MACTEC

engineering and constructing a better tomorrow

September 14, 2020

Mr. Benjamin Rung
Project Manager
Division of Environmental Remediation
Remedial Bureau E, 12th Floor
New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233-7016

Subject: **Erdle Perforating Company (NYSDEC Site 828072)**
June 2020 Groundwater Sampling Report
MACTEC Engineering and Geology, P. C., Project No. 3617137306

Dear Mr. Rung:

MACTEC Engineering and Geology, P.C. (MACTEC), under contract to the New York State Department of Environmental Conservation (NYSDEC) is submitting this Letter Report (Report) for groundwater sampling at the Erdle Perforating Company (Erdle) site (Site). The Site is listed as Class 2 hazardous waste Site No. 828072 in the Registry of Hazardous Waste Sites in New York State (Figure 1).

MACTEC conducted a groundwater sampling event under Work Assignment No. D007619-26 to continue to evaluate post remedial groundwater following the electrical resistivity heating (ERH) and the installation of the permanganate cylinders.

BACKGROUND

The Erdle Site is located at 100 Pixley Industrial Parkway in the Town of Gates, Monroe County (Figure 1). The Site property, approximately 9.2 acres in size, is bounded on the south by a marsh and Conrail railroad tracks and an undeveloped wooded area further south of the railroad tracks. It is bounded on the north and east by light industry, and on the west by open land and Interstate 490.

A residential development (Hidden Valley Development) is located south of the Site (south of the wooded area). The Site is currently zoned for industrial purposes including manufacturing and processing. The Site and surrounding developed areas are serviced by public water (MACTEC, 2010).

Erdle Company manufactures perforated sheet metal products. The facility was constructed in 1968 and used trichloroethene (TCE) during its manufacturing process to remove perforating oils. In February 1987, spent TCE, previously stored in a 2,000-gallon underground storage tank located on the south side of the Site building, was determined to have leaked and impacted soil and groundwater in the vicinity of the Site.

Several remedial actions have been conducted at the Site, including the installation of an in-site ERH system that operated from June 2015 to April 2016 (as per the NYSDEC Record of Decision (NYSDEC, 2010).

Although post ERH soil samples indicated the soils met the soil cleanup objectives, groundwater sampling conducted in May of 2018 and May 2019 indicated that contaminants (primarily chlorinated compounds) were still present in groundwater at and downgradient from the Site at concentrations above New York State Standards (MACTEC, 2018 and 2019a). As a result, six new wells were installed (IW-1 to IW-6). RemOx® SR+ICSCO cylinders (a mix of potassium permanganate and sodium persulfate cylinders provided by Carus Corporation) were placed in the new wells and in four existing wells (MW-8, MW-8D, MW-9, and MW-9D) to oxidize contaminants present in groundwater.

This Report describes the groundwater sampling conducted in June 2020 as part of evaluating the effectiveness of the chemical oxidant and monitoring groundwater quality.

FIELD ACTIVITIES

The performance of the groundwater sampling was governed by MACTEC's Field Activities Plan (MACTEC, 2019b). The NYSDEC call-out contractor TestAmerica Laboratories, Inc., provided the laboratory analytical services. Field activities were performed by MACTEC during the week

of June 8, 2020.

The groundwater sampling program is detailed in Table 1. Groundwater sampling was conducted from wells located on Site and downgradient from the Site.

Groundwater Sampling. Forty-five wells were sampled using low-flow sampling techniques and analyzed for Target Compound List Volatile Organic Compounds (VOCs) by Method 8260C (two additional wells purged dry and did not recover enough groundwater volume to sample). Field measurements for pH, temperature, specific conductivity, oxidation reduction potential (ORP), and dissolved oxygen were collected through a flow-through cell from each monitoring well during pre-sample purging. Turbidity was measured separately with a turbidity meter. Although low flow sampling was attempted at all locations, several locations had excessive drawdown within the wells, and the wells were purged down and allowed to recharge before sampling. Field measurements and monitoring well sampling activities were documented on Low Flow Groundwater Data Records included in Attachment 1.

Investigation Derived Waste. Groundwater purged during monitoring well sampling was containerized and treated on-Site using a portable granular activated carbon unit and allowed to infiltrate into the ground in the former source area at the Site.

Used disposable equipment and personal protective clothing was double bagged in polyethylene trash bags and sealed with twist ties. The disposable equipment was disposed of as nonhazardous municipal solid waste.

ANALYTICAL RESULTS AND FIELD OBSERVATIONS

Laboratory analytical results were validated and found to be usable as reported by the laboratory or qualified as documented in the Data Usability Summary Report (DUSR) (Attachment 2). Analytical data for the groundwater samples collected in June 2020 are summarized in Table 2.

The results for the primary contaminants of concern, TCE, cis-1,2-dichloroethene (cis-1,2-DCE), and vinyl chloride (VC) for the wells sampled in June 2020 are presented on Figure 2. In general,

chlorinated VOCs (CVOC) concentrations in groundwater were similar to those detected in November 2019; although several wells further downgradient from the Site had lower concentrations, including MW-17D, MW-11 and MW-11D, MW-16D, and MW-19D. The New York Class GA groundwater standards for CVOCs are currently exceeded at many locations at and downgradient of the Site, although degradation of TCE to cis-1,2-DCE and VC is generally observed.

The wells with RemOx® SR+ICSCO cylinders installed (IW-1 to IW-6, MW-8, MW-8D, MW-9 and MW-9D) were observed to evaluate the continued presence of chemical oxidant. The cylinders were still present in the wells and the well water was observed to be dark purple. Field parameters for wells just down gradient from the wells with chemical oxidant (MW-2A, MW-3A, GPZ-1S1, and GPZ-1D) were reviewed; wells continued to exhibit low dissolved oxygen and low ORP. The continued presence of the permanganate and the groundwater parameters indicate that chemical oxidant added has not migrated far from the wells where it was installed.

CONCLUSIONS

Concentrations of CVOCs detected in June 2020 in groundwater at and downgradient from the Site are similar to those detected in 2018 and 2019, with continued elevated concentrations of TCE and daughter products in the former source area (MW-2A). Slight changes in concentrations over time in downgradient wells may be the result of seasonal variation. VOC concentrations, visual observations and field parameters did not indicate that permanganate has traveled far from where it was placed in June 2019, however, the cylinders are not spent, and will continue to treat groundwater that flows through the wells where they are installed.

MACTEC will be conducting further evaluation to provide additional remedial options to address the remaining groundwater impacted at the site, specifically within the area surrounding MW-2A.

If you have questions on the information provided herein, please do not hesitate to contact us at (207) 775-5401.

Sincerely,

MACTEC Engineering and Geology, P.C.

Charles R Staples

Charles Staples, PG
Senior Scientist

Jamie Welch

Jamie Welch
Project Manager

Enclosures:

Figure 1:	Site Location
Figure 2:	Primary Contaminants of Concern Results
Table 1:	Sample Identification and Analysis
Table 2:	VOC's in Groundwater-June 2020
Attachment 1:	Field Data Records
Attachment 2:	Data Usability Summary Report

REFERENCES

MACTEC Engineering and Geology, P.C. (MACTEC), 2019a. May 2019 Groundwater Sampling Report, Erdle Perforating Company Site; Site Number 828027. September 6, 2019.

MACTEC, 2019b. 2019 Groundwater Remedial Action Field - Activities Plan, Erdle Perforating Company Site; Site Number 828027. May 15, 2019.

MACTEC, 2018. May 2018 Post ERH-Remediation Groundwater Sampling Report, Erdle Perforating Company Site; Site Number 828027. July 25, 2018.

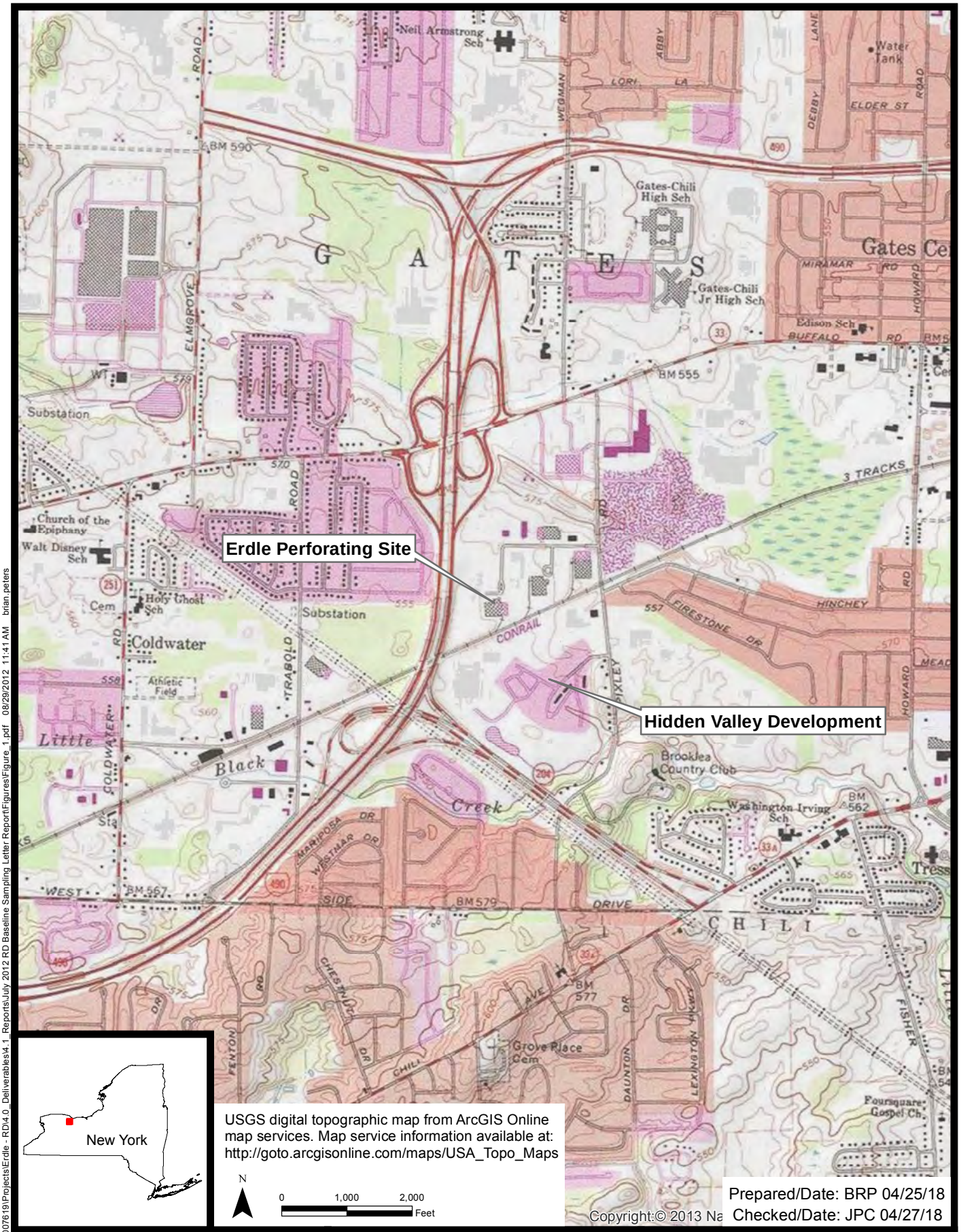
MACTEC, 2010. Final Remedial Investigation/Feasibility Study Report, Erdle Perforating Company, prepared for the New York State Department of Environmental Conservation. June 2010.

New York State Department of Environmental Conservation (NYSDEC), 2010. Record of Decision, Erdle Perforating Site, State Superfund Project, Town of Gates, Monroe County, Site No. 828072. December 2010.

LIST OF ACRONYMS AND ABBREVIATIONS

cis-1,2-DCE	cis-1,2-dichloroethene
CVOC	Chlorinated Volatile Organic Compound
DUSR	Data Usability Summary Report
Erdle	Erdle Perforating Company
ERH	electrical resistance heating
MACTEC	MACTEC Engineering & Geology, P.C.
NYSDEC	New York State Department of Environmental Conservation
ORP	oxidation reduction potential
Report	Letter Report
Site	Erdle Perforating Company Site
TCE	trichloroethylene
VC	vinyl chloride
VOC	volatile organic compound

FIGURES



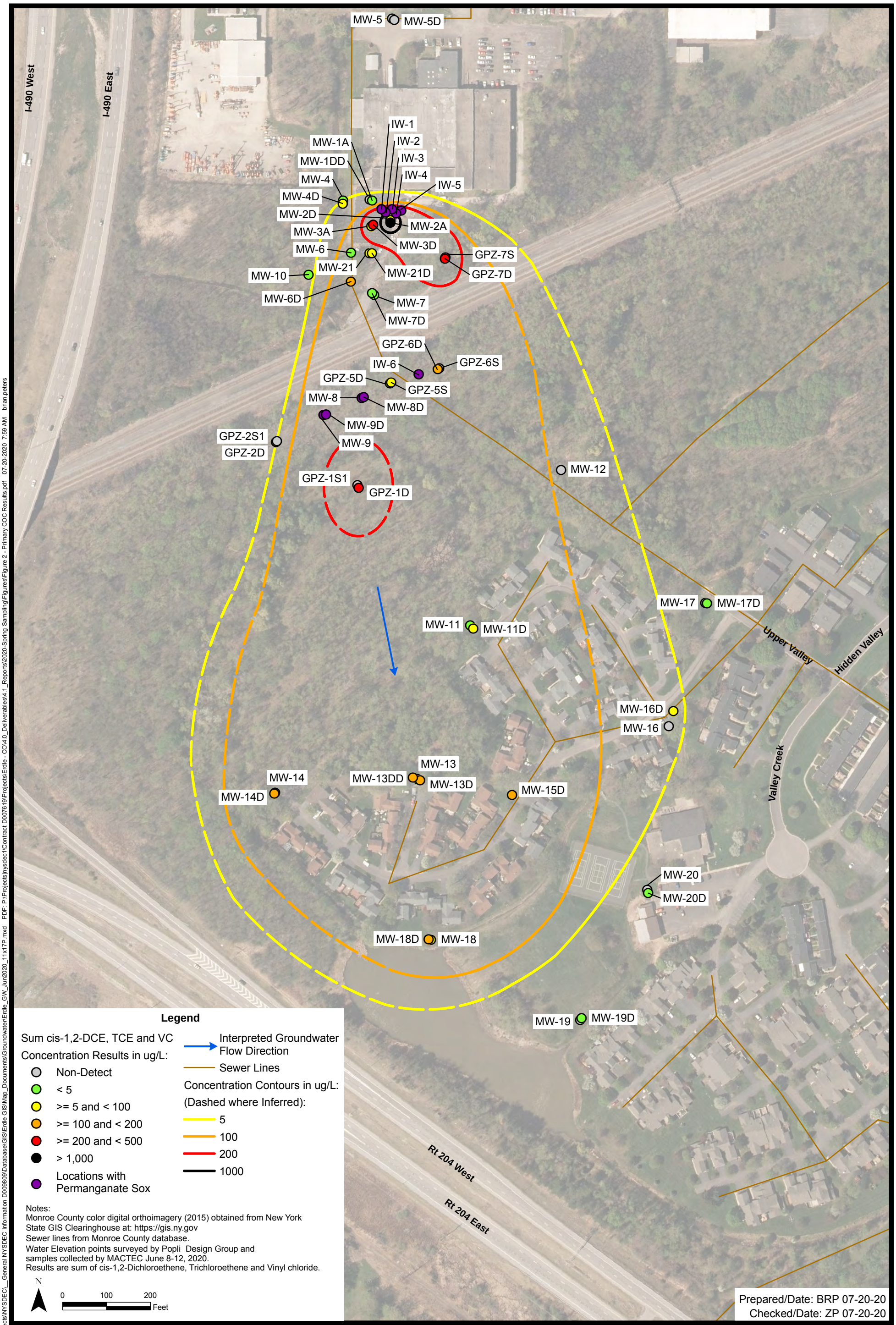
Prepared/Date: BRP 04/25/18
Checked/Date: JPC 04/27/18

2019 GROUNDWATER SAMPLING
ERDLE PERFORATING SITE
GATES, NEW YORK

MACTEC

SITE LOCATION

Project 3617137306 Figure 1



2019 GROUNDWATER SAMPLING
ERDLE PERFORATING SITE
GATES, NEW YORK

MACTEC

PRIMARY CONTAMINANTS OF CONCERN
RESULTS - JUNE 2019
Project 3617137306 Figure 2

TABLES

TABLE 1: SAMPLE IDENTIFICATION AND ANALYSES
Round 2: June 2020
(3 rounds - every 6 months starting November 2019)

Well ID	Sample ID	MS/ MSD	DUP	VOCs	Comments
MW-1A	828072-MW01A008	1		1	
MW-1DD	828072-MW1DD038			1	Drawdown
MW-2A	828072-MW02A008		1	1	
MW-2D	828072-MW02D020			1	OK
MW-3A	828072-MW03A008			1	
MW-3D	828072-MW03D014			1	OK
MW-4	828072-MW004			1	
MW-4D	828072-MW04D			1	
MW-5	828072-MW005006			1	well damaged
MW-5D	828072-MW05D010			1	well damaged
MW-6	828072-MW006008			1	Drawdown
MW-6D	828072-MW06D015			1	OK
MW-7	828072-MW007015			1	Drawdown
MW-7D	828072-MW07D022			1	OK
MW-10	828072-MW010016			1	OK
MW-11	828072-MW011012			1	Drawdown
MW-11D	828072-MW11D023			1	OK
MW-12	828072-MW012011			1	Drawdown
MW-13	828072-MW013006			1	Drawdown
MW-13D	828072-MW13D12		1	1	OK
MW-13DD	828072-MW13DD040			1	OK
MW-14	828072-MW014017			1	OK
MW-14D	828072-MW14D033			1	OK
MW-15	828072-MW015006			1	purged dry
MW-15D	828072-MW15D023			1	OK
MW-16	828072-MW016008			1	purged dry
MW-16D	828072-MW16D022			1	OK
MW-17	828072-MW017007			1	purged dry
MW-17D	828072-MW17D023	1		1	OK
MW-18	828072-MW018010			1	OK
MW-18D	828072-MW18D021			1	OK
MW-19	828072-MW019006			1	purged dry
MW-19D	828072-MW19D019			1	OK
MW-20	828072-MW020006			1	
MW-20D	828072-MW20D020			1	OK
MW-21	828072-MW021012		1	1	
MW-21D	828072-MW21D020	1		1	
GPZ-1S1	828072-GPZ1S1008			1	purged dry
GPZ-1D	828072-GPZ1D014			1	purged dry
GPZ-2D	828072-GPZ2D020			1	purged dry

GPZ-2S1	828072-GPZ2S1014			1	purged dry
GPZ-5D	828072-GPZ5D025			1	OK
GPZ-5S	828072-GPZ5S018			1	purged dry
GPZ-6D	828072-GPZ6D028			1	OK
GPZ-6S	828072-GPZ6S018			1	Drawdown
GPZ-7D	828072-GPZ7D028			1	Not previously sampled
GPZ-7S	828072-GPZ7S___			1	Not previously sampled
TOTAL Groundwater Samples		3	3	47	

Notes:

Sample ID = Site IDs begin with the NYSDEC Site # 8-28-072.

MS/MSD = matrix spike and matrix spike duplicate sample collected (5%)

DUP = Duplicate sample collected (5%)

VOCs = Target Compound List Volatile Organic Compounds analyzed by EPA Method 8260.

OK in comments indicates well purged at low flow rate with minimum drawdown.

Table 2: VOCs in Groundwater - June 2020

		Location ID	**GPZ-1D**		**GPZ-1S1**		**GPZ-2D**		**GPZ-2S1**	
		Field Sample Date	6/12/2020		6/11/2020		6/12/2020		6/11/2020	
		Field Sample ID	828072-GPZ1D014		828072-GPZ1S1008		828072-GPZ2D020		828072-GPZ2S1014	
		Field Sample Depth (ft bgs)	14		8		30		14	
		QC Code	**FS**		**FS**		**FS**		**FS**	
Parameter Name	**GA**	**GV**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
1,1-Dichloroethane	5	--	**6.1**		1	U	1	U	2.5	U
1,1-Dichloroethene	5	--	**0.25**	J	1	U	1	U	2.5	U
1,2,4-Trimethylbenzene	5	--	1	U	1	U	1	U	2.5	U
1,3,5-Trimethylbenzene	5	--	1	U	1	U	1	U	2.5	U
1,4-Dioxane	1	--	40	U	40	U	40	U	100	U
2-Butanone	--	50	5	U	5	U	5	U	13	U
4-Methyl-2-pentanone	--	--	5	U	5	U	5	U	13	U
Acetic acid, methyl ester	--	--	2	U	2	U	2	U	5	U
Acetone	--	50	5	U	5	U	5	U	13	U
Benzene	1	--	1	U	1	U	1	U	2.5	U
Carbon disulfide	--	60	1	U	1	U	1	U	2.5	U
Chloromethane	5	--	1	UJ	1	UJ	1	U	2.5	UJ
cis-1,2-Dichloroethene	5	--	**160**		1	U	1	U	2.5	U
Dichlorodifluoromethane	5	--	1	U	1	U	1	U	2.5	U
Methyl Tertbutyl Ether	--	10	1	U	1	U	1	U	2.5	U
Naphthalene	--	10	1	U	1	U	1	U	2.5	U
Tetrachloroethene	5	--	1	U	1	U	1	U	2.5	U
Toluene	5	--	1	U	1	U	1	U	2.5	U
trans-1,2-Dichloroethene	5	--	**0.8**	J	1	U	1	U	2.5	U
Trichloroethene	5	--	**17**		1	U	1	U	2.5	U
Vinyl chloride	2	--	**40**		1	U	1	U	2.5	U
Xylene, o	5	--	1	U	1	U	1	U	2.5	U
Xylenes (m&p)	5	--	2	U	2	U	2	U	5	U

Notes:

Results reported in micrograms per liter (µg/L)
Only detected compounds shown.
Samples analyzed for VOCs by EPA Method SW8260B
QC Code: FS= Field Sample**,** FD= Field Sample
Qualifiers: U = Not detected greater than the reporting limit
J = Estimated value
ft bgs = feet below ground surface
Bold = Compound detected in sample

Notes Cont.

GA/GV = Groundwater guidance or standard values from Technical and Operational Guidance Series (TOGS) 1.1.1, "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations" (NYSDEC, 1998):

GA = New York State Class GA Groundwater Standards
GV = New York State Guidance Values
-- = No listed value
Highlighted results exceed criteria

Table 2: VOCs in Groundwater - June 2020

		Location ID	**GPZ-5D**		**GPZ-5S**		**GPZ-6D**		**GPZ-6S**	
		Field Sample Date	6/11/2020		6/11/2020		6/11/2020		6/11/2020	
		Field Sample ID	828072-GPZ5D022		828072-GPZ5S018		828072-GPZ6D028		828072-GPZ6S018	
		Field Sample Depth (ft bgs)	22		18		28		18	
		QC Code	**FS**		**FS**		**FS**		**FS**	
Parameter Name	**GA**	**GV**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
1,1-Dichloroethane	5	--	**0.97**	J	1	U	**5**		1	U
1,1-Dichloroethene	5	--	1	U	1	U	1	U	1	U
1,2,4-Trimethylbenzene	5	--	1	U	1	U	1	U	1	U
1,3,5-Trimethylbenzene	5	--	1	U	1	U	1	U	1	U
1,4-Dioxane	1	--	40	U	40	U	**28**	J	40	U
2-Butanone	--	50	5	U	5	U	5	U	5	U
4-Methyl-2-pentanone	--	--	5	U	5	U	5	U	5	U
Acetic acid, methyl ester	--	--	2	U	2	U	2	U	2	U
Acetone	--	50	5	U	5	U	5	U	5	U
Benzene	1	--	1	U	1	U	1	U	1	U
Carbon disulfide	--	60	1	U	1	U	1	U	1	U
Chloromethane	5	--	1	UJ	1	UJ	1	U	1	U
cis-1,2-Dichloroethene	5	--	**32**		**7.4**		**89**		1	U
Dichlorodifluoromethane	5	--	1	U	1	U	1	U	1	U
Methyl Tertbutyl Ether	--	10	1	U	1	U	1	U	1	U
Naphthalene	--	10	1	U	1	U	1	U	1	U
Tetrachloroethene	5	--	1	U	1	U	1	U	1	U
Toluene	5	--	1	U	1	U	1	U	1	U
trans-1,2-Dichloroethene	5	--	**0.35**	J	1	U	**0.47**	J	1	U
Trichloroethene	5	--	**4.9**		**1.0**	J	**1.3**		1.0	U
Vinyl chloride	2	--	**8**		**0.2**	J	**24**		1.0	U
Xylene, o	5	--	1	U	1	U	1	U	1	U
Xylenes (m&p)	5	--	2	U	2	U	2	U	2	U

Notes:

Results reported in micrograms per liter (µg/L)
Only detected compounds shown.
Samples analyzed for VOCs by EPA Method SW8260B
QC Code: FS= Field Sample**,** FD= Field Sample
Qualifiers: U = Not detected greater than the reporting limit
J = Estimated value
ft bgs = feet below ground surface
Bold = Compound detected in sample

Notes Cont.

GA/GV = Groundwater guidance or standard values from Technical and Operational Guidance Series (TOGS) 1.1.1, "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations" (NYSDEC, 1998):

GA = New York State Class GA Groundwater Standards
GV = New York State Guidance Values
-- = No listed value
Highlighted results exceed criteria

Table 2: VOCs in Groundwater - June 2020

	Location ID		GPZ-7D		GPZ-7S		MW-1A		MW-1DD	
	Field Sample Date		6/8/2020		6/8/2020		6/8/2020		6/8/2020	
	Field Sample ID		828072-GPZ7D		828072-GPZ7S		828072-MW01A008		828072-MW1DD038	
	Field Sample Depth (ft bgs)						8		38	
	QC Code		FS		FS		FS		FS	
Parameter Name	**GA**	**GV**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	
1,1-Dichloroethane	5	--	**19**		1	U	10	U	1	U
1,1-Dichloroethene	5	--	1	U	1	U	10	U	1	U
1,2,4-Trimethylbenzene	5	--	1	U	1	U	10	U	1	U
1,3,5-Trimethylbenzene	5	--	1	U	1	U	10	U	1	U
1,4-Dioxane	1	--	**540**		40	U	400	U	40	U
2-Butanone	--	50	5	U	**1**	J+	50	U	5	U
4-Methyl-2-pentanone	--	--	5	U	5	U	**8.9**	J+	5	U
Acetic acid, methyl ester	--	--	2	U	2	U	20	U	2	U
Acetone	--	50	5	U	5	U	50	U	5	U
Benzene	1	--	1	U	1	U	10	U	1	U
Carbon disulfide	--	60	1	U	1	U	10	U	1	U
Chloromethane	5	--	1	U	1	U	10	U	1	U
cis-1,2-Dichloroethene	5	--	**6.3**		1	U	10	U	1	U
Dichlorodifluoromethane	5	--	1	U	1	U	10	U	1	U
Methyl Tertbutyl Ether	--	10	**1.3**		1	U	10	U	1	U
Naphthalene	--	10	1	U	1	U	10	U	1	U
Tetrachloroethene	5	--	1	U	1	U	10	U	1	U
Toluene	5	--	1	U	1	U	**17**		1	U
trans-1,2-Dichloroethene	5	--	**0.67**	J	1	U	**2.4**	J	1	U
Trichloroethene	5	--	1.0	U	1.0	U	10.0	U	1.0	U
Vinyl chloride	2	--	**250**		1.0	U	10.0	U	1.0	U
Xylene, o	5	--	1	U	1	U	10	U	1	U
Xylenes (m&p)	5	--	2	U	2	U	20	U	2	U

Notes:

Results reported in micrograms per liter (µg/L)
Only detected compounds shown.
Samples analyzed for VOCs by EPA Method SW8260B
QC Code: FS= Field Sample**,** FD= Field Sample
Qualifiers: U = Not detected greater than the reporting limit
J = Estimated value
ft bgs = feet below ground surface
Bold = Compound detected in sample

Notes Cont.

GA/GV = Groundwater guidance or standard values from Technical and Operational Guidance Series (TOGS) 1.1.1, "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations" (NYSDEC, 1998):

GA = New York State Class GA Groundwater Standards
GV = New York State Guidance Values
-- = No listed value
Highlighted results exceed criteria

Table 2: VOCs in Groundwater - June 2020

		Location ID	**MW-2A**		**MW-2A**		**MW-2D**		**MW-3A**	
		Field Sample Date	6/8/2020		6/8/2020		6/8/2020		6/8/2020	
		Field Sample ID	828072-MW02A008		828072-MW02A008 Dup		828072-MW02D020		828072-MW03A008	
		Field Sample Depth (ft bgs)	8		8		20		8	
		QC Code	**FS**		**FD**		**FS**		**FS**	
Parameter Name	**GA**	**GV**	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result
1,1-Dichloroethane	5	--	20	U	20	U	**0.74**	J	10	U
1,1-Dichloroethene	5	--	**24**		**23**		1	U	10	U
1,2,4-Trimethylbenzene	5	--	20	U	20	U	1	U	**5.2**	J
1,3,5-Trimethylbenzene	5	--	20	U	20	U	1	U	**2.1**	J
1,4-Dioxane	1	--	800	U	800	U	40	U	400	U
2-Butanone	--	50	100	U	100	U	5	U	50	U
4-Methyl-2-pentanone	--	--	100	U	100	U	5	U	**3.7**	J+
Acetic acid, methyl ester	--	--	40	U	40	U	2	U	20	U
Acetone	--	50	100	U	100	U	5	U	50	U
Benzene	1	--	20	U	20	U	1	U	**5.7**	J
Carbon disulfide	--	60	20	U	20	U	1	U	10	U
Chloromethane	5	--	**9.6**	J	20	U	1	U	10	U
cis-1,2-Dichloroethene	5	--	**9000**		**8800**		**44**		**30**	
Dichlorodifluoromethane	5	--	20	U	20	U	1	U	10	U
Methyl Tertbutyl Ether	--	10	20	U	20	U	1	U	10	U
Naphthalene	--	10	20	U	20	U	1	U	**13**	
Tetrachloroethene	5	--	20	U	20	U	1	U	10	U
Toluene	5	--	20	U	20	U	1	U	**11**	
trans-1,2-Dichloroethene	5	--	**54**		**47**		**0.66**	J	**4.9**	J
Trichloroethene	5	--	**360**		**410**		**1.9**		10.0	U
Vinyl chloride	2	--	**760**		**730**		**3.5**		**37.0**	
Xylene, o	5	--	20	U	20	U	1	U	**2.9**	J
Xylenes (m&p)	5	--	40	U	40	U	2	U	**4.2**	J

Notes:

Results reported in micrograms per liter (µg/L)
Only detected compounds shown.
Samples analyzed for VOCs by EPA Method SW8260B
QC Code: FS= Field Sample**,** FD= Field Sample
Qualifiers: U = Not detected greater than the reporting limit
J = Estimated value
ft bgs = feet below ground surface
Bold = Compound detected in sample

Notes Cont.

GA/GV = Groundwater guidance or standard values from Technical and Operational Guidance Series (TOGS) 1.1.1, "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations" (NYSDEC, 1998):

GA = New York State Class GA Groundwater Standards
GV = New York State Guidance Values
-- = No listed value
Highlighted results exceed criteria

Table 2: VOCs in Groundwater - June 2020

		Location ID	**MW-3D**		**MW-4**		**MW-4D**		**MW-5**	
		Field Sample Date	6/8/2020		6/9/2020		6/9/2020		6/9/2020	
		Field Sample ID	828072-MW03D014		828072-MW004		828072-MW004D		828072-MW005006	
		Field Sample Depth (ft bgs)	14						6	
		QC Code	**FS**		**FS**		**FS**		**FS**	
Parameter Name	**GA**	**GV**	Qualifier	Result		Qualifier	Result	Qualifier	Result	Qualifier
1,1-Dichloroethane	5	--	5	U	1	U	**0.63**	J	**0.31**	J
1,1-Dichloroethene	5	--	5	U	1	U	1	U	1	U
1,2,4-Trimethylbenzene	5	--	5	U	1	U	1	U	1	U
1,3,5-Trimethylbenzene	5	--	5	U	1	U	1	U	1	U
1,4-Dioxane	1	--	200	U	40	U	40	U	40	U
2-Butanone	--	50	25	U	5	U	5	U	5	U
4-Methyl-2-pentanone	--	--	**3.6**	J+	5	U	5	U	5	U
Acetic acid, methyl ester	--	--	**2.6**	J	2	U	2	U	2	U
Acetone	--	50	**630**	J+	5	U	5	U	5	U
Benzene	1	--	5	U	1	U	1	U	1	U
Carbon disulfide	--	60	5	U	1	U	1	U	1	U
Chloromethane	5	--	5	U	1	U	1	U	1	U
cis-1,2-Dichloroethene	5	--	**200**		**2.4**		**11**		1	U
Dichlorodifluoromethane	5	--	5	U	1	U	1	U	1	U
Methyl Tertbutyl Ether	--	10	5	U	1	U	1	U	1	U
Naphthalene	--	10	5	U	1	U	1	U	1	U
Tetrachloroethene	5	--	5	U	1	U	1	U	1	U
Toluene	5	--	**4**	J	1	U	1	U	1	U
trans-1,2-Dichloroethene	5	--	5	U	1	U	**5.3**		1	U
Trichloroethene	5	--	5.0	U	**0.8**	J	**1.2**		1.0	U
Vinyl chloride	2	--	**31.0**		**0.5**	J	**0.7**	J	1.0	U
Xylene, o	5	--	5	U	1	U	1	U	1	U
Xylenes (m&p)	5	--	10	U	2	U	2	U	2	U

Notes:

Results reported in micrograms per liter (µg/L)
Only detected compounds shown.
Samples analyzed for VOCs by EPA Method SW8260B
QC Code: FS= Field Sample**,** FD= Field Sample
Qualifiers: U = Not detected greater than the reporting limit
J = Estimated value
ft bgs = feet below ground surface
Bold = Compound detected in sample

Notes Cont.

GA/GV = Groundwater guidance or standard values from Technical and Operational Guidance Series (TOGS) 1.1.1, "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations" (NYSDEC, 1998):

GA = New York State Class GA Groundwater Standards
GV = New York State Guidance Values
-- = No listed value
Highlighted results exceed criteria

Table 2: VOCs in Groundwater - June 2020

		Location ID	**MW-5D**		**MW-6**		**MW-6D**		**MW-7**	
		Field Sample Date	6/8/2020		6/9/2020		6/8/2020		6/9/2020	
		Field Sample ID	828072-MW05D010		828072-MW006008		828072-MW06D015		828072-MW007015	
		Field Sample Depth (ft bgs)	10		8		15		15	
		QC Code	**FS**		**FS**		**FS**		**FS**	
Parameter Name	**GA**	**GV**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
1,1-Dichloroethane	5	--	1	U	1	U	**0.94**	J	1	U
1,1-Dichloroethene	5	--	1	U	1	U	**0.58**	J	1	U
1,2,4-Trimethylbenzene	5	--	1	U	1	U	1	U	1	U
1,3,5-Trimethylbenzene	5	--	1	U	1	U	1	U	1	U
1,4-Dioxane	1	--	40	U	40	U	40	U	40	U
2-Butanone	--	50	**1.7**	J+	5	U	5	U	5	U
4-Methyl-2-pentanone	--	--	5	U	5	U	5	U	5	U
Acetic acid, methyl ester	--	--	2	U	2	U	2	U	2	U
Acetone	--	50	**7.3**	J+	5	U	5	U	5	U
Benzene	1	--	1	U	1	U	1	U	1	U
Carbon disulfide	--	60	1	U	1	U	1	U	1	U
Chloromethane	5	--	1	U	1	U	1	U	1	U
cis-1,2-Dichloroethene	5	--	1	U	**0.76**	J	**150**		**1.7**	
Dichlorodifluoromethane	5	--	1	U	1	U	1	U	1	U
Methyl Tertbutyl Ether	--	10	1	U	1	U	1	U	1	U
Naphthalene	--	10	1	U	1	U	1	U	1	U
Tetrachloroethene	5	--	1	U	1	U	1	U	1	U
Toluene	5	--	1	U	1	U	1	U	1	U
trans-1,2-Dichloroethene	5	--	1	U	1	U	**2.1**		1	U
Trichloroethene	5	--	1.0	U	1.0	U	**17.0**		1.0	U
Vinyl chloride	2	--	1.0	U	**0.3**	J	**9.9**		**0.7**	J
Xylene, o	5	--	1	U	1	U	1	U	1	U
Xylenes (m&p)	5	--	2	U	2	U	2	U	2	U

Notes:

Results reported in micrograms per liter (µg/L)
Only detected compounds shown.
Samples analyzed for VOCs by EPA Method SW8260B
QC Code: FS= Field Sample**,** FD= Field Sample
Qualifiers: U = Not detected greater than the reporting limit
J = Estimated value
ft bgs = feet below ground surface
Bold = Compound detected in sample

Notes Cont.

GA/GV = Groundwater guidance or standard values from Technical and Operational Guidance Series (TOGS) 1.1.1, "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations" (NYSDEC, 1998):

GA = New York State Class GA Groundwater Standards
GV = New York State Guidance Values
-- = No listed value
Highlighted results exceed criteria

Table 2: VOCs in Groundwater - June 2020

		Location ID	MW-7D		MW-10		MW-11		MW-11D	
		Field Sample Date	6/9/2020		6/8/2020		6/9/2020		6/9/2020	
		Field Sample ID	828072-MW07D022		828072-MW010016		828072-MW011012		828072-MW11D023	
		Field Sample Depth (ft bgs)	22		16		12		23	
		QC Code	FS		FS		FS		FS	
Parameter Name	**GA**	**GV**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
1,1-Dichloroethane	5	--	**1.4**		1	U	1	U	**1.2**	
1,1-Dichloroethene	5	--	1	U	1	U	1	U	1	U
1,2,4-Trimethylbenzene	5	--	1	U	1	U	1	U	1	U
1,3,5-Trimethylbenzene	5	--	1	U	1	U	1	U	1	U
1,4-Dioxane	1	--	40	U	40	U	40	U	40	U
2-Butanone	--	50	5	U	5	U	5	U	5	U
4-Methyl-2-pentanone	--	--	5	U	5	U	5	U	5	U
Acetic acid, methyl ester	--	--	2	U	2	U	2	U	2	U
Acetone	--	50	5	U	5	U	5	U	5	U
Benzene	1	--	1	U	1	U	1	U	1	U
Carbon disulfide	--	60	1	U	1	U	1	U	1	U
Chloromethane	5	--	1	U	1	U	1	U	1	U
cis-1,2-Dichloroethene	5	--	**1.9**		1	U	1	U	**15**	
Dichlorodifluoromethane	5	--	**0.23**	J	1	U	1	U	1	U
Methyl Tertbutyl Ether	--	10	1	U	1	U	1	U	1	U
Naphthalene	--	10	1	U	1	U	1	U	1	U
Tetrachloroethene	5	--	1	U	1	U	1	U	1	U
Toluene	5	--	1	U	1	U	1	U	1	U
trans-1,2-Dichloroethene	5	--	1	U	1	U	1	U	1	U
Trichloroethene	5	--	1.0	U	1.0	U	1	U	1	U
Vinyl chloride	2	--	**0.7**	J	**0.3**	J	**0**	J	**59**	
Xylene, o	5	--	1	U	1	U	1	U	1	U
Xylenes (m&p)	5	--	2	U	2	U	2	U	2	U

Notes:

Results reported in micrograms per liter (µg/L)
Only detected compounds shown.
Samples analyzed for VOCs by EPA Method SW8260B
QC Code: FS= Field Sample**,** FD= Field Sample
Qualifiers: U = Not detected greater than the reporting limit
J = Estimated value
ft bgs = feet below ground surface
Bold = Compound detected in sample

Notes Cont.

GA/GV = Groundwater guidance or standard values from Technical and Operational Guidance Series (TOGS) 1.1.1, "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations" (NYSDEC, 1998):

GA = New York State Class GA Groundwater Standards
GV = New York State Guidance Values
-- = No listed value
Highlighted results exceed criteria

Table 2: VOCs in Groundwater - June 2020

		Location ID	**MW-12**		**MW-13**		**MW-13D**	
		Field Sample Date	6/9/2020		6/10/2020		6/10/2020	
		Field Sample ID	828072-MW012011		828072-MW013006		828072-MW13D12	
		Field Sample Depth (ft bgs)	11		6		12	
		QC Code	**FS**		**FS**		**FS**	
Parameter Name	**GA**	**GV**	Result	Qualifier	Result	Qualifier	Result	Qualifier
1,1-Dichloroethane	5	--	1	U	1	U	**1**	
1,1-Dichloroethene	5	--	1	U	1	U	1	U
1,2,4-Trimethylbenzene	5	--	1	U	1	U	1	U
1,3,5-Trimethylbenzene	5	--	1	U	1	U	1	U
1,4-Dioxane	1	--	40	U	40	U	40	U
2-Butanone	--	50	5	U	5	U	5	U
4-Methyl-2-pentanone	--	--	5	U	5	U	5	U
Acetic acid, methyl ester	--	--	2	U	2	U	2	U
Acetone	--	50	5	U	5	U	5	U
Benzene	1	--	1	U	1	U	1	U
Carbon disulfide	--	60	1	U	1	U	1	U
Chloromethane	5	--	**0.65**	J	1	UJ	1	UJ
cis-1,2-Dichloroethene	5	--	1	U	**0.46**	J	**120**	J
Dichlorodifluoromethane	5	--	1	U	1	U	1	U
Methyl Tertbutyl Ether	--	10	1	U	1	U	1	U
Naphthalene	--	10	1	U	1	U	1	U
Tetrachloroethene	5	--	1	U	1	U	**0.27**	J
Toluene	5	--	1	U	1	U	1	U
trans-1,2-Dichloroethene	5	--	1	U	1	U	**0.64**	J
Trichloroethene	5	--	1.0	U	1.0	U	1.0	U
Vinyl chloride	2	--	1.0	U	1.0	U	**26.0**	J
Xylene, o	5	--	1	U	1	U	1	U
Xylenes (m&p)	5	--	2	U	2	U	2	U

Notes:

Results reported in micrograms per liter (µg/L)
Only detected compounds shown.
Samples analyzed for VOCs by EPA Method SW8260B
QC Code: FS= Field Sample**,** FD= Field Sample
Qualifiers: U = Not detected greater than the reporting limit
J = Estimated value
ft bgs = feet below ground surface
Bold = Compound detected in sample

Notes Cont.

GA/GV = Groundwater guidance or standard values from Technical and Operational Guidance Series (TOGS) 1.1.1, "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations" (NYSDEC, 1998):

GA = New York State Class GA Groundwater Standards
GV = New York State Guidance Values
-- = No listed value
Highlighted results exceed criteria

Table 2: VOCs in Groundwater - June 2020

		Location ID	**MW-13D**		**MW-13DD**		**MW-14**		**MW-14D**	
		Field Sample Date	6/10/2020		6/10/2020		6/10/2020		6/11/2020	
		Field Sample ID	828072-MW13D12-DUP		828072-MW13DD040		828072-MW014017		828072-MW14D033	
		Field Sample Depth (ft bgs)	12		40		17		33	
		QC Code	**FD**		**FS**		**FS**		**FS**	
Parameter Name	**GA**	**GV**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
1,1-Dichloroethane	5	--	**0.59**	J	**1.1**		**1**		**1.4**	
1,1-Dichloroethene	5	--	1	U	**0.28**	J	1	U	**0.46**	J
1,2,4-Trimethylbenzene	5	--	1	U	1	U	1	U	1	U
1,3,5-Trimethylbenzene	5	--	1	U	1	U	1	U	1	U
1,4-Dioxane	1	--	40	U	40	U	40	U	40	U
2-Butanone	--	50	5	U	5	U	5	U	5	U
4-Methyl-2-pentanone	--	--	5	U	5	U	5	U	5	U
Acetic acid, methyl ester	--	--	2	U	2	U	2	U	2	U
Acetone	--	50	5	U	5	U	5	U	5	U
Benzene	1	--	1	U	1	U	1	U	1	U
Carbon disulfide	--	60	1	U	1	U	1	U	1	U
Chloromethane	5	--	1	UJ	1	UJ	1	U	1	UJ
cis-1,2-Dichloroethene	5	--	**50**	J	**97**		**130**		**160**	
Dichlorodifluoromethane	5	--	1	U	1	U	1	U	1	U
Methyl Tertbutyl Ether	--	10	1	U	1	U	1	U	1	U
Naphthalene	--	10	1	U	1	U	1	U	1	U
Tetrachloroethene	5	--	1	U	1	U	1	U	1	U
Toluene	5	--	1	U	1	U	1	U	1	U
trans-1,2-Dichloroethene	5	--	**0.23**	J	**0.51**	J	**0.58**	J	**0.6**	J
Trichloroethene	5	--	1.0	U	**17.0**		**0.5**	J	**26.0**	
Vinyl chloride	2	--	**9.2**	J	**7.6**		**24.0**		**5.2**	
Xylene, o	5	--	1	U	1	U	1	U	1	U
Xylenes (m&p)	5	--	2	U	2	U	2	U	2	U

Notes:

Results reported in micrograms per liter (µg/L)
Only detected compounds shown.
Samples analyzed for VOCs by EPA Method SW8260B
QC Code: FS= Field Sample**,** FD= Field Sample
Qualifiers: U = Not detected greater than the reporting limit
J = Estimated value
ft bgs = feet below ground surface
Bold = Compound detected in sample

Notes Cont.

GA/GV = Groundwater guidance or standard values from Technical and Operational Guidance Series (TOGS) 1.1.1, "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations" (NYSDEC, 1998):

GA = New York State Class GA Groundwater Standards
GV = New York State Guidance Values
-- = No listed value
Highlighted results exceed criteria

Table 2: VOCs in Groundwater - June 2020

			Location ID		**MW-15D**		**MW-16**		**MW-16D**		**MW-17**	
			Field Sample Date		6/9/2020		6/10/2020		6/10/2020		6/10/2020	
			Field Sample ID		828072-MW15D021		828072-MW016008		828072-MW16D022		828072-MW017007	
			Field Sample Depth (ft bgs)		21		8		22		7	
			QC Code		**FS**		**FS**		**FS**		**FS**	
Parameter Name	**GA**	**GV**			Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
1,1-Dichloroethane	5	--			**1.3**		1	U	**0.79**	J	1	U
1,1-Dichloroethene	5	--			1	U	1	U	1	U	1	U
1,2,4-Trimethylbenzene	5	--			1	U	1	U	1	U	1	U
1,3,5-Trimethylbenzene	5	--			1	U	1	U	1	U	1	U
1,4-Dioxane	1	--			40	U	40	U	40	U	40	U
2-Butanone	--	50			5	U	5	U	5	U	5	U
4-Methyl-2-pentanone	--	--			5	U	5	U	5	U	5	U
Acetic acid, methyl ester	--	--			2	U	2	U	2	U	2	U
Acetone	--	50			5	U	5	U	5	U	5	U
Benzene	1	--			1	U	1	U	1	U	1	U
Carbon disulfide	--	60			1	U	1	U	1	U	1	U
Chloromethane	5	--			1	U	1	UJ	1	UJ	1	UJ
cis-1,2-Dichloroethene	5	--			**93**		1	U	**55**		1	U
Dichlorodifluoromethane	5	--			1	U	1	U	1	U	1	U
Methyl Tertbutyl Ether	--	10			1	U	1	U	1	U	1	U
Naphthalene	--	10			1	U	1	U	1	U	1	U
Tetrachloroethene	5	--			1	U	1	U	1	U	1	U
Toluene	5	--			1	U	1	U	1	U	1	U
trans-1,2-Dichloroethene	5	--			**0.46**	J	1	U	**0.45**	J	1	U
Trichloroethene	5	--			1.0	U	1.0	U	1.0	U	1.0	U
Vinyl chloride	2	--			**82.0**		1.0	U	**42.0**		1.0	U
Xylene, o	5	--			1	U	1	U	1	U	1	U
Xylenes (m&p)	5	--			2	U	2	U	2	U	2	U

Notes:

Results reported in micrograms per liter (µg/L)
Only detected compounds shown.
Samples analyzed for VOCs by EPA Method SW8260B
QC Code: FS= Field Sample**,** FD= Field Sample
Qualifiers: U = Not detected greater than the reporting limit
J = Estimated value
ft bgs = feet below ground surface
Bold = Compound detected in sample

Notes Cont.

GA/GV = Groundwater guidance or standard values from Technical and Operational Guidance Series (TOGS) 1.1.1, "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations" (NYSDEC, 1998):

GA = New York State Class GA Groundwater Standards
GV = New York State Guidance Values
-- = No listed value
Highlighted results exceed criteria

Table 2: VOCs in Groundwater - June 2020

	Location ID		MW-17D		MW-18		MW-18D		MW-19	
	Field Sample Date		6/10/2020		6/9/2020		6/9/2020		6/10/2020	
	Field Sample ID		828072-MW17D023		828072-MW018010		828072-MW18D021		828072-MW019006	
	Field Sample Depth (ft bgs)		23		10		21		6	
	QC Code		FS		FS		FS		FS	
Parameter Name	**GA**	**GV**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
1,1-Dichloroethane	5	--	1	U	**0.28**	J	**1.3**		1	U
1,1-Dichloroethene	5	--	1	U	1	U	1	U	1	U
1,2,4-Trimethylbenzene	5	--	1	U	1	U	1	U	1	U
1,3,5-Trimethylbenzene	5	--	1	U	1	U	1	U	1	U
1,4-Dioxane	1	--	40	U	40	U	40	U	40	U
2-Butanone	--	50	5	U	5	U	5	U	5	U
4-Methyl-2-pentanone	--	--	5	U	5	U	5	U	5	U
Acetic acid, methyl ester	--	--	2	UJ	2	U	2	U	2	U
Acetone	--	50	5	U	5	U	5	U	5	U
Benzene	1	--	1	U	1	U	1	U	1	U
Carbon disulfide	--	60	**1.2**		1	U	1	U	1	U
Chloromethane	5	--	1	UJ	1	U	1	U	1	UJ
cis-1,2-Dichloroethene	5	--	**0.54**	J	**5.5**		**130**		1	U
Dichlorodifluoromethane	5	--	1	U	1	U	1	U	1	U
Methyl Tertbutyl Ether	--	10	1	U	1	U	1	U	1	U
Naphthalene	--	10	1	U	1	U	1	U	1	U
Tetrachloroethene	5	--	1	U	1	U	1	U	1	U
Toluene	5	--	1	U	1	U	1	U	1	U
trans-1,2-Dichloroethene	5	--	1	U	1	U	**0.69**	J	1	U
Trichloroethene	5	--	1.0	U	1.0	U	1.0	U	1.0	U
Vinyl chloride	2	--	**1.4**		**8.5**		**64.0**		1.0	U
Xylene, o	5	--	1	U	1	U	1	U	1	U
Xylenes (m&p)	5	--	2	U	2	U	2	U	2	U

Notes:

Results reported in micrograms per liter (µg/L)
Only detected compounds shown.
Samples analyzed for VOCs by EPA Method SW8260B
QC Code: FS= Field Sample**,** FD= Field Sample
Qualifiers: U = Not detected greater than the reporting limit
J = Estimated value
ft bgs = feet below ground surface
Bold = Compound detected in sample

Notes Cont.

GA/GV = Groundwater guidance or standard values from Technical and Operational Guidance Series (TOGS) 1.1.1, "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations" (NYSDEC, 1998):

GA = New York State Class GA Groundwater Standards
GV = New York State Guidance Values
-- = No listed value
Highlighted results exceed criteria

Table 2: VOCs in Groundwater - June 2020

		Location ID	**MW-19D**		**MW-20**		**MW-20D**	
		Field Sample Date	6/10/2020		6/10/2020		6/10/2020	
		Field Sample ID	828072-MW19D019		828072-MW020006		828072-MW20D020	
		Field Sample Depth (ft bgs)	19		6		20	
		QC Code	**FS**		**FS**		**FS**	
Parameter Name	**GA**	**GV**	Result	Qualifier	Qualifier	Result	Qualifier	Result
1,1-Dichloroethane	5	--	1	U	1	U	1	U
1,1-Dichloroethene	5	--	1	U	1	U	1	U
1,2,4-Trimethylbenzene	5	--	1	U	1	U	1	U
1,3,5-Trimethylbenzene	5	--	1	U	1	U	1	U
1,4-Dioxane	1	--	40	U	40	U	40	U
2-Butanone	--	50	5	U	5	U	5	U
4-Methyl-2-pentanone	--	--	5	U	5	U	5	U
Acetic acid, methyl ester	--	--	2	U	2	U	2	U
Acetone	--	50	5	U	5	U	5	U
Benzene	1	--	1	U	1	U	1	U
Carbon disulfide	--	60	1	U	1	U	1	U
Chloromethane	5	--	1	UJ	1	UJ	1	UJ
cis-1,2-Dichloroethene	5	--	**0.38**	J	1	U	**0.96**	J
Dichlorodifluoromethane	5	--	1	U	1	U	1	U
Methyl Tertbutyl Ether	--	10	1	U	1	U	1	U
Naphthalene	--	10	1	U	1	U	1	U
Tetrachloroethene	5	--	1	U	1	U	1	U
Toluene	5	--	1	U	1	U	1	U
trans-1,2-Dichloroethene	5	--	1	U	1	U	1	U
Trichloroethene	5	--	1.0	U	1.0	U	1.0	U
Vinyl chloride	2	--	**0.2**	J	1	U	**0.5**	J
Xylene, o	5	--	1	U	1	U	1	U
Xylenes (m&p)	5	--	2	U	2	U	2	U

Notes:

Results reported in micrograms per liter (µg/L)
Only detected compounds shown.
Samples analyzed for VOCs by EPA Method SW8260B
QC Code: FS= Field Sample**,** FD= Field Sample
Qualifiers: U = Not detected greater than the reporting limit
J = Estimated value
ft bgs = feet below ground surface
Bold = Compound detected in sample

Notes Cont.

GA/GV = Groundwater guidance or standard values from Technical and Operational Guidance Series (TOGS) 1.1.1, "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations" (NYSDEC, 1998):

GA = New York State Class GA Groundwater Standards
GV = New York State Guidance Values
-- = No listed value
Highlighted results exceed criteria

Table 2: VOCs in Groundwater - June 2020

		Location ID	**MW-21**		**MW-21**		**MW-21D**	
		Field Sample Date	6/8/2020		6/8/2020		6/8/2020	
		Field Sample ID	828072-MW021012		828072-MW021012Dup		828072-MW21D020	
		Field Sample Depth (ft bgs)	12		12		20	
		QC Code	**FS**		**FD**		**FS**	
Parameter Name	**GA**	**GV**	Qualifier	Result	Qualifier	Result	Qualifier	Result
1,1-Dichloroethane	5	--	**0.94**	J	**0.93**	J	**0.87**	J
1,1-Dichloroethene	5	--	1	U	1	U	**0.24**	J
1,2,4-Trimethylbenzene	5	--	1	U	1	U	1	U
1,3,5-Trimethylbenzene	5	--	1	U	1	U	1	U
1,4-Dioxane	1	--	40	U	40	U	40	U
2-Butanone	--	50	5	U	5	U	5	U
4-Methyl-2-pentanone	--	--	5	U	5	U	5	U
Acetic acid, methyl ester	--	--	2	U	2	U	2	U
Acetone	--	50	5	U	5	U	5	U
Benzene	1	--	1	U	1	U	1	U
Carbon disulfide	--	60	1	U	1	U	1	U
Chloromethane	5	--	1	U	1	U	1	U
cis-1,2-Dichloroethene	5	--	**20**		**20**		**21**	
Dichlorodifluoromethane	5	--	1	U	1	U	1	U
Methyl Tertbutyl Ether	--	10	1	U	1	U	1	U
Naphthalene	--	10	1	U	1	U	1	U
Tetrachloroethene	5	--	1	U	1	U	1	U
Toluene	5	--	1	U	1	U	1	U
trans-1,2-Dichloroethene	5	--	1	U	**0.22**	J	**1.3**	
Trichloroethene	5	--	**3.4**		**3.6**		**2.3**	
Vinyl chloride	2	--	**7**		**7.9**		**1.4**	
Xylene, o	5	--	1	U	1	U	1	U
Xylenes (m&p)	5	--	2	U	2	U	2	U

Notes:

Results reported in micrograms per liter (µg/L)
Only detected compounds shown.
Samples analyzed for VOCs by EPA Method SW8260B
QC Code: FS= Field Sample**,** FD= Field Sample
Qualifiers: U = Not detected greater than the reporting limit
J = Estimated value
ft bgs = feet below ground surface
Bold = Compound detected in sample

Notes Cont.

GA/GV = Groundwater guidance or standard values from Technical and Operational Guidance Series (TOGS) 1.1.1, "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations" (NYSDEC, 1998):

GA = New York State Class GA Groundwater Standards
GV = New York State Guidance Values
-- = No listed value
Highlighted results exceed criteria

ATTACHMENT 1

FIELD DATA RECORDS

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company
PROJECT NUMBER	3617137306.02
SAMPLE ID	828072- MW01A0608 (828072-MW01A0608MSMSD)
SAMPLE TIME	1012

LOCATION ID	MW-1A
DATE	06/08/20
START TIME	0930
END TIME	1025
SITE NAME/NUMBER	828072
PAGE	1 OF 1

WELL DIAMETER (INCHES): [ ] 1 [X] 2 [ ] 4 [ ] 6 [ ] 8 [ ] OTHER

TUBING ID (INCHES): [X] 1/8 [ ] 1/4 [ ] 3/8 [ ] 1/2 [ ] 5/8 [ ] OTHER

MEASUREMENT POINT (MP): [ ] TOP OF RISER (TOR) [ ] TOP OF CASING (TOC) [ ] OTHER NA

WELL INTEGRITY

	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR	X		

INITIAL DTW (BMP)	/ FT	FINAL DTW (BMP)	/ FT	PROT. CASING STICKUP (AGS)	2.9 FT
TOC/TOR DIFFERENCE	/ FT	WELL DEPTH (BMP)	/ FT	SCREEN LENGTH	Refer to well log FT
PID AMBIENT AIR	/ PPM	REFILL TIMER SETTING	/ SEC	WATER COLUMN	/ FT
DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	/ GAL	PID WELL MOUTH	/ PPM	DISCHARGE TIMER SETTING	/ SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	/ GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	1.56 GAL	DRAWDOWN/ TOTAL PURGED	/	PRESSURE TO PUMP	/ PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
0932	BEGIN PURGING										
0940	Cannot	150	15.05	2.416	6.73	2.05	3.20	-160.1	NA	8'	Sealed well
0950											
0955	Measure	150	15.20	2.411	6.62	1.40	3.45	-175.2			no water levels
1000		150	15.35	2.388	6.61	1.36	2.36	-175.7			
1005		150	15.09	2.390	6.60	1.33	2.73	-188.6			
1010		150	15.07	2.328	6.55	1.37	2.69	-183.4			
1012		Well Stable collect samples									

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

	15	2.3	6.6	1.4	2.7	-180 -183

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP
- [X] PERISTALTIC
- [ ] SUBMERSIBLE
- [ ] BLADDER
- [ ] OTHER

DECON FLUIDS USED
- [ ] LIQUINOX
- [ ] DEIONIZED WATER
- [ ] POTABLE WATER
- [ ] NITRIC ACID
- [✓] OTHER Deionized

TUBING/PUMP/BLADDER MATERIALS
- [X] SILICON TUBING
- [ ] HDPE TUBING
- [X] LDPE TUBING
- [ ] HDPE TUBING
- [ ] OTHER

- [ ] S. STEEL PUMP MATERIAL
- [ ] PVC PUMP MATERIAL
- [ ] GEOPROBE SCREEN
- [ ] TEFLON BLADDER
- [ ] OTHER

EQUIPMENT USED
- [X] WL METER
- [X] TURB. METER HACH 2100Q
- [X] WQ METER YSI 556 MPS
- [X] PUMP Geopump
- [ ] FILTERS NO. ____ TYPE ____

ANALYTICAL PARAMETERS

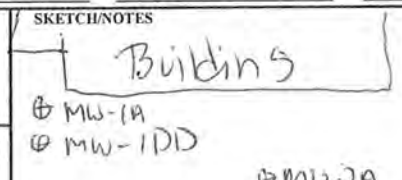
	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
X	VOCs	8260C	No	4°C HCl	9 X 40 ml	Y	MS,MSD	828072-MW01A0608 828072-MW01A0608MSMSD
	Alkalinity	2320B	No	4°C	250 ml Poly			
	Chloride	300	No	4°C	250 ml Poly			
	Nitrate	300	No	4°C				
	Nitrite	354.1	No	4°C				
	Sulfate	300	No	4°C				
	Sulfide	4500	No	4°C				
	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

	YES	NO
PURGE WATER CONTAINERIZED	X	
NO-PURGE METHOD UTILIZED		X

NUMBER OF GALLONS GENERATED 2.25 to sampling or ____ mL for this sample location.

SKETCH/NOTES



Yellow water
Strong odor

Sampler Signature: [signature] Print Name: Mannan Grozea

Checked By: [signature] Date: 6/30/20

MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company
PROJECT NUMBER	3617137306.02
SAMPLE ID	828072- MW1DD038
SAMPLE TIME	1212
LOCATION ID	MW1DD
DATE	6/8/20
START TIME	1124
END TIME	1222
SITE NAME/NUMBER	828072
PAGE	1 OF 1

WELL DIAMETER (INCHES): ☐ 1 ☐ 2 ☒ 4 ☒ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☒ 1/8 ☐ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER

MEASUREMENT POINT (MP): ☐ TOP OF RISER (TOR) ☒ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	☒		
CASING	☒		
LOCKED	☒		
COLLAR	☒		

INITIAL DTW (BMP)	6.05 FT	FINAL DTW (BMP)	7.15 FT	PROT. CASING STICKUP (AGS)	1.8 FT	TOC/TOR DIFFERENCE	/ FT
WELL DEPTH (BMP)	42.9 FT	SCREEN LENGTH	Report to Well Log FT	PID AMBIENT AIR	/ PPM	REFILL TIMER SETTING	/ SEC
WATER COLUMN	~~36.85~~ 36.85 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	~~0.77~~ 1.62 GAL	PID WELL MOUTH	/ PPM	DISCHARGE TIMER SETTING	/ SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	~~14.17~~ 34.7 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	1.79 GAL	DRAWDOWN/ TOTAL PURGED	89	PRESSURE TO PUMP	/ PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
1124	BEGIN PURGING										
1140	6.62	150	14.66	2.548	7.00	1.01	-10.1	-284.9	NA	38'	
1145	6.62	150	15.02	2.545	6.98	0.91	10.6	-270.1			
1150	6.80	150	14.59	2.543	6.98	0.83	9.35	-283.8			
1155	6.90	150	14.59	2.538	6.99	0.71	10.80	-285.3			
1200	7.00	150	14.64	2.533	6.98	0.65	10.40	-273.0			
1205	7.04	150	14.61	2.532	6.98	0.60	10.80	-268.8			
1210	7.15	150	14.59	2.527	6.98	0.61	11.1	-275.3			
1212	Well	Stable	Collect	Sample							

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF]) -290

	15	2.53	7.0	0.6	11.1	-275

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: ☒ PERISTALTIC ☐ SUBMERSIBLE ☐ BLADDER ☐ OTHER

DECON FLUIDS USED: ☒ LIQUINOX ☒ DEIONIZED WATER ☐ POTABLE WATER ☐ NITRIC ACID ☒ OTHER Isopropanol

TUBING/PUMP/BLADDER MATERIALS

☒ SILICON TUBING	☐ HDPE TUBING	☐ S. STEEL PUMP MATERIAL	☐ HDPE TUBING
☐ HDPE TUBING	☒ LDPE TUBING	☐ PVC PUMP MATERIAL	☐ LDPE TUBING
☐ LDPE TUBING	☐ HDPE TUBING	☐ GEOPROBE SCREEN	☐ HDPE TUBING
☐ HDPE TUBING	☐ OTHER	☐ TEFLON BLADDER	☐ OTHER
☐ OTHER		☐ OTHER	

EQUIPMENT USED

☒	WL METER	Heron Skinny Dipper M200-73
☒	TURB. METER	HACH 2100Q MW24-38
☒	WQ METER	YSI 556 MPS MW15-10
☒	PUMP	Geopump 5008-36
☒	FILTERS	NO. ___ TYPE

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
☒	VOCs	8260C	No	4°C HCl	3 X 40 ml	Y	~~Dup1.Dup2~~	828072-MW1DD038
☐	Alkalinity	2320B	No	4°C	250 ml Poly			
☐	Chloride	300	No	4°C	250 ml Poly			
☐	Nitrate	300	No	4°C				
☐	Nitrite	354.1	No	4°C				
☐	Sulfate	300	No	4°C				
☐	Sulfide	4500	No	4°C				
☐	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
☐	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
☐	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

	YES	NO
PURGE WATER CONTAINERIZED	☒	☐
NO-PURGE METHOD UTILIZED	☐	☒

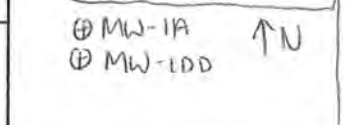
NUMBER OF GALLONS GENERATED: 2

to sampling or _____ mL for this sample location.

Sampler Signature: Hannah Grnza Print Name: Hannah Gnoza

Checked By: Jenny Rudloff Date:

SKETCH/NOTES



Notes AW

Grayish colored water
mild odor
low recharge well did not purge 5 x drawdown. (89)

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company
PROJECT NUMBER	3617137306.02
SAMPLE ID	828072- MW02A008 And 828072-MW02A008D07
SAMPLE TIME	1606
LOCATION ID	MW-2A
DATE	6/8/20
START TIME	1515
END TIME	1620
SITE NAME/NUMBER	828072
PAGE	1 OF 1

WELL DIAMETER (INCHES): ☐ 1 ☒ 2 ☐ 4 ☐ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☐ 1/8 ☒ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER

MEASUREMENT POINT (MP): ☐ TOP OF RISER (TOR) ☐ TOP OF CASING (TOC) ☑ OTHER N/A

WELL INTEGRITY

	YES	NO	N/A
CAP	✓		
CASING	✓		
LOCKED			✓
COLLAR			✓

INITIAL DTW (BMP)	N/A FT	FINAL DTW (BMP)	N/A FT	PROT. CASING STICKUP (AGS)	3.06 FT	TOC/TOR DIFFERENCE	N/A FT
WELL DEPTH (BMP)	Refer to well construction log	SCREEN LENGTH	Refer to well construction log	PID AMBIENT AIR	— PPM	REFILL TIMER SETTING	— SEC
WATER COLUMN	N/A FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	N/A GAL	PID WELL MOUTH	— PPM	DISCHARGE TIMER SETTING	— SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	N/A GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	1.313 GAL	DRAWDOWN/ TOTAL PURGED	N/A	PRESSURE TO PUMP	— PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
1515	BEGIN PURGING										
1525	Cannot	110	15.10	1.570	6.77	1.91	55.2	-95.2	N/A	8'	Sealed well - no WL
1530	Measure	110	14.74	1.552	6.78	4.13	21.7	-102.3			measurements.
1535		120	15.03	1.542	6.79	2.37	8.64	-97.5			Did not adjust pump
1540		120	14.86	1.545	6.78	1.90	4.82	-102.5			
1545		120	14.72	1.542	6.78	1.69	3.34	-109.2			
1550		110	14.72	1.541	6.79	1.52	3.04	-115.0			Did not adjust pump
1555		110	14.79	1.540	6.78	1.37	2.54	-112.7			
1600		110	14.83	1.541	6.78	1.31	2.31	-113.2			
1605		110	14.75	1.544	6.78	1.33	1.94	-114.3	↓		
1606		well	stable	collect		sample				↓	

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

	15	1.54	6.8	1.3	1.9	-114 (-110)

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: ☒ PERISTALTIC ☐ SUBMERSIBLE ☐ BLADDER ☐ OTHER

DECON FLUIDS USED: ☒ LIQUINOX ☒ DEIONIZED WATER ☒ POTABLE WATER ☐ NITRIC ACID ☑ OTHER Dewater

TUBING/PUMP/BLADDER MATERIALS: ☒ SILICON TUBING ☐ HDPE TUBING ☒ LDPE TUBING ☐ HDPE TUBING ☐ OTHER

☐ S. STEEL PUMP MATERIAL ☐ PVC PUMP MATERIAL ☐ GEOPROBE SCREEN ☐ TEFLON BLADDER ☐ OTHER

EQUIPMENT USED: ☐ WL METER Heronslimy Dipper M220-73 ☒ TURB. METER HACH 2100Q M015-10 ☒ WQ METER YSI 556 MPS M024-30 ☒ PUMP Geopump FILTERS NO. ___ TYPE ___

ANALYTICAL PARAMETERS

☒	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
☒	VOCs	8260C	No	4°C HCl	6 X 40 ml	Yes	Duplicate	828072-MW02A008 828072-MW02A008D07
	Alkalinity	2320B	No	4°C	250 ml Poly			
	Chloride	300	No	4°C	250 ml Poly			
	Nitrate	300	No	4°C				
	Nitrite	354.1	No	4°C				
	Sulfate	300	No	4°C				
	Sulfide	4500	No	4°C				
	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: ☒ YES ☐ NO

NO-PURGE METHOD UTILIZED: ☐ YES ☒ NO

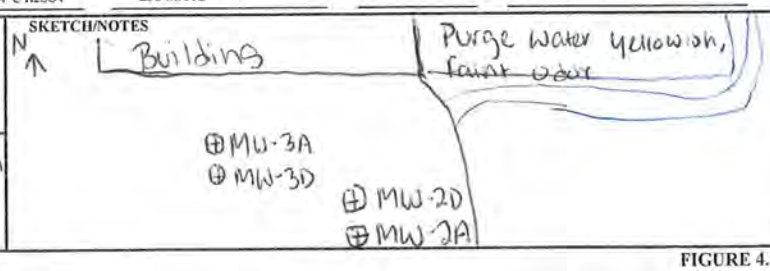
NUMBER OF GALLONS GENERATED: 1.5

to sampling or _____ mL for this sample location.

Sampler Signature: Hannah Grotz Print Name: Hannah Grotz

Checked By: Jerry Randall Date: 6/30/20

SKETCH/NOTES



MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company
PROJECT NUMBER	3617137306.02
SAMPLE ID	828072- MW02D020
SAMPLE TIME	1756

LOCATION ID	MW-2D
DATE	6/8/20
START TIME	~~1600~~ 1700
END TIME	1810
SITE NAME/NUMBER	828072
PAGE	1 OF 1

WELL DIAMETER (INCHES): ☐ 1 ☐ 2 ☐ 4 ☒ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☐ 1/8 ☒ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER

MEASUREMENT POINT (MP): ☐ TOP OF RISER (TOR) ☒ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	✓		
CASING	✓		
LOCKED		✓	
COLLAR			✓

INITIAL DTW (BMP)	4.96 FT	FINAL DTW (BMP)	4.96 FT	PROT. CASING STICKUP (AGS)	1.74 FT	TOC/TOR DIFFERENCE	/ FT
WELL DEPTH (BMP)	21.08 FT	SCREEN LENGTH	Refer to well log FT	PID AMBIENT AIR	/ PPM	REFILL TIMER SETTING	/ SEC
WATER COLUMN	16.12 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	0 GAL	PID WELL MOUTH	/ PPM	DISCHARGE TIMER SETTING	/ SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	23.79 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	1,716 GAL	DRAWDOWN/ TOTAL PURGED	0	PRESSURE TO PUMP	/ PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
~~1600~~ 1700	BEGIN PURGING										
~~1610~~ 1710	4.96	120	14.72	2.978	7.28	0.75	6.10	-150.5	NA	20	
~~1615~~ 1715	4.96	120	14.66	2.978	7.27	0.68	5.47	-147.5			
~~1620~~ 1720	4.96	120	14.62	2.978	7.26	0.64	4.86	-141.6			
~~1625~~ 1725	4.96	120	14.51	2.978	7.25	0.65	4.29	-145.3			
~~1630~~ 1730	4.96	120	14.47	2.977	7.24	0.89	3.43	-135.4			
~~1635~~ 1735	4.96	120	14.54	2.976	7.24	1.07	3.62	-135.2			
~~1640~~ 1740	4.96	120	14.55	2.977	7.24	1.16	2.94	-141.7			
~~1645~~ 1745	4.96	120	14.49	2.978	7.24	1.16	2.79	-143.9			
~~1650~~ 1750	4.96	120	14.45	2.977	7.24	1.06	2.55	-144.8			
~~1655~~ 1755	4.96	120	14.38	2.980	7.24	1.09	2.63	-149.5			
1756	Well	Stable	Collect	Sample							

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

14	2.98	7.2	1.1	2.6	-150	

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: ☒ PERISTALTIC ☐ SUBMERSIBLE ☐ BLADDER ☐ OTHER

DECON FLUIDS USED: ☒ LIQUINOX ☒ DEIONIZED WATER ☒ POTABLE WATER ☐ NITRIC ACID ☒ OTHER Deionized

TUBING/PUMP/BLADDER MATERIALS: ☒ SILICON TUBING ☐ HDPE TUBING ☒ LDPE TUBING ☐ HDPE TUBING ☐ OTHER; ☐ S. STEEL PUMP MATERIAL ☐ PVC PUMP MATERIAL ☐ GEOPROBE SCREEN ☐ TEFLON BLADDER ☐ OTHER

EQUIPMENT USED: ☒ WL METER Heron Slimmy Dipper M200-73 ☒ TURB. METER HACH 2100Q M02A-378 ☒ WQ METER YSI 556 MPS M015-10 ☒ PUMP Geopump 5208-36 ☐ FILTERS NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
X	VOCs	8260C	No	4°C HCl	3 X 40 ml	Y	828072-	MW02D020
	Alkalinity	2320B	No	4°C	250 ml Poly			
	Chloride	300	No	4°C	250 ml Poly			
	Nitrate	300	No	4°C				
	Nitrite	354.1	No	4°C				
	Sulfate	300	No	4°C				
	Sulfide	4500	No	4°C				
	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: ☒ YES ☐ NO

NO-PURGE METHOD UTILIZED: ☐ YES ☒ NO

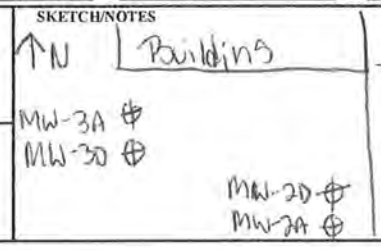
NUMBER OF GALLONS GENERATED: 1.75

to sampling or _____ mL for this sample location.

Sampler Signature: [signature] Print Name: Mamoka Gnoze

Checked By: [signature] Date: 6/30/20

SKETCH/NOTES



Notes
Clearish Water

MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company
PROJECT NUMBER	3617137306.02
SAMPLE ID	828072- MW03A008
SAMPLE TIME	1321

LOCATION ID	MW-3A
DATE	6/8/20
START TIME	1235
END TIME	1336
SITE NAME/NUMBER	828072
PAGE	1 OF 1

WELL DIAMETER (INCHES): ☐ 1 ☒ 2 ☐ 4 ☐ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☒ 1/8 ☐ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER

MEASUREMENT POINT (MP): ☐ TOP OF RISER (TOR) ☐ TOP OF CASING (TOC) ☒ OTHER NA

WELL INTEGRITY

	YES	NO	N/A
CAP	✓		
CASING	✓		
LOCKED	✓		
COLLAR	✓		

INITIAL DTW (BMP)	Sealed Well	FINAL DTW (BMP)	/ FT	PROT. CASING STICKUP (AGS)	/ FT	TOC/TOR DIFFERENCE	/ FT
WELL DEPTH (BMP)	- FT	SCREEN LENGTH	Refer to well construction 10ft	PID AMBIENT AIR	/ PPM	REFILL TIMER SETTING	/ SEC
WATER COLUMN	/ FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	/ GAL	PID WELL MOUTH	/ PPM	DISCHARGE TIMER SETTING	/ SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	/ GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	1.45 GAL	DRAWDOWN/ TOTAL PURGED	/	PRESSURE TO PUMP	/ PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
1237	BEGIN PURGING										
1250	Cannot	130	14.70	2.134	6.92	2.44	6.34	-209.9	NA	8'	Sealed well - no
1255	measure	130	14.79	2.094	6.91	1.86	~~6.41~~ 14.00	-218.6			Water levels
1300	|	130	14.64	2.066	6.91	1.55	4.23	-214.3			measurements
1305	|	130	14.91	1.975	6.84	1.47	2.56	-212.6			
1310	|	130	14.97	1.956	6.77	1.29	2.62	-215.0			
1315	|	130	14.75	1.945	6.79	1.32	2.86	-207.0			
1320	|	130	14.57	1.921	6.81	1.25	3.12	-201.2			
1321	Well	Stable	Collect	Sample							

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF]) -200

	15	1.92	6.8	1.3	3.1	-207

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: ☒ PERISTALTIC ☐ SUBMERSIBLE ☐ BLADDER ☐ OTHER

DECON FLUIDS USED: ☒ LIQUINOX ☒ DEIONIZED WATER ☐ POTABLE WATER ☐ NITRIC ACID ☒ OTHER DI Rinse

TUBING/PUMP/BLADDER MATERIALS: ☐ SILICON TUBING ☐ HDPE TUBING ☒ LDPE TUBING ☐ HDPE TUBING ☐ OTHER; ☐ S. STEEL PUMP MATERIAL ☐ PVC PUMP MATERIAL ☐ GEOPROBE SCREEN ☐ TEFLON BLADDER ☐ OTHER

EQUIPMENT USED

☒	WL METER	Heron Skinny Dipper M200-73
☒	TURB. METER	HACH 2100Q M024-33
☒	WQ METER	YSI 556 MPS M015-10
☒	PUMP	Geopump 5008-36
☐	FILTERS	NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
☒	VOCs	8260C	No	4°C HCl	3 X 40 ml	✓		MW 82872-MW03A008
☐	Alkalinity	2320B	No	4°C	250 ml Poly			
☐	Chloride	300	No	4°C	250 ml Poly			
☐	Nitrate	300	No	4°C				
☐	Nitrite	354.1	No	4°C				
☐	Sulfate	300	No	4°C				
☐	Sulfide	4500	No	4°C				
☐	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
☐	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
☐	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: ☒ YES ☐ NO

NO-PURGE METHOD UTILIZED: ☐ YES ☒ NO

NUMBER OF GALLONS GENERATED: 1.5

to sampling or ___ mL for this sample location.

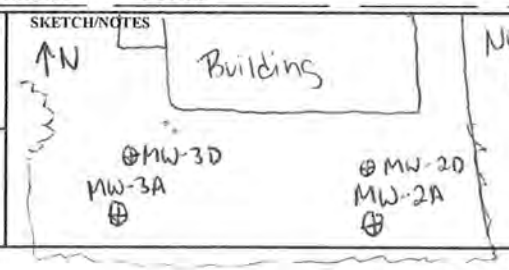
Sampler Signature: Hannah Gnoza

Print Name: Hannah Gnoza

Checked By: Jerry Randolf

Date: 6/30/20

SKETCH/NOTES



Notes: Water yellow, strong odor

MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

C6

PROJECT NAME: Erdle Perforating Company	LOCATION ID: MW-3D
PROJECT NUMBER: 3617137306.02	DATE: 6/18/20
SAMPLE ID: 828072-MW03D014	START TIME: 1352
SAMPLE TIME: 1442	END TIME: 1452
SITE NAME/NUMBER: 828072	PAGE: 1 OF 1

WELL DIAMETER (INCHES): ☐ 1 ☐ 2 ☐ 4 ☒ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☒ 1/8 ☐ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER

MEASUREMENT POINT (MP): ☐ TOP OF RISER (TOR) ☒ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR	X		

INITIAL DTW (BMP)	3.16 FT	FINAL DTW (BMP)	4.09 FT	PROT. CASING STICKUP (AGS)	2.1 FT	TOC/TOR DIFFERENCE	/ FT
WELL DEPTH (BMP)	14.8 FT	SCREEN LENGTH	Refer to well log FT	PID AMBIENT AIR	/ PPM	REFILL TIMER SETTING	/ SEC
WATER COLUMN	11.64 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	1.37 GAL	PID WELL MOUTH	/ PPM	DISCHARGE TIMER SETTING	/ SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	17.18 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	1.5 GAL	DRAWDOWN/ TOTAL PURGED	1.5	PRESSURE TO PUMP	/ PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
1356	BEGIN PURGING										
1410	3.42	110	17.12	4.355	7.70	0.37	76.4	-190.7	NA	8'	
1415	3.55	110	17.08	4.367	7.85	0.39	67.8	-268.6			
1420	3.65	110	17.18	4.356	7.74	0.34	64.8	-206.8			
1425	3.74	110	16.75	4.378	7.94	0.34	65.0	-286.8			
1430	3.85	110	16.75	4.360	7.90	0.30	70.8	-271.1			
1435	3.97	110	16.69	4.365	8.00	0.29	70.4	-271.7			
1440	4.09	110	16.67	4.358	7.97	0.27	69.4	-275.3			
1442	well	stable	collect sample								

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF]) -250

	17	4.36	8.0	0.3	69.4	-275 (-272)

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: ☒ PERISTALTIC ☐ SUBMERSIBLE ☐ BLADDER ☐ OTHER

DECON FLUIDS USED: ☐ LIQUINOX ☐ DEIONIZED WATER ☐ POTABLE WATER ☐ NITRIC ACID ☒ OTHER Dedicated

TUBING/PUMP/BLADDER MATERIALS: ☒ SILICON TUBING ☐ HDPE TUBING ☒ LDPE TUBING ☐ HDPE TUBING ☐ OTHER; ☐ S. STEEL PUMP MATERIAL ☐ PVC PUMP MATERIAL ☐ GEOPROBE SCREEN ☐ TEFLON BLADDER ☐ OTHER

EQUIPMENT USED: ☒ WL METER Heron Skinny Dipper M200-73 ☒ TURB. METER HACH 2100Q M024-38 ☒ WQ METER YSI 556 MPS M015-16 ☒ PUMP Geopump FW03-36 ☐ FILTERS NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
X	VOCs	8260C	No	4°C HCl	3 X 40 ml	Y		828072-MW03D014
	Alkalinity	2320B	No	4°C	250 ml Poly			
	Chloride	300	No	4°C	250 ml Poly			
	Nitrate	300	No	4°C				
	Nitrite	354.1	No	4°C				
	Sulfate	300	No	4°C				
	Sulfide	4500	No	4°C				
	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

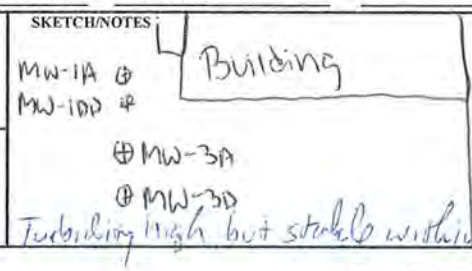
PURGE WATER CONTAINERIZED: ☑ YES ☐ NO

NO-PURGE METHOD UTILIZED: ☐ YES ☒ NO

NUMBER OF GALLONS GENERATED: 1.5

to sampling or _____ mL. for this sample location.

SKETCH/NOTES



Notes
Water yellowish, faint odor

Turbidity high but stable within criteria.

Sampler Signature: Hannah Garza

Print Name: Hannah Garza

Checked By: Jerry Randall

Date: 6/30/20

MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company	LOCATION ID	MW-4
PROJECT NUMBER	3617137306.02	DATE	6/9/20
SAMPLE ID	828072- MW004	START TIME	0913
SAMPLE TIME	1016	END TIME	1035
SITE NAME/NUMBER	828072	PAGE	1 OF 1

WELL DIAMETER (INCHES): ☐ 1 ☒ 2 ☐ 4 ☐ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☒ 1/8 ☐ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER

MEASUREMENT POINT (MP): ☒ TOP OF RISER (TOR) ☐ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	✓		
CASING	✓		
LOCKED		✓	
COLLAR	✓		

INITIAL DTW (BMP)	4.80 FT	FINAL DTW (BMP)	5.55 FT	PROT. CASING STICKUP (AGS)	1.40 FT	TOC/TOR DIFFERENCE	0.12 FT
WELL DEPTH (BMP)	9.45 FT	SCREEN LENGTH	Refer to Well log FT	PID AMBIENT AIR	/ PPM	REFILL TIMER SETTING	/ SEC
WATER COLUMN	4.65 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	0.112 GAL	PID WELL MOUTH	/ PPM	DISCHARGE TIMER SETTING	/ SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	0.7626 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	2.25 GAL	DRAWDOWN/ TOTAL PURGED	0.056	PRESSURE TO PUMP	/ PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE (mS/cm (3%))	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
0913	BEGIN PURGING										
0925	5.29	130	13.93	1.277	6.89	31.0	10.1	-42.1	0.62		
0930	5.33	130	14.03	1.170	6.33	4.82	5.73	-39.4	0.58		
0935	5.37	130	13.98	1.096	6.65	3.54	3.57	-47.8	0.55		
0940	5.20	130	14.22	1.075	6.74	2.67	2.55	-45.2	0.53		Well recharged
0945	5.38	140	14.02	1.053	6.77	2.22	1.63	-56.8	0.52		Did not adjust pump speed
0950	5.33	140	14.08	1.061	6.79	2.02	1.54	-46.7	0.53		
0955	5.49	140	13.97	1.073	6.82	1.82	1.18	-55.5	0.54		
1000	5.52	140	14.07	1.080	6.82	1.72	1.08	-58.1	0.54		
1005	5.50	140	14.03	1.095	6.82	1.56	1.17	-57.8	0.55		
1010	5.40	140	14.51	1.106	6.83	1.47	0.89	-55.9	0.55		
1015	5.55	140	14.02	1.120	6.82	1.45	1.47	-58.8	0.56		
1016	Well Stable		Collect	Samples							

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures|SF|)

14	1.12	6.8	1.5	1.5	-59	

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: ☒ PERISTALTIC ☐ SUBMERSIBLE ☐ BLADDER ☐ OTHER

DECON FLUIDS USED: ☒ LIQUINOX ☒ DEIONIZED WATER ☐ POTABLE WATER ☐ NITRIC ACID ☒ OTHER Distilled

TUBING/PUMP/BLADDER MATERIALS: ☐ SILICON TUBING ☐ HDPE TUBING ☒ LDPE TUBING ☐ HDPE TUBING ☐ OTHER; ☐ S. STEEL PUMP MATERIAL ☐ PVC PUMP MATERIAL ☐ GEOPROBE SCREEN ☐ TEFLON BLADDER ☐ OTHER

EQUIPMENT USED: ☒ WL METER Heron Dipper M200-73 ☒ TURB. METER HACH 2100Q M014-38 ☒ WQ METER YSI 556 MPS M015-10 ☒ PUMP Geopump 5009-36 ☐ FILTERS NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
☒	VOCs	8260C	No	4°C HCl	3 X 40 ml	✓		828072-MW004
	Alkalinity	2320B	No	4°C	250 ml Poly			
	Chloride	300	No	4°C	250 ml Poly			
	Nitrate	300	No	4°C				
	Nitrite	354.1	No	4°C				
	Sulfate	300	No	4°C				
	Sulfide	4500	No	4°C				
	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: ☒ YES ☐ NO

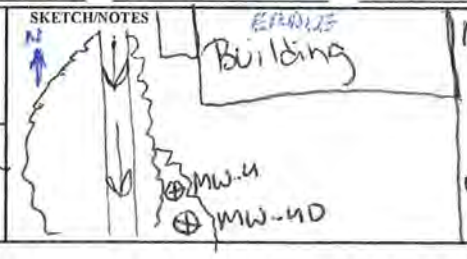
NO-PURGE METHOD UTILIZED: ☐ YES ☒ NO

NUMBER OF GALLONS GENERATED: 2.25 to sampling or ___ mL for this sample location.

Sampler Signature: Hannah Groza Print Name: Hannah Groza

Checked By: [signature] Date: 6/30/20

SKETCH/NOTES



Notes: Vegeration over-growth surrounding well water faint yellow

MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

~~0.0~~ 0.502 1.092

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company
PROJECT NUMBER	3617137306.02
SAMPLE ID	828072- MW-4D MW-4D (MS)
SAMPLE TIME	1222

LOCATION ID	MW-4D
START TIME	1130
SITE NAME/NUMBER	828072
DATE	6/9/20
END TIME	1234
PAGE	1 OF 1

WELL DIAMETER (INCHES): ☐ 1 ☐ 2 ☐ 4 ☒ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☒ 1/8 ☐ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER

MEASUREMENT POINT (MP): ☐ TOP OF RISER (TOR) ☒ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP			X
CASING	X		
LOCKED		X	
COLLAR	X		

INITIAL DTW (BMP)	5.17 FT	FINAL DTW (BMP)	5.15 FT	PROT. CASING STICKUP (AGS)	2.25 FT	TOC/TOR DIFFERENCE	/ FT
WELL DEPTH (BMP)	22.0 FT	SCREEN LENGTH	0.030 FT	PID AMBIENT AIR	/ PPM	REFILL TIMER SETTING	/ SEC
WATER COLUMN	16.83 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	Refer to well log GAL	PID WELL MOUTH	✓ PPM	DISCHARGE TIMER SETTING	/ SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	24.84 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	2.05 GAL	DRAWDOWN/ TOTAL PURGED	0.015	PRESSURE TO PUMP	/ PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
1130	BEGIN PURGING										
1150	5.14	150	16.37	2.889	8.01	0.44	12.9	-229.5	1.51		
1155	5.15	150	15.67	2.893	8.03	0.31	9.75	-221.6	1.52		
1200	5.15	150	15.73	2.897	8.03	0.33	9.28	-227	1.52		
1205	5.15	150	15.40	2.894	8.01	0.31	8.02	-222.2	1.52		
1210	5.15	150	15.50	2.902	7.99	0.31	8.60	-281.1	1.52		
1215	5.15	150	15.77	2.892	7.94	0.32	8.54	-284	1.51		
1220	5.15	150	16.18	2.896	7.87	0.35	8.39	-285.5	1.51		
1222	well	Stable	Collect	Sample							

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF]) (SF) (SF) (SF) (SF) (SF) (SF) (SF) (SF)

	16	2.90	7.9	0.35	8.4	~~-285~~	-280

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	DECON FLUIDS USED	TUBING/PUMP/BLADDER MATERIALS		EQUIPMENT USED	
☒ PERISTALTIC	☒ LIQUINOX	☒ SILICON TUBING	☒ S. STEEL PUMP MATERIAL	☒ WL METER	Heron Slammy Dipper M200-73
☐ SUBMERSIBLE	☒ DEIONIZED WATER	☐ HDPE TUBING	☐ PVC PUMP MATERIAL	☒ TURB. METER	HACH 2100Q M0124-38
☐ BLADDER	☐ POTABLE WATER	☒ LDPE TUBING	☐ GEOPROBE SCREEN	☒ WQ METER	YSI 556 MPS M0125-10
☐ OTHER	☐ NITRIC ACID	☐ HDPE TUBING	☐ TEFLON BLADDER	☒ PUMP	Geopump 5008-36
	☒ OTHER DI Blank	☐ OTHER	☐ OTHER	☐ FILTERS	NO. TYPE

ANALYTICAL PARAMETERS

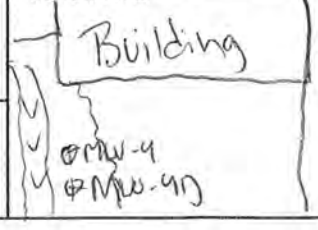
	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
X	VOCs	8260C	No	4°C HCl	3 X 40 ml	Y		828072-MW-4D MW-4D
	Alkalinity	2320B	No	4°C	250 ml Poly			
	Chloride	300	No	4°C	250 ml Poly			
	Nitrate	300	No	4°C				
	Nitrite	354.1	No	4°C				
	Sulfate	300	No	4°C				
	Sulfide	4500	No	4°C				
	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

	YES	NO
PURGE WATER CONTAINERIZED	☒	☐
NO-PURGE METHOD UTILIZED	☐	☒

NUMBER OF GALLONS GENERATED 2.25 to sampling or _____ mL for this sample location.

SKETCH/NOTES



Notes
- difficulty getting tubing down. Had to bend & use stick to force down

Sampler Signature: Hannah Gnoza Print Name: Hannah Gnoza

Checked By: J. Rundell Date: 6/30/20

MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company
PROJECT NUMBER	3617137306.02
SAMPLE ID	828072-MW05D010
SAMPLE TIME	1350

LOCATION ID	MW-5D
DATE	6/8/2020
START TIME	1200
END TIME	1417
SITE NAME/NUMBER	828072
PAGE	1 OF 2

WELL DIAMETER (INCHES): ☐ 1 ☐ 2 ☐ 4 ☒ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☒ 1/8 ☐ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER

MEASUREMENT POINT (MP): ☐ TOP OF RISER (TOR) ☒ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY	YES	NO	N/A
CAP		✓	
CASING	✓		
LOCKED		✓	
COLLAR			✓

INITIAL DTW (BMP)	2.00 FT	FINAL DTW (BMP)	2.04 FT	PROT. CASING STICKUP (AGS)	FT	TOC/TOR DIFFERENCE	FT
WELL DEPTH (BMP)	11.97 FT	SCREEN LENGTH	UNKNOWN FT	PID AMBIENT AIR	PPM	REFILL TIMER SETTING	SEC
WATER COLUMN	9.97 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	0.06 GAL	PID WELL MOUTH	PPM	DISCHARGE TIMER SETTING	SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	14.72 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	3.31 GAL	DRAWDOWN/ TOTAL PURGED	0.018	PRESSURE TO PUMP	PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
1211	BEGIN PURGING										
1220	2.06	110	17.10	1.895	8.96	0.76	85.7	12.5	0.97	9	
1225	2.03	125	16.86	1.924	8.92	0.57	87.1	12.5	0.99		DID NOT ADJUST SPEED CONTROL DIAL.
1230	2.04	145	16.59	1.990	8.87	0.53	88.7	12.6	1.02		" " " " " "
1235	2.04	145	16.51	2.057	8.81	0.60	82.5	11.8	1.06		SPEED CONTROL DIAL IS AT ITS LOWEST SETTING.
1240	2.04	145	16.37	2.139	8.68	0.60	82.8	2.5	1.11		
1245	2.04	145	16.32	2.280	8.54	0.69	85.6	-27.9	1.19		
1250	2.04	145	16.26	2.456	8.42	0.52	79.9	-71.9	1.28		
1255	2.04	145	16.18	2.623	8.37	0.39	80.0	-109.1	1.37		
1300	2.04	145	16.09	2.815	8.33	0.38	69.9	-135.1	1.48		
1305	2.04	145	16.11	2.966	8.34	0.41	64.4	-132.2	1.56		
1310	2.04	145	16.17	3.049	8.33	0.36	64.8	-124.7	1.60		
1315	2.04	150	16.16	3.123	8.35	0.41	62.5	-105.8	1.64		DID NOT ADJUST SPEED CONTROL DIAL.
1320	2.04	130	16.12	3.146	8.34	0.59	64.8	-137.4	1.65		" " " " " "
1325	2.04	145	16.13	3.169	8.30	0.54	64.1	-117.3	1.67		" " " " " "

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

@ 1345	16	3.20 8.7 (mS)	8.2	0.5	64.4	-100	6/8/20

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	DECON FLUIDS USED	TUBING/PUMP/BLADDER MATERIALS		EQUIPMENT USED	
☒ PERISTALTIC	☒ LIQUINOX	☒ SILICON TUBING	☐ S. STEEL PUMP MATERIAL	☒ WL METER	HERON DIPPER T
☒ SUBMERSIBLE	☒ DEIONIZED WATER	☐ HDPE TUBING	☐ PVC PUMP MATERIAL	☒ TURB. METER	HACH 2100Q
☐ BLADDER	☒ POTABLE WATER	☒ LDPE TUBING	☐ GEOPROBE SCREEN	☒ WQ METER	YSI 556 MPS
	☐ NITRIC ACID	☐ HDPE TUBING	☐ TEFLON BLADDER	☒ PUMP	Geopump
☐ OTHER	☒ OTHER Dedicated	☐ OTHER	☐ OTHER	☒ FILTERS	NO. TYPE

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
☒	VOCs	8260C	No	4°C HCl	3 X 40 ml	YES	NO	
☐	Alkalinity	2320B	No	4°C	250 ml Poly			
☐	Chloride	300	No	4°C	250 ml Poly			
☐	Nitrate	300	No	4°C				
☐	Nitrite	354.1	No	4°C				
☐	Sulfate	300	No	4°C				
☐	Sulfide	4500	No	4°C				
☐	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
☐	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
☐	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: ☒ YES ☐ NO

NO-PURGE METHOD UTILIZED: ☐ YES ☒ NO

NUMBER OF GALLONS GENERATED: 3.5 (approx.)

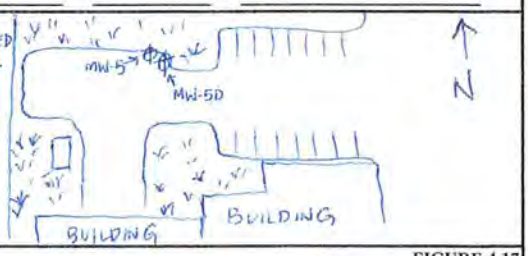
to sampling or _____ mL for this sample location.

Sampler Signature: K Amann Print Name: KATIE AMANN

Checked By: JFR Date: 6/30/20

SKETCH/NOTES

- WELL DAMAGED; NOT SEALED AT TOP - WELL PLUG IS STUCK IN CASING.
- PURGE WATER DESCRIPTION: LIGHT BROWN, CLOUDY, FAINT ODOR.
- ~50FT BOTTOM OF WELL.



MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company	LOCATION ID	MW-5D
PROJECT NUMBER	3617137306.02	DATE	6/8/2020
SAMPLE ID	828072- MW05D010	START TIME	1200
SAMPLE TIME	1350	END TIME	1417
SITE NAME/NUMBER	828072	PAGE	2 OF 2

WELL DIAMETER (INCHES): ☐ 1 ☐ 2 ☐ 4 ☒ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☒ 1/8 ☐ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER

MEASUREMENT POINT (MP): ☐ TOP OF RISER (TOR) ☒ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP		✓	
CASING	✓		
LOCKED		✓	
COLLAR			✓

INITIAL DTW (BMP)	2.00 FT	FINAL DTW (BMP)	2.04 FT	PROT. CASING STICKUP (AGS)	FT	TOC/TOR DIFFERENCE	FT
WELL DEPTH (BMP)	11.97 FT	SCREEN LENGTH	UNKNOWN FT	PID AMBIENT AIR	PPM	REFILL TIMER SETTING	SEC
WATER COLUMN	9.97 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	0.00 GAL	PID WELL MOUTH	PPM	DISCHARGE TIMER SETTING	SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	14.72 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	3.31 GAL	DRAWDOWN/ TOTAL PURGED	0.018	PRESSURE TO PUMP	PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
	BEGIN PURGING (KFA) 6/8/2020										
1330	2.04	145	16.04	3.181	8.34	0.52	62.8	-113.9	1.67	9	
1335	2.04	145	15.97	3.193	8.26	0.51	64.2	-100.6	1.68		
1340	2.04	145	15.94	3.196	8.30	0.51	62.4	-102.3	1.68		
1345	2.04	145	15.87	3.204	8.24	0.51	64.4	-99.8	1.69		
1350	COLLECT SAMPLES										

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

16	3.20	8.2	0.5	64.4	-100	

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: ☒ PERISTALTIC ☒ SUBMERSIBLE ☐ BLADDER ☐ OTHER

DECON FLUIDS USED: ☒ LIQUINOX ☒ DEIONIZED WATER ☒ POTABLE WATER ☐ NITRIC ACID ☒ OTHER Hydrated

TUBING/PUMP/BLADDER MATERIALS: ☒ SILICON TUBING ☐ HDPE TUBING ☒ LDPE TUBING ☐ HDPE TUBING ☐ OTHER ☐ S. STEEL PUMP MATERIAL ☐ PVC PUMP MATERIAL ☐ GEOPROBE SCREEN ☐ TEFLON BLADDER ☐ OTHER

EQUIPMENT USED: ☒ WL METER Heron Dipper T ☒ TURB. METER HACH 2100Q ☒ WQ METER YSI 556 MPS ☒ PUMP Geopump ☐ FILTERS NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
☒	VOCs	8260C	No	4°C HCl	3 X 40 ml	YES	NO	
	Alkalinity	2320B	No	4°C	250 ml Poly			
	Chloride	300	No	4°C	250 ml Poly			
	Nitrate	300	No	4°C				
	Nitrite	354.1	No	4°C				
	Sulfate	300	No	4°C				
	Sulfide	4500	No	4°C				
	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: ☒ YES ☐ NO

NO-PURGE METHOD UTILIZED: ☐ YES ☒ NO

NUMBER OF GALLONS GENERATED: 3.5 (approx)

to sampling or _____ mL. for this sample location.

SKETCH/NOTES

SEE PAGE 1 OF 2.

Sampler Signature: K Amann Print Name: KATIE AMANN

Checked By: Jerry Rudloff Date: 6/30/20

MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company
PROJECT NUMBER	3617137306.02
SAMPLE ID	828072- MW005006
SAMPLE TIME	1330 on 6/9/20
LOCATION ID	MW-5
DATE	6/8/2020/6/9/2020
START TIME	6/8/20 1955 / 6/9/20 1304
END TIME	6/9/20 1155 / 6/9/20 1345
SITE NAME/NUMBER	828072
PAGE	1 OF 2

WELL DIAMETER (INCHES): [ ] 1 [X] 2 [ ] 4 [ ] 6 [ ] 8 [ ] OTHER

TUBING ID (INCHES): [X] 1/8 [ ] 1/4 [ ] 3/8 [ ] 1/2 [ ] 5/8 [ ] OTHER

MEASUREMENT POINT (MP): [X] TOP OF RISER (TOR) [ ] TOP OF CASING (TOC) [ ] OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	✓		
CASING	✓		
LOCKED		✓	
COLLAR			✓

2 of 2 bolts missing

INITIAL DTW (BMP)	0.91 FT	FINAL DTW (BMP)	FT	PROT. CASING STICKUP (AGS)	FT	TOC/TOR DIFFERENCE	FT 0.23
WELL DEPTH (BMP)	7.76 FT	SCREEN LENGTH	UNKNOWN FT	PID AMBIENT AIR	PPM	REFILL TIMER SETTING	SEC
WATER COLUMN	6.85 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	GAL	PID WELL MOUTH	PPM	DISCHARGE TIMER SETTING	SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	1.12 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	8 GAL	DRAWDOWN/ TOTAL PURGED		PRESSURE TO PUMP	PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
1012	BEGIN PURGING										
1020	3.25	200	15.89	14.02	6.20	1.83	14.9	14.9	8.15	6.5	
1025	3.82	125	16.35	13.98	6.42	3.70	7.90	14.8	8.13		DECREASED PUMP SPEED TO TRY TO REDUCE DRAWDOWN
1030	3.99	100	16.84	13.94	6.44	2.73	17.4	16.3	8.10		" " " " " "
1035	4.19	100	17.03	13.97	6.45	2.25	13.8	17.5	8.12		
1040	4.39	100	17.19	14.10	6.44	2.19	11.3	17.9	8.21		
1045	4.58	100	17.13	14.19	6.45	1.94	8.15	19.1	8.26		
1050	4.74	100	17.12	14.21	6.44	1.76	6.76	19.8	8.28		
1055	4.90	100	16.93	14.24	6.45	1.64	5.49	20.4	8.29		
1100	5.04	100	16.78	14.21	6.44	1.45	5.02	21.2	8.27		
1105	5.24	100	16.59	14.21	6.46	1.33	3.12	22.1	8.26		
1110	5.38	100	16.60	14.13	6.47	1.14	4.02	22.9	8.21		
1115	5.54	100	16.82	14.01	6.48	1.09	4.26	23.3	8.14		
1120	5.73	100	17.00	13.91	6.48	1.04	5.90	23.6	8.09		
1125	5.93	100	16.60	13.86	6.49	1.00	5.98	24.1	8.05		

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

6/9/20 @1325	16	14.9	6.7	4.0	12.8	220	

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: [X] PERISTALTIC [ ] SUBMERSIBLE [ ] BLADDER [ ] OTHER

DECON FLUIDS USED: [X] LIQUINOX [X] DEIONIZED WATER [X] POTABLE WATER [ ] NITRIC ACID [X] OTHER Dedicated

TUBING/PUMP/BLADDER MATERIALS: [X] SILICON TUBING [ ] HDPE TUBING [X] LDPE TUBING [ ] HDPE TUBING [ ] OTHER; [ ] S. STEEL PUMP MATERIAL [ ] PVC PUMP MATERIAL [ ] GEOPROBE SCREEN [ ] TEFLON BLADDER [ ] OTHER

EQUIPMENT USED: [X] WL METER M200-75 HERON DIPPER T; [ ] TURB. METER HACH 2100Q M024-12; [ ] WQ METER YSI 556 MPS M015-15; [ ] PUMP Geopump S008-29; [ ] FILTERS NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
[X]	VOCs	8260C	No	4°C HCl	3 X 40 ml	YES	NO	
[ ]	Alkalinity	2320B	No	4°C	250 ml Poly			
[ ]	Chloride	300	No	4°C	250 ml Poly			
[ ]	Nitrate	300	No	4°C				
[ ]	Nitrite	354.1	No	4°C				
[ ]	Sulfate	300	No	4°C				
[ ]	Sulfide	4500	No	4°C				
[ ]	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
[ ]	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
[ ]	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: [X] YES [ ] NO

NO-PURGE METHOD UTILIZED: [ ] YES [X] NO

NUMBER OF GALLONS GENERATED: APPROX. 3

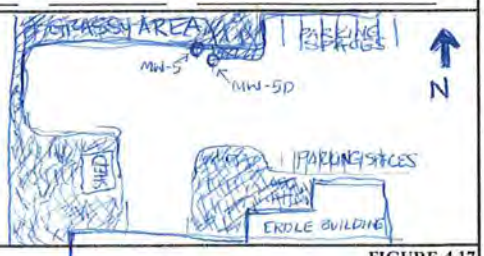
to sampling or ___ mL for this sample location.

Sampler Signature: K Amann Print Name: KATIE AMANN

Checked By: Jenny Pudlo Date: 6/30/20

SKETCH/NOTES

- ANNULAR SPACE FILLED W/ WATER ABOVE WELL PLUG.
- PURGE WATER DESCRIPTION: CLEAR, COLORLESS, ODORLESS.
- 6/8/20 - total vol. purged = 3.2 gal.



MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME: Erdle Perforating Company		LOCATION ID: MW-5	DATE: 6/8/2020 / 6/9/20
PROJECT NUMBER: 3617137306.02		START TIME: 6/9/20 0955 / 1304	END TIME: 6/9/20 1155 / 1345
SAMPLE ID: 828072-MW005006	SAMPLE TIME: 1330 ON 6/9/20	SITE NAME/NUMBER: 828072	PAGE: 2 OF 2

WELL DIAMETER (INCHES): [ ] 1 [X] 2 [ ] 4 [ ] 6 [ ] 8 [ ] OTHER

TUBING ID (INCHES): [X] 1/8 [ ] 1/4 [ ] 3/8 [ ] 1/2 [ ] 5/8 [ ] OTHER

MEASUREMENT POINT (MP): [X] TOP OF RISER (TOR) [ ] TOP OF CASING (TOC) [ ] OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	✓		
CASING	✓		
LOCKED		✓	
COLLAR			✓

INITIAL DTW (BMP)	0.91 FT	FINAL DTW (BMP)	FT	PROT. CASING STICKUP (AGS)	FT	TOC/TOR DIFFERENCE	0.23 FT
WELL DEPTH (BMP)	7.76 FT	SCREEN LENGTH	UNKNOWN FT	PID AMBIENT AIR	PPM	REFILL TIMER SETTING	SEC
WATER COLUMN	6.85 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	GAL	PID WELL MOUTH	PPM	DISCHARGE TIMER SETTING	SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	1.12 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	GAL	DRAWDOWN/ TOTAL PURGED		PRESSURE TO PUMP	PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
	BEGIN PURGING (KM)										
1126	INCREASED PURGE RATE; PURGED WELL DRY; WILL ALLOW TO RECHARGE AND SAMPLE AT A LATER TIME									7.7	
6/9/20 1307	5.37 ft										
1311	STARTED PURGING									6.5	
1320	6.01	115	16.05	14.78	6.65	3.46	17.5	254.4	8.66		
1325	6.16	100	16.35	14.92	6.66	4.02	12.8	220.4	8.72		
1330	COLLECT SAMPLES										

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

16	14.9	6.7	4.0	12.8	220	

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	DECON FLUIDS USED	TUBING/PUMP/BLADDER MATERIALS		EQUIPMENT USED	
[X] PERISTALTIC	[X] LIQUINOX	[X] SILICON TUBING	[ ] S. STEEL PUMP MATERIAL	[X] WL METER	HERON DIPPER-T
[ ] SUBMERSIBLE	[X] DEIONIZED WATER	[ ] HDPE TUBING	[ ] PVC PUMP MATERIAL	[X] TURB. METER	HACH 2100Q
[ ] BLADDER	[X] POTABLE WATER	[X] LDPE TUBING	[ ] GEOPROBE SCREEN	[X] WQ METER	YSI 556 MPS
	[ ] NITRIC ACID	[ ] HDPE TUBING	[ ] TEFLON BLADDER	[X] PUMP	Geopump
[ ] OTHER	[X] OTHER Dedicated	[ ] OTHER	[ ] OTHER	[ ] FILTERS	NO. TYPE

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
[X]	VOCs	8260C	No	4°C HCl	3 X 40 ml	YES	NO	
[ ]	Alkalinity	2320B	No	4°C	250 ml Poly			
[ ]	Chloride	300	No	4°C	250 ml Poly			
[ ]	Nitrate	300	No	4°C				
[ ]	Nitrite	354.1	No	4°C				
[ ]	Sulfate	300	No	4°C				
[ ]	Sulfide	4500	No	4°C				
[ ]	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
[ ]	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
[ ]	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: [X] YES [ ] NO

NO-PURGE METHOD UTILIZED: [ ] YES [X] NO

NUMBER OF GALLONS GENERATED: APPROX. 3

to sampling or _____ mL for this sample location.

SKETCH/NOTES

· SEE PAGE 1 OF 2

Sampler Signature: K. Amann Print Name: KATIE AMANN

Checked By: Jerry Rundell Date: 6/30/20

MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company	LOCATION ID	MW-6
PROJECT NUMBER	3617137306.02	DATE	6/9/2020
SAMPLE ID	828072-MW006008	START TIME	0930
SAMPLE TIME	1230	END TIME	1250
		SITE NAME/NUMBER	828072
		PAGE	1 OF 2

WELL DIAMETER (INCHES): [ ] 1 [X] 2 [ ] 4 [ ] 6 [ ] 8 [ ] OTHER

TUBING ID (INCHES): [X] 1/8 [X] 1/4 [ ] 3/8 [ ] 1/2 [ ] 5/8 [ ] OTHER

MEASUREMENT POINT (MP): [X] TOP OF RISER (TOR) [ ] TOP OF CASING (TOC) [ ] OTHER

WELL INTEGRITY	YES	NO	N/A
CAP	✓		
CASING	✓		
LOCKED	✓		
COLLAR	✓		

INITIAL DTW (BMP)	3.93 FT	FINAL DTW (BMP)	5.97 FT	PROT. CASING STICKUP (AGS)	2.24 FT	TOC/TOR DIFFERENCE	(TOR ABOVE TOC) 0.10 FT
WELL DEPTH (BMP)	10.21 FT	SCREEN LENGTH	REFER TO WELL CONSTRUCTION LOG FT	PID AMBIENT AIR	PPM	REFILL TIMER SETTING	SEC
WATER COLUMN	6.28 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	0.33 GAL	PID WELL MOUTH	PPM	DISCHARGE TIMER SETTING	SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	1.03 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	3.17 GAL	DRAWDOWN/ TOTAL PURGED	0.104	PRESSURE TO PUMP	PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity ppt %	PUMP INTAKE DEPTH	Comments
0940	BEGIN PURGING										
0950	5.43	150	YSI temp. is depicting a negative number. Stopped pump. Will troubleshoot YSI.								
1052	4.02	STARTED	PURGING. USING A DIFFERENT YSI. TEMP. PROBE ISSUE ON PREVIOUS YSI.								
1057	STOPPED, POOR SEAL IN YSI FLOW-THRU CELL. FIXED GASKET. RESTARTED PUMP @ 1100. 8										
1105	5.40	150	13.37	3.225	6.65	3.05	1.19	159.3	1.70		
1115	5.65	175	13.34	3.151	6.56	3.67	0.74	143.5	1.65		DID NOT ADJUST SPEED CONTROL DIAL.
1120	5.74	175	13.33	3.135	6.55	3.35	0.99	141.0	1.65		
1125	5.79	150	13.31	3.114	6.54	2.83	1.22	137.4	1.63		DECREASED PUMP SPEED.
1130	5.75	140	13.46	3.066	6.53	2.49	0.93	133.4	1.61		
1135	5.78	150	13.44	3.051	6.51	2.34	1.24	130.8	1.60		
1140	5.81	150	13.49	3.036	6.50	2.16	0.90	129.1	1.59		
1145	5.84	150	13.52	3.021	6.48	2.01	1.00	127.1	1.58		
1150	5.81	150	13.58	2.992	6.47	1.87	0.89	125.1	1.57		
1155	5.82	150	13.57	2.979	6.46	1.70	0.78	124.4	1.56		
1200	5.85	150	13.54	2.948	6.46	1.51	0.82	123.6	1.54		

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

@1225	14	2.85	6.5	1.1	0.6	120

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: [X] PERISTALTIC [ ] SUBMERSIBLE [ ] BLADDER [ ] OTHER

DECON FLUIDS USED: [X] LIQUINOX [X] DEIONIZED WATER [X] POTABLE WATER [ ] NITRIC ACID [X] OTHER Deionized

TUBING/PUMP/BLADDER MATERIALS: [X] SILICON TUBING [ ] HDPE TUBING [X] LDPE TUBING [ ] HDPE TUBING [ ] OTHER; [ ] S. STEEL PUMP MATERIAL [ ] PVC PUMP MATERIAL [ ] GEOPROBE SCREEN [ ] TEFLON BLADDER [ ] OTHER

EQUIPMENT USED: [X] WL METER Heron Dipper T; [X] TURB. METER HACH 2100Q; [X] WQ METER YSI 556 MPS; [X] PUMP Geopump; [ ] FILTERS NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
[X]	VOCs	8260C	No	4°C HCl	3 X 40 ml	YES	NO	
[ ]	Alkalinity	2320B	No	4°C	250 ml Poly			
[ ]	Chloride	300	No	4°C	250 ml Poly			
[ ]	Nitrate	300	No	4°C				
[ ]	Nitrite	354.1	No	4°C				
[ ]	Sulfate	300	No	4°C				
[ ]	Sulfide	4500	No	4°C				
[ ]	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
[ ]	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
[ ]	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: [X] YES [ ] NO

NO-PURGE METHOD UTILIZED: [ ] YES [X] NO

NUMBER OF GALLONS GENERATED: 3.5

to sampling or _____ mL for this sample location.

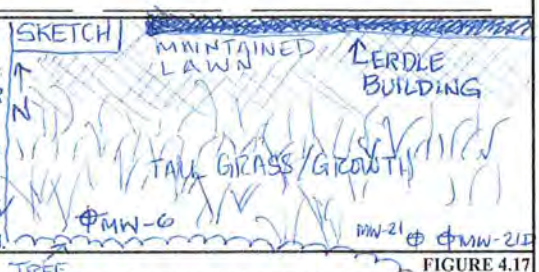
Sampler Signature: K Amann Print Name: KATIE AMANN

Checked By: Jerry Rockhill Date: 6/30/20

SKETCH/NOTES

- PURGE WATER DESCRIPTION: COLORLESS, ODORLESS, CLEAR
- YSI ISSUES. HAD TO USE A DIFFERENT ONE AND CALIBRATED PRIOR TO RESUMING PURGE.
- DID NOT INCLUDE READINGS/VALUES FROM 0940-1057 IN PURGE VOLUME CALCULATION.

SKETCH



MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company
PROJECT NUMBER	3617137306.02
SAMPLE ID	828072- MW0066008
SAMPLE TIME	1230

LOCATION ID	MW-6
DATE	6/9/2020
START TIME	0930
END TIME	1250
SITE NAME/NUMBER	828072
PAGE	2 OF 2

WELL DIAMETER (INCHES): ☐ 1 ☒ 2 ☐ 4 ☐ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☐ 1/8 ☒ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER

MEASUREMENT POINT (MP): ☒ TOP OF RISER (TOR) ☐ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	✓		
CASING	✓		
LOCKED	✓		
COLLAR	✓		

INITIAL DTW (BMP)	3.93 FT	FINAL DTW (BMP)	5.97 FT	PROT. CASING STICKUP (AGS)	2.24 FT	TOC/TOR DIFFERENCE	0.10 (FOR ABOVE TOC) FT
WELL DEPTH (BMP)	10.21 FT	SCREEN LENGTH	REFER TO WELL CONSTRUCTION LOG FT	PID AMBIENT AIR	PPM	REFILL TIMER SETTING	SEC
WATER COLUMN	6.28 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	0.33 GAL	PID WELL MOUTH	PPM	DISCHARGE TIMER SETTING	SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	1.03 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	3.17 GAL	DRAWDOWN/ TOTAL PURGED	0.104	PRESSURE TO PUMP	PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity % ppt	PUMP INTAKE DEPTH	Comments
	BEGIN PURGING		(EDT) 6/9/20								
1205	5.90	150	13.52	2.932	6.45	1.39	1.00	122.1	1.53	8	
1210	5.88	150	13.66	2.906	6.45	1.28	0.68	119.9	1.52		
1215	5.92	150	13.57	2.894	6.45	1.17	1.34	119.7	1.51		
1220	5.95	150	13.52	2.896	6.45	1.12	1.00	118.7	1.50		
1225	5.97	150	13.56	2.848	6.45	1.10	0.56	118.2	1.49		
1230	COLLECT SAMPLES										

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

	14	2.85	6.5	1.1	0.6	120

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.33 = 5.3)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB. 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: ☒ PERISTALTIC ☐ SUBMERSIBLE ☐ BLADDER ☐ OTHER

DECON FLUIDS USED: ☒ LIQUINOX ☒ DEIONIZED WATER ☒ POTABLE WATER ☐ NITRIC ACID ☒ OTHER Undiluted

TUBING/PUMP/BLADDER MATERIALS: ☒ SILICON TUBING ☐ HDPE TUBING ☒ LDPE TUBING ☐ HDPE TUBING ☐ OTHER

☐ S. STEEL PUMP MATERIAL ☐ PVC PUMP MATERIAL ☐ GEOPROBE SCREEN ☐ TEFLON BLADDER ☐ OTHER

EQUIPMENT USED: ☒ WL METER Heron Dipper T ☒ TURB. METER HACH 2100Q ☒ WQ METER YSI 556 MPS ☒ PUMP Geopump ☐ FILTERS NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
☒	VOCs	8260C	No	4°C HCl	3 X 40 ml	YES	NO	
☐	Alkalinity	2320B	No	4°C	250 ml Poly			
☐	Chloride	300	No	4°C	250 ml Poly			
☐	Nitrate	300	No	4°C				
☐	Nitrite	354.1	No	4°C				
☐	Sulfate	300	No	4°C				
☐	Sulfide	4500	No	4°C				
☐	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
☐	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
☐	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: ☒ YES ☐ NO

NO-PURGE METHOD UTILIZED: ☐ YES ☒ NO

NUMBER OF GALLONS GENERATED: 3.5 to sampling or _____ mL for this sample location.

SKETCH/NOTES

See page 1 of 2

Sampler Signature: K Amann Print Name: KATIE AMANN

Checked By: [signature] Date: 6/30/20

MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company
PROJECT NUMBER	3617137306.02
SAMPLE ID	828072- MW060015
SAMPLE TIME	1750

LOCATION ID	MW-6D
DATE	6/8/20
START TIME	1630
END TIME	1805
SITE NAME/NUMBER	828072
PAGE	1 OF 1

WELL DIAMETER (INCHES): ☐ 1 ☐ 2 ☐ 4 ☑ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☐ 1/8 ☑ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER

MEASUREMENT POINT (MP): ☐ TOP OF RISER (TOR) ☑ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	✓		
CASING	✓		
LOCKED	✓		
COLLAR	✓		

INITIAL DTW (BMP)	3.22 FT	FINAL DTW (BMP)	3.56 FT	PROT. CASING STICKUP (AGS)	1.9 FT	TOC/TOR DIFFERENCE	NA FT
WELL DEPTH (BMP)	25.7 FT	SCREEN LENGTH OPEN HOLE BR	UNK FT	PID AMBIENT AIR	— PPM	REFILL TIMER SETTING	— SEC
WATER COLUMN	22.48 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	GAL	PID WELL MOUTH	— PPM	DISCHARGE TIMER SETTING	— SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	GAL	DRAWDOWN/ TOTAL PURGED		PRESSURE TO PUMP	— PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
1636	BEGIN PURGING										
1700	3.54	145	13.1	2.891	7.2	2.1	3.3	-63	1.51		
1710	3.54	165	12.9	2.898	7.2	1.7	2.2	-62	1.52		
1715	3.56	165	12.9	2.894	7.2	1.7	1.4	-62	1.52		
1720	3.57	165	12.9	2.895	7.2	1.6	1.6	-62	1.52		
1725	3.57	165	12.9	2.897	7.2	1.4	1.1	-63	1.52		
1730	3.57	160	12.9	2.895	7.2	1.3	1.1	-63	1.52		
1735	3.54	145	13.0	2.890	7.2	1.2	1.1	-63	1.51		
1740	3.56	155	12.8	2.899	7.2	1.2	2.4	-63	1.52		
1745	3.56	155	12.8	2.896	7.2	1.2	1.4	-64	1.52		

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

	13	2.90	7.2	1.2	1.4	-64

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: ☑ PERISTALTIC ☐ SUBMERSIBLE ☐ BLADDER ☐ OTHER

DECON FLUIDS USED: ☐ LIQUINOX ☐ DEIONIZED WATER ☐ POTABLE WATER ☐ NITRIC ACID ☑ OTHER Hydrocarbon

TUBING/PUMP/BLADDER MATERIALS: ☑ SILICON TUBING ☐ HDPE TUBING ☑ LDPE TUBING ☐ HDPE TUBING ☐ OTHER; ☐ S. STEEL PUMP MATERIAL ☐ PVC PUMP MATERIAL ☐ GEOPROBE SCREEN ☐ TEFLON BLADDER ☐ OTHER

EQUIPMENT USED: ☑ WL METER Heron ☐ TURB. METER HACH 2100Q ☐ WQ METER YSI 556 MPS ☐ PUMP Geopump ☐ FILTERS NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
X	VOCs	8260C	No	4°C HCl	3 X 40 ml	✓		
	Alkalinity	2320B	No	4°C	250 ml Poly			
	Chloride	300	No	4°C	250 ml Poly			
	Nitrate	300	No	4°C				
	Nitrite	354.1	No	4°C				
	Sulfate	300	No	4°C				
	Sulfide	4500	No	4°C				
	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: ☑ YES ☐ NO

NO-PURGE METHOD UTILIZED: ☐ YES ☑ NO

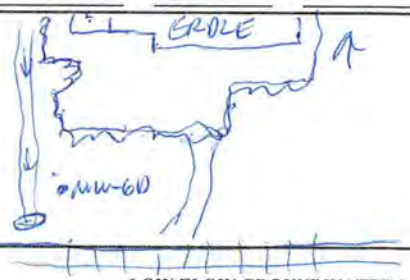
NUMBER OF GALLONS GENERATED: 2.9

to sampling or _____ mL for this sample location.

Sampler Signature: Jerry Rawcliffe Print Name: Jerry Rawcliffe

Checked By: Date: 7/6/20

SKETCH/NOTES



MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company
PROJECT NUMBER	3617137306.02
SAMPLE ID	828072- MW010 0116
SAMPLE TIME	1615
LOCATION ID	MW-10
DATE	6/8/20
START TIME	1440
END TIME	1630
SITE NAME/NUMBER	828072
PAGE	1 OF 1

WELL DIAMETER (INCHES): ☐ 1 ☑ 2 ☐ 4 ☐ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☑ 1/8 ☐ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER

MEASUREMENT POINT (MP): ☑ TOP OF RISER (TOR) ☐ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	✓		
CASING	✓		
LOCKED	✓		
COLLAR	✓		

INITIAL DTW (BMP)	4.80 FT	FINAL DTW (BMP)	5.68 FT	PROT. CASING STICKUP (AGS)	2.9 FT	TOC/TOR DIFFERENCE	0.12 FT
WELL DEPTH (BMP)	16.95 FT	SCREEN LENGTH	10' FT	PID AMBIENT AIR	— PPM	REFILL TIMER SETTING	— SEC
WATER COLUMN	12.15 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	.14 GAL	PID WELL MOUTH	— PPM	DISCHARGE TIMER SETTING	— SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	1.9 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	2.3 GAL	DRAWDOWN/ TOTAL PURGED	.06	PRESSURE TO PUMP	— PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
1505	BEGIN PURGING			~~mS/cm~~ (3%)							
1515	5.56	150	12.5	1.858	7.0	3.1	5.8	3	0.83		
1525	5.69	140	12.5	1.857	7.1	2.1	2.6	-16	.95		
1530	5.66	130	12.5	1.857	7.1	1.7	3.4	-19	.95		
1535	5.66	130	12.5	1.858	7.1	1.6	3.1	-21	.95		
1540	5.67	130	12.5	1.861	7.1	1.3	1.0	-22	.95		
1545	5.67	135	12.4	1.862	7.1	1.3	1.8	-22	.95		
1550	5.67	135	12.4	1.860	7.1	1.2	1.6	-23	.95		
1555	5.68	135	12.3	1.858	7.1	1.2	2.3	-24	.95		
1600	5.68	135	12.3	1.849	7.1	1.1	0.6	-24	.95		
1605	5.68	135	12.2	1.836	7.1	1.0	2.1	-24	.94		
1610	5.68	130	12.2	1.830	7.1	1.0	2.3	-24	.93		

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

12	1.83	7.1	1.0	2.3	-24	.93

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: ☑ PERISTALTIC ☐ SUBMERSIBLE ☐ BLADDER ☐ OTHER

DECON FLUIDS USED: ☐ LIQUINOX ☐ DEIONIZED WATER ☐ POTABLE WATER ☐ NITRIC ACID ☑ OTHER Dedicated

TUBING/PUMP/BLADDER MATERIALS: ☑ SILICON TUBING ☐ HDPE TUBING ☑ LDPE TUBING ☐ HDPE TUBING ☐ OTHER

☐ S. STEEL PUMP MATERIAL ☐ PVC PUMP MATERIAL ☐ GEOPROBE SCREEN ☐ TEFLON BLADDER ☐ OTHER

EQUIPMENT USED

☑	WL METER	Heron
☑	TURB. METER	HACH 2100Q
☑	WQ METER	YSI 556 MPS
☑	PUMP	Geopump
☐	FILTERS	NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
✓	VOCs	8260C	No	4°C HCl	3 X 40 ml	✓		
	Alkalinity	2320B	No	4°C	250 ml Poly			
	Chloride	300	No	4°C	250 ml Poly			
	Nitrate	300	No	4°C				
	Nitrite	354.1	No	4°C				
	Sulfate	300	No	4°C				
	Sulfide	4500	No	4°C				
	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: ☑ YES ☐ NO

NO-PURGE METHOD UTILIZED: ☐ YES ☑ NO

NUMBER OF GALLONS GENERATED: 2.3

to sampling or _____ mL for this sample location.

Sampler Signature: Jerry Rawcliffe

Print Name: Jerry Rawcliffe

Checked By: PMM

Date: 7/6/20

SKETCH/NOTES

MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company
PROJECT NUMBER	3617137306.02
SAMPLE ID	828072- MW007015
SAMPLE TIME	1055

LOCATION ID	MW-7
DATE	6/9/20
START TIME	0930
END TIME	1100
SITE NAME/NUMBER	828072
PAGE	1 OF 1

WELL DIAMETER (INCHES): ☐ 1 ☑ 2 ☐ 4 ☐ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☑ 1/8 ☐ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER

MEASUREMENT POINT (MP): ☑ TOP OF RISER (TOR) ☐ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY	YES	NO	N/A
CAP		✓	
CASING	✓		
LOCKED		✓	
COLLAR		✓	

INITIAL DTW (BMP)	4.36 FT	FINAL DTW (BMP)	6.32 FT	PROT. CASING STICKUP (AGS)	2.2 FT	TOC/TOR DIFFERENCE	0.33 above avg FT
WELL DEPTH (BMP)	17.0 FT	SCREEN LENGTH	UNK FT	PID AMBIENT AIR	— PPM	REFILL TIMER SETTING	— SEC
WATER COLUMN	12.64 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	.31 GAL	PID WELL MOUTH	— PPM	DISCHARGE TIMER SETTING	— SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	2.0 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	2.4 GAL	DRAWDOWN/ TOTAL PURGED	.13	PRESSURE TO PUMP	— PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
0939	BEGIN PURGING										
0955	5.96	135	13.9	1.086	6.9	2.9	6.3	-44	.54	15	
1000	6.23	115	14.1	1.085	6.9	2.9	2.7	-44	.54		
1005	6.30	120	14.1	1.086	6.9	2.7	1.7	-44	.54		
1010	6.35	120	14.0	1.089	6.9	2.3	1.5	-43	.54		Phone Call - Jamie Welch
1025	6.43	145	14.1	1.092	6.9	1.8	2.2	-44	.55		
1030	6.41	135	14.0	1.097	6.9	1.6	1.6	-42	.55		
1035	6.43	145	14.0	1.105	7.0	1.5	1.0	-45	.55		
1040	6.40	130	14.1	1.102	7.0	1.4	1.6	-44	.55		
1045	6.36	125	14.4	1.104	7.0	1.4	1.0	-46	.55		
1050	6.32	125	14.5	1.108	7.0	1.4	1.0	-46	.55		

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

	15	1.11	7.0	1.4	1.0	-46	.55

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: ☑ PERISTALTIC ☐ SUBMERSIBLE ☐ BLADDER ☐ OTHER

DECON FLUIDS USED: ☐ LIQUINOX ☐ DEIONIZED WATER ☐ POTABLE WATER ☐ NITRIC ACID ☑ OTHER Dedicated

TUBING/PUMP/BLADDER MATERIALS: ☑ SILICON TUBING ☐ HDPE TUBING ☑ LDPE TUBING ☐ HDPE TUBING ☐ OTHER ☐ S. STEEL PUMP MATERIAL ☐ PVC PUMP MATERIAL ☐ GEOPROBE SCREEN ☐ TEFLON BLADDER ☐ OTHER

EQUIPMENT USED: ☑ WL METER Heron ☑ TURB. METER HACH 2100Q ☑ WQ METER YSI 556 MPS ☑ PUMP Geopump ☐ FILTERS NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
✓	VOCs	8260C	No	4°C HCl	3 X 40 ml	(X)		
	Alkalinity	2320B	No	4°C	250 ml Poly			
	Chloride	300	No	4°C	250 ml Poly			
	Nitrate	300	No	4°C				
	Nitrite	354.1	No	4°C				
	Sulfate	300	No	4°C				
	Sulfide	4500	No	4°C				
	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

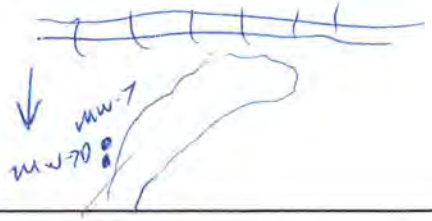
PURGE WATER CONTAINERIZED: YES ☑ NO ☐

NO-PURGE METHOD UTILIZED: YES ☐ NO ☐

NUMBER OF GALLONS GENERATED: 2.4

to sampling or _____ mL. for this sample location.

SKETCH/NOTES



Sampler Signature: Jerry Rawcliffe Print Name: Jerry Rawcliffe

Checked By: Date: 7/6/20

MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

ERDLE

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company
PROJECT NUMBER	3617137306.02
SAMPLE ID	828072- MW07D072
SAMPLE TIME	1235

LOCATION ID	MW-7D
DATE	6/9/20
START TIME	1100
END TIME	1250
SITE NAME/NUMBER	828072
PAGE	1 OF 1

WELL DIAMETER (INCHES): ☐ 1 ☐ 2 ☐ 4 ☑ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☑ 1/8 ☐ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER

MEASUREMENT POINT (MP): ☐ TOP OF RISER (TOR) ☑ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	✓		
CASING	✓		
LOCKED		✓	
COLLAR	✓		

INITIAL DTW (BMP)	3.11 FT	FINAL DTW (BMP)	3.15 FT	PROT. CASING STICKUP (AGS)	1.6 FT	TOC/TOR DIFFERENCE	NA FT
WELL DEPTH (BMP)	25.8 FT	SCREEN LENGTH OPEN HOLE BR	UNK FT	PID AMBIENT AIR	— PPM	REFILL TIMER SETTING	— SEC
WATER COLUMN	22.7 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	.06 GAL	PID WELL MOUTH	— PPM	DISCHARGE TIMER SETTING	— SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	33.4 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	5.3 GAL	DRAWDOWN/ TOTAL PURGED	.01	PRESSURE TO PUMP	— PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
1106	BEGIN PURGING										
1115	3.18	270	14.3	2.408	7.7	0.7	52	-170	1.25		
1125	3.15	235	14.5	2.432	7.8	0.7	34	-167	1.26		Tubing heavily iron stained. Casing very corroded. Water has lots of small particulates and a reddish tint.
1135	3.18	235	14.2	2.455	7.8	0.7	31	-169	1.27		
1140	3.14	235	14.1	2.460	7.8	0.7	25	-165	1.28		
1145	3.14	235	13.9	2.461	7.8	0.7	24	-173	1.28		
1150	3.14	225	14.0	2.451	7.7	0.7	21	-176	1.27		
1155	3.14	260	14.0	2.460	7.7	0.7	18	-174	1.28		
1200	3.15	260	13.5	2.461	7.7	0.7	18	-174	1.28		
1205	3.15	215	13.6	2.449	7.7	0.7	15	-167	1.27		
1210	3.15	225	13.8	2.441	7.6	0.7	13	-169	1.26		
1215	3.15	230	13.8	2.446	7.6	0.7	13	-167	1.27		
1220	3.16	250	13.9	2.439	7.6	0.7	12	-167	1.27		
1225	3.16	245	13.4	2.453	7.6	0.7	10	-161	1.27		
1230	3.15	250	13.5	2.442	7.6	0.6	8.9	-170	1.27		

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

	14	2.44	7.6	0.6	8.9	-170

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP
☑ PERISTALTIC
☐ SUBMERSIBLE
☐ BLADDER
☐ OTHER

DECON FLUIDS USED
☐ LIQUINOX
☐ DEIONIZED WATER
☐ POTABLE WATER
☐ NITRIC ACID
☑ OTHER Dedicated

TUBING/PUMP/BLADDER MATERIALS
☑ SILICON TUBING
☐ HDPE TUBING
☑ LDPE TUBING
☐ HDPE TUBING
☐ OTHER
☐ S. STEEL PUMP MATERIAL
☐ PVC PUMP MATERIAL
☐ GEOPROBE SCREEN
☐ TEFLON BLADDER
☐ OTHER

EQUIPMENT USED
☑ WL METER Heron
☑ TURB. METER HACH 2100Q
☑ WQ METER YSI 556 MPS
☑ PUMP Geopump
☐ FILTERS NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
☒	VOCs	8260C	No	4°C HCl	3 X 40 ml	☒		
☐	Alkalinity	2320B	No	4°C	250 ml Poly			
☐	Chloride	300	No	4°C	250 ml Poly			
☐	Nitrate	300	No	4°C				
☐	Nitrite	354.1	No	4°C				
☐	Sulfate	300	No	4°C				
☐	Sulfide	4500	No	4°C				
☐	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
☐	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
☐	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

	YES	NO
PURGE WATER CONTAINERIZED	☒	☐
NO-PURGE METHOD UTILIZED	☐	☒

NUMBER OF GALLONS GENERATED 5.3

to sampling or _____ mL for this sample location.

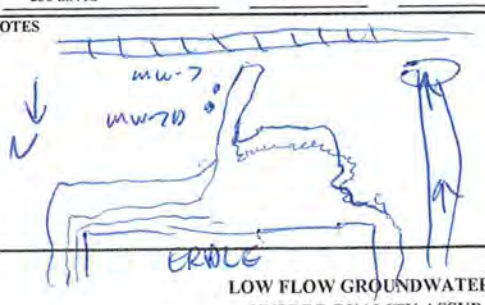
Sampler Signature: Jerry Rawcliffe

Print Name: Jerry Rawcliffe

Checked By: [signature]

Date: 7/6/20

SKETCH/NOTES



MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company
PROJECT NUMBER	3617137306.02
SAMPLE ID	828072- MW011012
SAMPLE TIME	1602

LOCATION ID	MW-11
DATE	6/9/20
START TIME	1527
END TIME	1610
SITE NAME/NUMBER	828072
PAGE	1 OF 1

WELL DIAMETER (INCHES): ☐ 1 ☒ 2 ☐ 4 ☐ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☐ 1/8 ☒ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER

MEASUREMENT POINT (MP): ☒ TOP OF RISER (TOR) ☐ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	✓		
CASING	✓		
LOCKED	✓		
COLLAR	✓		

INITIAL DTW (BMP)	8.40 FT	FINAL DTW (BMP)	9.45 FT	PROT. CASING STICKUP (AGS)	3.09 FT	TOC/TOR DIFFERENCE	0.14 FT
WELL DEPTH (BMP)	12.96 FT	SCREEN LENGTH	~~Refer to~~ WL11 10FT	PID AMBIENT AIR	/ PPM	REFILL TIMER SETTING	/ SEC
WATER COLUMN	4.56 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	0.17 GAL	PID WELL MOUTH	/ PPM	DISCHARGE TIMER SETTING	/ SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	0.75 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	0.86 GAL	DRAWDOWN/ TOTAL PURGED	0.20	PRESSURE TO PUMP	/ PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
1527	BEGIN PURGING										
1540	9.00	100	11.92	1.326	6.85	2.40	2.16	-79.7	0.67	11	
1545	9.10	100	12.17	1.324	6.86	1.65	2.50	-80.3	0.67		
1550	9.22	100	12.17	1.325	6.87	1.48	2.27	-81.1	0.67		
1555	9.36	100	12.05	1.319	6.87	1.38	1.52	-83.1	0.66		
1600	9.45	100	12.01	1.317	6.87	1.35	2.00	-85.0	0.66		
1602	Well	Grable	Collect	Sample							

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

	12	1.32	6.9	1.4	2.0	-85

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB.: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: ☒ PERISTALTIC ☐ SUBMERSIBLE ☐ BLADDER ☐ OTHER

DECON FLUIDS USED: ☒ LIQUINOX ☒ DEIONIZED WATER ☒ POTABLE WATER ☒ NITRIC ACID ☒ OTHER Deionized

TUBING/PUMP/BLADDER MATERIALS: ☒ SILICON TUBING ☐ HDPE TUBING ☒ LDPE TUBING ☐ HDPE TUBING ☐ OTHER

☐ S. STEEL PUMP MATERIAL ☐ PVC PUMP MATERIAL ☐ GEOPROBE SCREEN ☐ TEFLON BLADDER ☐ OTHER

EQUIPMENT USED

☒	WL METER	Heron Sky my Dipper #1200-73
☒	TURB. METER	HACH 2100Q M029-58
☒	WQ METER	YSI 556 MPS M015-10
☒	PUMP	Geopump 5008-36
☐	FILTERS	NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
☒	VOCs	8260C	No	4°C HCl	3 X 40 ml	X		MW011012
☐	Alkalinity	2320B	No	4°C	250 ml Poly			
☐	Chloride	300	No	4°C	250 ml Poly			
☐	Nitrate	300	No	4°C				
☐	Nitrite	354.1	No	4°C				
☐	Sulfate	300	No	4°C				
☐	Sulfide	4500	No	4°C				
☐	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
☐	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
☐	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

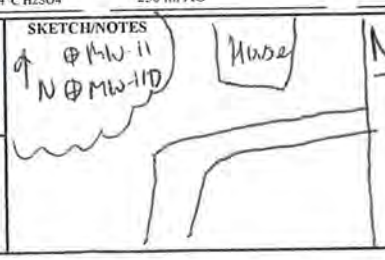
PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: ☒ YES ☐ NO

NO-PURGE METHOD UTILIZED: ☐ YES ☒ NO

NUMBER OF GALLONS GENERATED: 0.92 to sampling or ___ mL for this sample location.

SKETCH/NOTES



Notes: Water pale yellow

Sampler Signature: [signature] Print Name: Hannah Gnoza

Checked By: [signature] Date: 6/30/20

MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company
PROJECT NUMBER	3617137306.02
SAMPLE ID	828072- MW11D023
SAMPLE TIME	1457

LOCATION ID	MW-11D
DATE	6/9/2020
START TIME	1400
END TIME	1506
SITE NAME/NUMBER	828072
PAGE	1 OF 1

WELL DIAMETER (INCHES): ☐ 1 ☒ 2 (HG) ☒ 4 ☐ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☐ 1/8 ☒ 1/4 (HG) ☒ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER

MEASUREMENT POINT (MP): ☒ TOP OF RISER (TOR) ☐ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	✓		
CASING	✓		
LOCKED	✓		
COLLAR	✓		

INITIAL DTW (BMP)	9.71 FT	FINAL DTW (BMP)	9.75 FT	PROT. CASING STICKUP (AGS)	HG 3.09 4.0 FT	TOC/TOR DIFFERENCE	HG 3.68 0.74 FT
WELL DEPTH (BMP)	HG 12.96 23.60 FT	SCREEN LENGTH	Well log FT	PID AMBIENT AIR	/ PPM	REFILL TIMER SETTING	/ SEC
WATER COLUMN	HG 3.25 13.89 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	HG 0.007 0.026 GAL	PID WELL MOUTH	/ PPM	DISCHARGE TIMER SETTING	/ SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	HG 0.533 9.15 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	2.25 GAL	DRAWDOWN/ TOTAL PURGED	0.003	PRESSURE TO PUMP	/ PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
1400	BEGIN PURGING										
1420	9.75	150	12.43	1.173	7.03	0.48	9.22	-151.1	0.59		
1425	9.75	150	12.33	1.170	7.01	0.50	8.95	-156.3	0.59		
1430	9.75	150	12.07	1.170	6.99	0.70	7.32	-150.0	0.59		
1435	9.75	150	12.30	1.169	7.04	1.15	7.67	-146.7	0.59		
1440	9.75	150	12.00	1.170	7.06	1.85	6.53	-133.6	0.59		
1445	9.75	150	12.14	1.167	7.07	2.43	5.73	-133.5	0.58		
1450	9.75	150	11.96	1.166	7.08	2.41	4.41	-134.0	0.58		
1455	9.75	150	12.06	1.165	7.09	2.23	4.20	-131.3	0.58		
1457	well	sample	collect	sample							

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

12	1.17	7.1	2.2	4.2	-130	

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: ☒ PERISTALTIC ☐ SUBMERSIBLE ☐ BLADDER ☐ OTHER

DECON FLUIDS USED: ☒ LIQUINOX ☒ DEIONIZED WATER ☒ POTABLE WATER ☐ NITRIC ACID ☒ OTHER DI Water

TUBING/PUMP/BLADDER MATERIALS: ☒ SILICON TUBING ☐ HDPE TUBING ☒ LDPE TUBING ☐ HDPE TUBING ☐ OTHER | ☐ S. STEEL PUMP MATERIAL ☐ PVC PUMP MATERIAL ☐ GEOPROBE SCREEN ☐ TEFLON BLADDER ☐ OTHER

EQUIPMENT USED

☒	WL METER	Heron Skinny Dipper M200-73
☒	TURB. METER	HACH 2100Q M034138
☒	WQ METER	YSI 556 MPS M015-10
☐	PUMP	Geopump 5008-36
☐	FILTERS	NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
☒	VOCs	8260C	No	4°C HCl	3 X 40 ml	✓		MW11D023
☐	Alkalinity	2320B	No	4°C	250 ml Poly			
☐	Chloride	300	No	4°C	250 ml Poly			
☐	Nitrate	300	No	4°C				
☐	Nitrite	354.1	No	4°C				
☐	Sulfate	300	No	4°C				
☐	Sulfide	4500	No	4°C				
☐	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
☐	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
☐	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: ☒ YES ☐ NO

NO-PURGE METHOD UTILIZED: ☐ YES ☒ NO

NUMBER OF GALLONS GENERATED: 2.25

to sampling or ___ mL for this sample location.

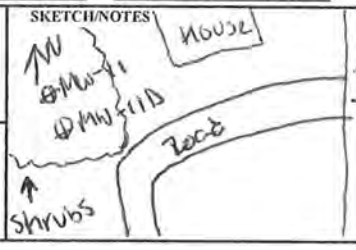
Sampler Signature: Hannah Gnoza

Print Name: Hannah Gnoza

Checked By: J Rawlik

Date: 6/30/20

SKETCH/NOTES



NOTES:
- Kept having to prime pump
- Water: yellowish, faint odor

MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company	LOCATION ID	MW-12
PROJECT NUMBER	3617137306.02	DATE	6/9/20
SAMPLE ID	828072- MW012011	START TIME	1400
SAMPLE TIME	1545	END TIME	1600
		SITE NAME/NUMBER	828072
		PAGE	1 OF 1

WELL DIAMETER (INCHES): ☐ 1 ☑ 2 ☐ 4 ☐ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☑ 1/8 ☐ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER

MEASUREMENT POINT (MP): ☑ TOP OF RISER (TOR) ☐ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY	YES	NO	N/A
CAP	✓		
CASING	✓		
LOCKED	✓		
COLLAR	✓		

INITIAL DTW (BMP)	9.48 FT	FINAL DTW (BMP)	11.16 FT	PROT. CASING STICKUP (AGS)	2.9 FT	TOC/TOR DIFFERENCE	0.15 FT
WELL DEPTH (BMP)	11.9 FT	SCREEN LENGTH	UNK FT	PID AMBIENT AIR	— PPM	REFILL TIMER SETTING	— SEC
WATER COLUMN	2.4 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	.27 GAL	PID WELL MOUTH	— PPM	DISCHARGE TIMER SETTING	— SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	.39 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	1.8 GAL	DRAWDOWN/ TOTAL PURGED	0.15	PRESSURE TO PUMP	— PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
1423	BEGIN PURGING										
1435	9.82	110	13.2	0.965	6.8	9.7	6.8	-186	0.48		
1445	10.06	105	13.2	0.972	6.8	3.3	2.8	-177	.48		
1450	10.14	105	13.1	0.975	6.8	2.6	2.0	-174	.48		
1455	10.26	100	13.1	0.973	6.8	2.0	2.3	-173	.48		
1500	10.35	100	13.1	0.974	6.8	1.7	1.2	-167	.48		
1505	10.45	95	13.2	0.972	6.8	1.4	1.3	-160	.48		
1510	10.55	90	13.5	0.963	6.8	1.2	2.1	-142	.48		
1515	10.65	85	13.7	0.959	6.8	1.1	1.3	-138	.48		
1520	10.77	85	13.8	0.958	6.8	1.0	1.7	-133	.48		
1525	10.88	95	13.6	0.959	6.8	0.9	1.3	-135	.48		
1530	11.02	110	13.2	0.949	6.8	0.9	1.5	-134	.47		
1535	11.16	100	12.9	0.945	6.8	0.9	1.7	-136	.47		

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

13	0.945	6.8	0.9	1.7	-140	

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.33 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: ✓ PERISTALTIC; ☐ SUBMERSIBLE; ☐ BLADDER; ☐ OTHER

DECON FLUIDS USED: ☐ LIQUINOX; ☐ DEIONIZED WATER; ☐ POTABLE WATER; ☐ NITRIC ACID; ☒ OTHER Dedicated

TUBING/PUMP/BLADDER MATERIALS: ☑ SILICON TUBING; ☐ HDPE TUBING; ☑ LDPE TUBING; ☐ HDPE TUBING; ☐ OTHER

☐ S. STEEL PUMP MATERIAL; ☐ PVC PUMP MATERIAL; ☐ GEOPROBE SCREEN; ☐ TEFLON BLADDER; ☐ OTHER

EQUIPMENT USED:

☑	WL METER	Heron
☑	TURB. METER	HACH 2100Q
☑	WQ METER	YSI 556 MPS
✓	PUMP	Geopump
☐	FILTERS	NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
X	VOCs	8260C	No	4°C HCl	3 X 40 ml	X		
	Alkalinity	2320B	No	4°C	250 ml Poly			
	Chloride	300	No	4°C	250 ml Poly			
	Nitrate	300	No	4°C				
	Nitrite	354.1	No	4°C				
	Sulfate	300	No	4°C				
	Sulfide	4500	No	4°C				
	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly		MW-12	
	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: ☒ YES ☐ NO

NO-PURGE METHOD UTILIZED: ☐ YES ☒ NO

NUMBER OF GALLONS GENERATED: 1.8 to sampling or ___ mL for this sample location.

SKETCH/NOTES

Sampler Signature: Jerry Rawcliffe Print Name: Jerry Rawcliffe

Checked By: Date: 7/6/20

MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company
PROJECT NUMBER	3617137306.02
SAMPLE ID	828072- MW013006
SAMPLE TIME	1535
LOCATION ID	MW-13
DATE	6/10/20
START TIME	1155
END TIME	1545
SITE NAME/NUMBER	828072
PAGE	1 OF 1

WELL DIAMETER (INCHES): ☐ 1 ☒ 2 ☐ 4 ☐ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☒ 1/8 ☐ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER

MEASUREMENT POINT (MP): ☒ TOP OF RISER (TOR) ☐ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		Missing bolt
COLLAR	X		

INITIAL DTW (BMP)	4.40 FT	FINAL DTW (BMP)	dry FT	PROT. CASING STICKUP (AGS)	/ FT	TOC/TOR DIFFERENCE	0.29 FT
WELL DEPTH (BMP)	6.8 FT	SCREEN LENGTH	Refer to well log FT	PID AMBIENT AIR	/ PPM	REFILL TIMER SETTING	/ SEC
WATER COLUMN	2.4 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	0.18 GAL	PID WELL MOUTH	/ PPM	DISCHARGE TIMER SETTING	/ SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	0.39 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	1.30 GAL (2)	DRAWDOWN/ TOTAL PURGED	0.12 (2)	PRESSURE TO PUMP	/ PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
1155	BEGIN PURGING										
1215	5.1	150	14.75	0.902	6.81	2.87	6.27	-81.4	0.45		
~~1220~~					6	~~3.00~~		-93.5	0.50		Had to adjust tubing
1225	5.43	120	13.52	1.003	6.83	3.00	13.3	-93.5	0.50		
1230	5.61	120	13.28	1.018	6.84	1.88	8.57	-99.6	0.51		
1235	5.92	120	13.18	1.037	6.84	1.88	9.25	-99.8	0.52		
1240	5.95	120	15.07	1.049	6.96	4.09	8.73	-98.4	0.52		
1245	Pumped Well dry due to lack of stabilization - drawdown										
1535	5.50	Collected Sample									

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

	15	1.05	6.9	4.1	8.7	-98

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: ☒ PERISTALTIC ☐ SUBMERSIBLE ☐ BLADDER ☐ OTHER

DECON FLUIDS USED: ☒ LIQUINOX ☒ DEIONIZED WATER ☐ POTABLE WATER ☐ NITRIC ACID ☒ OTHER Dedicated

TUBING/PUMP/BLADDER MATERIALS: ☒ SILICON TUBING ☐ HDPE TUBING ☒ LDPE TUBING ☐ HDPE TUBING

☐ S. STEEL PUMP MATERIAL ☐ PVC PUMP MATERIAL ☐ GEOPROBE SCREEN ☐ TEFLON BLADDER ☐ OTHER

EQUIPMENT USED: ☒ WL METER Heron Skinny Dipper M200-75 ☒ TURB. METER HACH 2100Q MO24-38 ☒ WQ METER YSI 556 MPS MO15-10 ☒ PUMP Geopump 5008-36 ☐ FILTERS NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
☒	VOCs	8260C	No	4°C HCl	3 X 40 ml	Y		MW013006
☐	Alkalinity	2320B	No	4°C	250 ml Poly			
☐	Chloride	300	No	4°C	250 ml Poly			
☐	Nitrate	300	No	4°C				
☐	Nitrite	354.1	No	4°C				
☐	Sulfate	300	No	4°C				
☐	Sulfide	4500	No	4°C				
☐	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
☐	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
☐	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: ☒ YES ☐ NO

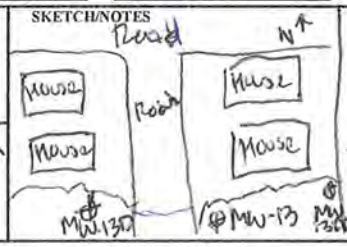
NO-PURGE METHOD UTILIZED: ☐ YES ☒ NO

NUMBER OF GALLONS GENERATED: 1.7 (0.90) to sampling or ___ mL for this sample location.

Sampler Signature: [signature] Print Name: Hannah Grover

Checked By: [signature] Date: 6/30/20

SKETCH/NOTES



Notes
- Pump dying, had to purge at 150 mL/min
- Water surrounding pvc pipe, had to bail
- Well did not stabilize

MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company
PROJECT NUMBER	3617137306.02
SAMPLE ID	828072- MW13D12 -MW13D12DUP
SAMPLE TIME	1102
LOCATION ID	MW-13D
DATE	6/10/20
START TIME	0945
END TIME	1110
SITE NAME/NUMBER	828072
PAGE	1 OF 1

WELL DIAMETER (INCHES): ☐ 1 ☒ 2 ☐ 4 ☐ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☒ 1/8 ☐ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER

MEASUREMENT POINT (MP): ☒ TOP OF RISER (TOR) ☐ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR	X		

INITIAL DTW (BMP)	5.40 FT	FINAL DTW (BMP)	5.42 FT	PROT. CASING STICKUP (AGS)	/ FT	TOC/TOR DIFFERENCE	FT
WELL DEPTH (BMP)	12.25 FT	SCREEN LENGTH	Differ to W2111009 FT	PID AMBIENT AIR	/ PPM	REFILL TIMER SETTING	/ SEC
WATER COLUMN	6.85 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	0.003 GAL	PID WELL MOUTH	/ PPM	DISCHARGE TIMER SETTING	/ SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	1.12 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	2.25 GAL	DRAWDOWN/ TOTAL PURGED	0.001	PRESSURE TO PUMP	/ PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
0945	BEGIN PURGING										
1000	5.41	110	11.50	2.414	7.54	0.65	17.2	-103.5	1.25		
1005	5.42	110	11.37	2.425	7.58	0.67	22.1	-112.4	1.26		
1010	5.42	110	11.63	2.411	7.63	0.70	12.8	-120.0	1.25		
1015	5.42	110	11.34	2.423	7.61	0.72	11.1	-140.1	1.25		
1020	5.42	110	11.22	2.435	7.54	0.64	14.2	-149.5	1.26		
1025	5.42	110	11.34	2.450	7.45	0.72	15.2	-145.2	1.27		
1030	5.42	110	11.47	2.456	7.43	0.78	15.5	-143.1	1.27		
1035	5.42	110	11.45	2.541	7.31	0.89	12.3	-130.2	1.27		
1040	5.42	110	11.50	2.568	7.28	1.19	13.0	-124.5	1.33		
1045	5.42	110	11.55	2.583	7.27	1.78	9.72	-122.6	1.34		
1050	5.42	110	11.59	2.587	7.26	2.01	8.86	-122.8	1.34		
1055	5.42	110	12.87	2.581	7.26	2.08	9.01	-112.3	1.35		
1100	5.42	110	11.97	2.624	7.26	2.09	8.21	-118.5	1.32		
1102	Well	Stable	Collect	Samples							

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

12	2.6	7.3	2.1	8.2	-118	

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	DECON FLUIDS USED	TUBING/PUMP/BLADDER MATERIALS	EQUIPMENT USED
☒ PERISTALTIC	☒ LIQUINOX	☒ SILICON TUBING	☒ WL METER Hanna Skinny Dipper M20-73
☐ SUBMERSIBLE	☒ DEIONIZED WATER	☐ HDPE TUBING	☒ TURB. METER HACH 2100Q M024-38
☐ BLADDER	☐ POTABLE WATER	☒ LDPE TUBING	☒ WQ METER YSI 556 MPS M015-16
☐ OTHER	☐ NITRIC ACID	☐ HDPE TUBING	☒ PUMP Geopump B008-36
	☒ OTHER Deionized	☐ OTHER	☐ FILTERS NO. ___ TYPE ___
		☐ TEFLON BLADDER	
		☐ S. STEEL PUMP MATERIAL	
		☐ PVC PUMP MATERIAL	
		☐ GEOPROBE SCREEN	
		☐ OTHER	

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
☒	VOCs	8260C	No	4°C HCl	3 X 40 ml	Y	DUP	828072-MW13D12, MW13D12DUP
☐	Alkalinity	2320B	No	4°C	250 ml Poly			
☐	Chloride	300	No	4°C	250 ml Poly			
☐	Nitrate	300	No	4°C				
☐	Nitrite	354.1	No	4°C				
☐	Sulfate	300	No	4°C				
☐	Sulfide	4500	No	4°C				
☐	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
☐	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
☐	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

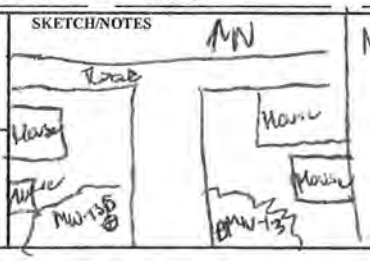
PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: ☒ YES ☐ NO

NO-PURGE METHOD UTILIZED: ☐ YES ☒ NO

NUMBER OF GALLONS GENERATED: 2.25 to sampling or _____mL for this sample location.

SKETCH/NOTES



Notes
Water pale yellow

Sampler Signature: Hannah Grozz

Print Name: Hannah Grozz

Checked By: DRandolph

Date: 6/30/20

MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company
PROJECT NUMBER	3617137306.02
SAMPLE ID	828072- MW13DD040
SAMPLE TIME	1452
LOCATION ID	MW-13DD
DATE	6/10/20
START TIME	1338
END TIME	1503
SITE NAME/NUMBER	828072
PAGE	1 OF 1

WELL DIAMETER (INCHES): ☐ 1 ☒ 2 ☐ 4 ☐ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☒ 1/8 ☐ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER

MEASUREMENT POINT (MP): ☒ TOP OF RISER (TOR) ☐ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR	X		

INITIAL DTW (BMP)	2.80 FT	FINAL DTW (BMP)	2.82 FT	PROT. CASING STICKUP (AGS)	/ FT	TOC/TOR DIFFERENCE	FT
WELL DEPTH (BMP)	42 FT	SCREEN LENGTH	REFER TO WELL LOG FT	PID AMBIENT AIR	/ PPM	REFILL TIMER SETTING	/ SEC
WATER COLUMN	39.2 FT	DRAWDOWN VOLUME	0.003 MG ~~2.74~~ GAL	PID WELL MOUTH	/ PPM	DISCHARGE TIMER SETTING	/ SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	6.43 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	~~1.81~~ 2.05 GAL (23)	DRAWDOWN/ TOTAL PURGED (initial DTW- final DTW X well diam. squared X 0.041)	~~1.29~~ 0.001 MG	PRESSURE TO PUMP	/ PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
1338	BEGIN PURGING										
1355	2.82	100	13.18	2.602	7.15	0.59	13.4	-97.8	1.35	40'	
1400	2.82	110	13.12	2.600	7.17	0.61	11.1	-97.8	1.35	|	Did not adjust Pump speed
1405	2.82	105	13.01	2.599	7.17	0.98	12.1	-99	1.35	|	
1410	2.82	105	12.87	2.597	7.17	1.70	11.3	-101.8	1.35	|	
1415	2.82	105	12.78	2.609	7.17	2.04	11.5	-108	1.36	|	
1420	2.82	105	12.76	2.621	7.18	1.79	8.51	-108.2	1.36	|	
1425	2.82	105	12.85	2.622	7.18	1.44	9.72	-107.6	1.36	|	
1430	2.82	105	12.81	2.618	7.18	1.24	8.07	-106.3	1.36	|	
1435	2.82	105	12.89	2.596	7.17	1.05	8.62	-111.5	1.35	|	
1440	2.82	105	12.96	2.565	7.17	0.93	8.43	-112.0	1.33	|	
1445	2.82	105	12.96	2.551	7.17	0.87	5.20	-109.4	1.32	|	
1450	2.82	105	12.76	2.537	7.16	0.85	7.86	-109.2	1.31	|	
1452	Well Stable		Collect	Samples							

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF]) (22)

	13	2.54	7.2	~~0.85~~ 0.9 (22)	7.9	~~109~~ -110

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: ☒ PERISTALTIC ☐ SUBMERSIBLE ☐ BLADDER ☐ OTHER

DECON FLUIDS USED: ☒ LIQUINOX ☒ DEIONIZED WATER ☐ POTABLE WATER ☐ NITRIC ACID ☒ OTHER Dilute

TUBING/PUMP/BLADDER MATERIALS: ☒ SILICON TUBING ☐ HDPE TUBING ☒ LDPE TUBING ☐ HDPE TUBING ☐ OTHER; ☐ S. STEEL PUMP MATERIAL ☐ PVC PUMP MATERIAL ☐ GEOPROBE SCREEN ☐ TEFLON BLADDER ☐ OTHER

EQUIPMENT USED: ☒ WL METER Heron Dipper M1200-73 ☒ TURB. METER HACH 2100Q M0214-38 ☒ WQ METER YSI 556 MPS M015-10 ☒ PUMP Geopump 5008-36 ☐ FILTERS NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
☒	VOCs	8260C	No	4°C HCl	3 X 40 ml	Y		MW13DD040
☐	Alkalinity	2320B	No	4°C	250 ml Poly			
☐	Chloride	300	No	4°C	250 ml Poly			
☐	Nitrate	300	No	4°C				
☐	Nitrite	354.1	No	4°C				
☐	Sulfate	300	No	4°C				
☐	Sulfide	4500	No	4°C				
☐	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
☐	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
☐	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

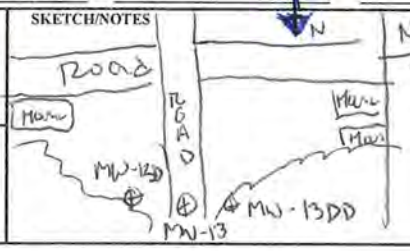
PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: ☒ YES ☐ NO

NO-PURGE METHOD UTILIZED: ☐ YES ☒ NO

NUMBER OF GALLONS GENERATED: 2.05 to sampling or ___ mL for this sample location.

SKETCH/NOTES



Notes:
Purge Water
Pail yellow

Sampler Signature: Hannah Gruber Print Name: Hannah Gruber

Checked By: Jerry Randolph Date: 6/30/20

MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company
PROJECT NUMBER	3617137306.02
SAMPLE ID	828072- MW014017
SAMPLE TIME	1740

LOCATION ID	MW-14
DATE	6/10/2020
START TIME	1613
END TIME	1755
SITE NAME/NUMBER	828072
PAGE	1 OF 1

WELL DIAMETER (INCHES): [ ] 1 [X] 2 [ ] 4 [ ] 6 [ ] 8 [ ] OTHER

TUBING ID (INCHES): [X] 1/8 [X] 1/4 [ ] 3/8 [ ] 1/2 [ ] 5/8 [ ] OTHER — OUTER DIAMETER

MEASUREMENT POINT (MP): [X] TOP OF RISER (TOR) [ ] TOP OF CASING (TOC) [ ] OTHER

WELL INTEGRITY	YES	NO	N/A
CAP	✓		
CASING	✓		
LOCKED	✓		
COLLAR	✓		

INITIAL DTW (BMP)	4.15 FT	FINAL DTW (BMP)	6.33 FT	PROT. CASING STICKUP (AGS)	0 FT	TOC/TOR DIFFERENCE	0.4 FT
WELL DEPTH (BMP)	16.25 FT	SCREEN LENGTH	REFER TO WELL CONSTRUCTION LOG	PID AMBIENT AIR	NA PPM	REFILL TIMER SETTING	NA SEC
WATER COLUMN	12.1 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	0.36 GAL	PID WELL MOUTH	NA PPM	DISCHARGE TIMER SETTING	NA SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	1.98 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	2.0 GAL	DRAWDOWN/ TOTAL PURGED	0.18	PRESSURE TO PUMP	NA PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity % ppt	PUMP INTAKE DEPTH	Comments
1625	BEGIN PURGING										
1630	5.60	110	11.44	2.041	7.29	0.86	38.5	105.4	1.05	15	
1635	5.96	110	11.30	2.045	7.32	0.91	25.0	100.8	1.05		
1640	5.99	100	11.40	2.075	7.31	0.79	18.2	97.7	1.07		
1645	6.01	100	11.69	2.137	7.30	0.83	16.1	95.4	1.11		
1650	6.09	100	11.54	2.263	7.26	1.03	17.4	93.0	1.17		
1655	6.11	100	11.54	2.303	7.25	1.15	16.5	90.9	1.19		
1700	6.11	100	11.47	2.331	7.24	1.25	14.7	88.0	1.21		
1705	6.09	100	11.64	2.346	7.22	1.33	14.4	83.8	1.22		
1710	6.16	100	11.40	2.402	7.20	1.33	14.5	79.2	1.24		
1715	6.19	100	11.48	2.405	7.19	1.37	11.5	74.6	1.25		
1720	6.22	100	11.45	2.425	7.18	1.36	11.5	69.8	1.26		
1725	6.26	100	11.31	2.452	7.17	1.34	10.3	64.7	1.27		
1730	6.30	100	11.38	2.457	7.16	1.35	10.7	60.6	1.27		
1735	6.33	100	11.25	2.470	7.15	1.30	10.2	56.9	1.28	↓	
FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])			11	2.47	7.2	1.3	10.2	57			

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: [X] PERISTALTIC [ ] SUBMERSIBLE [ ] BLADDER [ ] OTHER

DECON FLUIDS USED: [X] LIQUINOX [X] DEIONIZED WATER [X] POTABLE WATER [ ] NITRIC ACID [X] OTHER dedicated

TUBING/PUMP/BLADDER MATERIALS: [X] SILICON TUBING [ ] HDPE TUBING [X] LDPE TUBING [ ] HDPE TUBING [ ] OTHER; [ ] S. STEEL PUMP MATERIAL [ ] PVC PUMP MATERIAL [ ] GEOPROBE SCREEN [ ] TEFLON BLADDER [ ] OTHER

EQUIPMENT USED: [X] WL METER HERON DIPPER-T [X] TURB. METER HACH 2100Q [X] WQ METER YSI 556 MPS [X] PUMP Geopump [X] FILTERS NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
[X]	VOCs	8260C	No	4°C HCl	3 X 40 ml	YES	NO	
[ ]	Alkalinity	2320B	No	4°C	250 ml Poly			
[ ]	Chloride	300	No	4°C	250 ml Poly			
[ ]	Nitrate	300	No	4°C				
[ ]	Nitrite	354.1	No	4°C				
[ ]	Sulfate	300	No	4°C				
[ ]	Sulfide	4500	No	4°C				
[ ]	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
[ ]	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
[ ]	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

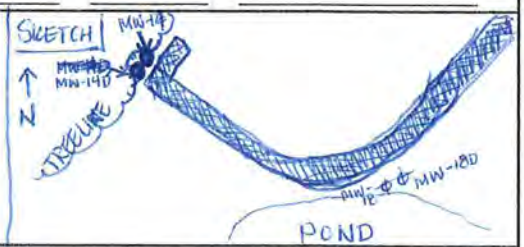
PURGE WATER CONTAINERIZED: [X] YES [ ] NO

NO-PURGE METHOD UTILIZED: [ ] YES [X] NO

NUMBER OF GALLONS GENERATED: ≈2 to sampling or ___ mL for this sample location.

SKETCH/NOTES

PURGE WATER DESCRIPTION: COLORLESS, ODORLESS, CLEAR.



Sampler Signature: K Amann Print Name: KATIE AMANN

Checked By: Jenny Pudloff Date: 6/30/20

MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company
PROJECT NUMBER	3617137306.02
SAMPLE ID	828072- MW14D033
SAMPLE TIME	0937
LOCATION ID	MW-14D
DATE	6/11/20
START TIME	0820
END TIME	0956
SITE NAME/NUMBER	828072
PAGE	1 OF 1

WELL DIAMETER (INCHES): ☐ 1 ☒ 2 ☐ 4 ☐ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☒ 1/8 ☐ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER

MEASUREMENT POINT (MP): ☒ TOP OF RISER (TOR) ☐ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR	X		

INITIAL DTW (BMP)	1.37 FT	FINAL DTW (BMP)	1.53 FT	PROT. CASING STICKUP (AGS)	0 / FT	TOC/TOR DIFFERENCE	0.19 FT
WELL DEPTH (BMP)	33.5 FT	SCREEN LENGTH	Below to Well 10' FT	PID AMBIENT AIR	/ PPM	REFILL TIMER SETTING	/ SEC
WATER COLUMN	32.13 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	0.026 GAL	PID WELL MOUTH	/ PPM	DISCHARGE TIMER SETTING	/ SEC
CALCULATED GAL/VOL. (column X well diameter squared X 0.041)	5.27 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	1.3 GAL	DRAWDOWN/ TOTAL PURGED	0.02	PRESSURE TO PUMP	/ PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
0845	BEGIN PURGING										
0900	1.53	100	12.86	3.029	7.25	0.51	4.03	-162.4	1.59	33'	
0905	1.53	100	12.79	3.057	7.26	0.62	3.09	-173.3	1.60		
0910	1.53	100	12.75	3.061	7.26	0.74	3.81	-173.1	1.61		
0915	1.53	100	12.71	3.064	7.27	1.08	2.82	-182.5	1.61		
0920	1.53	100	12.55	3.064	7.27	1.75	2.32	-187.2	1.61		
0925	1.53	100	12.55	3.063	7.28	2.01	1.88	-183.4	1.61		
0930	1.53	100	12.50	3.064	7.27	2.07	3.11	-191.2	1.61		
0935	1.53	100	12.43	3.061	7.28	1.95	2.12	-196	1.61		
0937	Well	Stable	collect	Sample							
FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])			12	3.1	7.3	2.0	2.1	-190			

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: ☒ PERISTALTIC ☐ SUBMERSIBLE ☐ BLADDER ☐ OTHER

DECON FLUIDS USED: ☒ LIQUINOX ☒ DEIONIZED WATER ☐ POTABLE WATER ☐ NITRIC ACID ☒ OTHER Isopropanol

TUBING/PUMP/BLADDER MATERIALS: ☒ SILICON TUBING ☐ HDPE TUBING ☒ LDPE TUBING ☐ HDPE TUBING ☐ OTHER

☐ S. STEEL PUMP MATERIAL ☐ PVC PUMP MATERIAL ☐ GEOPROBE SCREEN ☐ TEFLON BLADDER ☐ OTHER

EQUIPMENT USED

☒	WL METER	Heron Sky Dipper M200-73
☒	TURB. METER	HACH 2100Q M024-138
☒	WQ METER	YSI 556 MPS M015-10
☒	PUMP	Geopump 5008-36
☐	FILTERS	NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
X	VOCs	8260C	No	4°C HCl	3 X 40 ml	Y		828072-MW14D033
	Alkalinity	2320B	No	4°C	250 ml Poly			
	Chloride	300	No	4°C	250 ml Poly			
	Nitrate	300	No	4°C				
	Nitrite	354.1	No	4°C				
	Sulfate	300	No	4°C				
	Sulfide	4500	No	4°C				
	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

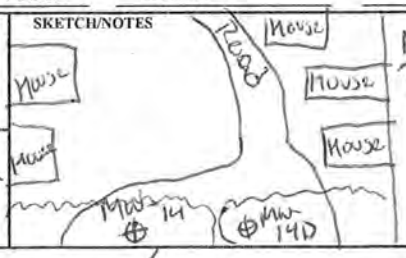
PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: ☒ YES ☐ NO

NO-PURGE METHOD UTILIZED: ☐ YES ☒ NO

NUMBER OF GALLONS GENERATED: 1.3 to sampling or _____ mL for this sample location.

SKETCH/NOTES



Notes: Purge water clear

Sampler Signature: Hannah Gnoza Print Name: Hannah Gnoza

Checked By: Jenn Rudolf Date: 6/30/20

MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company	LOCATION ID	MW-15
PROJECT NUMBER	3617137306.02	DATE	6/9/20
SAMPLE ID	828072-	START TIME	1610
SAMPLE TIME	NA	END TIME	1625
SITE NAME/NUMBER	828072	PAGE	1 OF 1

WELL DIAMETER (INCHES): ☐ 1 ☒ 2 ☐ 4 ☐ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☒ 1/8 ☐ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER

MEASUREMENT POINT (MP): ☒ TOP OF RISER (TOR) ☐ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	✓		
CASING	✓		
LOCKED	✓		
COLLAR	✓		

INITIAL DTW (BMP)	5.34 FT	FINAL DTW (BMP)	— FT	PROT. CASING STICKUP (AGS)	0 FT	TOC/TOR DIFFERENCE	0.2 (est) FT
WELL DEPTH (BMP)	5.50 FT	SCREEN LENGTH	UNK FT	PID AMBIENT AIR	— PPM	REFILL TIMER SETTING	— SEC
WATER COLUMN	.16 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	— GAL	PID WELL MOUTH	— PPM	DISCHARGE TIMER SETTING	— SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	.026 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	NA GAL	DRAWDOWN/ TOTAL PURGED	—	PRESSURE TO PUMP	— PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
	BEGIN PURGING										
	Not enough water in well. No sample attempted.										

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: ☐ PERISTALTIC ☐ SUBMERSIBLE ☐ BLADDER ☐ OTHER

DECON FLUIDS USED: ☐ LIQUINOX ☐ DEIONIZED WATER ☐ POTABLE WATER ☐ NITRIC ACID ☐ OTHER

TUBING/PUMP/BLADDER MATERIALS: ☐ SILICON TUBING ☐ HDPE TUBING ☐ LDPE TUBING ☐ HDPE TUBING ☐ OTHER

☐ S. STEEL PUMP MATERIAL ☐ PVC PUMP MATERIAL ☐ GEOPROBE SCREEN ☐ TEFLON BLADDER ☐ OTHER

EQUIPMENT USED

✓	WL METER	Heron
	TURB. METER	HACH 2100Q
	WQ METER	YSI 556 MPS
	PUMP	Geopump
	FILTERS	NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
✓	VOCs	8260C	No	4°C HCl	3 X 40 ml	NO		
	Alkalinity	2320B	No	4°C	250 ml Poly			
	Chloride	300	No	4°C	250 ml Poly			
	Nitrate	300	No	4°C				
	Nitrite	354.1	No	4°C				
	Sulfate	300	No	4°C				
	Sulfide	4500	No	4°C				
	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: YES ☐ NO ☑

NO-PURGE METHOD UTILIZED: YES ☐ NO ☑

NUMBER OF GALLONS GENERATED ___ to sampling or ___ mL for this sample location.

SKETCH/NOTES

Sampler Signature: Jerry Rawcliffe Print Name: Jerry Rawcliffe

Checked By: MWH Date: 7/6/20

MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company
PROJECT NUMBER	3617137306.02
SAMPLE ID	828072- MW150021
SAMPLE TIME	1810
LOCATION ID	MW-150
DATE	6/9/20
START TIME	1650
END TIME	1820
SITE NAME/NUMBER	828072
PAGE	1 OF 1

WELL DIAMETER (INCHES): ☐ 1 ☑ 2 ☐ 4 ☐ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☑ 1/8 ☐ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER

MEASUREMENT POINT (MP): ☑ TOP OF RISER (TOR) ☐ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	✓		
CASING	✓		
LOCKED	✓		
COLLAR	✓		

INITIAL DTW (BMP)	5.10 FT	FINAL DTW (BMP)	5.11 FT	PROT. CASING STICKUP (AGS)	0 FT	TOC/TOR DIFFERENCE	0.15 FT
WELL DEPTH (BMP)	23.65 FT	SCREEN LENGTH	10 FT	PID AMBIENT AIR	— PPM	REFILL TIMER SETTING	— SEC
WATER COLUMN	18.55 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	0.0026 GAL	PID WELL MOUTH	— PPM	DISCHARGE TIMER SETTING	— SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	3.0 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	3.9 GAL	DRAWDOWN/ TOTAL PURGED	0.0014	PRESSURE TO PUMP	PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
1653	BEGIN PURGING						3.1				
1700	5.24	240	13.3	2.767	7.0	3.6	~~28~~	-26	1.4		
1710	5.22	220	12.5	2.547	7.0	2.0	16	-40	1.35		
1720	5.21	250	13.1	2.552	7.0	1.4	18	-42	1.34		
1730	5.14	220	13.2	2.570	7.0	1.1	20	-40	1.33		
1740	5.16	235	13.1	2.563	7.0	1.0	3.0	-35	1.33		
1745	5.14	245	12.8	2.562	7.0	0.9	9.0	-35	1.33		
1750	5.12	230	12.9	2.545	7.0	0.9	9.9	-34	1.32		
1755	5.11	230	13.0	2.542	7.0	0.8	3.4	-34	1.32		
1800	5.11	230	12.7	2.544	7.0	0.8	2.6	-33	1.32		
1805	5.11	235	12.7	2.539	7.0	0.8	2.9	-34	1.32		

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

	13	2.54	7.0	0.8	2.9	-34

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP
- ☑ PERISTALTIC
- ☐ SUBMERSIBLE
- ☐ BLADDER
- ☐ OTHER

DECON FLUIDS USED
- ☑ LIQUINOX
- ☐ DEIONIZED WATER
- ☐ POTABLE WATER
- ☐ NITRIC ACID
- ☑ OTHER Deionized

TUBING/PUMP/BLADDER MATERIALS
- ☑ SILICON TUBING
- ☐ HDPE TUBING
- ☑ LDPE TUBING
- ☐ HDPE TUBING
- ☐ OTHER
- ☐ S. STEEL PUMP MATERIAL
- ☐ PVC PUMP MATERIAL
- ☐ GEOPROBE SCREEN
- ☐ TEFLON BLADDER
- ☐ OTHER

EQUIPMENT USED
- ☑ WL METER Heron
- ☑ TURB. METER HACH 2100Q
- ☑ WQ METER YSI 556 MPS
- ☑ PUMP Geopump
- ☐ FILTERS NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
✓	VOCs	8260C	No	4°C HCl	3 X 40 ml	✓		
	Alkalinity	2320B	No	4°C	250 ml Poly			
	Chloride	300	No	4°C	250 ml Poly			
	Nitrate	300	No	4°C				
	Nitrite	354.1	No	4°C				
	Sulfate	300	No	4°C				
	Sulfide	4500	No	4°C				A
	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			A
	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

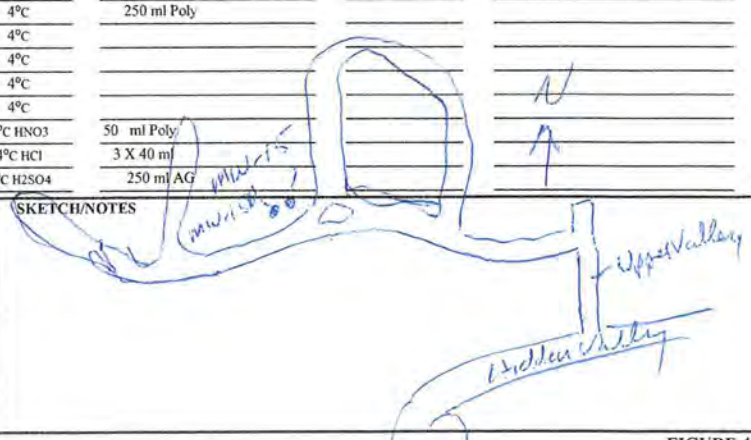
PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: ☑ YES ☐ NO

NO-PURGE METHOD UTILIZED: ☐ YES ☑ NO

NUMBER OF GALLONS GENERATED: 3.4 to sampling or _____mL. for this sample location.

SKETCH/NOTES



Sampler Signature: Jerry Rawcliffe Print Name: Jerry Rawcliffe

Checked By: Date: 7/6/20

MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company	LOCATION ID	MW-16
PROJECT NUMBER	3617137306.02	DATE	6/10/2020
SAMPLE ID	828072- MW016008	START TIME	0933 | 1543
SAMPLE TIME	1550	END TIME	1037 | 1609
		SITE NAME/NUMBER	828072
		PAGE	1 OF 1

WELL DIAMETER (INCHES): ☐ 1 ☒ 2 ☐ 4 ☐ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☒ 1/8 ☒ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER (→ outer diameter)

MEASUREMENT POINT (MP): ☒ TOP OF RISER (TOR) ☐ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP		✓ ~~WEEP~~ BROKEN	WELL PLUG
CASING	✓		
LOCKED	✓		
COLLAR	✓		

INITIAL DTW (BMP)	5.55 FT	FINAL DTW (BMP)	8.96 FT	PROT. CASING STICKUP (AGS)	NA FT	TOC/TOR DIFFERENCE	0.08 FT
WELL DEPTH (BMP)	8.96 FT	SCREEN LENGTH	REFER TO WELL CONSTRUCTION FT	PID AMBIENT AIR	NA PPM	REFILL TIMER SETTING	NA SEC
WATER COLUMN	3.41 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	.56 GAL	PID WELL MOUTH	NA PPM	DISCHARGE TIMER SETTING	NA SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	0.56 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	~~x~~ 3 GAL	DRAWDOWN/ TOTAL PURGED		PRESSURE TO PUMP	NA PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity % ppt	PUMP INTAKE DEPTH	Comments
0940	BEGIN PURGING										
0950	6.12	100	13.84	1.001	6.38	1.57	15.2	142.4	0.50	8	WATER IS CLOUDY W/ ORANGE PARTICULATES
0955	6.33	100	14.03	1.001	6.36	4.13	10.6	115.0	0.50	|	WATER BECOMING LESS CLOUDY
1000	6.46	100	13.94	1.005	6.33	3.68	6.65	97.8	0.50	|	
1005	6.61	100	13.87	1.007	6.32	2.95	~~3.57~~ 3.57	75.9	0.50	|	
1010	6.75	100	13.73	1.008	6.32	2.41	2.81	61.2	0.50	|	
1015	6.88	100	14.24	1.005	6.32	2.15	12.3	55.9	0.50	⊥	
1017	WILL PURGE DRY, DUE TO POOR RECHARGE, AND WILL RETURN AT A LATER TIME TO SAMPLE RECHARGE.										
1029	WELL DRY. TOTAL AMOUNT PURGED = 2.5 GALLONS.										
1544	6.62	—									
1550	COLLECTED SAMPLES									8	
1555	6.80	100	15.31	0.986	6.69	4.23	11.7	85.7	0.49	|	
1600	6.91	100	15.04	0.997	6.68	4.11	7.81	84.9	0.50	⊥	

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures|SF|)

15	0.997	6.7	4.1	7.8	85	

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: ☒ PERISTALTIC ☐ SUBMERSIBLE ☐ BLADDER ☐ OTHER

DECON FLUIDS USED: ☒ LIQUINOX ☒ DEIONIZED WATER ☒ POTABLE WATER ☐ NITRIC ACID ☒ OTHER Gold-Circle

TUBING/PUMP/BLADDER MATERIALS: ☒ SILICON TUBING ☐ HDPE TUBING ☒ LDPE TUBING ☐ HDPE TUBING ☐ OTHER

☐ S. STEEL PUMP MATERIAL ☐ PVC PUMP MATERIAL ☐ GEOPROBE SCREEN ☐ TEFLON BLADDER ☐ OTHER

EQUIPMENT USED: ☒ WL METER HERON DIPPER-T ☒ TURB. METER HACH 2100Q ☒ WQ METER YSI 556 MPS ☒ PUMP Geopump ☐ FILTERS NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
☒	VOCs	8260C	No	4°C HCl	3 X 40 ml	YES	NO	
	Alkalinity	2320B	No	4°C	250 ml Poly			
	Chloride	300	No	4°C	250 ml Poly			
	Nitrate	300	No	4°C				
	Nitrite	354.1	No	4°C				
	Sulfate	300	No	4°C				
	Sulfide	4500	No	4°C				
	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: YES ☒ NO ☐

NO-PURGE METHOD UTILIZED: YES ☐ NO ☒

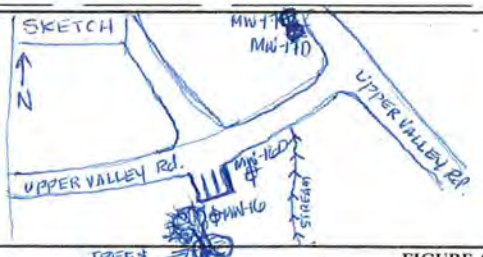
NUMBER OF GALLONS GENERATED: ~~2~~ 3 to sampling or ___ mL for this sample location.

Sampler Signature: K. Amann Print Name: KATIE AMANN

Checked By: J. Rudloff Date: 6/30/20

SKETCH/NOTES

- PURGE WATER DESCRIPTION: LIGHT ORANGE-BROWN, ODORLESS.
- WELL HISTORICALLY DRAWS DOWN AND IS PURGED DRY
- PURGED WELL DRY, POOR RECHARGE



MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company
PROJECT NUMBER	3617137306.02
SAMPLE ID	828072-MW16D022
SAMPLE TIME	1135

LOCATION ID	MW-16D
DATE	6/10/2020
START TIME	1038
END TIME	1155
SITE NAME/NUMBER	828072
PAGE	1 OF 1

WELL DIAMETER (INCHES): ☐ 1 ☒ 2 ☐ 4 ☐ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☒ 1/8 ☒ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER — OUTER DIAMETER

MEASUREMENT POINT (MP): ☒ TOP OF RISER (TOR) ☐ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	✓		
CASING	✓		
LOCKED	✓		
COLLAR	✓		

INITIAL DTW (BMP)	5.90 FT	FINAL DTW (BMP)	6.29 FT	PROT. CASING STICKUP (AGS)	0 FT	TOC/TOR DIFFERENCE	0.26 FT
WELL DEPTH (BMP)	22.14 FT	SCREEN LENGTH	REFER TO WELL CONSTRUCTION LOG FT	PID AMBIENT AIR	NA PPM	REFILL TIMER SETTING	NA SEC
WATER COLUMN	16.24 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	0.06 GAL	PID WELL MOUTH	NA PPM	DISCHARGE TIMER SETTING	NA SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	2.66 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	1.29 GAL	DRAWDOWN/ TOTAL PURGED	0.05	PRESSURE TO PUMP	NA PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
1042	BEGIN PURGING										
1055	6.29	115	13.30	0.967	6.59	1.57	32.5	24.7	0.48	21	PURGE WATER IS CLOUDY
1100	6.31	125	13.09	0.962	6.58	1.93	56.0	21.5	0.46		
1105	6.31	125	13.09	0.955	6.59	1.62	29.6	20.6	0.47		PURGE WATER MOSTLY CLEAR, TRACE FINE PARTICULATES
1110	6.31	125	13.01	0.953	6.59	1.34	27.4	21.0	0.47		
1115	6.31	125	12.93	0.951	6.59	1.23	29.3	21.9	0.47		
1120	6.31	125	12.88	0.947	6.59	1.11	28.4	19.5	0.47		
1125	6.30	125	13.01	0.941	6.59	1.03	29.2	20.1	0.47		
1130	6.29	125	13.08	0.938	6.58	1.04	26.9	18.9	0.47		
1135	COLLECT	SAMPLES									

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

13	0.938	6.6	1.0	26.9	19

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: ☒ PERISTALTIC ☐ SUBMERSIBLE ☐ BLADDER ☐ OTHER

DECON FLUIDS USED: ☒ LIQUINOX ☒ DEIONIZED WATER ☒ POTABLE WATER ☒ NITRIC ACID ☒ OTHER Deionized

TUBING/PUMP/BLADDER MATERIALS: ☒ SILICON TUBING ☐ HDPE TUBING ☒ LDPE TUBING ☐ HDPE TUBING ☐ OTHER

☐ S. STEEL PUMP MATERIAL ☐ PVC PUMP MATERIAL ☐ GEOPROBE SCREEN ☐ TEFLON BLADDER ☐ OTHER

EQUIPMENT USED: ☒ WL METER Heron Dipper-T ☒ TURB. METER HACH 2100Q ☒ WQ METER YSI 556 MPS ☒ PUMP Geopump ☐ FILTERS NO. ____ TYPE ____

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
☒	VOCs	8260C	No	4°C HCl	3 X 40 ml	YES	NO	
	Alkalinity	2320B	No	4°C	250 ml Poly			
	Chloride	300	No	4°C	250 ml Poly			
	Nitrate	300	No	4°C				
	Nitrite	354.1	No	4°C				
	Sulfate	300	No	4°C				
	Sulfide	4500	No	4°C				
	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: ☒ YES ☐ NO

NUMBER OF GALLONS GENERATED: APPROX. 1.5

NO-PURGE METHOD UTILIZED: ☐ YES ☒ NO

to sampling or ____ mL for this sample location.

Sampler Signature: K Amann Print Name: KATIE AMANN

Checked By: Jerry Randall Date: 6/30/20

SKETCH/NOTES

PURGE WATER DESCRIPTION: ORANGE, SLIGHT ODOR, CLOUDY CLEARED UP AFTER PURGING, APPROXIMATELY 0.5 GALLONS.

MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company
PROJECT NUMBER	3617137306.02
SAMPLE ID	828072- MW017007
SAMPLE TIME	1355
LOCATION ID	MW-17
DATE	6/10/2020
START TIME	1230
END TIME	1410
SITE NAME/NUMBER	828072
PAGE	1 OF 1

WELL DIAMETER (INCHES): ☐ 1 ☒ 2 ☐ 4 ☐ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☑ 1/8 ☒ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER (OUTER DIAMETER)

MEASUREMENT POINT (MP): ☒ TOP OF RISER (TOR) ☐ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	✓		
CASING	✓		
LOCKED	✓		
COLLAR	✓		

INITIAL DTW (BMP)	4.95 FT	FINAL DTW (BMP)	6.58 FT	PROT. CASING STICKUP (AGS)	0 FT	TOC/TOR DIFFERENCE	0.53 ~~0.35~~ FT 6/11/20
WELL DEPTH (BMP)	7.68 FT	SCREEN LENGTH	REFER TO WELL CONSTRUCTION LOG FT	PID AMBIENT AIR	NA PPM	REFILL TIMER SETTING	NA SEC
WATER COLUMN	2.73 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	0.27 GAL	PID WELL MOUTH	NA PPM	DISCHARGE TIMER SETTING	NA SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	0.45 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	2.9 GAL	DRAWDOWN/ TOTAL PURGED	0.09	PRESSURE TO PUMP	NA PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity % PPT	PUMP INTAKE DEPTH	Comments
1239	BEGIN PURGING					2.51					
1250	5.42	150	14.08	0.737	6.95	~~6.45~~ 6.46	7.89	161.8	0.36	7	
1255	5.58	150	14.24	0.740	6.95	2.89	6.81	154.2	0.36		
1300	5.84	150	14.01	0.756	6.94	2.51	4.73	148.1	0.37		CANNOT REDUCE PUMP SPEED, PUMP SHUTS OFF.
1305	6.01	150	13.69	0.780	6.91	2.59	8.03	142.3	0.39		
1310	6.12	150	13.79	0.800	6.89	2.97	11.8	137.9	0.39		
1315	6.20	150	13.98	0.812	6.89	3.49	5.62	133.5	0.40		
1320	6.29	150	13.86	0.820	6.88	3.61	4.15	130.0	0.41		
1325	6.37	150	13.23	0.864	6.84	3.66	3.99	125.9	0.43		
1330	6.42	150	13.51	0.875	6.84	3.80	2.89	122.0	0.43		
1335	6.45	150	13.65	0.861	6.85	3.65	2.97	124.1	0.43		
1340	6.49	150	13.56	0.849	6.84	3.58	2.30	124.5	0.42		
1345	6.54	150	13.46	0.836	6.84	3.57	2.24	123.6	0.41		
1350	6.58	150	13.41	0.835	6.84	3.57	1.86	122.7	0.41		
1355	COLLECT SAMPLES										

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

13	0.835	6.8	3.6	1.9	120	

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: ☒ PERISTALTIC ☐ SUBMERSIBLE ☐ BLADDER ☐ OTHER

DECON FLUIDS USED: ☒ LIQUINOX ☒ DEIONIZED WATER ☒ POTABLE WATER ☐ NITRIC ACID ☒ OTHER Dedicated

TUBING/PUMP/BLADDER MATERIALS: ☒ SILICON TUBING ☐ HDPE TUBING ☒ LDPE TUBING ☐ HDPE TUBING ☐ OTHER

☐ S. STEEL PUMP MATERIAL ☐ PVC PUMP MATERIAL ☐ GEOPROBE SCREEN ☐ TEFLON BLADDER ☐ OTHER

EQUIPMENT USED: ☒ WL METER HERON DIPPER-T ☒ TURB. METER HACH 2100Q ☒ WQ METER YSI 556 MPS ☒ PUMP Geopump ☒ FILTERS NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
☒	VOCs	8260C	No	4°C HCl	3 X 40 ml	YES	NO	
☐	Alkalinity	2320B	No	4°C	250 ml Poly			
☐	Chloride	300	No	4°C	250 ml Poly			
☐	Nitrate	300	No	4°C				
☐	Nitrite	354.1	No	4°C				
☐	Sulfate	300	No	4°C				
☐	Sulfide	4500	No	4°C				
☐	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
☐	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
☐	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: ☒ YES ☐ NO

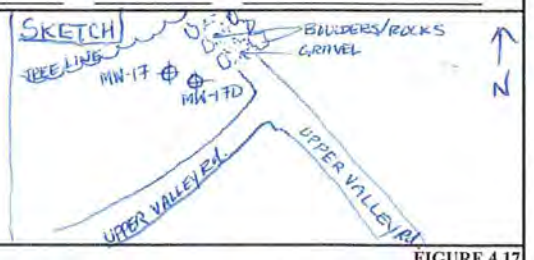
NO-PURGE METHOD UTILIZED: ☐ YES ☒ NO

NUMBER OF GALLONS GENERATED: ≈3

to sampling or _____ mL for this sample location.

SKETCH/NOTES

* PURGE WATER DESCRIPTION: CLEAR, COLORLESS, ODORLESS



Sampler Signature: [signature] Print Name: KATTIE AMANN

Checked By: [signature] Date: 6/30/20

MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

* MS/MSD COLLECTED

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company
PROJECT NUMBER	3617137306.02
SAMPLE ID	828072-MW17D023
SAMPLE TIME	1520

LOCATION ID	MW-17D
DATE	6/10/2020
START TIME	1411
END TIME	1542
SITE NAME/NUMBER	828072
PAGE	1 OF 1

WELL DIAMETER (INCHES): ☐ 1 ☒ 2 ☐ 4 ☐ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☑ 1/8 ☒ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER

MEASUREMENT POINT (MP): ☒ TOP OF RISER (TOR) ☐ TOP OF CASING (TOC) ☐ OTHER — OUTER DIAMETER

WELL INTEGRITY

	YES	NO	N/A
CAP	✓		
CASING	✓		
LOCKED	✓		
COLLAR	✓		

INITIAL DTW (BMP)	5.44 FT	FINAL DTW (BMP)	6.80 FT	PROT. CASING STICKUP (AGS)	0 FT	TOC/TOR DIFFERENCE	0.34 FT
WELL DEPTH (BMP)	23.23 FT	SCREEN LENGTH	REFER TO WELL CONSTRUCTION LOG FT	PID AMBIENT AIR	NA PPM	REFILL TIMER SETTING	NA SEC
WATER COLUMN	17.79 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	0.22 GAL	PID WELL MOUTH	NA PPM	DISCHARGE TIMER SETTING	NA SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	2.92 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	1.58 GAL	DRAWDOWN/ TOTAL PURGED	0.14	PRESSURE TO PUMP	NA PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
1419	BEGIN PURGING										
1430	6.70	105	12.24	1.647	6.79	1.63	10.9	-112.1	0.84	22	
1435	6.85	100	11.94	1.644	6.80	2.24	10.4	-123.5	0.83		
1440	6.83	100	12.17	1.629	6.81	1.97	6.14	-118.0	0.83		
1445	6.81	100	12.11	1.611	6.81	1.63	6.00	-111.3	0.82		
1450	6.81	100	12.15	1.599	6.81	1.53	6.57	-119.3	0.81		
1455	6.80	100	12.15	1.547	6.81	1.36	6.80	-126.7	0.78		
1500	6.80	100	12.07	1.499	6.81	1.27	6.10	-130.8	0.76		
1505	6.81	100	12.00	1.472	6.81	1.16	5.10	-135.8	0.74		
1510	6.80	100	12.05	1.450	6.80	1.10	5.63	-140.0	0.73		
1515	6.80	100	12.04	1.432	6.81	1.08	5.45	-141.8	0.72		
1520	SAMPLES COLLECTED										

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

12	1.43	6.8	1.1	5.5	-140	

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: ☒ PERISTALTIC ☐ SUBMERSIBLE ☐ BLADDER ☐ OTHER

DECON FLUIDS USED: ☒ LIQUINOX ☒ DEIONIZED WATER ☒ POTABLE WATER ☐ NITRIC ACID ☐ OTHER

TUBING/PUMP/BLADDER MATERIALS: ☒ SILICON TUBING ☐ HDPE TUBING ☒ LDPE TUBING ☐ HDPE TUBING ☐ OTHER; ☐ S. STEEL PUMP MATERIAL ☐ PVC PUMP MATERIAL ☐ GEOPROBE SCREEN ☐ TEFLON BLADDER ☐ OTHER

EQUIPMENT USED: ☒ WL METER HERON DIPPER-T ☒ TURB. METER HACH 2100Q ☒ WQ METER YSI 556 MPS ☐ PUMP Geopump ☐ FILTERS NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
☒	VOCs	8260C	No	4°C HCl	3 X 40 ml	YES	YES-MS/MSD	828072-MW17D023 828072-MW17D023MS 828072-MW17D023MSD
	Alkalinity	2320B	No	4°C	250 ml Poly			
	Chloride	300	No	4°C	250 ml Poly			
	Nitrate	300	No	4°C				
	Nitrite	354.1	No	4°C				
	Sulfate	300	No	4°C				
	Sulfide	4500	No	4°C				
	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: ☒ YES ☐ NO

NO-PURGE METHOD UTILIZED: ☐ YES ☒ NO

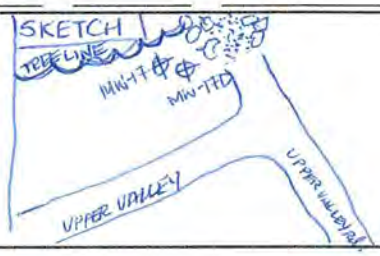
NUMBER OF GALLONS GENERATED: ≈ 1.6 to sampling or ___ mL for this sample location.

Sampler Signature: K. Amann Print Name: KATIE AMANN

Checked By: Jenny Rudloff Date: 6/30/20

SKETCH/NOTES

"PURGE WATER DESCRIPTION": COLORLESS, ODOR, TRACE FINE PARTICLES



MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company
PROJECT NUMBER	3617137306.02
SAMPLE ID	828072-MW018010
SAMPLE TIME	1555

LOCATION ID	MW-18
DATE	6/9/2020
START TIME	1450
END TIME	1608
SITE NAME/NUMBER	828072
PAGE	1 OF 1

WELL DIAMETER (INCHES): ☐ 1 ☒ 2 ☐ 4 ☐ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☐ 1/8 ☒ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER

MEASUREMENT POINT (MP): ☒ TOP OF RISER (TOR) ☐ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY	YES	NO	N/A
CAP	✓		
CASING	✓		
LOCKED	✓		
COLLAR	✓		

INITIAL DTW (BMP)	4.23 FT	FINAL DTW (BMP)	4.92 FT	PROT. CASING STICKUP (AGS)	NA FT	TOC/TOR DIFFERENCE	NA FT
WELL DEPTH (BMP)	10.98 FT	SCREEN LENGTH	REFER TO WELL CONSTRUCTION LOG FT	PID AMBIENT AIR	NA PPM	REFILL TIMER SETTING	NA SEC
WATER COLUMN	6.75 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	0.11 GAL	PID WELL MOUTH	NA PPM	DISCHARGE TIMER SETTING	NA SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	1.11 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	1.26 GAL	DRAWDOWN/ TOTAL PURGED	0.09	PRESSURE TO PUMP	NA PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity % ppt	PUMP INTAKE DEPTH	Comments
1457	BEGIN PURGING										
1510	4.75	100	12.56	1.186	6.85	4.12	5.83	-30.9	0.59	9	
1515	4.78	100	12.61	1.183	6.82	4.06	5.57	-25.7	0.59		
1520	4.83	110	12.59	1.184	6.77	3.95	4.90	-20.2	0.59		DID NOT ADJUST PUMP SPEED. DIAL ON LOWEST SETTING.
1525	4.85	110	12.54	1.184	6.72	3.65	5.75	-15.5	0.59		
1530	4.86	110	12.30	1.184	6.68	3.42	4.06	-12.0	0.59		
1535	4.88	110	12.27	1.186	6.65	3.17	3.93	-9.2	0.59		
1540	4.89	110	12.25	1.194	6.63	3.00	5.29	-7.1	0.60		
1545	4.91	110	12.22	1.196	6.62	2.84	4.50	-5.3	0.60		
1550	4.92	110	12.21	1.197	6.62	2.78	3.83	-4.0	0.60		
1555	COLLECT SAMPLES										

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

	12	1.20	6.6	2.5	3.5	-4

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: ☒ PERISTALTIC ☐ SUBMERSIBLE ☐ BLADDER ☐ OTHER

DECON FLUIDS USED: ☒ LIQUINOX ☒ DEIONIZED WATER ☒ POTABLE WATER ☐ NITRIC ACID ☒ OTHER Deionized

TUBING/PUMP/BLADDER MATERIALS: ☒ SILICON TUBING ☐ HDPE TUBING ☒ LDPE TUBING ☐ HDPE TUBING ☐ OTHER; ☐ S. STEEL PUMP MATERIAL ☐ PVC PUMP MATERIAL ☐ GEOPROBE SCREEN ☐ TEFLON BLADDER ☐ OTHER

EQUIPMENT USED: ☒ WL METER Heron Dipper-T ☒ TURB. METER HACH 2100Q ☒ WQ METER YSI 556 MPS ☒ PUMP Geopump ☐ FILTERS NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
☒	VOCs	8260C	No	4°C HCl	3 X 40 ml	YES	NO	
☐	Alkalinity	2320B	No	4°C	250 ml Poly			
☐	Chloride	300	No	4°C	250 ml Poly			
☐	Nitrate	300	No	4°C				
☐	Nitrite	354.1	No	4°C				
☐	Sulfate	300	No	4°C				
☐	Sulfide	4500	No	4°C				
☐	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
☐	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
☐	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: ☒ YES ☐ NO

NO-PURGE METHOD UTILIZED: ☐ YES ☒ NO

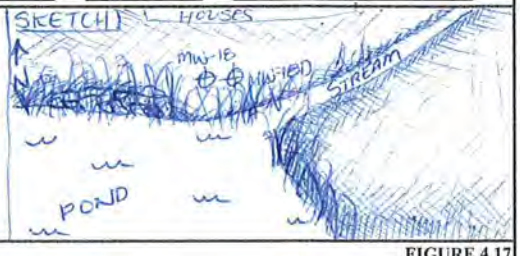
NUMBER OF GALLONS GENERATED: 1.5 (approx.) to sampling or ___ mL for this sample location.

Sampler Signature: K Amann Print Name: KATIE AMANN

Checked By: Jerry Ruffolo Date: 6/30/20

SKETCH/NOTES

- PURGE WATER DESCRIPTION: COLORLESS, ODORLESS, TRACE AMOUNT OF FINE, ORANGE PARTICULATES.



MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company
PROJECT NUMBER	3617137306.02
SAMPLE ID	828072- MW18D021
SAMPLE TIME	1710

LOCATION ID	MW-18D
DATE	6/9/2020
START TIME	1609
END TIME	1739
SITE NAME/NUMBER	828072
PAGE	1 OF 1

WELL DIAMETER (INCHES): ☐ 1 ☑ 2 ☐ 4 ☐ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☑ 1/8 ☐ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER

MEASUREMENT POINT (MP): ☑ TOP OF RISER (TOR) ☑ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	✓		
CASING	✓		
LOCKED	✓	← MISSING 1 OF 1 bolt	
COLLAR	✓		

INITIAL DTW (BMP)	4.31 FT	FINAL DTW (BMP)	4.38 FT	PROT. CASING STICKUP (AGS)	NA FT	TOC/TOR DIFFERENCE	NA FT
WELL DEPTH (BMP)	22.75 FT	SCREEN LENGTH	10 FT	PID AMBIENT AIR	NA PPM	REFILL TIMER SETTING	NA SEC
WATER COLUMN	18.44 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	0.01 GAL	PID WELL MOUTH	NA PPM	DISCHARGE TIMER SETTING	NA SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	3.02 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	1.2 GAL	DRAWDOWN/ TOTAL PURGED	0.01	PRESSURE TO PUMP	NA PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
1620	BEGIN PURGING										
1630	4.38	115	12.51	2.070	6.98	0.46	4.37	-17.7		21	WATER IN ANNULAR SPACE REMOVED PRIOR TO REMOVING WELL PLUG.
1635	4.38	115	12.35	2.029	6.95	0.67	4.90	-18.8			
1640	4.38	115	12.34	1.997	6.92	0.99	4.25	-15.3			
1645	4.38	115	12.16	1.982	6.90	1.55	4.31	-8.1			
1650	4.38	115	12.03	1.971	6.87	1.61	3.45	-4.5			
1655	4.38	115	11.93	1.966	6.86	1.56	3.17	-1.5			
1700	4.38	115	11.95	1.947	6.85	1.47	2.59	#2.0			
1705	4.38	115	12.01	1.927	6.84	1.43	2.02	5.5			
1710	COLLECTED SAMPLES										

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

	12	1.93	6.8	1.4	2.0 (N/A)	5.5

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: ☑ PERISTALTIC ☐ SUBMERSIBLE ☐ BLADDER ☐ OTHER

DECON FLUIDS USED: ☑ LIQUINOX ☑ DEIONIZED WATER ☑ POTABLE WATER ☐ NITRIC ACID ☐ OTHER

TUBING/PUMP/BLADDER MATERIALS: ☑ SILICON TUBING ☐ HDPE TUBING ☑ LDPE TUBING ☐ HDPE TUBING ☐ OTHER | ☐ S. STEEL PUMP MATERIAL ☐ PVC PUMP MATERIAL ☐ GEOPROBE SCREEN ☐ TEFLON BLADDER ☐ OTHER

EQUIPMENT USED: ☑ WL METER Heron Dipper-T ☑ TURB. METER HACH 2100Q ☑ WQ METER YSI 556 MPS ☑ PUMP Geopump ☐ FILTERS NO. ____ TYPE ____

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
☑	VOCs	8260C	No	4°C HCl	3 X 40 ml	Yes	NO	
☐	Alkalinity	2320B	No	4°C	250 ml Poly			
☐	Chloride	300	No	4°C	250 ml Poly			
☐	Nitrate	300	No	4°C				
☐	Nitrite	354.1	No	4°C				
☐	Sulfate	300	No	4°C				
☐	Sulfide	4500	No	4°C				
☐	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
☐	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
☐	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: ☑ YES ☐ NO

NUMBER OF GALLONS GENERATED: approx 1.5

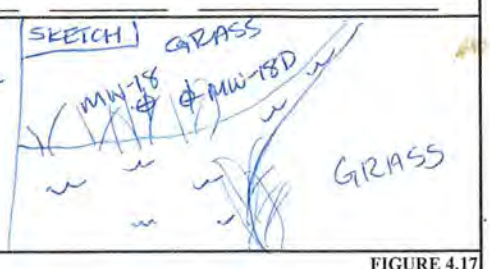
NO-PURGE METHOD UTILIZED: ☐ YES ☑ NO

____ to sampling or ____ mL for this sample location.

SKETCH/NOTES

"PURGE WATER DESCRIPTION": COLORLESS, TRACE FINE, BLACK PARTICULATES, SLIGHT ODOR.

SKETCH



Sampler Signature: K. Amann Print Name: KATIE AMANN

Checked By: Jerry Ruffolo Date: 6/30/20

MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

* DUPLICATE COLLECTED

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME: Erdle Perforating Company	LOCATION ID: MW-21
PROJECT NUMBER: 3617137306.02	DATE: 6/8/2020
SAMPLE ID: 828072-MW021012 (828072-MW021012DUP)	SAMPLE TIME: 1540
START TIME: 1445	END TIME: 1600
SITE NAME/NUMBER: 828072	PAGE: 1 OF 1

WELL DIAMETER (INCHES): ☐ 1 ☒ 2 ☐ 4 ☐ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☐ 1/8 ☒ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER

MEASUREMENT POINT (MP): ☐ TOP OF RISER (TOR) ☒ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY	YES	NO	N/A
CAP	✓		
CASING	✓		
LOCKED			✓
COLLAR			✓

INITIAL DTW (BMP)	CANNOT MEASURE FT	FINAL DTW (BMP)	CANNOT MEASURE FT	PROT. CASING STICKUP (AGS)	3 FT	TOC/TOR DIFFERENCE	NA FT
WELL DEPTH (BMP)	REFER TO WELL CONSTRUCTION LOG FT	SCREEN LENGTH	REFER TO WELL LOG FT	PID AMBIENT AIR	NA PPM	REFILL TIMER SETTING	NA SEC
WATER COLUMN	CANNOT CALCULATE FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	CANNOT CALCULATE GAL	PID WELL MOUTH	NA PPM	DISCHARGE TIMER SETTING	NA SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	CANNOT CALCULATE GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	1.89 GAL	DRAWDOWN/ TOTAL PURGED	NA	PRESSURE TO PUMP	NA PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
1456	BEGIN PURGING										
1505	CANNOT MEASURE	205	12.97	2.851	7.07	0.61	18.8	-3.8	1.49	12	SEALED WELL, THEREFORE UNABLE TO COLLECT DEPTH TO WATER OR DEPTH TO BOTTOM MEASUREMENTS
1510		205	12.89	2.859	7.10	0.84	15.9	-13.2	1.49	12	
1515		240	12.91	2.854	7.12	0.99	13.1	-14.6	1.49		
1520		200	12.97	2.848	7.15	1.05	3.05	-12.7	1.49		→ DID NOT ADJUST SPEED CONTROL DIAL.
1525		200	12.95	2.851	7.16	1.15	2.61	-13.4	1.49	12	→ DECREASED FLOW RATE ON GEOPUMP.
1530		200	12.97	2.848	7.18	1.12	4.74	-13.6	1.49		
1535		200	12.97	2.847	7.19	1.15	4.45	-13.5	1.49		
1540	COLLECT SAMPLE										

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

	13	2.85	7.2	1.2	~~4.45~~ 4.5 (CM 6/8/20)	-14

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	DECON FLUIDS USED	TUBING/PUMP/BLADDER MATERIALS		EQUIPMENT USED	
☒ PERISTALTIC	☒ LIQUINOX	☒ SILICON TUBING	☐ S. STEEL PUMP MATERIAL	☐ WL METER	
☐ SUBMERSIBLE	☒ DEIONIZED WATER	☐ HDPE TUBING	☐ PVC PUMP MATERIAL	☒ TURB. METER	HACH 2100Q
☐ BLADDER	☒ POTABLE WATER	☒ LDPE TUBING	☐ GEOPROBE SCREEN	☒ WQ METER	YSI 556 MPS
	☒ NITRIC ACID	☐ HDPE TUBING	☐ TEFLON BLADDER	☒ PUMP	Geopump
☐ OTHER	☒ OTHER Hexane rinse	☐ OTHER	☐ OTHER	☐ FILTERS	NO. TYPE

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
☒	VOCs	8260C	No	4°C HCl	6 X 40 ml (CM 6/8/20)	YES	DUPLICATE	828072-MW021012 828072-MW021012DUP
☐	Alkalinity	2320B	No	4°C	250 ml Poly			
☐	Chloride	300	No	4°C	250 ml Poly			
☐	Nitrate	300	No	4°C				
☐	Nitrite	354.1	No	4°C				
☐	Sulfate	300	No	4°C				
☐	Sulfide	4500	No	4°C				
☐	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
☐	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
☐	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

	YES	NO
PURGE WATER CONTAINERIZED	☒	☐
NO-PURGE METHOD UTILIZED	☐	☒

NUMBER OF GALLONS GENERATED: 2.3 (GROUP) to sampling or _____ mL for this sample location.

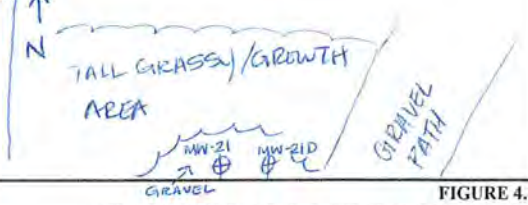
Sampler Signature: K. Amann Print Name: KATIE AMANN

Checked By: Jeremy Ruhlig Date: 6/30/20

~~SKETCH~~/NOTES

- PURGEWATER DESCRIPTION: CLEAR, COLORLESS, ODORLESS

SKETCH



MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company
PROJECT NUMBER	3617137306.02
SAMPLE ID	828072- MW019UU6
SAMPLE TIME	1210

LOCATION ID	MW-19
DATE	6/10/20
START TIME	1010
END TIME	1215
SITE NAME/NUMBER	828072
PAGE	1 OF 1

WELL DIAMETER (INCHES): ☐ 1 ☒ 2 ☐ 4 ☐ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☒ 1/8 ☐ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER

MEASUREMENT POINT (MP): ☒ TOP OF RISER (TOR) ☐ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY	YES	NO	N/A
CAP	✓		
CASING	✓		
LOCKED	✓		
COLLAR	✓		

INITIAL DTW (BMP)	4.49 FT	FINAL DTW (BMP)	6.26 FT	PROT. CASING STICKUP (AGS)	0 FT	TOC/TOR DIFFERENCE	0.38 FT
WELL DEPTH (BMP)	6.50 FT	SCREEN LENGTH	UNK FT	PID AMBIENT AIR	— PPM	REFILL TIMER SETTING	— SEC
WATER COLUMN	1.62 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	.28 GAL	PID WELL MOUTH	— PPM	DISCHARGE TIMER SETTING	— SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	.26 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	2.3 GAL	DRAWDOWN/ TOTAL PURGED	.12	PRESSURE TO PUMP	— PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
1050	BEGIN PURGING										
1100	4.88	135	15.1	0.761	6.9	4.3	3.6	80	.37	6.4	
1110	5.21	130	15.1	0.757	7.0	3.0	1.4	50	.37		
1120	5.47	100	15.1	0.755	7.1	2.6	1.1	42	.37		
1125	5.54	115	15.0	0.755	7.1	2.5	0.7	40	.37		
1130	5.66	115	14.8	0.754	7.1	2.2	0.8	37	.37		
1135	5.79	115	14.8	0.754	7.1	2.0	1.1	35	.37		
1140	5.87	125	14.6	0.753	7.1	1.7	1.8	33	.37		
1145	5.94	105	14.6	0.752	7.1	1.5	0.7	31	.37		
1150	6.03	100	14.6	0.752	7.1	1.5	0.7	30	.37		
1155	6.11	100	14.7	0.751	7.1	1.3	0.5	29	.37		
1200	6.17	105	14.7	0.750	7.1	1.2	0.8	29	.37		
1205	6.26	110	14.6	0.747	7.1	1.2	1.2	29	.37		

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

	15	0.747	7.1	1.2	1.2	29

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: ☑ PERISTALTIC ☐ SUBMERSIBLE ☐ BLADDER ☐ OTHER

DECON FLUIDS USED: ☐ LIQUINOX ☐ DEIONIZED WATER ☐ POTABLE WATER ☐ NITRIC ACID ☑ OTHER Deionized

TUBING/PUMP/BLADDER MATERIALS: ☑ SILICON TUBING ☐ HDPE TUBING ☑ LDPE TUBING ☐ HDPE TUBING ☐ OTHER

☐ S. STEEL PUMP MATERIAL ☐ PVC PUMP MATERIAL ☐ GEOPROBE SCREEN ☐ TEFLON BLADDER ☐ OTHER

EQUIPMENT USED: ☑ WL METER Heron ☑ TURB. METER HACH 2100Q ☑ WQ METER YSI 556 MPS ☑ PUMP Geopump ☐ FILTERS NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
☒	VOCs	8260C	No	4°C HCl	3 X 40 ml	X		
☐	Alkalinity	2320B	No	4°C	250 ml Poly			
☐	Chloride	300	No	4°C	250 ml Poly			
☐	Nitrate	300	No	4°C				
☐	Nitrite	354.1	No	4°C				
☐	Sulfate	300	No	4°C				
☐	Sulfide	4500	No	4°C				
☐	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
☐	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
☐	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: ☒ YES ☐ NO

NO-PURGE METHOD UTILIZED: ☐ YES ☒ NO

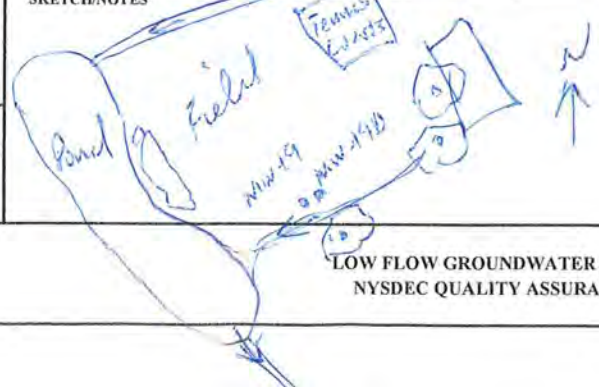
NUMBER OF GALLONS GENERATED: 2.3

to sampling or _____ mL for this sample location.

Sampler Signature: Jerry Rawcliffe Print Name: Jerry Rawcliffe

Checked By: Date: 7/6/20

SKETCH/NOTES



MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company
PROJECT NUMBER	3617137306.02
SAMPLE ID	828072- MW190019
SAMPLE TIME	1320

LOCATION ID	MW-190
DATE	6/10/20
START TIME	1215
END TIME	1340
SITE NAME/NUMBER	828072
PAGE	1 OF 1

WELL DIAMETER (INCHES): ☐ 1 ☑ 2 ☐ 4 ☐ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☑ 1/8 ☐ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER

MEASUREMENT POINT (MP): ☑ TOP OF RISER (TOR) ☐ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	✓		
CASING	✓		
LOCKED	✓		
COLLAR	✓		

INITIAL DTW (BMP)	3.97 FT	FINAL DTW (BMP)	4.04 FT	PROT. CASING STICKUP (AGS)	0 FT	TOC/TOR DIFFERENCE	0.61 FT
WELL DEPTH (BMP)	19.4 FT	SCREEN LENGTH	FT	PID AMBIENT AIR	PPM	REFILL TIMER SETTING	SEC
WATER COLUMN	15.43 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	.01 GAL	PID WELL MOUTH	PPM	DISCHARGE TIMER SETTING	SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	2.5 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	2.2 GAL	DRAWDOWN/ TOTAL PURGED	.005	PRESSURE TO PUMP	PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
1214	BEGIN PURGING										
1230	4.02	140	14.1	1.074	6.9	1.1	2.8	37	.53	19	Purge water to car
1245	4.03	150	13.8	0.918	6.9	1.2	1.7	-1	.45		
1255	4.03	130	14.2	0.900	6.9	0.9	2.2	-5	.45		
1300	4.03	150	13.9	.895	6.9	0.9	0.9	-6	.44		
1305	4.03	140	13.8	.887	6.9	0.8	0.7	-6	.44		
1310	4.04	160	13.9	.883	6.9	0.8	1.1	-7	.44		
1315	4.04	150	13.5	.880	6.9	0.8	0.4	-4	.44		

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

14	.880	6.9	0.8	0.4	-4	

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: ☑ PERISTALTIC ☐ SUBMERSIBLE ☐ BLADDER ☐ OTHER

DECON FLUIDS USED: ☐ LIQUINOX ☐ DEIONIZED WATER ☐ POTABLE WATER ☐ NITRIC ACID ☑ OTHER Dedicated

TUBING/PUMP/BLADDER MATERIALS: ☑ SILICON TUBING ☐ HDPE TUBING ☑ LDPE TUBING ☐ HDPE TUBING ☐ OTHER ☐ S. STEEL PUMP MATERIAL ☐ PVC PUMP MATERIAL ☐ GEOPROBE SCREEN ☐ TEFLON BLADDER ☐ OTHER

EQUIPMENT USED: ☑ WL METER HERON ☑ TURB. METER HACH 2100Q ☑ WQ METER YSI 556 MPS ☑ PUMP Geopump ☐ FILTERS NO. ___ TYPE ___

ANALYTICAL PARAMETERS

PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
☒ VOCs	8260C	No	4°C HCl	3 X 40 ml	X		
Alkalinity	2320B	No	4°C	250 ml Poly			
Chloride	300	No	4°C	250 ml Poly			
Nitrate	300	No	4°C				
Nitrite	354.1	No	4°C				
Sulfate	300	No	4°C				
Sulfide	4500	No	4°C				
Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: ☑ YES ☐ NO

NO-PURGE METHOD UTILIZED: ☐ YES ☒ NO

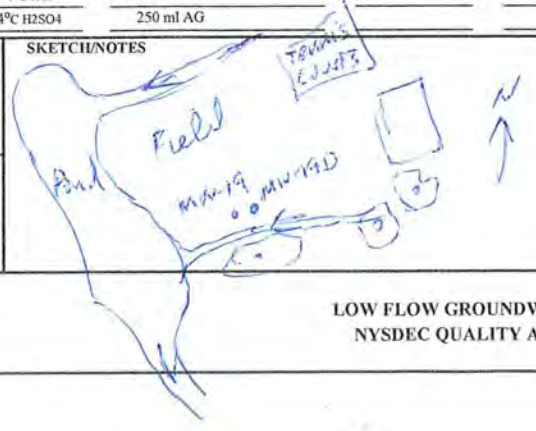
NUMBER OF GALLONS GENERATED: 2.2

to sampling or _____ mL for this sample location.

Sampler Signature: Jerry Rawcliffe Print Name: Jerry Rawcliffe

Checked By: Date: 7/6/20

SKETCH/NOTES



MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company	LOCATION ID	MW-20
PROJECT NUMBER	3617137306.02	DATE	6/10/20
SAMPLE ID	828072- MW020006	START TIME	1355
SAMPLE TIME	1625	END TIME	1630
SITE NAME/NUMBER	828072	PAGE	1 OF 1

WELL DIAMETER (INCHES): ☐ 1 ☑ 2 ☐ 4 ☐ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☑ 1/8 ☐ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER

MEASUREMENT POINT (MP): ☑ TOP OF RISER (TOR) ☐ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY	YES	NO	N/A
CAP	✓		
CASING	✓		
LOCKED	✓		
COLLAR	✓		

INITIAL DTW (BMP)	5.24 FT	FINAL DTW (BMP)	6.8 FT	PROT. CASING STICKUP (AGS)	0 FT	TOC/TOR DIFFERENCE	0.25 FT
WELL DEPTH (BMP)	6.8 FT	SCREEN LENGTH	5 FT	PID AMBIENT AIR	— PPM	REFILL TIMER SETTING	— SEC
WATER COLUMN	1.56 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	.25 GAL	PID WELL MOUTH	— PPM	DISCHARGE TIMER SETTING	— SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	.25 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	1.2 GAL	DRAWDOWN/ TOTAL PURGED	.21	PRESSURE TO PUMP	— PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
1405	BEGIN PURGING										
1415	5.66	125	16.5	0.688	7.2	5.3	2.7	32	.34	6	
1425	5.89	110	16.8	.1685	7.3	4.6	1.3	14	.34		
1430	6.00	90	17.0	.1684	7.3	4.5	0.8	19	.33		
1435	6.11	90	16.8	.1686	7.3	4.6	0.6	25	.34		
1440	6.24	140	16.4	.1692	7.3	4.7	0.6	30	.34		
1445	6.42	140	15.9	.1685	7.2	4.6	1.0	36	.34		
1450	6.58	—	15.6	.1683	7.2	4.3	1.2	34	.33		
1452	Purged dry - will grab sample of recharge										

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

	16	.1685	7.2	4.3	1.2	34

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	DECON FLUIDS USED	TUBING/PUMP/BLADDER MATERIALS		EQUIPMENT USED	
☒ PERISTALTIC	☐ LIQUINOX	☒ SILICON TUBING	☐ S. STEEL PUMP MATERIAL	☒ WL METER	Heron
☐ SUBMERSIBLE	☐ DEIONIZED WATER	☐ HDPE TUBING	☐ PVC PUMP MATERIAL	☒ TURB. METER	HACH 2100Q
☐ BLADDER	☐ POTABLE WATER	☒ LDPE TUBING	☐ GEOPROBE SCREEN	☒ WQ METER	YSI 556 MPS
☐ OTHER	☐ NITRIC ACID	☐ HDPE TUBING	☐ TEFLON BLADDER	☒ PUMP	Geopump
	☐ OTHER	☐ OTHER	☐ OTHER	☐ FILTERS	NO. TYPE

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
☒	VOCs	8260C	No	4°C HCl	3 X 40 ml	(X)		
	Alkalinity	2320B	No	4°C	250 ml Poly			
	Chloride	300	No	4°C	250 ml Poly			
	Nitrate	300	No	4°C				
	Nitrite	354.1	No	4°C				
	Sulfate	300	No	4°C				
	Sulfide	4500	No	4°C				
	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: ☑ YES ☐ NO

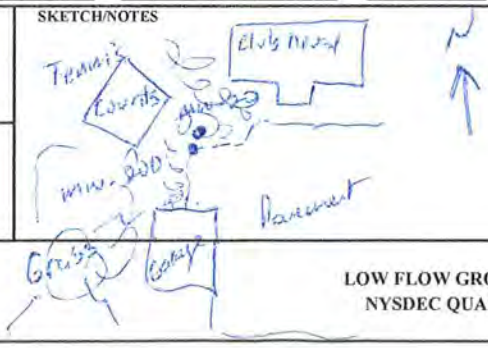
NO-PURGE METHOD UTILIZED: ☐ YES ☑ NO

NUMBER OF GALLONS GENERATED: 1.2 to sampling or _____ mL for this sample location.

Sampler Signature: Jerry Rawcliffe Print Name: Jerry Rawcliffe

Checked By: Date: 7/6/20

SKETCH/NOTES



MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company
PROJECT NUMBER	3617137306.02
SAMPLE ID	828072- MW20D 020
SAMPLE TIME	1605
LOCATION ID	MW-20D
DATE	6/10/20
START TIME	1655
END TIME	1610
SITE NAME/NUMBER	828072
PAGE	1 OF 1

WELL DIAMETER (INCHES): ☐ 1 ☑ 2 ☐ 4 ☐ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☑ 1/8 ☐ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER

MEASUREMENT POINT (MP): ☑ TOP OF RISER (TOR) ☐ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	✓		
CASING	✓		
LOCKED	✓		
COLLAR	✓		

INITIAL DTW (BMP)	5.65 FT	FINAL DTW (BMP)	6.33 FT	PROT. CASING STICKUP (AGS)	0 FT	TOC/TOR DIFFERENCE	0.31 FT
WELL DEPTH (BMP)	20.8 FT	SCREEN LENGTH	10ft FT	PID AMBIENT AIR	— PPM	REFILL TIMER SETTING	— SEC
WATER COLUMN	15.4 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	.11 GAL	PID WELL MOUTH	— PPM	DISCHARGE TIMER SETTING	— SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	2.5 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	2.5 GAL	DRAWDOWN/ TOTAL PURGED	.044	PRESSURE TO PUMP	— PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
1701	BEGIN PURGING										
1710	6.20	140	15.6	0.950	6.9	1.1	1.9	47	.47	20	Called Chris Sipple
1725	6.34	150	15.1	.959	6.9	1.6	1.4	1	.48		
1730	6.33	150	15.1	.964	6.9	1.3	1.0	-7	.48		
1735	6.33	150	15.0	.970	6.9	1.2	0.6	-8	.48		
1740	6.29	130	15.2	.963	6.9	1.0	0.6	-10	.48		
1745	—	130	15.3	.958	6.9	1.0	0.8	-10	.48		
1750	6.31	130	15.2	.941	6.9	0.9	0.6	-5	.47		
1755	6.31	145	15.0	.933	6.9	0.9	0.6	-4	.46		
1600	6.33	145	15.0	.925	6.9	0.9	0.7	-1	.46		

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: ☒ PERISTALTIC ☐ SUBMERSIBLE ☐ BLADDER ☐ OTHER

DECON FLUIDS USED: ☐ LIQUINOX ☐ DEIONIZED WATER ☐ POTABLE WATER ☐ NITRIC ACID ☑ OTHER Dedicated

TUBING/PUMP/BLADDER MATERIALS: ☑ SILICON TUBING ☐ HDPE TUBING ☑ LDPE TUBING ☐ HDPE TUBING ☐ OTHER; ☐ S. STEEL PUMP MATERIAL ☐ PVC PUMP MATERIAL ☐ GEOPROBE SCREEN ☐ TEFLON BLADDER ☐ OTHER

EQUIPMENT USED

☑	WL METER	Heron
☑	TURB. METER	HACH 2100Q
☑	WQ METER	YSI 556 MPS
☑	PUMP	Geopump
☑	FILTERS	NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
X	VOCs	8260C	No	4°C HCl	3 X 40 ml	X		
	Alkalinity	2320B	No	4°C	250 ml Poly			
	Chloride	300	No	4°C	250 ml Poly			
	Nitrate	300	No	4°C				
	Nitrite	354.1	No	4°C				
	Sulfate	300	No	4°C				
	Sulfide	4500	No	4°C				
	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

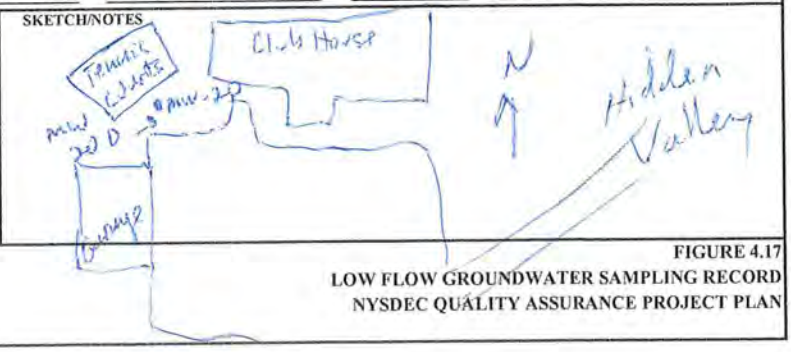
PURGE WATER CONTAINERIZED: ☑ YES ☐ NO

NO-PURGE METHOD UTILIZED: ☐ YES ☑ NO

NUMBER OF GALLONS GENERATED: 2.5

to sampling or _____ mL. for this sample location.

SKETCH/NOTES



Sampler Signature: Jerry Rawcliffe Print Name: Jerry Rawcliffe

Checked By: Date: 7/6/20

MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

A COLLECTED MS/MSD

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company
PROJECT NUMBER	3617137306.02
SAMPLE ID	828072- MW21D020 (828072-MW21D020MS, 828072-MW21D020MSD)
SAMPLE TIME	1645

LOCATION ID	MW-21D
DATE	6/8/2020
START TIME	1600
END TIME	1700
SITE NAME/NUMBER	828072
PAGE	1 OF 1

WELL DIAMETER (INCHES): ☐ 1 ☒ 2 ☐ 4 ☐ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☐ 1/8 ☒ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER

MEASUREMENT POINT (MP): ☐ TOP OF RISER (TOR) ☒ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	✓		
CASING	✓		
LOCKED			✓
COLLAR			✓

INITIAL DTW (BMP)	CANNOT MEASURE FT	FINAL DTW (BMP)	CANNOT MEASURE FT	PROT. CASING STICKUP (AGS)	3.5 FT	TOC/TOR DIFFERENCE	NA FT
WELL DEPTH (BMP)	REFER TO WELL CONSTRUCTION LOG FT	SCREEN LENGTH	REFER TO WELL CONSTRUCTION LOG FT	PID AMBIENT AIR	NA PPM	REFILL TIMER SETTING	NA SEC
WATER COLUMN	CANNOT CALCULATE FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	CANNOT CALCULATE GAL	PID WELL MOUTH	NA PPM	DISCHARGE TIMER SETTING	NA SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	CANNOT CALCULATE GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	1.56 GAL	DRAWDOWN/ TOTAL PURGED	CANNOT CALCULATE	PRESSURE TO PUMP	NA PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE (mS/cm (3%))	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
1602	BEGIN PURGING @ APPROX. 260 mL/min.										
1615	CANNOT MEASURE	200	13.37	3.096	7.26	1.14	1.17	-13.4	1.62	20	SEALED WELL, THEREFORE UNABLE TO COLLECT WATER LEVEL OR WELL DEPTH MEASUREMENTS.
1620		200	13.31	3.055	7.30	1.09	0.47	-15.9	1.60		
1625		200	13.27	3.039	7.28	1.00	0.34	-16.7	1.59		
1630		200	13.19	3.027	7.27	0.93	0.44	-16.1	1.59		
1635		200	13.21	3.017	7.27	0.90	0.34	-16.9	1.58		
1640		200	13.19	3.011	7.29	0.90	0.42	-18.3	1.58		
1645	COLLECT SAMPLES										

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

	13	3.01	7.3	0.9	0.4	-18

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: ☒ PERISTALTIC ☐ SUBMERSIBLE ☐ BLADDER ☐ OTHER

DECON FLUIDS USED: ☒ LIQUINOX ☒ DEIONIZED WATER ☒ POTABLE WATER ☒ NITRIC ACID ☒ OTHER Methanol

TUBING/PUMP/BLADDER MATERIALS: ☒ SILICON TUBING ☐ HDPE TUBING ☒ LDPE TUBING ☐ HDPE TUBING ☐ OTHER | ☐ S. STEEL PUMP MATERIAL ☐ PVC PUMP MATERIAL ☐ GEOPROBE SCREEN ☐ TEFLON BLADDER ☐ OTHER

EQUIPMENT USED: ☐ WL METER ☒ TURB. METER HACH 2100Q ☒ WQ METER YSI 556 MPS ☒ PUMP Geopump ☐ FILTERS NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
☒	VOCs	8260C	No	4°C HCl	9 X 40 ml	YES	MS/MSD	828072-MW21D020 TMS
	Alkalinity	2320B	No	4°C	250 ml Poly			828072-MW21D020MSD
	Chloride	300	No	4°C	250 ml Poly			
	Nitrate	300	No	4°C				
	Nitrite	354.1	No	4°C				
	Sulfate	300	No	4°C				
	Sulfide	4500	No	4°C				
	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

	YES	NO
PURGE WATER CONTAINERIZED	☒	☐
NO-PURGE METHOD UTILIZED	☐	☒

NUMBER OF GALLONS GENERATED: 2 (approx.) to sampling or ___ mL for this sample location.

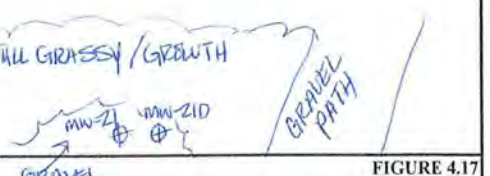
Sampler Signature: K. Amann Print Name: KATIE AMANN

Checked By: Jerry Ruckdeschel Date: 6/30/20

SKETCH/NOTES

PURGE WATER DESCRIPTION: CLEAR, COLORLESS, ODORLESS, SOME ORANGE PARTICULATES PRESENT UPON INITIALLY PURGING.

SKETCH



MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company
PROJECT NUMBER	3617137306.02
SAMPLE ID	828072- GPZ151008
SAMPLE TIME	1440

LOCATION ID	GPZ-151
DATE	6/11/20
START TIME	1215
END TIME	1445
SITE NAME/NUMBER	828072
PAGE	1 OF 1

WELL DIAMETER (INCHES): [X] 1 [ ] 2 [ ] 4 [ ] 6 [ ] 8 [ ] OTHER

TUBING ID (INCHES): [X] 1/8 [ ] 1/4 [ ] 3/8 [ ] 1/2 [ ] 5/8 [ ] OTHER

MEASUREMENT POINT (MP): [X] TOP OF RISER (TOR) [ ] TOP OF CASING (TOC) [ ] OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP		✓	
CASING		✓	
LOCKED		✓	
COLLAR	✓		

INITIAL DTW (BMP)	2.88 FT	FINAL DTW (BMP)	8.5 FT	PROT. CASING STICKUP (AGS)	2.3 FT	TOC/TOR DIFFERENCE	N/A FT
WELL DEPTH (BMP)	8.55 FT	SCREEN LENGTH	UNK FT	PID AMBIENT AIR	— PPM	REFILL TIMER SETTING	— SEC
WATER COLUMN	5.67 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	.27 GAL	PID WELL MOUTH	— PPM	DISCHARGE TIMER SETTING	— SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	.27 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	2.0 GAL	DRAWDOWN/ TOTAL PURGED	.135	PRESSURE TO PUMP	— PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
1217	BEGIN PURGING										
1225	4.55	155	15.3	1.296	6.9	1.9	24	-33	.65		Very difficult to
1230	5.46	190	15.2	1.196	6.9	2.2	—	-35	—		keep pump running at
1235	6.05	205	15.3	1.064	6.8	2.1	6.5	-36	—		low speed
1240	6.57	170	15.1	1.186	6.8	1.6	8.4	-38	.60		
1245	6.94	145	14.9	1.353	6.8	1.2	5.4	-40	.69		
1250	7.37	175	14.4	1.476	6.8	1.0	3.8	-42	.75		
1255	7.78	155	14.2	1.524	6.8	1.0	10.0	-42	.77		
1300	8.14	140	14.2	1.565	6.8	0.9	6.5	-44	.79		
1305	Purge dry - will sample recharge										
1440	7.10	Collected gals sample									

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: [✓] PERISTALTIC [ ] SUBMERSIBLE [ ] BLADDER [ ] OTHER

DECON FLUIDS USED: [ ] LIQUINOX [ ] DEIONIZED WATER [ ] POTABLE WATER [ ] NITRIC ACID [✓] OTHER

TUBING/PUMP/BLADDER MATERIALS: [✓] SILICON TUBING [ ] HDPE TUBING [✓] LDPE TUBING [ ] HDPE TUBING [ ] OTHER; [ ] S. STEEL PUMP MATERIAL [ ] PVC PUMP MATERIAL [ ] GEOPROBE SCREEN [ ] TEFLON BLADDER [ ] OTHER

EQUIPMENT USED: [✓] WL METER Heron; [✓] TURB. METER HACH 2100Q; [✓] WQ METER YSI 556 MPS; [✓] PUMP Geopump; [ ] FILTERS NO. ____ TYPE ____

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
✓	VOCs	8260C	No	4°C HCl	3 X 40 ml	X		
	Alkalinity	2320B	No	4°C	250 ml Poly			
	Chloride	300	No	4°C	250 ml Poly			
	Nitrate	300	No	4°C				
	Nitrite	354.1	No	4°C				
	Sulfate	300	No	4°C				
	Sulfide	4500	No	4°C				
	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: [✓] YES [ ] NO

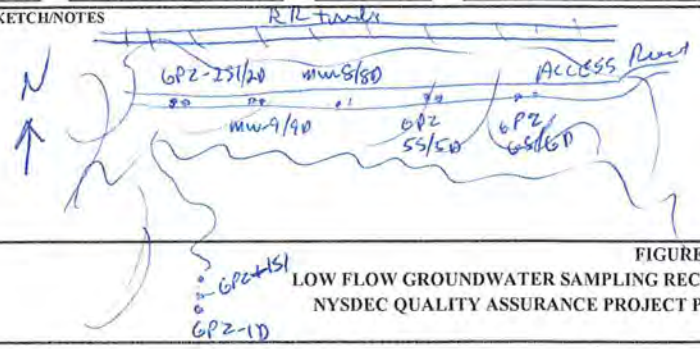
NO-PURGE METHOD UTILIZED: [ ] YES [✓] NO

NUMBER OF GALLONS GENERATED: 2.0 to sampling or ____ mL for this sample location.

Sampler Signature: Jerry Rawcliffe Print Name: Jerry Rawcliffe

Checked By: [signature] Date: 7/6/20

SKETCH/NOTES



MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company
PROJECT NUMBER	3617137306.02
SAMPLE ID	828072- GP2ID014
SAMPLE TIME	0825

LOCATION ID	GP2-ID
DATE	6/11/20
START TIME	1130
END TIME	6/12/20 0850
SITE NAME/NUMBER	828072
PAGE	1 OF 1

WELL DIAMETER (INCHES): [✓] 1 [ ] 2 [ ] 4 [ ] 6 [ ] 8 [ ] OTHER

TUBING ID (INCHES): [✓] 1/8 [ ] 1/4 [ ] 3/8 [ ] 1/2 [ ] 5/8 [ ] OTHER

MEASUREMENT POINT (MP): [✓] TOP OF RISER (TOR) [ ] TOP OF CASING (TOC) [ ] OTHER

WELL INTEGRITY	YES	NO	N/A
CAP	✓		
CASING		✓	
LOCKED		✓	
COLLAR	✓		

INITIAL DTW (BMP)	5.79 FT	FINAL DTW (BMP)	15.6 FT	~~PROT. CASING~~ PVC STICKUP (AGS)	2.6 FT	TOC/TOR DIFFERENCE	NA FT
WELL DEPTH (BMP)	15.6 FT	SCREEN LENGTH	UNK FT	PID AMBIENT AIR	— PPM	REFILL TIMER SETTING	— SEC
WATER COLUMN	9.81 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	.39 GAL	PID WELL MOUTH	— PPM	DISCHARGE TIMER SETTING	— SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	.39 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	.5 GAL	DRAWDOWN/ TOTAL PURGED	—	PRESSURE TO PUMP	— PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
1145	BEGIN PURGING										
1155	14.60	165	12.8	2.702	7.2	3.7	34	-12	1.4		
1158	15.60	Purged dry									

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

	13	2.70	7.2	3.7	34	-12

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: [✓] PERISTALTIC [ ] SUBMERSIBLE [ ] BLADDER [ ] OTHER

DECON FLUIDS USED: [ ] LIQUINOX [ ] DEIONIZED WATER [ ] POTABLE WATER [ ] NITRIC ACID [✓] OTHER Alconox

TUBING/PUMP/BLADDER MATERIALS: [✓] SILICON TUBING [ ] HDPE TUBING [✓] LDPE TUBING [ ] HDPE TUBING [ ] OTHER; [ ] S. STEEL PUMP MATERIAL [ ] PVC PUMP MATERIAL [ ] GEOPROBE SCREEN [ ] TEFLON BLADDER [ ] OTHER

EQUIPMENT USED: [✓] WL METER Heron [✓] TURB. METER HACH 2100Q [✓] WQ METER YSI 556 MPS [✓] PUMP Geopump [ ] FILTERS NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
✓	VOCs	8260C	No	4°C HCl	3 X 40 ml	X		
	Alkalinity	2320B	No	4°C	250 ml Poly			
	Chloride	300	No	4°C	250 ml Poly			
	Nitrate	300	No	4°C				
	Nitrite	354.1	No	4°C				
	Sulfate	300	No	4°C				
	Sulfide	4500	No	4°C				
	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: [✓] YES [ ] NO

NO-PURGE METHOD UTILIZED: [ ] YES [✓] NO

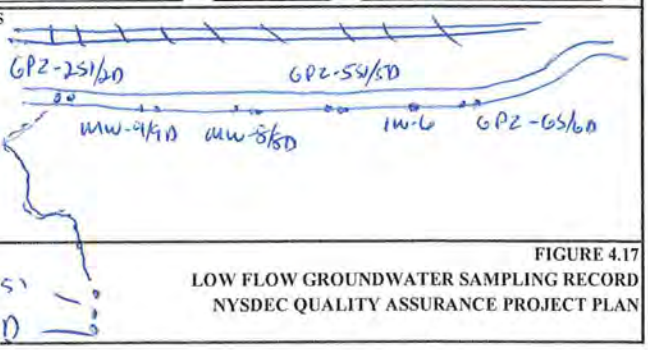
NUMBER OF GALLONS GENERATED: 0.5

to sampling or ___ mL for this sample location.

Sampler Signature: Jerry Rawcliffe Print Name: Jerry Rawcliffe

Checked By: [illegible] Date: 7/6/20

SKETCH/NOTES



MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company	LOCATION ID	GP2-251
PROJECT NUMBER	3617137306.02	DATE	6/11/20
SAMPLE ID	828072- GP2251014	START TIME	1000
SAMPLE TIME	1110	END TIME	1120
SITE NAME/NUMBER	828072	PAGE	1 OF 1

WELL DIAMETER (INCHES): ☑ 1 ☐ 2 ☐ 4 ☐ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☑ 1/8 ☐ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER

MEASUREMENT POINT (MP): ☑ TOP OF RISER (TOR) ☐ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY	YES	NO	N/A
CAP	✓		
CASING		✓	
LOCKED		✓	
COLLAR	✓		

INITIAL DTW (BMP)	14.19 FT	FINAL DTW (BMP)	15.14 FT	PROT. CASING STICKUP (AGS)	2.3 FT	TOC/TOR DIFFERENCE	NA FT
WELL DEPTH (BMP)	16.55 FT	SCREEN LENGTH	UNK FT	PID AMBIENT AIR	— PPM	REFILL TIMER SETTING	— SEC
WATER COLUMN	2.4 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	.64 GAL	PID WELL MOUTH	— PPM	DISCHARGE TIMER SETTING	— SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	0.1 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	1.0 GAL	DRAWDOWN/ TOTAL PURGED	.02	PRESSURE TO PUMP	— PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
1007	BEGIN PURGING										
1015	14.76	125	17.8	1.703	6.4	5.6	25	-34	.87		
1025	14.96	95	11.6	1.704	6.4	2.7	5.7	-37	.87		
1030	14.99	85	12.9	1.699	6.4	2.1	2.7	-38	.86		
1035	15.03	80	12.0	1.699	6.4	1.8	3.7	-42	.86		
1040	15.06	100	11.8	1.701	6.5	1.5	2.1	-44	.87		
1045	15.13	110	11.4	1.701	6.5	1.3	1.4	-43	.87		
1050	15.09	85	11.4	1.695	6.4	1.2	2.0	-40	.86		
1055	15.07	80	11.5	1.689	6.5	1.2	2.2	-41	.86		
1100	15.11	90	11.6	1.687	6.5	1.1	5.3	-41	.86		
1105	15.14	100	11.4	1.687	6.5	1.1	5.2	-41	.86		

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

	11	1.69	6.5	1.1	5.2	-41

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	DECON FLUIDS USED	TUBING/PUMP/BLADDER MATERIALS		EQUIPMENT USED	
☑ PERISTALTIC	☐ LIQUINOX	☑ SILICON TUBING	☐ S. STEEL PUMP MATERIAL	☑ WL METER	Heron
☐ SUBMERSIBLE	☐ DEIONIZED WATER	☐ HDPE TUBING	☐ PVC PUMP MATERIAL	☑ TURB. METER	HACH 2100Q
☐ BLADDER	☐ POTABLE WATER	☑ LDPE TUBING	☐ GEOPROBE SCREEN	☑ WQ METER	YSI 556 MPS
☐ OTHER	☐ NITRIC ACID	☐ HDPE TUBING	☐ TEFLON BLADDER	☑ PUMP	Geopump
	☑ OTHER Dedicated	☐ OTHER	☐ OTHER	☐ FILTERS	NO. TYPE

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
X	VOCs	8260C	No	4°C HCl	3 X 40 ml	X		
	Alkalinity	2320B	No	4°C	250 ml Poly			
	Chloride	300	No	4°C	250 ml Poly			
	Nitrate	300	No	4°C				
	Nitrite	354.1	No	4°C				
	Sulfate	300	No	4°C				
	Sulfide	4500	No	4°C				
	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: ☒ YES ☐ NO

NUMBER OF GALLONS GENERATED: 1.0

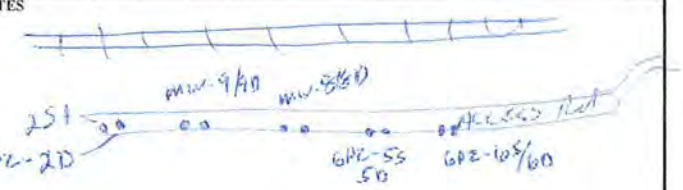
NO-PURGE METHOD UTILIZED: ☐ YES ☒ NO

to sampling or _____ mL for this sample location.

Sampler Signature: Jerry Rawcliffe Print Name: Jerry Rawcliffe

Checked By: Date: 7/6/20

SKETCH/NOTES



MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company
PROJECT NUMBER	3617137306.02
SAMPLE ID	828072- GP22D 020
SAMPLE TIME	0840 6/12/20

LOCATION ID	GP2-2D
DATE	6/11/20
START TIME	0900
END TIME	6/12/20 0850
SITE NAME/NUMBER	828072
PAGE	1 OF 1

WELL DIAMETER (INCHES): [✓] 1 [ ] 2 [ ] 4 [ ] 6 [ ] 8 [ ] OTHER

TUBING ID (INCHES): [✓] 1/8 [ ] 1/4 [ ] 3/8 [ ] 1/2 [ ] 5/8 [ ] OTHER

MEASUREMENT POINT (MP): [✓] TOP OF RISER (TOR) [ ] TOP OF CASING (TOC) [ ] OTHER

WELL INTEGRITY	YES	NO	N/A
CAP		✓	
CASING		✓	
LOCKED		✓	
COLLAR	✓		

INITIAL DTW (BMP)	13.52 FT	FINAL DTW (BMP)	20.8 FT	PROT. CASING STICKUP (AGS)	2.55 FT	TOC/TOR DIFFERENCE	NA FT
WELL DEPTH (BMP)	20.8 FT	SCREEN LENGTH	UNK FT	PID AMBIENT AIR	~ PPM	REFILL TIMER SETTING	— SEC
WATER COLUMN	7.28 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	.29 GAL	PID WELL MOUTH	— PPM	DISCHARGE TIMER SETTING	— SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	.29 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	.33 GAL	DRAWDOWN/ TOTAL PURGED	—	PRESSURE TO PUMP	— PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
0935	BEGIN PURGING										
0940	18.25	140	12.4	1,312	6.9	3.8	130	16	.666		
0945	19.49	115	11.5	1,295	7.0	3.1	85	-12	.665		
0950	20.42	100	11.1	1,301	7.0	2.9	770	-19	.665		
0954	20.80	Purged dry									

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

	11	1,30	7.0	2.9	770	-19

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	DECON FLUIDS USED	TUBING/PUMP/BLADDER MATERIALS		EQUIPMENT USED	
[✓] PERISTALTIC	[ ] LIQUINOX	[✓] SILICON TUBING	[ ] S. STEEL PUMP MATERIAL	[✓] WL METER	Heron
[ ] SUBMERSIBLE	[ ] DEIONIZED WATER	[ ] HDPE TUBING	[ ] PVC PUMP MATERIAL	[✓] TURB. METER	HACH 2100Q
[ ] BLADDER	[ ] POTABLE WATER	[✓] LDPE TUBING	[ ] GEOPROBE SCREEN	[✓] WQ METER	YSI 556 MPS
[ ] OTHER	[ ] NITRIC ACID	[ ] HDPE TUBING	[ ] TEFLON BLADDER	[✓] PUMP	Geopump
	[✓] OTHER Dedicated	[ ] OTHER	[ ] OTHER	[ ] FILTERS	NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
[X]	VOCs	8260C	No	4°C HCl	3 X 40 ml	X		
[ ]	Alkalinity	2320B	No	4°C	250 ml Poly			
[ ]	Chloride	300	No	4°C	250 ml Poly			
[ ]	Nitrate	300	No	4°C				
[ ]	Nitrite	354.1	No	4°C				
[ ]	Sulfate	300	No	4°C				
[ ]	Sulfide	4500	No	4°C				
[ ]	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
[ ]	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
[ ]	Total Organic Carbon	415.1	No	4°C H_2SO_4	250 ml AG			

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: YES [X] NO [ ]

NO-PURGE METHOD UTILIZED: YES [ ] NO [X]

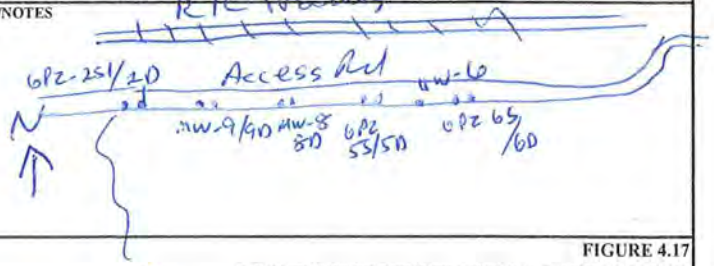
NUMBER OF GALLONS GENERATED: .33

to sampling or _____ mL for this sample location.

Sampler Signature: Jerry Rudloff Print Name: Jerry Rudloff

Checked By: Phil A. Fry Date: 7/6/20

SKETCH/NOTES



MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company
PROJECT NUMBER	3617137306.02
SAMPLE ID	828072- GPZ55018
SAMPLE TIME	1237

LOCATION ID	GPZ-55
DATE	6/11/20
START TIME	1049
END TIME	1254
SITE NAME/NUMBER	828072
PAGE	1 OF 2

WELL DIAMETER (INCHES): [X] 1 [ ] 2 [ ] 4 [ ] 6 [ ] 8 [ ] OTHER

TUBING ID (INCHES): [ ] 1/8 [X] 1/4 [ ] 3/8 [ ] 1/2 [ ] 5/8 [ ] OTHER

MEASUREMENT POINT (MP): [✓] TOP OF RISER (TOR) [ ] TOP OF CASING (TOC) [ ] OTHER

WELL INTEGRITY	YES	NO	N/A
CAP	✓		
CASING	✓		
LOCKED		✓	
COLLAR			✓

INITIAL DTW (BMP)	14.37 FT	FINAL DTW (BMP)	15.49 FT	PROT. CASING STICKUP (AGS)	1.64 FT	TOC/TOR DIFFERENCE	/ FT
WELL DEPTH (BMP)	18.47 FT	SCREEN LENGTH	Refer to well log FT	PID AMBIENT AIR	/ PPM	REFILL TIMER SETTING	/ SEC
WATER COLUMN	4.1 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	0.046 GAL	PID WELL MOUTH	/ PPM	DISCHARGE TIMER SETTING	/ SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	0.17 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	1.75 GAL	DRAWDOWN/ TOTAL PURGED	0.037 0.0262 (38)	PRESSURE TO PUMP	/ PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
1052	BEGIN PURGING										
1110	14.64	50	13.18	2.511	5.32	2.80	8.16	-139	1.30		
1115	14.75	90	13.22	2.517	6.43	5.01	7.33	-144.7	1.31		
1120	14.90	90	11.81	2.544	6.49	4.57	6.09	-150.2	1.31		
1125	15.05	100	11.07	2.507	6.52	3.12	3.38	-148.9	1.30		
1130	15.15	100	10.80	2.466	6.54	2.52	3.65	-150.7	1.28		
1135	15.25	100	10.60	2.466	6.55	2.25	3.86	-149.3	1.27		
1140	15.20	90	11.08	2.445	6.55	2.16	2.23	-149.1	1.27		Pump died
DTW 5.05 → 1145	~~15.17~~	90	11.17	2.447	6.56	2.05		-147.1	1.27		Pump died before turbidity sampl
1150	PUMP	DIED	HAD TO	REPLACE	BATTERY						
1155	15.10	85	11.75	2.460	6.56	1.80	1.91	-143.9	1.28		
1200	15.12	85	11.73	2.465	6.56	1.72	3.66	-142.3	1.28		
1205	15.25	100	10.97	2.469	6.56	1.54	2.21	-134.7	1.28		
1210	15.30	100	10.74	2.456	6.56	1.43	2.46	-132.7	1.27		
1215	15.32	80	10.61	2.438	6.56	1.29	1.78	-133.0	1.26		DID NOT ADJUST PUMP SPEED
	FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])		~~11~~	~~2.44~~	~~6.6~~	~~1.3~~	~~1.8~~	~~-133~~			

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

Wq

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	DECON FLUIDS USED	TUBING/PUMP/BLADDER MATERIALS		EQUIPMENT USED	
[X] PERISTALTIC	[X] LIQUINOX	[X] SILICON TUBING	[ ] S. STEEL PUMP MATERIAL	[X] WL METER	Heron Slimmy Dipper M200-73
[ ] SUBMERSIBLE	[X] DEIONIZED WATER	[ ] HDPE TUBING	[ ] PVC PUMP MATERIAL	[X] TURB. METER	HACH 2100Q M021-38
[ ] BLADDER	[X] POTABLE WATER	[X] LDPE TUBING	[ ] GEOPROBE SCREEN	[X] WQ METER	YSI 556 MPS M015-10
[ ] OTHER	[X] NITRIC ACID	[ ] HDPE TUBING	[ ] TEFLON BLADDER	[X] PUMP	Geopump 5008-38
	[X] OTHER DI CARE	[ ] OTHER	[ ] OTHER	[ ] FILTERS	NO. ___ TYPE ___

ANALYTICAL PARAMETERS

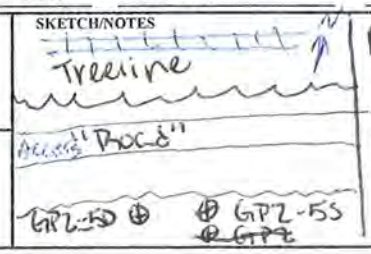
PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
[X] VOCs	8260C	No	4°C HCl	3 X 40 ml	Y		828072-GPZ55018
[ ] Alkalinity	2320B	No	4°C	250 ml Poly			
[ ] Chloride	300	No	4°C	250 ml Poly			
[ ] Nitrate	300	No	4°C				
[ ] Nitrite	354.1	No	4°C				
[ ] Sulfate	300	No	4°C				
[ ] Sulfide	4500	No	4°C				
[ ] Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
[ ] Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
[ ] Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

	YES	NO
PURGE WATER CONTAINERIZED	[X]	[ ]
NO-PURGE METHOD UTILIZED	[ ]	[X]

NUMBER OF GALLONS GENERATED 1.75 to sampling or ___ mL for this sample location

SKETCH/NOTES



Notes:
- Pump is dying
- Water is clear

Sampler Signature: Hannah Groza Print Name: Hannah Groza

Checked By: Jerry Randall Date: 6/30/20

MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company
PROJECT NUMBER	3617137306.02
SAMPLE ID	828072- GP2SS018
SAMPLE TIME	1237

LOCATION ID	GP2-5S
DATE	6/11/20
START TIME	1049
END TIME	1259
SITE NAME/NUMBER	828072
PAGE	2 OF 2

WELL DIAMETER (INCHES): [X] 1 [ ] 2 [ ] 4 [ ] 6 [ ] 8 [ ] OTHER

TUBING ID (INCHES): [ ] 1/8 [X] 1/4 [ ] 3/8 [ ] 1/2 [ ] 5/8 [ ] OTHER

MEASUREMENT POINT (MP): [√] TOP OF RISER (TOR) [ ] TOP OF CASING (TOC) [ ] OTHER

WELL INTEGRITY	YES	NO	N/A
CAP	√		
CASING	√		
LOCKED		√	
COLLAR			√

INITIAL DTW (BMP)	14.37 FT	FINAL DTW (BMP)	15.49 FT	PROT. CASING STICKUP (AGS)	1.64 FT	TOC/TOR DIFFERENCE	/ FT
WELL DEPTH (BMP)	18.47 FT	SCREEN LENGTH	Refer to Well Log FT	PID AMBIENT AIR	/ PPM	REFILL TIMER SETTING	/ SEC
WATER COLUMN	4.1 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	0.046 GAL	PID WELL MOUTH	/ PPM	DISCHARGE TIMER SETTING	/ SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	0.17 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	1.75 GAL	DRAWDOWN/ TOTAL PURGED	0.037 (23) 0.026	PRESSURE TO PUMP	/ PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
	BEGIN PURGING										
1220	15.38	100	10.33	2.439	6.56	1.18	1.83	-130.4	1.26		
1225	15.42	100	10.30	2.424	6.57	1.11	3.46	-128.0	1.26		
1230	15.46	100	10.22	2.424	6.57	1.06	1.85	-129.2	1.25		
1235	15.49	100	10.32	2.424	6.57	1.00	1.63	-126.8	1.25		
1237	Well	Stable	collect	Samples							

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF]) -130

	10	2.42	6.6	1.0 (BP3)	1.6	-126	

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: [X] PERISTALTIC [ ] SUBMERSIBLE [ ] BLADDER [ ] OTHER

DECON FLUIDS USED: [X] LIQUINOX [X] DEIONIZED WATER [X] POTABLE WATER [ ] NITRIC ACID [X] OTHER Dishwash

TUBING/PUMP/BLADDER MATERIALS: [X] SILICON TUBING [ ] HDPE TUBING [X] LDPE TUBING [ ] HDPE TUBING [ ] OTHER; [ ] S. STEEL PUMP MATERIAL [ ] PVC PUMP MATERIAL [ ] GEOPROBE SCREEN [ ] TEFLON BLADDER [ ] OTHER

EQUIPMENT USED: [X] WL METER Heron Slimy Dipper M720-73; [X] TURB. METER HACH 2100Q M024-38; [X] WQ METER YSI 556 MPS M015-10; [X] PUMP Geopump 5003-36; [ ] FILTERS NO. ____ TYPE ____

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
[X]	VOCs	8260C	No	4°C HCl	3 X 40 ml	4		MP255018
[ ]	Alkalinity	2320B	No	4°C	250 ml Poly			
[ ]	Chloride	300	No	4°C	250 ml Poly			
[ ]	Nitrate	300	No	4°C				
[ ]	Nitrite	354.1	No	4°C				
[ ]	Sulfate	300	No	4°C				
[ ]	Sulfide	4500	No	4°C				
[ ]	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
[ ]	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
[ ]	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

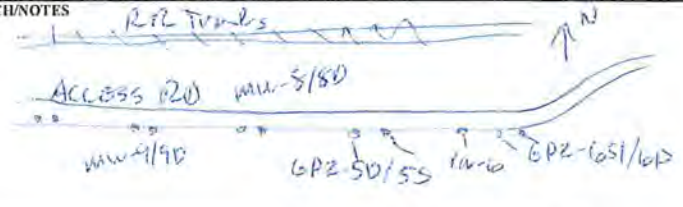
PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: [X] YES [ ] NO

NO-PURGE METHOD UTILIZED: [ ] YES [X] NO

NUMBER OF GALLONS GENERATED: 1.75 to sampling or ____ mL for this sample location.

SKETCH/NOTES



Sampler Signature: Hannah Grozen Print Name: Hannah Grozen

Checked By: Jerry Ruffolo Date: 6/30/20

MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

1.0192

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company
PROJECT NUMBER	3617137306.02
SAMPLE ID	828072- GPZ5D022
SAMPLE TIME	1457
LOCATION ID	GPZ-5D
DATE	6/11/20
START TIME	1310
END TIME	1510
SITE NAME/NUMBER	828072
PAGE	1 OF 1

WELL DIAMETER (INCHES): [X] 1 [ ] 2 [ ] 4 [ ] 6 [ ] 8 [ ] OTHER

TUBING ID (INCHES): NA [ ] 1/8 [X] 1/4 [ ] 3/8 [ ] 1/2 [ ] 5/8 [ ] OTHER

MEASUREMENT POINT (MP): [X] TOP OF RISER (TOR) [ ] TOP OF CASING (TOC) [ ] OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	✓		
CASING	✓		
LOCKED		✓	
COLLAR			✓

INITIAL DTW (BMP)	13.30 FT	FINAL DTW (BMP)	13.83 FT	PROT. CASING STICKUP (AGS)	Flush with ground FT	TOC/TOR DIFFERENCE	FT
WELL DEPTH (BMP)	25.04 FT	SCREEN LENGTH	Refer to Well Log FT	PID AMBIENT AIR	/ PPM	REFILL TIMER SETTING	SEC
WATER COLUMN	11.74 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	0.022 GAL	PID WELL MOUTH	/ PPM	DISCHARGE TIMER SETTING	SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	0.48 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	1.94 GAL	DRAWDOWN/ TOTAL PURGED	0.01	PRESSURE TO PUMP	PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
1313	BEGIN PURGING										
1330	13.90	140	10.44	2.521	6.74	0.93	15.7	-137.6	1.31		
1335	13.93	140	10.38	2.525	6.81	0.76	11.7	-135.4	1.31		
1340	13.96	140	10.35	2.521	6.84	0.69	8.47	-133.5	1.31		
1345	13.62	140	10.63	2.508	6.88	1.21	15.50	-135.2	1.30		
1350	PUMP	SHUT OFF, STOPPED PULLING WATER. CHANGED TUBING									
1414	Began	Purging	AGAIN								
1420	13.74	100	12.87	2.488	6.28	3.00	491	-125.3	1.29		
1425	13.81	100	12.90	2.495	6.78	1.38	170	-125.7	1.30		
1430	13.83	100	12.88	2.502	6.87	0.99	67.1	-125.4	1.30		
1435	13.83	100	12.55	2.517	6.90	0.80	28.0	-125.5	1.31		
1440	13.83	100	12.84	2.503	6.92	0.70	14.7	-124.6	1.30		
1445	13.83	100	12.53	2.511	6.95	0.65	11.6	-121.6	1.30		
1450	13.83	100	12.83	2.499	6.95	0.59	11.6	-119.7	1.30		
1455	13.83	100	12.84	2.498	6.95	0.58	7.70	-120.9	1.30		

SAMPLE 1457

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

	13	2.5	7.0	0.60	7.7	-120

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: [X] PERISTALTIC [ ] SUBMERSIBLE [ ] BLADDER [ ] OTHER

DECON FLUIDS USED: [X] LIQUINOX [X] DEIONIZED WATER [X] POTABLE WATER [ ] NITRIC ACID [X] OTHER Deliconex

TUBING/PUMP/BLADDER MATERIALS: [X] SILICON TUBING [ ] HDPE TUBING [X] LDPE TUBING [ ] HDPE TUBING [ ] OTHER | [ ] S. STEEL PUMP MATERIAL [ ] PVC PUMP MATERIAL [ ] GEOPROBE SCREEN [ ] TEFLON BLADDER [ ] OTHER

EQUIPMENT USED: [X] WL METER Heron Dipper [X] TURB. METER HACH 2100Q MUZH-38 [X] WQ METER YSI 556 MPS MW15-10 [X] PUMP Geopump 5008-36.29 [ ] FILTERS NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
[X]	VOCs	8260C	No	4°C HCl	3 X 40 ml	Y		828072-GPZ5D022
[ ]	Alkalinity	2320B	No	4°C	250 ml Poly			
[ ]	Chloride	300	No	4°C	250 ml Poly			
[ ]	Nitrate	300	No	4°C				
[ ]	Nitrite	354.1	No	4°C				
[ ]	Sulfate	300	No	4°C				
[ ]	Sulfide	4500	No	4°C				
[ ]	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
[ ]	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
[ ]	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

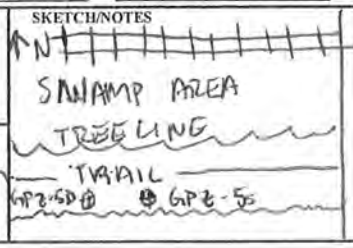
PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: [X] YES [ ] NO

NO-PURGE METHOD UTILIZED: [ ] YES [✓] NO

NUMBER OF GALLONS GENERATED: 2 to sampling or ___ mL for this sample location.

SKETCH/NOTES



Notes: Changed tubing & pump

Sample Signature: [signature] Print Name: Hannah Grotz

Checked By: J. Rudloff Date: 6/30/20

MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company
PROJECT NUMBER	3617137306.02
SAMPLE ID	828072-GPZ6S018
SAMPLE TIME	1105

LOCATION ID	GPZ-6S
DATE	6/11/2020
START TIME	6/11/20 0910
END TIME	6/11/20 1128
SITE NAME/NUMBER	828072
PAGE	1 OF 2

WELL DIAMETER (INCHES): [X] 1 [ ] 2 [ ] 4 [ ] 6 [ ] 8 [ ] OTHER

TUBING ID (INCHES): [ ] 1/8 [X] 1/4 [ ] 3/8 [ ] 1/2 [ ] 5/8 [X] OTHER 0.17" ID (OUTER DIAMETER)

MEASUREMENT POINT (MP): [X] TOP OF RISER (TOR) [ ] TOP OF CASING (TOC) [ ] OTHER

WELL INTEGRITY	YES	NO	N/A
CAP	✓		
CASING			✓
LOCKED		✓	
COLLAR			✓

INITIAL DTW (BMP)	12.08 FT	FINAL DTW (BMP)	14.00 FT	PROT. CASING (RISER) STICKUP (AGS)	0.5 FT	TOC/TOR DIFFERENCE	NA FT
WELL DEPTH (BMP)	19.35 FT	SCREEN LENGTH	REFER TO WELL CONSTRUCTION LOG FT	PID AMBIENT AIR	NA PPM	REFILL TIMER SETTING	NA SEC
WATER COLUMN	7.27 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	0.08 GAL	PID WELL MOUTH	NA PPM	DISCHARGE TIMER SETTING	NA SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	0.3 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	2.21 GAL	DRAWDOWN/ TOTAL PURGED	0.04	PRESSURE TO PUMP	NA PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
0926	BEGIN PURGING										
0935	12.93	100	10.33	2.248	6.46	7.99	14.5	-14.0	1.16	18	
0940	13.13	100	10.19	2.235	6.44	5.11		-20.0	1.15		
0945	13.26	100	9.56	2.243	6.44	4.34	11.9	-20.5	1.16		
0950	13.35	100	9.39	2.212	6.47	3.42	10.7	-14.7	1.14		
0955	13.54	100	9.56	2.194	6.45	2.90	10.9	-18.9	1.13		
1000	13.68	100	9.44	2.186	6.45	2.81	11.3	-11.9	1.12		
1005	13.76	100	9.33	2.170	6.44	2.74	11.2	-9.2	1.12		
1007	STOPPED PUMP. NEED TO ASSIST WITH HAULING EQUIPMENT AND SETUP AT ANOTHER WELL										
1023	RE-STARTED PUMP.										
1025	13.51	100	11.08	2.169	6.39	1.63	13.8	-8.4	1.12		
1030	13.62	100	9.75	2.178	6.39	1.71	13.7	-13.1	1.12		
1035	13.76	100	9.46	2.162	6.40	1.55	16.9	-15.0	1.11		
1040	13.81	100	9.50	2.155	6.41	1.53	15.6	-14.5	1.11		
1045	13.85	100	9.60	2.154	6.42	1.58	16.8	-7.2	1.11		
FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])											
	@1100	10	2.150	6.4	1.6	20.9	7.6				

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	DECON FLUIDS USED	TUBING/PUMP/BLADDER MATERIALS		EQUIPMENT USED	
[X] PERISTALTIC	[X] LIQUINOX	[X] SILICON TUBING	[ ] S. STEEL PUMP MATERIAL	[X] WL METER	HERON DIPPER-T
[ ] SUBMERSIBLE	[X] DEIONIZED WATER	[ ] HDPE TUBING	[ ] PVC PUMP MATERIAL	[X] TURB. METER	HACH 2100Q
[ ] BLADDER	[X] POTABLE WATER	[X] LDPE TUBING	[ ] GEOPROBE SCREEN	[X] WQ METER	YSI 556 MPS
[ ] OTHER	[ ] NITRIC ACID	[ ] HDPE TUBING	[ ] TEFLON BLADDER	[X] PUMP	Geopump
	[X] OTHER Deionized	[ ] OTHER	[ ] OTHER	[ ] FILTERS	NO. ___ TYPE

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
[X]	VOCs	8260C	No	4°C HCl	3 X 40 ml	YES	NO	
[ ]	Alkalinity	2320B	No	4°C	250 ml Poly			
[ ]	Chloride	300	No	4°C	250 ml Poly			
[ ]	Nitrate	300	No	4°C				
[ ]	Nitrite	354.1	No	4°C				
[ ]	Sulfate	300	No	4°C				
[ ]	Sulfide	4500	No	4°C				
[ ]	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
[ ]	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
[ ]	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: [X] YES [ ] NO

NO-PURGE METHOD UTILIZED: [ ] YES [X] NO

NUMBER OF GALLONS GENERATED: ≈2.25 to sampling or ___ mL for this sample location.

SKETCH/NOTES

- PURGE WATER DESCRIPTION: LIGHT GRAY, ODOR, TRACE FINE, BLACK PARTICULATES

SKETCH

Sampler Signature: K Amann Print Name: KATIE AMANN

Checked By: Date:

MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company
PROJECT NUMBER	3617137306.02
SAMPLE ID	828072-GPZ60S018
SAMPLE TIME	1105

LOCATION ID	GPZ-6S
DATE	6/11/2020
START TIME	0910
END TIME	1128
SITE NAME/NUMBER	828072
PAGE	2 OF 2

WELL DIAMETER (INCHES): [X] 1 [ ] 2 [ ] 4 [ ] 6 [ ] 8 [ ] OTHER

TUBING ID (INCHES): [X] 1/8 [X] 1/4 [ ] 3/8 [ ] 1/2 [ ] 5/8 [X] OTHER 0.17" ID (0.25" OUTER DIAMETER)

MEASUREMENT POINT (MP): [X] TOP OF RISER (TOR) [ ] TOP OF CASING (TOC) [ ] OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	✓		
CASING			✓
LOCKED		✓	
COLLAR			✓

INITIAL DTW (BMP)	12.08 FT	FINAL DTW (BMP)	14.00 FT (6/11/2020)	PROT. CASING (RISER) STICKUP (AGS)	0.5 FT	TOC/TOR DIFFERENCE	NA FT
WELL DEPTH (BMP)	19.35 FT	SCREEN LENGTH	REFER TO WELL CONSTRUCTION LOG FT	PID AMBIENT AIR	NA PPM	REFILL TIMER SETTING	NA SEC
WATER COLUMN	7.27 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	0.08 GAL	PID WELL MOUTH	NA PPM	DISCHARGE TIMER SETTING	NA SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	0.3 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	2.2 GAL	DRAWDOWN/ TOTAL PURGED	0.04	PRESSURE TO PUMP	NA PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
	BEGIN PURGING (KFA) 6/11/2020										
1050	13.92	100	9.67	2.153	6.43	1.56	21.1	0.7	1.11	18	
1055	13.96	100	9.51	2.152	6.43	1.56	21.3	-0.6	1.11		
1100	14.00	100	9.52	2.150	6.44	1.56	20.9	-1.6	1.11		
1105	COLLECT SAMPLES										

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

(KFA) 6/11/20	10	2.150	6.4	1.6	20.9	-1.6	

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: [X] PERISTALTIC [ ] SUBMERSIBLE [ ] BLADDER [ ] OTHER

DECON FLUIDS USED: [X] LIQUINOX [X] DEIONIZED WATER [X] POTABLE WATER [ ] NITRIC ACID [X] OTHER Dedicated

TUBING/PUMP/BLADDER MATERIALS: [X] SILICON TUBING [ ] HDPE TUBING [X] LDPE TUBING [ ] HDPE TUBING [ ] OTHER; [ ] S. STEEL PUMP MATERIAL [ ] PVC PUMP MATERIAL [ ] GEOPROBE SCREEN [ ] TEFLON BLADDER [ ] OTHER

EQUIPMENT USED: [X] WL METER HERON DIPPER-T [X] TURB. METER HACH 2100Q [X] WQ METER YSI 556 MPS [X] PUMP Geopump [ ] FILTERS NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
[X]	VOCs	8260C	No	4°C HCl	3 X 40 ml	YES	NO	1
[ ]	Alkalinity	2320B	No	4°C	250 ml Poly			
[ ]	Chloride	300	No	4°C	250 ml Poly			
[ ]	Nitrate	300	No	4°C				
[ ]	Nitrite	354.1	No	4°C				
[ ]	Sulfate	300	No	4°C				
[ ]	Sulfide	4500	No	4°C				
[ ]	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
[ ]	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
[ ]	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: YES [X] NO [ ]

NO-PURGE METHOD UTILIZED: YES [ ] NO [X]

NUMBER OF GALLONS GENERATED: ~2.25 to sampling or ___ mL for this sample location.

SKETCH/NOTES

SEE PAGE 1 OF 2.

Sampler Signature: K. Ann Print Name: KATIE AMANN

Checked By: Jerry Date: 6/30/20

MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company
PROJECT NUMBER	3617137306.02
SAMPLE ID	828072- GPZ6D028
SAMPLE TIME	1315

LOCATION ID	GPZ-6D
DATE	6/11/2020
START TIME	1130
END TIME	1340
SITE NAME/NUMBER	828072
PAGE	1 OF 1

WELL DIAMETER (INCHES): [X] 1 [ ] 2 [ ] 4 [ ] 6 [ ] 8 [ ] OTHER

TUBING ID (INCHES): [X] 1/8 [ ] 1/4 [ ] 3/8 [ ] 1/2 [ ] 5/8 [X] OTHER 0.17"

MEASUREMENT POINT (MP): [X] TOP OF RISER (TOR) [ ] TOP OF CASING (TOC) [ ] OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	✓		
CASING			✓
LOCKED		✓	
COLLAR		✓	

← CONCRETE PAD DAMAGED/BROKEN

INITIAL DTW (BMP)	13.42 FT	FINAL DTW (BMP)	13.77 FT	PROT. CASING STICKUP (AGS)	0 FT	TOC/TOR DIFFERENCE	NA FT
WELL DEPTH (BMP)	26.15 FT	SCREEN LENGTH	REFER TO WELL CONSTRUCTION LOG FT	PID AMBIENT AIR	NA PPM	REFILL TIMER SETTING	NA SEC
WATER COLUMN	12.73 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	0.014 GAL	PID WELL MOUTH	NA PPM	DISCHARGE TIMER SETTING	NA SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	0.52 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	2.02 GAL	DRAWDOWN/ TOTAL PURGED	0.007	PRESSURE TO PUMP	NA PSI

MEASUREMENT FROM 11/2019 COULD NOT MEASURE PAST 16.85 ft.

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity ppt	PUMP INTAKE DEPTH	Comments
1201	BEGIN PURGING										
1205	~~13.55~~ 13.65 (DTW) 6/11/20	125	10.34	1.732	6.55	2.78	23.7	8.9	0.88	≈25	
1210	13.68	110	10.39	1.776	6.67	2.60	17.1	-13.5	0.91		
1215	13.70	110	10.30	1.853	6.74	3.21	15.2	-23.4	0.95		
1220	13.71	110	10.24	1.943	6.78	2.52	19.8	-19.1	1.00		
1225	13.72	110	10.23	2.005	6.82	2.08	16.3	-19.2	1.03		
1230	13.73	110	10.23	2.018	6.85	1.81	11.4	-18.4	1.04		
1235	13.73	110	10.28	2.047	6.89	1.50	10.1	-11.5	1.05		
1240	13.74	110	10.25	2.071	6.91	1.39	7.14	-8.4	1.07		
1245	13.75	110	10.31	2.101	6.93	1.23	9.02	-6.2	1.08		
1250	13.75	110	10.28	2.124	6.94	1.13	13.1	-5.6	1.09		
1255	13.76	110	10.25	2.138	6.96	1.07	11.7	-4.0	1.10		
1300	13.76	110	10.29	2.159	6.97	1.07	10.2	-3.1	1.11		
1305	13.77	110	10.26	2.189	6.99	1.06	10.4	-3.0	1.13		
1310	13.77	110	10.29	2.211	7.00	(SP) 0.99 6/11/20	9.87	-3.0	1.14	—	

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

	10	2.21	7.0	1.0	9.9	-3.0

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: [X] PERISTALTIC [ ] SUBMERSIBLE [ ] BLADDER [ ] OTHER

DECON FLUIDS USED: [X] LIQUINOX [X] DEIONIZED WATER [X] POTABLE WATER [X] NITRIC ACID [a] OTHER Dedicated

TUBING/PUMP/BLADDER MATERIALS: [X] SILICON TUBING [ ] HDPE TUBING [X] LDPE TUBING [ ] HDPE TUBING [ ] OTHER; [ ] S. STEEL PUMP MATERIAL [ ] PVC PUMP MATERIAL [ ] GEOPROBE SCREEN [ ] TEFLON BLADDER [ ] OTHER

EQUIPMENT USED: [X] WL METER HERON DIPPER-T [X] TURB. METER HACH 2100Q [X] WQ METER YSI 556 MPS [X] PUMP Geopump [ ] FILTERS NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
[X]	VOCs	8260C	No	4°C HCl	3 X 40 ml	YES	NO	
[ ]	Alkalinity	2320B	No	4°C	250 ml Poly			
[ ]	Chloride	300	No	4°C	250 ml Poly			
[ ]	Nitrate	300	No	4°C				
[ ]	Nitrite	354.1	No	4°C				
[ ]	Sulfate	300	No	4°C				
[ ]	Sulfide	4500	No	4°C				
[ ]	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
[ ]	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
[ ]	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: [X] YES [ ] NO

NO-PURGE METHOD UTILIZED: [ ] YES [X] NO

NUMBER OF GALLONS GENERATED ≈2.25 to sampling or ___ mL for this sample location.

SKETCH NOTES

- CANNOT GET WATER LEVEL METER PAST 16.85 ft.
- RISER BROKEN, FLUSH W/ GROUND SURFACE
- PURGE WATER DESCRIPTION: LIGHT GRAY-YELLOW, ODOR, CLEAR.

Sampler Signature: K. Amann Print Name: KATIE AMANN

Checked By: Jeremy Russell Date: 6/30/20

MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company	LOCATION ID	GP2-75	DATE	6/8/20
PROJECT NUMBER	3617137306.02	START TIME	1045	END TIME	1215
SAMPLE ID	828072- GP275	SAMPLE TIME	1210	SITE NAME/NUMBER	828072
				PAGE	1 OF 1

WELL DIAMETER (INCHES): [✓] 1 [ ] 2 [ ] 4 [ ] 6 [ ] 8 [ ] OTHER

TUBING ID (INCHES): [✓] 1/8 [ ] 1/4 [ ] 3/8 [ ] 1/2 [ ] 5/8 [ ] OTHER

MEASUREMENT POINT (MP): [✓] TOP OF RISER (TOR) [ ] TOP OF CASING (TOC) [ ] OTHER

WELL INTEGRITY	YES	NO	N/A
CAP	✓		
CASING		✓	
LOCKED		✓	
COLLAR		✓	

INITIAL DTW (BMP)	6.77 FT	FINAL DTW (BMP)	9.74 FT	PROT. CASING STICKUP (AGS)	2.65 FT	TOC/TOR DIFFERENCE	NA FT
WELL DEPTH (BMP)	10.35 FT	SCREEN LENGTH	UNK FT	PID AMBIENT AIR	— PPM	REFILL TIMER SETTING	— SEC
WATER COLUMN	3.58 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	0.12 GAL	PID WELL MOUTH	— PPM	DISCHARGE TIMER SETTING	— SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	0.14 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	1.8 GAL	DRAWDOWN/ TOTAL PURGED	0.07	PRESSURE TO PUMP	— PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE (mS/cm (3%))	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	Salinity %	PUMP INTAKE DEPTH	Comments
1056	BEGIN PURGING										
1105	7.64	105	12.2	2.147	6.8	3.9	2.7	-41	1.1	9.5	
1115	8.38	125	11.8	2.136	6.9	4.2	3.5	-54	1.1		
1125	8.63	145	11.7	2.232	6.9	3.9	2.6	-67	1.2		
1130	8.80	95	11.6	2.224	6.9	2.7	1.8	-66	1.2		
1135	8.84	105	11.8	2.227	6.9	2.5	1.7	-65	1.2		
1140	9.07	115	11.7	2.227	6.9	2.1	2.0	-68	1.2		
1145	9.24	120	11.7	2.227	6.9	2.2	2.1	-67	1.2		
1150	9.36	135	11.5	2.392	6.8	2.9	2.5	-65	1.2		
1155	9.558	100	11.3	2.440	6.8	2.5	2.0	-61	1.3		
1200	9.74	105	11.2	2.471	6.8	2.4	1.8	-60	1.3		

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

	11	2.47	6.8	2.4	1.8	-60

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	DECON FLUIDS USED	TUBING/PUMP/BLADDER MATERIALS		EQUIPMENT USED	
[✓] PERISTALTIC	[ ] LIQUINOX	[✓] SILICON TUBING	[ ] S. STEEL PUMP MATERIAL	[✓] WL METER	Heron
[ ] SUBMERSIBLE	[ ] DEIONIZED WATER	[ ] HDPE TUBING	[ ] PVC PUMP MATERIAL	[✓] TURB. METER	HACH 2100Q
[ ] BLADDER	[ ] POTABLE WATER	[✓] LDPE TUBING	[ ] GEOPROBE SCREEN	[✓] WQ METER	YSI 556 MPS
[ ] OTHER	[✓] NITRIC ACID	[ ] HDPE TUBING	[ ] TEFLON BLADDER	[✓] PUMP	Geopump
	[✓] OTHER Dedicated	[ ] OTHER	[ ] OTHER	[ ] FILTERS	NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
[✓]	VOCs	8260C	No	4°C HCl	3 X 40 ml	✓		
[ ]	Alkalinity	2320B	No	4°C	250 ml Poly			
[ ]	Chloride	300	No	4°C	250 ml Poly			
[ ]	Nitrate	300	No	4°C				
[ ]	Nitrite	354.1	No	4°C				
[ ]	Sulfate	300	No	4°C				
[ ]	Sulfide	4500	No	4°C				
[ ]	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
[ ]	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
[ ]	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: YES [✓] NO [ ]

NO-PURGE METHOD UTILIZED: YES [ ] NO [✓]

NUMBER OF GALLONS GENERATED: 1.8

to sampling or _____ mL for this sample location.

Sampler Signature: Jerry Rawlfs Print Name: Jerry Rawlfs

Checked By: [signature] Date: 7/6/20

SKETCH/NOTES

Parameters stable except for drawdown. Have purged well over 5x drawdown. Collect sample.

MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Erdle Perforating Company
PROJECT NUMBER	3617137306.02
SAMPLE ID	828072- GPZ7D
SAMPLE TIME	1340
LOCATION ID	GPZ-7D
DATE	6/8/20
START TIME	1215
END TIME	1410
SITE NAME/NUMBER	828072
PAGE	1 OF 1

WELL DIAMETER (INCHES): [✓] 1 [ ] 2 [ ] 4 [ ] 6 [ ] 8 [ ] OTHER

TUBING ID (INCHES): [✓] 1/8 [ ] 1/4 [ ] 3/8 [ ] 1/2 [ ] 5/8 [ ] OTHER

MEASUREMENT POINT (MP): [✓] TOP OF RISER (TOR) [ ] TOP OF CASING (TOC) [ ] OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	✓		
CASING		✓	
LOCKED		✓	
COLLAR		✓	

INITIAL DTW (BMP)	7.58 FT	FINAL DTW (BMP)	7.88 FT	PROT. CASING STICKUP (AGS)	2.5 FT	TOC/TOR DIFFERENCE	NA FT
WELL DEPTH (BMP)	19.25 FT	SCREEN LENGTH	UNK FT	PID AMBIENT AIR	— PPM	REFILL TIMER SETTING	— SEC
WATER COLUMN	11.67 FT	DRAWDOWN VOLUME (initial DTW- final DTW X well diam. squared X 0.041)	.012 GAL	PID WELL MOUTH	— PPM	DISCHARGE TIMER SETTING	— SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	.47 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	2.5 GAL	DRAWDOWN/ TOTAL PURGED	.004	PRESSURE TO PUMP	— PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE mS/cm (3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv) ORP	Salinity %	PUMP INTAKE DEPTH	Comments
1215	BEGIN PURGING										
1225	7.78	130	11.2	1.502	7.0	1.6	380	-31	0.8		
1240	7.83	150	11.4	1.323	7.0	1.8	170	-34	0.7		Cleveland pull
1250	7.85	155	12.0	1.256	7.0	1.2	120	-36	0.6		
1300	7.86	150	11.8	1.221	7.0	1.1	83	-31	0.6		
1310	7.86	130	11.7	1.191	7.0	1.0	59	-29	0.6		
1315	7.83	130	11.7	1.180	7.0	1.0	59	-31	0.6		
1320	7.83	125	11.7	1.174	7.0	1.0	47	-32	0.6		
1325	7.78	110	11.7	1.168	7.0	0.9	43	-31	0.6		
1330	7.84	135	11.6	1.162	7.0	1.0	46	-32	0.6		
1335	7.88	145	11.5	1.156	7.0	0.9	43	-31	0.6		

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

	12	1.16	7.0	0.9	43	-31

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: [✓] PERISTALTIC [ ] SUBMERSIBLE [ ] BLADDER [ ] OTHER

DECON FLUIDS USED: [ ] LIQUINOX [ ] DEIONIZED WATER [ ] POTABLE WATER [ ] NITRIC ACID [✓] OTHER Deflected

TUBING/PUMP/BLADDER MATERIALS: [✓] SILICON TUBING [ ] HDPE TUBING [✓] LDPE TUBING [ ] HDPE TUBING [ ] OTHER; [ ] S. STEEL PUMP MATERIAL [ ] PVC PUMP MATERIAL [ ] GEOPROBE SCREEN [ ] TEFLON BLADDER [ ] OTHER

EQUIPMENT USED: [✓] WL METER Heron; [✓] TURB. METER HACH 2100Q; [✓] WQ METER YSI 556 MPS; [✓] PUMP Geopump; [ ] FILTERS NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
✓	VOCs	8260C	No	4°C HCl	3 X 40 ml	X		
	Alkalinity	2320B	No	4°C	250 ml Poly			
	Chloride	300	No	4°C	250 ml Poly			
	Nitrate	300	No	4°C				
	Nitrite	354.1	No	4°C				
	Sulfate	300	No	4°C				
	Sulfide	4500	No	4°C				
	Fe, Mn	6010B	No	4°C HNO3	50 ml Poly			
	Ethene, Ethane, Methane	RSK-175	No	4°C HCl	3 X 40 ml			
	Total Organic Carbon	415.1	No	4°C H2SO4	250 ml AG			

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: [✓] YES [ ] NO

NO-PURGE METHOD UTILIZED: [ ] YES [✓] NO

NUMBER OF GALLONS GENERATED: 2.8

to sampling or ___ mL for this sample location.

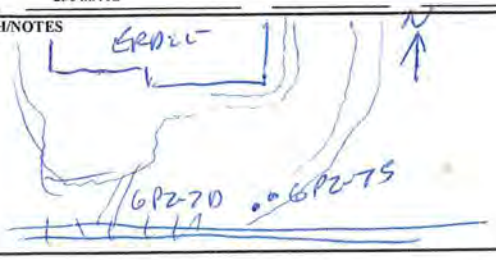
Sampler Signature: Jerry Rawcliffe

Print Name: Jerry Rawcliffe

Checked By: MLH

Date: 7/6/20

SKETCH/NOTES



MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 4.17
LOW FLOW GROUNDWATER SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

ATTACHMENT 2

DATA USABILILTY SUMMARY REPORT

CATEGORY A REVIEW REPORT
JUNE 2020 GROUNDWATER SAMPLING EVENT
ERDLE PERFORATING COMPANY SITE
GATES, NEW YORK

1.0 INTRODUCTION

Groundwater samples were collected at the Erdle Perforating Company Site in Gates, New York, in June 2020 and submitted for off-site laboratory analysis. Sample analyses included in this review were performed by ALS Environmental located in Rochester, New York, using the following United States Environmental Protection Agency (USEPA) method:

- Volatile organic compounds (VOCs) by USEPA Method 8260C

Results were reported in the following sample delivery groups (SDGs):

- R2004884
- R2005025

Sample event information included in this Category A review is presented in the following tables:

- Table 1 – Summary of Samples and Analytical Methods
- Table 2 – Summary of Analytical Results
- Table 3 – Summary of Qualification Actions

A summary of table notes applicable to Tables 1, 2, and 3 is presented just before Table 1.

Laboratory deliverables included:

- Category B deliverables as defined in the New York State Department of Environmental Conservation (NYSDEC) Analytical Services Protocols (NYSDEC, 2005).

The Category A review included the following evaluations. Data review checklists and applicable laboratory QC summary forms are provided as Attachment A.

- Lab Report Narrative Review
- Data Package Completeness and COC records (Table 1 verification)
- Sample Preservation and Holding Times
- QC Blanks
- Laboratory Control Samples (LCS)
- Matrix Spike/Matrix Spike Duplicates (MS/MSD) (if applicable)
- Field Duplicates (if applicable)
- Surrogates (if applicable)

- Reporting Limits
- Electronic Data Qualification and Verification

The following laboratory or data review qualifiers are used in the final data presentation:

U = target analyte is not detected above the reported detection limit
UJ = target analyte is not detected and reporting limit is considered estimated
J = concentration is estimated
J+ = concentration is estimated, biased high

Results are interpreted to be usable as reported by the laboratory or as qualified in the following section.

2.0 POTENTIAL DATA LIMITATIONS

Based on the Category A Review the data meet the data quality objectives; however, the following potential limitations were identified:

- The reporting limits for bromomethane in a subset of samples in SDG R2004884 were qualified estimated (UJ) based on exceedances of the lower control limit of the associated CCV. Qualified results are included in Table 3 with reason code CCV%D.
- The reporting limits for chloromethane and bromomethane in a subset of samples in SDG R2005025 were qualified estimated (UJ) based on exceedances of the lower control limit of the associated CCV. Qualified results are included in Table 3 with reason code CCV%D.
- The detections of acetone and 2-butanone in sample 828072-MW05D010 were qualified estimated with potential high bias (J+) based on exceedance of the upper control limits of the associated CCV. Qualified results are included in Table 3 with reason code CCV%D.
- The detection of 4-methyl-2-pentanone in samples 828072-MW03A008 and 828072-MW03D014 were qualified estimated with potential high bias (J+) based on exceedance of the upper control limits of the associated CCV. Qualified results are included in Table 3 with reason code CCV%D.
- Results for cis-1,2-dichloroethene and vinyl chloride in sample 828072-MW13D12 and associated field duplicate 828072-MW13D12-DUP were qualified estimated (J) based on high RPDs between reported concentrations. Qualified results are included in Table 3 with reason code FD.
- The detections of acetone, 2-butanone, and 4-methyl-2-pentanone in a subset of samples in SDG R2004884 were qualified estimated with high bias (J+) based on a high recovery in the associated LCS. Qualified results are included in Table 3 with reason code LCSH.
- The reporting limits for bromomethane and chloroethane in a subset of samples in SDG R2004884 were qualified estimated (UJ) based on low recovery in the associated LCS. Qualified results are included in Table 3 with reason code LCSL.
- The reporting limits for bromomethane and methyl acetate in sample 828072-MW17D023 were qualified estimated (UJ) based on low recoveries in the associated MS/MSDs. Qualified results are included in Table 3 with reason code MSL.

- The detection of 4-methyl-2-pentanone in sample 828072-MW01A008 was qualified estimated with potential high bias (J+) based on high recovery in the associated MS/MSD. Qualified results are included in Table 3 with reason code MSH.
- The reporting limit for bromomethane in sample 828072-MW01A008 was qualified estimated (UJ) based on low recovery in the associated MS/MSD. Qualified results are included in Table 3 with reason code MSL.
- A subset of samples was analyzed at dilution due to high concentrations of target compounds. Non-detect results are reported with elevated reporting limits as presented in Table 2.

Reference:

NYSDEC, 2005. "Analytical Services Protocols"; July 2005.

Data Validator: Shawna Couplin July 23, 2020

Reviewed by: Julie Ricardi July 27, 2020

Standard Table Notes:

Sample Type (QC Code)

FS – field sample

FD – field duplicate

TB – trip blank

EB – equipment blank

FB – field blank

Matrix

GW – ground water

BW – blank water

TW – tap water

SV – soil vapor

SED - sediment

Units

mg/L – milligrams per liter

ng/L – nanograms per liter

µg/L – micrograms per liter

mg/kg – milligrams per kilogram

µg/kg – micrograms per kilogram

µg/m^3 – micrograms per cubic meter

Qualifiers

U – not detected above quantitation limit

J – estimated quantity

J+ - estimated quantity, biased high

J- - estimated quantity, biased low

R – data unusable

Fraction

T – total

D – dissolved

N – normal

Qualification Reason Codes

BL1 – method blank qualifier

BL2 – field or trip blank qualifier

CCV – continuing calibration verification recovery outside limits

CCV%D – continuing calibration verification percent difference exceeds goal

CCVRRF – continuing calibration relative response factor low

CI – chromatographic interference present

DCPD – dual column percent difference exceeds limit

E – result exceeds calibration range

FD – field duplicate precision goal exceeded

FP – false positive interference

HT – holding time for prep or analysis exceeded

HTG – holding time for prep or analysis grossly exceeded

ICV – initial calibration verification recovery outside limit

ICVRRF – initial calibration verification relative response factor low

ICVRSD – initial calibration verification % relative standard deviation exceeds goal

ISH – internal standard response greater than limit

ISL – internal standard response less than limit

LCSH – laboratory control sample recovery high

LCSL – laboratory control sample recovery low

LCSRPD – laboratory control sample/duplicate relative % difference precision goal exceeded

LD – lab duplicate precision goal exceeded

MSH – matrix spike and/or MS duplicate recovery high

MSL – matrix spike and/or MS duplicate recovery low

MSRPD – matrix spike/duplicate relative % difference precision goal exceeded

N – analyte identification is not certain

PEM – performance evaluation mixture exceeds limit

PM – sample percent moisture exceeds EPA guideline

SD – serial dilution result exceeds percent difference limit

SP – sample preservation/collection does not meet method requirement

SSH – surrogate recovery high

SSL – surrogate recovery low

TD – dissolved concentration exceeds total

TABLE 1 - SUMMARY OF SAMPLES AND ANALYTICAL METHODS
JUNE 2020 GROUNDWATER SAMPLING
ERDLE PERFORATING COMPANY
GATES, NEW YORK

					Analysis Method	SW8260C
					Method Class	VOCs
					Fraction	N
Lab SDG	**Location**	**Sample ID**	**Sample Date**	**Media**	**Qc Code**	Param_Count
R2004884	GPZ-7D	828072-GPZ7D	6/8/2020	GW	FS	60
R2004884	GPZ-7S	828072-GPZ7S	6/8/2020	GW	FS	60
R2004884	MW-10	828072-MW010016	6/8/2020	GW	FS	60
R2004884	MW-11	828072-MW011012	6/9/2020	GW	FS	60
R2004884	MW-11D	828072-MW11D023	6/9/2020	GW	FS	60
R2004884	MW-12	828072-MW012011	6/9/2020	GW	FS	60
R2004884	MW-15D	828072-MW15D021	6/9/2020	GW	FS	60
R2004884	MW-18	828072-MW018010	6/9/2020	GW	FS	60
R2004884	MW-18D	828072-MW18D021	6/9/2020	GW	FS	60
R2004884	MW-1A	828072-MW01A008	6/8/2020	GW	FS	60
R2004884	MW-1DD	828072-MW1DD038	6/8/2020	GW	FS	60
R2004884	MW-21	828072-MW021012	6/8/2020	GW	FS	60
R2004884	MW-21	828072-MW021012Dup	6/8/2020	GW	FD	60
R2004884	MW-21D	828072-MW21D020	6/8/2020	GW	FS	60
R2004884	MW-2A	828072-MW02A008	6/8/2020	GW	FS	60
R2004884	MW-2A	828072-MW02A008 Dup	6/8/2020	GW	FD	60
R2004884	MW-2D	828072-MW02D020	6/8/2020	GW	FS	60
R2004884	MW-3A	828072-MW03A008	6/8/2020	GW	FS	60
R2004884	MW-3D	828072-MW03D014	6/8/2020	GW	FS	60
R2004884	MW-4	828072-MW004	6/9/2020	GW	FS	60
R2004884	MW-4D	828072-MW004D	6/9/2020	GW	FS	60
R2004884	MW-5	828072-MW005006	6/9/2020	GW	FS	60
R2004884	MW-5D	828072-MW05D010	6/8/2020	GW	FS	60
R2004884	MW-6	828072-MW006008	6/9/2020	GW	FS	60
R2004884	MW-6D	828072-MW06D015	6/8/2020	GW	FS	60
R2004884	MW-7	828072-MW007015	6/9/2020	GW	FS	60
R2004884	MW-7D	828072-MW07D022	6/9/2020	GW	FS	60
R2004884	QC	TRIP BLANK	6/8/2020	BW	TB	60
R2005025	GPZ-1D	828072-GPZ1D014	6/12/2020	GW	FS	60
R2005025	GPZ-1S1	828072-GPZ1S1008	6/11/2020	GW	FS	60
R2005025	GPZ-2D	828072-GPZ2D020	6/12/2020	GW	FS	60
R2005025	GPZ-2S1	828072-GPZ2S1014	6/11/2020	GW	FS	60
R2005025	GPZ-5D	828072-GPZ5D022	6/11/2020	GW	FS	60
R2005025	GPZ-5S	828072-GPZ5S018	6/11/2020	GW	FS	60
R2005025	GPZ-6D	828072-GPZ6D028	6/11/2020	GW	FS	60
R2005025	GPZ-6S	828072-GPZ6S018	6/11/2020	GW	FS	60
R2005025	MW-13	828072-MW013006	6/10/2020	GW	FS	60
R2005025	MW-13D	828072-MW13D12	6/10/2020	GW	FS	60
R2005025	MW-13D	828072-MW13D12-DUP	6/10/2020	GW	FD	60
R2005025	MW-13DD	828072-MW13DD040	6/10/2020	GW	FS	60

Created by: KMS 7/13/2020
Checked by: SRC 7/27/2020

TABLE 1 - SUMMARY OF SAMPLES AND ANALYTICAL METHODS
JUNE 2020 GROUNDWATER SAMPLING
ERDLE PERFORATING COMPANY
GATES, NEW YORK

					Analysis Method	SW8260C
					Method Class	VOCs
					Fraction	N
Lab SDG	**Location**	**Sample ID**	**Sample Date**	**Media**	**Qc Code**	Param_Count
R2005025	MW-14	828072-MW014017	6/10/2020	GW	FS	60
R2005025	MW-14D	828072-MW14D033	6/11/2020	GW	FS	60
R2005025	MW-16	828072-MW016008	6/10/2020	GW	FS	60
R2005025	MW-16D	828072-MW16D022	6/10/2020	GW	FS	60
R2005025	MW-17	828072-MW017007	6/10/2020	GW	FS	60
R2005025	MW-17D	828072-MW17D023	6/10/2020	GW	FS	60
R2005025	MW-19	828072-MW019006	6/10/2020	GW	FS	60
R2005025	MW-19D	828072-MW19D019	6/10/2020	GW	FS	60
R2005025	MW-20	828072-MW020006	6/10/2020	GW	FS	60
R2005025	MW-20D	828072-MW20D020	6/10/2020	GW	FS	60
R2005025	QC	828072-Trip Blank #2	6/11/2020	BW	TB	60

Created by: KMS 7/13/2020
Checked by: SRC 7/27/2020

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
CATEGORY A REVIEW REPORT
JUNE 2020 GROUNDWATER SAMPLING
ERDLE PERFORATING COMPANY
GATES, NEW YORK

		Location	GPZ-7D		GPZ-7S		MW-10		MW-11	
		Lab SDG	R2004884		R2004884		R2004884		R2004884	
		Sample Date	6/8/2020		6/8/2020		6/8/2020		6/9/2020	
		Field Sample ID	828072-GPZ7D		828072-GPZ7S		828072-MW010016		828072-MW011012	
		Qc Code	FS		FS		FS		FS	
Method	Fraction	Parameter	Units	Result Qualifier	Result Qualifier		Result Qualifier		Result Qualifier	
SW8260C	N	1,1,1-Trichloroethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,1,2,2-Tetrachloroethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,1,2-Trichloroethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,1-Dichloroethane	ug/l	19	1 U		1 U		1 U	
SW8260C	N	1,1-Dichloroethene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,2,3-Trichlorobenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,2,4-Trichlorobenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,2,4-Trimethylbenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,2-Dibromo-3-chloropropane	ug/l	2 U	2 U		2 U		2 U	
SW8260C	N	1,2-Dibromoethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,2-Dichlorobenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,2-Dichloroethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,2-Dichloropropane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,3,5-Trimethylbenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,3-Dichlorobenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,4-Dichlorobenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,4-Dioxane	ug/l	540	40 U		40 U		40 U	
SW8260C	N	2-Butanone	ug/l	5 U	1 J+		5 U		5 U	
SW8260C	N	2-Hexanone	ug/l	5 U	5 U		5 U		5 U	
SW8260C	N	4-iso-Propyltoluene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	4-Methyl-2-pentanone	ug/l	5 U	5 U		5 U		5 U	
SW8260C	N	Acetic acid, methyl ester	ug/l	2 U	2 U		2 U		2 U	
SW8260C	N	Acetone	ug/l	5 U	5 U		5 U		5 U	
SW8260C	N	Benzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Bromochloromethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Bromodichloromethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Bromoform	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Bromomethane	ug/l	1 UJ	1 UJ		1 UJ		1 UJ	
SW8260C	N	Carbon disulfide	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Carbon tetrachloride	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Chlorobenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Chloroethane	ug/l	1 UJ	1 UJ		1 UJ		1 U	
SW8260C	N	Chloroform	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Chloromethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	cis-1,2-Dichloroethene	ug/l	6.3	1 U		1 U		1 U	
SW8260C	N	cis-1,3-Dichloropropene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Cyclohexane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Dibromochloromethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Dichlorodifluoromethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Ethylbenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Isopropylbenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Methyl cyclohexane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Methyl Tertbutyl Ether	ug/l	1.3	1 U		1 U		1 U	
SW8260C	N	Methylene chloride	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	n-Butylbenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Naphthalene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Propylbenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	sec-Butylbenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Styrene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	tert-Butylbenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Tetrachloroethene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Toluene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	trans-1,2-Dichloroethene	ug/l	0.67 J	1 U		1 U		1 U	
SW8260C	N	trans-1,3-Dichloropropene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Trichloroethene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Trichlorofluoromethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Vinyl chloride	ug/l	250	1 U		0.3 J		0.26 J	
SW8260C	N	Xylene, o	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Xylenes (m&p)	ug/l	2 U	2 U		2 U		2 U	

Created by: KMS 07/24/2020
Checked by: SRC 07/27/2020

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
CATEGORY A REVIEW REPORT
JUNE 2020 GROUNDWATER SAMPLING
ERDLE PERFORATING COMPANY
GATES, NEW YORK

			Location	MW-11D		MW-12		MW-15D		MW-18	
			Lab SDG	R2004884		R2004884		R2004884		R2004884	
			Sample Date	6/9/2020		6/9/2020		6/9/2020		6/9/2020	
			Field Sample ID	828072-MW11D023		828072-MW012011		828072-MW15D021		828072-MW018010	
			Qc Code	FS		FS		FS		FS	
Method	Fraction	Parameter	Units	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
SW8260C	N	1,1,1-Trichloroethane	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	1,1,2,2-Tetrachloroethane	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	1,1,2-Trichloroethane	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	1,1-Dichloroethane	ug/l	1.2		1	U	1.3		0.28	J
SW8260C	N	1,1-Dichloroethene	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	1,2,3-Trichlorobenzene	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	1,2,4-Trichlorobenzene	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	1,2,4-Trimethylbenzene	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	1,2-Dibromo-3-chloropropane	ug/l	2	U	2	U	2	U	2	U
SW8260C	N	1,2-Dibromoethane	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	1,2-Dichlorobenzene	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	1,2-Dichloroethane	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	1,2-Dichloropropane	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	1,3,5-Trimethylbenzene	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	1,3-Dichlorobenzene	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	1,4-Dichlorobenzene	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	1,4-Dioxane	ug/l	40	U	40	U	40	U	40	U
SW8260C	N	2-Butanone	ug/l	5	U	5	U	5	U	5	U
SW8260C	N	2-Hexanone	ug/l	5	U	5	U	5	U	5	U
SW8260C	N	4-iso-Propyltoluene	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	4-Methyl-2-pentanone	ug/l	5	U	5	U	5	U	5	U
SW8260C	N	Acetic acid, methyl ester	ug/l	2	U	2	U	2	U	2	U
SW8260C	N	Acetone	ug/l	5	U	5	U	5	U	5	U
SW8260C	N	Benzene	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	Bromochloromethane	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	Bromodichloromethane	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	Bromoform	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	Bromomethane	ug/l	1	UJ	1	UJ	1	UJ	1	UJ
SW8260C	N	Carbon disulfide	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	Carbon tetrachloride	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	Chlorobenzene	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	Chloroethane	ug/l	1	U	1	UJ	1	UJ	1	U
SW8260C	N	Chloroform	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	Chloromethane	ug/l	1	U	0.65	J	1	U	1	U
SW8260C	N	cis-1,2-Dichloroethene	ug/l	15		1	U	93		5.5	
SW8260C	N	cis-1,3-Dichloropropene	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	Cyclohexane	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	Dibromochloromethane	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	Dichlorodifluoromethane	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	Ethylbenzene	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	Isopropylbenzene	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	Methyl cyclohexane	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	Methyl Tertbutyl Ether	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	Methylene chloride	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	n-Butylbenzene	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	Naphthalene	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	Propylbenzene	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	sec-Butylbenzene	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	Styrene	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	tert-Butylbenzene	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	Tetrachloroethene	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	Toluene	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	trans-1,2-Dichloroethene	ug/l	1	U	1	U	0.46	J	1	U
SW8260C	N	trans-1,3-Dichloropropene	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	Trichloroethene	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	Trichlorofluoromethane	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	Vinyl chloride	ug/l	59		1	U	82		8.5	
SW8260C	N	Xylene, o	ug/l	1	U	1	U	1	U	1	U
SW8260C	N	Xylenes (m&p)	ug/l	2	U	2	U	2	U	2	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
CATEGORY A REVIEW REPORT
JUNE 2020 GROUNDWATER SAMPLING
ERDLE PERFORATING COMPANY
GATES, NEW YORK

		Location	MW-18D		MW-1A		MW-1DD		MW-21	
		Lab SDG	R2004884		R2004884		R2004884		R2004884	
		Sample Date	6/9/2020		6/8/2020		6/8/2020		6/8/2020	
		Field Sample ID	828072-MW18D021		828072-MW01A008		828072-MW1DD038		828072-MW021012	
		Qc Code	FS		FS		FS		FS	
Method	Fraction	Parameter	Units	Result Qualifier	Result Qualifier		Result Qualifier		Result Qualifier	
SW8260C	N	1,1,1-Trichloroethane	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	1,1,2,2-Tetrachloroethane	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	1,1,2-Trichloroethane	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	1,1-Dichloroethane	ug/l	1.3	10 U		1 U		0.94 J	
SW8260C	N	1,1-Dichloroethene	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	1,2,3-Trichlorobenzene	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	1,2,4-Trichlorobenzene	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	1,2,4-Trimethylbenzene	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	1,2-Dibromo-3-chloropropane	ug/l	2 U	20 U		2 U		2 U	
SW8260C	N	1,2-Dibromoethane	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	1,2-Dichlorobenzene	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	1,2-Dichloroethane	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	1,2-Dichloropropane	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	1,3,5-Trimethylbenzene	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	1,3-Dichlorobenzene	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	1,4-Dichlorobenzene	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	1,4-Dioxane	ug/l	40 U	400 U		40 U		40 U	
SW8260C	N	2-Butanone	ug/l	5 U	50 U		5 U		5 U	
SW8260C	N	2-Hexanone	ug/l	5 U	50 U		5 U		5 U	
SW8260C	N	4-iso-Propyltoluene	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	4-Methyl-2-pentanone	ug/l	5 U	8.9 J+		5 U		5 U	
SW8260C	N	Acetic acid, methyl ester	ug/l	2 U	20 U		2 U		2 U	
SW8260C	N	Acetone	ug/l	5 U	50 U		5 U		5 U	
SW8260C	N	Benzene	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	Bromochloromethane	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	Bromodichloromethane	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	Bromoform	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	Bromomethane	ug/l	1 UJ	10 UJ		1 UJ		1 UJ	
SW8260C	N	Carbon disulfide	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	Carbon tetrachloride	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	Chlorobenzene	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	Chloroethane	ug/l	1 U	10 U		1 UJ		1 U	
SW8260C	N	Chloroform	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	Chloromethane	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	cis-1,2-Dichloroethene	ug/l	130	10 U		1 U		20	
SW8260C	N	cis-1,3-Dichloropropene	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	Cyclohexane	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	Dibromochloromethane	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	Dichlorodifluoromethane	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	Ethylbenzene	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	Isopropylbenzene	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	Methyl cyclohexane	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	Methyl Tertbutyl Ether	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	Methylene chloride	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	n-Butylbenzene	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	Naphthalene	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	Propylbenzene	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	sec-Butylbenzene	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	Styrene	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	tert-Butylbenzene	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	Tetrachloroethene	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	Toluene	ug/l	1 U	17		1 U		1 U	
SW8260C	N	trans-1,2-Dichloroethene	ug/l	0.69 J	2.4 J		1 U		1 U	
SW8260C	N	trans-1,3-Dichloropropene	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	Trichloroethene	ug/l	1 U	10 U		1 U		3.4	
SW8260C	N	Trichlorofluoromethane	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	Vinyl chloride	ug/l	64	10 U		1 U		7.2	
SW8260C	N	Xylene, o	ug/l	1 U	10 U		1 U		1 U	
SW8260C	N	Xylenes (m&p)	ug/l	2 U	20 U		2 U		2 U	

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
CATEGORY A REVIEW REPORT
JUNE 2020 GROUNDWATER SAMPLING
ERDLE PERFORATING COMPANY
GATES, NEW YORK

		Location	MW-21		MW-21D		MW-2A		MW-2A	
		Lab SDG	R2004884		R2004884		R2004884		R2004884	
		Sample Date	6/8/2020		6/8/2020		6/8/2020		6/8/2020	
		Field Sample ID	828072-MW021012Dup		828072-MW21D020		828072-MW02A008		828072-MW02A008 Dup	
		Qc Code	FD		FS		FS		FD	
Method	Fraction	Parameter	Units	Result Qualifier	Result Qualifier		Result Qualifier		Result Qualifier	
SW8260C	N	1,1,1-Trichloroethane	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	1,1,2,2-Tetrachloroethane	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	1,1,2-Trichloroethane	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	1,1-Dichloroethane	ug/l	0.93 J	0.87 J		20 U		20 U	
SW8260C	N	1,1-Dichloroethene	ug/l	1 U	0.24 J		24		23	
SW8260C	N	1,2,3-Trichlorobenzene	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	1,2,4-Trichlorobenzene	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	1,2,4-Trimethylbenzene	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	1,2-Dibromo-3-chloropropane	ug/l	2 U	2 U		40 U		40 U	
SW8260C	N	1,2-Dibromoethane	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	1,2-Dichlorobenzene	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	1,2-Dichloroethane	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	1,2-Dichloropropane	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	1,3,5-Trimethylbenzene	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	1,3-Dichlorobenzene	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	1,4-Dichlorobenzene	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	1,4-Dioxane	ug/l	40 U	40 U		800 U		800 U	
SW8260C	N	2-Butanone	ug/l	5 U	5 U		100 U		100 U	
SW8260C	N	2-Hexanone	ug/l	5 U	5 U		100 U		100 U	
SW8260C	N	4-iso-Propyltoluene	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	4-Methyl-2-pentanone	ug/l	5 U	5 U		100 U		100 U	
SW8260C	N	Acetic acid, methyl ester	ug/l	2 U	2 U		40 U		40 U	
SW8260C	N	Acetone	ug/l	5 U	5 U		100 U		100 U	
SW8260C	N	Benzene	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	Bromochloromethane	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	Bromodichloromethane	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	Bromoform	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	Bromomethane	ug/l	1 UJ	1 UJ		20 UJ		20 UJ	
SW8260C	N	Carbon disulfide	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	Carbon tetrachloride	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	Chlorobenzene	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	Chloroethane	ug/l	1 U	1 U		20 UJ		20 UJ	
SW8260C	N	Chloroform	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	Chloromethane	ug/l	1 U	1 U		9.6 J		20 U	
SW8260C	N	cis-1,2-Dichloroethene	ug/l	20	21		9000		8800	
SW8260C	N	cis-1,3-Dichloropropene	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	Cyclohexane	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	Dibromochloromethane	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	Dichlorodifluoromethane	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	Ethylbenzene	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	Isopropylbenzene	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	Methyl cyclohexane	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	Methyl Tertbutyl Ether	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	Methylene chloride	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	n-Butylbenzene	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	Naphthalene	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	Propylbenzene	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	sec-Butylbenzene	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	Styrene	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	tert-Butylbenzene	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	Tetrachloroethene	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	Toluene	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	trans-1,2-Dichloroethene	ug/l	0.22 J	1.3		54		47	
SW8260C	N	trans-1,3-Dichloropropene	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	Trichloroethene	ug/l	3.6	2.3		360		410	
SW8260C	N	Trichlorofluoromethane	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	Vinyl chloride	ug/l	7.9	1.4		760		730	
SW8260C	N	Xylene, o	ug/l	1 U	1 U		20 U		20 U	
SW8260C	N	Xylenes (m&p)	ug/l	2 U	2 U		40 U		40 U	

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
CATEGORY A REVIEW REPORT
JUNE 2020 GROUNDWATER SAMPLING
ERDLE PERFORATING COMPANY
GATES, NEW YORK

		Location	MW-2D		MW-3A		MW-3D		MW-4	
		Lab SDG	R2004884		R2004884		R2004884		R2004884	
		Sample Date	6/8/2020		6/8/2020		6/8/2020		6/9/2020	
		Field Sample ID	828072-MW02D020		828072-MW03A008		828072-MW03D014		828072-MW004	
		Qc Code	FS		FS		FS		FS	
Method	Fraction	Parameter	Units	Result Qualifier	Result Qualifier		Result Qualifier		Result Qualifier	
SW8260C	N	1,1,1-Trichloroethane	ug/l	1 U	10 U		5 U		1 U	
SW8260C	N	1,1,2,2-Tetrachloroethane	ug/l	1 U	10 U		5 U		1 U	
SW8260C	N	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	ug/l	1 U	10 U		5 U		1 U	
SW8260C	N	1,1,2-Trichloroethane	ug/l	1 U	10 U		5 U		1 U	
SW8260C	N	1,1-Dichloroethane	ug/l	0.74 J	10 U		5 U		1 U	
SW8260C	N	1,1-Dichloroethene	ug/l	1 U	10 U		5 U		1 U	
SW8260C	N	1,2,3-Trichlorobenzene	ug/l	1 U	10 U		5 U		1 U	
SW8260C	N	1,2,4-Trichlorobenzene	ug/l	1 U	10 U		5 U		1 U	
SW8260C	N	1,2,4-Trimethylbenzene	ug/l	1 U	5.2 J		5 U		1 U	
SW8260C	N	1,2-Dibromo-3-chloropropane	ug/l	2 U	20 U		10 U		2 U	
SW8260C	N	1,2-Dibromoethane	ug/l	1 U	10 U		5 U		1 U	
SW8260C	N	1,2-Dichlorobenzene	ug/l	1 U	10 U		5 U		1 U	
SW8260C	N	1,2-Dichloroethane	ug/l	1 U	10 U		5 U		1 U	
SW8260C	N	1,2-Dichloropropane	ug/l	1 U	10 U		5 U		1 U	
SW8260C	N	1,3,5-Trimethylbenzene	ug/l	1 U	2.1 J		5 U		1 U	
SW8260C	N	1,3-Dichlorobenzene	ug/l	1 U	10 U		5 U		1 U	
SW8260C	N	1,4-Dichlorobenzene	ug/l	1 U	10 U		5 U		1 U	
SW8260C	N	1,4-Dioxane	ug/l	40 U	400 U		200 U		40 U	
SW8260C	N	2-Butanone	ug/l	5 U	50 U		25 U		5 U	
SW8260C	N	2-Hexanone	ug/l	5 U	50 U		25 U		5 U	
SW8260C	N	4-iso-Propyltoluene	ug/l	1 U	10 U		5 U		1 U	
SW8260C	N	4-Methyl-2-pentanone	ug/l	5 U	3.7 J+		3.6 J+		5 U	
SW8260C	N	Acetic acid, methyl ester	ug/l	2 U	20 U		2.6 J		2 U	
SW8260C	N	Acetone	ug/l	5 U	50 U		630 J+		5 U	
SW8260C	N	Benzene	ug/l	1 U	5.7 J		5 U		1 U	
SW8260C	N	Bromochloromethane	ug/l	1 U	10 U		5 U		1 U	
SW8260C	N	Bromodichloromethane	ug/l	1 U	10 U		5 U		1 U	
SW8260C	N	Bromoform	ug/l	1 U	10 U		5 U		1 U	
SW8260C	N	Bromomethane	ug/l	1 UJ	10 UJ		5 UJ		1 UJ	
SW8260C	N	Carbon disulfide	ug/l	1 U	10 U		5 U		1 U	
SW8260C	N	Carbon tetrachloride	ug/l	1 U	10 U		5 U		1 U	
SW8260C	N	Chlorobenzene	ug/l	1 U	10 U		5 U		1 U	
SW8260C	N	Chloroethane	ug/l	1 UJ	10 UJ		5 UJ		1 UJ	
SW8260C	N	Chloroform	ug/l	1 U	10 U		5 U		1 U	
SW8260C	N	Chloromethane	ug/l	1 U	10 U		5 U		1 U	
SW8260C	N	cis-1,2-Dichloroethene	ug/l	44	30		200		2.4	
SW8260C	N	cis-1,3-Dichloropropene	ug/l	1 U	10 U		5 U		1 U	
SW8260C	N	Cyclohexane	ug/l	1 U	10 U		5 U		1 U	
SW8260C	N	Dibromochloromethane	ug/l	1 U	10 U		5 U		1 U	
SW8260C	N	Dichlorodifluoromethane	ug/l	1 U	10 U		5 U		1 U	
SW8260C	N	Ethylbenzene	ug/l	1 U	10 U		5 U		1 U	
SW8260C	N	Isopropylbenzene	ug/l	1 U	10 U		5 U		1 U	
SW8260C	N	Methyl cyclohexane	ug/l	1 U	10 U		5 U		1 U	
SW8260C	N	Methyl Tertbutyl Ether	ug/l	1 U	10 U		5 U		1 U	
SW8260C	N	Methylene chloride	ug/l	1 U	10 U		5 U		1 U	
SW8260C	N	n-Butylbenzene	ug/l	1 U	10 U		5 U		1 U	
SW8260C	N	Naphthalene	ug/l	1 U	13		5 U		1 U	
SW8260C	N	Propylbenzene	ug/l	1 U	10 U		5 U		1 U	
SW8260C	N	sec-Butylbenzene	ug/l	1 U	10 U		5 U		1 U	
SW8260C	N	Styrene	ug/l	1 U	10 U		5 U		1 U	
SW8260C	N	tert-Butylbenzene	ug/l	1 U	10 U		5 U		1 U	
SW8260C	N	Tetrachloroethene	ug/l	1 U	10 U		5 U		1 U	
SW8260C	N	Toluene	ug/l	1 U	11		4 J		1 U	
SW8260C	N	trans-1,2-Dichloroethene	ug/l	0.66 J	4.9 J		5 U		1 U	
SW8260C	N	trans-1,3-Dichloropropene	ug/l	1 U	10 U		5 U		1 U	
SW8260C	N	Trichloroethene	ug/l	1.9	10 U		5 U		0.83 J	
SW8260C	N	Trichlorofluoromethane	ug/l	1 U	10 U		5 U		1 U	
SW8260C	N	Vinyl chloride	ug/l	3.5	37		31		0.53 J	
SW8260C	N	Xylene, o	ug/l	1 U	2.9 J		5 U		1 U	
SW8260C	N	Xylenes (m&p)	ug/l	2 U	4.2 J		10 U		2 U	

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
CATEGORY A REVIEW REPORT
JUNE 2020 GROUNDWATER SAMPLING
ERDLE PERFORATING COMPANY
GATES, NEW YORK

		Location	MW-4D		MW-5		MW-5D		MW-6	
		Lab SDG	R2004884		R2004884		R2004884		R2004884	
		Sample Date	6/9/2020		6/9/2020		6/8/2020		6/9/2020	
		Field Sample ID	828072-MW004D		828072-MW005006		828072-MW05D010		828072-MW006008	
		Qc Code	FS		FS		FS		FS	
Method	Fraction	Parameter	Units	Result Qualifier	Result Qualifier		Result Qualifier		Result Qualifier	
SW8260C	N	1,1,1-Trichloroethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,1,2,2-Tetrachloroethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,1,2-Trichloroethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,1-Dichloroethane	ug/l	0.63 J	0.31 J		1 U		1 U	
SW8260C	N	1,1-Dichloroethene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,2,3-Trichlorobenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,2,4-Trichlorobenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,2,4-Trimethylbenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,2-Dibromo-3-chloropropane	ug/l	2 U	2 U		2 U		2 U	
SW8260C	N	1,2-Dibromoethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,2-Dichlorobenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,2-Dichloroethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,2-Dichloropropane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,3,5-Trimethylbenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,3-Dichlorobenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,4-Dichlorobenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,4-Dioxane	ug/l	40 U	40 U		40 U		40 U	
SW8260C	N	2-Butanone	ug/l	5 U	5 U		1.7 J+		5 U	
SW8260C	N	2-Hexanone	ug/l	5 U	5 U		5 U		5 U	
SW8260C	N	4-iso-Propyltoluene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	4-Methyl-2-pentanone	ug/l	5 U	5 U		5 U		5 U	
SW8260C	N	Acetic acid, methyl ester	ug/l	2 U	2 U		2 U		2 U	
SW8260C	N	Acetone	ug/l	5 U	5 U		7.3 J+		5 U	
SW8260C	N	Benzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Bromochloromethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Bromodichloromethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Bromoform	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Bromomethane	ug/l	1 UJ	1 UJ		1 UJ		1 UJ	
SW8260C	N	Carbon disulfide	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Carbon tetrachloride	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Chlorobenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Chloroethane	ug/l	1 UJ	1 U		1 U		1 U	
SW8260C	N	Chloroform	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Chloromethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	cis-1,2-Dichloroethene	ug/l	11	1 U		1 U		0.76 J	
SW8260C	N	cis-1,3-Dichloropropene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Cyclohexane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Dibromochloromethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Dichlorodifluoromethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Ethylbenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Isopropylbenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Methyl cyclohexane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Methyl Tertbutyl Ether	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Methylene chloride	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	n-Butylbenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Naphthalene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Propylbenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	sec-Butylbenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Styrene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	tert-Butylbenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Tetrachloroethene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Toluene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	trans-1,2-Dichloroethene	ug/l	5.3	1 U		1 U		1 U	
SW8260C	N	trans-1,3-Dichloropropene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Trichloroethene	ug/l	1.2	1 U		1 U		1 U	
SW8260C	N	Trichlorofluoromethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Vinyl chloride	ug/l	0.74 J	1 U		1 U		0.31 J	
SW8260C	N	Xylene, o	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Xylenes (m&p)	ug/l	2 U	2 U		2 U		2 U	

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
CATEGORY A REVIEW REPORT
JUNE 2020 GROUNDWATER SAMPLING
ERDLE PERFORATING COMPANY
GATES, NEW YORK

		Location	MW-6D		MW-7		MW-7D		QC	
		Lab SDG	R2004884		R2004884		R2004884		R2004884	
		Sample Date	6/8/2020		6/9/2020		6/9/2020		6/8/2020	
		Field Sample ID	828072-MW06D015		828072-MW007015		828072-MW07D022		TRIP BLANK	
		Qc Code	FS		FS		FS		TB	
Method	Fraction	Parameter	Units	Result Qualifier	Result Qualifier		Result Qualifier		Result Qualifier	
SW8260C	N	1,1,1-Trichloroethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,1,2,2-Tetrachloroethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,1,2-Trichloroethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,1-Dichloroethane	ug/l	0.94 J	1 U		1.4		1 U	
SW8260C	N	1,1-Dichloroethene	ug/l	0.58 J	1 U		1 U		1 U	
SW8260C	N	1,2,3-Trichlorobenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,2,4-Trichlorobenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,2,4-Trimethylbenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,2-Dibromo-3-chloropropane	ug/l	2 U	2 U		2 U		2 U	
SW8260C	N	1,2-Dibromoethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,2-Dichlorobenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,2-Dichloroethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,2-Dichloropropane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,3,5-Trimethylbenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,3-Dichlorobenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,4-Dichlorobenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,4-Dioxane	ug/l	40 U	40 U		40 U		40 U	
SW8260C	N	2-Butanone	ug/l	5 U	5 U		5 U		5 U	
SW8260C	N	2-Hexanone	ug/l	5 U	5 U		5 U		5 U	
SW8260C	N	4-iso-Propyltoluene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	4-Methyl-2-pentanone	ug/l	5 U	5 U		5 U		5 U	
SW8260C	N	Acetic acid, methyl ester	ug/l	2 U	2 U		2 U		2 U	
SW8260C	N	Acetone	ug/l	5 U	5 U		5 U		5 U	
SW8260C	N	Benzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Bromochloromethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Bromodichloromethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Bromoform	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Bromomethane	ug/l	1 UJ	1 UJ		1 UJ		1 U	
SW8260C	N	Carbon disulfide	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Carbon tetrachloride	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Chlorobenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Chloroethane	ug/l	1 UJ	1 UJ		1 UJ		1 U	
SW8260C	N	Chloroform	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Chloromethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	cis-1,2-Dichloroethene	ug/l	150	1.7		1.9		1 U	
SW8260C	N	cis-1,3-Dichloropropene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Cyclohexane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Dibromochloromethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Dichlorodifluoromethane	ug/l	1 U	1 U		0.23 J		1 U	
SW8260C	N	Ethylbenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Isopropylbenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Methyl cyclohexane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Methyl Tertbutyl Ether	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Methylene chloride	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	n-Butylbenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Naphthalene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Propylbenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	sec-Butylbenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Styrene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	tert-Butylbenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Tetrachloroethene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Toluene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	trans-1,2-Dichloroethene	ug/l	2.1	1 U		1 U		1 U	
SW8260C	N	trans-1,3-Dichloropropene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Trichloroethene	ug/l	17	1 U		1 U		1 U	
SW8260C	N	Trichlorofluoromethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Vinyl chloride	ug/l	9.9	0.73 J		0.66 J		1 U	
SW8260C	N	Xylene, o	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Xylenes (m&p)	ug/l	2 U	2 U		2 U		2 U	

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
CATEGORY A REVIEW REPORT
JUNE 2020 GROUNDWATER SAMPLING
ERDLE PERFORATING COMPANY
GATES, NEW YORK

			Location	GPZ-1D		GPZ-1S1		GPZ-2D		GPZ-2S1	
			Lab SDG	R2005025		R2005025		R2005025		R2005025	
			Sample Date	6/12/2020		6/11/2020		6/12/2020		6/11/2020	
			Field Sample ID	828072-GPZ1D014		828072-GPZ1S1008		828072-GPZ2D020		828072-GPZ2S1014	
			Qc Code	FS		FS		FS		FS	
Method	**Fraction**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
SW8260C	N	1,1,1-Trichloroethane	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	1,1,2,2-Tetrachloroethane	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	1,1,2-Trichloroethane	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	1,1-Dichloroethane	ug/l	6.1		1	U	1	U	2.5	U
SW8260C	N	1,1-Dichloroethene	ug/l	0.25	J	1	U	1	U	2.5	U
SW8260C	N	1,2,3-Trichlorobenzene	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	1,2,4-Trichlorobenzene	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	1,2,4-Trimethylbenzene	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	1,2-Dibromo-3-chloropropane	ug/l	2	U	2	U	2	U	5	U
SW8260C	N	1,2-Dibromoethane	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	1,2-Dichlorobenzene	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	1,2-Dichloroethane	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	1,2-Dichloropropane	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	1,3,5-Trimethylbenzene	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	1,3-Dichlorobenzene	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	1,4-Dichlorobenzene	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	1,4-Dioxane	ug/l	40	U	40	U	40	U	100	U
SW8260C	N	2-Butanone	ug/l	5	U	5	U	5	U	13	U
SW8260C	N	2-Hexanone	ug/l	5	U	5	U	5	U	13	U
SW8260C	N	4-iso-Propyltoluene	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	4-Methyl-2-pentanone	ug/l	5	U	5	U	5	U	13	U
SW8260C	N	Acetic acid, methyl ester	ug/l	2	U	2	U	2	U	5	U
SW8260C	N	Acetone	ug/l	5	U	5	U	5	U	13	U
SW8260C	N	Benzene	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	Bromochloromethane	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	Bromodichloromethane	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	Bromoform	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	Bromomethane	ug/l	1	UJ	1	UJ	1	U	2.5	UJ
SW8260C	N	Carbon disulfide	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	Carbon tetrachloride	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	Chlorobenzene	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	Chloroethane	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	Chloroform	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	Chloromethane	ug/l	1	UJ	1	UJ	1	U	2.5	UJ
SW8260C	N	cis-1,2-Dichloroethene	ug/l	160		1	U	1	U	2.5	U
SW8260C	N	cis-1,3-Dichloropropene	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	Cyclohexane	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	Dibromochloromethane	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	Dichlorodifluoromethane	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	Ethylbenzene	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	Isopropylbenzene	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	Methyl cyclohexane	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	Methyl Tertbutyl Ether	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	Methylene chloride	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	n-Butylbenzene	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	Naphthalene	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	Propylbenzene	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	sec-Butylbenzene	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	Styrene	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	tert-Butylbenzene	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	Tetrachloroethene	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	Toluene	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	trans-1,2-Dichloroethene	ug/l	0.8	J	1	U	1	U	2.5	U
SW8260C	N	trans-1,3-Dichloropropene	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	Trichloroethene	ug/l	17		1	U	1	U	2.5	U
SW8260C	N	Trichlorofluoromethane	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	Vinyl chloride	ug/l	40		1	U	1	U	2.5	U
SW8260C	N	Xylene, o	ug/l	1	U	1	U	1	U	2.5	U
SW8260C	N	Xylenes (m&p)	ug/l	2	U	2	U	2	U	5	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
CATEGORY A REVIEW REPORT
JUNE 2020 GROUNDWATER SAMPLING
ERDLE PERFORATING COMPANY
GATES, NEW YORK

		Location	GPZ-5D		GPZ-5S		GPZ-6D		GPZ-6S	
		Lab SDG	R2005025		R2005025		R2005025		R2005025	
		Sample Date	6/11/2020		6/11/2020		6/11/2020		6/11/2020	
		Field Sample ID	828072-GPZ5D022		828072-GPZ5S018		828072-GPZ6D028		828072-GPZ6S018	
		Qc Code	FS		FS		FS		FS	
Method	Fraction	Parameter	Units	Result Qualifier	Result Qualifier		Result Qualifier		Result Qualifier	
SW8260C	N	1,1,1-Trichloroethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,1,2,2-Tetrachloroethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,1,2-Trichloroethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,1-Dichloroethane	ug/l	0.97 J	1 U		5		1 U	
SW8260C	N	1,1-Dichloroethene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,2,3-Trichlorobenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,2,4-Trichlorobenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,2,4-Trimethylbenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,2-Dibromo-3-chloropropane	ug/l	2 U	2 U		2 U		2 U	
SW8260C	N	1,2-Dibromoethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,2-Dichlorobenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,2-Dichloroethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,2-Dichloropropane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,3,5-Trimethylbenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,3-Dichlorobenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,4-Dichlorobenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	1,4-Dioxane	ug/l	40 U	40 U		28 J		40 U	
SW8260C	N	2-Butanone	ug/l	5 U	5 U		5 U		5 U	
SW8260C	N	2-Hexanone	ug/l	5 U	5 U		5 U		5 U	
SW8260C	N	4-iso-Propyltoluene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	4-Methyl-2-pentanone	ug/l	5 U	5 U		5 U		5 U	
SW8260C	N	Acetic acid, methyl ester	ug/l	2 U	2 U		2 U		2 U	
SW8260C	N	Acetone	ug/l	5 U	5 U		5 U		5 U	
SW8260C	N	Benzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Bromochloromethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Bromodichloromethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Bromoform	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Bromomethane	ug/l	1 UJ	1 UJ		1 U		1 U	
SW8260C	N	Carbon disulfide	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Carbon tetrachloride	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Chlorobenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Chloroethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Chloroform	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Chloromethane	ug/l	1 UJ	1 UJ		1 U		1 U	
SW8260C	N	cis-1,2-Dichloroethene	ug/l	32	7.4		89		1 U	
SW8260C	N	cis-1,3-Dichloropropene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Cyclohexane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Dibromochloromethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Dichlorodifluoromethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Ethylbenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Isopropylbenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Methyl cyclohexane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Methyl Tertbutyl Ether	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Methylene chloride	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	n-Butylbenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Naphthalene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Propylbenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	sec-Butylbenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Styrene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	tert-Butylbenzene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Tetrachloroethene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Toluene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	trans-1,2-Dichloroethene	ug/l	0.35 J	1 U		0.47 J		1 U	
SW8260C	N	trans-1,3-Dichloropropene	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Trichloroethene	ug/l	4.9	0.96 J		1.3		1 U	
SW8260C	N	Trichlorofluoromethane	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Vinyl chloride	ug/l	7.9	0.23 J		24		1 U	
SW8260C	N	Xylene, o	ug/l	1 U	1 U		1 U		1 U	
SW8260C	N	Xylenes (m&p)	ug/l	2 U	2 U		2 U		2 U	

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
CATEGORY A REVIEW REPORT
JUNE 2020 GROUNDWATER SAMPLING
ERDLE PERFORATING COMPANY
GATES, NEW YORK

		Location	MW-13		MW-13D		MW-13D		MW-13DD	
		Lab SDG	R2005025		R2005025		R2005025		R2005025	
		Sample Date	6/10/2020		6/10/2020		6/10/2020		6/10/2020	
		Field Sample ID	828072-MW013006		828072-MW13D12		828072-MW13D12-DUP		828072-MW13DD040	
		Qc Code	FS		FS		FD		FS	
Method	Fraction	Parameter	Units	Result Qualifier		Result Qualifier		Result Qualifier		Result Qualifier
SW8260C	N	1,1,1-Trichloroethane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,1,2,2-Tetrachloroethane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,1,2-Trichloroethane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,1-Dichloroethane	ug/l	1	U	1		0.59	J	1.1
SW8260C	N	1,1-Dichloroethene	ug/l	1	U	1	U	1	U	0.28 J
SW8260C	N	1,2,3-Trichlorobenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,2,4-Trichlorobenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,2,4-Trimethylbenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,2-Dibromo-3-chloropropane	ug/l	2	U	2	U	2	U	2 U
SW8260C	N	1,2-Dibromoethane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,2-Dichlorobenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,2-Dichloroethane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,2-Dichloropropane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,3,5-Trimethylbenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,3-Dichlorobenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,4-Dichlorobenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,4-Dioxane	ug/l	40	U	40	U	40	U	40 U
SW8260C	N	2-Butanone	ug/l	5	U	5	U	5	U	5 U
SW8260C	N	2-Hexanone	ug/l	5	U	5	U	5	U	5 U
SW8260C	N	4-iso-Propyltoluene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	4-Methyl-2-pentanone	ug/l	5	U	5	U	5	U	5 U
SW8260C	N	Acetic acid, methyl ester	ug/l	2	U	2	U	2	U	2 U
SW8260C	N	Acetone	ug/l	5	U	5	U	5	U	5 U
SW8260C	N	Benzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Bromochloromethane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Bromodichloromethane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Bromoform	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Bromomethane	ug/l	1	UJ	1	UJ	1	UJ	1 UJ
SW8260C	N	Carbon disulfide	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Carbon tetrachloride	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Chlorobenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Chloroethane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Chloroform	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Chloromethane	ug/l	1	UJ	1	UJ	1	UJ	1 UJ
SW8260C	N	cis-1,2-Dichloroethene	ug/l	0.46	J	120	J	50	J	97
SW8260C	N	cis-1,3-Dichloropropene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Cyclohexane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Dibromochloromethane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Dichlorodifluoromethane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Ethylbenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Isopropylbenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Methyl cyclohexane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Methyl Tertbutyl Ether	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Methylene chloride	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	n-Butylbenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Naphthalene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Propylbenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	sec-Butylbenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Styrene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	tert-Butylbenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Tetrachloroethene	ug/l	1	U	0.27	J	1	U	1 U
SW8260C	N	Toluene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	trans-1,2-Dichloroethene	ug/l	1	U	0.64	J	0.23	J	0.51 J
SW8260C	N	trans-1,3-Dichloropropene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Trichloroethene	ug/l	1	U	1	U	1	U	17
SW8260C	N	Trichlorofluoromethane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Vinyl chloride	ug/l	1	U	26	J	9.2	J	7.6
SW8260C	N	Xylene, o	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Xylenes (m&p)	ug/l	2	U	2	U	2	U	2 U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
CATEGORY A REVIEW REPORT
JUNE 2020 GROUNDWATER SAMPLING
ERDLE PERFORATING COMPANY
GATES, NEW YORK

		Location	MW-14		MW-14D		MW-16		MW-16D	
		Lab SDG	R2005025		R2005025		R2005025		R2005025	
		Sample Date	6/10/2020		6/11/2020		6/10/2020		6/10/2020	
		Field Sample ID	828072-MW014017		828072-MW14D033		828072-MW016008		828072-MW16D022	
		Qc Code	FS		FS		FS		FS	
Method	Fraction	Parameter	Units	Result Qualifier		Result Qualifier		Result Qualifier		Result Qualifier
SW8260C	N	1,1,1-Trichloroethane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,1,2,2-Tetrachloroethane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,1,2-Trichloroethane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,1-Dichloroethane	ug/l	1		1.4		1	U	0.79 J
SW8260C	N	1,1-Dichloroethene	ug/l	1	U	0.46	J	1	U	1 U
SW8260C	N	1,2,3-Trichlorobenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,2,4-Trichlorobenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,2,4-Trimethylbenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,2-Dibromo-3-chloropropane	ug/l	2	U	2	U	2	U	2 U
SW8260C	N	1,2-Dibromoethane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,2-Dichlorobenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,2-Dichloroethane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,2-Dichloropropane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,3,5-Trimethylbenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,3-Dichlorobenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,4-Dichlorobenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,4-Dioxane	ug/l	40	U	40	U	40	U	40 U
SW8260C	N	2-Butanone	ug/l	5	U	5	U	5	U	5 U
SW8260C	N	2-Hexanone	ug/l	5	U	5	U	5	U	5 U
SW8260C	N	4-iso-Propyltoluene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	4-Methyl-2-pentanone	ug/l	5	U	5	U	5	U	5 U
SW8260C	N	Acetic acid, methyl ester	ug/l	2	U	2	U	2	U	2 U
SW8260C	N	Acetone	ug/l	5	U	5	U	5	U	5 U
SW8260C	N	Benzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Bromochloromethane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Bromodichloromethane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Bromoform	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Bromomethane	ug/l	1	U	1	UJ	1	UJ	1 UJ
SW8260C	N	Carbon disulfide	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Carbon tetrachloride	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Chlorobenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Chloroethane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Chloroform	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Chloromethane	ug/l	1	U	1	UJ	1	UJ	1 UJ
SW8260C	N	cis-1,2-Dichloroethene	ug/l	130		160		1	U	55
SW8260C	N	cis-1,3-Dichloropropene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Cyclohexane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Dibromochloromethane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Dichlorodifluoromethane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Ethylbenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Isopropylbenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Methyl cyclohexane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Methyl Tertbutyl Ether	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Methylene chloride	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	n-Butylbenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Naphthalene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Propylbenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	sec-Butylbenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Styrene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	tert-Butylbenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Tetrachloroethene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Toluene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	trans-1,2-Dichloroethene	ug/l	0.58	J	0.6	J	1	U	0.45 J
SW8260C	N	trans-1,3-Dichloropropene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Trichloroethene	ug/l	0.45	J	26		1	U	1 U
SW8260C	N	Trichlorofluoromethane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Vinyl chloride	ug/l	24		5.2		1	U	42
SW8260C	N	Xylene, o	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Xylenes (m&p)	ug/l	2	U	2	U	2	U	2 U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
CATEGORY A REVIEW REPORT
JUNE 2020 GROUNDWATER SAMPLING
ERDLE PERFORATING COMPANY
GATES, NEW YORK

		Location	MW-17		MW-17D		MW-19		MW-19D	
		Lab SDG	R2005025		R2005025		R2005025		R2005025	
		Sample Date	6/10/2020		6/10/2020		6/10/2020		6/10/2020	
		Field Sample ID	828072-MW017007		828072-MW17D023		828072-MW019006		828072-MW19D019	
		Qc Code	FS		FS		FS		FS	
Method	Fraction	Parameter	Units	Result Qualifier		Result Qualifier		Result Qualifier		Result Qualifier
SW8260C	N	1,1,1-Trichloroethane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,1,2,2-Tetrachloroethane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,1,2-Trichloroethane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,1-Dichloroethane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,1-Dichloroethene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,2,3-Trichlorobenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,2,4-Trichlorobenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,2,4-Trimethylbenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,2-Dibromo-3-chloropropane	ug/l	2	U	2	U	2	U	2 U
SW8260C	N	1,2-Dibromoethane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,2-Dichlorobenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,2-Dichloroethane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,2-Dichloropropane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,3,5-Trimethylbenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,3-Dichlorobenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,4-Dichlorobenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	1,4-Dioxane	ug/l	40	U	40	U	40	U	40 U
SW8260C	N	2-Butanone	ug/l	5	U	5	U	5	U	5 U
SW8260C	N	2-Hexanone	ug/l	5	U	5	U	5	U	5 U
SW8260C	N	4-iso-Propyltoluene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	4-Methyl-2-pentanone	ug/l	5	U	5	U	5	U	5 U
SW8260C	N	Acetic acid, methyl ester	ug/l	2	U	2	UJ	2	U	2 U
SW8260C	N	Acetone	ug/l	5	U	5	U	5	U	5 U
SW8260C	N	Benzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Bromochloromethane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Bromodichloromethane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Bromoform	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Bromomethane	ug/l	1	UJ	1	UJ	1	UJ	1 UJ
SW8260C	N	Carbon disulfide	ug/l	1	U	1.2		1	U	1 U
SW8260C	N	Carbon tetrachloride	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Chlorobenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Chloroethane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Chloroform	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Chloromethane	ug/l	1	UJ	1	UJ	1	UJ	1 UJ
SW8260C	N	cis-1,2-Dichloroethene	ug/l	1	U	0.54	J	1	U	0.38 J
SW8260C	N	cis-1,3-Dichloropropene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Cyclohexane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Dibromochloromethane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Dichlorodifluoromethane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Ethylbenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Isopropylbenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Methyl cyclohexane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Methyl Tertbutyl Ether	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Methylene chloride	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	n-Butylbenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Naphthalene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Propylbenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	sec-Butylbenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Styrene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	tert-Butylbenzene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Tetrachloroethene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Toluene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	trans-1,2-Dichloroethene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	trans-1,3-Dichloropropene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Trichloroethene	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Trichlorofluoromethane	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Vinyl chloride	ug/l	1	U	1.4		1	U	0.2 J
SW8260C	N	Xylene, o	ug/l	1	U	1	U	1	U	1 U
SW8260C	N	Xylenes (m&p)	ug/l	2	U	2	U	2	U	2 U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
CATEGORY A REVIEW REPORT
JUNE 2020 GROUNDWATER SAMPLING
ERDLE PERFORATING COMPANY
GATES, NEW YORK

			Location	MW-20		MW-20D		QC	
			Lab SDG	R2005025		R2005025		R2005025	
			Sample Date	6/10/2020		6/10/2020		6/11/2020	
			Field Sample ID	828072-MW020006		828072-MW20D020		828072-Trip Blank #2	
			Qc Code	FS		FS		TB	
Method	Fraction	Parameter	Units	Result	Qualifier	Result	Qualifier	Result	Qualifier
SW8260C	N	1,1,1-Trichloroethane	ug/l	1	U	1	U	1	U
SW8260C	N	1,1,2,2-Tetrachloroethane	ug/l	1	U	1	U	1	U
SW8260C	N	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	ug/l	1	U	1	U	1	U
SW8260C	N	1,1,2-Trichloroethane	ug/l	1	U	1	U	1	U
SW8260C	N	1,1-Dichloroethane	ug/l	1	U	1	U	1	U
SW8260C	N	1,1-Dichloroethene	ug/l	1	U	1	U	1	U
SW8260C	N	1,2,3-Trichlorobenzene	ug/l	1	U	1	U	1	U
SW8260C	N	1,2,4-Trichlorobenzene	ug/l	1	U	1	U	1	U
SW8260C	N	1,2,4-Trimethylbenzene	ug/l	1	U	1	U	1	U
SW8260C	N	1,2-Dibromo-3-chloropropane	ug/l	2	U	2	U	2	U
SW8260C	N	1,2-Dibromoethane	ug/l	1	U	1	U	1	U
SW8260C	N	1,2-Dichlorobenzene	ug/l	1	U	1	U	1	U
SW8260C	N	1,2-Dichloroethane	ug/l	1	U	1	U	1	U
SW8260C	N	1,2-Dichloropropane	ug/l	1	U	1	U	1	U
SW8260C	N	1,3,5-Trimethylbenzene	ug/l	1	U	1	U	1	U
SW8260C	N	1,3-Dichlorobenzene	ug/l	1	U	1	U	1	U
SW8260C	N	1,4-Dichlorobenzene	ug/l	1	U	1	U	1	U
SW8260C	N	1,4-Dioxane	ug/l	40	U	40	U	40	U
SW8260C	N	2-Butanone	ug/l	5	U	5	U	5	U
SW8260C	N	2-Hexanone	ug/l	5	U	5	U	5	U
SW8260C	N	4-iso-Propyltoluene	ug/l	1	U	1	U	1	U
SW8260C	N	4-Methyl-2-pentanone	ug/l	5	U	5	U	5	U
SW8260C	N	Acetic acid, methyl ester	ug/l	2	U	2	U	2	U
SW8260C	N	Acetone	ug/l	5	U	5	U	5	U
SW8260C	N	Benzene	ug/l	1	U	1	U	1	U
SW8260C	N	Bromochloromethane	ug/l	1	U	1	U	1	U
SW8260C	N	Bromodichloromethane	ug/l	1	U	1	U	1	U
SW8260C	N	Bromoform	ug/l	1	U	1	U	1	U
SW8260C	N	Bromomethane	ug/l	1	UJ	1	UJ	1	U
SW8260C	N	Carbon disulfide	ug/l	1	U	1	U	1	U
SW8260C	N	Carbon tetrachloride	ug/l	1	U	1	U	1	U
SW8260C	N	Chlorobenzene	ug/l	1	U	1	U	1	U
SW8260C	N	Chloroethane	ug/l	1	U	1	U	1	U
SW8260C	N	Chloroform	ug/l	1	U	1	U	1	U
SW8260C	N	Chloromethane	ug/l	1	UJ	1	UJ	1	UJ
SW8260C	N	cis-1,2-Dichloroethene	ug/l	1	U	0.96	J	1	U
SW8260C	N	cis-1,3-Dichloropropene	ug/l	1	U	1	U	1	U
SW8260C	N	Cyclohexane	ug/l	1	U	1	U	1	U
SW8260C	N	Dibromochloromethane	ug/l	1	U	1	U	1	U
SW8260C	N	Dichlorodifluoromethane	ug/l	1	U	1	U	1	U
SW8260C	N	Ethylbenzene	ug/l	1	U	1	U	1	U
SW8260C	N	Isopropylbenzene	ug/l	1	U	1	U	1	U
SW8260C	N	Methyl cyclohexane	ug/l	1	U	1	U	1	U
SW8260C	N	Methyl Tertbutyl Ether	ug/l	1	U	1	U	1	U
SW8260C	N	Methylene chloride	ug/l	1	U	1	U	1	U
SW8260C	N	n-Butylbenzene	ug/l	1	U	1	U	1	U
SW8260C	N	Naphthalene	ug/l	1	U	1	U	1	U
SW8260C	N	Propylbenzene	ug/l	1	U	1	U	1	U
SW8260C	N	sec-Butylbenzene	ug/l	1	U	1	U	1	U
SW8260C	N	Styrene	ug/l	1	U	1	U	1	U
SW8260C	N	tert-Butylbenzene	ug/l	1	U	1	U	1	U
SW8260C	N	Tetrachloroethene	ug/l	1	U	1	U	1	U
SW8260C	N	Toluene	ug/l	1	U	1	U	1	U
SW8260C	N	trans-1,2-Dichloroethene	ug/l	1	U	1	U	1	U
SW8260C	N	trans-1,3-Dichloropropene	ug/l	1	U	1	U	1	U
SW8260C	N	Trichloroethene	ug/l	1	U	1	U	1	U
SW8260C	N	Trichlorofluoromethane	ug/l	1	U	1	U	1	U
SW8260C	N	Vinyl chloride	ug/l	1	U	0.47	J	1	U
SW8260C	N	Xylene, o	ug/l	1	U	1	U	1	U
SW8260C	N	Xylenes (m&p)	ug/l	2	U	2	U	2	U

TABLE 3 - SUMMARY OF QUALIFICATION ACTIONS
CATEGORY A REVIEW REPORT
JUNE 2020 GROUNDWATER SAMPLING
ERDLE PERFORATING COMPANY
GATES, NEW YORK

Lab SDG	Analysis Method	Location	Lab Sample ID	Field Sample ID	Parameter	Lab Result	Lab Qualifier	Final Result	Final Qualifier	Val Reason Code	Units
R2004884	SW8260C	MW-1A	R2004884-001	828072-MW01A008	4-Methyl-2-pentanone	8.9	J	8.9	J+	MSH	ug/l
R2004884	SW8260C	MW-1A	R2004884-001	828072-MW01A008	Bromomethane	10	U	10	UJ	MSL	ug/l
R2004884	SW8260C	MW-1DD	R2004884-002	828072-MW1DD038	Bromomethane	1	U	1	UJ	LCSL, CCV%D	ug/l
R2004884	SW8260C	MW-1DD	R2004884-002	828072-MW1DD038	Chloroethane	1	U	1	UJ	LCSL	ug/l
R2004884	SW8260C	MW-3D	R2004884-003	828072-MW03D014	4-Methyl-2-pentanone	3.6	J	3.6	J+	LCSH, CCV%D	ug/l
R2004884	SW8260C	MW-3D	R2004884-003	828072-MW03D014	Acetone	630		630	J+	LCSH	ug/l
R2004884	SW8260C	MW-3D	R2004884-003	828072-MW03D014	Bromomethane	5	U	5	UJ	LCSL, CCV%D	ug/l
R2004884	SW8260C	MW-3D	R2004884-003	828072-MW03D014	Chloroethane	5	U	5	UJ	LCSL	ug/l
R2004884	SW8260C	MW-2D	R2004884-004	828072-MW02D020	Bromomethane	1	U	1	UJ	LCSL, CCV%D	ug/l
R2004884	SW8260C	MW-2D	R2004884-004	828072-MW02D020	Chloroethane	1	U	1	UJ	LCSL	ug/l
R2004884	SW8260C	MW-2A	R2004884-005	828072-MW02A008	Bromomethane	20	U	20	UJ	LCSL, CCV%D	ug/l
R2004884	SW8260C	MW-2A	R2004884-005	828072-MW02A008	Chloroethane	20	U	20	UJ	LCSL	ug/l
R2004884	SW8260C	MW-2A	R2004884-006	828072-MW02A008 Dup	Bromomethane	20	U	20	UJ	LCSL, CCV%D	ug/l
R2004884	SW8260C	MW-2A	R2004884-006	828072-MW02A008 Dup	Chloroethane	20	U	20	UJ	LCSL	ug/l
R2004884	SW8260C	MW-3A	R2004884-007	828072-MW03A008	4-Methyl-2-pentanone	3.7	J	3.7	J+	LCSH, CCV%D	ug/l
R2004884	SW8260C	MW-3A	R2004884-007	828072-MW03A008	Bromomethane	10	U	10	UJ	LCSL, CCV%D	ug/l
R2004884	SW8260C	MW-3A	R2004884-007	828072-MW03A008	Chloroethane	10	U	10	UJ	LCSL	ug/l
R2004884	SW8260C	MW-4	R2004884-008	828072-MW004	Bromomethane	1	U	1	UJ	LCSL, CCV%D	ug/l
R2004884	SW8260C	MW-4	R2004884-008	828072-MW004	Chloroethane	1	U	1	UJ	LCSL	ug/l
R2004884	SW8260C	MW-4D	R2004884-009	828072-MW004D	Bromomethane	1	U	1	UJ	LCSL, CCV%D	ug/l
R2004884	SW8260C	MW-4D	R2004884-009	828072-MW004D	Chloroethane	1	U	1	UJ	LCSL	ug/l
R2004884	SW8260C	GPZ-7S	R2004884-010	828072-GPZ7S	2-Butanone	1	J	1	J+	LCSH	ug/l
R2004884	SW8260C	GPZ-7S	R2004884-010	828072-GPZ7S	Bromomethane	1	U	1	UJ	LCSL, CCV%D	ug/l
R2004884	SW8260C	GPZ-7S	R2004884-010	828072-GPZ7S	Chloroethane	1	U	1	UJ	LCSL	ug/l
R2004884	SW8260C	GPZ-7D	R2004884-011	828072-GPZ7D	Bromomethane	1	U	1	UJ	LCSL, CCV%D	ug/l
R2004884	SW8260C	GPZ-7D	R2004884-011	828072-GPZ7D	Chloroethane	1	U	1	UJ	LCSL	ug/l
R2004884	SW8260C	MW-10	R2004884-012	828072-MW010016	Bromomethane	1	U	1	UJ	LCSL, CCV%D	ug/l
R2004884	SW8260C	MW-10	R2004884-012	828072-MW010016	Chloroethane	1	U	1	UJ	LCSL	ug/l
R2004884	SW8260C	MW-6D	R2004884-013	828072-MW06D015	Bromomethane	1	U	1	UJ	LCSL, CCV%D	ug/l
R2004884	SW8260C	MW-6D	R2004884-013	828072-MW06D015	Chloroethane	1	U	1	UJ	LCSL	ug/l
R2004884	SW8260C	MW-7	R2004884-014	828072-MW007015	Bromomethane	1	U	1	UJ	LCSL, CCV%D	ug/l
R2004884	SW8260C	MW-7	R2004884-014	828072-MW007015	Chloroethane	1	U	1	UJ	LCSL	ug/l
R2004884	SW8260C	MW-7D	R2004884-015	828072-MW07D022	Bromomethane	1	U	1	UJ	LCSL, CCV%D	ug/l

Created by: KMS 7/24/2020
Checked by: SRC 07/27/2020

TABLE 3 - SUMMARY OF QUALIFICATION ACTIONS
CATEGORY A REVIEW REPORT
JUNE 2020 GROUNDWATER SAMPLING
ERDLE PERFORATING COMPANY
GATES, NEW YORK

Lab SDG	Analysis Method	Location	Lab Sample ID	Field Sample ID	Parameter	Lab Result	Lab Qualifier	Final Result	Final Qualifier	Val Reason Code	Units
R2004884	SW8260C	MW-7D	R2004884-015	828072-MW07D022	Chloroethane	1	U	1	UJ	LCSL	ug/l
R2004884	SW8260C	MW-12	R2004884-016	828072-MW012011	Bromomethane	1	U	1	UJ	LCSL, CCV%D	ug/l
R2004884	SW8260C	MW-12	R2004884-016	828072-MW012011	Chloroethane	1	U	1	UJ	LCSL	ug/l
R2004884	SW8260C	MW-15D	R2004884-017	828072-MW15D021	Bromomethane	1	U	1	UJ	LCSL, CCV%D	ug/l
R2004884	SW8260C	MW-15D	R2004884-017	828072-MW15D021	Chloroethane	1	U	1	UJ	LCSL	ug/l
R2004884	SW8260C	MW-11D	R2004884-018	828072-MW11D023	Bromomethane	1	U	1	UJ	LCSL,CCV%D	ug/l
R2004884	SW8260C	MW-11	R2004884-019	828072-MW011012	Bromomethane	1	U	1	UJ	CCV%D	ug/l
R2004884	SW8260C	MW-5D	R2004884-020	828072-MW05D010	2-Butanone	1.7	J	1.7	J+	CCV%D	ug/l
R2004884	SW8260C	MW-5D	R2004884-020	828072-MW05D010	Acetone	7.3		7.3	J+	CCV%D	ug/l
R2004884	SW8260C	MW-5D	R2004884-020	828072-MW05D010	Bromomethane	1	U	1	UJ	CCV%D	ug/l
R2004884	SW8260C	MW-21	R2004884-021	828072-MW021012	Bromomethane	1	U	1	UJ	CCV%D	ug/l
R2004884	SW8260C	MW-21	R2004884-022	828072-MW021012Dup	Bromomethane	1	U	1	UJ	CCV%D	ug/l
R2004884	SW8260C	MW-21D	R2004884-023	828072-MW21D020	Bromomethane	1	U	1	UJ	CCV%D	ug/l
R2004884	SW8260C	MW-6	R2004884-024	828072-MW006008	Bromomethane	1	U	1	UJ	CCV%D	ug/l
R2004884	SW8260C	MW-5	R2004884-025	828072-MW005006	Bromomethane	1	U	1	UJ	CCV%D	ug/l
R2004884	SW8260C	MW-18	R2004884-026	828072-MW018010	Bromomethane	1	U	1	UJ	CCV%D	ug/l
R2004884	SW8260C	MW-18D	R2004884-027	828072-MW18D021	Bromomethane	1	U	1	UJ	CCV%D	ug/l
R2004884	SW8260C	QC	R2004884-028	TRIP BLANK	Bromomethane	1	U	1	UJ	LCSL,CCV%D	ug/l
R2005025	SW8260C	MW-13D	R2005025-001	828072-MW13D12	Bromomethane	1	U	1	UJ	CCV%D	ug/l
R2005025	SW8260C	MW-13D	R2005025-001	828072-MW13D12	Chloromethane	1	U	1	UJ	CCV%D	ug/l
R2005025	SW8260C	MW-13D	R2005025-001	828072-MW13D12	cis-1,2-Dichloroethene	120		120	J	FD	ug/l
R2005025	SW8260C	MW-13D	R2005025-001	828072-MW13D12	Vinyl chloride	26		26	J	FD	ug/l
R2005025	SW8260C	MW-13DD	R2005025-002	828072-MW13DD040	Bromomethane	1	U	1	UJ	CCV%D	ug/l
R2005025	SW8260C	MW-13DD	R2005025-002	828072-MW13DD040	Chloromethane	1	U	1	UJ	CCV%D	ug/l
R2005025	SW8260C	MW-13	R2005025-003	828072-MW013006	Bromomethane	1	U	1	UJ	CCV%D	ug/l
R2005025	SW8260C	MW-13	R2005025-003	828072-MW013006	Chloromethane	1	U	1	UJ	CCV%D	ug/l
R2005025	SW8260C	GPZ-5S	R2005025-004	828072-GPZ5S018	Bromomethane	1	U	1	UJ	CCV%D	ug/l
R2005025	SW8260C	GPZ-5S	R2005025-004	828072-GPZ5S018	Chloromethane	1	U	1	UJ	CCV%D	ug/l
R2005025	SW8260C	MW-14D	R2005025-005	828072-MW14D033	Bromomethane	1	U	1	UJ	CCV%D	ug/l
R2005025	SW8260C	MW-14D	R2005025-005	828072-MW14D033	Chloromethane	1	U	1	UJ	CCV%D	ug/l
R2005025	SW8260C	GPZ-5D	R2005025-006	828072-GPZ5D022	Bromomethane	1	U	1	UJ	CCV%D	ug/l
R2005025	SW8260C	GPZ-5D	R2005025-006	828072-GPZ5D022	Chloromethane	1	U	1	UJ	CCV%D	ug/l
R2005025	SW8260C	MW-13D	R2005025-007	828072-MW13D12-DUP	Bromomethane	1	U	1	UJ	CCV%D	ug/l

TABLE 3 - SUMMARY OF QUALIFICATION ACTIONS
CATEGORY A REVIEW REPORT
JUNE 2020 GROUNDWATER SAMPLING
ERDLE PERFORATING COMPANY
GATES, NEW YORK

Lab SDG	Analysis Method	Location	Lab Sample ID	Field Sample ID	Parameter	Lab Result	Lab Qualifier	Final Result	Final Qualifier	Val Reason Code	Units
R2005025	SW8260C	MW-13D	R2005025-007	828072-MW13D12-DUP	Chloromethane	1	U	1	UJ	CCV%D	ug/l
R2005025	SW8260C	MW-13D	R2005025-007	828072-MW13D12-DUP	cis-1,2-Dichloroethene	50		50	J	FD	ug/l
R2005025	SW8260C	MW-13D	R2005025-007	828072-MW13D12-DUP	Vinyl chloride	9.2		9.2	J	FD	ug/l
R2005025	SW8260C	QC	R2005025-008	828072-Trip Blank #2	Bromomethane	1	U	1	UJ	CCV%D	ug/l
R2005025	SW8260C	QC	R2005025-008	828072-Trip Blank #2	Chloromethane	1	U	1	UJ	CCV%D	ug/l
R2005025	SW8260C	MW-19	R2005025-009	828072-MW019006	Bromomethane	1	U	1	UJ	CCV%D	ug/l
R2005025	SW8260C	MW-19	R2005025-009	828072-MW019006	Chloromethane	1	U	1	UJ	CCV%D	ug/l
R2005025	SW8260C	MW-19D	R2005025-010	828072-MW19D019	Bromomethane	1	U	1	UJ	CCV%D	ug/l
R2005025	SW8260C	MW-19D	R2005025-010	828072-MW19D019	Chloromethane	1	U	1	UJ	CCV%D	ug/l
R2005025	SW8260C	MW-20D	R2005025-011	828072-MW20D020	Bromomethane	1	U	1	UJ	CCV%D	ug/l
R2005025	SW8260C	MW-20D	R2005025-011	828072-MW20D020	Chloromethane	1	U	1	UJ	CCV%D	ug/l
R2005025	SW8260C	MW-20	R2005025-012	828072-MW020006	Bromomethane	1	U	1	UJ	CCV%D	ug/l
R2005025	SW8260C	MW-20	R2005025-012	828072-MW020006	Chloromethane	1	U	1	UJ	CCV%D	ug/l
R2005025	SW8260C	GPZ-2S1	R2005025-013	828072-GPZ2S1014	Bromomethane	2.5	U	2.5	UJ	CCV%D	ug/l
R2005025	SW8260C	GPZ-2S1	R2005025-013	828072-GPZ2S1014	Chloromethane	2.5	U	2.5	UJ	CCV%D	ug/l
R2005025	SW8260C	GPZ-1S1	R2005025-014	828072-GPZ1S1008	Bromomethane	1	U	1	UJ	CCV%D	ug/l
R2005025	SW8260C	GPZ-1S1	R2005025-014	828072-GPZ1S1008	Chloromethane	1	U	1	UJ	CCV%D	ug/l
R2005025	SW8260C	GPZ-1D	R2005025-015	828072-GPZ1D014	Bromomethane	1	U	1	UJ	CCV%D	ug/l
R2005025	SW8260C	GPZ-1D	R2005025-015	828072-GPZ1D014	Chloromethane	1	U	1	UJ	CCV%D	ug/l
R2005025	SW8260C	MW-16D	R2005025-017	828072-MW16D022	Bromomethane	1	U	1	UJ	CCV%D	ug/l
R2005025	SW8260C	MW-16D	R2005025-017	828072-MW16D022	Chloromethane	1	U	1	UJ	CCV%D	ug/l
R2005025	SW8260C	MW-17	R2005025-018	828072-MW017007	Bromomethane	1	U	1	UJ	CCV%D	ug/l
R2005025	SW8260C	MW-17	R2005025-018	828072-MW017007	Chloromethane	1	U	1	UJ	CCV%D	ug/l
R2005025	SW8260C	MW-17D	R2005025-019	828072-MW17D023	Acetic acid, methyl ester	2	U	2	UJ	MSL	ug/l
R2005025	SW8260C	MW-17D	R2005025-019	828072-MW17D023	Bromomethane	1	U	1	UJ	MSL, CCV%D	ug/l
R2005025	SW8260C	MW-17D	R2005025-019	828072-MW17D023	Chloromethane	1	U	1	UJ	CCV%D	ug/l
R2005025	SW8260C	MW-16	R2005025-020	828072-MW016008	Bromomethane	1	U	1	UJ	CCV%D	ug/l
R2005025	SW8260C	MW-16	R2005025-020	828072-MW016008	Chloromethane	1	U	1	UJ	CCV%D	ug/l

CATEGORY A REVIEW REPORT
JUNE 2020 GROUNDWATER SAMPLING EVENT
ERDLE PERFORATING COMPANY SITE
GATES, NEW YORK

ATTACHMENT A

VOCs

PROJECT CATEGORY A REVIEW RECORD
Project:
Method : SW-846 8260C
Laboratory: ALS Environmental **SDG(s): R2004884**
Date: 7/20/2020
Reviewer: Shawna Couplin
Review Level [X] CATEGORY A

1. ~~☐~~ Case **Narrative Review and COC/Data Package Completeness** COMMENTS
   Were problems noted? **YES, SEE ATTACHED FOR QUALS**

   Were all the samples on the COC analyzed for the requested analyses? **YES** NO(circle one)**YES**

   Are Field Sample IDs and Locations assigned correctly? **YES** NO (circle one)**YES**

2. ~~☐~~ **Holding time and Sample Collection**
   All samples were analyzed within the 14 day holding time. **YES** NO (circle one)**YES**

3. ~~☐~~ **QC Blanks**
   Are method blanks free of contamination? **YES** NO (circle one)

   Are Trip blanks free of contamination? **YES** NO (circle one)

   Are Rinse blanks free of contamination? YES NO **NA** (circle one)

4. ~~☐~~ **Matrix Spike** - Region II limits (water and soil 70-130%, water RPD 20, soil RPD 35)
   Were MS/MSDs submitted/analyzed? **YES** NO **YES**

   Were all results within the Region II limits? YES **NO** NA (circle one)**NO, SEE ATTACHED FOR QUALS**

5. ~~☐~~ **Laboratory Control Sample Results** - Region II (Water and soil 70-130%)

   Were all results were within Region II control limits? YES **NO** (circle one) **NO, SEE ATTACHED FOR QUALS**

6. ~~☐~~ **Surrogate Recovery** - Region II limits (water 80-120%, soil 70-130%)

   Were all results within Region II limits? **YES** NO (circle one) **YES**

7. ~~☐~~ **Field Duplicates** - Region II Limits (water RPD 50, soil RPD 100)
   Were Field Duplicates submitted/analyzed? **YES** NO **YES**

   Were all results within Region II Limits? YES **NO** NA (circle one) **NO QUALS, samples ND or J, OK**

8. ~~☐~~ **Reporting Limits:** Were samples analyzed at a dilution? **YES** NO (circle one)**YES, SEE MEMO**

9. ~~☐~~ **Electronic Data Review and Edits**
   Does the EDD match the Form Is? **YES** NO (circle one)**YES**

10. ~~☐~~ **Table Review**
    Table 1 (Samples and Analytical Methods)
    Table 2 (Analytical Results)
    Table 3 (Qualification Actions)
    Were all tables produced and reviewed? **YES** NO (circle one)**YES**

    Table 4 (TICs) Did lab report TICs? YES **NO** (circle one) **NO**

Client: Wood E&IS - Portland ME
Project: Erdle Perforating Site 828072
Sample Matrix: Water

Service Request: R2004884
Date Received: 06/10/2020

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.

Sample Receipt:

Twenty eight water samples were received for analysis at ALS Environmental on 06/10/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Volatiles by GC/MS:

Method 8260C, 06/16/2020: The upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.

SEE ATTACHED FOR LCS QUALS

Method 8260C, 06/16/2020: The upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.

SEE ATTACHED FOR CCV QUALS

Method 8260C, 06/16/2020: The lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.

SEE ATTACHED FOR CCV QUALS

Method 8260C, 06/17/2020: The upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.

SEE ATTACHED FOR CCV QUALS

Method 8260C, 06/17/2020: The lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken. Bromomethane had exceeded 40% low on the CCV. LCS/MS/MSD all were within limits.

SEE ATTACHED FOR CCV QUALS

Method 8260C, 06/17/2020: The upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.

SEE ATTACHED FOR LCS QUALS

Method 8260C, 06/18/2020: The upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.

Approved by _____ Date 06/25/2020

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Wood E&IS - Portland ME	**Service Request:**	R2004884
Project:	Erdle Perforating Site 828072/3617137306.02	**Date Collected:**	06/08/20
Sample Matrix:	Water	**Date Received:**	06/10/20
		Date Analyzed:	06/16/20
		Date Extracted:	NA

Duplicate Matrix Spike Summary
Volatile Organic Compounds by GC/MS

Sample Name:	828072-MW01A008	**Units:**	ug/L
Lab Code:	R2004884-001	**Basis:**	NA
Analysis Method:	8260C		
Prep Method:	EPA 5030C		

		Matrix Spike RQ2006305-05			**Duplicate Matrix Spike** RQ2006305-06					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,1,1-Trichloroethane (TCA)	1.0 U	53.5	50.0	107	55.6	50.0	111	74-127	4	30
1,1,2,2-Tetrachloroethane ND, OK	1.0 U	66.0	50.0	132 *	65.6	50.0	131 *	72-122	<1	30
1,1,2-Trichloroethane	1.0 U	59.3	50.0	119	57.8	50.0	116	82-121	3	30
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	52.1	50.0	104	55.0	50.0	110	50-147	5	30
1,1-Dichloroethane (1,1-DCA)	1.0 U	61.6	50.0	123	63.3	50.0	127	74-132	3	30
1,1-Dichloroethene (1,1-DCE)	1.0 U	53.9	50.0	108	56.1	50.0	112	71-118	4	30
1,2,3-Trichlorobenzene	1.0 U	52.1	50.0	104	50.9	50.0	102	59-129	2	30
1,2,4-Trichlorobenzene	1.0 U	57.0	50.0	114	56.9	50.0	114	69-122	<1	30
1,2,4-Trimethylbenzene	1.0 U	63.6	50.0	127	63.1	50.0	126	73-133	<1	30
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	48.1	50.0	96	49.8	50.0	100	37-150	3	30
1,2-Dibromoethane	1.0 U	53.9	50.0	108	52.9	50.0	106	67-127	2	30
1,2-Dichlorobenzene	1.0 U	52.5	50.0	105	53.1	50.0	106	77-120	1	30
1,2-Dichloroethane	1.0 U	61.5	50.0	123	60.5	50.0	121	68-130	2	30
1,2-Dichloropropane	1.0 U	63.5	50.0	127 *	63.3	50.0	127 *	79-124	<1	30
1,3,5-Trimethylbenzene	1.0 U	63.3	50.0	127	62.6	50.0	125	81-131	1	30
1,3-Dichlorobenzene	1.0 U	54.6	50.0	109	54.7	50.0	109	83-121	<1	30
1,4-Dichlorobenzene	1.0 U	53.2	50.0	106	52.6	50.0	105	82-120	1	30
1,4-Dioxane	40 U	1240	1000	124	1210	1000	121	44-154	2	30
2-Butanone (MEK)	5.0 U	67.1	50.0	134	67.8	50.0	136	61-137	1	30
2-Hexanone ND, OK	5.0 U	75.2	50.0	150 *	77.1	50.0	154 *	56-132	3	30
4-Isopropyltoluene	1.0 U	60.3	50.0	121	59.5	50.0	119	78-133	1	30
4-Methyl-2-pentanone MSH, J	8.9 J	78.0	50.0	138	79.0	50.0	140	60-141	1	30
Acetone ND, OK	5.0 U	67.6	50.0	135	69.8	50.0	140	35-183	3	30
Benzene	1.0 U	62.1	50.0	124	61.8	50.0	124	76-129	<1	30
Bromochloromethane	1.0 U	53.8	50.0	108	54.6	50.0	109	80-122	1	30
Bromodichloromethane	1.0 U	57.9	50.0	116	57.9	50.0	116	78-133	<1	30
Bromoform	1.0 U	44.7	50.0	89	46.0	50.0	92	58-133	3	30
Bromomethane MSL, UJ	1.0 U	20.9	50.0	42	21.5	50.0	43	10-184	3	30
Carbon Disulfide	1.0 U	57.7	50.0	115	61.1	50.0	122	59-140	6	30
Carbon Tetrachloride	1.0 U	49.6	50.0	99	50.6	50.0	101	65-135	2	30
Chlorobenzene	1.0 U	54.0	50.0	108	53.9	50.0	108	76-125	<1	30
Chloroethane	1.0 U	47.6	50.0	95	45.8	50.0	92	48-146	4	30
Chloroform	1.0 U	57.3	50.0	115	57.9	50.0	116	75-130	1	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Wood E&IS - Portland ME	**Service Request:**	R2004884
Project:	Erdle Perforating Site 828072/3617137306.02	**Date Collected:**	06/08/20
Sample Matrix:	Water	**Date Received:**	06/10/20
		Date Analyzed:	06/16/20
		Date Extracted:	NA

Duplicate Matrix Spike Summary
Volatile Organic Compounds by GC/MS

Sample Name:	828072-MW01A008	**Units:**	ug/L
Lab Code:	R2004884-001	**Basis:**	NA
Analysis Method:	8260C		
Prep Method:	EPA 5030C		

		Matrix Spike RQ2006305-05			**Duplicate Matrix Spike** RQ2006305-06					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Chloromethane	1.0 U	60.0	50.0	120	60.5	50.0	121	55-160	<1	30
Cyclohexane ND, OK	1.0 U	62.5	50.0	125	66.4	50.0	133	52-145	6	30
Dibromochloromethane	1.0 U	51.1	50.0	102	53.0	50.0	106	72-128	4	30
Dichlorodifluoromethane (CFC 12)	1.0 U	53.0	50.0	106	59.0	50.0	118	49-154	11	30
Dichloromethane	1.0 U	59.1	50.0	118	60.4	50.0	121	73-122	2	30
Ethylbenzene	1.0 U	55.7	50.0	111	55.8	50.0	112	72-134	<1	30
Isopropylbenzene (Cumene)	1.0 U	60.0	50.0	120	59.4	50.0	119	77-128	<1	30
Methyl Acetate ND, OK	2.0 U	63.7	50.0	127 *	65.6	50.0	131 *	26-121	3	30
Methyl tert-Butyl Ether	1.0 U	61.2	50.0	122 *	63.0	50.0	126 *	75-119	3	30
Methylcyclohexane	1.0 U	61.0	50.0	122	63.4	50.0	127	45-146	4	30
Naphthalene	1.0 U	63.3	50.0	127	62.0	50.0	124	57-153	2	30
Styrene	1.0 U	59.2	50.0	118	58.2	50.0	116	74-136	2	30
Tetrachloroethene (PCE)	1.0 U	52.2	50.0	104	52.6	50.0	105	72-125	<1	30
Toluene	17	63.0	50.0	93	62.9	50.0	92	79-119	<1	30
Trichloroethene (TCE)	1.0 U	50.4	50.0	101	50.1	50.0	100	74-122	<1	30
Trichlorofluoromethane (CFC 11)	1.0 U	57.6	50.0	115	60.3	50.0	121	71-136	4	30
Vinyl Chloride	1.0 U	51.1	50.0	102	51.5	50.0	103	74-159	<1	30
cis-1,2-Dichloroethene	1.0 U	58.6	50.0	117	58.9	50.0	118	77-127	<1	30
cis-1,3-Dichloropropene	1.0 U	54.4	50.0	109	55.0	50.0	110	52-134	1	30
m,p-Xylenes	2.0 U	119	100	119	116	100	116	80-126	3	30
n-Butylbenzene ND, OK	1.0 U	65.5	50.0	131	64.1	50.0	128	78-133	2	30
n-Propylbenzene ND, OK	1.0 U	65.9	50.0	132 *	66.5	50.0	133 *	78-131	<1	30
o-Xylene	1.0 U	58.1	50.0	116	57.3	50.0	115	79-123	1	30
sec-Butylbenzene	1.0 U	62.4	50.0	125	63.0	50.0	126	75-129	<1	30
tert-Butylbenzene	1.0 U	59.3	50.0	119	59.3	50.0	119	68-127	<1	30
trans-1,2-Dichloroethene	2.4 J	54.5	50.0	104	55.7	50.0	107	73-118	2	30
trans-1,3-Dichloropropene	1.0 U	51.8	50.0	104	53.7	50.0	107	71-133	4	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

Client: Wood E&IS - Portland ME
Project: Erdle Perforating Site 828072/3617137306.02
Sample Matrix: Water

Service Request: R2004884
Date Analyzed: 06/16/20

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

Lab Control Sample
RQ2006306-03

Analyte Name		Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
1,1,1-Trichloroethane (TCA)		8260C	18.9	20.0	94	75-125
1,1,2,2-Tetrachloroethane		8260C	25.9	20.0	129 *	78-126
1,1,2-Trichloroethane		8260C	22.2	20.0	111	82-121
1,1,2-Trichloro-1,2,2-trifluoroethane		8260C	18.9	20.0	95	67-124
1,1-Dichloroethane (1,1-DCA)		8260C	23.0	20.0	115	80-124
1,1-Dichloroethene (1,1-DCE)		8260C	19.5	20.0	97	71-118
1,2,3-Trichlorobenzene		8260C	21.0	20.0	105	67-136
1,2,4-Trichlorobenzene		8260C	22.8	20.0	114	75-132
1,2,4-Trimethylbenzene		8260C	23.6	20.0	118	81-126
1,2-Dibromo-3-chloropropane (DBCP)		8260C	17.8	20.0	89	55-136
1,2-Dibromoethane		8260C	20.7	20.0	104	82-127
1,2-Dichlorobenzene		8260C	21.7	20.0	108	80-119
1,2-Dichloroethane		8260C	24.4	20.0	122	71-127
1,2-Dichloropropane		8260C	24.0	20.0	120 *	80-119
1,3,5-Trimethylbenzene		8260C	23.3	20.0	116	81-128
1,3-Dichlorobenzene		8260C	21.7	20.0	108	83-121
1,4-Dichlorobenzene		8260C	21.0	20.0	105	79-119
1,4-Dioxane		8260C	451	400	113	44-154
2-Butanone (MEK)		8260C	26.8	20.0	134	61-137
2-Hexanone	ND, OK	8260C	26.2	20.0	131 *	63-124
4-Isopropyltoluene		8260C	22.0	20.0	110	78-133
4-Methyl-2-pentanone	ND, OK	8260C	26.4	20.0	132 *	66-124
Acetone		8260C	27.2	20.0	136	40-161
Benzene		8260C	22.8	20.0	114	79-119
Bromochloromethane		8260C	21.4	20.0	107	81-126
Bromodichloromethane		8260C	21.7	20.0	109	81-123
Bromoform		8260C	17.1	20.0	85	65-146
Bromomethane	LCSL, UJ	8260C	12.3	20.0	61	42-166
Carbon Disulfide		8260C	21.7	20.0	108	66-128
Carbon Tetrachloride		8260C	16.9	20.0	84	70-127
Chlorobenzene		8260C	20.3	20.0	101	80-121
Chloroethane		8260C	16.4	20.0	82	62-131
Chloroform		8260C	21.6	20.0	108	79-120

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Wood E&IS - Portland ME
Project: Erdle Perforating Site 828072/3617137306.02
Sample Matrix: Water

Service Request: R2004884
Date Analyzed: 06/16/20

Duplicate Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

		Lab Control Sample				Duplicate Lab Control Sample					
		RQ2006305-07				RQ2006305-08					
Analyte Name		**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,1,1-Trichloroethane (TCA)		8260C	17.3	20.0	87	17.8	20.0	89	75-125	3	30
1,1,2,2-Tetrachloroethane		8260C	25.2	20.0	126	23.7	20.0	119	78-126	6	30
1,1,2-Trichloroethane		8260C	22.0	20.0	110	22.7	20.0	113	82-121	3	30
1,1,2-Trichloro-1,2,2-trifluoroethane		8260C	16.2	20.0	81	18.0	20.0	90	67-124	10	30
1,1-Dichloroethane (1,1-DCA)		8260C	21.8	20.0	109	22.7	20.0	114	80-124	4	30
1,1-Dichloroethene (1,1-DCE)		8260C	17.0	20.0	85	18.3	20.0	92	71-118	7	30
1,2,3-Trichlorobenzene		8260C	18.7	20.0	94	18.5	20.0	93	67-136	1	30
1,2,4-Trichlorobenzene		8260C	20.1	20.0	101	20.5	20.0	103	75-132	2	30
1,2,4-Trimethylbenzene		8260C	21.5	20.0	108	22.3	20.0	111	81-126	3	30
1,2-Dibromo-3-chloropropane (DBCP)		8260C	16.6	20.0	83	17.1	20.0	85	55-136	3	30
1,2-Dibromoethane		8260C	19.7	20.0	98	20.2	20.0	101	82-127	3	30
1,2-Dichlorobenzene		8260C	19.5	20.0	98	20.0	20.0	100	80-119	3	30
1,2-Dichloroethane		8260C	23.0	20.0	115	23.4	20.0	117	71-127	2	30
1,2-Dichloropropane		8260C	22.8	20.0	114	23.0	20.0	115	80-119	1	30
1,3,5-Trimethylbenzene		8260C	20.7	20.0	104	21.9	20.0	110	81-128	6	30
1,3-Dichlorobenzene		8260C	19.9	20.0	100	20.2	20.0	101	83-121	1	30
1,4-Dichlorobenzene		8260C	19.5	20.0	98	19.7	20.0	99	79-119	1	30
1,4-Dioxane		8260C	467	400	117	461	400	115	44-154	1	30
2-Butanone (MEK)	LCSH, J	8260C	25.9	20.0	130	27.1	20.0	135	61-137	4	30
2-Hexanone		8260C	26.0	20.0	130 *	25.7	20.0	129 *	63-124	<1	30
4-Isopropyltoluene		8260C	19.3	20.0	96	20.4	20.0	102	78-133	6	30
4-Methyl-2-pentanone	LCSH, J	8260C	26.4	20.0	132 *	26.4	20.0	132 *	66-124	<1	30
Acetone	LCSH, J	8260C	26.0	20.0	130	27.1	20.0	135	40-161	4	30
Benzene		8260C	21.4	20.0	107	22.2	20.0	111	79-119	4	30
Bromochloromethane		8260C	19.7	20.0	99	21.2	20.0	106	81-126	7	30
Bromodichloromethane		8260C	20.9	20.0	104	22.2	20.0	111	81-123	6	30
Bromoform		8260C	16.3	20.0	81	17.1	20.0	85	65-146	5	30
Bromomethane	LCSL, UJ	8260C	11.3	20.0	57	12.5	20.0	63	42-166	10	30
Carbon Disulfide		8260C	19.9	20.0	99	20.3	20.0	101	66-128	2	30
Carbon Tetrachloride		8260C	15.2	20.0	76	16.8	20.0	84	70-127	10	30
Chlorobenzene		8260C	19.3	20.0	96	19.6	20.0	98	80-121	2	30
Chloroethane	LCSL, UJ	8260C	13.8	20.0	69	15.1	20.0	76	62-131	9	30
Chloroform		8260C	20.3	20.0	101	21.4	20.0	107	79-120	6	30

Client: Wood E&IS - Portland ME
Project: Erdle Perforating Site 828072/3617137306.02

Service Request: R2004884
Date Analyzed: 06/16/20 09:33

Continuing Calibration Verification (CCV) Summary
Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
File ID: I:\ACQUDATA\msvoa10\data\061620\T0205.D\
Signal ID: 1

Calibration Date: 4/18/2020
Calibration ID: RC2000054
Analysis Lot: 683882
Units: ug/L

Analyte Name		Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
1,1,1-Trichloroethane (TCA)		50.0	50.4	0.7807	0.7872	0.8	NA	±20	Average RF
1,1,2,2-Tetrachloroethane		50.0	55.2	0.949	1.0482	10.5	NA	±20	Average RF
1,1,2-Trichloroethane		50.0	55.6	0.3021	0.3361	11.2	NA	±20	Average RF
1,1,2-Trichloro-1,2,2-trifluoroethane		50.0	53.3	0.4649	0.4952	6.5	NA	±20	Average RF
1,1-Dichloroethane (1,1-DCA)		50.0	59.7	0.9191	1.0983	19.5	NA	±20	Average RF
1,1-Dichloroethene (1,1-DCE)		50.0	53.4	0.4477	0.478	6.8	NA	±20	Average RF
1,2,3-Trichlorobenzene		50.0	49.5	1.056	1.0446	-1.1	NA	±20	Average RF
1,2,4-Trichlorobenzene		50.0	53.7	0.9751	1.0464	7.3	NA	±20	Average RF
1,2,4-Trimethylbenzene		50.0	58.9	2.3223	2.7377	17.9	NA	±20	Average RF
1,2-Dibromo-3-chloropropane (DBCP)		50.0	40.3	0.2288	0.1845	-19.4	NA	±20	Average RF
1,2-Dibromoethane		50.0	51.9	0.3576	0.371	3.8	NA	±20	Average RF
1,2-Dichlorobenzene		50.0	50.7	1.4481	1.4698	1.5	NA	±20	Average RF
1,2-Dichloroethane	ND, OK	50.0	61.8	0.479	0.5917	23.5*	NA	±20	Average RF
1,2-Dichloropropane	ND, OK	50.0	61.4	0.3152	0.3869	22.7*	NA	±20	Average RF
1,3,5-Trimethylbenzene		50.0	58.5	2.3035	2.6968	17.1	NA	±20	Average RF
1,3-Dichlorobenzene		50.0	52.2	1.4091	1.4706	4.4	NA	±20	Average RF
1,4-Dichlorobenzene		50.0	50.0	1.4787	1.4785	0.0	NA	±20	Average RF
1,4-Dioxane		1000	1050	0.0065	0.0068	4.6	NA	±20	Average RF
2-Butanone (MEK)		50.0	56.9	0.3704	0.4218	13.9	NA	±20	Average RF
2-Hexanone		50.0	58.0	0.3241	0.3756	15.9	NA	±20	Average RF
4-Isopropyltoluene		50.0	57.2	2.4098	2.7586	14.5	NA	±20	Average RF
4-Methyl-2-pentanone	J+, CCV%D	50.0	60.8	0.397	0.483	21.7*	NA	±20	Average RF
Acetone		50.0	57.4	0.2411	0.2768	14.8	NA	±20	Average RF
Benzene		50.0	59.1	1.2203	1.4417	18.2	NA	±20	Average RF
Bromochloromethane		50.0	52.0	0.3425	0.3564	4.0	NA	±20	Average RF
Bromodichloromethane		50.0	56.9	0.3889	0.4423	13.7	NA	±20	Average RF
Bromoform		50.0	42.7	0.2337	0.1948	NA	-14.6	±20	Quadratic
Bromomethane	UJ, CCV%D	50.0	33.4	0.7269	0.4431	NA	-33.3*	±20	Quadratic
Carbon Disulfide		50.0	59.6	1.2129	1.4459	19.2	NA	±20	Average RF
Carbon Tetrachloride		50.0	47.9	0.391	0.3744	-4.3	NA	±20	Average RF
Chlorobenzene		50.0	50.3	0.9611	0.9661	0.5	NA	±20	Average RF
Chloroethane		50.0	43.8	0.5997	0.5247	-12.5	NA	±20	Average RF
Chloroform		50.0	55.4	0.9212	1.02	10.7	NA	±20	Average RF
Chloromethane		50.0	57.2	0.7626	0.8727	14.4	NA	±20	Average RF
Cyclohexane	ND, OK	50.0	60.6	0.301	0.365	21.3*	NA	±20	Average RF
Dibromochloromethane		50.0	49.5	0.3264	0.3326	NA	-1.0	±20	Quadratic
Dichlorodifluoromethane (CFC 12)		50.0	56.2	0.6287	0.7064	12.4	NA	±20	Average RF
Dichloromethane		50.0	57.7	0.6029	0.5911	NA	15.3	±20	Quadratic
Ethylbenzene		50.0	52.7	0.5003	0.5275	5.4	NA	±20	Average RF

Client: Wood E&IS - Portland ME
Project: Erdle Perforating Site 828072/3617137306.02

Service Request: R2004884
Date Analyzed: 06/16/20 09:33

Continuing Calibration Verification (CCV) Summary
Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
File ID: I:\ACQUDATA\msvoa10\data\061620\T0205.D\
Signal ID: 1

Calibration Date: 4/18/2020
Calibration ID: RC2000054
Analysis Lot: 683882
Units: ug/L

Analyte Name		Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Isopropylbenzene (Cumene)		50.0	56.6	1.5084	1.7065	13.1	NA	±20	Average RF
Methyl Acetate		50.0	57.4	0.5593	0.6425	14.9	NA	±20	Average RF
Methyl tert-Butyl Ether		50.0	56.8	1.7241	1.9572	13.5	NA	±20	Average RF
Methylcyclohexane	ND, OK	50.0	61.4	0.3897	0.4788	22.9*	NA	±20	Average RF
Naphthalene		50.0	52.9	2.8458	3.0093	5.7	NA	±20	Average RF
Styrene		50.0	58.6	0.9878	1.1582	17.3	NA	±20	Average RF
Tetrachloroethene (PCE)		50.0	50.9	0.2517	0.2562	1.8	NA	±20	Average RF
Toluene		50.0	56.8	1.273	1.445	13.5	NA	±20	Average RF
Trichloroethene (TCE)		50.0	50.9	0.3189	0.3246	1.8	NA	±20	Average RF
Trichlorofluoromethane (CFC 11)		50.0	54.9	0.7554	0.8295	9.8	NA	±20	Average RF
Vinyl Chloride		50.0	50.2	0.8832	0.8865	0.4	NA	±20	Average RF
cis-1,2-Dichloroethene		50.0	56.7	0.5308	0.6021	13.4	NA	±20	Average RF
cis-1,3-Dichloropropene		50.0	58.4	0.498	0.5817	16.8	NA	±20	Average RF
m,p-Xylenes		100	110	0.5958	0.6559	10.1	NA	±20	Average RF
n-Butylbenzene	ND, OK	50.0	62.5	2.234	2.7915	25.0*	NA	±20	Average RF
n-Propylbenzene		50.0	60.0	3.21	3.8491	19.9	NA	±20	Average RF
o-Xylene		50.0	54.3	0.6009	0.6531	8.7	NA	±20	Average RF
sec-Butylbenzene		50.0	57.4	2.9432	3.3761	14.7	NA	±20	Average RF
tert-Butylbenzene		50.0	52.6	2.0122	2.1154	5.1	NA	±20	Average RF
trans-1,2-Dichloroethene		50.0	52.1	0.5076	0.5288	4.2	NA	±20	Average RF
trans-1,3-Dichloropropene		50.0	56.1	0.4583	0.514	12.2	NA	±20	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
4-Bromofluorobenzene	50.0	57.2	0.4654	0.5321	14.3	NA	±20	Average RF
Dibromofluoromethane	50.0	52.6	0.3026	0.3181	5.1	NA	±20	Average RF
Toluene-d8	50.0	54.4	1.1675	1.2695	8.7	NA	±20	Average RF

Client: Wood E&IS - Portland ME
Project: Erdle Perforating Site 828072/3617137306.02

Service Request: R2004884
Date Analyzed: 06/16/20 22:04

Continuing Calibration Verification (CCV) Summary
Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
File ID: I:\ACQUDATA\msvoa10\data\061620\T0236.D\
Signal ID: 1

Calibration Date: 4/18/2020
Calibration ID: RC2000054
Analysis Lot: 683883
Units: ug/L

Analyte Name		Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
1,1,1-Trichloroethane (TCA)		50.0	49.9	0.7807	0.7797	-0.1	NA	±20	Average RF
1,1,2,2-Tetrachloroethane		50.0	55.1	0.949	1.0448	10.1	NA	±20	Average RF
1,1,2-Trichloroethane		50.0	56.3	0.3021	0.3403	12.6	NA	±20	Average RF
1,1,2-Trichloro-1,2,2-trifluoroethane		50.0	51.0	0.4649	0.4737	1.9	NA	±20	Average RF
1,1-Dichloroethane (1,1-DCA)		50.0	59.8	0.9191	1.0996	19.6	NA	±20	Average RF
1,1-Dichloroethene (1,1-DCE)		50.0	51.9	0.4477	0.4648	3.8	NA	±20	Average RF
1,2,3-Trichlorobenzene		50.0	49.4	1.056	1.043	-1.2	NA	±20	Average RF
1,2,4-Trichlorobenzene		50.0	52.7	0.9751	1.028	5.4	NA	±20	Average RF
1,2,4-Trimethylbenzene		50.0	58.8	2.3223	2.7331	17.7	NA	±20	Average RF
1,2-Dibromo-3-chloropropane (DBCP)		50.0	45.3	0.2288	0.2075	-9.3	NA	±20	Average RF
1,2-Dibromoethane		50.0	52.5	0.3576	0.3756	5.0	NA	±20	Average RF
1,2-Dichlorobenzene		50.0	51.1	1.4481	1.4796	2.2	NA	±20	Average RF
1,2-Dichloroethane	ND, OK	50.0	61.8	0.479	0.5919	23.6*	NA	±20	Average RF
1,2-Dichloropropane	ND, OK	50.0	60.9	0.3152	0.3836	21.7*	NA	±20	Average RF
1,3,5-Trimethylbenzene		50.0	58.0	2.3035	2.6703	15.9	NA	±20	Average RF
1,3-Dichlorobenzene		50.0	51.8	1.4091	1.4601	3.6	NA	±20	Average RF
1,4-Dichlorobenzene		50.0	48.8	1.4787	1.4439	-2.4	NA	±20	Average RF
1,4-Dioxane		1000	1140	0.0065	0.0075	14.3	NA	±20	Average RF
2-Butanone (MEK)	J+, CCV%D	50.0	68.2	0.3704	0.5049	36.3*	NA	±20	Average RF
2-Hexanone	ND, OK	50.0	67.5	0.3241	0.4378	35.1*	NA	±20	Average RF
4-Isopropyltoluene		50.0	55.3	2.4098	2.6645	10.6	NA	±20	Average RF
4-Methyl-2-pentanone	ND, OK	50.0	67.7	0.397	0.5376	35.4*	NA	±20	Average RF
Acetone	J+, CCV%D	50.0	68.0	0.2411	0.3281	36.1*	NA	±20	Average RF
Benzene		50.0	58.2	1.2203	1.4204	16.4	NA	±20	Average RF
Bromochloromethane		50.0	51.4	0.3425	0.3523	2.9	NA	±20	Average RF
Bromodichloromethane		50.0	55.8	0.3889	0.4341	11.6	NA	±20	Average RF
Bromoform		50.0	44.0	0.2337	0.2013	NA	-12.1	±20	Quadratic
Bromomethane	UJ, CCV%D	50.0	28.5	0.7269	0.3801	NA	-43.0*	±20	Quadratic
Carbon Disulfide		50.0	54.8	1.2129	1.3289	9.6	NA	±20	Average RF
Carbon Tetrachloride		50.0	45.4	0.391	0.3553	-9.1	NA	±20	Average RF
Chlorobenzene		50.0	50.9	0.9611	0.9775	1.7	NA	±20	Average RF
Chloroethane		50.0	43.4	0.5997	0.5199	-13.3	NA	±20	Average RF
Chloroform		50.0	54.8	0.9212	1.0094	9.6	NA	±20	Average RF
Chloromethane		50.0	56.7	0.7626	0.8645	13.4	NA	±20	Average RF
Cyclohexane		50.0	57.2	0.301	0.3446	14.5	NA	±20	Average RF
Dibromochloromethane		50.0	50.0	0.3264	0.3363	NA	0.0	±20	Quadratic
Dichlorodifluoromethane (CFC 12)		50.0	53.5	0.6287	0.6724	6.9	NA	±20	Average RF
Dichloromethane		50.0	56.8	0.6029	0.5821	NA	13.5	±20	Quadratic
Ethylbenzene		50.0	51.2	0.5003	0.512	2.4	NA	±20	Average RF

Client: Wood E&IS - Portland ME
Project: Erdle Perforating Site 828072/3617137306.02

Service Request: R2004884
Date Analyzed: 06/16/20 22:04

Continuing Calibration Verification (CCV) Summary
Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
File ID: I:\ACQUDATA\msvoa10\data\061620\T0236.D\
Signal ID: 1

Calibration Date: 4/18/2020
Calibration ID: RC2000054
Analysis Lot: 683883
Units: ug/L

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Isopropylbenzene (Cumene)	50.0	55.3	1.5084	1.6687	10.6	NA	±20	Average RF
Methyl Acetate ND, OK	50.0	63.3	0.5593	0.7082	26.6*	NA	±20	Average RF
Methyl tert-Butyl Ether	50.0	58.9	1.7241	2.0298	17.7	NA	±20	Average RF
Methylcyclohexane	50.0	56.4	0.3897	0.4394	12.8	NA	±20	Average RF
Naphthalene	50.0	56.7	2.8458	3.2273	13.4	NA	±20	Average RF
Styrene	50.0	58.0	0.9878	1.1463	16.0	NA	±20	Average RF
Tetrachloroethene (PCE)	50.0	49.7	0.2517	0.2502	-0.6	NA	±20	Average RF
Toluene	50.0	56.1	1.273	1.4289	12.2	NA	±20	Average RF
Trichloroethene (TCE)	50.0	52.2	0.3189	0.3332	4.5	NA	±20	Average RF
Trichlorofluoromethane (CFC 11)	50.0	53.3	0.7554	0.806	6.7	NA	±20	Average RF
Vinyl Chloride	50.0	49.1	0.8832	0.8674	-1.8	NA	±20	Average RF
cis-1,2-Dichloroethene	50.0	55.6	0.5308	0.5905	11.3	NA	±20	Average RF
cis-1,3-Dichloropropene	50.0	56.8	0.498	0.5661	13.7	NA	±20	Average RF
m,p-Xylenes	100	107	0.5958	0.6382	7.1	NA	±20	Average RF
n-Butylbenzene	50.0	58.5	2.234	2.613	17.0	NA	±20	Average RF
n-Propylbenzene	50.0	59.6	3.21	3.8279	19.3	NA	±20	Average RF
o-Xylene	50.0	53.2	0.6009	0.6389	6.3	NA	±20	Average RF
sec-Butylbenzene	50.0	56.4	2.9432	3.3173	12.7	NA	±20	Average RF
tert-Butylbenzene	50.0	52.9	2.0122	2.129	5.8	NA	±20	Average RF
trans-1,2-Dichloroethene	50.0	52.3	0.5076	0.5309	4.6	NA	±20	Average RF
trans-1,3-Dichloropropene	50.0	54.0	0.4583	0.4951	8.0	NA	±20	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
4-Bromofluorobenzene	50.0	56.4	0.4654	0.5245	12.7	NA	±20	Average RF
Dibromofluoromethane	50.0	53.4	0.3026	0.3233	6.8	NA	±20	Average RF
Toluene-d8	50.0	55.3	1.1675	1.2901	10.5	NA	±20	Average RF

field_sample_id	qc_cod	lab_sample_id	analysis_m	param_name	lab_sample	final_r	final_	lab_res	lab	repc	result_uom	detection_	SQL_text	run_i	dilution_factor	**Dup RPD**	
828072-MW021012	FS	R2004884-021	SW8260C	1,1-Dichloroethane	R2004884	0.94	J	0.94	J	Y	ug/l	0.20	1	1	1	1	
828072-MW021012Dup	FD	R2004884-022	SW8260C	1,1-Dichloroethane	R2004884	0.93	J	0.93	J	Y	ug/l	0.20	1	1	1		
828072-MW02A008	FS	R2004884-005	SW8260C	1,1-Dichloroethene	R2004884	24		24		Y	ug/l	4.0	20	1	20	4	
828072-MW02A008 Dup	FD	R2004884-006	SW8260C	1,1-Dichloroethene	R2004884	23		23		Y	ug/l	4.0	20	1	20		
828072-MW02A008	**FS**	**R2004884-005**	**SW8260C**	**Chloromethane**	**R2004884**	**9.6**	**J**	**9.6**	**J**	**Y**	**ug/l**	**5.6**	**20**	**1**	**20**	70	U,J ok
828072-MW02A008 Dup	**FD**	**R2004884-006**	**SW8260C**	**Chloromethane**	**R2004884**	**20**	**U**	**20**	**U**		**ug/l**	**5.6**	**20**	**1**	**20**		
828072-MW02A008	FS	R2004884-005	SW8260C	cis-1,2-Dichloroethene	R2004884	9000		9000	D	Y	ug/l	23	100	2	100	2	
828072-MW02A008 Dup	FD	R2004884-006	SW8260C	cis-1,2-Dichloroethene	R2004884	8800		8800	D	Y	ug/l	23	100	2	100		
828072-MW021012	FS	R2004884-021	SW8260C	cis-1,2-Dichloroethene	R2004884	20		20		Y	ug/l	0.23	1	1	1	0	
828072-MW021012Dup	FD	R2004884-022	SW8260C	cis-1,2-Dichloroethene	R2004884	20		20		Y	ug/l	0.23	1	1	1		
828072-MW02A008	FS	R2004884-005	SW8260C	trans-1,2-Dichloroethene	R2004884	54		54		Y	ug/l	4.0	20	1	20	14	
828072-MW02A008 Dup	FD	R2004884-006	SW8260C	trans-1,2-Dichloroethene	R2004884	47		47		Y	ug/l	4.0	20	1	20		
828072-MW021012	**FS**	**R2004884-021**	**SW8260C**	**trans-1,2-Dichloroethene**	**R2004884**	**1.0**	**U**	**1.0**	**U**		**ug/l**	**0.20**	**1**	**1**	**1**	128	U, J ok
828072-MW021012Dup	**FD**	**R2004884-022**	**SW8260C**	**trans-1,2-Dichloroethene**	**R2004884**	**0.22**	**J**	**0.22**	**J**	**Y**	**ug/l**	**0.20**	**1**	**1**	**1**		
828072-MW02A008	FS	R2004884-005	SW8260C	Trichloroethene	R2004884	360		360		Y	ug/l	4.0	20	1	20	13	
828072-MW02A008 Dup	FD	R2004884-006	SW8260C	Trichloroethene	R2004884	410		410		Y	ug/l	4.0	20	1	20		
828072-MW021012	FS	R2004884-021	SW8260C	Trichloroethene	R2004884	3.4		3.4		Y	ug/l	0.20	1	1	1	6	
828072-MW021012Dup	FD	R2004884-022	SW8260C	Trichloroethene	R2004884	3.6		3.6		Y	ug/l	0.20	1	1	1		
828072-MW02A008	FS	R2004884-005	SW8260C	Vinyl chloride	R2004884	760		760		Y	ug/l	4.0	20	1	20	4	
828072-MW02A008 Dup	FD	R2004884-006	SW8260C	Vinyl chloride	R2004884	730		730		Y	ug/l	4.0	20	1	20		
828072-MW021012	FS	R2004884-021	SW8260C	Vinyl chloride	R2004884	7.2		7.2		Y	ug/l	0.20	1	1	1	9	
828072-MW021012Dup	FD	R2004884-022	SW8260C	Vinyl chloride	R2004884	7.9		7.9		Y	ug/l	0.20	1	1	1		

VOCs

PROJECT CATEGORY A REVIEW RECORD
Project:
Method : SW-846 8260C
Laboratory: ALS Environmental **SDG(s): R2005025**
Date: 7/20/2020
Reviewer: Shawna Couplin
Review Level [X] CATEGORY A

1. ~~☐~~ Case **Narrative Review and COC/Data Package Completeness** COMMENTS
   Were problems noted? **YES, QUALS: CCV%D, UJ**

   Were all the samples on the COC analyzed for the requested analyses? **YES** NO(circle one) **YES**

   Are Field Sample IDs and Locations assigned correctly? **YES** NO (circle one) **YES**

2. ~~☐~~ **Holding time and Sample Collection**
   All samples were analyzed within the 14 day holding time. **YES** NO (circle one) **YES**

3. ~~☐~~ **QC Blanks**
   Are method blanks free of contamination? **YES** NO (circle one) **YES**

   Are Trip blanks free of contamination? **YES** NO (circle one) **YES**

   Are Rinse blanks free of contamination? YES NO **NA** (circle one) **NA**

4. ~~☐~~ **Matrix Spike** - Region II limits (water and soil 70-130%, water RPD 20, soil RPD 35)
   Were MS/MSDs submitted/analyzed? **YES** NO **YES**

   Were all results within the Region II limits? YES **NO** NA (circle one) **SEE ATTACHED, QUALS: MSL; FLAG: UJ**

5. ~~☐~~ **Laboratory Control Sample Results** - Region II (Water and soil 70-130%)

   Were all results were within Region II control limits? **YES** NO (circle one) **YES**

6. ~~☐~~ **Surrogate Recovery** - Region II limits (water 80-120%, soil 70-130%)

   Were all results within Region II limits? **YES** NO (circle one) **YES**

7. ~~☐~~ **Field Duplicates** - Region II Limits (water RPD 50, soil RPD 100)
   Were Field Duplicates submitted/analyzed? **YES** NO **YES**

   Were all results within Region II Limits? YES **NO** NA (circle one) **NO, see attached, FD, J flag**

8. ~~☐~~ **Reporting Limits:** Were samples analyzed at a dilution? **YES** NO (circle one) **YES, SEE MEMO**

9. ~~☐~~ **Electronic Data Review and Edits**
   Does the EDD match the Form Is? **YES** NO (circle one)

10. ~~☐~~ **Table Review**
    Table 1 (Samples and Analytical Methods)
    Table 2 (Analytical Results)
    Table 3 (Qualification Actions)
    Were all tables produced and reviewed? **YES** NO (circle one) **YES**

    Table 4 (TICs) Did lab report TICs? YES **NO** (circle one) **NO**

Client: Wood E&IS - Portland ME
Project: Erdle Perforating Site 828072
Sample Matrix: Water

Service Request: R2005025
Date Received: 06/12/2020

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.

Sample Receipt:

Twenty three water samples were received for analysis at ALS Environmental on 06/12/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Volatiles by GC/MS: Quals: CCV%D, UJ flag (see attached)

Method 8260C, 06/19/2020: The lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.

Method 8260C, r2005025-013: Sample(s) required dilution due to the foaming nature of the matrix. The reporting limits are adjusted to reflect the dilution.

Approved by _____ Date 06/26/2020

Client:	Wood E&IS - Portland ME	**Service Request:**	R2005025
Project:	Erdle Perforating Site 828072/3617137306.02	**Date Collected:**	06/10/20
Sample Matrix:	Water	**Date Received:**	06/12/20
		Date Analyzed:	06/19/20
		Date Extracted:	NA

Duplicate Matrix Spike Summary
Volatile Organic Compounds by GC/MS

Sample Name:	828072-MW17D023	**Units:**	ug/L
Lab Code:	R2005025-019	**Basis:**	NA
Analysis Method:	8260C		
Prep Method:	EPA 5030C		

		Matrix Spike RQ2006409-05			Duplicate Matrix Spike RQ2006409-06					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,1,1-Trichloroethane (TCA)	1.0 U	52.5	51.2	102	53.1	51.2	104	74-127	1	30
1,1,2,2-Tetrachloroethane	1.0 U	53.5	51.2	104	54.4	51.2	106	72-122	2	30
1,1,2-Trichloroethane	1.0 U	50.0	51.2	98	45.9	51.2	90	82-121	8	30
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	51.2	51.2	100	50.3	51.2	98	50-147	2	30
1,1-Dichloroethane (1,1-DCA)	1.0 U	52.1	51.2	102	51.5	51.2	101	74-132	1	30
1,1-Dichloroethene (1,1-DCE)	1.0 U	51.1	51.2	100	51.2	51.2	100	71-118	<1	30
1,2,3-Trichlorobenzene	1.0 U	43.5	51.2	85	46.6	51.2	91	59-129	7	30
1,2,4-Trichlorobenzene	1.0 U	45.6	51.2	89	49.0	51.2	96	69-122	7	30
1,2,4-Trimethylbenzene	1.0 U	54.2	51.2	106	54.6	51.2	107	73-133	<1	30
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	49.3	51.2	96	53.7	51.2	105	37-150	8	30
1,2-Dibromoethane	1.0 U	51.4	51.2	100	50.7	51.2	99	67-127	1	30
1,2-Dichlorobenzene	1.0 U	48.8	51.2	95	49.4	51.2	96	77-120	1	30
1,2-Dichloroethane	1.0 U	49.6	51.2	97	43.9	51.2	86	68-130	12	30
1,2-Dichloropropane	1.0 U	51.8	51.2	101	51.8	51.2	101	79-124	<1	30
1,3,5-Trimethylbenzene	1.0 U	52.3	51.2	102	53.1	51.2	104	81-131	2	30
1,3-Dichlorobenzene	1.0 U	49.1	51.2	96	49.8	51.2	97	83-121	1	30
1,4-Dichlorobenzene	1.0 U	46.5	51.2	91	48.0	51.2	94	82-120	3	30
1,4-Dioxane	40 U	911	1020	89	953	1020	93	44-154	5	30
2-Butanone (MEK)	5.0 U	42.1	51.2	82	44.2	51.2	86	61-137	5	30
2-Hexanone	5.0 U	48.0	51.2	94	49.5	51.2	97	56-132	3	30
4-Isopropyltoluene	1.0 U	53.1	51.2	104	54.3	51.2	106	78-133	2	30
4-Methyl-2-pentanone	5.0 U	50.0	51.2	98	52.1	51.2	102	60-141	4	30
Acetone	5.0 U	46.7	51.2	91	47.2	51.2	92	35-183	1	30
Benzene	1.0 U	52.9	51.2	103	47.1	51.2	92	76-129	12	30
Bromochloromethane	1.0 U	52.3	51.2	102	50.6	51.2	99	80-122	3	30
Bromodichloromethane	1.0 U	54.2	51.2	106	53.8	51.2	105	78-133	<1	30
Bromoform	1.0 U	49.5	51.2	97	50.8	51.2	99	58-133	3	30
Bromomethane	1.0 U	35.7	51.2	70	32.9	51.2	64	10-184	8	30
Carbon Disulfide	1.2	55.9	51.2	107	56.2	51.2	107	59-140	<1	30
Carbon Tetrachloride	1.0 U	52.5	51.2	103	48.0	51.2	94	65-135	9	30
Chlorobenzene	1.0 U	51.8	51.2	101	50.9	51.2	99	76-125	2	30
Chloroethane	1.0 U	53.0	51.2	104	51.5	51.2	101	48-146	3	30
Chloroform	1.0 U	50.9	51.2	99	50.5	51.2	99	75-130	<1	30

Results flagged with an asterisk (*) indicate values outside control criteria.

MSL, UJ

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

Client:	Wood E&IS - Portland ME	**Service Request:**	R2005025
Project:	Erdle Perforating Site 828072/3617137306.02	**Date Collected:**	06/10/20
Sample Matrix:	Water	**Date Received:**	06/12/20
		Date Analyzed:	06/19/20
		Date Extracted:	NA

Duplicate Matrix Spike Summary
Volatile Organic Compounds by GC/MS

Sample Name:	828072-MW17D023	**Units:**	ug/L
Lab Code:	R2005025-019	**Basis:**	NA
Analysis Method:	8260C		
Prep Method:	EPA 5030C		

		Matrix Spike RQ2006409-05			Duplicate Matrix Spike RQ2006409-06				
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Chloromethane	1.0 U	52.1	51.2	102	51.7	51.2	101	55-160	<1	30
Cyclohexane	1.0 U	50.5	51.0	99	44.5	51.0	87	52-145	13	30
Dibromochloromethane	1.0 U	54.7	51.2	107	54.6	51.2	107	72-128	<1	30
Dichlorodifluoromethane (CFC 12)	1.0 U	58.2	51.2	114	58.0	51.2	113	49-154	<1	30
Dichloromethane	1.0 U	49.7	51.2	97	48.9	51.2	96	73-122	1	30
Ethylbenzene	1.0 U	53.6	51.2	105	53.0	51.2	104	72-134	1	30
Isopropylbenzene (Cumene)	1.0 U	53.3	51.2	104	52.9	51.2	103	77-128	<1	30
Methyl Acetate	2.0 U	35.4	51.0	69	35.0	51.0	69	26-121	1	30
Methyl tert-Butyl Ether	1.0 U	51.2	51.2	100	51.2	51.2	100	75-119	<1	30
Methylcyclohexane	1.0 U	49.5	51.0	97	51.4	51.0	101	45-146	4	30
Naphthalene	1.0 U	48.7	51.2	95	51.9	51.2	101	57-153	6	30
Styrene	1.0 U	52.0	51.2	102	52.6	51.2	103	74-136	1	30
Tetrachloroethene (PCE)	1.0 U	49.9	51.2	97	49.6	51.2	97	72-125	<1	30
Toluene	1.0 U	52.9	51.2	103	52.1	51.2	102	79-119	2	30
Trichloroethene (TCE)	1.0 U	47.1	51.2	92	47.3	51.2	92	74-122	<1	30
Trichlorofluoromethane (CFC 11)	1.0 U	54.2	51.2	106	53.9	51.2	105	71-136	<1	30
Vinyl Chloride	1.4	54.2	51.2	103	52.6	51.2	100	74-159	3	30
cis-1,2-Dichloroethene	0.54 J	51.2	51.2	99	51.6	51.2	100	77-127	<1	30
cis-1,3-Dichloropropene	1.0 U	48.7	51.2	95	50.0	51.2	98	52-134	3	30
m,p-Xylenes	2.0 U	111	102	109	109	102	106	80-126	3	30
n-Butylbenzene	1.0 U	53.7	51.2	105	54.7	51.2	107	78-133	2	30
n-Propylbenzene	1.0 U	54.2	51.2	106	54.5	51.2	106	78-131	<1	30
o-Xylene	1.0 U	56.1	51.2	110	54.3	51.2	106	79-123	3	30
sec-Butylbenzene	1.0 U	54.0	51.2	105	54.4	51.2	106	75-129	<1	30
tert-Butylbenzene	1.0 U	52.9	51.2	103	52.7	51.2	103	68-127	<1	30
trans-1,2-Dichloroethene	1.0 U	53.7	51.2	105	51.2	51.2	100	73-118	5	30
trans-1,3-Dichloropropene	1.0 U	47.5	51.2	93	44.7	51.2	87	71-133	6	30

MSL, UJ

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

Client: Wood E&IS - Portland ME
Project: Erdle Perforating Site 828072/3617137306.02

Service Request: R2005025
Date Analyzed: 06/18/20 21:16

Continuing Calibration Verification (CCV) Summary
Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
File ID: I:\ACQUDATA\msvoa10\data\061820\T0314.D\
Signal ID: 1

Calibration Date: 6/17/2020
Calibration ID: RC2000086
Analysis Lot: 684209
Units: ug/L

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
1,1,1-Trichloroethane (TCA)	50.0	43.8	0.7932	0.6943	-12.5	NA	±20	Average RF
1,1,2,2-Tetrachloroethane	50.0	50.5	1.0469	1.0566	0.9	NA	±20	Average RF
1,1,2-Trichloroethane	50.0	48.1	0.3336	0.3212	-3.7	NA	±20	Average RF
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	42.5	0.4824	0.4103	-14.9	NA	±20	Average RF
1,1-Dichloroethane (1,1-DCA)	50.0	45.4	1.1022	1.0004	-9.2	NA	±20	Average RF
1,1-Dichloroethene (1,1-DCE)	50.0	42.9	0.482	0.413	-14.3	NA	±20	Average RF
1,2,3-Trichlorobenzene	50.0	47.7	1.0638	1.0143	-4.7	NA	±20	Average RF
1,2,4-Trichlorobenzene	50.0	48.0	1.0453	1.0027	-4.1	NA	±20	Average RF
1,2,4-Trimethylbenzene	50.0	50.1	2.6026	2.6053	0.1	NA	±20	Average RF
1,2-Dibromo-3-chloropropane (DBCP)	50.0	54.2	0.1845	0.2019	NA	8.4	±20	Quadratic
1,2-Dibromoethane	50.0	50.8	0.3522	0.3578	1.6	NA	±20	Average RF
1,2-Dichlorobenzene	50.0	48.8	1.4987	1.4631	-2.4	NA	±20	Average RF
1,2-Dichloroethane	50.0	49.0	0.5801	0.568	-2.1	NA	±20	Average RF
1,2-Dichloropropane	50.0	52.1	0.3852	0.4014	4.2	NA	±20	Average RF
1,3,5-Trimethylbenzene	50.0	48.0	2.6482	2.5404	-4.1	NA	±20	Average RF
1,3-Dichlorobenzene	50.0	47.2	1.5029	1.4174	-5.7	NA	±20	Average RF
1,4-Dichlorobenzene	50.0	46.1	1.5825	1.4601	-7.7	NA	±20	Average RF
1,4-Dioxane	1000	980	0.0074	0.0072	-2.0	NA	±20	Average RF
2-Butanone (MEK)	50.0	44.8	0.4902	0.4394	-10.4	NA	±20	Average RF
2-Hexanone	50.0	49.2	0.4099	0.4036	-1.5	NA	±20	Average RF
4-Isopropyltoluene	50.0	46.6	2.6171	2.4393	-6.8	NA	±20	Average RF
4-Methyl-2-pentanone	50.0	50.0	0.4974	0.4971	-0.1	NA	±20	Average RF
Acetone	50.0	48.3	0.324	0.313	-3.4	NA	±20	Average RF
Benzene	50.0	45.3	1.4275	1.2946	-9.3	NA	±20	Average RF
Bromochloromethane	50.0	49.0	0.3479	0.3407	-2.1	NA	±20	Average RF
Bromodichloromethane	50.0	54.1	0.4133	0.4474	8.2	NA	±20	Average RF
Bromoform	50.0	49.9	0.1903	0.1961	NA	-0.2	±20	Quadratic
Bromomethane	50.0	34.0	0.5307	0.3106	NA	-32.1*	±20	Quadratic
Carbon Disulfide	50.0	50.6	1.3652	1.3821	1.2	NA	±20	Average RF
Carbon Tetrachloride	50.0	41.8	0.3749	0.3132	-16.5	NA	±20	Average RF
Chlorobenzene	50.0	46.4	0.9784	0.908	-7.2	NA	±20	Average RF
Chloroethane	50.0	46.7	0.544	0.5076	-6.7	NA	±20	Average RF
Chloroform	50.0	44.7	1.0314	0.9225	-10.6	NA	±20	Average RF
Chloromethane	50.0	39.1	0.9068	0.7097	-21.7*	NA	±20	Average RF
Cyclohexane	50.0	41.7	0.3947	0.3294	-16.6	NA	±20	Average RF
Dibromochloromethane	50.0	51.3	0.3129	0.3213	2.7	NA	±20	Average RF
Dichlorodifluoromethane (CFC 12)	50.0	45.1	0.642	0.5796	-9.7	NA	±20	Average RF
Dichloromethane	50.0	45.4	0.6086	0.5529	-9.1	NA	±20	Average RF
Ethylbenzene	50.0	45.7	0.5152	0.4708	-8.6	NA	±20	Average RF

Quals: CCV%D; Flag: UJ

R2005025 FD RPD

field_sample_id	param_name	final_result	final_qualifi	Val_Reason	lab_result_	lab_qualifie	report_hit_	result_uom	lab_uncert	detection_	dilution_factor	**Dup RPD**	
828072-MW13D12	1,1-Dichloroethane	1.0			1.0		Y	ug/l	0.20		1	**52**	
828072-MW13D12-DUP	1,1-Dichloroethane	0.59	J		0.59	J	Y	ug/l	0.20		1		
828072-MW13D12	cis-1,2-Dichloroethene	120			120		Y	ug/l	0.23		1	**82**	
828072-MW13D12-DUP	cis-1,2-Dichloroethene	50			50		Y	ug/l	0.23		1		
828072-MW13D12	Tetrachloroethene	0.27	J		0.27	J	Y	ug/l	0.21		1	115	ND, ok
828072-MW13D12-DUP	Tetrachloroethene	1.0	U		1.0	U		ug/l	0.21		1		
828072-MW13D12	trans-1,2-Dichloroethene	0.64	J		0.64	J	Y	ug/l	0.20		1	94	J flags ok
828072-MW13D12-DUP	trans-1,2-Dichloroethene	0.23	J		0.23	J	Y	ug/l	0.20		1		
828072-MW13D12	Vinyl chloride	26			26		Y	ug/l	0.20		1	**95**	
828072-MW13D12-DUP	Vinyl chloride	9.2			9.2		Y	ug/l	0.20		1		