EA Engineering, P.C. and Its Affiliate
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25 November 2020

Mr. Joshua Haugh
Division of Environmental Remediation
New York State Department of Environmental Conservation
1130 N. Westcott Road
Schenectady, New York 12306-2014

RE: Remedial Investigation/Feasibility Study Letter Work Plan Addendum - FINAL
Bedrock Monitoring Wells
Contract/Work Assignment No: D009806-04
Admiral Cleaners, Watervliet, New York
Site No. 401075

Dear Mr. Haugh:

This Addendum to the Letter Work Plan[1] provides additional detail for the Phase III field investigation activities for the remedial investigation (RI) at the Admiral Cleaners Site (Number [No.] 401075) (Site) in the City of Watervliet, Albany County, New York (Figure 1). EA Engineering, P.C. and its affiliate EA Science and Technology (EA) will complete a supplemental field investigation to install permanent bedrock groundwater monitoring wells.

Under this Addendum, EA will mobilize to the Site and install three 2-inch (in.) permanent bedrock groundwater monitoring wells as presented in Figure 2. Locations of the bedrock monitoring wells are based on regional groundwater flow and previously completed soil borings. The drilling subcontractor, Parratt-Wolff, Inc. (Parratt-Wolff) of East Syracuse, New York, will be responsible for contacting Dig Safely New York to identify subsurface utilities in the vicinity of soil boring locations in addition to acquiring any permits required. Additionally, Parratt-Wolff will hand clear boring locations using an air knife or hand tools within five feet of subsurface utilities and those located on private property. The drilling and installation of monitoring wells will be supervised and documented by an EA field geologist according to the procedures described below. Monitoring wells will be completed as flush mounts with a curb box. Soil and rock cuttings generated during monitoring well installation activities will be containerized, handled, and disposed of as described below in the Investigation Derived Waste (IDW) section and as detailed in Section 3.4 of the site-specific HASP Addendum (Attachment B to the Letter Work Plan).

Field activities will be completed in accordance with this Addendum and the Letter Work Plan including Attachment A (EA's Generic Field Activities Plan); Attachment B (site-specific Health and Safety Plan [HASP]; and Attachment C (site-specific Quality Assurance Project Plan [QAPP]). Additional tasks and any deviations from the Letter Work Plan[1] are described in the following sections.

[1] EA. 2018. *Remedial Investigation/Feasibility Study Letter Work Plan.* March

BEDROCK MONITORING WELL INSTALLATION

Parratt-Wolff will install three 2-in. bedrock groundwater monitoring wells to a depth up to 40 feet (ft) below ground surface (bgs). It is anticipated that 10-15 ft of glacial till overburden overlies bedrock at the proposed locations. Borings will be advanced through overburden until competent bedrock is encountered. It is at Parratt-Wolff's discretion on how to best advance within and isolate the overburden material for this drilling scope. Temporary PVC or steel casing may be installed if needed to prevent overburden collapse during drilling. Once the boring is advanced approximately 3 ft into competent bedrock, 4-in. permanent PVC or steel casing will be set and grouted into place. The grout will be permitted to cure for 24 hours. After the casing is set and the grout has been allowed to cure, a 4-in. borehole will be advanced through the casing using conventional coring methods (i.e. HX diamond core bit).

The bedrock wells will be installed within a 4-in. diameter borehole to as much as 40 ft bgs. Bedrock cores will be collected and logged by the onsite field geologist and placed in new core boxes. The core boxes will be labeled (borehole ID, date, and depth interval of core) and photographed. Upon reaching final depth, the Parratt-Wolff will install a 2-in. diameter monitoring well. The screen interval will be determined in the field based on observed fractures and water bearing zones but is anticipated to be within the range of 20–40 ft bgs. A gravel pack design consisting of medium sand (or equivalent) will be installed from the base of the well to 2 ft above the top of the screen. A minimum 2-ft bentonite seal will be installed above the sand pack. The remaining borehole annulus will be tremie grouted with a bentonite/cement grout mix to within 2 ft of the surface and completed with concrete as a flush mount curb box.

MONITORING WELL DEVELOPMENT

The monitoring wells will be developed no sooner than 48 hours but no longer than 7 calendar days following installation. The monitoring wells will be developed using surging and pumping techniques. Monitoring well development will be considered complete when temperature, conductivity, and pH have stabilized and a turbidity of less than 50 nephelometric turbidity units (NTUs) has been achieved. At a minimum, development will remove 3-5 well volumes of water. One development volume is defined as (1) equivalent volume, plus (2) the amount of fluid lost during drilling, plus (3) the volume of water used in filter pack placement.

Development water will be containerized, handled, and disposed of as described below in the Investigation Derived Waste section and as detailed in Section 3.4 of the site-specific HASP Addendum (Attachment B to the Letter Work Plan).

DECONTAMINATION PROCEDURES AND INVESTIGATION DERIVED WASTE

Non-dedicated equipment and tools will be decontaminated prior to, between each drilling location, and prior to departure from site using steam cleaning methods. A temporary decontamination pad will be constructed onsite (e.g. plastic sheeting and hale bales). Investigation derived waste including personal protective equipment, solids and liquids generated during the well drilling, well development, decontamination, and well sampling activities, will be stored, handled, and disposed of in accordance with the Letter Work Plan.[1] Parratt-Wolff will also be required to contain and manage any liquids used for drilling to the extent practicable to prevent offsite runoff of IDW.

HEALTH AND SAFETY CONSIDERATIONS

For work in the public right-of-way on 19th Street and the alleyway, traffic will be routed around the work area with 36-in. safety cones with connecting stanchions and "Men/Women Working" signs placed a minimum of 50 ft. prior to the work area. Equipment will be transported across the road with a minimum of two flaggers to direct traffic.

Additionally, EA will perform perimeter dust and vapor monitoring in accordance with the Community Air Monitoring Plan.[2]

Please feel free to contact me if you have any questions or concerns at (315) 565-6565.

Sincerely yours,
EA SCIENCE AND TECHNOLOGY

Christopher Schroer
Project Manager

EA ENGINEERING, P.C.

Donald F. Conan, P.E., P.G.
Contract Manager

[2] EA Engineering, P.C. and its affiliate EA Science and Technology (EA). 2019. Community Air Monitoring Plan; Admiral Cleaners Site (401075). July.

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FIGURES

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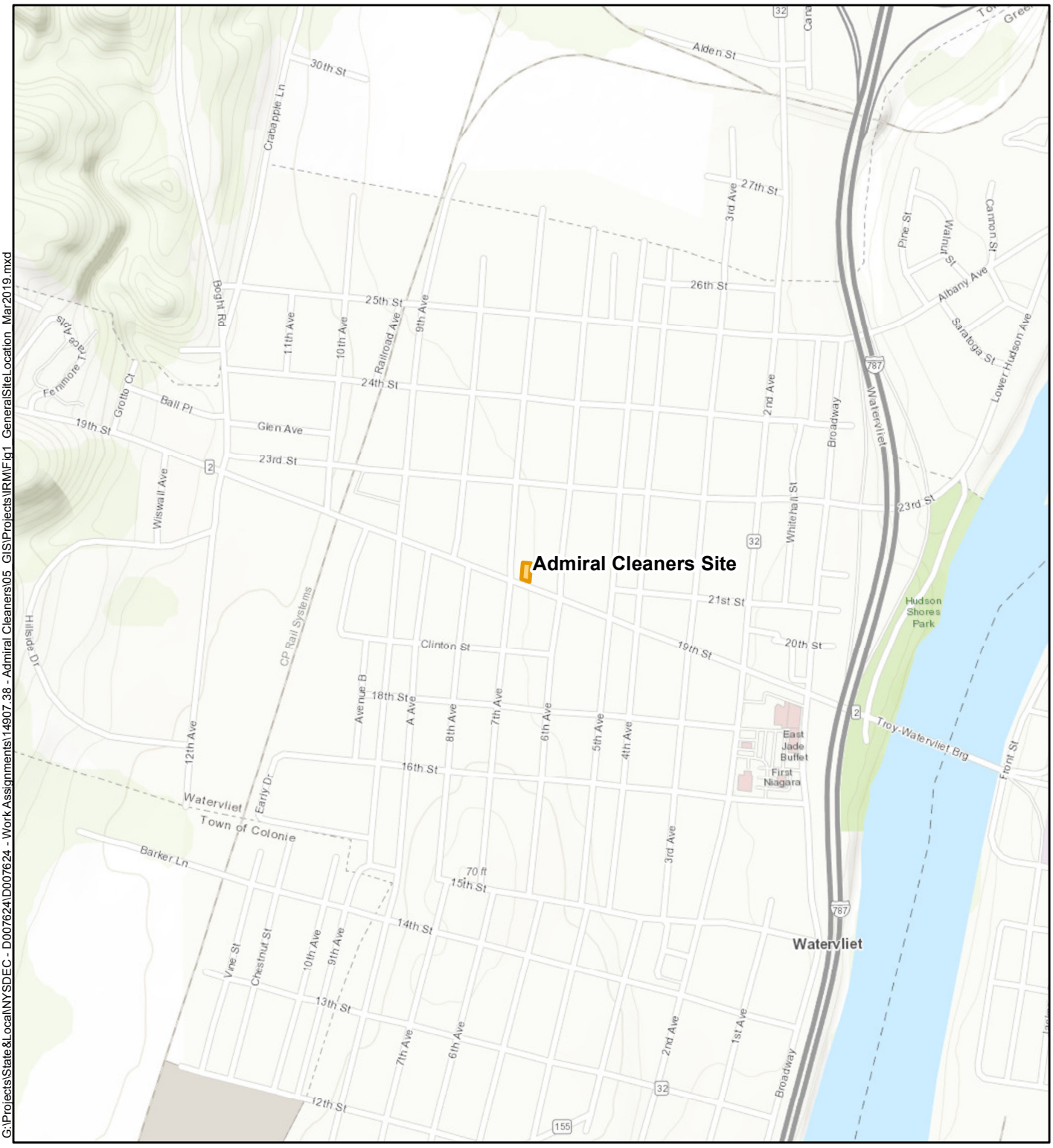

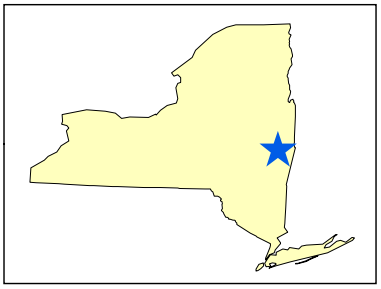

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Legend

- Site Location
- Admiral Cleaners Site Boundary

Figure 1
General Site Location
Admiral Cleaners
Watervliet, Albany County, NY

Map Date: 3/12/2019
Projection: NAD 1983 State Plane New York East FIPS 3101 Feet

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401075-MW-07R	
Analyte	**Result (µg/L)**
Cis-1,2-DCE	**1500 D**
PCE	**11000 D**
TCE	**1600 D**
VC	(< 27) U

401075-MW-02	
Analyte	**Result (µg/L)**
Cis-1,2-DCE	2.1
PCE	**28**
TCE	1.4
VC	(< 0.13) U

401075-MW-07	
Analyte	**Result (µg/L)**
Cis-1,2-DCE	**160**
PCE	**23**
TCE	**29**
VC	(< 0.13) U

401075-MW-10	
Analyte	**Result (µg/L)**
Cis-1,2-DCE	2
PCE	2.8
TCE	0.39 J
VC	(< 0.13) U

401075-MW-10	
Analyte	**Result (µg/L)**
Cis-1,2-DCE	2
PCE	2.8
TCE	0.39 J
VC	(< 0.13) U

401075-MW-09	
Analyte	**Result (µg/L)**
Cis-1,2-DCE	**5.6**
PCE	**32**
TCE	3.4
VC	(< 0.13) U

401075-MW-03	
Analyte	**Result (µg/L)**
Cis-1,2-DCE	3.9
PCE	**8.9**
TCE	1.5
VC	(< 0.13) U

401075-MW-01	
Analyte	**Result (µg/L)**
Cis-1,2-DCE	**110 D**
PCE	**440 D**
TCE	**77 D**
VC	(< 1.3) U

401075-MW-04	
Analyte	**Result (µg/L)**
Cis-1,2-DCE	**69**
PCE	**9.4**
TCE	2.7
VC	(< 0.13) U

401075-MW-05	
Analyte	**Result (µg/L)**
Cis-1,2-DCE	**740 D**
PCE	**51 D**
TCE	**26 D**
VC	**2.9 JD**

401075-MW-08	
Analyte	**Result (µg/L)**
Cis-1,2-DCE	0.36 J
PCE	1.5
TCE	(< 0.2) U
VC	(< 0.13) U

401075-MW-12	
Analyte	**Result (µg/L)**
Cis-1,2-DCE	(< 0.15) U
PCE	1.9
TCE	(< 0.2) U
VC	(< 0.13) U

401075-MW-15	
Analyte	**Result (µg/L)**
Cis-1,2-DCE	(< 0.15) U
PCE	1.8
TCE	(< 0.2) U
VC	(< 0.13) U
Chloroform	**12**

401075-MW-06	
Analyte	**Result (µg/L)**
Cis-1,2-DCE	**16000 D**
PCE	(< 27) U
TCE	**180 D**
VC	**41 JD**
1,1-DCE	**22 JD**
Trans-1,2-DCE	**27 JD**

401075-MW-17	
Analyte	**Result (µg/L)**
Cis-1,2-DCE	(< 0.15) U
PCE	(< 0.27) U
TCE	(< 0.2) U
VC	(< 0.13) U

401075-MW-14	
Analyte	**Result (µg/L)**
Cis-1,2-DCE	0.47 J
PCE	3.5
TCE	(< 0.2) U
VC	(< 0.13) U

401075-MW-16	
Analyte	**Result (µg/L)**
Cis-1,2-DCE	(< 0.15) U
PCE	(< 0.27) U
TCE	(< 0.2) U
VC	(< 0.13) U

Detected Compound	NYSDEC AWQS (µg/L)
Cis-1,2-Dichloroethene (Cis-1,2-DCE)	5
Tetrachloroethene (PCE)	5
Trichloroethene (TCE)	5
Vinyl Chloride (VC)	2
1,1-Dichloroethene (1,1-DCE)	5
Trans-1,2-Dichloroethene (Trans-1,2-DCE)	5

19th Street

MW-13 (Dry)

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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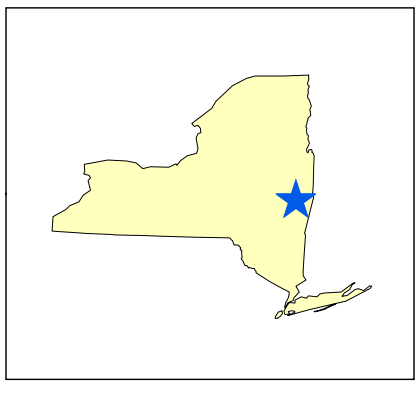

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Legend

- Results Exceed AWQS
- Phase III Bedrock Wells
- Phase I Monitoring Wells
- Phase II Monitoring Wells
- Admiral Cleaners Site Boundary
- Site Location

NOTE:
Bold and shaded values indicate that the analyte was detected greater than the applicable Guidance Values
PFOS = Perfluorooctanesulfonic acid
PFOA = Perfluorooctanoic acid
J = Result is estimated concentration.
µg/L = Microgram(s) per liter
ng/L = Nanogram(s) per liter

Figure 2
Remedial Investigation Phase III
Proposed Bedrock Monitoring Wells

Admiral Cleaners
Watervliet, Albany County, NY

Map Date: 11/25/2020
Projection: NAD 1983 State Plane New York East FIPS 3101 Feet

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