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ENVIRONMENT

Mr. Steven Scharf, P.E.
New York State Department of Environmental Conservation (NYSDEC)
Division of Environmental Remediation
625 Broadway
Albany, New York 12233-7015

Subject:
Phase 2 Remedial Investigation Work Plan Addendum No. 4, Former Grumman Settling Ponds (Operable Unit 3, - Bethpage Community Park), Bethpage, New York.

Date:
August 7, 2006

Contact:
David Stern

Phone:
631-391-5284

Email:
dstern@arcadis-us.com

Our ref:
NY001348.0806.00003

Dear Mr. Scharf:

ARCADIS has prepared this Work Plan Addendum No. 4 for Phase 2 of the Remedial Investigation (RI) at the Former Grumman Settling Ponds (Operable Unit 3 – Bethpage Community Park), Bethpage, New York Site. This Work Plan Addendum No. 4 presents the rationale and scope for drilling, installing, developing, and sampling of an initial pair of permanent monitoring wells on the Northrop Grumman Plant 24 Access Road property, adjacent to the Bethpage Community Park. The NYSDEC-approved revised RI/FS Work Plan, dated March 8, 2006, is incorporated herein by reference and contains additional information as to the goals and objectives of the overall RI. The following sections provide the rationale and scope of the work proposed under this RI Work Plan Addendum.

Rationale

Table 1 provides the details and rationale for the proposed monitoring wells. The monitoring wells will be located near Phase 2 RI vertical profile boring (VPB) VPB-3C for the following reasons: better quantify volatile organic compounds (VOCs) in groundwater at the Northrop Grumman Plant 24 Access Road southern boundary and develop local groundwater quality data trends. Figure 1 depicts the location of the proposed wells and completed VPB-3C, total VOC concentrations in groundwater from VPB-3C, and nearby site features.

Scope of Work

Two monitoring wells (BCP-MW4-1 and BCP-MW4-2) will be drilled, installed, developed, and sampled. Well BCP-4-1 will be installed to straddle the water table (approximately 55 ft bls); Well BCP-MW4-2 will be installed to intersect the highest VOC concentrations in groundwater at the site boundary (see Figure 1). The

monitoring wells will be drilled, installed, developed and sampled consistent with NYSDEC-approved protocols.

Beginning one week subsequent to completion of development, groundwater from the wells will be sampled by ARCADIS on a varying frequency (dependent on the data obtained) for the Target Compound List of VOCs using analytical protocols consistent with the NYSDEC-approved RI/FS Work Plan (the list of analytes may be modified, depending on future data needs). The monitoring well construction information and groundwater data obtained will be incorporated into the RI Report.

Schedule

ARCADIS' objective is to begin monitoring local groundwater quality (via collection of groundwater samples from the newly installed wells) as soon as possible. We expect well drilling to commence on August 8, 2006. Assuming the wells are completed on or about August 16, 2006, we expect that the first groundwater sampling event will occur on August 23, 2006. ARCADIS will notify the NYSDEC in advance of groundwater sample collection.

We appreciate NYSDEC expedited review of this work plan addendum. If you have any questions, please feel free to contact us.

Sincerely,

ARCADIS G&M, Inc.

David E. Stern
Senior Hydrogeologist

Carlo San Giovanni
Project Manager

Enclosures

Copies:
Michael F. Wolfert, ARCADIS
John Cofman, Northrop Grumman Corporation
Larry Leskovjan, Northrop Grumman Corporation

Table 1. Construction and Sampling Specifications for Proposed Permanent Monitoring Wells and Rationale, Former Grumman Settling Ponds (Operable Unit 3 - Bethpage Community Park), Bethpage, New York.

Monitoring Well Identification	Drilling Method	Gamma Logging	Split Spoon Sampling	Proposed Casing/Screen Diameter and Material	Proposed Screen Slot Size	Proposed Screen Interval (ft bls)	Proposed Total Depth (ft bls) [1]	Proposed Monitoring Activity			Proposed Groundwater Analysis [2]	Rationale/Objective [3]
								NAPL Gauging	Water Levels	Sampling		
BCP-MW4-1	H.S.A	--	--	4-inch Ø Schedule 40 PVC	0.01	45 - 65	70	√	√	√	VOC	- Although NAPL has not been found to-date, concentrations of VOCs in soil and groundwater in nearby VPBs suggest that NAPLs may be present. - The groundwater VOC data along the Plant 24 Access Road indicate that the highest VOC concentrations were detected at VP-3C (downgradient of the former Rag Pit). - Local hydraulic information indicates a seasonal variation in water-table depth of approximately 5 ft. Well BCP-MW4-1 will intercept the water table (accounting for seasonal variations) and will be used to monitor water-table VOC concentrations and for the presence of NAPL along the NGC Plant 24 Access Road. - Well BCP-MW4-2 will be installed to intersect and monitor the highest concentrations of VOCs in groundwater and monitor for the presence of NAPL along the NGC Plant 24 Access Road. - The information obtained from this effort will be incorporated into the overall RI Report.
BCP-MW4-2	H.S.A	√	--	4-inch Ø Schedule 40 PVC	0.01	70 - 85	90	√	√	√	VOC	

Footnotes:

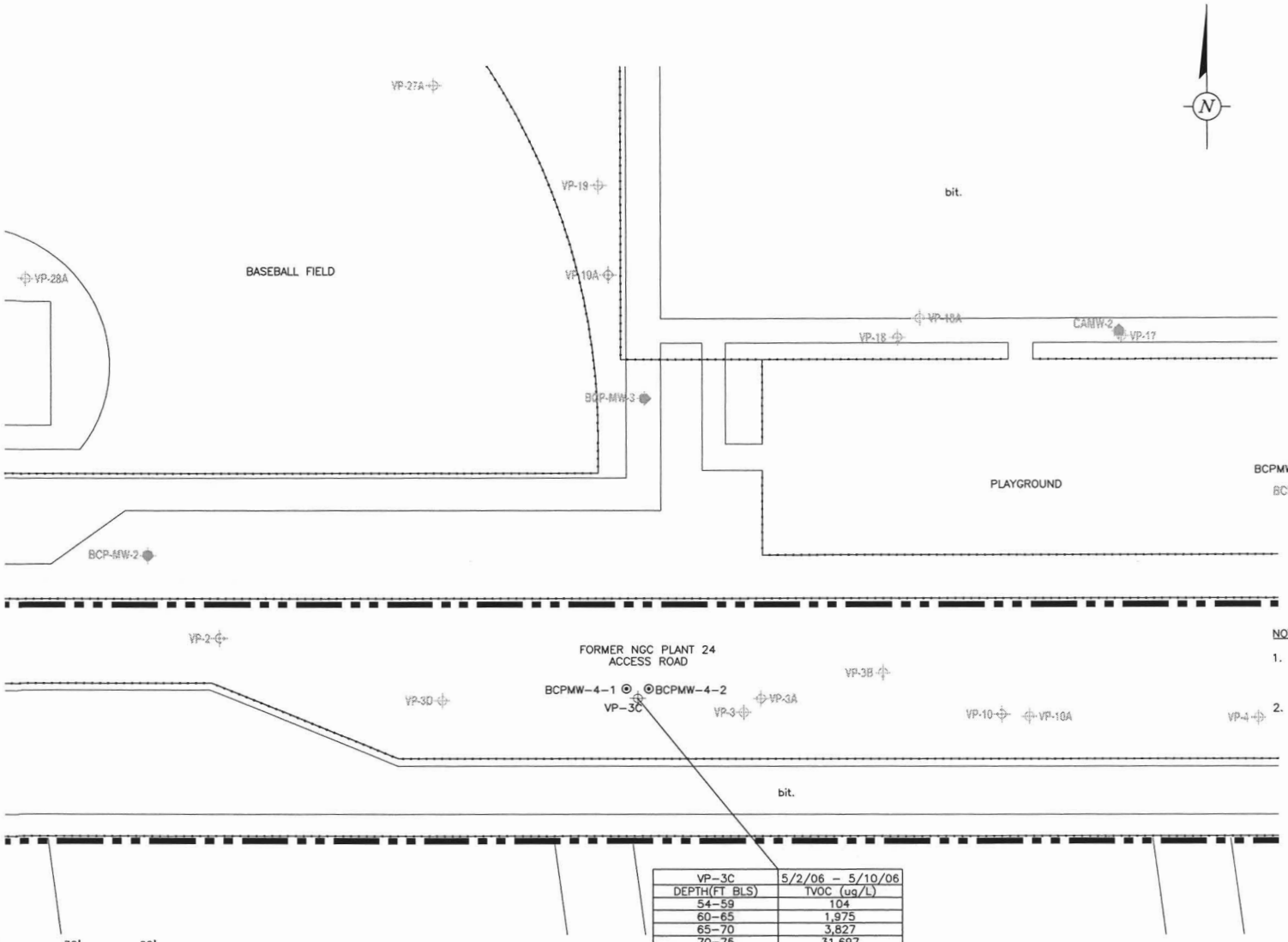
(1) Wells will be installed with a 5-ft length of PVC below the screem to serve as a sump.

(2) Laboratory analysis of groundwater samples shall be performed using one or more of the following methods (see Revised RI/FS Work Plan QAPP - Appendix B for details). VOCs: TCL List of VOCs using NYSDEC ASP 2000 Method OLM 4.2.

(3) Wells will be developed no sooner than 24 hours after installation using a submersible pump. Investigation derived waste will be managed in a manner consistent with the provisions of the NYSDEC-approved RI/FS Work Plan.

Definitions:

H.S.A	Hollow-Stem Auger
ft bls	feet below land surface
QAPP	Quality Assurance Project Plan
NAPL	Non-Aqueous Phase Liquid
VOC	Volatile Organic Compound
PVC	Polyvinyl Chloride
Ø	inner diameter
√	Activity will be performed
--	Activity will NOT be performed



EXPLANATION

— · —	NORTHROP GRUMMAN CORPORATION PROPERTY LINE
———	FENCE
bit.	BITUMINOUS PAVEMENT
BCPMW-4-1 ⊙	PROPOSED MONITORING WELL
BCP-MW-3 ◆	EXISTING MONITORING WELL
VP-1 ⊕	COMPLETED VERTICAL PROFILE BORING (BY ARCADIS)
ug/L	MICROGRAMS PER LITER
TVOC	TOTAL VOLATILE ORGANIC COMPOUND

NOTES:

1. LOCATIONS OF WELLS INSTALLED BY THE TOWN OF OYSTER BAY ARE BASED ON THE 2005 REPORTS, LOCATIONS ARE APPROXIMATE (H2M 2005a;b).
2. PROPOSED WELL LOCATIONS SUBJECT TO FIELD VERIFICATION AND MAY BE MODIFIED.

VP-3C	5/2/06 – 5/10/06
DEPTH(FT BLS)	TVOC (ug/L)
54–59	104
60–65	1,975
65–70	3,827
70–75	31,697
75–80	12,294
80–85	23,143
85–90	2,911
90–95	244
95–100	64
105–110	12
115–120	4

0 30' 60'

SCALE IN FEET

BASE MAP REFERENCE
DVIRKA AND BARTILUCCI
CONSULTING ENGINEERS 2003

NO.	DATE	REVISION DESCRIPTION	BY / CKD
0	8/4/06	WORK PLAN ADDENDUM NO.4	DES

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PROJECT TITLE
OPERABLE UNIT 3
FORMER GRUMMAN
SETTLING PONDS
BETHPAGE, NEW YORK

PROJECT MANAGER	DEPARTMENT MANAGER	LEAD DESIGNER	CHECKED BY
C. SAN GIOVANNI	M. WOLFERT		D. STERN

SHEET TITLE
SITE PLAN SHOWING
PROPOSED WELL LOCATIONS

TASK/PHASE NUMBER	DRAWN BY
00003	A. SANCHEZ
PROJECT NUMBER	DRAWING NUMBER
NY001348.0806	1