells 20-08 and 34-07 Soil Remediation Engineering Services Draft Work Plan, August 1999	Plant 03: dry wells 20-08 and 34-07	PCBs	No sampling conducted.	Recommended installation of two borings with sampling at 2-foot intervals to 65 feet below grade and construction and sampling of 4 monitoring wells. In addition, an exposure assessment, focused feasibility study and conceptual design for remedial alternatives are recommended.	NA	Dry wells 20-08 and 34-07.

Designation	Size (Acres)	Building Size (sq ft)	Current Ownership	Studies/References	AOCs	Constituents of Concern	Constituents in Exceedance of Applicable Regulatory Standards	Remedial Action	Residual Contamination	Remaining AOCs
iii. Hazardous Waste Storage Areas										
Plant 03 - Product Manufacturing	35.50	707,703	Navy	Closure of the Less-Than-90-Day Storage Area Adjacent to Facilities - Plant 3, April 23, 1999	Area Adjacent to Facilities	NA	NA	Previously removed woodblock flooring was analyzed and determined to be non-hazardous. Underlying concrete floor was scraped and cleaned and new slab poured on top.	--	NYSDEC required sampling of soil beneath concrete slab. Samples collected November 1999.
Plant 03 - Product Manufacturing	35.50	707,703	Navy	Field Report - Permanent Closure/Storage Tank/Main Drum Marshalling Area, November 1996	Less-than-90-day oil/water storage tank no. 575	Target Compound List (TCL) VOCs, TCL SVOCs and RCRA priority pollutant metals	None.	--	--	Report submitted November 19, 1996. NYSDEC approved closure.
Plant 03 - Product Manufacturing	35.50	707,703	Navy	Field Report - Permanent Closure of Hazardous Waste Transfer Tanks, October 1997	Hazardous Waste Transfer Tanks Nos. 1131, 1132, 1133 and 1134	Nitrate, fluoride and priority pollutant metals	Rinse Water Samples: antimony, chromium and lead detected above the Class GA Groundwater Standards and Guidance Value listed in the NYSDEC's Technical and Operational Guidance Series (TOGS) 1.1.1 - "Ambient Water Quality Standards and Guidance Values"; Soil Samples: none (TAGM); Soil Sample: none (TAGM).	The concentrations of antimony, chromium and lead were below the typical leachable values for cement (Portland Cement Association). Therefore, the concentration of these metals may not necessarily be present from contamination on the containment pad but may naturally be present in cement.	--	Closure approved by NYSDEC November 18, 1997.
Plant 03 - Product Manufacturing	35.50	707,703	Navy	Field Report - Permanent Closure of Main Drum Marshalling Area, September 1998	Main drum marshalling area	TCL VOCs, TCL SVOCs and priority pollutant metals	Rinse Water Samples: 1,2-dichloroethene, phenol, antimony, cadmium and copper detected above the Class GA Groundwater Standards and Guidance Value listed in the NYSDEC's Technical and Operational Guidance Series (TOGS) 1.1.1 - "Ambient Water Quality Standards and Guidance Values"; Soil Samples: none (TAGM).	Concentrations of 1,2-dichloroethene and phenol are not significant because they do not pose an environmental or public health risk. Cadmium, antimony and copper were also contained in the hose blank sample.	--	NYSDEC approved closure March 10, 1999.
Plant 03 - Product Manufacturing	35.50	707,703	Navy	Field Report - Permanent Closure of Less-Than-90-Day Mini Drum Marshalling Area, December 1998	Less-than-90-day Mini Drum Marshalling Area	TCL VOCs, TCL SVOCs and priority pollutant metals	Rinse Water Samples: TCE detected above the Class GA Groundwater Standards and Guidance Value listed in the NYSDEC's Technical and Operational Guidance Series (TOGS) 1.1.1 - "Ambient Water Quality Standards and Guidance Values."	Concentration of TCE is not significant because groundwater is not expected to be impacted due to attenuation effects.	--	NYSDEC approved closure March 10, 1999.
Plant 03 - Product Manufacturing	35.50	707,703	Navy	Closure of the Less-Than-90-Day Storage Area Adjacent to Facilities - Plant 3, January 6, 2000	Underlying soil	TCL VOCs, TCL SVOCs and priority pollutant metals	None.	--	--	NYSDEC approved closure January 12, 2000.

Designation	Size (Acres)	Building Size (sq ft)	Current Ownership	Studies/References	AOCs	Constituents of Concern	Constituents in Exceedance of Applicable Regulatory Standards	Remedial Action	Residual Contamination	Remaining AOCs
IV. Remedial Investigations										
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Final (Phase I) Remedial Investigation Report: Volumes I - IV, May 1992	Former Drum Marshalling Area, Recharge Basin Area, Salvage Storage Area, groundwater	Metals, VOCs, SVOCs, PCBs and cyanide	VOCs, PCBs, pesticides, PAHs, inorganics.	Remedial alternatives were investigated under the subsequent feasibility study. No remediation was performed as part of this study. Groundwater is currently being investigated under a separate program.	NA	NA
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Phase II Remedial Investigation Report: Volumes 1 and 2, October 1993	Former Drum Marshalling Area, Recharge Basin Area, Salvage Storage Area, Plant 3, Drum Area near north warehouses, HN-24 area, groundwater	VOCs, PCBs and pesticides	PCBs and VOCs.	Remedial alternatives were investigated under the subsequent feasibility study. No remediation was performed as part of this study. Groundwater is currently being investigated under a separate program.	NA	NA
Plant 20	5.00	25,243	Navy	Soil and Groundwater Sampling at Plant 20: July 7, 1995	Soil and groundwater in vicinity of a 6,000-gallon diesel UST	Benzene, toluene, ethylbenzene, xylene and fuel-related constituents	TPHC (identified as No. 2 fuel oil) was detected in the soil and groundwater.	--	--	--
Plant 20	5.00	25,243	Navy	Plant 20 Soil and Concrete Sampling and Analysis, November 2, 1995	Soil and concrete at various locations surrounding Plant 20	RCRA metals, VOCs, TPHC and fuel-related constituents (if TPHC detected)	Lubricating oil in two samples. Elevated PID readings detected in soil surrounding several manholes/tanks and leaching rings in the plow and equipment storage areas.	Soil excavated from all 12 sample locations. All soil transported to an off-site clean-fill disposal site with the exception of soil in the vicinity of the lubricating oil samples and areas exhibiting elevated PID readings.	--	--
Plant 20	5.00	25,243	Navy	Soil Impact Investigation Tank 20-01-1, March 13, 1996	Soil surrounding the 6,000-gallon diesel UST	STARS VOCs and STARS SVOCs	None.	Approximately 1 cubic yard of soil was excavated and removed from the area of the faulty fill pipe (the suspected source of the release) following repair of the pipe back in 1995. Results of the treatability study indicate that the heterotropic bacteria population and environmental conditions of the soil are conducive to natural attenuation of any residual hydrocarbons. Therefore, no further action is recommended.	--	--
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Navy Installation Restoration (IR) Site 1 Pre-Excavation Sampling Results - Draft Report, July 1996	IR Site 1 - Previous and additional soil borings, leach pit locations within and outside potential areas of excavation and leach pit connector piping	Total PCBs (15 samples), TCLP constituents, RCRA parameters (60 samples), Target Analyte List (TAL) metals (215 samples), Target Compound List (TCL) volatile organics, full TCL organics (volatile, semi-volatile and pesticides/PCBs) and TAL metals (2 samples)	PCBs: Aroclor 1242 and 1248 (in previous and additional soil boring locations and in leach pit locations); TCLP/RCRA parameters: TCE, PCE, cadmium (leach pit locations) ; TCL volatiles: vinyl chloride, 1,1-dichloroethane, 1,2-dichloroethene, 1,1,1-trichloroethane, 1,1,1-tricholoroethene (leach pit locations); TAL metals: arsenic, beryllium, cadmium, chromium, copper, iron, mercury, nickel, selenium and zinc (leach pit locations); TCL organics and TAL metals: phenol, 4-methylphenol (SVOCs), heptachlor (pesticide), Aroclor 1242, cadmium, iron and zinc (metals) (near connector piping).	Three alternatives evaluated: 1. Soils with total PCBs between 10 mg/kg and 500 mg/kg will be land disposed off-site, soil above 500 mg/kg PCB or with VOCs above TCLP regulatory limits will be incinerated; soils contaminated with cadmium above its TCLP regulatory limit will require stabilization prior to off-site land disposal. 2. Same as alternative 1 but soil is to be excavated only to a maximum depth of 8 feet (to allow for the use of the property as an industrial site with restrictions on excavations). 3. Placement of a 6-inch thick asphalt cap over all of the site.	--	To be managed under the ROD for Operable Unit #1.
Plant 10 & 17 South Warehouses	13.00	24,900 and 165,691	Navy	South Warehouse Area Railroad Tie, Rail Support and Soil Sampling, January 21, 1997	Railroad ties and supports	Metals, TCLP VOCs and extractable organic compounds	None.	Following excavation, the railroad ties and support rails may be disposed of as construction and demolition debris.	NA	NA
Plant 10 & 17 South Warehouses	13.00	24,900 and 165,691	Navy	South Warehouse Area Railroad Tie, Rail Support and Soil Sampling, January 21, 1997	Soil	RCRA metals, VOCs, SVOCs, TPHC, herbicides, fuel-related constituents and STARS TCLP SVOCs	TPHC (identified as No. 6 fuel oil), benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene and benzo(a)pyrene.	During removal of the railroad tracks, soil in the location where elevated concentrations of constituents were detected should be segregated and disposed off-site. The remaining soil may be reused on-site as fill material.	NA	NA
Plant 10 & 17 South Warehouses	13.00	24,900 and 165,691	Navy	Building 17 Loading Docks, South Warehouse Complex, June 11, 1997	Shallow soil	VOCs, SVOCs, PCBs, STARS parameters, TAL metals, cyanide, TPHC and fuel-related constituents	Xylene, toluene, phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, Benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, benzo(g,h,i)perylene, PCBs, arsenic, copper, cadmium, calcium, zinc and TPHC (identified as diesel, No. 2 fuel oil and lubricating oil).	Soil excavation and off-site disposal in accordance with STARS is recommended for the soil located in 9 of the 13 sample locations. The soil from the remaining 4 locations may be reused on-site as fill material.	NA	NA
Plant 17 - North Warehouses	12.86	193,979	Navy	Building 17 North AOCs 2 and 12 Remediation Endpoint Sample Results, March 31, 1998	AOC 12 - Former drum storage area north of Warehouse 8	Priority pollutant metals, VOCs, SVOCs and PCBs	Chromium, arsenic, TCE and PCBs in five endpoint soil samples. Soil excavated an additional 3 feet in these areas. Second endpoint samples did not detect these compounds at concentrations in excess of the applicable criteria.	Soil excavated and removed from the entire AOC 12 area to a depth of approximately 4 feet below grade. Endpoint soil samples collected from the floor and sidewalls of the excavation. An additional 3 feet of soil was excavated in 4 areas measuring 20 feet by 30 feet each and 1 area measuring 3 feet by 30 feet due to exceedances in endpoint samples. Subsequent endpoint sample results were below the applicable criteria. All excavated material transported off-site for disposal. Excavation backfilled with sand.	--	--
					AOC 2 - Former oil barrel storage area at Warehouse 4	Priority pollutant metals and SVOCs	Arsenic and SVOCs in one endpoint sample. Soil excavated an additional 3 feet in this area. Second endpoint sample did not detect arsenic or any SVOC above the applicable criteria.	Soil excavated and removed from the entire AOC 2 area to a depth of approximately 6 feet below grade. Endpoint soil samples collected from the floor and sidewalls of the excavation. An additional 6 foot by 10 foot area was excavated to 9 feet below grade due to exceedances in an endpoint sample. Subsequent endpoint sample results were below applicable criteria. All excavated material transported off-site for disposal. Excavation backfilled with sand and restored to match existing conditions.	--	--
Plant 10 & 17 South Warehouses	13.00	24,900 and 165,691	Navy	Plant 10 Letter Report Subsurface Investigation Degreaser Pit, May 1998	Former Degreaser Pit	VOCs	None detected in exceedance of the NYSDEC TAGM 4046 Appendix A criteria.	--	--	No further investigation recommended.

Designation	Size (Acres)	Building Size (sq ft)	Current Ownership	Studies/References	AOCs	Constituents of Concern	Constituents in Exceedance of Applicable Regulatory Standards	Remedial Action	Residual Contamination	Remaining AOCs
V. Drainage Swale										
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Letter Report - Subsurface Soil Investigation / Drainage Swale North of Main Drum Marshalling Area, September 1998	Drainage Swale leading from the Cherry Avenue Extension to the McKay Field Drainage Swale	Priority pollutant metals; Chromium and lead and hexavalent chromium	Chromium, copper and zinc detected above TAGM criteria and/or Eastern USA background levels in three out of the ten samples.	Copper and zinc are not listed as 'Hazardous Constituents' in Appendix 23 of 6 NYCRR part 371. The samples contain mostly trivalent chromium; which is significantly less toxic than hexavalent chromium. Hexavalent chromium was either not detected or detected at concentrations well below the TAGM criteria. Therefore, this area does not require any further characterization.	--	--

Designation	Size (Acres)	Building Size (sq ft)	Current Ownership	Studies/References	AOCs	Constituents of Concern	Constituents in Exceedance of Applicable Regulatory Standards	Remedial Action	Residual Contamination	Remaining AOCs
VI. Miscellaneous Studies / Reports										
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	105 Acres Chemical Bulk Storage Tank Permits - Requests for Change of Ownership (Various Correspondence)	Registered tanks	None	No sampling conducted during this project.	NA	NA	NA
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	105 Acres Record of Remediation RCRA Closures	Outstanding Plant 3 UIC closure	No sampling conducted	No sampling conducted.	NGC proposing remedial actions within the AOCs to the NYSDEC.	NA	NA
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	105 Acres Record of Remediation RCRA Closures	Plant 03: IWTP	No sampling conducted	No sampling conducted.	NYSDEC approved discharge of standing water within the secondary containment area to the recharge basin.	NA	NA
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	105 Acres Record of Remediation RCRA Closures	Plant 03: mini drum marshalling area and main drum marshalling area	No sampling conducted	No sampling conducted.	NYSDEC considers these areas officially closed.	NA	NA
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	105 Acres Record of Remediation RCRA Closures	Various AOCs	No sampling conducted	No sampling conducted.	NYSDEC approved recommended remedial actions to be conducted within the AOCs.	NA	NA
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	Plant 3 Former UST Area Spill No. 97-09123	Former UST Area	No sampling conducted	No sampling conducted.	NYSDEC requires an investigation to determine the vertical/horizontal extent of the soil/groundwater contamination. Remediation plan must be approved.		
Plant 03 - Product Manufacturing	35.50	707,703	Navy	IWTP Tank Inspection & Precision Pipe and Tank Testing Reports 1990, 1992-1995, 1997	IWTP underground tanks and piping	No sampling conducted	No sampling conducted.	Performed minor surface patching. Tanks/piping found to meet NCDH tightness criteria.	NA	NA
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	105 Acre Contract Excessing Plan, October 1996	Various AOCs	No sampling conducted	No sampling conducted.	Summarizes proposed remediation of various areas (in accordance with Phase I/II site assessments and anticipated Phase III remediation activities).	NA	NA
105 Acre - GOCO Facility (NWIRP)	105	NA	Navy	105 Acres Groundwater Modeling Letter Reports, March 1998	Groundwater (total volatile organic compound (TVOC) and vinyl chloride monomer (VCM) plume)	Total VOCs; VCM	Total VOCs detected at elevated levels upon start-up of the modeling program in 2 out of 5 extraction wells (GP-3 and GP-10). VCM are predicted to be found at elevated levels after start-up of the modeling program in 2 out of 5 extraction wells (GP-5 and GP-10).	GP-3 and GP-10 require well head treatment for the removal of Total VOCs prior to discharge to a groundwater recharge basin. GP-5 and GP-10 likely require well head treatment (and may require off-gas treatment for VCM) for the removal of VCM prior to discharge to a groundwater recharge basin.	No further work necessary to evaluate the impacts of pumpage in the North Plant area on the hydraulic containment system.	NA
Plant 10 & 17 South Warehouses	13.00	24,900 and 165,691	Navy	AOCs, March - July 1998	Report not reviewed.	NA	NA	NA	NA	NA
Plant 10 & 17 South Warehouses	13.00	24,900 and 165,691	Navy	Building 10 and 17 South, AOC 1 partial, 4 partial, 6 partial, and 8 - Recommendations for No Further Action March 30, 1998	AOC 1 - Former dry wells outside of Plant 10	1,2-dichloroethene	Detection of this compound not confirmed during subsequent sampling	NGC requests a letter of "No Further Action" regarding this AOC.	--	--
					AOC 4 - Stained floor in the Machine Shop of Plant 10	Arsenic and chromium	Detection of these compounds not confirmed during subsequent sampling.	NGC requests a letter of "No Further Action" regarding this AOC.	--	--
					AOC 6 - Former stormwater dry wells outside of the Plant 17 South Warehouses, excluding dry wells 17S-06E and 17S-06FA.	Zinc, PCBs, selenium and nickel	Detection of PCBs not confirmed during subsequent sampling. Zinc is not a hazardous constituent per Appendix 23 of 6 NYCRR Part 371. Exceedances of selenium and nickel considered to be minor.	NGC requests a letter of "No Further Action" regarding this AOC.	--	--
					AOC 8 - Former sanitary leaching chambers east of Warehouse L and M at Plant 17 South	Arsenic	Concentrations of arsenic do not greatly exceed TAGM criteria, samples above and below arsenic-containing intervals were not impacted and relative depth of arsenic should eliminate migration.	NGC requests a letter of "No Further Action" regarding this AOC.	--	--
Plant 03 - Product Manufacturing	35.50	707,703	Navy	IWTP Tank Inspection & Precision Pipe and Tank Testing Reports, August 1998	IWTP underground tanks and piping	None	No sampling conducted.	Performed minor surface patching. Tanks/piping found to meet NCDH tightness criteria.	NA	NA
Plant 20	5.00	25,243	Navy	Waste Oil Tank #2013, December 1998	Report not reviewed.	NA	NA	NA	NA	NA

Appendix B

APPENDIX B

"NO FURTHER ACTION" LETTERS

New York State Department of Environmental Conservation
Division of Solid and Hazardous Materials
Building 40, SUNY, Stony Brook, New York 11790-2356
Telephone: (516) 444-0375
Facsimile: (516) 444-0231

John P. Cahill
Commissioner

February 24, 1998

Mr. Larry Leskovjan, Manager
Environmental, Health, safety & Medical Services
M/S: D16-001
Northrup Grumman Corporation
South Oyster Bay Rd
Bethpage, NY 11714-3580

RE: Analytical Data for End Point Samples for Area of Concern (AOC)03; Building 03
Grumman-Bethpage
NYD002047967

Dear Mr. Leskovjan:

The Division of Solid and Hazardous Materials (DSHM)) has reviewed the end point sample analytical data for AOC 3, known as the Old Alodine Process Line, submitted in your letter dated February 2, 1998.

Based on our review of the sampling data, the DSHM has no objection to your backfilling the excavated area listed below. We also recommend your receiving approval from Nassau County Department of Health prior to beginning the work. The AOC 3 was identified in the Phase I Environmental Assessment Report dated April 11, 1997.

1. Area of Concern 03 Building 03, Old Alodine Area(Excavated Pit (60'x 35'x 30')

If you have any questions, please contact me or Thomas John.

Yours truly,

Stanley Farkas, P.E.
Environmental Engineer II

cc: A. Postyn, Northrup Grumman
S. Kaminski, NYSDEC
T. John, NYSDEC
J. Lovejoy, NCDH

ew York State Department of Environmental Conservation
ivision of Solid & Hazardous Materials, Region One
ıild' · 40 - SUNY, Stony Brook, New York 11790-2356
ıor. (516) 444-0375 FAX: (516) 444-0231

John P. Cahill
Commissioner

May 13, 1998

Mr. Larry Leskovjan, Manager
Environmental, Health & Safety
M/S D16-001
Northrup Grumman Corporation
South Oyster Bay Rd.
Bethpage, NY 11714-3583

RE: Authorization to Backfill Various Areas of Concern
Grumman-Bethpage NYD002047967

Dear Mr. Leskovjan:

The Division of Solid and Hazardous Materials (DSHM) has completed its review of the following submissions concerning remediation of various Areas of Concern (AOCs) located within the Naval Weapons Industrial Reserve Plant at the Northrup Grumman Corp. in Bethpage:

Date of Letter	Description
3/24/98	Plant 3, AOC 1-29
3/24/98	Plant 9, AOC 1-30
3/31/98	Plant 10, AOC 3
3/31/98	Plant 17 North AOCs, 2 and 12
4/01/98	Plant 3, AOC 1-05/06
4/14/98	Plant 3, AOC 13
4/14/98	Plant 3, AOC 33-19
4/28/98	Plant 3, AOC 19
4/28/98	Plant 3, AOC 14

Based on our review of the sampling data, inspection of the designated areas and discussions with your engineers, the DSHM approves your requests for no further action based upon achievement of TAGM criteria and hereby approves the backfilling of the excavations associated with the AOCs listed.

Please advise the Department of your schedule for filling these areas. We also recommend your receiving approval from the Nassau County Department of Health. If you have any questions, please do hesitate to contact me at (516) 444-0379 or Mr. Henry Wilkie at (518) 457-9255.

Yours truly,

Stanley Farkas, P.E.
Environmental Engineer II

SF:ek

cc: A. Postyn, Northrup Grumman
S. Kaminski, NYSDEC
H. Wilkie, NYSDEC
J. Lovejoy, NCDH

New York State Department of Environmental Conservation
Division of Solid & Hazardous Materials, Region One
F ding 40 - SUNY, Stony Brook, New York 11790-2356
P ne: (516) 444-0375 FAX: (516) 444-0231

John P. Cahill
Commissioner

June 23, 1998

Mr. Larry Leskovjan, Manager
Environmental, Health & Safety
M/S D16-001
Northrup Grumman Corporation
South Oyster Bay Rd.
Bethpage, NY 11714-3583

RE: Authorization to Backfill Various Areas of Concern
Grumman-Bethpage NYD002047967

Dear Mr. Leskovjan:

The Division of Solid and Hazardous Materials (DSHM) has completed its review of the following submissions concerning remediation of various Areas of Concern (AOCs) located within the Naval Weapons Industrial Reserve Plant at the Northrup Grumman Corp. in Bethpage. Based on our review of the sampling data, inspection of the designated areas and discussions with your engineers, the DSHM approves your requests for No Further Action (NFA) based upon achievement of TAGM criteria and hereby approves the backfilling of the excavations associated with the AOCs listed.

Date of Submittal	Description	DSHM Response
3/23/98	Plant 3, Various AOCs (36) - Request for NFA	Verbal O.K. 6/9/98
3/30/98	Plants 10/17 South, Various AOCs (4) - Request for NFA	Verbal O.K. 6/9/98
4/17/98	Plant 3, AOC 24 - Request for NFA/ Backfilling	None
4/28/98	Plant 3, AOC 9 - Request for NFA/ Backfilling	None
4/28/98	Plant 3, AOC 27 - Request for NFA/ Backfilling	Verbal O.K. 5/12/98
4/29/98	Plant 3, AOC 2 - Request for NFA/ Backfilling	None

5/5/98	Plant 3, AOC 21-21 - Request for NFA/ Backfilling	Verbal O.K. 5/12/98
5/13/98	Plant 3, AOC 33-09 - Request for NFA/ Backfilling	Verbal O.K. 5/15/98
5/13/98	Plant 3, AOC 33-11/12 - Request for NFA/ Backfilling	Verbal O.K. 5/15/98
5/5/98	Plant 3, AOC 1-08 - Request for NFA/ Backfilling	Verbal O.K. 5/12/98
5/5/98	Plant 3, AOC 1-20 - Request for NFA/ Backfilling	Verbal O.K. 5/12/98
5/13/98	Plant 3, AOC 6 - Request for NFA/ Backfilling	Verbal O.K. 5/15/98
5/13/98	Plant 3, AOC 34 - Request for NFA/ Backfilling	Verbal O.K. 5/15/98

We have also received submissions dated 5/21/98, for Plant 3, AOC 20-24, and 6/4/98 for Plant 10 Degreaser Pit which are still under review.

Please advise the Department of your schedule for filling the approved AOCs. We also recommend your receiving approval from the Nassau County Department of Health. If you have any questions, please do hesitate to contact me at (516) 444-0379 or Mr. Henry Wilkie at (518) 457-9255.

Yours truly,

Stanley Farkas, P.E.
Environmental Engineer II

SF:ek

cc: A. Postyn, Northrup Grumman
S. Kaminski, NYSDEC
H. Wilkie, NYSDEC
J. Lovejoy, NCDH

New York State Department of Environmental Conservation
Division of Solid & Hazardous Materials, Region One
Building 40 - SUNY, Stony Brook, New York 11790-2356
Phone: (516) 444-0375 FAX: (516) 444-0231

John P. Cahill
Commissioner

August 31, 1998

Mr. John Cofman
Environmental Technology and Compliance
M/S D08-001
Northrup Grumman Corporation
South Oyster Bay Rd.
Bethpage, NY 11714-3580

RE: Authorization to Backfill Various Areas of Concern
Grumman-Bethpage NYD002047967

Dear Mr. Cofman:

The Division of Solid and Hazardous Materials (DSHM) has completed its review of the following submissions concerning remediation of various Areas of Concern (AOCs) located within the Naval Weapons Industrial Reserve Plant at the Northrup Grumman Corp. in Bethpage. Based on our review of the sampling data and the achievement of TAGM criteria, the DSHM hereby approves your requests for No Further Action (NFA) and the backfilling of the excavations associated with the AOCs listed.

Date of Submittal	Description
5/21/98	Plant 3, AOC 20-24 - Request for NFA/Backfilling
6/04/98	Plant 10 Degreaser Pit - Requests for NFA/Backfilling
6/24/98	Plant 17 South, AOC 6, Drywells 17S-06 EA and 17S-06FA - Request for NFA/Backfilling
6/26/98	Plant 10, AOC 2, Former Sanitary System - Request for NFA/Backfilling
6/26/98	Plant 3, AOC 20-06 - New catch basin will be installed which will discharge to the existing storm water drainage system and Plant 3, AOC 20-28, Dry well - Request for NFA/Backfilling

Please advise the Department of your schedule for filling the approved AOCs. We also recommend your receiving approval from the Nassau County Department of Health. If you have any questions, please do not hesitate to contact me at (516) 444-0379 or Mr. Henry Wilkie at (518) 457-9255.

Yours truly,

Stanley Farkas, P.E.
Environmental Engineer II

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