From: "Underhill, Scott" <Scott.Underhill@aecom.com>
To: John Spellman <jtspellm@gw.dec.state.ny.us>
CC: <tlblazicek@nyseg.com>
Date: 12/10/2010 1:16 PM
Subject: RE: Mechanicville MGP Site, sediment removal summary report
Attachments: NYSEG Mechanicville Sediment Removal Summary Dec 2010.pdf

John,

Attached is the Final Sediment Removal letter that has responded to the Department's concern described below. Let us know if you have any further comments. We plan on submitting the SMP next month.

Thanks,

Scott

Scott Underhill, PE

Project Engineer

Environment

D 518.951.2208 M 518.396.7638

scott.underhill@aecom.com <mailto:scott.underhill@aecom.com>

AECOM

40 British American Blvd, Latham, NY 12110

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www.aecom.com <http://www.aecom.com/>

From: John Spellman [mailto:jtspellm@gw.dec.state.ny.us]
Sent: Friday, December 10, 2010 10:37 AM
To: Underhill, Scott
Cc: tlblazicek@nyseg.com
Subject: RE: Mechanicville MGP Site, sediment removal summary report

Hi Scott,

As we discussed, because of the NAPL presence in bedrock the Department believes the sentence "Subsequent deposition of sediment will not contain any NAPL." is speculative and thus should be removed from your draft letter.

Please finalize your letter accordingly. If you would like to discuss further please contact me.

Thank you,

John Spellman

>>> "Underhill, Scott" <Scott.Underhill@aecom.com> 12/6/2010 11:36 AM
>>>

John,

Attached is a revised 'draft' copy to the sediment removal letter report. Please review and provide comments. Once agreed upon, I will submit as a final letter.

Also, responses to the Department's comments are provided below.

We can have a call if you would like to discuss these responses.

Thanks,

Scott

Scott Underhill, PE

Project Engineer

Environment

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From: John Spellman [mailto:jtspellm@gw.dec.state.ny.us]
Sent: Thursday, December 02, 2010 11:15 AM
To: tlblazicek@nyseg.com
Cc: Underhill, Scott
Subject: Mechanicville MGP Site, sediment removal summary report

Hi Tracy,

Thank you and Scott for the November 15, 2010 letter on the subject.

As I mentioned to you in a recent phone message, this Department's review generated the following questions:

1. The letter states an objective of the sediment removal was to gain a better understanding of the release mechanisms of NAPL blebs. However, this topic is never discussed later in the letter. Was anything learned

from the September 2010 sediment removal which would help to support or reject the postulation that gas bubbles cause the sheen?

2. Can AECOM offer an explanation for why sheens were observed before the sediment removal but not observed after?

3. Was all visually contaminated sediment able to be removed during this removal activity?

Also, here are some specific items the Department will be expecting in the forthcoming Site Management Plan:

-The SMP shall state a minimum time to observe the surface water. The SMP will require 1 hour per monitoring event for observing the Anthony Kill.

- The observation shall include probing of the sediments, if any. NAPL may be collecting with depositional sediment in the bedrock trough. This will be included in the SMP.

- There shall be contingency actions if NAPL sheens and blebs reappear. These actions could include more frequent observations, periodic sediment removal, capping, grouting or hydraulic control subject to the approval of the Department. The SMP will include the following: If NAPL blebs reappear, NYSEG will attempt to determine the source and cause of the blebs. Contingency actions could include more frequent observations, periodic sediment removal, capping, grouting, or hydraulic control subject to the approval of the NYSDEC based on the recommendations of a focused engineering evaluation to determine the most appropriate action based on the present conditions.

Please give me a call if you would like to discuss.

Thank you,

John

John Spellman, P.E.

New York State Department of

Environmental Conservation

Division of Environmental Remediation

625 Broadway

Albany, NY 12233-7014

(518) 402-9648

AECOM
40 British American Boulevard
Latham, NY 12110

518.951.2200 tel
518.951.2300 fax

December 10, 2010 **SENT VIA ELECTRONIC MAIL**

Mr. John Spellman
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233-7014

Subject: Sediment Removal Summary Fall 2010
NYSEG Mechanicville-Central Avenue Former Manufactured Gas Plant Site
Site #: 5-46-033

Dear Mr. Spellman,

On behalf of New York State Electric and Gas Corporation (NYSEG), AECOM has prepared this letter to summarize the sediment removal and streambed investigation activities performed at the NYSEG Mechanicville Central Avenue Former Manufactured Gas Plant (MGP) site (Site) in Mechanicville, NY. These activities were performed in accordance to the Sediment Removal/Streambed Investigation Work Plan (AECOM, 2010) approved by the New York State Department of Environmental Conservation (NYSDEC) in a letter dated September 13, 2010.

Background

The Site was listed as a Class 2a in the Registry of Inactive Hazardous Waste Sites in New York in 1986 and several investigations and an interim remedial measure were conducted at the site as outlined in the Record of Decision (ROD) issued in March 2006. As required in the ROD, approximately 25,600 tons of impacted material was removed from the site as part of a remedial action that took place between October 2008 and July 2009. Following the source removal, a nonaqeuous phase liquid (NAPL) recovery effort was performed between August 2009 and November 2009 that recovered approximately 31 gallons of NAPL from the Site bedrock wells. The conclusion of the NAPL recovery effort was that the NAPL recovery yield was not sufficient to warrant an automated system and that subsequent monitoring be performed over a three month period to identify NAPL recovery (AECOM letter to NYSDEC, January 26, 2010). During the 3-month monitoring period, no significant amount of NAPL was observed in any of the wells with the maximum thickness measured at 3 inches (AECOM letter to NYSDEC, June 14, 2010).

As part of the NAPL recovery and monitoring program, the Anthony Kill was also monitored for NAPL blebs. During the Fall 2009 and Spring 2010 monitoring of the Anthony Kill NAPL blebs were observed emanating from a single location in line with where a bedrock fault was observed during the soil remedial action. The cause of the sheen on the Anthony Kill was believed to be air/gas bubbles being released from the sediment and/or bedrock. When the air/gas bubbles burst upon hitting the water surface, a sheen, typically less than 3 inches in diameter, would appear and dissipate within a few seconds. In response to this, NYSDEC requested that NYSEG develop an approach to address the release of NAPL blebs into the Anthony Kill (NYSDEC letter to NYSEG, July 26, 2010). A work plan was then submitted to the NYSDEC in August 2010 (AECOM, 2010) and subsequently approved by the NYSDEC on September 13, 2010. The objective of this work was to gain a better understanding of the release mechanisms of NAPL blebs and eliminate the source of the blebs if possible.

Field Activities

Prior to beginning the sediment removal activities two permits were obtained. A Pre-Construction Nationwide Permit No. 38 (PCN) application was submitted to the United States Army Corps of Engineers (USACE) on August 8, 2008 for work involving the Anthony Kill (Permit Application No. NAN-2008-1132-WCO). An addendum to this permit was submitted to the USACE concurrently with the Work Plan (AECOM 2010). A waste transportation permit was also obtained by NYSEG's waste transportation contractor (Clean Harbors) to transport water and sediments removed from the Anthony Kill for off-site disposal.

AECOM mobilized a vacuum truck, oil booms, turbidity curtains, sand/fill, cofferdam sacks, a crane, and pumps to the Site between September 27 and September 29, 2010. Prior to any disturbance to the Anthony Kill and/or associated stream bank AECOM installed a turbidity curtain and oil boom to prevent any suspended solids generated from construction activities from traveling downstream. The turbidity curtain and oil boom were installed surrounding the work zone (see Figure 1). The setup is shown on Photo 1 and Photo 2 of the attached photographic log (Attachment A).

Prior to any sediment removal and following installation of erosion controls, a cofferdam was constructed with the intention of diverting the Anthony Kill flow away from the area of the sediment removal. The cofferdam consisted of two diversion berms surrounding the area to be excavated (Figure 1). The cofferdams consisted of 5 cubic yard sacks filled with sand and were lowered by crane into position. Prior to placement of the cofferdam sacks the Anthony Kill channel was cleared of stone and debris by hand to the amount practical and lined with plastic sheeting. Sand bags were used to supplement the large sacks where necessary.

Following construction of the cofferdam, the areas within the cofferdam were dewatered using pumps and vacuum hoses. Any water from between the outer cofferdam and the inner cofferdam was pumped using a trash pump onto the rip rap on the bank where it flowed into the Anthony Kill. Water and sediment from within the inner cofferdam were collected directly into an onsite vacuum box for offsite disposal.

Sediment removal began on September 29, 2010 following dewatering activities within the inner cofferdam. Sediments were removed using a vacuum truck hose. During vacuum excavation two bedrock folds were observed in a W shape. Each fold was approximately 24-inches wide and 12-inches deep. The valley of the folds contained NAPL-impacted sediment removed during excavation. The bedrock folds containing NAPL-impacted sediment are shown on photos 3 and 4 of the attached photographic log (Attachment A). All impacted sediments from within the inner coffer dam were removed.

The sediments were collected within an on-site vacuum box prior to being transported off-site for disposal. Clean Harbors removed free liquid from the vacuum box following excavation activities using the vacuum truck on September 29, 2010. Approximately 5,000 gallons of water and 2,000 pounds of sediments/mud were generated during this remedial activity. The mobile trailer containing liquid waste was shipped on September 30, 2010 and the vacuum box containing sediments was shipped October 4, 2010. All materials were shipped to Clean Harbor's Bristol, CT facility.

Following streambed observation the inner cofferdam was removed followed by the outer cofferdam. Once the cofferdams were removed, the oil boom and turbidity curtain were removed. No additional Site restoration activities were performed.

Monitoring Results

The area of the sediment removal was observed for NAPL blebs for one hour per week for the four weeks following the sediment removal (October 4, 13, 21, and 28). Photos 5 through 8 show the Anthony Kill following the sediment removal (Attachment A). No NAPL blebs were observed during any of the four observation events.

Conclusions and Recommendations

All sediment within the inner coffer dam was removed during this field effort, resulting in the removal of approximately 2,000 pounds of sediments and 5,000 gallons of water. Two bedrock folds were observed in the streambed; no open faults in the bedrock were observed, though the continuous presence of water within the folds made observation difficult. No NAPL blebs were observed for the four weeks following the sediment removal effort.

The presence of NAPL blebs in the Anthony Kill was suspected to be caused by gas bubbles. One paper "*Ebullition-facilitated Transport of Manufactured Gas Plant Tar from Contaminated Sediment*" in Environmental Toxicology and Chemistry (McLinn, Eugene L. and Stolzenburg, Thomas R., 2009) identified gas migration as the cause of NAPL from sediment. The paper concluded that anaerobic biodegradation of organic matter in the sediment generated methane and carbon dioxide. As gas accumulates and migrates upward, NAPL is entrained. When the gas bubble hits the water surface, the gas is released and the NAPL causes a sheen on the water. The transport requires three conditions: sediment must produce gas bubbles, sediment must contain NAPL, and the gas must come in contact with the NAPL. The presence of all three conditions could neither be confirmed nor denied based on the observations made during the field work.

Sediment and NAPL were removed from the Anthony Kill where bedrock folds were observed. The primary source of NAPL in the bedrock folds (soil, sediment and weathered bedrock from within the Anthony Kill and upgradient areas) have now been removed, though a secondary source of NAPL still likely exists in the fractures within the competent bedrock . Subsequent deposition of sediment within the Anthony Kill folds will not contain any NAPL; however, there is the potential for NAPL from within the bedrock fractures to impact any sediment deposited within the bedrock fold area.

A Site Management Plan (SMP) will be developed recommending quarterly observation of the Anthony Kill at the location where the bedrock folds were observed. The SMP will be submitted to the NYSDEC for review in January 2011.

Should you have any questions or require additional information in the meantime, please do not hesitate to call Tracy Blazicek at (607) 762-8839 or me (518) 396-7638.

Yours sincerely,

Scott Underhill

Scott Underhill, P.E.
Project Manager

cc: T. Blazicek, NYSEG

FIGURE

POST-REMEDIATION SEDIMENT REMOVAL AREA

MW 35I

MW 34D

ANTHONY KILL

FRACTURES OBSERVED AT ROCK SURFACE

MW-32D

GRAVEL

TW-4

MW-15IR

MW-11

FOLD FOUND AT ROCK SURFACE

TW-3

MW-22IR

MW-29IR

TW-2S

TW-2I

MW-14

MW-14S

MW-14D

MW-46I

BLOCK / BRICK STRUCTURE

CONC.

GRAVEL

ASPHALT

MW-44I

MW-25I

MW-25S

MW-2

MW-21

GRAVEL

MW-12S

MW-13

MW-17

MW-18

MW-45I

MW-12

TW-1

CENTRAL AVENUE

TEAR FAULT FOUND AT ROCK SURFACE

MW-30D

MW-30S

FERRIS LANE

GRAVEL

MW 1I

MW-1

MW 1D

MW-10

LEGEND

- 2009 REMEDAIL EXCAVATION LIMIT BOUNDARY
- 90 — SURFACE CONTOUR (1 FT.)
- STONE FILL
- MW-15IR — MONITORING WELL
- TW-3 — EXTRACTION WELL

AECOM

SITE MANAGEMENT PLAN

LOCATION OF POST REMEDIATION SEDIMENT REMOVAL

NEW YORK STATE ELECTRIC AND GAS
MECHANICVILLE, NEW YORK

FILE NAME:	DRN	PROJECT NO.	DATE	FIGURE NO.
	—	60135689	11/2010	1

Plotted By: MeisterK
Layout-Sheet Name: SM-NAPL
Plot File Date Created: Nov/12/2010 8:37 AM

Filename: L:\WORK\94560\CADD\SITE_MANAGEMENT_PLAN\94560-LT-NAPL-MONITORING.DWG

ATTACHMENT A

PHOTOGRAPHIC LOG

PHOTOGRAPHIC LOG

Site Name:	Site Location:	Project No.
Mechanicville Former MGP Site	Mechanicville, New York	94560

Photo No.	Date:
1	09/30/10

Direction Photo Taken:

West

Description:

View of the work zone setup showing inner and outer coffer dam, oil boom and turbidity curtain.



Photo No.	Date:
2	9/30/10

Direction Photo Taken:

Northeast

Description:

View of the cofferdam showing downstream culverts under Route 4 (Central Ave) and oil boom and turbidity curtain.



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PHOTOGRAPHIC LOG

Site Name:	Site Location:	Project No.
Mechanicville Former MGP Site	Mechanicville, New York	94560

Photo No.	Date:
3	9/30/10

Direction Photo Taken:

Down

Description:

View of the sediment and NAPL removal activity.



Photo No.	Date:
4	9/30/10

Direction Photo Taken:

Down

Description:

View of NAPL removal from the trough in the streambed.



PHOTOGRAPHIC LOG

Site Name:	Site Location:	Project No.
Mechanicville Former MGP Site	Mechanicville, New York	94560

Photo No.	Date:
5	10/4/10

Direction Photo Taken:

Northeast

Description:

Stream observation one week following the sediment removal activity.



Photo No.	Date:
6	10/4/10

Direction Photo Taken:

Down

Description:

Stream observation one week following the sediment removal activity.



AECOM

PHOTOGRAPHIC LOG

Site Name:	Site Location:	Project No.
Mechanicville Former MGP Site	Mechanicville, New York	94560

Photo No.	Date:
7	10/26/10

Direction Photo Taken:

Northeast

Description:

Stream observation four weeks following the sediment removal activity.



Photo No.	Date:
8	10/26/10

Direction Photo Taken:

Northwest

Description:

Stream observation four weeks following the sediment removal activity.

