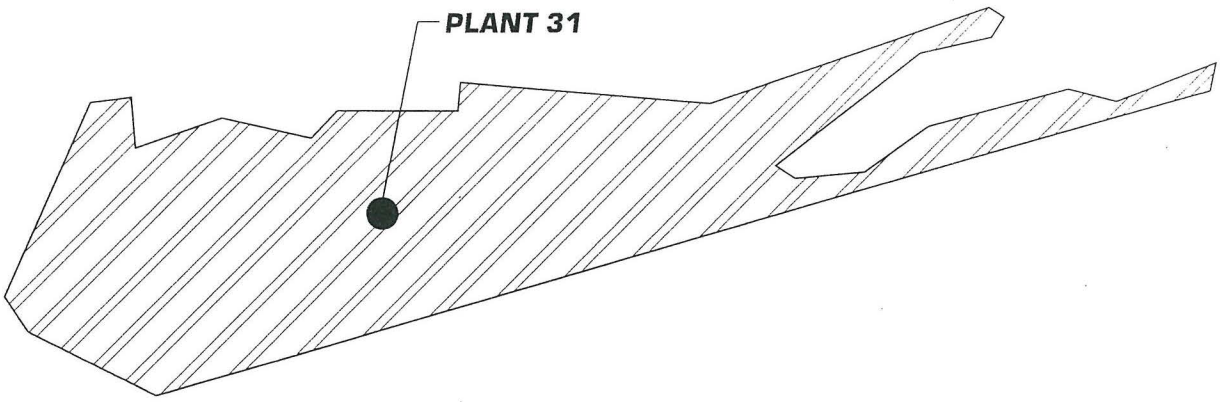
7C-3

NORTHROP GRUMMAN

BETHPAGE FACILITY



REMEDIATION OVERSIGHT REPORT PLANT 31

NORTHROP GRUMMAN CORPORATION
BETHPAGE, NEW YORK

Dvirka and Bartilucci
Consulting Engineers

MAY 1997

Dvirka and Bartilucci
CONSULTING ENGINEERS

330 Crossways Park Drive, Woodbury, New York, 11797-2015
516-364-9890 ▪ 718-460-3634 ▪ Fax: 516-364-9045

May 23, 1997

John Cofman, P.E., Lead Engineer
Environmental Technology and Compliance
Northrop Grumman Corporation
Mail Stop: D08-001
Bethpage, NY 11714-3582

Re: Remediation Oversight
Plant 31
Bethpage, NY
D&B No. 801/96-63

Dear Mr. Cofman:

Enclosed please find six copies of the document entitled:

"Remediation Oversight Report
Plant 31
Bethpage, New York"

If you have any questions and/or comments, please do not hesitate to contact Mr. Errol Kitt or me at (516) 364-9890.

Very truly yours,

Richard M. Walka

Richard M. Walka
Vice President

RMW/ESK/ajmc
cc: J. Ohlmann (NGC)
A. Postyn (NGC)
E. Kitt (D&B)
♦0801\RMW97A-76.LTR

REMEDIATION OVERSIGHT REPORT

NORTHROP GRUMMAN CORPORATION
PLANT 31
BETHPAGE, NEW YORK

PREPARED BY

DVIRKA AND BARTILUCCI
CONSULTING ENGINEERS
WOODBURY, NEW YORK

MAY 1997

REMEDIATION OVERSIGHT REPORT
NORTHROP GRUMMAN CORPORATION
PLANT 31
BETHPAGE, NEW YORK

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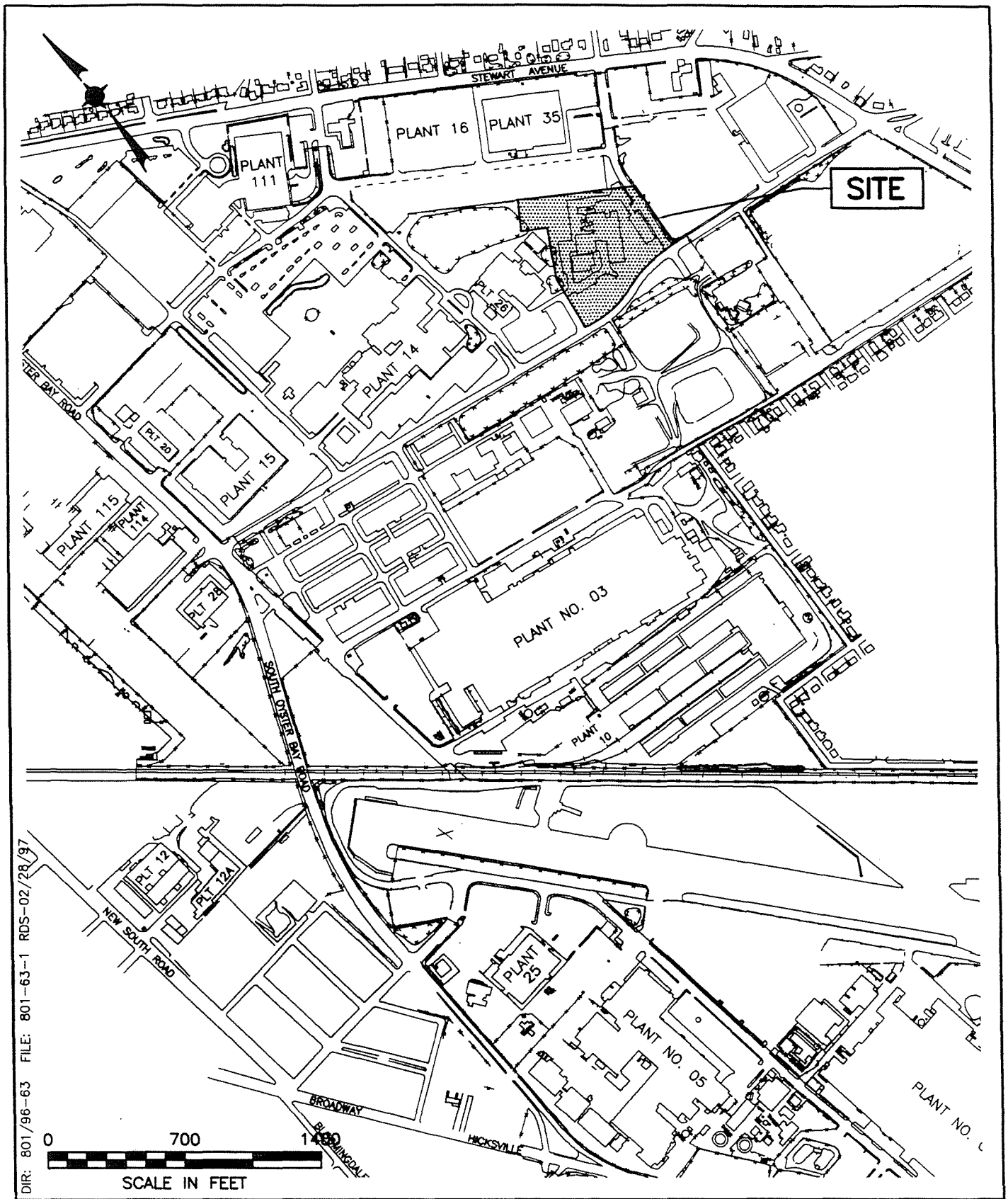
1.0 INTRODUCTION

This report documents the remediation activities undertaken at the Northrop Grumman Corporation (NGC) Plant 31 facility. The Plant 31 facility is located approximately 800 feet south and 1,200 feet west of Stewart Avenue in Bethpage, within the Town of Oyster Bay, in Nassau County, New York. A site location map is presented on Figure 1-1. The site is located within an area zoned Industrial H. Other industrial properties are currently located north, south, east and west of the site.

The Plant 31 property is currently owned by NGC. Plant 31 was historically utilized as an "air testing facility" by NGC, but is no longer active. Plant 31 comprises 60,000 square feet. The eastern part of the original building is one story, and the western part is a two-story hangar-like structure referred to as the Environmental Test Laboratory Hangar area.

Dvirka and Bartilucci Consulting Engineers (D&B) was retained by NGC to provide engineering oversight of the remediation activities conducted by NGC at the Plant 31 site. The scope of work for the remediation was based upon the recommendations presented in a report entitled "Supplemental Phase II Site Assessment, Plant 31, Bethpage, New York," dated February 1997 prepared by Dvirka and Bartilucci Consulting Engineers. The recommendations presented in the Supplemental Phase II Site Assessment report are provided in Appendix A.

The technical scope of work for the remediation program is described in Section 2.0. The procedures followed throughout the field program of the remediation project are presented in Section 3.0. The conclusions of the remediation report are provided in Section 4.0. Daily field activity reports are presented in Appendix B. The analytical results of the waste characterization sampling for disposal purposes is provided in Appendix C. Documentation of the transportation, treatment and disposal is provided in Appendices D and E. Certification of the backfill material utilized is provided in Appendix F.



NORTHROP GRUMMAN CORPORATION
PLANT 31
REMEDIATION OVERSIGHT
BETHPAGE, NEW YORK

SITE LOCATION MAP

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

FIGURE 1-1

2.0 SCOPE OF WORK

The scope of work recommended as part of the report entitled "Supplemental Phase II Site Assessment, Plant 31, Bethpage, New York," included the remediation of soils and sediment from the bottom of a dry well and beneath the bottom of a test pit.

Accordingly, soil and sediment from within Dry Well "DWC", located between the Old Compressor Room and the Environmental Test Laboratory Hangar was to be excavated from approximately 3 feet to approximately 13 feet below ground surface. The excavated material would be loaded into a roll-off container with leaktight cover for proper containment, transportation and off-site disposal. In addition, backfilling of the excavation would be conducted utilizing clean sand fill, including site restoration and re-surfacing with asphalt or concrete, as required.

In addition, soil and sediment from within the test pit floor drain and dry well in Test Area "C" would be excavated from approximately 0 to 4 feet below the bottom of the pit. The area to be excavated was to be approximately 4 feet by 4 feet. The actual dimensions of the excavation would be dependent upon site constraints and field conditions. The excavated material will be loaded into a roll-off container with leaktight cover for proper containment, transportation and off-site disposal. In addition, backfilling of the excavation would be conducted utilizing clean sand fill, including site restoration and re-surfacing with asphalt or concrete, as required.

The scope of work for the remediation of the dry well and test pit also included waste characterization sampling for disposal purposes by collecting at least one composite sample from the roll-off container for laboratory analysis, or at a frequency required by the disposal facility.

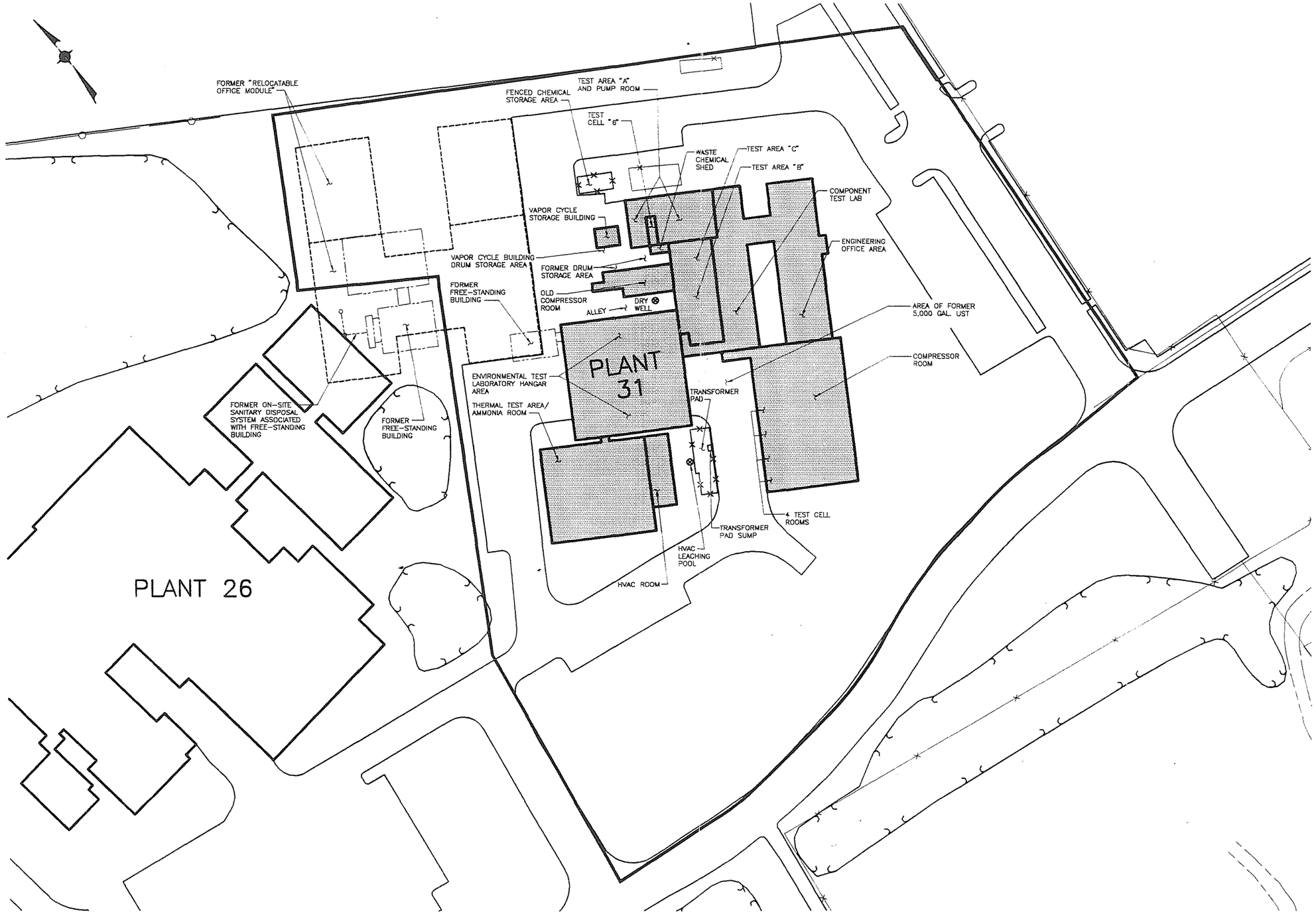
In addition, endpoint sampling activities were not conducted due to the fact that in situ soil samples were obtained at appropriate depths from within the dry well and test pit areas during the Supplemental Phase II Site Assessment. Accordingly, the analytical results were utilized to define the extent of soil-contamination and remediation activities.

3.0 REMEDIATION ACTIVITIES

This section of the report documents the field activities associated with the remediation of soil and sediment from the within Dry Well "DWC" and Test Area "C" test pit floor drain and dry well at the Plant 31 facility. The field activities were conducted from February 5 through February 7, 1997. Daily field activity reports, which are presented in Appendix B, provide documentation of the daily field program activities that were conducted at the site. A site plan of the facility is presented on Figure 3-1.

As indicated in Section 1.0, D&B was retained by NGC to provide engineering oversight of the remediation activities conducted by NGC at the Plant 31 facility. NGC retained Blue Water Environmental Inc. (Blue Water) of Farmingdale, New York to conduct the remediation activities for the project. All excavation, loading, transportation, disposal services and site restoration activities, as required, were conducted by Blue Water. D&B provided engineering oversight of the remediation activities. The excavated soil and sediment material was transported as nonhazardous waste in a 20 cubic yard roll-off container with leaktight cover by Blue Water to the BFI Conestoga Landfill in Morgantown, Pennsylvania. In addition, one composite soil/sediment sample was collected from the 20 cubic yard roll-off container by Blue Water for waste characterization purposes and analyzed for total RCRA metals (6010), RCRA metals by Toxicity Characteristic Leaching Procedure (TCLP), VOCs (8240), SVOCs (8270), TPHCs (418.1), cyanide (9010) and reactivity, corrosivity and ignitability by Nytest Environmental, Inc. (Nytest). The analytical result of the waste characterization sample is presented in Appendix C. In addition, waste manifests and certificates from the disposal facility along with a certification that clean sand was utilized for backfill material are presented in Appendix D, E and F, respectively.

Endpoint sampling activities were not conducted due to the fact that in situ soil samples were obtained at appropriate depths at Dry Well "DWC" and Test Area "C" during the Supplemental Phase II Site Assessment. Accordingly, the analytical results of the Supplemental



DIRECTORY: 801/96-63
FILE NAME: 801-63-2
DATE: RDS-03/05/97

NO.	DATE	REVISION	INIT.

PROJECT ENGINEER:	DRAWN BY:
E.K.	R.S.
DESIGNED BY:	CHECKED BY:
M.R.	E.K.

DVIRKA AND BARTILUCCI
CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

NORTHROP GRUMMAN CORPORATION
BETHPAGE FACILITY
PLANT 31
REMEDIATION OVERSIGHT

SITE PLAN

PROJECT NO.	FIGURE
801/96-63	3-1
DATE: FEB. 1997	
SCALE: NTS	

Phase II Site Assessment were utilized to define the extent of soil-contamination and remediation activities.

3.1 Dry Well "DWC"

Soil remediation activities associated with Dry Well "DWC" were conducted in accordance with the recommendations of the Supplemental Phase II Site Assessment report prepared by D&B. All excavation, loading, transportation, disposal services and site restoration activities for Dry Well "DWC," were conducted by Blue Water.

The dry well remediation field activities consisted of the excavation of soil and sediment from within Dry Well "DWC," located between the Old Compressor Room and the Environmental Test Laboratory Hangar, from approximately 3 feet to approximately 13 feet below ground surface. Excavation of soil and sediment was accomplished utilizing a "Vactor Supersucker" truck with an 8-inch diameter flexible hose. The depth of excavation extended approximately 7 feet below the bottom of the dry well exposing what appeared to be clean, native sand. It should be noted that the depth of excavation was determined based upon the analytical results of the Supplemental Phase II Site Assessment which defined the extent of soil-contamination and remediation activities. The soil and sediment material excavated from the dry well was subsequently transferred from the Vactor truck into a 20 cubic yard roll-off container with leaktight cover for proper transportation and off-site disposal at the BFI Conestoga Landfill.

Following completion of the excavation activities, the dry well was backfilled with clean sand fill to a depth of 6 feet below ground surface (i.e., to the bottom of the dry well ring structure). A copy of clean fill certification letter is provided in Appendix F.

3.2 Test Area "C"

Soil remediation activities associated with the test pit floor drain and dry well in Test Area "C" were conducted in accordance with the recommendations of the Supplemental Phase II

Site Assessment report prepared by D&B. All excavation, loading, transportation and disposal services, as well as site restoration activities for the test pit floor drain and dry well in Test Area "C," were conducted by Blue Water.

The test pit floor drain and dry well remediation field activities consisted of the removal of a 4-foot by 4-foot area of 14-inch thick reinforced concrete in order to access and remove approximately 4-feet of underlying soil. Removal of the reinforced concrete was accomplished utilizing a diamond impregnated saw blade and a 90-pound jackhammer. The underlying soil was excavated utilizing a "Vactor Supersucker" truck with an 8-inch diameter flexible hose. The limits of the soil excavation extended approximately 1-foot underneath the concrete floor (5-foot by 5-foot area) and approximately 4-feet below the pit floor exposing what appeared to be clean, native sand. A layer (approximately 2 feet thick of blue stone material (i.e., 1 to 2-inch diameter) was encountered directly beneath the concrete floor of the pit. This blue stone material facilitated drainage to the underlying soils. It should be noted that the depth of excavation was determined based upon the analytical results of the Supplemental Phase II Site Assessment which defined the extent of soil-contamination and remediation activities. The underlying soil excavated from within the test pit floor drain and dry well was subsequently transferred from the Vactor truck into a 20 cubic yard roll-off container with leaktight cover for proper transportation and off-site disposal at the BFI Conestoga Landfill.

Following completion of the excavation activities, the test pit floor drain and dry well were backfilled with the previously removed concrete and clean sand fill and the area was re-surfaced with 2-inches of concrete.

A total of 8.45 tons of soil and sediment material from both areas, Dry Well "DWC" and the test pit floor drain and dry well in Test Area "C," was loaded into the 20-cubic yard roll-off container with leaktight cover and transported by Blue Water for proper off-site disposal as nonhazardous waste at the BFI Conestoga Landfill.

4.0 CONCLUSIONS

Remediation activities associated with the excavation, loading, transportation and disposal of soil and sediment from within Dry Well "DWC" and the Test Area "C" test pit floor drain and dry well at the Northrop Grumman Corporation (NGC) Plant 31 facility in Bethpage, New York were conducted and completed in accordance with the recommendations of the Supplemental Phase II Site Assessment report prepared by Dvirka and Bartilucci Consulting Engineers (D&B) of Woodbury, New York.

As discussed in Section 3.0, D&B was retained by NGC to provide engineering oversight of the remediation activities conducted by NGC at the Plant 31 facility. NGC retained Blue Water Environmental Inc. (Blue Water) of Farmingdale, New York to conduct the remediation activities for the project. All excavation, loading, transportation, disposal services and site restoration activities, as required, were conducted by Blue Water.

A total of 8.45 tons of soil and sediment material from Dry Well "DWC" and Test Area "C" was excavated and transported off-site by Blue Water to the BFI Conestoga Landfill in Morgantown, Pennsylvania in a 20-cubic yard roll-off container with leaktight cover. Following completion of the excavation activities in Dry Well "DWC," the dry well was backfilled with clean sand to 6 feet from grade. The Test Area "C" test pit floor drain and dry well were backfilled with clean sand fill and the surface was restored with 2 inches of cement.

In addition, one composite soil/sediment sample was collected from the 20-cubic yard roll-off container by Blue Water for waste characterization purposes and analyzed for total RCRA metals (6010), RCRA metals by TCLP, VOCs (8240), SVOCs (8270), TPHCs (418.1), cyanide (9010) and reactivity, corrosivity and ignitability by Nytest Environmental, Inc. (Nytest).

Endpoint sampling activities were not conducted due to the fact that in situ soil samples were obtained at appropriate depths at Dry Well "DWC" and Test Area "C" during the Supplemental Phase II Site Assessment. Accordingly, the analytical results of the Supplemental

Phase II Site Assessment were utilized to define the extent of soil-contamination and remediation activities.

Based upon the results of the Supplemental Phase II Site Assessment and the subsequent remediation activities, further remedial activities are not warranted in Dry Well "DWC" and Test Area "C" at the NGC's Plant 31 facility.

APPENDIX A

EXCERPT FROM SUPPLEMENTAL PHASE II SITE ASSESSMENT

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based upon the findings of the Supplemental Phase II Site Assessment field investigation discussed in Section 5, conclusions are presented in this section, and recommendations are provided regarding remedial actions at the Plant 31 site.

In support of providing conclusions and technical recommendations with regard to the level and degree to which clean-up or remediation of the property is required, we have relied on the Technical and Administrative Guidance Memorandum (TAGM) No. 4046 - Determination of Soil Cleanup Objectives and Cleanup Levels dated January 24, 1994 published by the New York State Department of Environmental Conservation (NYSDEC).

As discussed in the introduction of the TAGM, the document is designed to provide a basis and procedure for NYSDEC Project Managers at "... individual Federal Superfund, State Superfund, 1986 EQBA Title 3 and Responsible Party (RP) sites..." to determine soil cleanup levels. The TAGM provides a number of methods to determine the degree to which these sites are cleaned up including recommended soil cleanup objectives (NYSDEC TAGM criteria) and Eastern USA background concentrations.

The Plant 31 site is not a Federal Superfund or State Superfund site nor is it an RP or 1986 EQBA Title 3 property. However, we believe it is reasonable to establish the NYSDEC TAGM criteria for VOCs and SVOCs and the Eastern USA background levels for metals, as presented in the TAGM, as the levels of cleanup across the site. In addition, the proposed revised NYSDEC TAGM criteria for cadmium and chromium were established as the levels of cleanup for the site for these metals.

Also, the TCLP Extraction Guidance Values listed in Table 2, "Guidance Values for Fuel Oil Contaminated Soil," of Appendix B of NYSDEC's STARS Memo #1 (STARS Table 2 guidance values) were utilized for soil cleanup levels at specific locations at the site.

As discussed in Section 5, the Supplemental Phase II field investigation at the Plant 31 site was conducted at the following 3 areas:

- Test Area "C"
- Waste Chemical Shed
- Dry Well Between Old Compressor Room and Environmental Test Laboratory Hangar

Conclusions and recommendations regarding additional investigation and/or remedial activities in these areas is presented in Sections 6.1 through 6.3, respectively.

In addition, a summary of recommended remedial activities associated with the HVAC Room Leaching Pool is presented in Section 6.4.

6.1 Test Area "C"

Conclusions

As discussed in Section 5.1, twenty (20) soil samples were collected in Test Area "C" at soil probe locations TACA, TACB, TACC and TACD during the Supplemental Phase II field investigation. The analytical results of the shallow soil sample (at 8'-10' below grade or 0-2' below the bottom of the pit) collected at soil probe TACB (advanced adjacent to former probe TA-C) indicated that naphthalene and benzo(a)anthracene were detected at concentrations exceeding the STARS Table 2 guidance values. TPHCs were detected at a concentration of 24 mg/kg in the shallow (8'-10') soil sample collected at soil probe TACC. However, although there is no NYSDEC TAGM criterion for TPHCs, a limit of 500 mg/kg has been accepted at similar sites in consultation with NYSDEC. Several priority pollutant metals were also detected in the soil samples collected at soil probes TACA, TACC and TACD. However, none of these concentrations exceeded Eastern USA background levels or the proposed revised NYSDEC TAGM criteria for cadmium and chromium.

In addition, it is important to note that the analytical results of the soil samples collected at former probe TA-C as part of the previous Phase II Site Assessment field program indicated that cadmium, chromium, copper, mercury, nickel and zinc were detected at concentrations exceeding Eastern USA background levels in the sample from the 8'-10' interval (0-2' below the bottom of the pit), and mercury was detected at a concentration exceeding the Eastern USA background level for this metal in the sample from the 10'-12' interval (2'-4' below the bottom of the pit).

Recommendations

Based upon the analytical results of the soil samples collected during the Supplemental Phase II field investigation, it has been determined that naphthalene and benzo(a)anthracene are the primary contaminants of concern found in the test pit dry well in Test Area "C". In addition, the analytical results of soil samples collected during the previous Phase II Site Assessment field investigation indicated that several metals, including mercury, were also contaminants of concern in the test pit dry well. Therefore, soil remediation is recommended in Test Area "C".

Accordingly, it is recommended that soil and sediment within the test pit dry well in Test Area "C" (in the vicinity of former soil probe TA-C and soil probe TACB) be excavated from approximately 0 feet to 4 feet below the bottom of the pit. This depth was selected based upon the detection of naphthalene and benzo(a)anthracene, as well as several metals, at concentrations which exceeded STARS Table 2 guidance values and Eastern USA background levels, respectively, at a depth of 2 feet below the bottom of the pit, and the detection of mercury at a concentration exceeding the Eastern USA background level for this metal at a depth of 4 feet below the bottom of the pit.

The excavated material should be containerized (in 55-gallon drums or roll-offs) for proper off-site transportation and disposal.

6.2 Waste Chemical Shed

Conclusions

As discussed in Section 5.2, nine (9) soil samples were collected at the Waste Chemical Shed at soil probe locations WCS2A, WCS2B, WCS2C, WCS2D and WCS2E during the Supplemental Phase II field investigation. The analytical results indicated that phenanthrene was detected below its STARS Table 2 guidance value in the soil sample collected at WCS2B. However, several TPHCs were detected at concentrations ranging from 24 mg/kg in soil sample WCS2D-2 (2'-4') to 1,300 mg/kg in soil sample WCS2C-2 (2'-4'). Accordingly, soil sample WCS2C (2'-4') was also analyzed for STARS Table 2 VOC and SVOCs by TCLP; however, VOCs and SVOCs were not detected. All other TPHC detections were well below the 500 mg/kg limit which has been utilized at other sites in consultation with the NYSDEC.

Recommendations

Based upon the analytical results of the soil samples collected during the Supplemental Phase II field investigation, the STARS Table 2 VOCs and SVOCs analyzed by TCLP were either not detected or were detected in concentrations below the STARS Table 2 guidance values. The STARS Table 2 VOCs and SVOCs were not detected at concentrations exceeding STARS Table 2 guidance values in soil sample WCS2B-1 (0-2'). In addition, VOCs and SVOCs were not detected in soil sample WCS2C-2 (2'-4'), which was analyzed for STARS Table 2 VOCs and SVOCs by TCLP due to elevated TPHC levels (greater than 500 mg/kg). All other detected concentrations of TPHCs were well below 500 mg/kg. As a result, no further investigation and/or remediation activities are warranted at the Waste Chemical Shed.

6.3 Dry Well Between Old Compressor Room and Environmental Test Laboratory Hangar

Conclusions

As stated in Section 5.3, forty (40) soil samples were collected at the dry well between the Old Compressor Room and the Environmental Test Laboratory Hangar at borings DWA, DWB, DWC, DWD and DWE. Boring DWC was advanced immediately adjacent to former boring DWCE. The analytical results indicated that the TCLP waste characterization results did not exceed regulatory levels in the soil sample collected at boring DWC. However, four (4) of the remaining seven (7) soil samples collected at boring DWC, samples DWC-2 (5'-7'), DWC-3 (7'-9'), DWC-4 (9'-11') and DWC-5 (11'-13'), contained concentrations of mercury that exceeded the Eastern USA background level for this metal.

The analytical results of the thirty-two (32) soil samples collected at borings DWA, DWB, DWD and DWE indicated that VOCs and SVOCs were not detected at concentrations in excess of the NYSDEC TAGM criteria. TPHCs were detected at low levels (less than 500 mg/kg) in the soil samples collected these at boring locations.

In addition, it is important to note that the analytical results of the soil samples collected at former boring DWCE as part of the previous Phase II Site Assessment field investigation indicated that: 1,2-dichloroethene and phenol were detected at concentrations that exceeded the NYSDEC TAGM criteria for these compounds in the 3'-5' sample interval; several priority pollutant metals, including cadmium, chromium, copper, mercury, nickel and zinc, were detected at concentrations that exceeded the Eastern USA background levels for these metals in the 3'-5' sample interval; TPHCs were detected at an elevated concentration (greater than 500 mg/kg) in the 3'-5' sample interval; cadmium and zinc were detected above Eastern USA background levels in the 5'-7' sample interval; and mercury was detected above the Eastern USA background level in the 11'-13' sample interval.

Recommendations

Based upon the analytical results of the soil samples collected during the Supplemental Phase II field investigation, as well as the analytical results of the soil samples collected as part of the previous Phase II Site Assessment field program, it has been determined that TPHCs and several priority pollutant metals, including mercury, are the primary contaminants of concern in the soil at a depth of 3 to 5 feet in the dry well and that mercury is the primary contaminant of concern in the soil at depths between 5 and 13 feet in the dry well. Therefore, soil remediation is recommended at the dry well between the Old Compressor Room and the Environmental Test Laboratory Hangar.

Accordingly, it is recommended that soil and sediment within the dry well between the Old Compressor Room and the Environmental Test Laboratory Hangar be excavated from approximately 3 feet to 13 feet below ground surface. This depth was selected based upon the detection of mercury at concentrations that exceeded the Eastern USA background level in soil samples to a depth of 13 feet below ground surface.

The excavated material should be containerized (in 55-gallon drums or roll-offs) for proper off-site transportation and disposal.

6.4 HVAC Room Leaching Pool

Based on the analytical results of the soil samples collected at the HVAC Leaching Pool as part of the previous Phase II Site Assessment field program, VOCs and SVOCs were either not detected above method detection limits or were detected at concentrations below NYSDEC TAGM criteria. However, the analytical results of the 10'-12' soil sample interval (0 to 2 feet below the bottom of the leaching pool) indicated that copper, mercury and zinc were detected at concentrations in excess of the Eastern USA background levels. In addition, copper and zinc were found at concentrations below the Eastern USA background levels in the 12'-14' soil sample interval (2 to 4 feet below the bottom of the leaching pool), and mercury was detected at

the Eastern USA background level of 0.2 mg/kg. TPHCs were also detected in low concentrations (less than 500 mg/kg), and were classified as motor oil in the 10'-12' soil sample interval.

Accordingly, it was recommended in the previous Phase II Site Assessment report that the soil and sediment in the HVAC Leaching Pool be excavated to a depth of approximately 3 feet below the bottom of the leaching pool (from 10 to 13 feet below ground surface), containerized for proper off-site transportation and disposal, and that an endpoint sample be collected and analyzed for mercury by Method 7471. Provided that the endpoint sample does not exhibit elevated levels of mercury, it was also recommended that the leaching pool be backfilled to grade with clean sand and gravel and that the floor drain in the HVAC Room be properly closed. In addition, it was noted that the closure of the leaching pool and floor drain would need to be performed in accordance with the USEPA UIC program.

However, subsequent to the previous Phase II Site Assessment and Supplemental Phase II field investigation, a preliminary field inspection of the HVAC Room Leaching Pool and a review of recently available construction drawings of the building indicated that four (4) additional floor drains (other than the known floor drain in the HVAC Room) and two (2) slop sinks could possibly to be connected to the HVAC Room Leaching Pool. Therefore, in addition to the excavation and backfilling of the HVAC leaching pool, it is also recommended that each of the five (5) floor drains and two (2) slop sinks be dye and/or flush tested to confirm their connection/discharge to the leaching pool. Subsequent to the dye/flush testing, the floor drains and slop sinks should be properly closed.

In order to implement the recommended closure activities for the HVAC Room Leaching Pool, floor drains, slop sinks and associated piping, the preparation of a closure plan is required in accordance with the United States Environmental Protection Agency (USEPA) Underground Injection Control (UIC) program. Therefore, the development of a closure plan for the HVAC Room Leaching Pool, floor drains, slop sinks and associated piping is recommended with subsequent submittal of the plan for approval to the USEPA and the Nassau County Department

of Health (NCDOH) as required by the USEPA UIC program. The closure plan should include a proposed scope of work and site plan, leaching pool construction details (if available), and a brief history of the use of the unit. The closure plan should also address the required sampling parameters, associated quality assurance/quality control requirements and detailed procedures to be utilized in order to properly close the unit.

In addition, in accordance with NCDOH requirements for the closure of the leaching pool, the endpoint soil sample should be analyzed for total petroleum hydrocarbons by Method 418.1, total Resource Conservation and Recovery Act (RCRA) metals (which includes mercury) and the NCDOH Appendix A organic constituents.

APPENDIX B

DAILY FIELD ACTIVITY REPORTS

DVIRKA AND BARTILUCCI

DAILY FIELD ACTIVITY REPORT

Report Number: 1 Project Number: 801/96-63 Date: 2/5/97

Field Log Book Page Number: —

Project: Northrop Grumman Corp. - Plant 31 - Dry Well "C" & Test Area "C" Test Pit Reconciliation

Address: Stewart Ave. Bethpage NY

Weather: (AM) Cloudy Rain (PM): Mostly Sunny

Rainfall: (AM) .5-1 Inches (PM) — Inches

Temperature: (AM) 40's °F (PM) " °F

Wind Speed: (AM) 0-5 MPH (PM) " MPH

Wind Direction: (AM) N (PM) "

Site Condition: Wet on Bldg. ext., Dry on Bldg. Int.

Personnel On Site:

Name	Affiliation	Arrival Time	Departure Time
Mark Rauber	D&B	8:30	4:30
Adam Postyn	NGC	"	10:10
Tom Spattafora	Blue Water Env. Inc	"	4:30
Brian Duggan	" " "	~ 12:30	4:30
Desmond Corrigan	" " "	8:30	4:30

Subcontractor Work Commencement: (AM) 9:00 (PM) 12:00

Subcontractor Work Completion: (AM) 11:00 (PM) 4:00

DVIRKA AND BARTILUCCI

DATE: 2/5/97

DAILY FIELD ACTIVITY REPORT

General work performed today by D&B: • Observe NGCs Contractor conduct remediation of Test Area "C" test pit by jackhammering an area as directed by NGC.
• Document all field activities in project log book
• Complete all req'd field forms & assure set is secured w/ NGC

List specific inspection(s) performed and results (include problems and corrective actions):

• Provided periodic inspection of the work conducted by NGCs contractor to assure compliance, on behalf of NGC, with the scope of work. Informed NGC Re: difficulties w/ jackhammering due to dense & thick concrete

List type and location of tests performed and results (include equipment used and monitoring results):

• NA

Verbal comments received from subcontractor (include construction and testing problems, and recommendations/resulting action):

• Contractor's difficulty w/ removal of concrete in Test Area "C" test pit expressed to NGC

Prepared by: M.R. Reviewed by: _____

DB-DFAR

DVIRKA AND BARTILUCCI

DATE: 2/5/97

DAILY FIELD ACTIVITY REPORT

Work performed today by NGC subcontractor(s) (includes equipment and labor breakdown):

- NGCs subcontracta conducted the following activities @ the Plant 31 site:

  - jackhammering of Test area "C" test pit floor utilizing a 45 lb. gas powered jackhammer & then a 90 lb. jackhammer / compressor unit (mobile SMITH 200 rpm, 125 psi)

  - sawcut area 6' x 6', as directed by NGC, to outline area of concrete in Test Pit to be removed utilizing a gas powered concrete saw

Note: NGC subcontracta provided continuous ventilation with the Test Pit during work within the Test pit utilizing a gas powered blower & yellow accordian hose

DVIRKA AND BARTILUCCI

DAILY FIELD ACTIVITY REPORT

Report Number: 2 Project Number: 801/96-63 Date: 2/6/97

Field Log Book Page Number: —

Project: NGC - Plant 31 - Dry well "C" & Test Area "C" test pit remediation

Address: Stewart ave. Bethpage, NY

Weather: (AM) Partly Sunny (PM): Most " Rainfall: (AM) — Inches (PM) — Inches

Temperature: (AM) 40's °F (PM) " °F Wind Speed: (AM) 0-10 MPH (PM) " MPH Wind Direction: (AM) N (PM) "

Site Condition: Bldg. Int. - Dry, Bldg Ext. - Dry

Personnel On Site:

Name	Affiliation	Arrival Time	Departure Time
A. Postyn	NGC	7[30]	8[00]
M. Rawbay	D&B	"	2[00]
B. Duggan	Blue Water Env. Inc.	"	1100
D. Corrigan	" " " "	"	somewhere between 12[00] & 1[00]

Subcontractor Work Commencement: (AM) 8[00] (PM) 10[30]

Subcontractor Work Completion: (AM) 10[10] (PM) somewhere ~ 12[00] - 12[45] ?

DB-DFAR

DVIRKA AND BARTILUCCI

DATE: 2/6/97

DAILY FIELD ACTIVITY REPORT

General work performed today by D&B:

- Observed NGCs subcontractor conduct remediation activities in the test pit in Test Area "C" @ the Plant 3c facs. by sawcut of jackhammering concrete flooring in test pit so that underlying soils can be removed
- Documented all field activities in the project log book
- Completed all req'd field forms

List specific inspection(s) performed and results (include problems and corrective actions):

- Periodic inspection of the work & work area provided to assure, on behalf of NGC, compliance w/ the intended scope of work

List type and location of tests performed and results (include equipment used and monitoring results):

NA

Verbal comments received from subcontractor (include construction and testing problems, and recommendations/resulting action):

- Subcontractor will be onsite 2/7/97 w/ super-sucker for removal / excavation of test pit & dry well

Prepared by: M Flanby Reviewed by:

DB-DFAR

DVIRKA AND BARTILUCCI

DATE: 2/6/97

DAILY FIELD ACTIVITY REPORT

Work performed today by ☒ NGC subcontractor(s) (includes equipment and labor breakdown):

NGC subcontracta conducted the following activities:

- Saw cut 4' x 4' area (scaled back version as directed by NGC) within the test pit in test area "C" in prep of concrete removal
- jackhammer above area to remove concrete in prep of removing underlying soils – utilizing a 90 lb. jackhammer & Smith mobile compression unit (200 rpm & 125 psi)

Note: Continuous ventilation provided by subcontractor in test pit utilizing a gas powered blower unit & flexible hose

DB-DFAR

DVIRKA AND BARTILUCCI

DAILY FIELD ACTIVITY REPORT

Report Number: 3 Project Number: 801/96-63 Date: 2/7/97

Field Log Book Page Number: _____

Project: NGC - Plant 31 - Dry Well "C" & Test Area "C" test pit remediation

Address: Stewart Ave, Bethpage NY

Weather: (AM) Mostly Sunny Rainfall: (AM) — Inches
(PM): " " (PM) — Inches

Temperature: (AM) 30's °F Wind Speed: (AM) 05 MPH Wind Direction: (AM) N
(PM) " °F (PM) " MPH (PM) "

Site Condition: Bldg. Int. - Dry, Bldg - Ext. - Dry

Personnel On Site: Name	Affiliation	Arrival Time	Departure Time
A. Postyn	NGC	8:00	9 45
M. Rauber	D&B	8:00	1 30
D. Corrigan	Blue Water Env. Inc	~8:00	~9 30
T. Spattafora	" " "	10:30	1 00
3 Laborers from	E&B Industrial	~8:00	11 45

Subcontractor Work Commencement: (AM) 8 00 (PM) _____

Subcontractor Work Completion: (AM) 1:00 pm (PM) _____

DVIRKA AND BARTILUCCI

DATE: 2/7/97

DAILY FIELD ACTIVITY REPORT

General work performed today by D&B:

- Observed NGC's Subcontractor conduct remediation activities @ the Dry Well "C" and Test Area "C" test pit w/ the excavation (Vactor truck) of soil material for future trans. & disposal off-site
- Completed all req'd field forms
- Documented, as req'd, all field activities in the project log book

List specific inspection(s) performed and results (include problems and corrective actions):

- Provided periodic inspection, on behalf of NGC, of the excavation & backfilling activities to assure compliance with the req'd scope of work

List type and location of tests performed and results (include equipment used and monitoring results):

None

Verbal comments received from subcontractor (include construction and testing problems, and recommendations/resulting action): D&B

NGC's subcontractor asked / to what depth he should backfill Dry well - D&B's response was to contact NGC. D&B did not estimate backfilling requirements D&B only est. area's & depths of excavation @ the dry well based upon analytical data.

Prepared by: M. Rambo Reviewed by: _____

DB-DFAR

DVIRKA AND BARTILUCCI

DATE: 2/7/97

DAILY FIELD ACTIVITY REPORT

Work performed today by NGC's subcontractor(s) (includes equipment and labor breakdown):

NGC's subcontractor conducted the following activities for the Plant 31 facility remediation:

- Excavated, to a depth of 5' below grade, 8 2"± ϕ blue stone & underlying soils in the test pit in Test Area "C" as req'd by the scope of work, utilizing a vac truck. Area excavated included the 4'x4' concrete opening & 1' undermined the concrete pit floor slabs – material transferred to a 40 yd³ rolloff

- Excavated, to a depth of 13' below grade, soil material within dry well "C" utilizing a vac truck. ~~as req'd by the scope of work~~ Note: ϕ of dry well / excavation ≥ 3' ~~Mat. excavated & transferred~~ to a 40yd³ rolloff.

- Backfilled excavation in test pit w/ concrete jackhammered material from pit floor & sand backfill to within 2"± from grade. Remaining 2" ~~filled~~ filled w/ hand mixed concrete to grade (i.e. resurfacing efforts completed)

- Backfilled dry well w/ sand material to within 6'± of grade or to the bottom of the dry well blocking & replaced open grate manhole cover.

Note: Contractor still required to collect, for lab analysis, at least one (1) composite soil sample from the 40 yd³ rolloff, for waste characterization purposes. In addition, rolloff fully tarped to prevent rainwater from entering

DB-DFAR

APPENDIX C

WASTE CHARACTERIZATION SAMPLING RESULTS

nytest environmental inc.
(516) 625-5500 FAX: (516) 625-1274

Chain of Custody Record

page #: ___ of ___

Client Name: Blue Water Environmental
Address: 1610 New Highway
Farmingdale, N.Y. 11735

Project Manager: Tom Spatafora
Phone: 752-2145 FAX: 249-8124
Project Name: Northrop Grumman, Bldg. 31
Project Number:
P.O. #:
Analytical Protocol: ___ Deliverables: ___
Sampled By: Brian Duggan

Login #: 30543

Ship to:
Nytest Environmental Inc.
60 Seaview Blvd
Port Washington N.Y. 11050
Attn.: Sample Control

Date Shipped:
Carrier:
Air Bill #:
Cooler #:
C of C #:
SDG #:
NEI QT #:

Analysis Requested

Lab ID (Lab Use Only)	Sample ID (Maximum of 6 Characters)	Date Sampled	Time Sampled	Sample Description	No. of Containers	RCRA Metals Method 6010	VOC's Method 8240	Semi Volatiles Method 8270	TPH Method 418.1	Cyanide Method 9010(?)	Reactivity	Corrosivity	Ignitability
01	BD0210	2/10/97		Composite, Soils		X	X	X	X	X	X	X	X

Bin #'s In/Out (For Lab Use Only)

Comments

Relinquished by:	Date / Time	Received by:	Date / Time
Print Name: Brian Duggan	2/10/97 12:10 P	Print Name:	
Relinquished by:	Date / Time	Received by:	Date / Time
Print Name:		Print Name:	
Relinquished by:	Date / Time	Received by:	Date / Time
Print Name:		Print Name:	2/10/97 12:10

Lab Use Only

Custody Seals: Intact Broken (Absent)
Sample Rec'd in Good Condition?: (Y) N
Sample Temperature: 8 Degrees Celsius
INSPECTED BY:
COMMENTS: Sample Recd in Plastic Bags.

Special Instructions:

CLIENT RETAINS YELLOW COPY ONLY

NYTEST ENVIRONMENTAL Inc.

SDG:

LABORATORY NUMBER	SAMPLE IDENTIFICATION	TYPE OF SAMPLE
3054301	BD0210	Soil

Method Qualifiers for Organic Non-CLP Methodologies

Q Qualifier - Specified entries and their meanings as follows:

U - Indicates compound was analyzed for but was not detected. The sample quantitation limit is corrected for dilutions and for the moisture content for soil samples. If a sample extract can not be concentrated to the protocol - specific volume, this fact is also accounted for in reporting the sample quantitation limit. The number is the minimum detected limits for the sample.

J - Indicates an estimated volume. The flag is used either when estimating concentration for tentatively identified compounds where a 1:1 response is assumed, or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero.

N - Indicates presumptive evidence of a compound. This flag is used only for tentatively identified compounds, where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the **N** code is not used.

B - This flag is used when the analyte is found in the analyte is found in the associated blank as well as the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. This flag is used for a TIC as well as for a positively identified target compound.

E - This flag identifies compounds whose concentrations exceeded the calibration range of the GC/MS instrument for that specific analysis.

D - This flag identifies all compounds identified in an analysis at a secondary dilution factor.

A - This flag indicates that a TIC is a suspected aldol condensation product.

Method Qualifiers for Inorganics

*** C (concentration) Qualifier -** Enter "B" if the reported value was obtained from a reading that was less than the Contract Required detection limit (CRDL) but greater than or equal to the Instrument Detection Limit (IDL). If the analyte was analyzed for but not detected, a "U" must be entered.

*** Q Qualifier -** Specified entries and their meanings as follows:

E - The reported value is estimated because of the presence of interference.

M - Duplicate precision not met (CV > 20%)

N - Spike sample recovery not within control limits.

S - The reported value was determined by Method of Standard Addition (MSA).

W - Post-digestion spike for Furnace AA analysis is out of control limits (85 - 115), while sample absorbance is less than 50% of spike absorbance.

***** - Duplicate analysis not within control limits.

+ - Correlation Coefficient for the MSA is less than 0.995.

Entering "S", "W", or "+" is mutually exclusive.

*** M (Method) Qualifier - enter:**

- "P" for ICP
- "A" for Flame AA
- "F" for Furnace AA
- "CV" for Cold Vapor AA
- "AV" for Automated Cold Vapor AA
- "AS" for Semi-Automated Spectrophotometric
- "C" for Manual Spectrophotometric
- "T" for Titrimetric
- "NR" if the analyte is not required to be analyzed.

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BD0210

Lab Name: NYTEST ENV INC Contract: 9723035

Lab Code: NYTEST Case No.: 30543 SAS No.: SDG No.: 30543

Matrix: (soil/water) SOIL Lab Sample ID: 3054301

Sample wt/vol: 5.0 (g/mL) G Lab File ID: N2540.D

Level: (low/med) LOW Date Received: 02/10/97

% Moisture: not dec. 5 Data Analyzed: 02/12/97

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	JB
67-64-1	Acetone	14	B
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U
108-05-4	Vinyl Acetate	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BD0210

Lab Name: NYTEST ENV INC Contract: 9723035

Lab Code: NYTEST Case No.: 30543 SAS No.: SDG No.: 30543

Matrix: (soil/water) SOIL Lab Sample ID: 3054301

Sample wt/vol: 5.0 (g/mL) G Lab File ID: N2540.D

Level: (low/med) LOW Date Received: 02/10/97

% Moisture: not dec. 5 Data Analyzed: 02/12/97

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 11

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	5.986	59	J
2.		UNKNOWN HYDROCARBON	18.169	83	J
3.		UNKNOWN HYDROCARBON	19.358	61	J
4.		UNKNOWN HYROCARBON	19.910	82	J
5.		UNKNOWN HYDROCARBON	20.530	66	J
6.		UNKNOWN AROMATIC	21.150	160	J
7.		UNKNOWN HYDROCARBON	22.235	84	J
8.		UNKNOWN AROMATIC	22.846	82	J
9.		UNKNOWN AROMATIC	23.834	81	J
10.		UNKNOWN	24.145	60	J
11.		UNKNOWN AROMATIC	24.939	52	J
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKN15

Lab Name: NYTEST ENV INC Contract: 9723035

Lab Code: NYTEST Case No.: 30543 SAS No.: SDG No.: 30543

Matrix: (soil/water) SOIL Lab Sample ID: VBLKN15

Sample wt/vol: 5.0 (g/mL) G Lab File ID: N2527.D

Level: (low/med) LOW Date Received: 00/00/00

% Moisture: not dec. 0 Data Analyzed: 02/11/97

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	4	J
67-64-1	Acetone	9	J
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U
108-05-4	Vinyl Acetate	10	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

VBLKN15

Lab Name: NYTEST ENV INC Contract: 9723035

Lab Code: NYTEST Case No.: 30543 SAS No.: SDG No.: 30543

Matrix: (soil/water) SOIL Lab Sample ID: VBLKN15

Sample wt/vol: 5.0 (g/mL) G Lab File ID: N2527.D

Level: (low/med) LOW Date Received: 00/00/00

% Moisture: not dec. 0 Data Analyzed: 02/11/97

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BD0210

Lab Name: NYTEST ENV INC Contract: 9723035

Lab Code: NYTEST Case No.: 30543 SAS No.: SDG No.: 30543

Matrix: (soil/water) SOIL Lab Sample ID: 3054301

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S7169.D

Level: (low/med) LOW Date Received: 02/10/97

% Moisture: not dec. 5 dec. Date Extracted: 02/12/97

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/20/97

GPC Cleanup: (Y/N) N Dilution Factor: 2.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	740	
111-44-4	bis(2-Chloroethyl)Ether	700	U
95-57-8	2-Chlorophenol	700	U
541-73-1	1,3-Dichlorobenzene	700	U
106-46-7	1,4-Dichlorobenzene	700	U
95-50-1	1,2-Dichlorobenzene	700	U
95-48-7	2-Methylphenol	700	U
108-60-1	2,2'-oxybis(1-Chloropropane)	700	U
106-44-5	4-Methylphenol	700	U
621-64-7	N-Nitroso-di-n-propylamine	700	U
67-72-1	Hexachloroethane	700	U
98-95-3	Nitrobenzene	700	U
78-59-1	Isophorone	700	U
88-75-5	2-Nitrophenol	700	U
105-67-9	2,4-Dimethylphenol	700	U
120-83-2	2,4-Dichlorophenol	700	U
120-82-1	1,2,4-Trichlorobenzene	700	U
91-20-3	Naphthalene	700	U
106-47-8	4-Chloroaniline	700	U
87-68-3	Hexachlorobutadiene	700	U
111-91-1	bis(2-Chloroethoxy)methane	700	U
59-50-7	4-Chloro-3-Methylphenol	700	U
91-57-6	2-Methylnaphthalene	73	J
77-47-4	Hexachlorocyclopentadiene	700	U
88-06-2	2,4,6-Trichlorophenol	700	U
95-95-4	2,4,5-Trichlorophenol	3500	U
91-58-7	2-Chloronaphthalene	700	U
88-74-4	2-Nitroaniline	3500	U
131-11-3	Dimethylphthalate	700	U
208-96-8	Acenaphthylene	700	U
606-20-2	2,6-Dinitrotoluene	700	U
99-09-2	3-Nitroaniline	3500	U
83-32-9	Acenaphthene	700	U

4-Methylphenol is being reported as the combination of 3 + 4 Methylphenol

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BD0210

Lab Name: NYTEST ENV INC Contract: 9723035

Lab Code: NYTEST Case No.: 30543 SAS No.: SDG No.: 30543

Matrix: (soil/water) SOIL Lab Sample ID: 3054301

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S7169.D

Level: (low/med) LOW Date Received: 02/10/97

% Moisture: not dec. 5 dec. Date Extracted: 02/12/97

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/20/97

GPC Cleanup: (Y/N) N Dilution Factor: 2.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	3500	U
100-02-7	4-Nitrophenol	3500	U
132-64-9	Dibenzofuran	700	U
121-14-2	2,4-Dinitrotoluene	700	U
84-66-2	Diethylphthalate	700	U
7005-72-3	4-Chlorophenyl-phenylether	700	U
86-73-7	Fluorene	700	U
100-01-6	4-Nitroaniline	3500	U
534-52-1	4,6-Dinitro-2-methylphenol	3500	U
86-30-6	N-Nitrosodiphenylamine (1)	700	U
101-55-3	4-Bromophenyl-phenylether	700	U
118-74-1	Hexachlorobenzene	700	U
87-86-5	Pentachlorophenol	3500	U
85-01-8	Phenanthrene	88	J
120-12-7	Anthracene	700	U
84-74-2	Di-n-butylphthalate	190	J
206-44-0	Fluoranthene	700	U
129-00-0	Pyrene	700	U
85-68-7	Butylbenzylphthalate	700	U
91-94-1	3,3'-Dichlorobenzidine	1400	U
56-55-3	Benzo(a)anthracene	700	U
218-01-9	Chrysene	700	U
117-81-7	bis(2-Ethylhexyl)phthalate	2600	
117-84-0	Di-n-octylphthalate	130	J
205-99-2	Benzo(b)fluoranthene	700	U
207-08-9	Benzo(k)fluoranthene	700	U
50-32-8	Benzo(a)pyrene	700	U
193-39-5	Indeno(1,2,3-cd)pyrene	700	U
53-70-3	Dibenz(a,h)anthracene	700	U
191-24-2	Benzo(g,h,i)perylene	700	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BD0210

Lab Name: NYTEST ENV INC Contract: 9723035

Lab Code: NYTEST Case No.: 30543 SAS No.: SDG No.: 30543

Matrix: (soil/water) SOIL Lab Sample ID: 3054301

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S7169.D

Level: (low/med) LOW Date Received: 02/10/97

% Moisture: not dec. 5 dec. Date Extracted: 02/12/97

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/20/97

GPC Cleanup: (Y/N) N Dilution Factor: 2.0

Number TICs found: 22

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN HYDROCARBON	5.301	1600	J
2.		UNKNOWN HYDROCARBON	5.688	1500	J
3.		UNKNOWN HYDROCARBON	5.881	1700	J
4.		UNKNOWN	6.144	2400	J
5.		UNKNOWN AROMATIC	8.110	2200	J
6.		UNKNOWN HYDROCARBON	11.516	1800	J
7.		UNKNOWN AROMATIC	12.411	1500	J
8.		UNKNOWN	12.639	1700	J
9.		UNKNOWN HYDROCARBON	12.990	3400	J
10.		UNKNOWN AROMATIC	13.815	3200	J
11.		UNKNOWN	20.890	4100	J
12.		UNKNOWN	21.680	1700	J
13.		UNKNOWN	23.611	4100	J
14.		UNKNOWN	25.419	18000	J
15.		UNKNOWN	26.402	21000	J
16.		UNKNOWN	27.069	4800	J
17.		UNKNOWN	27.297	20000	J
18.		UNKNOWN	27.455	2500	J
19.		UNKNOWN	28.351	2200	J
20.		UNKNOWN	29.702	5500	J
21.		UNKNOWN	30.352	3800	J
22.		UNKNOWN	30.949	4500	J
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK09

Lab Name: NYTEST ENV INC Contract: 9723035

Lab Code: NYTEST Case No.: 30543 SAS No.: SDG No.: 30543

Matrix: (soil/water) SOIL Lab Sample ID: SSB0212

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S7168.D

Level: (low/med) LOW Date Received: 00/00/00

% Moisture: not dec. 0 dec. Date Extracted:02/12/97

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/20/97

GPC Cleanup: (Y/N) N Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-di-n-propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
111-91-1	bis(2-Chloroethoxy)methane	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	1700	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	1700	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	1700	U
83-32-9	Acenaphthene	330	U

4-Methylphenol is being reported as the combination of 3 + 4 Methylphenol

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK09

Lab Name: NYTEST ENV INC Contract: 9723035

Lab Code: NYTEST Case No.: 30543 SAS No.: SDG No.: 30543

Matrix: (soil/water) SOIL Lab Sample ID: SSB0212

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S7168.D

Level: (low/med) LOW Date Received: 00/00/00

% Moisture: not dec. 0 dec. Date Extracted: 02/12/97

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/20/97

GPC Cleanup: (Y/N) N Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1700	U
100-02-7	4-Nitrophenol	1700	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	1700	U
534-52-1	4,6-Dinitro-2-methylphenol	1700	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	1700	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
84-74-2	Di-n-butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	670	U
56-55-3	Benzo(a)anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)phthalate	330	U
117-84-0	Di-n-octylphthalate	330	U
205-99-2	Benzo(b)fluoranthene	330	U
207-08-9	Benzo(k)fluoranthene	330	U
50-32-8	Benzo(a)pyrene	330	U
193-39-5	Indeno(1,2,3-cd)pyrene	330	U
53-70-3	Dibenz(a,h)anthracene	330	U
191-24-2	Benzo(g,h,i)perylene	330	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK09

Lab Name: NYTEST ENV INC Contract: 9723035

Lab Code: NYTEST Case No.: 30543 SAS No.: SDG No.: 30543

Matrix: (soil/water) SOIL Lab Sample ID: SSB0212

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S7168.D

Level: (low/med) LOW Date Received: 00/00/00

% Moisture: not dec. (dec. Date Extracted:02/12/97

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/20/97

GPC Cleanup: (Y/N) N Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

NYTEST ENVIRONMENTAL INC.

INORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

BD0210

Lab Name: NYTEST_ENV_INC Contract: 9723035

Lab Code: NYTEST Login No.: 30543 QC Report No.30543

Matrix (soil/water): SOIL
Level (low/high) : LOW
Percent Solids : 95.4

Lab Sample ID: 054301
Date Received: 02/10/97

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	1.6			P
7440-39-3	Barium	13.0	B		P
7440-43-9	Cadmium	0.92			P
7440-47-3	Chromium	8.4			P
7439-92-1	Lead	16.6			P
7439-97-6	Mercury	3.4			CV
7782-49-2	Selenium	0.39	U		P
7440-22-4	Silver	0.80	B		P

CODES :
P: ICP; F : GFAA; CV Cold Vapor; AS: Automated Spectrophotometric
Note: A "U" in the "C" (Concentration) column indicates the analyte was not detected in this sample; "B" = Sample value greater than Instrument Detection Limit, but less than reporting limit; "NR" = Not Required.

Comments:
BD0210

NYTEST ENVIRONMENTAL INC.

ANALYTICAL AND METHOD BLANK SUMMARY

Lab Name: NYTEST_ENV_INC_____ Contract: 9723035___

Lab Code: NYTEST Login No.: 30543_ QC Report No.: 30543_

Preparation Blank Matrix (soil/water): SOIL_

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Arsenic									0.410	U	P
Barium									0.570	U	P
Cadmium									0.040	U	P
Chromium									0.130	U	P
Lead									0.180	U	P
Mercury									0.045	U	CV
Selenium									0.410	U	P
Silver									0.200	U	P

NR = Analyte Not Requested

NEI Report of Analysis

General Chemistry

Client Name: Blue Water Environment
Client ID: BD0210
Lab ID: 30543-01

Date Collected: 2/10/97
Date Received: 2/10/97
Matrix: Soil
Concentration in: Dry Weight

Parameter	Reporting Limit	Units	Result	Flag	Dilution Factor	Date Prepped	Date Analyzed	Analyst Initial
orrosivity	0.01	inch/yr	0.01	U	1.00	2/19/97	2/19/97	JLG
Ignitability		Degrees F	> 212		1.00	2/19/97	2/19/97	JLG
PH	1.00	NA	11.1		1.00	2/11/97	2/11/97	MG
eactive Cyanide	1.00	ppm	1.00	U	1.00	2/19/97	2/19/97	JLG
Reactive Sulfide	1.00	ppm	1.00	U	1.00	2/19/97	2/19/97	JLG
Total Cyanide	0.52	mg/Kg	0.52	U	1.00	2/19/97	2/19/97	HW
Total Petroleum Hydrocarbons	10.5	mg/kg	1590		1.00	2/12/97	2/13/97	JLG

U: Below reporting limit
E: Above method limit
NA: Not available
NC: Not Calculable

TOTAL ANALYTICAL SERVICES FOR A SAFE ENVIRONMENT

nytest environmental inc.

March 17, 1997

Blue Water Environmental
1610 New Highway
Farmingdale, NY 11735

Attn : Tom Spatafora
Ref : Northrop Grumman, Bldg. 31
P.O. #: Pending

Nytest Environmental, Inc., is pleased to submit our Project Number 9723035 for Login Number 30742 , on your sample(s) received 02/10/97 .

We certify that this report is a true report of results obtained from our tests of this material.

Test sample(s) associated with this project will be retained for a period of thirty (30) days, unless otherwise instructed.

My staff is available to answer any questions concerning our report and we look forward to serving your future analytical needs.

Respectfully submitted,

Lori Beyer
Laboratory Director
Nytest Environmental, Inc.

Encl:
Shipped Via:

NYS Lab ID#10195
NJ Cert.#73469

box 1518 ☐ 60 seaview blvd., port washington, ny 11050 ☐ (516) 625-5500
fax (516) 625-1274

nyiest environmental
(516) 625-5500 FAX: (516) 625-1274

Chain of Custody Record

page #: ___ of ___

Client Name: Blue Water Environmental
Address: 1610 New Highway
Farmingdale, N.Y. 11735

Project Manager: Tom Spatafora
Phone: 752-2145 FAX: 249-8124
Project Name: Northrop Grumman, Bldg. 31
Project Number:
P.O. #:
Analytical Protocol: ___ Deliverables: ___
Sampled By: Brian Duggan

Login #: 30593

Ship to:
Nytest Environmental Inc.
60 Seaview Blvd
Port Washington N.Y. 11050
Attn.: Sample Control

Date Shipped: ___
Carrier: ___
Air Bill #: ___
Cooler #: ___
C of C #: ___
SDG #: ___
NEI QT #: ___

Analysis Requested

Lab ID (Lab Use Only)	Sample ID (Maximum of 6 Characters)	Date Sampled	Time Sampled	Sample Description	No. of Containers	RCRA Metals Method 6010	VOC's Method 8240	Semi Volatiles Method 8270	TPH Method 418.1	Cyanide Method 9010 (?)	Reactivity	Corrosivity	Ignitability
01	3D02LD	2/10/97		Composite, Soils		X	X	X	X	X	X	X	X

Bin #'s In/Out (For Lab Use Only)

3/11
Run Sample for TCLP Metals
Brian

Comments

GUUUUU

Relinquished by:	Date / Time	Received by:	Date / Time
Print Name: Brian Duggan	2/10/97 12:10 P	Print Name:	
Relinquished by:	Date / Time	Received by:	Date / Time
Print Name:		Print Name:	
Relinquished by:	Date / Time	Received by:	Date / Time
Print Name:		Print Name:	2/10/97

Lab Use Only

Custody Seals: Intact Broken (Absent)
Sample Rec'd in Good Condition?: (Y) N
Sample Temperature: 8 Degrees Celsius
INSPECTED BY:
COMMENTS: Sample Recd in Plastic Bag

Special Instructions: ___

CLIENT RETAINS YELLOW COPY ONLY

NYTEST ENVIRONMENTAL INC.

INORGANICS ANALYSIS DATA SHEET

SAMPLE NO. BD0210

Lab Name: NYTEST_ENV_INC Contract: 9723035

Lab Code: NYTEST Login No.: 30742 QC Report No.30742

Matrix (soil/water): WATER
Level (low/high) : LOW
Percent Solids : 0.0

Lab Sample ID: T074201
Date Received: 02/10/97

Concentration Units (ug/L or mg/kg dry weight): MG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	0.020	U		P
7440-39-3	Barium	0.57			P
7440-43-9	Cadmium	0.026			P
7440-47-3	Chromium	0.0039	U		P
7439-92-1	Lead	0.035			P
7439-97-6	Mercury	0.00047			CV
7782-49-2	Selenium	0.090	U		P
7440-22-4	Silver	0.0070	U		P

CODES :
P: ICP; F : GFAA; CV: Cold Vapor; AS: Automated Spectrophotometric
Note: A "U" in the "C" (Concentration) column indicates the analyte was not detected in this sample; "B" = Sample value greater than Instrument Detection Limit, but less than reporting limit; "NR" = Not Required.

Comments:

NEI FORM 1 - (9/93)

APPENDIX D

WASTE MANIFESTS

NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

No. 035287

If waste is asbestos waste, complete Sections I, II, III and IV.
If waste is NOT asbestos waste, complete only Sections I, II, and III.

Section I — GENERATOR (Generator completes all of Section I)

Generator Name: Grumman Corp
b. Generating Location: Same
Address: Bldg 51
Bethpage NY 11714
d. Address:
Phone No.:
f. Phone No.:
Owner of the generating facility differs from the generator, provide:
Owner's Name:
h. Owner's Phone No.:
WASTE CODE NY1167/980305/352732
Description of Waste: Soil / Sand

Containers

k. Quantity	Units	No.	TYPE
22	Y	51	T

TYPE
DM - METAL DRUM
DP - PLASTIC DRUM
B - BAG
BA - 6 MIL. PLASTIC BAG or WRAP
T - TRUCK
O - OTHER

UNITS
P - POUNDS
Y - YARDS
M³ - CUBIC METERS
Y³ - CUBIC YARDS
O - OTHER

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator Authorized Agent Name — Signature — Shipment Date 3/24/97

Section II — TRANSPORTER (Generator completes a-d: Transporter I complete e-g)

TRANSPORTER I
Name: Blue Water Environmental Inc
d. Phone No.: 516-752-2145
e. Truck No.: 495
Address: 1610 New Highway
Farmingdale NY 11735
f. Vehicle License No./State: YW 2253 NY
Acknowledgement of Receipt of Materials.
Driver Name/Title: Glenn Hartwig
Print/Type
g. Driver Signature — Shipment Date 3-27-97

Section III — DESTINATION (Generator completes a-d: destination site completes e-f)

Name: RHI Morgantown LF
c. Phone No.: 1610 286 6844
Physical Address: Mineview Dr Ext
Morgantown PA
d. Mailing Address:
Discrepancy Indication Space:
I hereby certify that the above named has been accepted and to the best of my knowledge the foregoing is true and accurate.
Name of Authorized Agent — Signature — Receipt Date 3/27/97

Section IV — ASBESTOS (Generator completes a-d,f,g. Operator* completes e)

Operator's* Name:
b. Operator's* Phone No.:
Operator's* Address:
Special Handling Instructions and additional information:

GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and governmental regulations.

Operator's* Name & Title: Print/Type — Operator's* Signature — Date
Name and Address Responsible Agency:

____ Friable; ____ Non-friable; ____ Both ____ % friable ____ % nonfriable

*Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation, or both.

RETURN TO GENERATOR

260-720B-CONT

APPENDIX E

DISPOSAL FACILITY CERTIFICATION

No: 092073

Date : 03-27-97 Time In: 07:26:25 Time Out: 09:29:16
Ticket # : 465256 CNS # : 0002659 CNS #: 0002659
Customer : BFI1424 NORTHROP GRUMMAN
Vehicle # : 000495 Trailer #: 200
NEW YORK NEW YORK STATE
Manifest # : 035287 Transporter: MIS
Source Co : Generator : NOR NORTHROP GRUMMAN
Comment : Operator: BRUCE EBERT
Scale In # : 1 Scale Out #: 2
Gross Wt : 19.43 Tare Wt: 10.98 Net Wt: 8.45 tn

Sales	Descr	Bill Qty	$/Unit	Extended
252732	FRU	8.45 TN		

Have a Nice Day!!

CONESTOGA LANDFILL
NEW MORGAN LANDFILL CO., INC.
P.O. BOX 128
MINEVIEW DRIVE EXTENSION
MORGANTOWN, PA 19543
TELEPHONE: 610/286-6844
FAX: 610/286-7048

WARNING

TRANSPORTING ANY UNAUTHORIZED HAZARDOUS WASTE TO THIS FACILITY FOR DISPOSAL IS PROHIBITED BY LAW. PERSONS VIOLATING THIS PROHIBITION ARE SUBJECT TO CIVIL AND CRIMINAL PROSECUTIONS.

SIGNATURE: _____

RECYCLED PAPER

1167 NELF 116 (3-96)

APPENDIX F

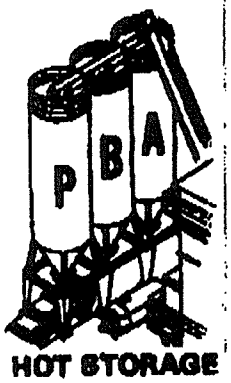
CERTIFICATION OF BACKFILL MATERIAL

Posillico Bros. Asphalt Co.

1610 New Highway, Farmingdale, NY 11735-1534

Plant Tel.: (516) 293-2620, 2621

Office Tel.: (516) 249-1872



February 28, 1997

Mr. Adam Postyn
NORTHROP GRUMMAN CORP.
South Oyster Bay Road
Bethpage, NY 11714

Reference: Building 31 - South Oyster Bay Road
Bethpage, NY

Dear Mr. Postyn:

On February 7, 1997 Blue Water Environmental, Inc. picked up a total of 14.78 tons of clean fill / sand (ticket #59282 & 59278), for your project at the above referenced location. This material, as well as all other materials for sale at Posillico Bros. Asphalt, Co. are clean materials and are free of any contamination.

If you have any questions, please do not hesitate to contact us.

Very truly yours,
POSILLICO BROS ASPHALT CO.

Michael J. Posillico

MJP/kp

END