Dvirka and Bartilucci
CONSULTING ENGINEERS

330 Crossways Park Drive, Woodbury, New York, 11797-2015
516-364-9890 ▪ 718-460-3634 ▪ Fax: 516-364-9045
e-mail: db-eng@worldnet.att.net

July 18, 2002

OVERNIGHT MAIL

John Cofman, P.E., Lead Engineer
Environmental Technology and Compliance
Northrop Grumman Corporation
Mail Stop: Z18-025
Bethpage, NY 11714-3582

Re: Additional Soil Sampling Program
Town of Oyster Bay Bethpage Community Park
Bethpage, New York
D&B No. 1572-06

Dear Mr. Cofman:

The purpose of this letter is document the field activities and findings associated with the Additional Soil Sampling Program undertaken within the Town of Oyster Bay Bethpage Community Park located in Bethpage, New York. Dvirka and Bartilucci Consulting Engineers (D&B) undertook this soil sampling program on behalf of Northrop Grumman Corporation (NGC) at the request of the New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH).

Background

In March 2002, a soil sampling program was undertaken within the Town of Oyster Bay Bethpage Community Park to determine whether concentrations of polychlorinated biphenyls (PCBs) detected on an adjacent NGC-owned property were also present within the park. NGC presented the analytical results of the soil sampling program to the NYSDEC and NYSDOH during a meeting on April 25, 2002.

Based on NYSDEC's and NYSDOH's review of the analytical data and subsequent site visits, NGC received a letter from the NYSDEC dated May 7, 2002 in which the NYSDEC and NYSDOH requested additional soil sampling be performed within the park. In that letter, the NYSDEC/NYSDOH requested that surface soil samples (0 to 2-inch depth interval below grade) be collected from the bocce court area, the picnic pavilion adjacent to the north playground area, the soil stockpile area and the area surrounding probe P-31. In a letter dated May 9, 2002, NGC agreed to undertake the additional soil sampling as specified in the NYSDEC's May 7, 2002 letter.

During a May 9, 2002 NYSDEC/NYSDOH meeting with the Nassau County Department of Health and the Town of Oyster Bay, it was determined that surface soil samples should be collected from some additional areas located within the Bethpage Community Park. Larry Rosenmann of the NYSDEC communicated these additional locations to NGC during a telephone call following the May 9, 2002 meeting. Based on that request, NGC agreed to collect surface soil samples from the additional locations.

As a result, based on the letters and telephone calls, the scope of the Additional Soil Sampling Program included the following:

- Two surface soil samples collected from the picnic pavilion adjacent to the north playground area from locations where exposed soil was present (samples designated as EP-20 and EP-21);
- One surface soil sample collected from the bocce court area beneath the surface cover material (sample designated as EP-22);
- One composite soil sample collected from the soil stockpiled on the new concrete pad located south of the recharge basin (sample designated as EP-23);
- Two surface soil samples collected from the picnic area located within the fenced area southwest of the pool area (samples designated as EP-24 and EP-25);
- One surface soil sample collected from a location situated midway between probes P-9 and P-24 (sample designated as EP-26);
- One surface soil sample collected in the disturbed soil area located southeast of the recharge basin (sample designated as EP-27); and,
- Twelve surface soil samples collected surrounding probe P-31: four samples collected 5 feet northeast, northwest, southeast and southwest of P-31 (samples designated as P-31NE5, P-31NW5, P-31SE5 and P-31SW5, respectively), four samples collected 10 feet north, south, east and west of P-31 (samples designated as P-31N10, P-31S10, P-31E10 and P-31W10, respectively), and four samples collected 50 feet north, south,

east and west of P-31 (samples designated as P-31N50, P-31S50, P-31E50 and P-31W50).

It should be noted that NGC decided that the eight surface soil samples collected 10 feet and 50 feet from probe P-31 would be placed "on-hold" at the laboratory and only analyzed if the results of the PCB analyses performed on the four surface soil samples collected 5 feet from probe P-31 exceeded 1 mg/kg.

In accordance with the Town of Oyster Bay Bethpage Community Park, Soil Sampling Program, Site-Specific Work Plan dated February 2002, surface soil samples were collected from the 0 to 2-inch depth interval below grade.

In addition, it was determined that a representative of NYSDEC and the Town of Oyster Bay's consultant (Gannett Fleming Engineers and Architects, P.C. [Gannett Fleming]) would split samples with D&B during the course of the Additional Soil Sampling Program for analysis. While Gannett Fleming split all soil samples collected by D&B, the NYSDEC only split soil samples from certain predetermined locations.

Field Activities

At the request of NGC, on May 14, 2002, D&B undertook the Additional Soil Sampling Program within the Town of Oyster Bay Bethpage Community Park. During the course of the field program, D&B utilized the Quality Assurance Project Plan (QAPP) and Site-Specific Health and Safety Plan presented in the NYSDEC/NYSDOH-approved Site-Specific Work Plan dated February 2002.

At each sampling location, a consensus was reached by representatives of D&B, Gannett Fleming and the NYSDEC as to where the soil samples should be collected. In general, with the exception of the soil samples collected surrounding P-31 which had specific predetermined locations based on measurements, areas where soil disturbance resulting from human activity were selected. Following location selection, soil was collected from the 0 to 2-inch depth interval below grade utilizing a disposable plastic scoop and placed in a resealable plastic bag. Once in the bag, the sample was homogenized by mixing the sealed bag by hand. Subsequent to homogenization, the samples were extracted utilizing a plastic spoon, one spoonful at a time, and placed into D&B's jar, followed by Gannett Fleming's jar followed by the NYSDEC's jar. This procedure was repeated until each jar was full which ensured representative samples in each split. All soil samples collected by D&B were placed in pre-cleaned laboratory-supplied sample jars, labeled, placed on ice and packed into a cooler for delivery to the laboratory. All samples were denoted by the sample identification nomenclature mentioned previously.

Following sample collection in each location, all disposable sampling equipment was properly discarded following its one time use. Non-disposable sampling equipment was not utilized during this sampling program. Next, the location from where each surface soil sample was collected was measured and noted on a sketch. A figure showing the locations from which all surface soil samples were collected during the Additional Soil Sampling Program undertaken on May 14, 2002 within the Bethpage Community Park is shown on Figure 1 presented as Attachment 1 to this letter.

In total, 20 surface soil samples were collected by D&B during the Additional Soil Sampling Program for laboratory analyses. In addition, one set of matrix spike and matrix spike duplicate samples (MS/MSDs) were collected for quality assurance/quality control purposes. All soil samples collected by D&B during this program were analyzed for PCBs. The laboratory utilized to perform the laboratory analyses on the soil samples (Mitkem Corporation) participates in the NYSDOH Environmental Laboratory Approval Program. As noted previously, surface soil samples P-31N10, P-31S10, P-31E10, P-31W10, P-31N50, P-31S50, P-31E50 and P-31W50 were sent to the laboratory and placed "on hold" awaiting an evaluation of the laboratory analyses of the soil samples collected from the 5-foot radius.

It should be noted that, surface soil sample P-31N50 was relocated three feet to the north since its original location fell on an asphalt path. Figure 1 presented as Attachment 1 shows the correct location of sample P-31N50.

As discussed previously, Gannett Fleming, on behalf of the Town of Oyster Bay, split all of the surface soil samples collected by D&B during this field program. The NYSDEC only split the following seven surface soil samples with D&B: EP-20, EP-21, EP-25, EP-26, P-31N50S1, P-31S50S1 and P-31E10S1.

Findings

The analytical results obtained from the laboratory for the surface soil samples collected from within the Bethpage Community Park during the Additional Soil Sampling Program are summarized on the table provided in Attachment 2 to this letter. All of the analytical results of the soil samples were compared to the Recommended Soil Cleanup Objective listed in the NYSDEC's Technical and Administrative Guidance Memorandum (TAGM) No. 4046 – "Determination of Soil Cleanup Objectives and Cleanup Levels." As noted in TAGM 4046, the Recommended Soil Cleanup Objective for Total PCBs in surface soil is 1 mg/kg.

All total PCB analytical results of the surface soil samples collected during this program were determined to be below 1 mg/kg with the exception of EP-27, which was collected from a location southeast of the recharge basin. Total PCBs were detected at a concentration of 3.5 mg/kg in sample EP-27 which exceeds the Recommended Soil Cleanup Objective of 1 mg/kg.

It should be noted that, since none of the four surface soil samples collected from the 5-foot radius surrounding P-31 exceeded 1 mg/kg, none of the on-hold samples collected from the 10-foot and 50-foot radii surrounding P-31 were analyzed.

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

Very truly yours,

Richard M. Walka
Vice President

RMW/BMV/MRHt/jmy
Attachment
cc: B. Veith (D&B)
♦1572\RMW07152JC.DOC

ATTACHMENT 1

SURFACE SOIL SAMPLE LOCATION PLAN

CHERRY AVENUE EXTENSION

FORMER NURSERY AREAS

BALL FIELDS

grass

VALVE PITS

DRAINAGE SWALE

McKAY FIELD

SHED

RESTROOM

FOOD PREP. SHELTERS

PICNIC SHELTER

TRANSFORMER AREA

FORMER PLANT 24

TENNIS COURTS

PADDLEBALL COURTS

PLAY–GROUND

stones

gravel

EP–20

EP–21

COVERED PICNIC AREA

RECHARGE BASIN

EP–22

SHUFFLE–BOARD

BASKETBALL

HORSESHOES

bit.

EP–23

EP–27

P–31N50

P–31N10

P–31W50

P–31NW5

P–31NE5

P–31E50

P–31W10

P–31E10

P–31SW5

P–31SE5

P–31S10

P–31S50

BASEBALL FIELD

PARKING LOT

BICYCLE RACKS

conc.

OFFICE

ICE RINK

STEWART AVE.

POOL

EP–25

EP–24

EP–26

PLAYGROUND

wood chips

PLANT 24 ACCESS ROAD SITE

ACCESS ROAD

NINTH ST.

EIGHTH ST.

SEVENTH ST.

SIXTH ST.

FIFTH ST.

FOURTH ST.

THIRD ST.

SYCAMORE AVENUE

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.

LEGEND:

- PROPERTY LINE
- FENCE
- TEMPORARY FENCE
- EXPOSURE POINT SAMPLING LOCATION (COLLECTED FROM THE 0–2" DEPTH INTERVAL)
- SURFACE SOIL SAMPLING LOCATION (COLLECTED FROM THE 0–2" DEPTH INTERVAL)

0 50' 100'
SCALE: 1"=50'

NO.	DATE	REVISION	INT.
---	05/02	ORIGINAL DRAWING	M.R.H.

PROJECT ENGINEER:	DRAWN BY:
B.M.V.	L.V.G.
DESIGNED BY:	CHECKED BY:
M.R.H.	B.M.V.

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

NORTHROP GRUMMAN CORPORATION
BETHPAGE FACILITY
BETHPAGE, NEW YORK

TOWN OF OYSTER BAY
BETHPAGE COMMUNITY PARK
ADDITIONAL SOIL SAMPLING PROGRAM
SURFACE SOIL SAMPLE LOCATION PLAN

PROJECT NO.: 1572–06
DATE: JULY 2002
SCALE: AS NOTED
DRAWING NO.: 1

ATTACHMENT 2

SAMPLE LABORATORY RESULTS

TABLE 1
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
ADDITIONAL SOIL SAMPLING PROGRAM
POLYCHLORINATED BIPHENYLS

SAMPLE LOCATION	Covered Picnic Area		Bocce Court	Soil Pile	Pool Picnic Area			
SAMPLE IDENTIFICATION	EP-20	EP-21	EP-22	EP-23	EP-24	EP-25	CONTRACT REQUIRED DETECTION LIMIT	RECOMMENDED SOIL CLEANUP OBJECTIVES
SAMPLE DEPTH	0 - 2"	0 - 2"	0 - 2"	0 - 2"	0 - 2"	0 - 2"		
DATE OF COLLECTION	5/14/02	5/14/02	5/14/02	5/14/02	5/14/02	5/14/02		
DILUTION FACTOR	1	1	1	1	1	1		
PERCENT SOLIDS	96	92	91	84	82	84		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Aroclor-1016	U	U	U	U	U	U	0.033	---
Aroclor-1221	U	U	U	U	U	U	0.067	---
Aroclor-1232	U	U	U	U	U	U	0.033	---
Aroclor-1242	U	U	U	U	U	U	0.033	---
Aroclor-1248	U	0.340	U	0.100	0.310	0.750	0.033	---
Aroclor-1254	U	U	U	U	U	U	0.033	---
Aroclor-1260	U	U	U	U	U	U	0.033	---
TOTAL PCBs	0	0.340	0	0.100	0.310	0.750		1/10 *

Qualifiers:
U: Constituent analyzed for but not detected.
P: Concentration estimated, possibly biased low since primary and confirmation column concentrations had a percent difference >40%; lower value reported.

Notes:
--- : Not established.
* : Recommended Soil Cleanup Objective is 1 mg/kg for surface soil and 10 mg/kg for subsurface soil.
: Value exceeds the Recommended Soil Cleanup Objective.

TABLE 1 (continued)
NORTHROP GRUMMAN CORPORATION
TOWN OF OYSTER BAY BETHPAGE COMMUNITY PARK
ADDITIONAL SOIL SAMPLING PROGRAM
POLYCHLORINATED BIPHENYLS

SAMPLE LOCATION	Between P-9/24	SE of Rec. Bas.	Surrounding Probe P-31					
SAMPLE IDENTIFICATION	EP-26	EP-27	P-31 NE5 S1	P-31 NW5 S1	P-31 SE5 S1	P-31SW5 S1	CONTRACT REQUIRED DETECTION LIMIT	RECOMMENDED SOIL CLEANUP OBJECTIVES
SAMPLE DEPTH	0 - 2"	0 - 2"	0 - 2"	0 - 2"	0 - 2"	0 - 2"		
DATE OF COLLECTION	5/14/02	5/14/02	5/14/02	5/14/02	5/14/02	5/14/02		
DILUTION FACTOR	1	10	1	1	1	1		
PERCENT SOLIDS	82	81	69	70	61	65		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Aroclor-1016	U	U	U	U	U	U	0.033	---
Aroclor-1221	U	U	U	U	U	U	0.067	---
Aroclor-1232	U	U	U	U	U	U	0.033	---
Aroclor-1242	U	U	U	U	U	U	0.033	---
Aroclor-1248	0.980	3.500	0.420	0.460	0.630	0.360	0.033	---
Aroclor-1254	U	U	U	U	U	U	0.033	---
Aroclor-1260	U	U	U	U	U	U	0.033	---
TOTAL PCBs	0.980	**3.500**	0.420	0.460	0.630	0.360		1/10 *

Qualifiers:
U: Constituent analyzed for but not detected.
P: Concentration estimated, possibly biased low since primary and confirmation column concentrations had a percent difference >40%; lower value reported.

Notes:
--- : Not established.
* : Recommended Soil Cleanup Objective is 1 mg/kg for surface soil and 10 mg/kg for subsurface soil.
[ ] : Value exceeds the Recommended Soil Cleanup Objective.