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November 20, 2015
File: 190500751

Todd Caffoe, P.E
New York State Department of Environmental Conservation
Division of Environmental Remediation
6274 East Avon-Lima Road
Avon, NY 14414

**Reference: Brownfield Cleanup Program
 Enhanced Reductive Dechlorination
 Supplemental Injection Program Summary Report
 Site #C828184
 Former Carriage Factory
 33 Litchfield Street
 Rochester, Monroe County, New York**

Dear Todd,

On behalf of Carriage Factory Special Needs Apartments, LP (CFSNA), and pursuant to the Department-approved Enhanced Reductive Dechlorination-Supplemental Injection Work Plan, Stantec Consulting Services Inc. (Stantec) has prepared this Supplemental Injection Program Summary Report for the Brownfield Cleanup Program (BCP) at the Former Carriage Factory located at 33 Litchfield Street in the City of Rochester, Monroe County, New York (Site).

1. Background

The supplemental enhanced reductive dechlorination (ERD) injection activities described herein were performed in accordance with the Enhanced Reductive Dechlorination – Supplemental Injection Work Plan (ERD-SIWP), dated October 21, 2015 and the Department's October 27, 2015 email approval.

The October-November 2015 injection program was intended to supplement the original sodium lactate injection program that occurred at the Site in April-May 2014. The original injection program, along with pre-injection groundwater monitoring data, and seven rounds of post injection groundwater monitoring data are summarized in Stantec's 2014 and 2015 monthly and quarterly Progress Reports. As discussed in Progress Report #24, dated September 30, 2015, based on the apparent consumption of the sodium lactate solution initially injected, a supplement round of injection was recommended which would target the two exterior groundwater monitoring wells immediately upgradient of the building, RW-4 and B102-MW, and the three horizontal injection legs which were installed beneath the building.



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2. Supplemental Injection Activities Completed

The October-November 2015 injection program involved injecting a 20,000 mg/L sodium lactate and water solution, which was mixed in a batch process in a 1,500-gallon poly tank, into eleven injection points. The injection locations consisted of each of the nine horizontal pipes installed beneath the building (1-A, 1-B, 1-C, 2-A, 2-B, 2-C, 3-A, 3-B, 3-C), and the two groundwater monitoring wells located immediately south of the building, RW-4 and B102-MW. Figure 1 shows the locations of each of these injection points. As proposed in the ERD-SIWP, each injection location received at least the target volume of 1,500 gallons of the sodium lactate solution.

The supplemental injection procedure was identical to that of the initial injection: the sodium lactate concentrate solution was mixed in the poly tank with potable water from a street-side City of Rochester hydrant, and then the mixed solution was transferred to the injection points through the use of a ½ horsepower submersible pump which directed the solution through three injection hoses with dedicated flow meters to the well heads. As expected, the horizontal legs received the injection solution more quickly than the monitoring wells, though all of the injection points accepted the full 1,500 gallons within the time frame from October 29 through November 5, 2015.

The quantities injected into each injection location are summarized in the table below.

Injection Location	Start Date	End Date	Target Volume	Injected Gallons	% Complete
1-A	10/29/15	10/30/15	1500	1515	101
1-B	10/30/15	11/2/15	1500	1500	100
1-C	11/2/15	11/4/15	1500	1502	100
2-A	10/29/15	10/30/15	1500	1500	100
2-B	10/30/15	11/2/15	1500	1534	102
2-C	11/2/15	11/4/15	1500	1500	100
3-A	10/29/15	11/4/15	1500	1500	100
3-B	11/4/15	11/4/15	1500	1500	100
3-C	11/5/15	11/5/15	1500	1706	114
RW-4	10/29/15	11/5/15	1500	1501	100
B102-MW	10/29/15	11/5/15	1500	1501	100



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3. Post-Injection Groundwater Monitoring Program

As outlined in the ERD-SIWP, a post-injection groundwater monitoring program will be performed to evaluate the effectiveness of the treatment. The following wells are proposed to be monitored three months after the completion of supplemental injection activities (this would occur in February 2016), and then quarterly for the next two successive quarters: B102-MW, B106-MW, B108-MW, RW-1, RW-2, RW-3, RW-4, RW-5, RW-6, RW-7, RW-9, and RW-12. Groundwater samples will be collected using low-flow/low-stress sampling procedures. Samples will be analyzed for pH, ORP, conductivity, temperature, and DO in the field, and for VOCs and TOC in the laboratory. Depending on the results of the initial sampling event, wells may be deleted from, or added to, the post-injection monitoring program for one or more of the monitoring events with prior approval from the Department. For further explanation of the proposed sampling and reporting methods, please refer to the ERD-SIWP.

Closing

Please do not hesitate to contact us if you have any questions regarding the summary of the injection activities or the proposed post-injection groundwater monitoring program.

Regards,

STANTEC CONSULTING SERVICES INC.

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Attachments:

Figure 1 – Injection Well Map

cc:	James Mahoney (NYSDEC)	Al Floro (Nixon Peabody)
	Justin Deming (NYSDOH)	Jonathan Penna (Nixon Peabody)
	Stephanie Selmer (NYSDOH)	Mark Gregor (City of Rochester)



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James Whalen (CFSNA)	Mark Fuller (CFSNA)
Daniel Alger (Goldman Sachs)	Gillian Conde (CFSNA)
Linda Kaiser (Goldman Sachs)	Joy Cromwell (CFSNA)
Patrick Miller (CPC)	Chris Betts (Betts Housing)
David Lent (IVI)	Amy Reichhart (Nixon Peabody)

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Figures











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Legend

	HORIZONTAL INJECTION LEG
	AREA OF BEDROCK REMOVAL
	BEDROCK ELEVATION BELOW FINISHED FLOOR BEFORE NECESSARY REMOVAL
	B.O.P. 1.75"
	BOTTOM OF PIPE ELEVATION BELOW FINISHED FLOOR
	SOLID 2" PVC PIPE
	SLOTTED (.010") 2" PVC PIPE
	LOCATIONS OF GROUNDWATER MONITORING WELLS

1. EXCAVATION LIMITS APPROXIMATE ONLY.
2. ALL PIPING SHOWN IS ABOVE BEDROCK EXCEPT IN AREAS WHERE BEDROCK WAS REMOVED.
3. ALL ELEVATIONS SHOWN ARE MEASURED BELOW FIRST FLOOR - FINISHED FLOOR ELEVATION (516.50' AMSL), AS SHOWN ON SWBR CONSTRUCTION SET - PLAN ENTITLED "WALL SECTIONS AND DETAILS" (A-320 DETAIL 1 WALL SECTION)
DATED APRIL 20, 2012.

Client/Project		
CARRIAGE FACTORY		
BROWNFIELD CLEANUP PROGRAM FORMER CARRIAGE FACTORY 33 LITCHFIELD STREET, ROCHESTER , NY		
Title		
GROUNDWATER REMEDIATION PIPING AND MONITORING WELLS PLAN		
Project No.	Scale	
190500751	AS SHOWN	
Drawing No.	Sheet	Revision

