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To: Mr. Kevin Whalen
IBM Corporate Environmental Affairs

From: Sanborn, Head & Associates, Inc.
Allan H. Horneman, Dr.Eng.Sci., Project Manager
Daniel B. Carr, P.E., Vice President

File: 2400.00

Date: April 7, 2008

Re: April 2008 Work Plan Amendment
Brownfield Cleanup Program (BCP) Remedial Investigation (RI)
Former Burn Pit Area – IBM Gun Club
BCP #C704044
Union, New York

cc: File

INTRODUCTION AND BACKGROUND

Sanborn, Head & Associates, Inc. (SHA) has prepared this Work Plan Amendment for the BCP RI focused on the former Burn Pit Area. It is intended to describe additional RI work to be initiated in April 2008. We understand that IBM will forward this Amendment to the New York State Department of Environmental Conservation (NYSDEC) as a part of the March 2008 monthly report.

SHA and IBM met with representative of NYSDEC and New York State Department of Health (Agencies) on April 2, 2008 to discuss project status and a conceptual scope for additional RI investigations. In this meeting we presented and discussed the findings of the site reconnaissance, wet area sampling, and rock probe work completed in late January through early March 2008 under a Work Plan amendment submitted to the Agencies on January 17, 2008 and approved on February 7, 2008.

The data from this initial field investigation work on the Binghamton Country Club (the country club) property was intended to provide a basis for siting bedrock borings and monitoring well installations. In turn, the groundwater quality data from the monitoring wells

and rock probe borings will be used to select locations for rock core sampling and analysis. The work will be completed using methodologies consistent with those outlined in the approved March 2006 RI Work Plan[1] (Work Plan), and consistent with prior investigation phases on the Gun Club property.

The number, locations, and rationale for the monitoring wells were presented to and discussed with the country club at an April 3, 2008 meeting, and subsequently the Country Club agreed to let IBM move forward with the work.

SCOPE OF WORK

Drilling and Installation of Bedrock Monitoring Wells

IBM is proposing to drill and install monitoring wells at 11 locations on the country club property and one additional location on the Gun Club property. The planned locations of the monitoring wells are shown on the attached figure. The majority of the wells are intended to screen the uppermost highly fractured bedrock that has been shown to represent the zone of primary transport in groundwater. Based on prior observed fracture patterns, the depth of these wells is expected to be on the order of 15 to 20 feet. At two locations (BP-20 and BP-27) deeper companion wells, will be installed to monitor water levels and quality in the next deepest zone of fracturing. We have assumed drilling depths of approximately 30 to 40 ft below ground surface. As for past work, the boreholes will be advanced using HQ wire line rock coring.

Sampling of Newly Installed Monitoring Wells

Following the completion of the monitoring wells, they will be developed and water samples will be collected and submitted to a laboratory for VOC analysis by EPA method 8260B. The data will be subjected to independent data usability validation consistent with the Work Plan.

Meetings with Owners of Neighboring Properties

Prior to beginning drilling at locations adjacent to Robinson Hill Road, IBM will meet with the owners of the five neighboring properties located east of the country club property and southeast of the IBM Gun Club – Former Burn Pit Area. The purpose of these meetings will be to inform the adjacent property owners of the upcoming work and the findings of work completed to date. At the property owner's request, IBM will be prepared to resample these private water supplies (these water supplies were sampled in 2003 and found to have no impacts from burn pit area operations) and will endeavor to address other questions and concerns these homeowners might have. IBM will seek additional information regarding the water supply wells serving these properties as well. If sampling of private water supplies is conducted, the water samples will be collected from the plumbing system in the homes and

[1] Sanborn, Head & Associates, Inc., March 6, 2006, Remedial Investigation Work Plan, IBM Gun Club, Former Burn Pit Area.

will be analyzed for VOCs using U.S. EPA Method 524.2 for drinking water. The data will be subjected to independent data usability validation consistent with the Work Plan.

Rock Core Borings and Laboratory Analyses

Following receipt and review of data and observations from the bedrock boring and monitoring well installation and sampling work, IBM will proceed with a scope of rock coring and rock sampling and analysis (rock core episode). As with past rock core episodes, the purpose of this work is to obtain information on the vertical and horizontal extent of VOC presence in bedrock that constitutes an on-going source of VOCs in groundwater. The work will be conducted in concert with representatives of the Universities of Waterloo, and Guelph Ontario using methodologies consistent with prior work at the site and as outlined in the original Work Plan.

Data Validation and Usability Assessment

We propose to complete future data validation in accordance with NYSDEC ASP 2005 protocol and updated Region 2 DV guidance of October 2006 to be consistent with the current State and Federal guidance. Consistent with the project RI Work Plan dated, March 2006, past data validation has been conducted meeting NYSDEC ASP2000 protocol and using Region 2 Data Validation Guidance from June 1999. NYSDEC ASP2005 incorporates all updated methods for SW-846 (for example, using Method 5035a for preservation of volatiles) which is not present in the NYSDEC ASP2000. Use of the newer guidance is more consistent with our existing data management procedures in which we are maintaining a validated database file containing all sample results which explicitly indicates actions taken during the Data Usability Review (data qualifiers used, bias in results, and comments explaining, in detail, any actions taken).

PROPOSED SCHEDULE

The drilling and well installation work is scheduled to begin the week of April 21, 2008 and is expected to take at least three weeks to complete. Allowing for completion of several rounds of water quality monitoring, rock core sampling and analysis is projected to begin in June 2008. Consistent with past work, data from the rock coring event is projected to be available within 8 to 10 weeks of completing the field work. We will keep the Agencies informed of the completion of this work and updated schedules through regular monthly reporting.

Attachments: Figure 1

AHH/DBC:ahh

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Notes:
1.The figure summarizes the proposed monitoring well locations sited on the basis of site reconnaissance observations, rock probing, and wet area sampling conducted on the Binghamton Country Club property. The sampling locations are also shown for reference.
Legend
Perennial Drainage
Drainage Feature
Wetland
Culvert
Well
Proposed Well Location
N
BP-12A
BP-12D
BP-5
BP-5A
BP-14D
BP-14A
BP-1
BP-1A
BP-3
BP-11A
BP-6
BP-13D
BP-4
BP-2
BP-13A
BP-10A
CC-1
BP-18A
CC-2A
BP-8A
BP-9A
BP-15D
BP-17A
BP-15A
BP-23A
BP-24A
BP-26A
BP-19A
BP-27A
BP-27
BP-20A
BP-25A
BP-20
BP-28A
BP-21A
BP-29
BP-22A

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GRAPHICAL SCALE

Feet

100 50 0 100 200 300

SHA ENGINEERS • SCIENTISTS

DRAWN BY: SLW
DESIGNED BY: SLW
CHECKED BY: AHH
REVIEWED BY: DBC
PROJECT MGR: AHH
PIC: DBC
DATE: March 2008

1" : 100'

April 2008 Work Plan Amendment
IBM Gun Club - Former Burn Pit Area
Union, New York

Proposed Monitoring Well Locations

PROJECT NUMBER :
2400.00

FIGURE NUMBER :
1

NO.	DATE	DESCRIPTION	BY