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Rockaway Park Former Manufactured Gas Plant (MGP) Site
Rockaway Park, Queens County, New York

April 17, 2009 Field Change Request: FCR-02

Waterloo Barrier Installation Procedures

On behalf of National Grid US, Paulus, Sokolowski and Sartor Engineering, PC (PS&SPC) has prepared this Field Change Request# 2 (FCR-02) to address the planned Waterloo Barrier Installation Procedures at the On-Site Area of the Rockaway Park Former MGP Site (Site).

PS&SPC and National Grid's remediation contractor, Posillico Environmental, Inc. (Posillico) have prepared the following clarifications to the Waterloo ™ Dense Non Aqueous Phase (DNAPL) Migration Barrier procedures identified in Section 3.4 of the November 2008 100 percent Remedial Design Report (RDR). On-Site Area DNAPL Migration Barrier installation activities commenced on March 16, 2009 and are scheduled for completion prior to May 25, 2009.

ON-SITE AREA 120 FOOT LONG WATERLOO BARRIER INSTALLATION PROCEDURES

In order to provide a safe work environment, Posillico has modified their procedures for the installation of the 120 foot long On-Site Area DNAPL Migration Barriers. Posillico has installed and will continue to install the remaining 120 foot long On-Site Area DNAPL Migration Barriers with a combined set-up consisting of the ABI Mobilram sheet pile rig and a cherry picker truck crane.

Posillico's Installation Procedures for the 120 foot long On-Site Area DNAPL Migration Barriers are presented in the attached documents.

- April 13, 2009 Installation of the Bottom Half of the Waterloo Barrier (refer to Attachment A); and,
- April 13, 2009 Installation of the Top Half of the Waterloo Barrier (refer to Attachment B).

ON-SITE AREA 50 FOOT LONG WATERLOO BARRIER INSTALLATION PROCEDURES

Posillico has completed the installation of the eastern wing wall of 50 foot long DNAPL Migration Barriers and is scheduled to complete the western wing wall of the 50 foot long DNAPL Migration Barriers in April 2009 and May 2009. Posillico has installed and plans to install the remaining On-site Area 50 foot long DNAPL Migration Barriers in accordance with the procedures identified in Section 3.4, DNAPL Migration Barrier, of the RDR.

FCR-02 CONCLUSIONS: ON-SITE AREA DNAPL MIGRATION BARRIER INSTALLATION

Posillico has commenced the installation of the 120 foot long DNAPL Migration Barriers and have revised the installation procedures in order to provide a safe work environment.

The remedial design intent of the RDR has been and will continue to be achieved with these improved and revised On-Site Migration Barrier installation procedures.

Posillico will notify National Grid, National Grid's Construction Manager, ARCADIS-US, Inc., and PS&SPC of any emergency deviations from the prescribed Waterloo Barrier Installation Procedures within one day of the event. If Posillico plans to revise the Waterloo Barrier Installation Procedures, a written notice to National Grid and PS&SPC in the form of a Request for Information (RFI) or Field Change Request (FCR) will be submitted a minimum of one week prior to the planned revised Installation Procedures implementation. PS&SPC will then submit an FCR to NYSDEC for the regulatory compliance project record.

BULKHEAD AREA

After the Bulkhead Area remedial design is finalized, Posillico will prepare a revised Bulkhead Area Waterloo Barrier Installation Procedure a minimum of one month prior to implementation. This revised Bulkhead Area Waterloo Barrier Installation Procedure will be the subject of a future FCR submission to NYSDEC; where PS&SPC plans to submit the FCR to NYSDEC two weeks prior to implementation.

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Attachment A

Procedures for the Installation of the Bottom Half of the Waterloo Barrier

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Attachment B

Procedures for the Installation of the Top Half of the Waterloo Barrier

National Grid US
Rockaway Park Former Manufactured Gas Plant Site
Rockaway Park, Queens County New York

Item 3.11 Installation of the bottom 60 ft of the Waterloo Barrier

During the installation of the 120 ft Waterloo Barrier, there may be a circumstance which prevents the procedure that is described in the 100% RDR from being followed. In the approved procedure, the top of the 65ft sheet pile will be secured using the two sheeting chains to the ABI hammer. The ABI hammer will then rise until the bottom of the sheet pile is above the top of the previously driven sheet, so that the suspended sheet can be threaded into the interlock of the adjacent previously driven sheet. If the height required to accomplish this task is greater than the maximum height achievable by the ABI machine (approximately 70ft), then a cherry picker (rough terrain hydraulic crane) will be implemented to assist the ABI in the initial threading of the sheet pile. In doing this, either the cherry picker or ABI will remain in control of the sheet pile, meaning that a physical connection to the sheet pile, in addition to the interlock of the adjacent sheet, will be maintained until the sheet pile is substantially driven.

The procedure for installing the bottom half of the 120 ft Waterloo sheets is as follows:

1) The cherry picker will be rigged to pick up the sheet pile using the main jib from the top of the sheet pile.
2) The cherry picker will then lift the sheet pile using the main jib to a height sufficient enough to thread the new sheet into the interlock of the adjacent sheet.
3) Once the new sheet is fully interlocked into the adjacent sheet, the cherry picker will then have the secondary line attached to the body of the sheet pile with either a nylon or wire rope sling.
4) With the secondary jib attached to the body of the sheet, and the interlock of the sheet fully threaded into the exposed adjacent sheet, the main jib will be detached from the top of the sheet. The purpose of the secondary jib is provide lateral support for the sheet pile in the event that wind and interlock failure causes the sheet to fall or sway.
5) At this point, the ABI will take hold of the top of the sheet pile with jaws of the hammer, and drive the sheet as described in the RDR.

National Grid US
Rockaway Park Former Manufactured Gas Plant Site
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Item 3.11 Installation of the top half of the Waterloo Barrier

For the installation of the top half of 120 ft Waterloo Barrier please refer to the attached diagram and written procedure below:

1) Once the bottom half of the 120 ft Waterloo sheet piles are driven to approximately 10ft above grade, the cherry picker will be rigged to pick up the top half of the sheet pile using the main jib.
2) The cherry picker will then lift the sheet pile using the main jib to a height sufficient enough to thread the top half of the sheet into the interlocks of the two adjacent sheets.
    a. A small piece of steel (roughly 4” x1/2” x 4”) will be placed between the leading half sheet and bottom sheet to allow for the full welding of the male interlock.
3) Once the sheet is fully interlocked into the two adjacent sheets, the cherry picker will hold the sheet in place with the main jib while the bottom of the sheet is welded to the top of the previously driven sheet.
    a. Once the first half of the sheet pile is fully welded, (including the male interlock) the leading half of the sheet will be picked up so that the small piece of steel can be removed from between the top and bottom half sheets.
    b. Once the second half of the sheet (leading sheet) is completely welded, with the exception of the leading male interlock, the adjacent sheet pile will be driven so that the top of the sheet is a few inches below the splice location of the sheet being welded to allow for the complete welding of the leading male interlock.
4) At this point, the two 60 ft sheet piles are fully welded into one contiguous 120 ft sheet pile, allowing the cherry picker to be detached from the top of the sheet.
5) The ABI will then move into position, and drive the 120 ft sheet pile either to grade, or to a height that will facilitate the threading of the adjacent sheet.

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