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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. 2, Former Grumman Settling Ponds (Operable Unit 3, - Bethpage Community Park), Bethpage, New York.

Date:
June 9, 2006

Contact:
David Stern

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Our ref:
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Dear Mr. Scharf:

ARCADIS has prepared this Work Plan Addendum No. 2 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. 1 presents the rationale and scope for additional groundwater vertical profile borings (VPBs) to be drilled and sampled on the Bethpage Community Park and on adjacent Northrop Grumman property. 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 (enclosed) provides the details of the proposed additional VPBs along with the detailed rationale. In general, the additional VPBs will be drilled and sampled to better define the nature and extent of source strength volatile organic compounds (VOCs) in groundwater at and near the Northrop Grumman Plant 24 Access Road Site southern boundary, as well as gather additional information on the Park property toward design of a potential Interim Remedial Measure (IRM) for groundwater. Figure 1 depicts existing and former site features, completed wells and VPBs, and the proposed locations of the additional VPBs.

Scope of Work

A maximum of 13 additional VPBs will be drilled and sampled (see Table 1 and Figure 1). The majority of the additional VPBs will be drilled adjacent to Phase 1 RI VPBs to fill data gaps in shallow groundwater to an depth of approximately 20 ft

below the water table (estimated at 55 ft bls). The number and location of additional VPBs drilled and sampled may be modified, as data are obtained, to achieve the objectives. Initially, VPBs VP-12A, VP-18A, and VP-28A will be drilled and sampled. Following receipt and evaluation of the VOC analytical data from the laboratory (on a 24-hr turnaround time) the need for additional VPBs will be determined and contingency VPBs VP-2A, VP-4A, and/or VP-10A may be drilled and sampled. VPBs VP-14A, VP-15A, VP-16A, VP-23A, VP-34, VP-35, and VP-36 will be drilled as pre-design VPBs to gather additional shallow groundwater data toward design of a potential IRM. For locations of VPBs that will be drilled adjacent to Phase 1 RI VPBs (i.e., location designated with an "A"), soil sampling and geophysical logging will not be performed; geophysical logging (using the natural gamma method) will be performed for VPBs VP-34, VP-35, and VP-36. The additional VPBs will be drilled, sampled, and abandoned using the hollow-stem auger/temporary well method, as described in the revised RI/FS Work Plan.

Related sampling and analysis activities will be performed consistent with the Sampling and Analysis Plan (SAP), located in Appendices A through D of the revised RI/FS Work Plan. In addition to the above, the components of the SAP are also consistent with the requirements of NYSDEC Draft DER-10 Technical Guidance for Site Investigation and Remediation (NYSDEC 2002).

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

Copies:
John Cofman, Northrop Grumman Corporation
Larry Leskovjan, Northrop Grumman Corporation

Table 1. Summary of Proposed Additional On-Site Phase 2 Vertical Profile Borings and Rationale, Former Grumman Settling Ponds (Operable Unit 3 - Bethpage Community Park), Bethpage, New York.

Activity	Proposed Sample ID	Proposed Total Depth (ft bls)	Proposed Groundwater Sampling Intervals (ft bls)	Proposed Groundwater Analysis	General Rationale
Pre-Design VPBs	VP-14A	75	50-55 55-60 60-65 70-75	VOC(1)	Drilling of VPBs VP-14A, VP-15A, and VP-16A will be performed to horizontally and vertically delineate source strength VOCs in groundwater at the water table at the site southern boundary downgradient of Monitoring Well CAMW-3 and VPBs VP-23 and VP-24, as appropriate.
	VP-15A	65	50-55 55-60 60-65	VOC(1)	
	VP-16A	65	50-55 55-60 60-65	VOC(1)	
	VP-23A	67	57-62 62-67	VOC(1)	Drilling at VPBs VP-23A, VP-34, VP-35, and VP-36 will be performed to delineate the on-site extent of the potential source area near CAMW-3 and VPBs VP-23 and VP-24.
	VP-34	67	57-62 62-67	VOC(1)	
	VP-35	67	52-57 57-62 62-67	VOC(1)	
	VP-36	67	52-57 57-62 62-67	VOC(1)	

Footnotes:

(1) 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.

Definitions:

ft bls	feet below land surface
VPB	Vertical Profile Boring
QAPP	Quality Assurance Project Plan

Table 1. Summary of Proposed Additional On-Site Phase 2 Vertical Profile Borings and Rationale, Former Grumman Settling Ponds (Operable Unit 3 - Bethpage Community Park), Bethpage, New York.

Activity	Proposed Sample ID	Proposed Total Depth (ft bls)	Proposed Groundwater Sampling Intervals (ft bls)	Proposed Groundwater Analysis	General Rationale
Primary VPBs					
	VP-28A	55	50-55	VOC[1]	Previous data indicate that close proximity to the source area at the site results in marked varibility in VOC concentrations over short distances (laterally and vertically). Groundwater VOC data indicate that the highest concentrations were detected at the water table (i.e., 55 ft bls), with source strength VOC concentrations in some cases extending to 15 ft into the water table. The goal of the proposed additional VPBs will be to vertically and horizontally delineate water table source-strength VOC concentrations. In the eastern portion of the site, Well CAMW-3 and VPBs VP-23 and VP-24 indicate elevated TVOC concentrations (close to or above 1 mg/L) at the water table. Additionally, the highest TVOC concentration in VP-12 was detected at a shallower depth than the highest TVOC concentrations from upgradient VP-23 and VP-24. Therefore, VP-12A will be installed at downgradient southern boundary to determine if source strength VOCs are present at the water table at the southern boundary.
	VP-18A	65	50-55 55-60 60-65	VOC[1]	
	VP-12A	70	50-55 55-60 60-65 70-75	VOC[1]	
Contingency VPBs					
	VP-2A	65	50-55 55-60 60-65	VOC[1]	Drilling of VPBs VP-2A, VP-4A, and VP-10A will be performed contingent on VOC concentrations detected in VP-28A and VP-18A, as appropriate, to delineate source strength VOCs in groundwater at the water table. If source strength VOCs are found in VP-18A, then VP-10A and, if necessary, VP-4A would be drilled. VP-2A would be drilled if source strength concentrations are found in VP-28A.
	VP-10A	65	50-55 55-60 60-65	VOC[1]	
	VP-4A	65	50-55 55-65 60-65	VOC[1]	

see notes on last page