**New York State Department of Environmental Conservation**
**Division of Environmental Remediation**
**Remedial Bureau A,11th Floor**
**625 Broadway, Albany, New York 12233-7015**
**Phone: (518) 402-9620 FAX: (518) 402-9022**

Alexander B. Grannis
Commissioner

April 9, 2007

Larry Leskovjan
Manager, Environmental Safety, Health and Medical Services
Northrop Grumman Corporation
600 Grumman Road West
Bethpage, NY 11747

RE: Former Grumman Settling Ponds, NYSDEC Nassau County Site No. 1-30-003A OU3 (Bethpage Community Park).

Dear Mr. Leskovjan:

ARCADIS and Dvirka and Bartilucci (D&B), on behalf of the Northrop Grumman Corporation (Grumman), have submitted soil boring investigative scopes of work for the former Grumman Settling Ponds (a.k.a. Bethpage Community Park) site. This work is being specified as a followup to the geophysical, membrane interface Probe (MIP) and test pit operations conducted as part of the Grumman Aerospace Operable Unit 3 (OU3) remedial investigation work plan.

The following (see also attached) were the ARCADIS and D&B submittals that comprise the ongoing and upcoming soil boring field work and detail the locations, analytical parameters and depths of the proposed soil borings:

1. ARCADIS table one and drawing one, and

2. the Supplemental Soil Boring boring table and figure one (Dvirka and Bartilucci).

This field work is being conducted in conformance with the Former Grumman Ssettling Ponds RI/FS work plan. The ARCADIS and D&B submittals have been reviewed and by means of this letter, the NYSDEC approves the soil boring program for immediate implementation. If you have any questions, please contact me directly.

Sincerely,

Steven M. Scharf

Steven M. Scharf, P.E.
Project Engineer
Remedial Bureau A
Division of Environmental Remediation

ec: J. Swartwout/S. Scharf/File
R. Rusinko, Esq.
W. Parish, Region 1 (Via E-mail)
J. Nealon, NYSDOH (Via E-mail)
J. Cofman, Northrop Grumman (Via E-mail)
M. Hofgren, D&B
D. Stern, ARCADIS
M. Russo, Town Of Oyster Bay
P. Schade, H2M Inc.
(RIFSWorkplan-asoil boring-app.wpd)

Table 1. Summary of Proposed Remedial Investigation Soil Borings, Former Grumman Settling Ponds (Operable Unit 3 - Bethpage Community Park), Bethpage, New York.

| ARCADIS Boring Identification ( | Associated DB Boring [1] | Nominal Borehole/ Well Diameter (inches) | Total Depth (ft bmp) | No. Split Spoons | Split Spoon Sampling Intervals | Proposed Laboratory Analysis [2] | Shelby Tube Interval [3] (ft bls) | Proposed Geotechnical Testing | Gamma Log | Rationale |
|---|---|---|---|---|---|---|---|---|---|---|
| **Completed Soil Borings (SB)** | | | | | | | | | | |
| ***On-Site, Primary*** | | | | | | | | | | |
| *Parking Lot* | | | | | | | | | | |
| K8-SB | None | 6 | 56 | 18 | 20 - 56 | VOCs | N | N | Y | Characterize soil VOC impacts >20 ft bls in NW Parking Lot. |
| L7-SB | None | 6 | 56 | 18 | 20 - 56 | VOCs | N | N | Y | Characterize soil VOC impacts >20 ft bls in NW Parking Lot. |
| N3-SB | None | 6 | 56 | 18 | 20 - 56 | VOCs | N | N | Y | Delineate soil VOC impacts >20 ft bls in South Parking Lot. |
| N5-SB | None | 6 | 56 | 23 | 10 - 56 | VOCs | N | N | Y | Characterize soil VOC impacts >10 ft bls in Central Parking Lot. |
| N6-SB | None | 6 | 56 | 23 | 10 - 56 | VOCs | N | N | Y | Characterize soil VOC impacts >10 ft bls in Central Parking Lot. |
| N8-SB | None | 6 | 56 | 18 | 20 - 56 | VOCs | N | N | Y | Delineate soil VOC impacts >20 ft bls in East Parking Lot. |
| P5-SB | None | 6 | 56 | 18 | 20 - 56 | VOCs | N | N | Y | Delineate soil VOC impacts >20 ft bls in North Parking Lot. |
| **Proposed Soil Borings (SB)** | | | | | | | | | | |
| ***On-Site, Primary*** | | | | | | | | | | |
| *Ballfield* | | | | | | | | | | |
| G3-SB | B-32 | 6 | 56 | 15 | 26 - 56 | VOCs | N | N | Y | Delineate western extent of source-strength soil VOC impacts. |
| I1-SB | None | 6 | 56 | 28 | 0 - 56 | VOCs | N | N | Y | Delineate southern extent of source-strength soil VOC impacts. |
| I2-SB | P-28/B-14 | 6 | 56 | 28 | 0 - 56 | VOCs | N | N | Y | Characterize southern portion of source-strength soil VOC impacts. |
| I3-SB | None | 6 | 56 | 28 | 0 - 56 | VOCs | N | N | Y | Characterize central portion of source-strength soil VOC impacts. |
| I4-SB | **B-67** | 6 | 56 | 15 | 40 - 46; 48-56 | VOCs | N | N | Y | Characterize northern portion of source-strength soil VOC impacts. |
| J2-SB | B-35 | 6 | 56 | 28 | 0 - 56 | VOCs | N | N | Y | Delineate southeastern extent of source-strength soil VOC impacts. PID Screening to 44 ft bls, with VOC samples collected continuously from 44 to 56 ft bls (water table). |
| J3-SB | B-35 | 8 | 56 | 28 | 0 - 56 | VOCs | N | N | Y | Delineate eastern extent of source-strength soil VOC impacts. PID Screening to 44 ft bls, with VOC samples collected continuously from 44 to 56 ft bls (water table). |
| ***On-Site, Contingency*** | | | | | | | | | | |
| *Parking Lot* | | | | | | | | | | |
| Q5-SB | None | 8 | 56 | 18 | 20 - 56 | VOCs | N | N | N | If needed based on P5-SB, delineate soil VOC impacts >20 ft bls in North Parking Lot. |

ARCADIS

Table 1. Summary of Proposed Remedial Investigation Soil Borings, Former Grumman Settling Ponds (Operable Unit 3 - Bethpage Community Park), Bethpage, New York.

| ARCADIS Boring Identification ( | Associated DB Boring [1] | Nominal Borehole/ Well Diameter (inches) | Total Depth (ft bmp) | No. Split Spoons | Split Spoon Sampling Intervals | Proposed Laboratory Analysis [2] | Shelby Tube Interval [3] (ft bls) | Proposed Geotechnical Testing | Gamma Log | Rationale |
|---|---|---|---|---|---|---|---|---|---|---|
| **Proposed Geotechnical Borings (GB)** | | | | | | | | | | |
| **On-Site** | | | | | | | | | | |
| I2-GB | None | 8 | 56 | 0 | 0 | N | 2-4; 10-12; 14-16; 20-22; 38-40; 48-50 | [4] | N | In general, geotechnical soil borings will be drilled and sampled to determine soil properties of sand and lower permeability soils in area exhibiting high concentrations of VOCs. |
| I3-GB | None | 8 | 56 | 0 | 0 | N | 2-4; 10-12; 14-16; 20-22; 38-40; 48-50 | [4] | N | |
| N5-GB | None | 8 | 56 | 0 | 0 | N | 2-4; 10-12; 14-16; 20-22; 38-40; 48-50 | [4] | N | |
| N6-GB | None | 8 | 56 | 0 | 0 | N | 2-4; 10-12; 14-16; 20-22; 38-40; 48-50 | [4] | N | |
| Totals: | | -- | 1064 | 324 | -- | -- | 24 | | -- | |

(1) Proposed soil boring shown in **Bold** text.

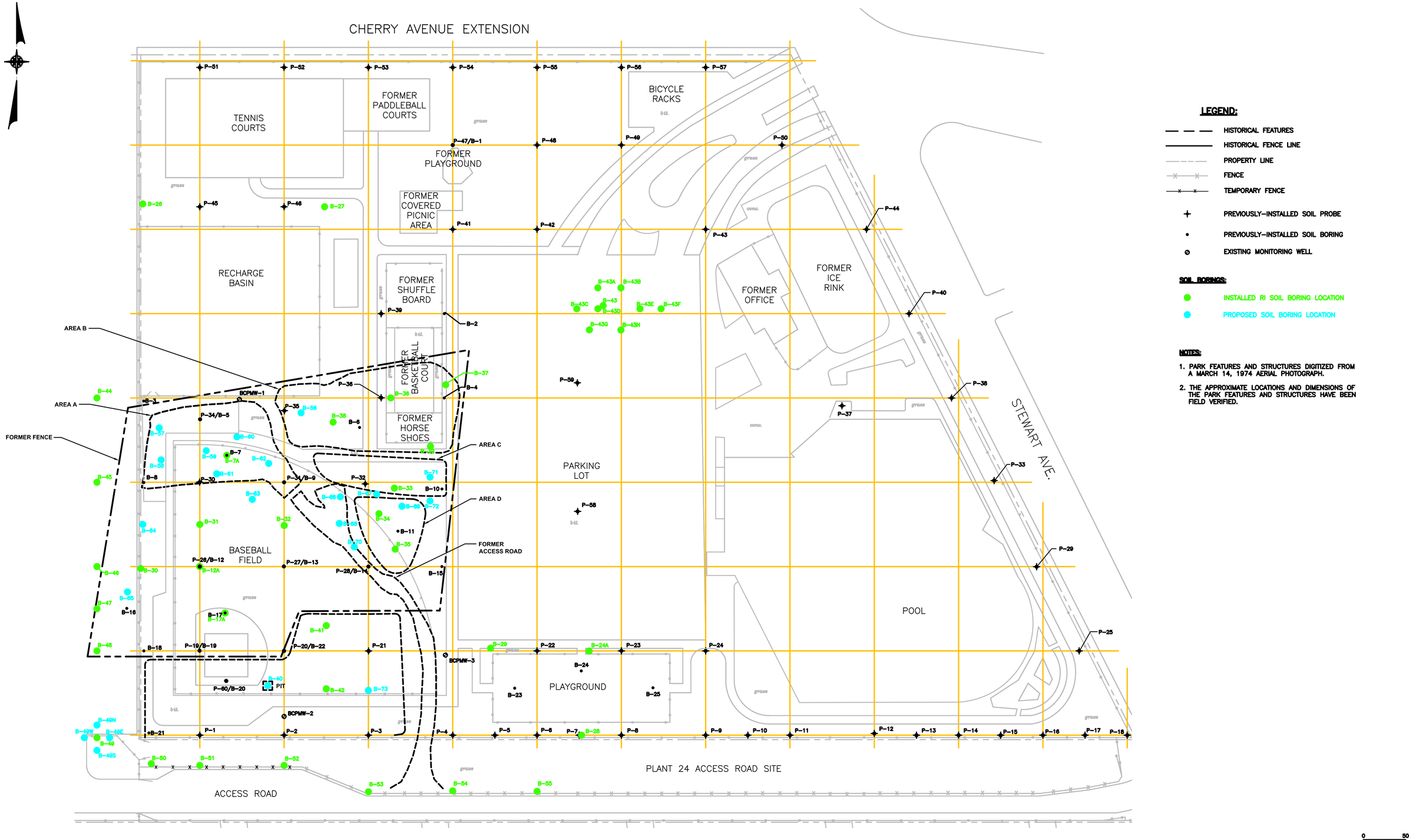
(2) The soil samples will be analyzed for VOCs using methods specified in the NYSDEC-approved April 2006 RI/FS Work Plan. See RI/FS Work Plan QAPP and FSP for additional sample collection/analytical methodology. Soil boring locations may be modified and/or additional borings may be drilled, depending on field conditions.

(3) Shelby Tube samples will be collected from sand and lower permeability soils in selected borings. Specified locations/intervals may be modified based on field conditions.

(4) Shelby Tube sample parameters and methods are specified in the NYSDEC-approved April 2006 RI/FS Work Plan.

**OPERABLE UNIT 3 – BETHPAGE COMMUNITY PARK**
**FORMER GRUMMAN SETTLING PONDS**
**PHASE 2A REMEDIAL INVESTIGATION**
**SUPPLEMENTAL SOIL BORING SCOPE OF WORK**

| Location | Boring | Rationale | Depth (ft.) | Soil Samples and Analyses |
|---|---|---|---|---|
| East of Baseball Field Infield | B-40 | Previously planned boring in southern baseball field area | 30 | 16 samples: Cr, PCBs, VOCs and PAHs |
| Western End of Plant 24 Access Road | B-49N, B-49E, B-49W and B-49S | Delineate impacts identified at B-49 | 4 | 12 samples: PCBs |
| Western Portion of Area B | B-56 | Determine soil quality in western potion of area | 20 | 11 samples: Cd, Cr, PCBs, VOCs and PAHs |
| Western Portion of Area A | B-57 and B-58 | Delineate western extent of impacts identified in TP-1 | 20 | 10 samples: Cd, Cr, PCBs, VOCs and PAHs |
| Central Portion of Area A | B-59, B-60, B-61, B-62 and B-63 | Delineate impacts identified in B-7/ B-7A, TP-2 and TP-2A | 24 | 35 samples: Cd, Cr, PCBs, VOCs and PAHs |
| West of B-31 | B-64 | Delineate impacts to the west of B-31 and to the north of B-30 | 30 | 9 samples: Cd, Cr, PCBs, VOCs and PAHs |
| North of B-16 | B-65 | Investigate presence of potential basin and determine soil quality | 12 | 6 samples: Cd, Cr, PCBs, VOCs and PAHs |
| Area D | B-66, B-67, B-68, B-69 and B-70 | Investigate/delineate impacts identified in borings, probe holes and test pits | 40 | 25 samples: Cd, Cr and PAHs<br>55 samples: PCBs and VOCs |
| Surrounding B-10 | B-71 and B-72 | Delineate impacts identified in B-10 | 16 | 18 samples: Cr, PCBs and Pb |
| East of B-42 | B-73 | Delineate impacts identified in B-42 | 20 | 7 samples: Cd, Cr, PCBs, VOCs and PAHs |




**LEGEND:**

- HISTORICAL FEATURES
- HISTORICAL FENCE LINE
- PROPERTY LINE
- FENCE
- TEMPORARY FENCE
- PREVIOUSLY–INSTALLED SOIL PROBE
- PREVIOUSLY–INSTALLED SOIL BORING
- EXISTING MONITORING WELL

**SOIL BORINGS:**

- INSTALLED RI SOIL BORING LOCATION
- PROPOSED SOIL BORING LOCATION

**NOTES:**

1. PARK FEATURES AND STRUCTURES DIGITIZED FROM A MARCH 14, 1974 AERIAL PHOTOGRAPH.
2. THE APPROXIMATE LOCATIONS AND DIMENSIONS OF THE PARK FEATURES AND STRUCTURES HAVE BEEN FIELD VERIFIED.

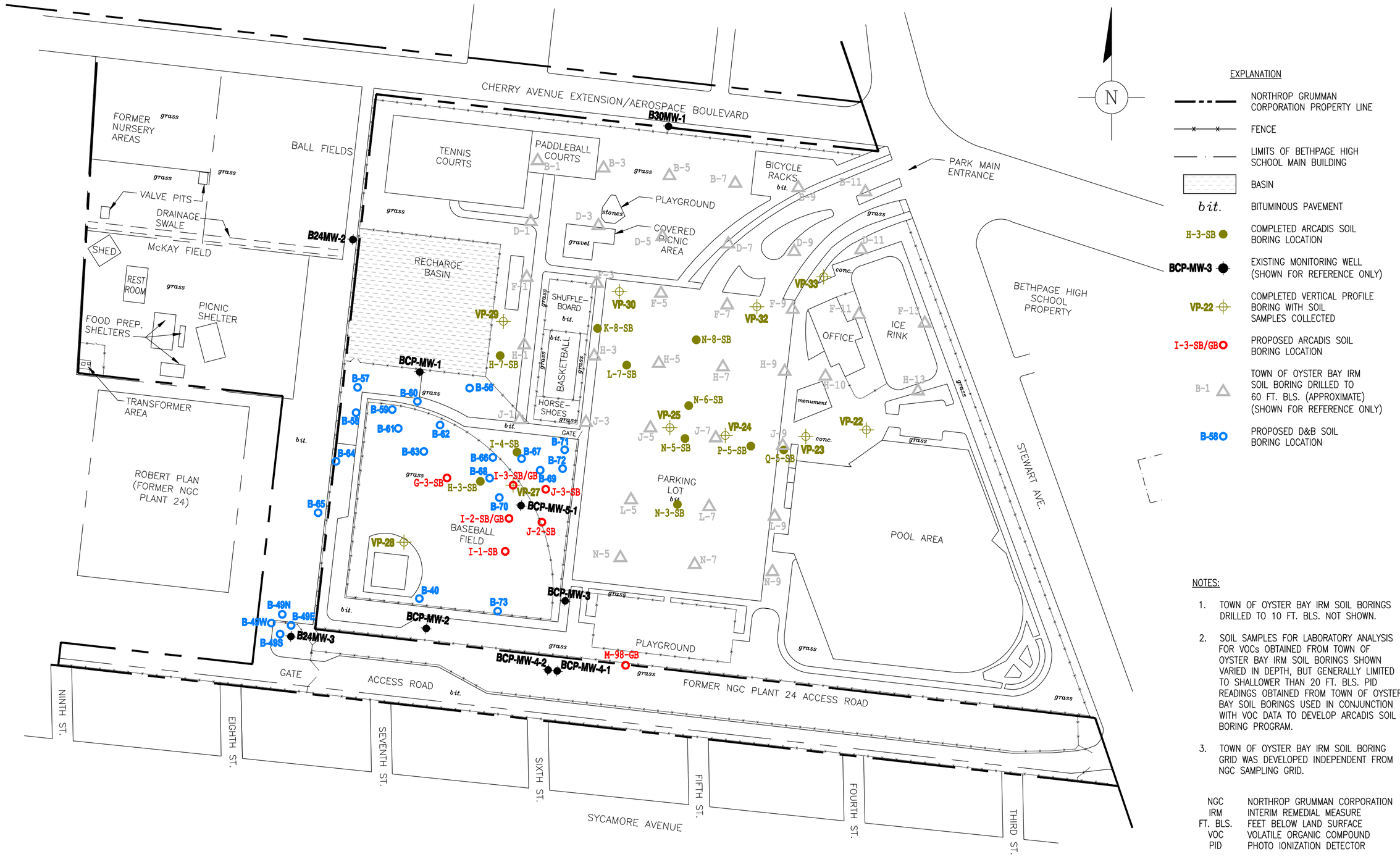
0 50
SCALE IN FEET

TOWN OF OYSTER BAY
BETHPAGE COMMUNITY PARK
BETHPAGE, NEW YORK

# REMEDIAL INVESTIGATION PROGRAM - PHASE 2A
# PROPOSED ADDITIONAL SOIL BORING LOCATIONS

Dvirka and Bartilucci
CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

FIGURE 1




EXPLANATION

- NORTHROP GRUMMAN CORPORATION PROPERTY LINE
- FENCE
- LIMITS OF BETHPAGE HIGH SCHOOL MAIN BUILDING
- BASIN
- *bit.* BITUMINOUS PAVEMENT
- H-3-SB ● COMPLETED ARCADIS SOIL BORING LOCATION
- BCP-MW-3 ● EXISTING MONITORING WELL (SHOWN FOR REFERENCE ONLY)
- VP-22 ⊕ COMPLETED VERTICAL PROFILE BORING WITH SOIL SAMPLES COLLECTED
- I-3-SB/GB○ PROPOSED ARCADIS SOIL BORING LOCATION
- B-1 △ TOWN OF OYSTER BAY IRM SOIL BORING DRILLED TO 60 FT. BLS. (APPROXIMATE) (SHOWN FOR REFERENCE ONLY)
- B-58○ PROPOSED D&B SOIL BORING LOCATION

NOTES:

1. TOWN OF OYSTER BAY IRM SOIL BORINGS DRILLED TO 10 FT. BLS. NOT SHOWN.
2. SOIL SAMPLES FOR LABORATORY ANALYSIS FOR VOCs OBTAINED FROM TOWN OF OYSTER BAY IRM SOIL BORINGS SHOWN VARIED IN DEPTH, BUT GENERALLY LIMITED TO SHALLOWER THAN 20 FT. BLS. PID READINGS OBTAINED FROM TOWN OF OYSTER BAY SOIL BORINGS USED IN CONJUNCTION WITH VOC DATA TO DEVELOP ARCADIS SOIL BORING PROGRAM.
3. TOWN OF OYSTER BAY IRM SOIL BORING GRID WAS DEVELOPED INDEPENDENT FROM NGC SAMPLING GRID.

| | |
|---|---|
| NGC | NORTHROP GRUMMAN CORPORATION |
| IRM | INTERIM REMEDIAL MEASURE |
| FT. BLS. | FEET BELOW LAND SURFACE |
| VOC | VOLATILE ORGANIC COMPOUND |
| PID | PHOTO IONIZATION DETECTOR |

**PRELIMINARY DRAFT**





| NO. | ISSUED DATE | REVISION DESCRIPTION | BY/CKD |
|---|---|---|---|
| 0 | 02-15-07 | PHASE 3 RI WORK PLAN | DS |

SEAL

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PROJECT TITLE

OPERABLE UNIT 3
FORMER GRUMMAN
SETTLING PONDS
BETHPAGE, NEW YORK

| | |
|---|---|
| PROJECT MANAGER: C. SAN GIOVANNI | DEPARTMENT MANAGER: M. WOLFERT |
| LEAD DESIGN PROF. | CHECKED BY: M. REINDL |
| SHEET TITLE: SITE PLAN SHOWING COMPLETED AND PROPOSED SOIL BORING LOCATIONS | TASK/PHASE NUMBER: 001SO |
| | DRAWN BY: A. SANCHEZ |
| | PROJECT NUMBER: NY001464.0807 |
| | DRAWING NUMBER: 1 |