S2C2 inc.

Streamlined Site Characterization & Closure

September 28, 2018

Mr. Adam T. Morgan
Project Manager/Assistant Engineer
New York State Department of Environmental Conservation
Division of Environmental Remediation - Region 8
6274 East Avon-Lima Road
Avon, New York 14414

RE: Supplemental Remedial Investigation Activity at Carlson Park in Rochester, NY. NYSDEC BCP Site ID# C828199 (formerly NYSDEC VCP Number V00514-8)

Dear Adam:

This work plan addendum letter is intended to provide a description of an additional Remedial Investigation (RI) activity requested by the New York State Department of Environmental Conservation (NYSDEC) in a letter dated May 2, 2018 and sent to James Goff representing 100 Carlson Road, LLC. That letter requests that groundwater sampling and analysis be conducted to evaluate the possible presence of "Emerging Contaminants" at the Carlson Park Site (Site). Although 100 Carlson Road LLC is not currently aware of any information to suggest the presence of emerging contaminants at the Site, this request represents a statewide initiative being undertaken by the NYSDEC to help determine the potential presence of 1,4-dioxane and per-and polyfluoroalkyl substances (PFAS) at all remedial sites in New York. Such initiative is intended to help develop a comprehensive statewide database of emerging contaminant data. This work plan addendum letter is considered to be an attachment to the original Voluntary Cleanup Program Remedial Investigation Work Plan for Carlson Park, dated October 2004 (RI Work Plan), and the Supplemental Work Plan for Initial Bedrock Evaluation Activities dated February 28, 2010 (Supplemental Work Plan), and other related subsequent supplemental work plan addendum letters that have been prepared.

The proposed scope for the supplemental RI activity addressed herein has been discussed and agreed upon with you during recent telephone conversations. The remainder of this letter provides a description of the subject proposed scope of work, a description of the field groundwater sampling procedures, and analytical methods to be utilized.

Scope of Supplemental RI Activity:

In order to address the NYSDEC request to conduct Emerging Contaminant groundwater sampling at the Site, it has been proposed that a total of six (6) on-Site groundwater monitoring wells be sampled. The locations of these wells are shown on Figure 1. Two (2) of these wells are considered to be background/upgradient wells, while the remaining four (4) wells are considered to be downgradient wells. The two (2) upgradient wells are situated in the southwest corner of the Site property, and include: MW-02 and MWBR-09A, which consist of a shallow overburden well and an adjacent deeper bedrock well, respectively. The four (4) downgradient wells are generally situated NE to ENE of the upgradient wells. Two of these four downgradient wells are screened in shallow bedrock at locations where overburden groundwater is not present (i.e., wells MWBR-02A and MWBR-08A). At these locations the water table is situated within the bedrock. The remaining two downgradient groundwater monitoring wells are installed where the water table is present within the overburden. Well MW-19D is a shallow overburden well, while well MWBR-06A is screened in bedrock. The configuration and spacing of the six (6) selected groundwater monitoring wells to be sampled as part of the emerging contaminant evaluation are considered to be representative of both overburden/water table and deeper bedrock groundwater conditions at the Site.

Please note that the currently proposed supplemental on-site RI groundwater sampling activity will be conducted using methods and procedures similar to those previously approved and used during implementation of the original RI Work Plan and/or the Supplemental Work Plan, and/or associated addenda. Some sample collection and/or analytical procedural modifications have been made to address specific concerns and/or issues related to sampling for PFAS and/or 1,4-dioxane. These modifications are consistent with the NYSDEC guidance memo entitled: "Groundwater Sampling for Emerging Contaminants", dated April 2018 (NYSDEC April 2018 Emerging Contaminant Memo), a copy of which has been included with this letter work plan. A description of these modified procedures is included in the description presented below.

Description of groundwater sampling procedures:

Groundwater sampling to be conducted during this event will be accomplished in general accordance with the "Low Flow" sampling methodology as outlined in USEPA-Region I "Low Stress (low flow) Purging and Sampling Procedure for the Collection of Groundwater Samples From Monitoring Wells", EQASOP-GW 001, January 19, 2010. A slightly modified version of this methodology (from the procedures utilized in previous groundwater sampling events conducted at the Site, and as described in previous RI Work Plan addendums) will be implemented specifically with respect to the PFAS sampling component of this event.

Accordingly, rather than accomplishing groundwater purging with the use of a submersible bladder pump, this program will utilize a peristaltic pump fitted with dedicated silicone and high density polyethylene tubing for each groundwater sampling location. A stainless-steel check valve and ball may be attached to the bottom of the tubing.

The groundwater intake depth will typically be set near the center of the screened interval for each well during purging activities. In the event that a well screen is not fully submerged, the sampling intake depth will either be placed near the center of the saturated interval within the well screen or even lower if necessary. Groundwater levels will be monitored during purging activities to determine drawdown levels. In addition, purged water will pass through a low-flow cell and will be monitored for a variety of field parameters. Such field parameters will include: temperature, pH, specific conductance, dissolved oxygen (DO), and oxidation-reduction potential (ORP). Purged groundwater will be temporarily containerized and subsequently be put through the on-site carbon treatment system, which is situated within the basement of Building 10.

In an effort to obtain representative groundwater samples, an attempt will be made to allow all the above field parameters to stabilize to within specific variance ranges for three consecutive readings prior to initiating groundwater sample collection. Such ranges include: <0.3' for water level drawdown; +/- 3% for temperature and specific conductivity; +/- 0.1 unit for pH; +/- 10% for DO; and +/- 10 millivolts for ORP.

Once groundwater purging has been completed at each sampling location, the purge tubing will be detached from the low-flow cell and groundwater samples will be collected directly from the dedicated tubing into laboratory-supplied sample bottles.

In the event that well yields in any of the wells to be sampled as part of this event are too low to undergo purging and low-flow sampling procedures, such wells will be purged dry and an attempt will be made to collect groundwater samples from groundwater which recharges into the wells. In this situation, groundwater sample collection will be accomplished with the use of dedicated polyethylene tubing fitted with a decontaminated stainless-steel check valve and ball to be utilized as a dedicated bailer. Such water will then be placed directly into laboratory-supplied sample bottles. In the event that groundwater yield is too low to conduct low-flow sampling at MW-19D, or the recharge rate at that well is too slow to allow for groundwater grab sampling, an attempt will be made to collect a groundwater sample from MW-18D instead.

Due to the very low laboratory reporting limits required for PFAS compounds, and the associated sensitivity to artificially impact the groundwater samples with a variety of other materials potentially containing PFAS, several other unique precautionary procedures will be implemented for PFAS sampling. These precautions include avoiding the use of a variety of

materials and clothing. Examples of items to avoid using during and around the sampling for PFAS include: waterproofed materials/Gore-Tex, fabric softener, Teflon, food or drink packaging materials, etc. Examples of items acceptable for use during PFAS sampling include: Aluminum clipboards in lieu of plastic, nitrile gloves, etc. A more comprehensive list of materials to be avoided or acceptable for use during PFAS sampling is summarized on a table entitled: "PFC Sampling – Prohibited and Acceptable Items", and has been included with this letter work plan

With the exception of the unique procedures and precautions described above, other standard groundwater sampling protocols, as described in previous work plans, will be incorporated. For example, all groundwater samples collected to undergo emerging contaminant analysis will be stored in ice from the time they are collected until they are delivered to the analytical laboratory. Chain-of-custody forms will accompany all samples sent to the lab, standard field QA/QC samples will be included, etc.

Description of groundwater sample analysis:

All groundwater monitoring well samples to be collected as part of this program will undergo emerging contaminant analysis by an Environmental Laboratory Approval Program (ELAP) certified laboratory. Samples to be analyzed for the presence of 1,4-dioxane will be done in accordance with USEPA SW-846 Method 8270. A Single/Selective Ion Monitoring (SIM) mode will be utilized to help achieve a method detection limit of 0.28 ug/L for 1,4-dioxane. Samples to be analyzed for the presence of PFAS compounds will be done in accordance with modified USEPA SW-846 Method 537. The target method detection limits for these compounds is 2 ng/L.

The complete Target Analyte List (TAL) of specific PFAS compounds to be included for analysis as part of this emerging contaminants sampling program is provided in the NYSDEC April 2018 Emerging Contaminant Memo. The laboratory will provide full Category B deliverables in EQuIS format. QA/QC samples consisting of a field duplicate, field equipment blank, and a trip blank, will be included with the sampling event. In addition, a site-specific matrix spike/matrix duplicate sample will be collected as required by the lab. Final analytical results will be validated and a Data Usability Summary Report (DUSR) will be prepared.

Schedule

As previously discussed, 100 Carlson Road, LLC was initially hoping to conduct this emerging contaminant groundwater sampling event during the summer of 2018. However, such sampling cannot take place until final approval to proceed is provided by NYSDEC. Accordingly, the actual field sampling schedule will be determined once NYSDEC approval

to proceed is obtained. It is anticipated that a minimum of several weeks will be required to arrange for this program to begin once approved.

A total of one to two field days will be required to complete the groundwater sample collection. Once the final analytical results are provided by the laboratory and the DUSR has been completed, the findings of this emerging contaminants sampling event will be included with the following monthly Site progress report.

As stated above, the supplemental RI activity proposed in this Work Plan addendum letter will generally be completed in a similar manner as previously conducted as part of the ongoing RI activities being completed at the Site, and will be consistent with the methodologies presented in prior Work Plans and/or addendums as previously approved by NYSDEC for this Site as applicable, or as otherwise stated herein. Please feel free to contact me at (908) 625-3192 if you have any questions or comments concerning this matter, or if you require any additional information.

Sincerely,
S2C2 Inc.

Steven B. Gelb

Steven B. Gelb
Project Manager

CC: Jim Goff
Frank Sowers (NYSDEC)
Angela Martin (NYSDOH)

MW-02

MWBR-09 A

Building 14

Building 5

Building 6

Building 7

Building 1

Building 2

Building 3

Building 4

Building 8

Building 9

Building 10A

Building 10B

Building 10C

Van Bergh Ave

MWBR-08 A

De Mallie St

Humboldt Street

Brookfield Rd

Carlson Road

Blossom Rd

MWBR-02 A

MWBR-06 A

MW-19D

Hampden Road

Legend

Well Locations

- Emerging Contaminant Groundwater Sampling Loc.
- Existing Well Locations

Features

- Roads
- Railroad
- Sidewalks
- Buildings
- Property Boundary

0 40 80 160 240 320 Feet

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CARLSON PARK FACILITY
CARLSON ROAD
ROCHESTER, NEW YORK

TITLE: Emerging Contaminant Groundwater Sampling Locations

FIGURE: 1

SCALE: 1:1,800

W:\Projects\Rochester\ArcMap\Supl\RI\WorkPlan2018\WellLocationsEmergingContaminants_062016v6a.mxd

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Region 8
6274 East Avon-Lima Road, Avon, NY 14414-9516
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www.dec.ny.gov

May 2, 2018

James Goff
Landsman Real Estate Services
3 Townline Circle
Rochester, NY 14623

RE: Request for sampling of Emerging Contaminants
Carlson Park
Site ID# C828199

Dear Mr. Goff:

The New York State Department of Environmental Conservation (DEC) is undertaking a Statewide evaluation of remediation sites to better understand the risk posed to New Yorkers by 1,4-dioxane and per- and polyfluoroalkyl substances (PFAS). PFAS have historically not been evaluated at remediation sites, and 1,4-dioxane has not been evaluated at the levels that are now thought to represent a health concern. This initiative is being undertaken as a result of these "emerging contaminants" having been found in a number of drinking water supplies in New York. Accordingly, the DEC is requiring that you test site groundwater for these chemicals. To accommodate this requirement, a select number of existing monitoring wells, representative of the potential of the above-referenced site to be a source of these emerging contaminants, must be sampled. DEC recommends that at least one of these wells should be upgradient of the site.

The attached guidance provides information on the analytical methods and reporting requirements. A second guidance document describes special precautions that need to be considered when sampling for PFAS.

Please prepare a draft letter work plan that identifies the wells proposed for sampling, brief description of the sampling methods, and anticipated sampling date within the next 60 days. If you wish to discuss the scope of the requested water testing, please contact me at (585) 226-5356 or adam.morgan@dec.ny.gov.

Sincerely,

Adam T. Morgan

Project Manager, NYSDEC Region 8
Division of Environmental Remediation

Groundwater Sampling for Emerging Contaminants

April 2018

Issue: NYSDEC has committed to analyzing representative groundwater samples at remediation sites for emerging contaminants (1,4-dioxane and PFAS) as described in the below guidance.

Implementation

NYSDEC project managers will be contacting site owners to schedule sampling for these chemicals. Only groundwater sampling is required. The number of samples required will be similar to the number of samples where "full TAL/TCL sampling" would typically be required in a remedial investigation. If sampling is not feasible (e.g., the site no longer has any monitoring wells in place), sampling may be waived on a site-specific basis after first considering potential sources of these chemicals and whether there are water supplies nearby.

Upon a new site being brought into any program (i.e., SSF, BCP), PFAS and 1,4-dioxane will be incorporated into the investigation of groundwater as part of the standard "full TAL/TCL" sampling. Until an SCO is established for PFAS, soil samples do not need to be analyzed for PFAS unless groundwater contamination is detected. Separate guidance will be developed to address sites where emerging contaminants are found in the groundwater. The analysis currently performed for SVOCs in soil is adequate for evaluation of 1,4-dioxane, which already has an established SCO.

Analysis and Reporting

Labs should provide a full category B deliverable, and a DUSR should be prepared by a data validator, and the electronic data submission should meet the requirements provided at: https://www.dec.ny.gov/chemical/62440.html ,

The work plan should explicitly describe analysis and reporting requirements.

PFAS sample analysis: Currently, ELAP does not offer certification for PFAS compounds in matrices other than finished drinking water. However, laboratories analyzing environmental samples (ex. soil, sediments, and groundwater) are required, by DER, to hold ELAP certification for PFOA and PFOS in drinking water by EPA Method 537 or ISO 25101.

Modified EPA Method 537 is the preferred method to use for groundwater samples due to the ability to achieve 2 ng/L (ppt) detection limits. If contract labs or work plans submitted by *responsible parties* indicate that they are not able to achieve similar reporting limits, the project manager should discuss this with a DER chemist. Note: Reporting limits for PFOA and PFOS should not exceed 2 ng/L.

PFAS sample reporting: DER has developed a PFAS target analyte list (below) with the intent of achieving reporting consistency between labs for commonly reportable analytes. It is expected that reported results for PFAS will include, at a minimum, all the compounds listed. This list may be updated in the future as new information is learned and as labs develop new capabilities. If lab and/or matrix specific issues are encountered for any particular compounds, the NYSDEC project manager will make case-by-case decisions as to whether particular analytes may be temporarily or permanently discontinued from analysis for each site. Any technical lab issues should be brought to the attention of a NYSDEC chemist.

Some sampling using this full PFAS target analyte list is needed to understand the nature of contamination. It may also be critical to differentiate PFAS compounds associated with a site from other

sources of these chemicals. Like routine refinements to parameter lists based on investigative findings, the full PFAS target analyte list may not be needed for all sampling intended to define the extent of contamination. Project managers may approve a shorter analyte list (e.g., just the UCMR3 list) for some reporting on a case by case basis.

1,4-Dioxane Analysis and Reporting: The method detection limit (MDL) for 1,4-dioxane should be no higher than 0.28 µg/l (ppb). ELAP offers certification for both EPA Methods 8260 and 8270. In order to get the appropriate detection limits, the lab would need to run either of these methods in "selective ion monitoring" (SIM) mode. DER is advising the use of method 8270, since this method provides a more robust extraction procedure, uses a larger sample volume, and is less vulnerable to interference from chlorinated solvents (we acknowledge that 8260 has been shown to have a higher recovery in some studies).

Full PFAS Target Analyte List

Group	Chemical Name	Abbreviation	CAS Number
Perfluoroalkyl sulfonates	**Perfluorobutanesulfonic acid**	**PFBS**	**375-73-5**
	Perfluorohexanesulfonic acid	**PFHxS**	**355-46-4**
	Perfluoroheptanesulfonic acid	PFHpS	375-92-8
	Perfluorooctanessulfonic acid	**PFOS**	**1763-23-1**
	Perfluorodecanesulfonic acid	PFDS	335-77-3
Perfluoroalkyl carboxylates	Perfluorobutanoic acid	PFBA	375-22-4
	Perfluoropentanoic acid	PFPeA	2706-90-3
	Perfluorohexanoic acid	PFHxA	307-24-4
	Perfluoroheptanoic acid	**PFHpA**	**375-85-9**
	Perfluorooctanoic acid	**PFOA**	**335-67-1**
	Perfluorononanoic acid	**PFNA**	**375-95-1**
	Perfluorodecanoic acid	PFDA	335-76-2
	Perfluoroundecanoic acid	PFUA/PFUdA	2058-94-8
	Perfluorododecanoic acid	PFDoA	307-55-1
	Perfluorotridecanoic acid	PFTriA/PFTrDA	72629-94-8
	Perfluorotetradecanoic acid	PFTA/PFTeDA	376-06-7
Fluorinated Telomer Sulfonates	6:2 Fluorotelomer sulfonate	6:2 FTS	27619-97-2
	8:2 Fluorotelomer sulfonate	8:2 FTS	39108-34-4
Perfluorooctane-sulfonamides	Perfluroroctanesulfonamide	FOSA	754-91-6
Perfluorooctane-sulfonamidoacetic acids	N-methyl perfluorooctanesulfonamidoacetic acid	N-MeFOSAA	2355-31-9
	N-ethyl perfluorooctanesulfonamidoacetic acid	N-EtFOSAA	2991-50-6

Bold entries depict the 6 original UCMR3 chemicals

PFC Sampling – Prohibited and Acceptable Items

Prohibited	Acceptable
Field Equipment	
Teflon® containing materials	High-density polyethylene (HDPE) materials
Low density polyethylene (LDPE) materials	Acetate Liners
	Silicon Tubing
Waterproof field books	Loose paper (non-waterproof)
Plastic clipboards, binders, or spiral hard cover notebooks	Aluminum field clipboards or with Masonite
	Sharpies®, pens
Post-It Notes®	
Chemical (blue) ice packs	Regular ice
Field Clothing and PPE	
New cotton clothing or synthetic water resistant, waterproof, or stain-treated clothing, clothing containing Gore-Tex™	Well-laundered clothing made of natural fibers (preferable cotton)
Clothing laundered using fabric softener	No fabric softener
Boots containing Gore-Tex™	Boots made with polyurethane and PVC
Tyvek®	Cotton clothing
No cosmetics, moisturizers, hand cream, or other related products as part of personal cleaning/showering routine on the morning of sampling	**Sunscreens** - Alba Organics Natural Sunscreen, Yes To Cucumbers, Aubrey Organics, Jason Natural Sun Block, Kiss my face, Baby sunscreens that are "free" or "natural" **Insect Repellents** - Jason Natural Quit Bugging Me, Repel Lemon Eucalyptus Insect repellant, Herbal Armor, California Baby Natural Bug Spray, BabyGanics **Sunscreen and insect repellant -** Avon Skin So Soft Bug Guard Plus – SPF 30 Lotion
Sample Containers	
LDPE or glass containers	HDPE or polypropylene
Teflon-lined caps	Unlined polypropylene caps
Rain Events	
Waterproof or resistant rain gear	Gazebo tent that is only touched or moved prior to and following sampling activities
Equipment Decontamination	
Decon 90®	Alconox® and/or Liquinox®
Water from an on-site well	Potable water from municipal drinking water supply
Food Considerations	
All food and drink, with exceptions noted on right	Bottled water and hydration fluids (i.e, Gatorade® and Powerade®) to be brought and consumed only in the staging areas