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September 8, 2020

Mr. Harry D. Warner, P.E.
Regional Hazardous Waste Remediation Engineer
NYSDEC Region 7
Division of Environmental Remediation
615 Erie Blvd. West
Syracuse, New York 13204-2400

Subject: Carrier Corporation Thompson Road Facility, Syracuse, New York
Corrective Action Order — Index CO 7-20051118-4
Site Registry No.: 734043
Monitoring Well Installation Work Plan

Dear Mr. Warner:

On behalf of Carrier Corporation (Carrier), AECOM USA, Inc. (AECOM) is submitting this work plan to install a monitoring well downgradient of MW-71 at the Carrier Thompson Road Facility (the Site) in Syracuse, Onondaga County, New York. Installation of the new monitoring well was proposed in the 2018 Annual Site-Wide Groundwater Monitoring Report (AECOM, 2019). The new well will provide a monitoring point on the Carrier property downgradient of MW-71.

The environmental work at the Site is being performed in accordance with the Corrective Action Order on Consent (CO) dated January 4, 2006. Monitoring well MW-71 was installed at the Site in early 2017 under a New York State Department of Environmental Conservation (NYSDEC)-approved Sampling and Analysis Plan (SAP) (AECOM, 2016). The SAP was submitted to NYSDEC in October 2016 and approved by NYSDEC on November 3, 2016. This new well will be installed in accordance with the procedures described in this SAP.

Figure 1 shows the locations of MW-71 and the newly proposed well at the southwest portion of the Site. All field activities associated with the construction of the newly proposed well will be performed in accordance with the SAP (AECOM, 2016), Generic Site Investigation Procedures (GSIP) (AECOM, 2017a), Health and Safety Plan (HASP) (AECOM, 2020), and Quality Assurance Plan (QAPP) (AECOM, 2017b).

Prior to beginning intrusive activities, Dig Safely NY will be notified for utility clearance. AECOM will also retain an underground utility surveyor who will use radio detection and ground penetrating radar (GPR) to conduct a utility location survey at the proposed well location; will review available site records and utility drawings with Carrier personnel; and prior to drilling, will pre-clear the monitoring well boring location to approximately 5 feet (ft) deep using hand tools.

Construction of the new monitoring well will be consistent with MW-71; in summary, the procedures and materials will include the following:

- The well boring will be advanced to approximately 15 ft using a truck-mounted drill rig or track-mounted Geoprobe rig equipped with a 4 ¼-inch (in) inside diameter hollow stem auger.
- Well construction materials will consist of 10-slot, 2-in diameter flush-coupled polyvinyl chloride (PVC) screen and solid riser.
- The well screen will be set in the unconfined water-bearing zone intercepting the observed water table. The well screen length will be 10 ft, located between approximately 5 and 15 ft below ground surface.
- A NJ #0 sand filter will be placed in the annular space between the well screen/riser and the borehole wall and extended to the bottom of the well screen to approximately 0.5 ft to 2 ft above the top of the well screen.
- A minimum 2-ft thick bentonite seal will be placed above the sand filter.
- The sand filter and bentonite will be added through the augers as the augers are slowly removed.
- The well will be completed using a flush-mount casing set in concrete.

Attachment 1 includes a copy of the MW-71 test boring log and well construction diagram for reference.

During installation of the new monitoring well, community air monitoring will be performed in accordance with the New York State Department of Health (NYSDOH) Generic Community Air Monitoring Plan (CAMP) (NYSDEC, 2010). Volatile Organic Compounds (VOCs) and particulate concentrations will be continuously monitored at the upwind and downwind perimeter of the active work area. Action levels and response actions identified in the CAMP are summarized below:

- *VOCs.* If the ambient air concentration of total organic vapors at the downwind perimeter of the work area exceeds 5 parts per million (ppm) greater than the background concentration (above background) for a 15-minute average, work activities will be temporarily suspended and monitoring will continue. If the total organic vapor levels readily decrease (per instantaneous readings) to less than 5 ppm above background, work activities will resume with continued monitoring. If

the organic vapor levels are greater than 5 ppm above background, but less than 25 ppm over background at the perimeter of the work area, activities can resume provided that the total organic vapor level 200 feet downwind of the work area, or half the distance to the nearest residential or commercial structure (whichever is less), is less than 5 ppm above background. If the total organic vapor level is greater than 10 ppm at the perimeter of the work area, activities will be shut down and appropriate actions will be taken to mitigate the organic vapor source.

- *Particulates.* Particulate monitoring will be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating measurements over a period of 15 minutes (or less) for comparison to the airborne particulate action level. Each particulate monitor will be calibrated daily using a filtered air sample. Data from each air monitoring instrument will be continuously downloaded and saved electronically to a dedicated computer located on-Site. The NYSDOH Generic CAMP-specified action level of 0.10 milligrams per cubic meter (mg/m^3) above background for PM-10 will be used to determine whether modifications to given processes are required. If the downwind measurement of PM-10 is greater than 0.10 mg/m^3 above the upwind background level, or if dust is observed leaving the project area, dust suppression techniques (i.e., misting surfaces with water) will be implemented to reduce the generation of fugitive dust. Furthermore, if the action level of 0.15 mg/m^3 (above background) is exceeded, work activities will be halted and dust suppression techniques will be reevaluated.

The new monitoring well will be developed by surging and pumping. Water quality measurements of pH, conductivity, temperature, and turbidity will be periodically recorded during the well-development process. Well-development water will be sent to the on-Site Storm Water Treatment Plant. Decontamination water and soil cuttings will be placed in drums for subsequent off-Site disposal. The new monitoring well will be surveyed for location and elevation by a New York State-licensed land surveyor to within 0.01 ft referencing the New York State Plane Central Zone North American Datum of 1983 (NAD 83) for horizontal control and the North American Vertical Datum of 1988 (NAVD 88) for vertical control.

The new monitoring well will be sampled during the next annual Site-wide groundwater sampling event, which is tentatively scheduled for September or October 2020. The sampling results will be included in the subsequent 2020 annual Site-wide groundwater monitoring report.

If you have any questions regarding this work plan, please contact me at 919-461-1194.

Sincerely,

Peter Hollatz
Project Manager
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Jon Alberg
Senior Principal
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cc: Michael Belveg, NYSDEC
Julia M. Kenney, NYSDOH (hard copy)
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Don Sorbello, Carrier Corporation
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Joe Basile, Carrier Corporation
Dan Servetas, AECOM

References

AECOM, 2016. *Site-Wide Groundwater Monitoring Supplemental Well Installation Sampling and Analysis Plan.* October 2016.

AECOM, 2017a. *Generic Site Investigation Procedures (GISP).* November 2017.

AECOM, 2017b. *Quality Assurance Project Plan (QAPP).* November 2017.

AECOM, 2019. *2018 Annual Site-Wide Groundwater Monitoring Report.* February 2019.

AECOM, 2020. *Health and Safety Plan.* August 2020.

NYSDEC, 2010. *Division of Environmental Remediation (DER)-10 Technical Guidance for Site Investigation and Remediation, Appendix 1A*. May 2010.

Figure 1 – Proposed Location of Monitoring Well Downgradient of MW-71

Attachment 1 – Test Boring Log and Well Construction Diagram from MW-71

Figure

N

SANDERS CREEK

THOMPSON RD

CARRIER PKWY

KINNE ST

MW-05R, 393.94
MW-17, 388.87
MW-42, 389.92
MW-66, 390.44
MW-57, 394.70
TR3-MW-02, 393.15
MW-43, 394.81
MW-58, 392.45
TR3-PW-01, 394.83
AR-SB-04, NM
AR-SB-02, 391.81
MW-21, 391.28
MW-68, 389.62
MW-79, 392.37
MW-14, 392.95
MW-18, 393.64
TR3-PW-02, 394.50
MW-47, 396.11
MW-50, 394.56
MW-62, 395.37
MW-48, 394.54
AR-MW-03, 396.03
AR-MW-01, 395.82
AR-MW-02, 396.08
B00107, 394.99
MW-46, 398.08, 0.20
B00109, 395.68
B00108, NM
MW-49, 396.47
MW-70, 395.24
B00103, 398.16
B00104, 394.39
MW-45, 397.83
B00110, 396.25
MW-44, 398.17
MW-20, NM
AR-MW-06, 395.27
AR-MW-04, 395.64
B00106, 401.03
PUR001, 399.64, 0.10
AR-MW-05, 396.05
B00105, 394.43
MW-82, 395.70
MW-10, 394.25
MW-81, 398.07
MW-83, 399.07
MW-73, 395.20
MW-38, 395.09
MW-06, 395.01
MW-37, 395.49
MW-36, 395.52
FDPZ01, 395.62
FDPZ03, 395.50
MW-39, 395.59
MW-19, 395.57
MW-23, 394.91
MW-24, 395.62
MW-77, 396.21
MW-31, 395.29, 0.24
DCDPZ02, 396.70
MW-30, 397.07
MW-33, 396.44, 0.07
DCDPZ04, 397.04, 0.18
DCDPZ01, 398.83, 0.75
MW-34, 396.88
MW-03S, 397.54
MW-75, 398.15
DCDPZ03, 396.95
MW-26, 399.04
MW-32, 397.33
SSIPZ04, 398.00, 0.02
SSIPZ03, 398.14
MW-28, 397.96
MW-29, 399.51
SSIPZ02, 398.36, Sheen
SSIPZ01, 397.89
MW-25, 398.12, 2.01
MW-27, 397.25
SSIPZ05, NM
MW-84, 396.68
MW-08, 398.79
MW-76, 398.67
SEE INSET
MW-69, 398.22
MW-71, 395.41
MW-74, 398.58
MW-09, 399.78
DP-MW-04, 404.86

INSET
MW-71
0
40 Feet

Legend

- Proposed Monitoring Well
- Monitoring Well
- Groundwater Flow Direction
- Groundwater Elevation Contour *(Dashed where inferred)*
- Property Line
- Sheet Pile Wall
- **Horizontal Well:**
- Slotted Pipe
- Solid Pipe

MW-25, 398.12, 2.01
Location ID | Groundwater Elevation (ft AMSL) | LNAPL Thickness (ft)

NOTES:
1. Elevation shown in feet above mean sea level (ft amsl); NAVD 88 Datum
2. NM = Not Measured
3. Groundwater elevations are corrected to account for LNAPL thickness. These elevations were considered, but not used to generate groundwater contours.
4. Groundwater elevations for MW-79, TR3-MW-02, and B00106 were not used to generate groundwater contours.
5. Shallow groundwater elevations (October 11 & 12, 2018).

SOURCE: NYS Digital Ortho-imagery Program (NYSDOP), Onondaga County, 2015

250 0 250 Feet

SITE-WIDE GROUNDWATER MONITORING
CARRIER THOMPSON ROAD SITE
PROPOSED LOCATION OF MONITORING WELL DOWNGRADIENT OF MW-71

AECOM

FIGURE 1

J:\Projects\60310231_UTCAOCGR\MISC\GIS\Maps\SITE-WIDE\PROPOSED MW DOWNGRADIENT MW-71.mxd 4/25/2019

Attachment 1

Test Boring Log and Well Construction Diagram

TEST BORING LOG

AECOM

BORING NO. :	MW-71
PROJECT/PROJECT LOCATION:	UTC Supplemental GW
SHEET:	1 OF 1
CLIENT:	UTC
JOB NO. :	60528299
BORING CONTRACTOR:	Parratt-Wolff
NORTHING:	1123463.97 **EASTING:** 952230.85
GROUNDWATER:	
GROUND ELEVATION:	405.24'
DATE STARTED:	1/11/17
DATE FINISHED:	1/10/17
DRILLER:	Jolaan Price
GEOLOGIST:	Rob Murphy
REVIEWED BY:	K. Connare

DATE	TIME	LEVEL	TYPE		CAS.	SAMPLER	CORE	TUBE
				TYPE	HSA	Macrocore		
				DIA.	4 1/4"	2"		
				WT.				
				FALL				
				* POCKET PENETROMETER READING				

DEPTH FEET	STRATA	SAMPLE DEPTH	SAMPLE BLOW COUNTS	RECOVERY (%)	PID DIRECT/ HEAD-SPACE	MATERIAL DESCRIPTION	WELL CONSTRUCTION	REMARKS
0		0-5		NA	ND	Brown silty clay with gravel (FILL)	Flush-mount roadbox set in concrete	Moist
						Dark gray silty gravel (FILL)	Hole Plug (0.5-3.0')	
							2" PVC Riser (0'-5)	
-5		5-10		60	ND	Gray silt with coarse sand (FILL)		Very Moist at 7'
						Brown to gray reworked clayey silt, some coarse sand (FILL)		
						Light brown Clayey SILT, some fine sand (ML)		Wet @8'
						Brown silty fine SAND (SM)	NJ #0 US Silica (3'-15')	
-10		10-15		80	ND	Brown to gray Silty fine SAND, with clay seams. (SM)	10-slot 2" PVC screen (5'-15')	
-15						End of boring @ 15.0'		
-20								

COMMENTS: Boring hand cleared to 5' bgs then advanced with truck mounted Ingersol Rand A-300 rig.

Collected sample from 7-8' for analysis of VOCs and PCBs.

Moved 7' east of proposed location due to refusal at 7' (on possible abandoned sewer line).