TETRA TECH

March 29, 2022

Ms. Karen A. Cahill
Assistant Engineer
NYSDEC Region 7
615 Erie Boulevard W.
Syracuse, NY 13204-2400

RE: Revised Phase III 1,4-Dioxane Groundwater Investigation
Abandoned Solvent Center Site – Pompey, NY
(NYSDEC #734035)

Karen,

Your correspondence dated January 31, 2022, requested the following changes be made to the scope for the proposed new well installations: 1) install a fourth well set between Phase I borings B2 and B3, 2) well screens are to be 5 feet in length rather than 10 feet, and 3) set the bottom of the shallow well screens at 17 feet bgs rather than 12 feet bgs. In addition, per email dated February 14, 2022, regarding the inability to vertically profile the new Scalisi drinking water well because of the installed well pump you requested that we perform vertical profiling in the well to be installed between Phase I borings B2 and B3. These changes are incorporated into the revised scope provided below.

Installation of Nested Groundwater Monitoring Wells

Nested groundwater monitoring wells will be installed at four (4) locations (MW-12 to MW-15) shown on Figure 1. Similar to the existing network, the proposed wells will be completed at depths of 17 feet (S) and 30 feet (I) in the unconsolidated deposits and at a depth of 75 feet (D) in the bedrock to confirm the horizontal limits and define the vertical extent of the 1,4-D plume.

The 17- and 30-foot wells in the unconsolidated deposits will be constructed in the same boring. A SONIC rig will be used to core through the soil to the depth of 17 feet using an 8-inch core barrel and 7-inch override casing. A 15 minute falling head test will be conducted to prove the efficacy of the seal between the casing shoe and the formation between the two well screens. Drilling will continue to 30 feet (or top of bedrock) with the 4 by 6-inch drill steel combination. The 30 feet deep 2-inch PVC well will be set and the 5-foot screen will be sand-packed in lifts to one foot above the top of screen. At least two feet of bentonite chips will be placed between the top of the deep screen and the bottom of the shallow screen to seal the annular space between screens. All of the 6-inch override casing will be pulled. The 17 foot shallow 2-inch PVC well will be set inside the 8-inch casing. The 5-foot screen will be sand-packed in lifts to one foot above the top of screen. The remaining annular space will be pressure grouted with bentonite/cement grout. All of the SONIC working casings will be pulled and the grout will be topped off. The vibration applied to the casing as it is pulled will serve to degas and densify the grout and knit it into

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the borehole wall making a superior seal. An appropriate surface completion will be installed, and the wells will be developed by pumping and surging.

For the 75-foot deep bedrock well, a SONIC rig will be used to core through the soil and into the top of bedrock using a 6-inch core barrel and 7-inch override casing. A 15-minute falling head test will be conducted to prove the efficacy of the seal between the casing shoe and the bedrock. The 7-inch working casing will be sleeved with temporary 6-inch steel casing and that shoe will also be driven into rock. Drilling will continue to the target depth of 75 feet with a 6-inch down-the-hole (DTH) hammer using water as the drilling fluid to clean the hole. The 75 feet deep 2-inch PVC well will be set and the 5-foot screen will be sand-packed in lifts to one foot above the top of screen. A couple feet of bentonite chips will be placed above the sand pack to seal the annular space. The remaining annular space will be pressure grouted with bentonite/cement grout. All of the SONIC working casings will be pulled and the grout will be topped off. The vibration applied to the casing as it is pulled will serve to degas and densify the grout and knit it into the borehole wall making a superior seal. An appropriate surface completion will be installed, and the well will be developed by pumping and surging.

At one (1) of the deep bedrock well locations, vertical profile sampling will be conducted. Groundwater samples will be collected at 10-foot intervals from 40-80' (35-40', 45-50', 55-60', 65-70', 75-80'). The procedure will involve drilling to the depth of the first vertical profile interval and lowering a packer on the drill rod down the drilled hole to isolate a 5-foot zone. A sampling pump will be put down the drill rod to purge/pump the water and collect a sample. The packer will be removed and the hole will be drilled down to the bottom of the next 10-foot interval and the packer/sampling process would be repeated.

Solid investigative derived waste (IDW) will be placed in a roll-off box for waste characterization and disposal. Development water will be contained and transported to the sump of the site ground water treatment plant where it will be pumped off for treatment.

The location and top of casing elevation of each of the nested wells will be surveyed by a registered surveyor. After well development, dual-membrane passive diffusion bags (DMPDBs) will be deployed in each of the new wells and allowed to equilibrate for at least two weeks. These well will be sampled as part of the Spring 2022 sampling event and analyzed for VOCs and 1,4-D.

Schedule

The start date for the well installations is scheduled to begin the week of April 18, 2022.

Please feel free to contact me if you have any questions.

Tetra Tech, Inc.

Michael R. Noel, P.G.
Principal Hydrogeologist

	TVOCs	1,4-D
MW-8S (12')		
1995	95	NS
5/3/2021	9.29	73
10/28/2021	20.1	**77**
MW-8I (31')		
1995	ND	NS
5/3/2021	ND	620
10/28/2021	ND	**630**
MW-8D (74')		
1995	ND	NS
5/3/2021	ND	40
10/28/2021	1.5	**110**

	TVOCs	1,4-D
MW-2S (12')		
1995	NS	NS
5/3/21	788.6	0.68
10/29/2021	1078	**2.4**
MW-2I (31')		
1995	140000	NS
5/3/2021	9030	17
10/29/2021	11010	**16**
MW-2D (47')		
1995	10100	NS
5/3/2021	34.7	1.5
10/29/2021	47.4	**1.7**

	TVOCs	1,4-D
MW-6S (12')		
1995	ND	NS
10/30/2020	NS	NS
5/3/2021	ND	**ND**
MW-6D (76')		
1995	ND	NS
10/30/2020	NS	NS
5/3/2021	ND	**0.13**

	TVOCs	1,4-D
MW-5S (12')		
1995	10	NS
5/3/2021	0.51	110
10/29/2021	1.1	**1200**
MW-5D (76')		
1995	ND	NS
5/3/2021	ND	ND
10/28/2021	ND	**0.8**

	TVOCs	1,4-D
MW-11S		
1995	69	NS
5/3/2021	ND	0.51
10/28/2021	ND	**2.0**

	TVOCs	1,4-D
MW-1S (18')		
1995	ND	NS
10/30/2020	NS	NS
5/3/2021	ND	**ND**
MW-1D (55.5')		
1995	ND	NS
10/30/2020	NS	NS
5/3/2021	ND	**ND**

	TVOCs	1,4-D
MW-7S (10')		
1995	61000	NS
5/3/2021	2860	35
10/28/2021	7210	**45**
MW-7I (28')		
1995	46290	NS
5/3/2021	3663	400
10/28/2021	4540	**530**
MW-7D (94')		
1995	ND	NS
5/3/2021	ND	0.32
10/29/2021	ND	**2.4**

	TVOCs	1,4-D
MW-4S (16')		
1995	ND	NS
10/30/2020	NS	NS
5/3/2021	ND	**ND**
MW-4D (66')		
1995	ND	NS
10/30/2020	NS	NS
5/3/2021	ND	**ND**

EXPLANATION

- PIEZOMETER
- MONITORING WELL
- STAND PIPE
- GROUNDWATER COLLECTION TRENCH
- GROUNDWATER CUT-OFF WALL
- PIEZOMETER SAMPLE
- B-1 DIRECT PUSH GROUNDWATER VERTICAL PROFILE
- STEP OUT LOCATION
- RESIDENTIAL WELL
- 1360.06 GROUNDWATER ELEVATION
- 1365 GROUNDWATER CONTOUR
- 220 1,4-DIOXANE (ug/L)
- PROPOSED GROUNDWATER MONITORING WELL NEST

NOTE:
TOTAL VOC CONCENTRATIONS SHOWN ARE IN PARTS PER BILLION

ND = NOT DETECTED

NS = NOT SAMPLED

J = ESTIMATE VALUE

H = SAMPLE PREPPED OR ANALYZED BEYOND HOLDING TIME

B = ANALYTE IS FOUND IN ASSOCIATED BLANK AS WELL AS SAMPLE

* = LAB CONTROL SAMPLE EXCEEDS CONTROL LIMITS

2021 Addition to 017.-02-03.0

017.-02-01.4

017.-02-01.5

017.-02-03.0

017.-02-04.0

017.-02-02.0

023.-02-03.0

023.-01-06.0

023.-02-02.0

023.-01-07.0

023.-02-01.1

023.-01-08.0

023.-02-04.2

023.-02-04.8

023.-02-05.0

023.-02-04.1

BUMPUS RESIDENCE WELL

SCALISI RESIDENCE WELL

SCALISI RESIDENTIAL WELL #2

CHERRY VALLEY TURNPIKE (US ROUTE 20)

RIDGE ROAD (COUNTY ROAD 128)

B-1 **300** (8-12') **920** (13-17')

B-2 **63** (13-17')

B-3 **220** (6-10') **440/450** (10-14')

B-4 ND (6-10') **0.12** (13-17')

B-5 ND (6-10') ND (13-17')

B-6 **15** (12-16')

B-7 **5.2** (6-10') **12** (13-17')

B-8 DRY ND (8-8.5' Soil) ND (13.5-14' Soil)

B-9 DRY

B-10 **1.4** (6-10') **0.4** (11.5-14.5')

B-11 **16** (6-10') **29** (11-15')

B-12 **1.1** (9-13')

B-13 **3.1** (6-10') **29** (11-15')

MW-1S 1393.56; MW-1D

MW-2I 1369.74; MW-2D; MW-2S 1369.29

MW-4S,D 1359.95

MW-5S,D 1360.06

MW-6S,D 1359.69

MW-7S 1364.47; MW-7I; MW-7D

MW-8S,I,D 1367.29

MW-10 1369.57

MW-11S 1359.18

MW-12 S,I,D

MW-13 S,I,D

MW-14 S,I,D

MW-15 S,I,D

P-1 1361.79 **51**

P-2 1361.00 **510**

P-3 1369.74 **14**

P-4 1369.13 **4.3**

P-5 1363.21 **0.31**

P-6 1359.11 **1.1**

P-7 1361.97

P-8 1358.26

P-9 1370.77

SP-1

SP-2

42-67

0 120 240

SCALE IN FEET

NOTE: BASE MAP AND WELL LOCATIONS PROVIDED BY O'BRIEN & GERE FILE NO. 3027.23745-005 MAY 2000

TITLE:
1,4-DIOXANE GROUNDWATER INVESTIGATION RESULTS

LOCATION:
Abandoned Solvent Center Site
Pompey, New York

TETRA TECH

APPROVED	MRN
DRAFTED	CMP
PROJECT#	117C-GE-00070
DATE	03-29-22

FIGURE 1

S:\CAD\GE\POMPEY\DECEMBER 2021\PROPOSED 14-D GW INVESTIGATION 12-22-21.DWG