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Unicorn Management Consultants, LLC

ANNUAL GROUNDWATER MONITORING REPORT
CLOSURE YEAR 23 (2019)

UNION ROAD SITE
TOWN OF CHEEKTOWAGA
ERIE COUNTY, NEW YORK
(SITE REGISTRY NO. 9-15-128)

Prepared for:

AMERICAN PREMIER UNDERWRITERS, INC.
(FORMERLY THE PENN CENTRAL CORPORATION)
ONE EAST FOURTH STREET
CINCINNATI, OHIO 45202

Prepared by:

UNICORN MANAGEMENT CONSULTANTS, LLC
52 FEDERAL ROAD, SUITE 2C
DANBURY, CT 06810

January 15, 2020

Document Authorization Form

Annual Groundwater Monitoring Report
Closure Year 23 (2019)

Union Road Site
Town of Cheektowaga
Erie County, New York
(Site Registry No. 9-15-128)

Prepared for:

American Premier Underwriters, Inc.
(Formerly The Penn Central Corporation)
One East Fourth Street
Cincinnati, Ohio 45202

Prepared by:

UNICORN MANAGEMENT CONSULTANTS, LLC
52 FEDERAL ROAD, SUITE 2C
DANBURY, CT 06810

January 15, 2020

AUTHORIZATIONS:

Michael J. O'Connor, LEP, PG.
Manager of Environmental Projects

01/15/2020
Date

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1. INTRODUCTION

This Groundwater Monitoring Report has been prepared by Unicorn Management Consultants, LLC (UMC) on behalf of American Premier Underwriters, Inc (APU). The purpose of this document is to demonstrate compliance with Section 12.4.1 of the Union Road Site Remedial Design Report (Design Report), approved by the New York State Department of Environmental Conservation (NYSDEC) in May, 1995. Section 12.4.1 of the Design Report discusses the Groundwater Monitoring Plan (GMP).

The purpose of GMP is as follows:

- To evaluate the groundwater quality to assess the effectiveness of the remedial action performed in accordance with 1995 Design Report, and
- To monitor the groundwater gradient of the three hydrogeologic units in and around the closure area.

The GMP consists of these elements:

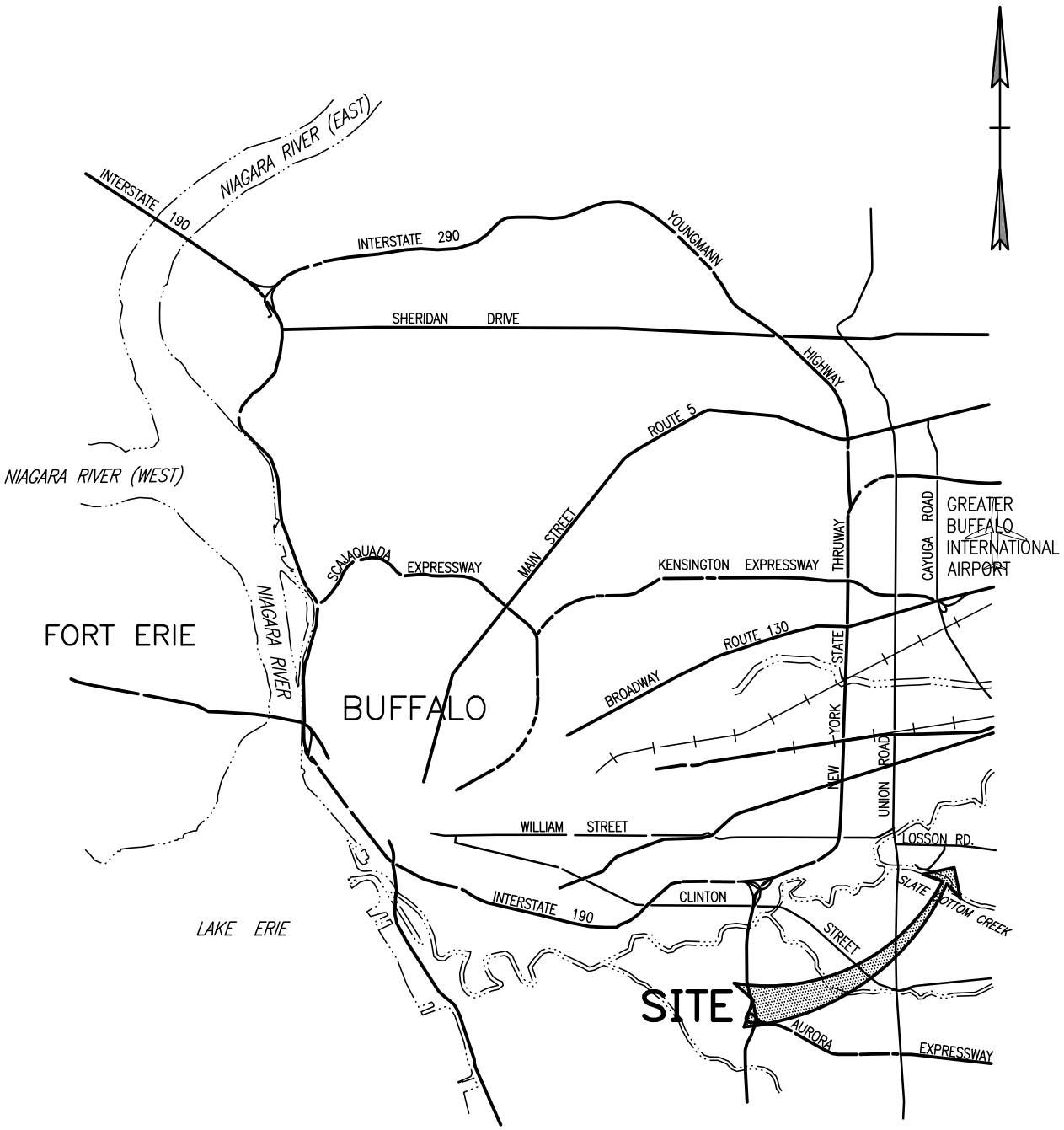
- The installation of groundwater monitoring wells inside and outside the slurry wall around the landfill closure;
- The collection and analyses of groundwater samples; and
- The determination of groundwater elevations.

Please note that pursuant to a letter dated October 18, 2001, from Blank Rome Comisky and McCauley, LLP (APU's legal counsel), effective October 19, 2001, APU designated UMC as their environmental consultants.

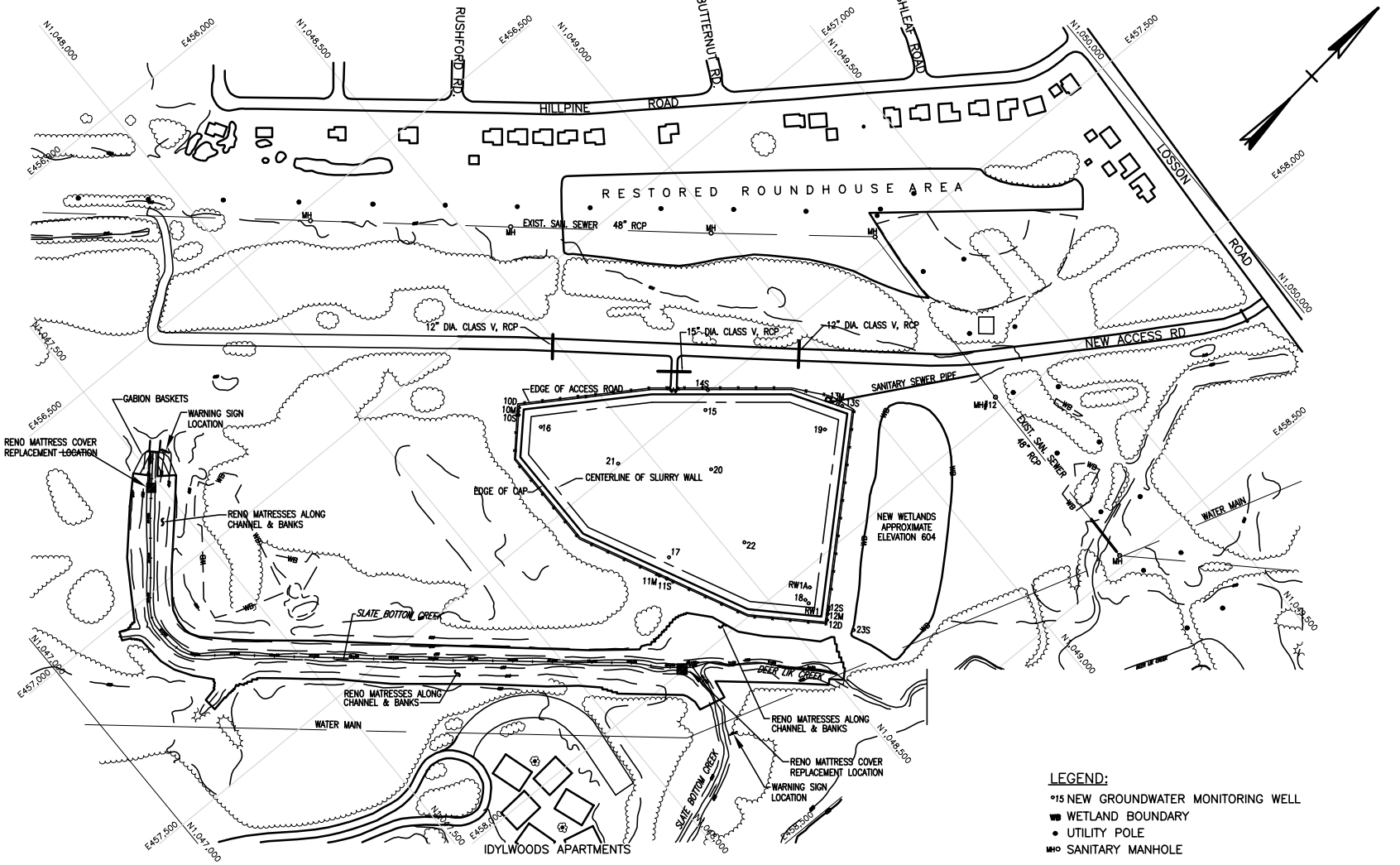
The Union Road site ("the Site") is a Class 4 Site as defined by the NYSDEC. The Site registry number is 915128. The Site is located at 333 Losson Road in Cheektowaga, New York (see Figure 1-1). A Record of Decision (ROD) for the Site was signed on March 9, 1992. Order on Consent Index No. B9-0148-92-03 was signed by The Penn Central Corporation (currently, APU) and the NYSDEC; the effective date of the Order is April 12, 1994. Appendix "B" of the Order is the Final Remedial Action Work Plan (the "Work Plan"), dated June 18, 1993.

As required in Section 4.2 of the Work Plan, the design documents, including the Union Road Site Remedial Design Report, were submitted in May 1995 to the NYSDEC and were subsequently approved. After approval, work commenced and the landfill closure was completed in December 1996. Figure 1-2 illustrates a plan view of the Site closure.

The GMP, and Operation and Maintenance (O&M) activities for the Site went into effect following the landfill closure. This report presents and summarizes the activities conducted and analytical data for groundwater samples collected on Site during Closure Year 23 (2019). The 2019 Annual Sampling Event is the 27th sampling event since the landfill closure.



REVISION NO.		PROJECT	UNION ROAD SITE TOWN OF CHEEKTOWAGA, NEW YORK	Unicorn Management Consultants, LLC 52 FEDERAL ROAD DANBURY, CT (203) 205-9000	PROJECT # 2011-200
NO.	DATE				FILENAME: UNION_RD
					SCALE: 1"~2mi DATE: 1/16/02
		DRAWING	LOCATION MAP		BY: AD CK:
					FIGURE # 1-1



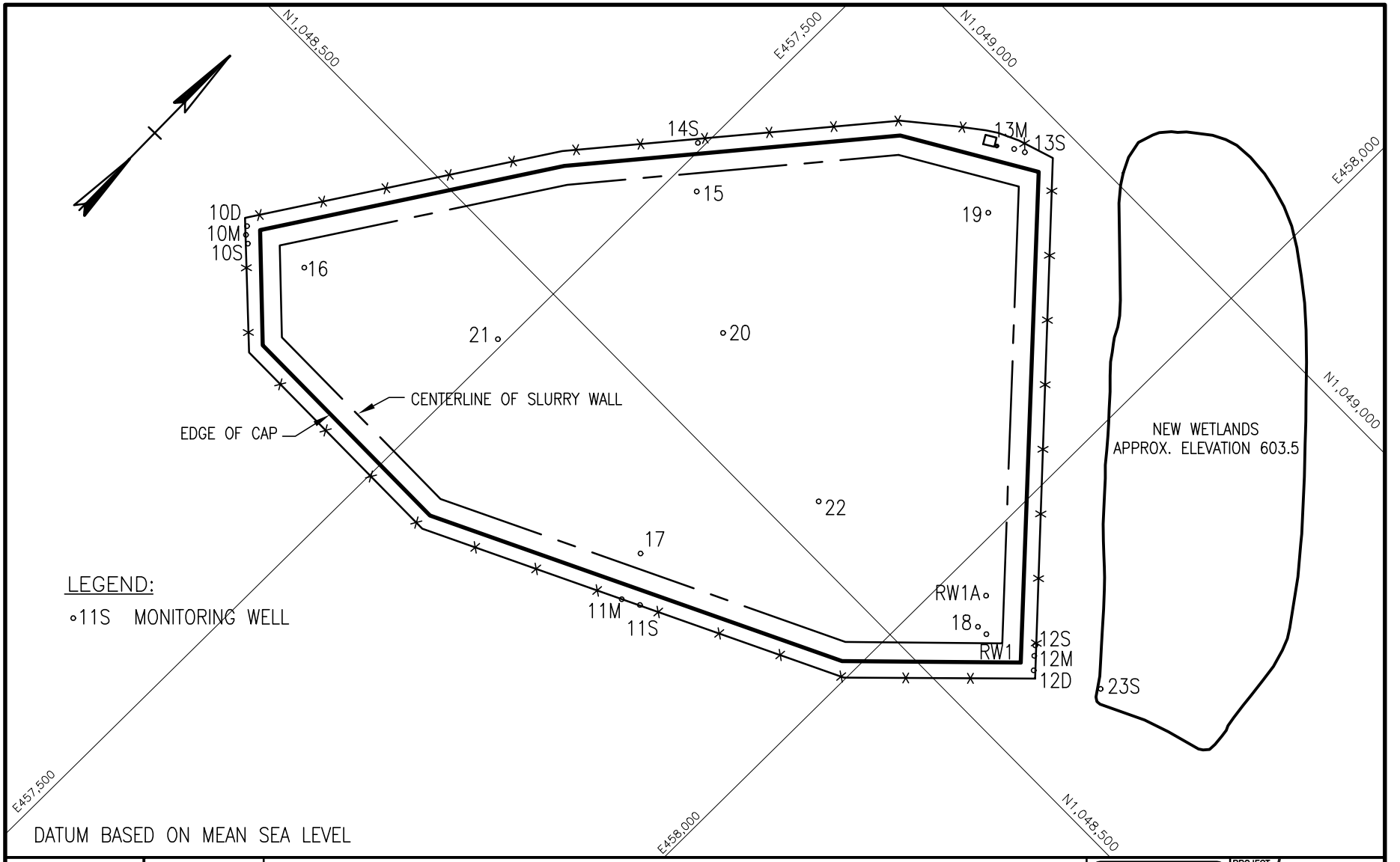
REVISIONS		PROJECT	UNION ROAD SITE TOWN OF CHEEKTOWAGA, NEW YORK	Unicorn Management Consultants, LLC 52 FEDERAL ROAD DANBURY, CT (203) 205-9000	PROJECT # 2011-200
NO.	DATE				FILENAME: 2045100B
		DRAWING	SITE LOCATION		SCALE: 1" =400' DATE: 8/23/06
					BY: AD CK:
					FIGURE # 1-2

2. WELL INSTALLATION

As proposed in the GMP, five well clusters were installed along the outside perimeter of the slurry wall. These exterior wells are identified as MW-10S/M/D, MW-11S/M, MW-12S/M/D, MW-13S/M, and MW-14S. Adjacent to these wells, along the inside perimeter of the slurry wall, five shallow wells identified as MW-15, MW-16, MW-17, MW-18, and MW-19 were installed.

Three additional shallow wells (not originally proposed) were also installed. These wells (MW-20, MW-21, and MW-22) were installed in the center of the landfill to monitor the elevation of groundwater inside the landfill closure. Proposed well MW-20S adjacent to the outfall of the new wetland was installed; however, the identification of this well was changed from MW-20S to MW-23S. As discussed in the Groundwater Monitoring Report for the Second Quarter 1997, the original Monitoring Well 14S (MW-14S) was decommissioned and the replacement was reinstalled nine feet southwest (along the fence line). The MW-14S replacement was installed, surveyed and developed on August 19, 1997. Well designations and locations are shown on Figure 2-1.

Installation of monitoring wells proceeded according to Section 02170 of the Technical Specifications. Installation of the interior wells occurred from February 19-23, 1996. Installation of the exterior wells took place from December 10, 1996 through January 6, 1997 and August 19, 1997. Copies of the Boring Logs and Well Construction Drawings are included as Appendix A.



REVISIONS		PROJECT	UNION ROAD SITE TOWN OF CHEEKTOWAGA, NEW YORK	Unicorn Management Consultants, LLC 52 FEDERAL ROAD DANBURY, CT (203) 205-9000	PROJECT # 2011-200
NO.	DATE				FILENAME: 2045100B
		DRAWING	GROUNDWATER MONITORING WELL LOCATIONS		SCALE: 1" =150' DATE: 1/15/02
					BY: AD CK:
					FIGURE # 2-1

3. GROUNDWATER SAMPLING AND ANALYSES

3.1 GROUNDWATER SAMPLING

The purpose of groundwater sampling and analyses is to assess the effectiveness of the remedial action by evaluating the groundwater quality.

According to the GMP, groundwater samples will be collected from the outside perimeter monitoring wells by the following schedule:

- Quarterly the first year (1997);
- Semi-annually the second year (1998); and
- Annually (during the dry season) thereafter.

The parameters and applicable methods for the analyses are as follows:

- Total petroleum hydrocarbons (TPH) by EPA Method 1664A;
- Volatile organic compounds (VOCs) by EPA Method 8260;
- Semi-volatile organic compounds (SVOCs) by EPA Method 8270; and
- Soluble metals (lead and arsenic) by EPA Method 6010B, respectively.

The sampling frequency, analytical parameters, and/or sampling of specific wells will be modified based on the results of previous sampling events (since the landfill closure) and with written approval from the NYSDEC. Following discussions with NYSDEC and a review of the analytical data for groundwater samples collected on Site following the landfill closure in 1997, UMC believes that a reduction in the sampling frequency on Site is appropriate.

To evaluate the immediate effects of remedial activities on the groundwater around the landfill closure, the results of this sampling event are compared to results gathered from previous investigation reports performed by Dvirka and Bartilucci prior to the landfill closure. The data from the reports dated June, 1991 and August, 1991 are summarized in Table 3-1. Comparison between the averages prior to closure with post closure in the shallow wells shows significant decreases in all of the contaminants analyzed. To determine the continued effectiveness of the containment system, future sampling will be compared to the pre-closure concentrations.

3.2 2019 ANNUAL SAMPLING EVENT

On September 8-9, 2019, UMC conducted the 2019 Annual Sampling Event. UMC collected groundwater samples from a total of eleven groundwater monitoring wells on Site. UMC then submitted the groundwater samples to ALS Environmental Laboratories in Rochester, NY (ALS) to be analyzed for the parameters listed in Section 3.1 above.

Table 3-2 summarizes the water depth measurements and well purging operations completed on the wells along the outside perimeter of the slurry wall during the 2019 Annual Sampling Event. Tables 3-3 through 3-8 present the analytical results from this sampling event. An electronic copy of the analytical data report is included in Appendix B.

3.3 SUMMARY OF ANALYTICAL DATA

No TPH, lead, or arsenic were detected in any of the groundwater samples collected during this year's annual sampling event.

Acetone was detected in groundwater samples collected from MW-10D (10 µg/L), MW-13S (12 µg/L), and MW-14S (14 µg/L); all below the NYSDEC groundwater standard of 50 µg/L. The laboratory analytical report for these samples notes that the Continuing Calibration Verification (CCV) exceeded control limits for acetone, and that all concentrations of acetone should be considered estimated. Acetone was not detected in any other groundwater samples collected during this year's annual sampling event. No other VOCs were detected.

Bis(2-ethylhexyl)phthalate was detected in the groundwater sample collected from MW-12M at 120D µg/L, above the NYSDEC groundwater standard of 5 µg/L. Bis(2-ethylhexyl)phthalate has been detected in monitoring wells MW-10D, MW-11M, MW-12D and MW-13S between 2001 and 2006, 2014, and again in 2018. Bis(2-ehtylhexyl)phthalate was not detected in any other groundwater samples collected during this year's annual sampling event. No other SVOCs were detected.

Both acetone and Bis(2-ethylhexyl)phthalate are common laboratory artifacts and have not been observed consistently in groundwater samples collected on Site.

3.4 MODIFICATION OF GROUNDWATER SAMPLING FREQUENCY

On January 24, 2018, NYSDEC sent an email to UMC in which NYSDEC remarked that the analytical data obtained for groundwater samples collected during the 2017 Annual Sampling Event conducted on September 6, 2017 looked good. NYSDEC then asked if the data from 2017 was part of a longer trend and could support a modification to the frequency or scope of the collection of groundwater samples from the Site.

UMC reviewed the analytical data obtained during the groundwater sampling events conducted on Site since the landfill closure in 1997 (including the data from the 2018 Annual Sampling Event), and noted an overall decrease in the number of detections observed in groundwater samples.

Based on these observations, UMC believed that a reduction of the sampling frequency on Site was appropriate, and in the *Annual Groundwater Monitoring Report for Closure Year 22 (2018)*, dated January 22, 2019, UMC recommended that the sampling frequency on Site be reduced from annual to once every five years. This reduction of sampling frequency would have only applied to the collection of groundwater samples and not the annual groundwater elevation monitoring or other O&M activities (inspections, mowing, etc.).

NYSDEC responded to UMC's recommendation in two emails dated April 30, 2019 and May 6, 2019 stating that after further consideration of the nature of the Site and its history, that a reduction of sampling frequency was not appropriate, and that groundwater sampling should continue annually.

TABLE 3-1
UNION ROAD GROUNDWATER MONITORING REPORT
CLOSURE YEAR 23 (2019)

Unicorn Management Consultants, LLC

PRE-CONSTRUCTION SAMPLING OF SHALLOW WELLS
(JUNE - AUGUST, 1991)

(concentrations in ug/L)

	MW-4S	MW-4S	MW-5S	MW-6S	MW-6S	
ANALYTE	**PHASE I**	**PHASE II**	**PHASE I**	**PHASE I**	**PHASE II**	**AVERAGE**
SVOC's (Base Neutrals)	17	16	120	290	100	109
Total VOC's	ND	5.9	ND	42	3	10
TPH	4,400	1,800	2,200	5,800	ND	2,840
Soluble Arsenic	34.8	35.5	14.7	27.1	5.7	24
Soluble Lead	10,100	8,090	4,450	3,560	367	5,313

ND- analyte not detected

Prepared by: MP
Date: 1/7/20
Checked by: RTM
Date: 1/9/20

TABLE 3-2
UNION ROAD
GROUNDWATER MONITORING REPORT

Unicorn Management Consultants, LLC

September 8-9, 2019
WELL PURGING SUMMARY

Well Number	Riser Elev. (Feet) [1]	Orginal Bottom Elev. (Feet)	Depth to Water (Feet)	Water Elev. (Feet)	Water Height in Well (Feet)	Water Volume in Well (Gallons)	Water Removed from Well (Gallons)	Notes
10S	623.09	599.9	10.00	613.09	13.19	2.1	6.50	
10M	622.50	589.6	12.25	610.25	20.65	3.3	10.00	
10D	622.02	574.1	15.29	606.73	32.63	5.2	8.00	Purged Dry
11S	622.74	597.1	15.04	607.70	10.60	1.7	5.25	
11M	622.86	578.4	20.30	602.56	24.16	3.9	10.50	
12S	622.62	595.8	20.72	601.90	6.10	1.0	3.00	
12M	622.97	578.8	21.30	601.67	22.87	3.7	11.25	
12D	621.18	557.8	18.40	602.78	44.98	7.2	21.50	
13S	622.96	599.1	12.60	610.36	11.26	1.8	5.50	
13M	621.66	585.8	12.52	609.14	23.34	3.7	11.50	
14S [2]	621.61	602.1	11.00	610.61	8.51	1.4	4.00	

[1] Elevations were surveyed by Douglas C. Meyers P.L.S., P.C. on March 17, 1997

[2] MW-14S was reinstalled, developed and resurveyed on August 19, 1997.

[3] All Elevations are referenced to Mean Sea Level

[4] All wells are two 2-inches in diameter

[5] Well development was performed on 1/16/1997

Prepared by: MP
Date: 1/8/20
Checked by: RTM
Date: 1/9/20

TABLE 3-3
UNION ROAD
ANNUAL GROUNDWATER MONITORING
September 8-9, 2019

Unicorn Management Consultants, LLC

SHALLOW WELL SVOCs

ANALYTE	ANALYTICAL RESULTS (ug/L)					MRL
	MW-10S	MW-11S	MW-12S	MW-13S	MW-14S	
Dilution	1.00	1.00	1.00	1.00	1.00	
acenapthene	ND	ND	ND	ND	ND	9.4
acenapthylene	ND	ND	ND	ND	ND	9.4
anthracene	ND	ND	ND	ND	ND	9.4
benzo(a)anthracene	ND	ND	ND	ND	ND	9.4
benzo(a)pyrene	ND	ND	ND	ND	ND	9.4
benzo(b)fluoranthene	ND	ND	ND	ND	ND	9.4
benzo(g,h,i)perylene	ND	ND	ND	ND	ND	9.4
benzo(k)fluoranthene	ND	ND	ND	ND	ND	9.4
benzyl alcohol	ND	ND	ND	ND	ND	9.4
butly benzyl phthalate	ND	ND	ND	ND	ND	9.4
di-n-butlyphthalate	ND	ND	ND	ND	ND	9.4
carbazole	ND	ND	ND	ND	ND	9.4
indeno(1,2,3-cd)pyrene	ND	ND	ND	ND	ND	9.4
4-chloroaniline	ND	ND	ND	ND	ND	9.4
bis(-2-chloroethoxy)methane	ND	ND	ND	ND	ND	9.4
bis(2-chloroethyl)ether	ND	ND	ND	ND	ND	9.4
2-chloronapthalene	ND	ND	ND	ND	ND	9.4
2-chlorophenol	ND	ND	ND	ND	ND	9.4
2,2'-oxybis(1-chloropropane)	ND	ND	ND	ND	ND	9.4
chrysene	ND	ND	ND	ND	ND	9.4
dibenzo(a,h)anthracene	ND	ND	ND	ND	ND	9.4
dibenzofuran	ND	ND	ND	ND	ND	9.4
1,2-dichlorobenzene	ND	ND	ND	ND	ND	9.4
1,3-dichlorobenzene	ND	ND	ND	ND	ND	9.4
1,4-dichlorobenzene	ND	ND	ND	ND	ND	9.4
3,3'-dichlorobenzidine	ND	ND	ND	ND	ND	9.4
2,4-dichlorophenol	ND	ND	ND	ND	ND	9.4
diethylphthalate	ND	ND	ND	ND	ND	9.4
dimethyl phthalate	ND	ND	ND	ND	ND	9.4
2,4-dimethlyphenol	ND	ND	ND	ND	ND	9.4
2,4-dinitrophenol	ND	ND	ND	ND	ND	47
2,4-dinitrotoluene	ND	ND	ND	ND	ND	9.4
2,6-dinitrotoluene	ND	ND	ND	ND	ND	9.4
bis(2-ethylhexyl)phthalate	ND	ND	ND	ND	ND	9.7
fluoranthene	ND	ND	ND	ND	ND	9.4
fluorene	ND	ND	ND	ND	ND	9.4
hexachlorobenzene	ND	ND	ND	ND	ND	9.4
hexachlorobutadiene	ND	ND	ND	ND	ND	9.4
hexachlorocyclopentadiene	ND	ND	ND	ND	ND	9.4
hexachloroethane	ND	ND	ND	ND	ND	9.4
isophorone	ND	ND	ND	ND	ND	9.4
2-methlynapthalene	ND	ND	ND	ND	ND	9.4
2-methylphenol	ND	ND	ND	ND	ND	9.4
4,6-dinitro-2-methylphenol	ND	ND	ND	ND	ND	47

Prepared by: MP
Date: 1/8/20
Checked by: RTM
Date: 1/9/20

TABLE 3-3
UNION ROAD
ANNUAL GROUNDWATER MONITORING
September 8-9, 2019

Unicorn Management Consultants, LLC

SHALLOW WELL SVOCs

ANALYTE	ANALYTICAL RESULTS (ug/L)					MRL
	MW-10S	MW-11S	MW-12S	MW-13S	MW-14S	
Dilution	1.00	1.00	1.00	1.00	1.00	
4-chloro-3-methlyphenol	ND	ND	ND	ND	ND	9.4
3+4-methylphenol	ND	ND	ND	ND	ND	9.4
napthalene	ND	ND	ND	ND	ND	9.4
2-nitroaniline	ND	ND	ND	ND	ND	47
3-nitroaniline	ND	ND	ND	ND	ND	47
4-nitroaniline	ND	ND	ND	ND	ND	47
nitrobenzene	ND	ND	ND	ND	ND	9.4
2-nitrophenol	ND	ND	ND	ND	ND	9.4
4-nitrophenol	ND	ND	ND	ND	ND	47
n-nitrosodimethylamine	ND	ND	ND	ND	ND	9.4
n-nitrosodiphenylamine	ND	ND	ND	ND	ND	9.4
di-n-octyl phthalate	ND	ND	ND	ND	ND	9.4
pentachlorophenol	ND	ND	ND	ND	ND	47
phenanthrene	ND	ND	ND	ND	ND	9.4
phenol	ND	ND	ND	ND	ND	9.4
4-bromophenyl-phenylether	ND	ND	ND	ND	ND	9.4
4-chlorophenyl-phenylether	ND	ND	ND	ND	ND	9.4
n-nitroso-di-n-propylamine	ND	ND	ND	ND	ND	9.4
pyrene	ND	ND	ND	ND	ND	9.4
1,2,4-trichlorobenzene	ND	ND	ND	ND	ND	9.4
2,4,5-trichlorophenol	ND	ND	ND	ND	ND	9.4
2,4,6-trichlorophenol	ND	ND	ND	ND	ND	9.4
TOTALS	ND	ND	ND	ND	ND	

Average Outside Landfill (MW 10S - 14S)	ND
Average Inside Landfill (Table 3-1)	109

ND - Not Detected, above the laboratory detection limit

Prepared by: MP
Date: 1/8/20
Checked by: RTM
Date: 1/9/20

TABLE 3-4
UNION ROAD
ANNUAL GROUNDWATER MONITORING
September 8-9, 2019

Unicorn Management Consultants, LLC

SHALLOW WELL VOCs

ANALYTE	ANALYTICAL RESULTS (ug/L)					MRL
	MW-10S	MW-11S	MW-12S	MW-13S	MW-14S	
Dilution	1.00	1.00	1.00	1.00	1.00	
acetone	ND	ND	ND	12	14	10
benzene	ND	ND	ND	ND	ND	5.0
bromodichloromethane	ND	ND	ND	ND	ND	5.0
bromoform	ND	ND	ND	ND	ND	5.0
bromomethane	ND	ND	ND	ND	ND	5.0
2-butanone (MEK)	ND	ND	ND	ND	ND	10
carbon disulfide	ND	ND	ND	ND	ND	10
carbon tetrachloride	ND	ND	ND	ND	ND	5.0
chlorobenzene	ND	ND	ND	ND	ND	5.0
chloroethane	ND	ND	ND	ND	ND	5.0
chloroform	ND	ND	ND	ND	ND	5.0
chloromethane	ND	ND	ND	ND	ND	5.0
dibromochloromethane	ND	ND	ND	ND	ND	5.0
1,1-dichloroethane	ND	ND	ND	ND	ND	5.0
1,2-dichloroethane	ND	ND	ND	ND	ND	5.0
1,1-dichloroethene	ND	ND	ND	ND	ND	5.0
cis-1,2-dichloroethene	ND	ND	ND	ND	ND	5.0
trans-1,2-dichloroethene	ND	ND	ND	ND	ND	5.0
1,2-dichloropropane	ND	ND	ND	ND	ND	5.0
cis-1,3-dichloropropene	ND	ND	ND	ND	ND	5.0
trans-1,3-dichloropropene	ND	ND	ND	ND	ND	5.0
ethlybenzene	ND	ND	ND	ND	ND	5.0
2-hexanone	ND	ND	ND	ND	ND	10
methylene chloride	ND	ND	ND	ND	ND	5.0
4-methyl-2-pentanone (MIBK)	ND	ND	ND	ND	ND	10
styrene	ND	ND	ND	ND	ND	5.0
1,1,2,2-tetrachloroethane	ND	ND	ND	ND	ND	5.0
tetrachloroethene	ND	ND	ND	ND	ND	5.0
toluene	ND	ND	ND	ND	ND	5.0
1,1,1-trichloroethane	ND	ND	ND	ND	ND	5.0
1,1,2-trichloroethane	ND	ND	ND	ND	ND	5.0
trichloroethene	ND	ND	ND	ND	ND	5.0
vinyl chloride	ND	ND	ND	ND	ND	5.0
m+p xylene	ND	ND	ND	ND	ND	5.0
o-xylene	ND	ND	ND	ND	ND	5.0
TOTAL VOC'S	ND	ND	ND	12	14	
TPH	ND	ND	ND	ND	ND	4.7
SOLUBLE ARSENIC	ND	ND	ND	ND	ND	10
SOLUBLE LEAD	ND	ND	ND	ND	ND	50

Average Outside Landfill (MW 10S - 14S)	Average Inside Landfill (Table 3-1)
13	**10**
0.0	**2,840**
0.0	**24**
0.0	**5,313**

ND - Not Detected, above the laboratory detection limit

Prepared by: MP
Date: 1/8/20
Checked by: RTM
Date: 1/9/20

TABLE 3-5
UNION ROAD
ANNUAL GROUNDWATER MONITORING
September 8-9, 2019

Unicorn Management Consultants, LLC

MEDIUM WELL SVOCs

ANALYTE	ANALYTICAL RESULTS (ug/L)				MRL
	MW-10M	MW-11M	MW-12M	MW-13M	
Dilution	1.00	1.00	1.00	1.00	
acenapthene	ND	ND	ND	ND	9.4
acenapthylene	ND	ND	ND	ND	9.4
anthracene	ND	ND	ND	ND	9.4
benzo(a)anthracene	ND	ND	ND	ND	9.4
benzo(a)pyrene	ND	ND	ND	ND	9.4
benzo(b)fluoranthene	ND	ND	ND	ND	9.4
benzo(g,h,i)perylene	ND	ND	ND	ND	9.4
benzo(k)fluoranthene	ND	ND	ND	ND	9.4
benzyl alcohol	ND	ND	ND	ND	9.4
butly benzyl phthalate	ND	ND	ND	ND	9.4
di-n-butlyphthalate	ND	ND	ND	ND	9.4
carbazole	ND	ND	ND	ND	9.4
indeno(1,2,3-cd)pyrene	ND	ND	ND	ND	9.4
4-chloroaniline	ND	ND	ND	ND	9.4
bis(-2-chloroethoxy)methane	ND	ND	ND	ND	9.4
bis(2-chloroethyl)ether	ND	ND	ND	ND	9.4
2-chloronapthalene	ND	ND	ND	ND	9.4
2-chlorophenol	ND	ND	ND	ND	9.4
2,2'-oxybis(1-chloropropane)	ND	ND	ND	ND	9.4
chrysene	ND	ND	ND	ND	9.4
dibenzo(a,h)anthracene	ND	ND	ND	ND	9.4
dibenzofuran	ND	ND	ND	ND	9.4
1,2-dichlorobenzene	ND	ND	ND	ND	9.4
1,3-dichlorobenzene	ND	ND	ND	ND	9.4
1,4-dichlorobenzene	ND	ND	ND	ND	9.4
3,3'-dichlorobenzidine	ND	ND	ND	ND	9.4
2,4-dichlorophenol	ND	ND	ND	ND	9.4
diethylphthalate	ND	ND	ND	ND	9.4
dimethyl phthalate	ND	ND	ND	ND	9.4
2,4-dimethlyphenol	ND	ND	ND	ND	9.4
2,4-dinitrophenol	ND	ND	ND	ND	47
2,4-dinitrotoluene	ND	ND	ND	ND	9.4
2,6-dinitrotoluene	ND	ND	ND	ND	9.4
bis(2-ethylhexyl)phthalate	ND	ND	120 D	ND	9.7
fluoranthene	ND	ND	ND	ND	9.4
fluorene	ND	ND	ND	ND	9.4
hexachlorobenzene	ND	ND	ND	ND	9.4
hexachlorobutadiene	ND	ND	ND	ND	9.4
hexachlorocyclopentadiene	ND	ND	ND	ND	9.4
hexachloroethane	ND	ND	ND	ND	9.4
isophorone	ND	ND	ND	ND	9.4
2-methlynapthalene	ND	ND	ND	ND	9.4
2-methylphenol	ND	ND	ND	ND	9.4
4,6-dinitro-2-methylphenol	ND	ND	ND	ND	47

Prepared by: MP
Date: 1/8/20
Checked by: RTM
Date: 1/9/20

TABLE 3-5
UNION ROAD
ANNUAL GROUNDWATER MONITORING
September 8-9, 2019

Unicorn Management Consultants, LLC

MEDIUM WELL SVOCs

ANALYTE	ANALYTICAL RESULTS (ug/L)				MRL
	MW-10M	MW-11M	MW-12M	MW-13M	
Dilution	1.00	1.00	1.00	1.00	
4-chloro-3-methlyphenol	ND	ND	ND	ND	9.4
3+4-methylphenol	ND	ND	ND	ND	9.4
napthalene	ND	ND	ND	ND	9.4
2-nitroaniline	ND	ND	ND	ND	47
3-nitroaniline	ND	ND	ND	ND	47
4-nitroaniline	ND	ND	ND	ND	47
nitrobenzene	ND	ND	ND	ND	9.4
2-nitrophenol	ND	ND	ND	ND	9.4
4-nitrophenol	ND	ND	ND	ND	47
n-nitrosodimethylamine	ND	ND	ND	ND	9.4
n-nitrosodiphenylamine	ND	ND	ND	ND	9.4
di-n-octyl phthalate	ND	ND	ND	ND	9.4
pentachlorophenol	ND	ND	ND	ND	47
phenanthrene	ND	ND	ND	ND	9.4
phenol	ND	ND	ND	ND	9.4
4-bromophenyl-phenylether	ND	ND	ND	ND	9.4
4-chlorophenyl-phenylether	ND	ND	ND	ND	9.4
n-nitroso-di-n-propylamine	ND	ND	ND	ND	9.4
pyrene	ND	ND	ND	ND	9.4
1,2,4-trichlorobenzene	ND	ND	ND	ND	9.4
2,4,5-trichlorophenol	ND	ND	ND	ND	9.4
2,4,6-trichlorophenol	ND	ND	ND	ND	9.4
TOTALS	ND	ND	120 D	ND	

D - Reported concentration is a result of a dilution.
ND - Not Detected, above the laboratory detection limit

Prepared by: MP
Date: 1/8/20
Checked by: RTM
Date: 1/9/20

TABLE 3-6
UNION ROAD
ANNUAL GROUNDWATER MONITORING
September 8-9, 2019

Unicorn Management Consultants, LLC

MEDIUM WELL VOCs

ANALYTE	ANALYTICAL RESULTS (ug/L)				MRL
	MW-10M	MW-11M	MW-12M	MW-13M	
Dilution	1.00	1.00	1.00	1.00	
acetone	ND	ND	ND	ND	10
benzene	ND	ND	ND	ND	5.0
bromodichloromethane	ND	ND	ND	ND	5.0
bromoform	ND	ND	ND	ND	5.0
bromomethane	ND	ND	ND	ND	5.0
2-butanone (MEK)	ND	ND	ND	ND	10
carbon disulfide	ND	ND	ND	ND	10
carbon tetrachloride	ND	ND	ND	ND	5.0
chlorobenzene	ND	ND	ND	ND	5.0
chloroethane	ND	ND	ND	ND	5.0
chloroform	ND	ND	ND	ND	5.0
chloromethane	ND	ND	ND	ND	5.0
dibromochloromethane	ND	ND	ND	ND	5.0
1,1-dichloroethane	ND	ND	ND	ND	5.0
1,2-dichloroethane	ND	ND	ND	ND	5.0
1,1-dichloroethene	ND	ND	ND	ND	5.0
cis-1,2-dichloroethene	ND	ND	ND	ND	5.0
trans-1,2-dichloroethene	ND	ND	ND	ND	5.0
1,2-dichloropropane	ND	ND	ND	ND	5.0
cis-1,3-dichloropropene	ND	ND	ND	ND	5.0
trans-1,3-dichloropropene	ND	ND	ND	ND	5.0
ethlybenzene	ND	ND	ND	ND	5.0
2-hexanone	ND	ND	ND	ND	10
methylene chloride	ND	ND	ND	ND	5.0
4-methyl-2-pentanone (MIBK)	ND	ND	ND	ND	10
styrene	ND	ND	ND	ND	5.0
1,1,2,2-tetrachloroethane	ND	ND	ND	ND	5.0
tetrachloroethene	ND	ND	ND	ND	5.0
toluene	ND	ND	ND	ND	5.0
1,1,1-trichloroethane	ND	ND	ND	ND	5.0
1,1,2-trichloroethane	ND	ND	ND	ND	5.0
trichloroethene	ND	ND	ND	ND	5.0
vinyl chloride	ND	ND	ND	ND	5.0
m+p xylene	ND	ND	ND	ND	5.0
o-xylene	ND	ND	ND	ND	5.0
TOTAL VOC'S	ND	ND	ND	ND	
TPH	ND	ND	ND	ND	4.7
SOLUBLE ARSENIC	ND	ND	ND	ND	10
SOLUBLE LEAD	ND	ND	ND	ND	50

ND - Not Detected, above the laboratory detection limit

Prepared by: MP
Date: 1/8/20
Checked by: RTM
Date: 1/9/20

TABLE 3-7
UNION ROAD
ANNUAL GROUNDWATER MONITORING
September 8-9, 2019

Unicorn Management Consultants, LLC

DEEP WELL SVOCs

ANALYTE	ANALYTICAL RESULTS (ug/L)		MRL
	MW-10D	MW-12D	
Dilution	1.00	1.00	
acenapthene	ND	ND	9.4
acenapthylene	ND	ND	9.4
anthracene	ND	ND	9.4
benzo(a)anthracene	ND	ND	9.4
benzo(a)pyrene	ND	ND	9.4
benzo(b)fluoranthene	ND	ND	9.4
benzo(g,h,i)perylene	ND	ND	9.4
benzo(k)fluoranthene	ND	ND	9.4
benzyl alcohol	ND	ND	9.4
butly benzyl phthalate	ND	ND	9.4
di-n-butlyphthalate	ND	ND	9.4
carbazole	ND	ND	9.4
indeno(1,2,3-cd)pyrene	ND	ND	9.4
4-chloroaniline	ND	ND	9.4
bis(-2-chloroethoxy)methane	ND	ND	9.4
bis(2-chloroethyl)ether	ND	ND	9.4
2-chloronapthalene	ND	ND	9.4
2-chlorophenol	ND	ND	9.4
2,2'-oxybis(1-chloropropane)	ND	ND	9.4
chrysene	ND	ND	9.4
dibenzo(a,h)anthracene	ND	ND	9.4
dibenzofuran	ND	ND	9.4
1,2-dichlorobenzene	ND	ND	9.4
1,3-dichlorobenzene	ND	ND	9.4
1,4-dichlorobenzene	ND	ND	9.4
3,3'-dichlorobenzidine	ND	ND	9.4
2,4-dichlorophenol	ND	ND	9.4
diethylphthalate	ND	ND	9.4
dimethyl phthalate	ND	ND	9.4
2,4-dimethlyphenol	ND	ND	9.4
2,4-dinitrophenol	ND	ND	47
2,4-dinitrotoluene	ND	ND	9.4
2,6-dinitrotoluene	ND	ND	9.4
bis(2-ethylhexyl)phthalate	ND	ND	9.7
fluoranthene	ND	ND	9.4
fluorene	ND	ND	9.4
hexachlorobenzene	ND	ND	9.4
hexachlorobutadiene	ND	ND	9.4
hexachlorocyclopentadiene	ND	ND	9.4
hexachloroethane	ND	ND	9.4
isophorone	ND	ND	9.4
2-methlynapthalene	ND	ND	9.4
2-methylphenol	ND	ND	9.4
4,6-dinitro-2-methylphenol	ND	ND	47

Prepared by: MP
Date: 1/8/20
Checked by: RTM
Date: 1/9/20

TABLE 3-7
UNION ROAD
ANNUAL GROUNDWATER MONITORING
September 8-9, 2019

Unicorn Management Consultants, LLC

DEEP WELL SVOCs

ANALYTE	ANALYTICAL RESULTS (ug/L)		MRL
	MW-10D	MW-12D	
Dilution	**1.00**	**1.00**	
4-chloro-3-methlyphenol	ND	ND	9.4
3+4-methylphenol	ND	ND	9.4
napthalene	ND	ND	9.4
2-nitroaniline	ND	ND	47
3-nitroaniline	ND	ND	47
4-nitroaniline	ND	ND	47
nitrobenzene	ND	ND	9.4
2-nitrophenol	ND	ND	9.4
4-nitrophenol	ND	ND	47
n-nitrosodimethylamine	ND	ND	9.4
n-nitrosodiphenylamine	ND	ND	9.4
di-n-octyl phthalate	ND	ND	9.4
pentachlorophenol	ND	ND	47
phenanthrene	ND	ND	9.4
phenol	ND	ND	9.4
4-bromophenyl-phenylether	ND	ND	9.4
4-chlorophenyl-phenylether	ND	ND	9.4
n-nitroso-di-n-propylamine	ND	ND	9.4
pyrene	ND	ND	9.4
1,2,4-trichlorobenzene	ND	ND	9.4
2,4,5-trichlorophenol	ND	ND	9.4
2,4,6-trichlorophenol	ND	ND	9.4
TOTALS	ND	ND	

ND - Not Detected, above the laboratory detection limit

Prepared by: MP
Date: 1/8/20
Checked by: RTM
Date: 1/9/20

TABLE 3-8
UNION ROAD
ANNUAL GROUNDWATER MONITORING
September 8-9, 2019

Unicorn Management Consultants, LLC

DEEP WELL VOCs

ANALYTE	ANALYTICAL RESULTS (ug/L)		MRL
	MW-10D	MW-12D	
Dilution	1.00	1.00	
acetone	10	ND	10
benzene	ND	ND	5.0
bromodichloromethane	ND	ND	5.0
bromoform	ND	ND	5.0
bromomethane	ND	ND	5.0
2-butanone (MEK)	ND	ND	10
carbon disulfide	ND	ND	10
carbon tetrachloride	ND	ND	5.0
chlorobenzene	ND	ND	5.0
chloroethane	ND	ND	5.0
chloroform	ND	ND	5.0
chloromethane	ND	ND	5.0
dibromochloromethane	ND	ND	5.0
1,1-dichloroethane	ND	ND	5.0
1,2-dichloroethane	ND	ND	5.0
1,1-dichloroethene	ND	ND	5.0
cis-1,2-dichloroethene	ND	ND	5.0
trans-1,2-dichloroethene	ND	ND	5.0
1,2-dichloropropane	ND	ND	5.0
cis-1,3-dichloropropene	ND	ND	5.0
trans-1,3-dichloropropene	ND	ND	5.0
ethlybenzene	ND	ND	5.0
2-hexanone	ND	ND	10
methylene chloride	ND	ND	5.0
4-methyl-2-pentanone (MIBK)	ND	ND	10
styrene	ND	ND	5.0
1,1,2,2-tetrachloroethane	ND	ND	5.0
tetrachloroethene	ND	ND	5.0
toluene	ND	ND	5.0
1,1,1-trichloroethane	ND	ND	5.0
1,1,2-trichloroethane	ND	ND	5.0
trichloroethene	ND	ND	5.0
vinyl chloride	ND	ND	5.0
m+p xylene	ND	ND	5.0
o-xylene	ND	ND	5.0
TOTAL VOC'S	10	ND	
TPH	ND	ND	4.7
SOLUBLE ARSENIC	ND	ND	10
SOLUBLE LEAD	ND	ND	50

ND - Not Detected, above the laboratory detection limit

4. GROUNDWATER ELEVATION MONITORING

The purpose of groundwater elevation monitoring is to determine the groundwater gradient of the three hydrogeologic units in and around the closure area. The three hydrogeologic units (layers) are:

- The overburden layer (shallow), which is above the clay layer;
- The till layer (medium), which is beneath the clay layer; and
- Bedrock (deep), which is beneath the till layer.

As stated in the NYSDEC approved Design Report, the frequency of groundwater elevation measurements are as follows:

- Monthly for the first six months after closure (Jan – June 1997);
- Quarterly thereafter until the end of year two (July 1997 – December 1998); and
- Annually (during the dry season) thereafter.

The objective for collecting groundwater elevation measurements is to gain knowledge of the groundwater flows and hydraulic gradients in and around the closure. This information is used to generate groundwater flow maps and demonstrate an inward gradient of groundwater around the closure.

On September 8, 2019, UMC measured the depth to groundwater in the monitoring wells. Table 4-1 summarizes the results of these measurements. The data from Table 4-1 were used to create groundwater contour maps (Figures 4-1 through 4-3), which depict groundwater elevations and inferred groundwater flow directions in the three hydrogeologic units. Figure 4-1 shows an inward gradient of shallow (overburden) groundwater across the slurry wall and towards the dewatering trench at the east corner of the closure.

Figures 4-2 and 4-3 depict groundwater elevations in the medium and deep units. The inferred groundwater flow direction for the medium unit is toward the southeast. The inferred groundwater flow direction for the deep unit is easterly. However, since only two monitoring wells intercept the deep unit, a groundwater contour map cannot be produced. Flow is generally toward the southeast and east respectfully and has not been affected by the placement of the landfill closure.

Prepared by: MP
Date: 1/7/20
Checked by: RTM
Date: 1/9/20

TABLE 4-1
UNION ROAD
GROUNDWATER MONITORING REPORT

Unicorn Management Consultants, LLC

GROUNDWATER WELL MEASUREMENTS
September 8-9, 2019

Well Number	Riser Elev.[1] (Feet)	Depth to Water (Feet)	Water Elev. (Feet)
10S	623.09	10.00	613.09
10M	622.50	12.25	610.25
10D	622.02	15.29	606.73
11S	622.74	15.04	607.70
11M	622.86	20.30	602.56
12S	622.62	20.72	601.90
12M	622.97	21.30	601.67
12D	621.18	18.40	602.78
13S	622.96	12.60	610.36
13M	621.66	12.52	609.14
14S [2]	621.61	11.00	610.61
15	624.67	15.63	609.04
16	624.51	14.90	609.61
17	624.44	20.80	603.64
18 [3]	624.67	Dry	<602.75
19	625.08	21.37	603.71
20 [4]	631.98	28.45	603.53
21	629.25	24.96	604.29
22 [4]	629.24	25.85	603.39
23S	607.45	8.07	599.38
RW1 [5]	623.76	NM	598.76

[1] Elevations were surveyed by Douglas C. Meyers P.L.S., P.C. on March 17, 1997.

[2] MW-14S was reinstalled and resurveyed on August 19, 1997.

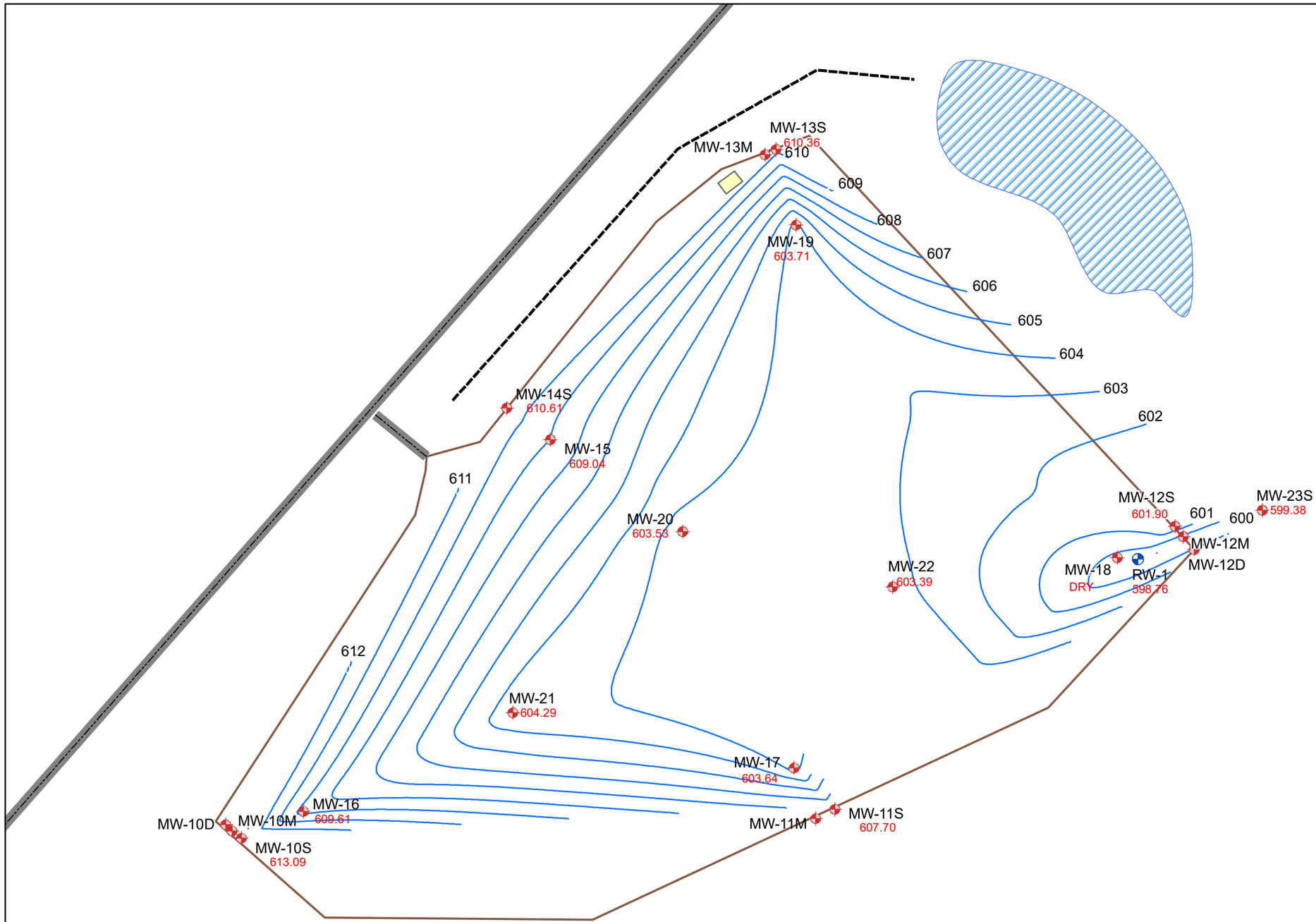
[3] MW-18 is dry; measuring tape stopped without indicating water.

[4] Depth measured to free product. Both MW-20 and MW-22 have free product on water surface; therefore water level measurement is conservatively assumed as the top of the oil layer (Because of the less dense oil, the actual water elevation would be lower).

[5] Groundwater measurement was not taken in RW1. The assumed elevation is at the pump inlet (598.76).

[6] NM: Not Measured

[7] All Elevations are referenced to Mean Sea Level



Union Road- Shallow Groundwater Elevation Contour Map for 9/8- 9/9/2019

Unicorn Management Consultants, LLC

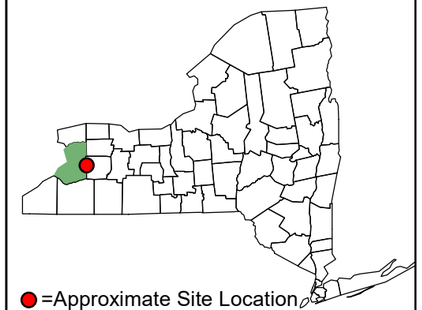
52 Federal Road
Suite 2C
Danbury, CT
06810

(203) 205-9000

Project Name: Union Road

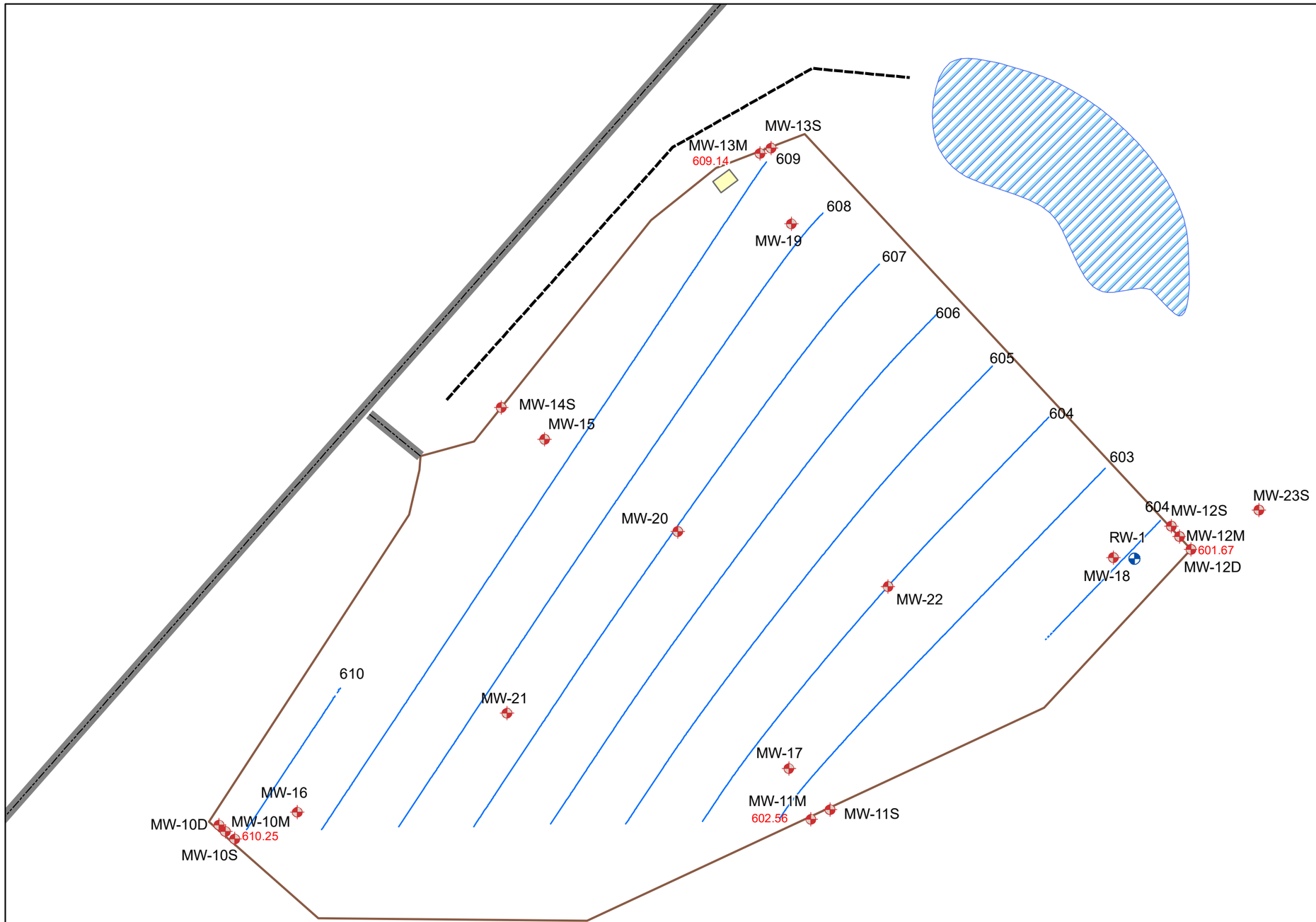
FIGURE 4-1

Author: RTM	**Checked By:** ----
Project #: 2011	**Created:** 10/10/2011
	Revised: 1/13/19
Scale: 1 in:100 ft	**File:** GWContour_S_2019



Legend

- Monitoring Wells
- Recovery Well
- Contour
- Road
- Ditch
- Fence
- Shed
- Pond



Union Road- Middle Groundwater Elevation Contour Map for 9/8- 9/9/2019

Unicorn Management Consultants, LLC

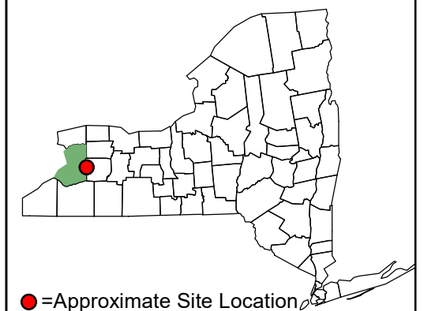
52 Federal Road
Suite 2C
Danbury, CT
06810

(203) 205-9000

Project Name: Union Road

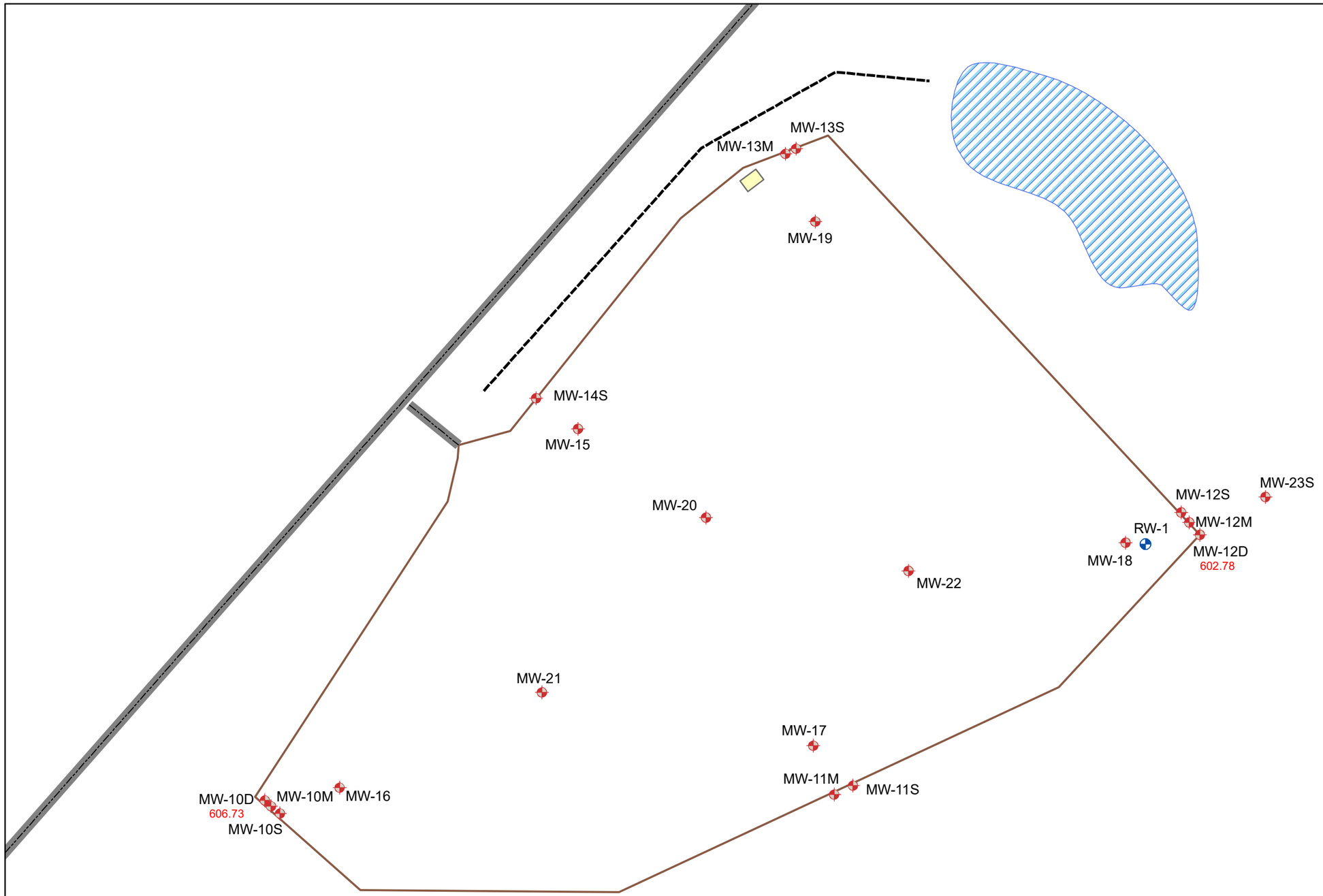
FIGURE 4-2

Author: RTM	**Checked By:** ----
Project #: 2011	**Created:** 10/10/2011
	Revised: 1/13/20
Scale: 1 in:100 ft	**File:** GWContour_M_2019



Legend

- Monitoring Wells
- Recovery Well
- Contour
- Road
- Ditch
- Fence
- Shed
- Pond



0 62.5 125 250 375 500 Feet

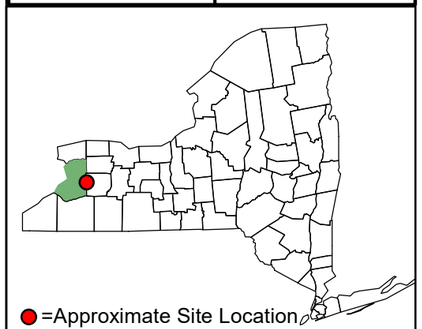
Union Road- Deep Groundwater Elevation Map for 9/8- 9/9/2019

Unicorn Management Consultants, LLC
52 Federal Road
Suite 2C
Danbury, CT
06810
(203) 205-9000

Project Name: Union Road

FIGURE 4-3

Author: RTM	**Checked By:** ----
Project #: 2011	**Created:** 10/10/2011
	Revised: 1/13/19
Scale: 1 in:100 ft	**File:** GWContour_D_2019



Legend

- Monitoring Wells
- Recovery Well
- Road
- Ditch
- Fence
- Shed
- Pond

5. SITE INSPECTION AND MAINTENANCE

UMC performed the 2019 Site Inspection on April 16, 2019. UMC is usually accompanied by a representative of NYSDEC, however on the morning of April 16, 2019 UMC was notified in an email from Mr. Chad Staniszewski, the NYSDEC Regional Hazardous Waste Engineer associated with the Site, that no representative would be available to join UMC on Site. Mr. Staniszewski stated in the same email that UMC could still conduct this year's inspection without NYSDEC present. The 2019 Site Inspection consisted of walking the site and documenting any observations. Below is a summary of observations made during the 2019 Site Inspection, as well as any maintenance activities that have been conducted in 2019:

Roundhouse Area: The area is well vegetated and stabilized. During the 2019 Site Inspection, several large holes were observed where the concrete of the former roundhouse has collapsed. These holes are large enough for a person to fall into. However, this land is not owned by APU. Numerous property owners adjacent to this area have encroached on it and are maintaining it with the rest of their properties. No action is needed.

Landfill Closure: There are no signs of erosion, no areas of distressed vegetation, and no evidence of any outbreak of any substance (slurry wall material or oil) on the landfill. Erie County Water Company has previously been notified that a small quantity of contaminated soil is located northeast of the new wetland area and beneath the existing water pipe. UMC has an account with Dig Safely New York so when someone needs to dig in the area and calls Dig Safely, UMC will be notified. Except for periodic grass cutting, annual groundwater monitoring, and quarterly groundwater discharge monitoring required by the Buffalo Sewer Authority, no action is needed.

During the 2019 Site Inspection, UMC observed some erosion due to a small number of animal burrows located on the sloped area between the landfill and the northern wetlands. These burrows were previously filled in with soil in April 2017. On May 16, 2019, UMC filled the erosion located on the slope between the landfill and the wetlands to the north of the landfill with topsoil and reseeded the affected area with a local ryegrass grass seed blend. UMC continues to monitor the erosion and will replace eroded soils as necessary.

Some rutting attributed to vehicular traffic was observed along the southwestern side of the site near Slate Bottom Creek. This rutting does not affect the integrity of the capped landfill.

As requested by the NYSDEC, grass on the landfill area is mowed annually. Annual Mowing was performed on September 8, 2019.

Wetland Restoration: The wetlands north of the landfill closure, which was created during the remediation activities has continued to reestablish itself. The wetlands have completely revegetated itself and wildlife (e.g., ducks, geese and deer) have returned to the area.

Stream Restoration: A letter to the Town of Cheektowaga (Town) was sent by APU's Legal Counsel on October 7, 2005. This letter informs the Town that it must notify the NYSDEC prior to any activity in those creeks where the reno mattresses are located (see Figure 1-2).

The reno mattresses installed in 1995/1996 and repaired in 2006 on the creek channel have stabilized and vegetation has established itself through the reno mattresses. There is some

sediment accumulation within the creek channels, but at some locations the reno mattress wire mesh was visible at the base of the channel.

At the time of the 2019 Site Inspection, the gabion basket wing-walls were stable and the reno mattresses installed along the creek were in overall good condition. One section of reno-mattress adjacent to the confluence of Deer Lik creek and Slate Bottom Creek was showing signs of ATV wear. This area was previously repaired in April 2015 and despite the ATV wear, the streambank in this area was stable. On May 15-16, 2019, UMC installed new reno-mattress covers over the remains of the existing covers using a combination of stakes, and hog rings. UMC will continue to monitor this area for ATV damage and make repairs as needed.

Downstream Area: Though some of the trees planted in this area have died, there are no signs of erosion in this area. Grass has established itself in this area. No action is needed.

UMC will continue to inspect and repair all closure areas to ensure that the closure remains intact and successful.

Dewatering System: In January 2019, UMC was notified that the 2G cell service in the Site area was going to be discontinued in the near future, and that the 2G telemetry system would no longer be able to send alarm notifications. Therefore, in order to ensure that UMC continues to receive dewatering system alarm notifications, UMC replaced the 2G telemetry system with a newer 4G system on April 16, 2019.

During the 2019 Site Inspection, UMC observed some minor issues with the valves controlling the flow of water from the sump to the sewer system. Both valves installed in the sump appear to no longer restrict the flow of water. One valve was visibly leaking water when opened past a certain point. UMC interpreted this as an indication that the internal seals in both valves have degraded and the valves required replacement. The degraded valves did not inhibit the dewatering system's ability to remove water from the Site.

On May 15, 2019, UMC provided oversight to Matthew Kandefer Plumbing, Inc. during the replacement of the two gate valves described above. Following the gate valve replacement, UMC tested the dewatering system and adjusted both new valves to meet the Site discharge permit requirements.

On August 8, 2019, UMC received an automated alarm from the Site's Sensaphone unit that the Site had lost power. The next day UMC received a notification that the Site was "Offline". This meant that the Site was without power.

On August 12, 2019, UMC checked the system to find that there was no power at the pump shed. UMC called New York State Electric and Gas (NYSEG), who promply came out to the site to check the electrical connections at the pole. Upon inspection NYSEG found and replaced a burned out fuse at the pole. Following the fuse replacement, the power was restored to the pump shed and the dewatering system.

The dewatering system is currently operating without issue.

6. CONCLUSION

The groundwater quality within the exterior wells and the groundwater elevation measurements during the 2019 annual monitoring event demonstrate that remedial activities at the Union Road Site are successful. The groundwater quality outside the landfill closure is better than groundwater quality in the interior of the closure.

No TPH, lead, or arsenic were detected in any of the groundwater samples collected during this year's annual sampling event. No VOCs were detected with the exception of acetone which was detected in groundwater samples collected from MW-10D (10 µg/L), MW-13S (12 µg/L), and MW-14S (14 µg/L); all below the NYSDEC groundwater standard of 50 µg/L. The laboratory analytical report for these samples notes that the Continuing Calibration Verification (CCV) exceeded control limits for acetone, and that all concentrations of acetone should be considered estimated. No SVOCs were detected with the exception of bis(2-ethylhexyl)phthalate which was detected was detected in the groundwater sample collected from MW-12M at 120D µg/L, above the NYSDEC groundwater standard of 5 µg/L. Bis(2-ethylhexyl)phthalate has been detected in monitoring wells MW-10D, MW-11M, MW-12D and MW-13S between 2001 and 2006, 2014, and again in 2018. Both acetone and bis(2-ethylhexyl)phthalate are common laboratory artifacts and have not been observed consistently in groundwater samples collected on Site.

The groundwater elevation measurements indicate that an inward gradient of shallow groundwater flow has been established across the slurry wall. This inward gradient in combination with the groundwater quality outside the closure demonstrates that the contamination is contained within the slurry wall.

UMC will continue to monitor and evaluate the groundwater surrounding the landfill in accordance with the GMP.

APPENDIX A

BORING LOGS AND WELL CONSTRUCTION DRAWINGS

TEST BORING LOG

BORING NO. 10-5

PROJECT NO. NAME Union Road - 2035-200 | LOCATION Buffalo NY

DRILLING CONTRACTOR/DRILLER MANM

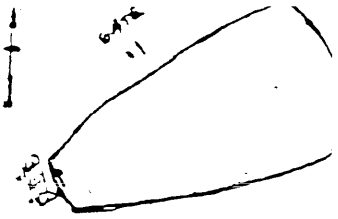
GEOLOGIST. OFFICE JOHN J ZACHER JR

DRILLING EQUIPMENT. METHOD HSA | SIZE TYPE OF BIT 6" HSA | SAMPLING METHOD SPLIT SPOON | START. FINISH

WELL INSTALLED? YES ☒ NO ☐ | CASING MAT./DIA. STAINLESS STEEL / 2" | SCREEN: TYPE SLOT MAT. STAINLESS LENGTH 10' DIA. 2" SLOT SIZE 0.02

ELEVATION OF: GROUND SURFACE TOP OF WELL CASING TOP & BOTTOM SCREEN GW SURFACE DATE (FT. ABOVE M.S.L.)

REMARKS: Hole to 21', Samples to 20'



DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC
				SAMPLING STARTS AT 4' B.G.			
5	4 4 6	21"	6 6 8 10	BRICK TO TANISH GREY CLAY W LITTLE ANGULAR ROCKS TO 1/2"	STIFF, DAMP		
	6 8 4	21"	6 45 20 8	0-3" BRICK TO TAN-GREY CLAY SOME ROCKS TO 3/4" 3-15" CINDERS W/SOME ROCKS. - DAMP 15-21" BROWN/TAN CLAY SOME SAND, LITTLE SILT TRACE ROCKS	STIFF DAMP SATURATED LITTLE H2O		
10	4 10	24"	8 5 4 10	TAN/LT BROWN CLAY	STIFF, LITTLE H2O		
	10 12	12"	2 3 4 3	TAN/LT BROWN CLAY	MED STIFF SOME H2O		
	12 14	16"	2 3 3 4	TAN/LT BROWN CLAY - TRACE SILTS	MED STIFF SOME H2O		
15	14 16	20"	2 2 3 4	GREY TO LT BROWN CLAY - LITTLE ROUNDED ROCKS	MED STIFF SOME H2O		
	16 18	18"	2 3 4 5	TAN TO LT BROWN CLAY	MED STIFF SOME H2O		
	18 20	20"	2 3 3 3	GREYISH BROWN CLAY TRACE ORGANICS.	MED STIFF SOME H2O		
				END of Boring 21' BGS - ~~20~~ 20'			

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

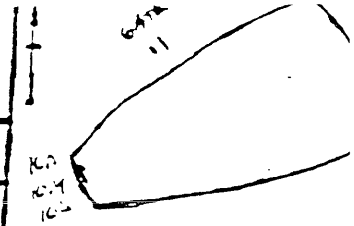
Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

TEST BORING LOG

BORING NO.	10-M
PROJECT NO., NAME	UNION ROAD - 2035-200
LOCATION	BUFFALO NY
DRILLING CONTRACTOR/DRILLER	MAHM
GEOLOGIST, OFFICE	JOHN J ZACHER JR
DRILLING EQUIPMENT, METHOD	HSA
SIZE, TYPE OF BIT	6" HSA
SAMPLING METHOD	SPLIT SPOON
START, FINISH DATE	1/3/97
WELL INSTALLED?	YES ☒ NO ☐
CASING MAT./DIA.	STAINLESS STEEL / 2"
SCREEN: TYPE	SLOT
MAT.	STAINLESS
LENGTH	10'
DIA.	2"
SLOT SIZE	0.0[illegible]

ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE | TOP OF WELL CASING | TOP & BOTTOM SCREEN | GW SURFACE | DATE

REMARKS:



LOG OF TEST BORING

SAMPLING STARTS 4' BG

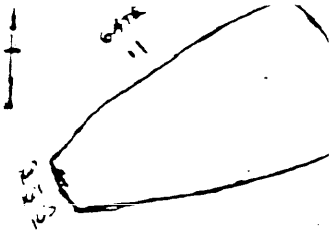
DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/.5 FT	DESCRIPTION	REMARKS
4 - 6		20"	6 6 4 5	BLK TO TAN/GREY CLAY W/LITTLE ROCKS TO 1/4"	STIFF, DAMP
6 - 8		22"	6 5 8 12	0-7" BLACK TO TAN/GREY CLAY SOME ROCKS 7-14" CINDERS 14-22" BROWN TAN CLAY LITTLE ROCKS	STIFF DAMP DRY MED STIFF, LITTLE H2O
8 - 10		24"	7 8 5 8	TAN/LT BROWN CLAY	STIFF, LITTLE H2O
10 - 12		15"	4 3 4 5	TAN/LT BROWN CLAY	MED STIFF SOME H2O
12 - 14		15"	3 4 3 5	TAN/LT BROWN CLAY	MED STIFF SOME H2O
14 - 16		20"	3 4 4 4	TAN/LT BROWN CLAY, LITTLE GREY LITTLE ROUND ROCKS	MED STIFF SOME H2O
16 - 18		19"	3 3 3 4	TAN TO LT BROWN CLAY	MED STIFF SOME H2O
18 - 20		20"	3 2 3 4	GREYISH BROWN CLAY, SOME ORGANICS	MED STIFF SOME H2O

WELL CONST.: Cont. Gr. / Ben. / Sand

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

TEST BORING LOG



BORING NO. 10M

PROJECT NO. NAME Woodlawn - 2035-200 | LOCATION BUFFALO NY

DRILLING CONTRACTOR/DRILLER MAHM

GEOLOGIST. OFFICE JOHN J ZACHER JR

DRILLING EQUIPMENT. METHOD	SIZE TYPE OF BIT	SAMPLING METHOD	START. FINISH
HSA	6" HSA	SPLIT SPOON	1/13/97

WELL INSTALLED?	CASING MAT./DIA.	SCREEN:				
YES ☒ NO ☐	STAINLESS STEEL/2"	TYPE SLOT	MAT. STAINLESS	LENGTH 10'	DIA. 2"	SLOT SIZE 0.02

ELEVATION OF: GROUND SURFACE TOP OF WELL CASING TOP & BOTTOM SCREEN ON SURFACE DATE (FT. ABOVE M.S.L.)

REMARKS:

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC
20			1	DARK GREY w/ SOME ORGANICS LITTLE	MED STIFF		
21		21	3		SOME H2O		
22			2				
22			4	GREY & SOME BROWN CLAYS	MED STIFF		
23		21	5		LITTLE H2O		
24			4				
24			2	GREY CLAY	SOFT,		
25		20	3		WET		
26			3				
26			1	TOP 14" GREY CLAY	SOFT WET		
27		21	2				
28			2	BOT 7" GREY/LT BROWN CLAY, SOME ROCK FRAGS, LITTLE SAND	WET, NON COHESIVE		
28			10				
29			12	LT BROWN SILTS W/SOME SAND 0-6"	WET, LOOSE		
30		17"	4	LT BROWN TAN CLAY, SOME ROCKS 6-17" 1/2-1"	SOFT-WET		
30			4				
30			2				

BOB @ 31' Bgl

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

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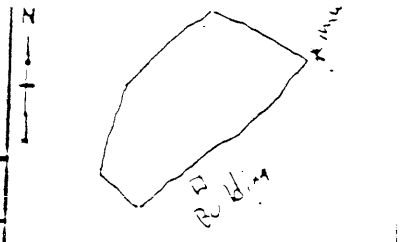
TEST BORING LOG



BORING NO. MW-10D

PROJECT NO.. NAME: Union Road | LOCATION: Buffalo NY

DRILLING CONTRACTOR/ DRILLER: Maxim (Dick Miller, Ron Brown)

GEOLOGIST. OFFICE: James Dann

DRILLING EQUIPMENT. METHOD	SIZE TYPE OF BIT	SAMPLING METHOD	START. FINISH DATE
Air Rotary / HSA	8¼" HSA / 7⅞"	Split Spoon	12/6 - 12/7/96

WELL INSTALLED?	CASING MAT./ DIA.	SCREEN: TYPE	MAT.	LENGTH	DIA.	SLOT SIZE
YES ☒ NO ☐	Stainless / 2"	Slot	Stainless	10'	2"	.020

ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE | TOP OF WELL CASING | TOP & BOTTOM SCREEN | GW SURFACE | DATE

REMARKS:

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHOLOGY
				Sampling started @ 4' BG.			
5		21"	5 6 9 10	~~Blk to tan/Grey clay w/ Trace angular~~ Fragmented Rock upto 1" in size	~~Stiff,~~ Damp		
		22"	7 30 18 11	Top 8" Blk, tan/grey Clay w/ Trace angular Fragmented Rock next 6" Blk Cinder like material w/ ~~same~~ w/ angular Fragmented Rock, 1" in size Bottom 6" Brown/Tan Sand/Silty Clay w/ 10%-20% Rx Frag. 2"	Stiff, Damp Dry Not Cohesive, little H_2O		
10		24"	7 8 10 9	Tan to Lt Brown clay, No Rocks	m. stiffness w/ some H_2O		
		16"	2 2 3 3	Tan to lt Brown clay w/o Rocks	m. Stiffness w/ some H_2O		
15		15"	1 3 3 5	tan to lt Brown Clay w/o Rocks Possibly Some Silts	m. stiffness w/ some H_2O		
		20"	2 2 3 4	Grey to lt Brown Mottled clay w/ trace rounded Rocks, ¼ - ⅛" diameter.	m. stiffness w/ Some H_2O		
		18"	1 3 4 6	Tan to lt Brown Clay w/o Rxs	m. stiffness w/ Some H_2O		
		21"	2 2 3 4	Grayish/Brown/Blk clay w/ 10-20% organics	m. stiffness w/ some H_2O		

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

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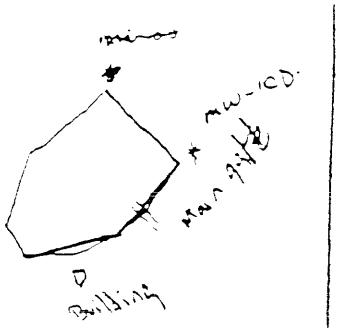
C 01 /

TEST BORING LOG



BORING NO. MW- 10D

PROJECT NO.. NAME: Union Road 2035-200

LOCATION: Buffalo NY

DRILLING CONTRACTOR/ DRILLER: Maxim (Dick Miller, Ron Brown)

GEOLOGIST, OFFICE: James Doan

DRILLING EQUIPMENT. METHOD	SIZE TYPE OF BIT	SAMPLING METHOD	START. FINISH DATE
HSA / Air Rotary	HSA 8 1/4" / 7 7/8"	Split SPOON	

WELL INSTALLED?	CASING MAT.. DIA.	SCREEN: TYPE	MAT.	LENGTH	DIA.	SLOT SIZE
YES ☒ NO ☐	Stainless Steel / 2"	SLOT	Stainless	10'	2"	.020

ELEVATION OF: GROUND SURFACE | TOP OF WELL CASING | TOP & BOTTOM SCREEN | GW SURFACE | DATE
(FT. ABOVE M.S.L.)

REMARKS:

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING — DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHOLOGY
20-22'		21"	1 3 5 8	Greyish/Blk/Dk Grey Clays w/ Traces organics	m. stiffness w/ Some H_2O		
22-24'		20"	3 5 8 9	Grey + Brown Clays	m. stiffness w/ Trace H_2O		
24-26'		0"	2 2 3 2	The inside of the spoon was v. wet, No Basket.			
26-28'		22"	1 1 3 17	Top 16" Grey clays mid 4" Grey clays, w/ trace organics Bottom 2" Grey/H Brown/ Clays w/ some Frag. Rks, Sands	soft wet soft wet Not cohesive wet		
28-30'		17"	3 3 3 3	lt Brown/Tan clays w/ silts 20% Rock Frags. 1/4" - 2"	Sof wet		
28-30'		18"	6 2 2 2	Top 3" Sands w/ lt Brown/Tan silts + clays Bottom 15" lt Brown / Tan Clays w/ silts, 20% Rock Fragments 1/4" - 2" in size	Not Cohesive wet Soft Wet		
32-34'		4"	2 3"/50	lt Brown/Tan clays w/ silts, 20% Rx's Frags 1/4" - 2" in size	Soft Wet		
				Bed Rock.			
				@ 38' BG Bottom of Protectiv casing	Bottem of The Protective Casing		

Proportions Used. Trace = 0-10%. Little = 10-20%. Some = 20-35%. And = 35-50%

CS = Continuous Soil Core

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TEST BORING LOG

BORING NO. MW-10D

PROJECT NO.. NAME: 2035-200 Union Road

LOCATION: Buffalo NY

DRILLING CONTRACTOR/ DRILLER: Maxim

GEOLOGIST, OFFICE: James Doan

DRILLING EQUIPMENT. METHOD: HSA

SIZE. TYPE OF BIT:

SAMPLING METHOD: Split SPOON

START. FINISH DATE:

WELL INSTALLED? YES ☑ NO ☐

CASING MAT.. DIA.: Stainless Steel 2"

SCREEN: TYPE SLOT MAT. Stainless LENGTH 10' DIA. 2" SLOT SIZE .020

ELEVATION OF: GROUND SURFACE TOP OF WELL CASING TOP & BOTTOM SCREEN GW SURFACE DATE
(FT. ABOVE M.S.L.)

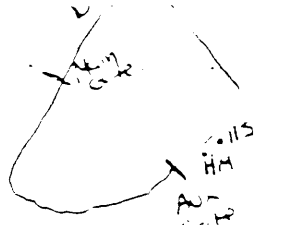
REMARKS:

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHOLOGY
5				@ 45 the water bearing zone The hole has collapsed The Rock isn't very consolidated	B.O.B 45.5' BG		
10							
15							

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Samples: ST = Shelby Tube, CSC = Continuous Soil Core

TEST BORING LOG



BORING NO. MW-115	
PROJECT NO. NAME Niagara 2035-200	LOCATION Buffalo NY
DRILLING CONTRACTOR/DRILLER MAXIM	
GEOLOGIST. OFFICE JOHN J ZAHER JR	
DRILLING EQUIPMENT. METHOD HSA	SIZE TYPE OF BIT 6" HSA / SAMPLING METHOD SPLIT SPOON / START. FINISH DAT 1/2/97
WELL INSTALLED? YES ☒ NO ☐	CASING MAT./DIA. STAINLESS STEEL 2" / SCREEN: TYPE SLOT MAT. STAINLESS LENGTH 10' DIA. 2" SLOT SIZE 0.020
ELEVATION OF: (FT. ABOVE M.S.L.)	GROUND SURFACE / TOP OF WELL CASING / TOP & BOTTOM SCREEN / GW SURFACE / DATE
REMARKS:	

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING — DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LOG
				SAMPLING STARTED AT 4' B.G.			
	4'		10	BROWN/DRK BROWN SILTS & CLAYS	STIFF/		
5		15"	9	TRACE RX FRAGMENTS < 1/8"	DRY - LITTLE TO H2O		Conc
	6'		10				
	6'		4	BROWN/DRK BROWN SILTS AND CLAYS	STIFF		
		15"	9	NO RXS	LITTLE TO H2O		
	8'		12	FILL			
	8'		11	BROWN/DRK BROWN CLAYS	STIFF		
		10"	12	TRACE RX FRAGS	LITTLE TO H2O		Bent
	10'		12	FILL			
10	10'		4	TOP 9" DRK BROWN CLAYS W/SOME ORGANICS	STIFF - LITTLE H2O		
		13"	6	BOTTOM 4" - GREY SILTS/CLAYS AND ORGANICS	~~SOFT~~ STIFF - LITTLE H2O MED		
	12'		8				Sand
	12'		8	GREY CLAYS LITTLE ORGANICS	MEDIUM STIFFNESS SOME H2O		
		20"	9				
	14'		10				
	14'		13	TOP 6" - GREY CLAYS, LITTLE ORGANICS	MED STIFFNESS WISOME H2O		Bent
			9				
15		15"	11				
	16'		15	BOTTOM 12" - REDDISH BROWN CLAY NO RXS ORGANICS	STILL - LITTLE TO NO H2O		
	16'		19	REDDISH BROWN CLAYS W/GREY LAYERS	STIFF - LITTLE		
		21"	20	GREY LAYERS MAY BE EVIDENCE OF VARVED CLAYS	TO NO H2O		
	18'		22				
	18'		5	REDDISH BROWN CLAYS W/GREY LAYERS	M. STIFFNESS		
		12"	5	GREY LAYERS MAY BE EVIDENCE OF VARVED CLAYS	DAMP		
	20'		21				
			4				

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

TEST BORING LOG

BORING NO. MW-11S

PROJECT NO., NAME: Union Road - 2035-200

LOCATION: Buffalo NY

DRILLING CONTRACTOR/DRILLER: Maxim

GEOLOGIST, OFFICE: John J Zacher Jr

DRILLING EQUIPMENT, METHOD: HSA

SIZE/TYPE OF BIT: 6" HSA

SAMPLING METHOD: Split Spoon

START, FINISH DATE: 1/2/97

WELL INSTALLED? YES ☒ NO ☐

CASING MAT./DIA.: SS / 2"

SCREEN: TYPE Slot MAT. Stainless LENGTH 10' DIA. 2" SLOT SIZE 0.020

ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE / TOP OF WELL CASING / TOP & BOTTOM SCREEN / GW SURFACE / DATE

REMARKS:

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHOLOGY LOG
20	20	24"	3 5 6 5	Brown/Drk Brown Clays, no Rks.	Stiff Little - No H2O		
22	22-24	23"	2 4 5 4	Brown w/ some Grey Clays	Stiff Trace H2O		
24							

BoB 24' Bgl

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

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TEST BORING LOG

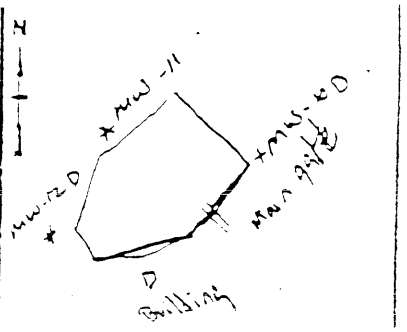
BORING NO. MW-11M

PROJECT NO.. NAME Union Road 2035-200

LOCATION Buffalo NY

DRILLING CONTRACTOR/ DRILLER Maxim

GEOLOGIST, OFFICE James Dean



DRILLING EQUIPMENT. METHOD	SIZE. TYPE OF BIT	SAMPLING METHOD	START. FINISH. DATE
HSA		Split Spoon	12/18 - 12/19/96

WELL INSTALLED? YES ☑ NO ☐ | CASING MAT./ DIA. Stainless Steel / 2" | SCREEN: TYPE SLOT MAT. Stainless LENGTH 10' DIA. 2" SLOT SIZE .020

ELEVATION OF: GROUND SURFACE TOP OF WELL CASING TOP & BOTTOM SCREEN GW SURFACE DATE
(FT. ABOVE M.S.L.)

REMARKS:

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHOLOGY
				Sampling started @ 4' BG			
4'			10				
5 6'		14"	8 10 10	Brown/DRK Brown silts + clays w/ Trace amounts of Rx Fragments. less than ½"	Stiff little to No H_2O		
6'			8	Brown/Drk Brown silts + clays, w/o Rxs	Stiff little to No H_2O		
8'		13"	12 12 14	Most likely Fill			
8'				Drk Brown clays w/ Trace amounts of Rx frags.	Stiff little to No H_2O		
		4"		most liky Fill			
10 10'				Top 8" Drk Brown clays w/ some Organics	Stiff little to No H_2O		
10'		10"	3 4 5	Bottom 2" Grey silts + clays w/ some Organics	~~little to No H_2O~~ soft w/ some H_2O		
12'			9	Top 4" discarded looked as if they fell into hole			
12'		18"	5 18		m. Stiffness Some H_2O		
14'			15	Bottom 14" Grey clays w/ Some organics + Trace ashes or soot.			
14'			7		Stiff		
15		19"	11 11	Reddish Brown clays w/ No Rxs or organics	little to No H_2O		
16'			20				
16'			19		Stiff		
		24"	25 18	Reddish Brown clays w/ Grey layers evidence of The grey layers may be varbed clays.	little to No H_2O		
18'			20		m. Stiffness		
18'			6 3	Reddish Brown clays w/ Grey layers			
			4	The Grey layers may be evedence of Varbed clays	Damn		
20			5				

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

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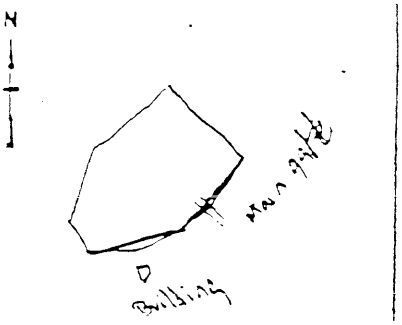
TEST BORING LOG



BORING NO. MW-11M

PROJECT NO.. NAME: Union Road 2035-200 | LOCATION: Buffalo NY

DRILLING CONTRACTOR/ DRILLER: Maxim

GEOLOGIST OFFICE: James Dean

DRILLING EQUIPMENT. METHOD: HSA | SIZE. TYPE OF BIT | SAMPLING METHOD: Split Spoon | START. FINISH DATE

WELL INSTALLED? YES ☑ NO ☐ | CASING MAT./ DIA.: Stainless Steel/ 2" | SCREEN: TYPE SLOT MAT. Stainless LENGTH 10' DIA. 2" SLOT SIZE .020 | DATE

ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE | TOP OF WELL CASING | TOP & BOTTOM SCREEN | GW SURFACE

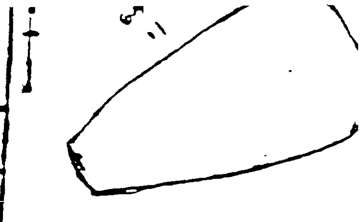
REMARKS:

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING — DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHOLOGY
20'			6	- Reddish brown varbed clays w/ Red, Grey, and dark Brown layers.	Soft Wet		
22'		24"	3 3 3				
22'					Soft		
24'		12"	3 2 4	Reddish/ Brown clays	Wet		
24			1 1 3	Reddish Brown (Fleshy Color) clays ¼" - ½" Rx frags. w/ Rounded edges.	Soft Wet		
26'		18"					
26'			3 4 5	Reddish Brown (Fleshy Color) clays ¼" - 2" Rx frags w/ rounded edges.	Soft Wet		
28'		18					
28'			2 2 2	Reddish Brown (Fleshy Color) clays + 40%-50% Rock fragments w/ some rounded edges	Soft Wet		
30'		13"					
30'			5 6 7	- Mostly Rocks 70% w/ Some Reddish Brown (Fleshy color) clays	Soft Wet		
32'		4"					
32'			3 3 3	- Reddish Brown (Flesh color) clays + silts - Some Sands 20-30% rock mostly smoothed pebbles ¼" - 1"	Soft Wet		
34'		14"					
34'			1 8 15	Reddish Brown/ Grey silts + clays 10% Rocks + Sands	The sample Ranged from Soft → hard Wet		
36'		13"	22		Soft → Hard		
36			24	Reddish Brown/ Grey silts, clays, Sands + Rocks.	Wet		
35		5"	54/2"				
				Bed Rock @ 39' BG			

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

SS = Split Spoon Type, CSC = Continuous Soil Core

TEST BORING LOG



BORING NO.	17-S
PROJECT NO., NAME	UNION ROAD - 2035 - 200
LOCATION	BUFFALO NY
DRILLING CONTRACTOR/DRILLER	MANM
GEOLOGIST, OFFICE	JOHN J ZACHER JR
DRILLING EQUIPMENT, METHOD	HSA
SIZE, TYPE OF BIT	6" HSA
SAMPLING METHOD	SPLIT SPOON
START, FINISH DA[TE]	1-2-97
WELL INSTALLED?	YES ☒ NO ☐
CASING MAT./DIA.	STAINLESS STEEL / 2"
SCREEN: TYPE	SLOT
MAT.	STAINLESS
LENGTH	10'
DIA.	2"
SLOT SIZE	0.020

ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE TOP OF WELL CASING TOP & BOTTOM SCREEN GW SURFACE DATE

REMARKS:

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS
				SAMPLING START AT 15' BG	
15 – 17		21"	6 8 7 9	BROWN CLAYS - FILL	STIFF · LITTLE TO NO H_2O
17 – 19		24"	7 4 4 5	BROWN CLAYS FILL	STIFF · TRACE H_2O
19 – 21		23	6 6 7 8	BROWN TO DARK BROWN CLAYS	STIFF LITTLE H_2O
21 – 23		24"	4 5 5 5	BROWN TO TAN CLAY W/ LITTLE GREY	STIFF SOME TO LITTLE H_2O
23 – 25		24"	5 6 5 4	BROWN - GREY CLAY 0-12 12-24	SOFT / MOIST

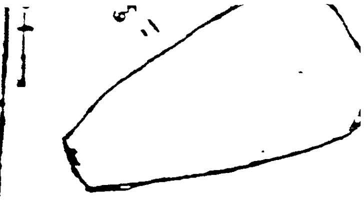
BOB 25

WELL CONST.: 10, 12, 9, BENT, SAND, SCR

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

TEST BORING LOG



BORING NO.	12-M
PROJECT NO., NAME	Union Road - 2035-200
LOCATION	Buffalo NY
DRILLING CONTRACTOR/DRILLER	MAHM
GEOLOGIST, OFFICE	John J Zacher Jr
DRILLING EQUIPMENT, METHOD	HSA
SIZE, TYPE OF BIT	6" ~~4~~ 8" HSA
SAMPLING METHOD	Split Spoon
START, FINISH DA[TE]	12/31/96
WELL INSTALLED?	YES ☒ NO ☐
CASING MAT./DIA.	Stainless Steel / 2"
SCREEN: TYPE	Slot
MAT.	Stainless
LENGTH	10'
DIA.	2"
SLOT SIZE	0.020
ELEVATION OF: (FT. ABOVE M.S.L.)	GROUND SURFACE / TOP OF WELL CASING / TOP & BOTTOM SCREEN / GW SURFACE / DATE

REMARKS: No Samples 0-20' Fill material, cuttings brown dry sample 40-42 - no recovery refusal 42.5'

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/6"	DESCRIPTION	REMARKS
20-22		22"	9, 5, [illegible], [illegible]	Brown/Drk Brown Clays	Stiff - little/no H_2O
22-24		24"	4, 4, 4, 4	Brown to Tan Clay some grey	Stiff some to trace H_2O
24-26		24"	2, 1, 1, 1	Grey to Red Brown Clay, trace rocks	Soft, moist
26-28		19"	4, 7, 7, 8	Red Brown Clay	Stiff, little H_2O
28-30		18	2, 4, 2, 7	Lt Brown/Tan Clay, trace silts, little rocks (1/8")	Soft, damp
30-32		16	2, 2, 3, 4	Lt Brown/Tan Clay - little grey, little rocks (1/8-1/4)	Stiff damp
32-34		18	3, 8, 12, 10	Top 12" - Lt Brown/Tan Clay - some greys, little rocks Bot 6" - Grey clay and sand, no cohesive strength	Soft damp, some H_2O wet
34-36		24"	1, 2, 2, 1	Grey clay and sand	No strength, wet
36-38		20"	1, 1, 1, 1	Grey clay and sand 0-15" 15-20" - Grey clay ~~[illegible]~~ and rocks 1/4-1/2"	No strength wet wet
38-40		6"	7, 50/3"	Mostly rock - w/some grey/tan clay	wet, stiff

Well construction / graphic log annotations: 24, 26, Bent, 31.5, Scr, 41.5

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

Weather Bedrock
BOB - 42.5

44 SHELTER ROCK ROAD
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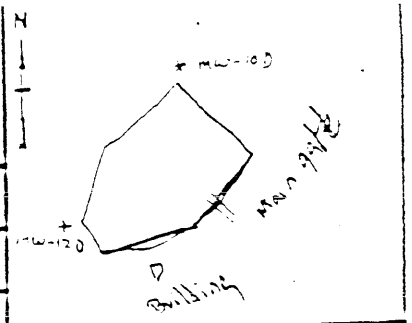
TEST BORING LOG



BORING NO. MW-120

LOCATION Buffalo NY

PROJECT NO.. NAME Union Road 2035-200

DRILLING CONTRACTOR/ DRILLER Maxim (Ron Brown, Dick Miller)

GEOLOGIST, OFFICE James Dean

START, FINISH DATE 12/12-12/16/96

DRILLING EQUIPMENT, METHOD HSA / Air Rotary

SIZE, TYPE OF BIT 8¼" HSA / 7⅞" Air / 5⅞" SAMPLING METHOD Split Spoon

WELL INSTALLED? YES ☑ NO ☐

CASING MAT., DIA. Stainless Steel / 2"

SCREEN: TYPE SLOT MAT. Stainless LENGTH 10' DIA. 2" SLOT SIZE .020

ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE TOP OF WELL CASING TOP & BOTTOM SCREEN GW SURFACE DATE

REMARKS:

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHOLOGY
				No samples taken until 20' BG. The material is all Fill untill then.			
				Grout Seal			
5							
10							
15							

...-10%, Little = 10-20%, Some = 20-35%, And = 35-50%
...SC = Continuous Soil Core

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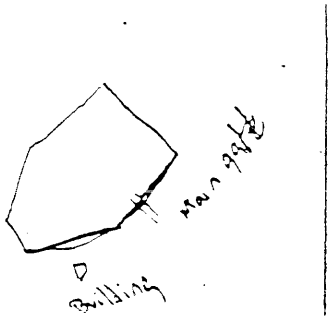
TEST BORING LOG



BORING NO. MW-125

PROJECT NO.. NAME Union Road 2035-200

LOCATION Buffalo NY

DRILLING CONTRACTOR/ DRILLER Maxim

GEOLOGIST. OFFICE James Doar

DRILLING EQUIPMENT. METHOD HSA

SIZE TYPE OF BIT

SAMPLING METHOD Split SPOON

START. FINISH DATE

WELL INSTALLED? YES ☑ NO ☐ | CASING MAT.. DIA. Stainless Steel 2" | SCREEN: TYPE SLOT MAT. Stainless LENGTH 10' DIA. 2" SLOT SIZE .020

ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE TOP OF WELL CASING TOP & BOTTOM SCREEN GW SURFACE DATE

REMARKS:

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHOLOGY
20'			3	Brown to Drk Brown Clays, No Rxs	Stiff little to No H_2O		
		24"	5				
22'			6				
			8				
22'			3	Brown/Tan/w/ some Greys	Stiff w/ trace H_2O		
		24"	5				
			4				
24'			4		Soft Damp		
5			1	Greyish/ Red Brown Clays, Trace Rx Fragments Y8" - Y4"			
24'		24"	1				
26'			1				
26'			4	Top 6" Red Brown Clay, No Rxs	Stiff		
		17"	6		Soft w/		
			14	Bottom 11" lt Brown/Tan (Fleshy color) Clays, Trace silts & some Rx Fragments	Some H_2O		
28'			20		Soft		
28'			1	lt Brown/Tan (Fleshy color) clays, Trace silts &	Some H_2O		
		15"	4	Some rock fragments. Y8" - Y4"			
			2		Soft		
30'			3	lt Brown/Tan (Flesh Color) clays, Trace silts &	Some H_2O		
10 D'			1	some Rock fragments			
		14"	3		Soft, Damp		
32'			4	Top 12" lt Brown/Tan, w/ some Grey clays some Rx fragments.			
32'			1		No Cohesive Strength Wet to Damp		
		24"	8	lst 16 Brown/Tan (Flesh Color) clays & silts			
34'			16	Bottom 8" Grey 50% Sands No Rxs			
			50				
				Sample skipped the augers into hard unconsolidated Rocks.			
15							
					Soft		
				lt Brown/Tan/Grey Clays w/ silts & Angular Rock Fragments 40-50% Y8" - 1"			
37'		5/6"	5"		Wet		
39'							

Abbreviations Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

CSC = Continuous Soil Core

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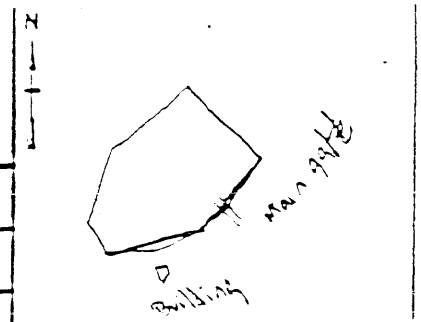
SOT 5

TEST BORING LOG



BORING NO. MW-12D

PROJECT NO.. NAME Union Road 2035-200

LOCATION Buffalo NY

DRILLING CONTRACTOR/ DRILLER Maxim

GEOLOGIST, OFFICE James Doan

DRILLING EQUIPMENT. METHOD HSA

SIZE. TYPE OF BIT

SAMPLING METHOD Split Spoon

START. FINISH DATE

WELL INSTALLED? YES ☒ NO ☐

CASING MAT.. DIA. Stainless Steel 2"

SCREEN: TYPE SLOT MAT. Stainless LENGTH 10' DIA. 2" SLOT SIZE .020

ELEVATION OF: GROUND SURFACE TOP OF WELL CASING TOP & BOTTOM SCREEN GW SURFACE DATE
FT. ABOVE M.S.L.)

REMARKS:

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHOLOG
40-42'	2'	50/2"		Mostly Rx ¼"-2" in size w/ a matrix of lt Brown/Tan/Grey Clays + silts -Bed Rock @ -41' BG	Wet Stiff		
					Cement Seal		
5				Bottom of Protective casing @ 46' BG	Bentonite seal		
				Stainless Steal Riser			
10				Stainless steal Screen			
15				Sand			
				Bottom of hole 61.5' BG			

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

61.5'

TEST BORING LOG

BORING NO. MW-135	
PROJECT NO. NAME UNION ROAD 2035-200	LOCATION BUFFALO NY
DRILLING CONTRACTOR/DRILLER MAKIM	
GEOLOGIST. OFFICE JOHN J ZACHER JR	
DRILLING EQUIPMENT. METHOD HSA	SIZE TYPE OF BIT 6" HSA / SAMPLING METHOD SPLIT SPOON / START. FINISH DATE 12/20/96
WELL INSTALLED? YES ☒ NO ☐ / CASING MAT./DIA. STAINLESS STEEL / 2"	SCREEN: TYPE SLOT MAT. STAINLESS LENGTH 10' DIA. 2" SLOT SIZE 0.020
ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE	TOP OF WELL CASING / TOP & BOTTOM SCREEN / GW SURFACE / DATE
REMARKS: BORING TO 21', LAST 1' NOT SPLIT SPOONED WELL ~~RISER~~ RISER AT 20.5' B.G.	

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHOLOGY LOG
				SAMPLING STARTED AT 4' B.G.			
4			15	DARK BROWN CLAYS	STIFF		
			10	NO ROCKS	LITTLE NO H2O		
5		14"	15	SOME CINDERS			
6'			12				
6			12	DARK BROWN CLAYS	STIFF		
		12	10	SOME CINDERS	TRACE H2O		
8'			10				
8'			12	5' → DARK BROWN CLAYS, LITTLE CINDERS	STIFF, LITTLE H2O		
		10"	11				
10'			13	BOTS" - BLACK SANDS/CINDERS NOT NATIVE	DRY		
10			8	TOP 3" - BLACK SAND CINDERS	DRY		
		11'	5				
			10	BOTTOM 3" - WOOD SOME CREOSOTE ODOR			
12			7				
12			8	BLACK SAND / CINDERS	WET		
		10"	3				
14			6				
14			7	BLACK SAND / CINDERS	WET		
15		12"	7	SOME BRICK AND WOOD			
16			6				
16			5	BLACK SAND CINDERS W/SOME RED CLAY	DAMP		
		7"	4				
18			4		WET		
18			3	TOP 6" BLACK CINDERS	MED STIFF		
		21"	5	6"-15" RED CLAY, NO ROCKS	SOME H2O		
20			9				

BOB 21'

Proportions Used: Trace = 0-10%. Little = 10-20%. Some = 20-35%. And = 35-50%

Sampling Abbreviations: SS = Split Spoon. ST = Shelby Tube. CSC = Continuous Soil Core

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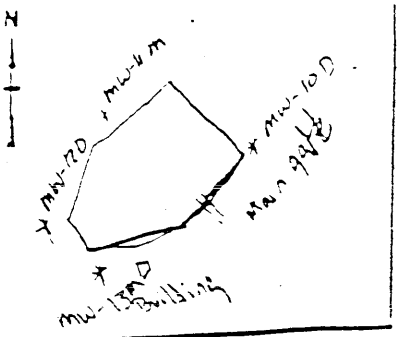
TEST BORING LOG



BORING NO. MW- 13 M

PROJECT NO.. NAME Union Road 2025-200

LOCATION Buffalo NY

DRILLING CONTRACTOR/ DRILLER Maxim

GEOLOGIST, OFFICE James Doan

DRILLING EQUIPMENT. METHOD HSA

SIZE. TYPE OF BIT

SAMPLING METHOD Split SPOON

START. FINISH DATE 12/9/96

WELL INSTALLED? YES ☒ NO ☐

CASING MAT./DIA. Stainless Steel / 2"

SCREEN: TYPE SLOT MAT. Stainless LENGTH 10' DIA. 2" SLOT SIZE .020

ELEVATION OF: GROUND SURFACE TOP OF WELL CASING TOP & BOTTOM SCREEN GW SURFACE DATE
(FT. ABOVE M.S.L.)

REMARKS:

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESIST-ANCE BLOWS/FT	LOG OF TEST BORING DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHOLOGY
5	5'	12"	18 12 8 17	-Drk Brown clays w/o RKS	Stiff little to No H2O		
	7'						
10	10'	8"	15 14 11 5	Blk sands + cashes or cinders - Not a native material	No Cohesive strength DRY		
	12'						
	12'	11"	7 9 4 5	Top 9" Blk sand + ashes or cinder some organics Bottom 2" Wood, Hobby from a RR tie-	No Cohesive strength DRY		
	14'				Damp		
15	14'	5"	50/5"	Top 2" Blk ash w/ some ~~as~~ organics Next 1" Brick (Red Bottom 2" Wood			
	16'						
	16'	3"	50/3"	Wood Next Sample will be 19'-21'			
	18'						
	19'	3"	50/3"	Wood			

Proportions Used: Trace = 0-10%. Little = 10-20%. Some = 20-35%. And = 35-50%

44 SHELTER ROCK ROAD
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2 of 2

TEST BORING LOG

BORING NO. MW-13M

PROJECT NO.. NAME Union Road 2035-200

LOCATION Buffalo NY

DRILLING CONTRACTOR/ DRILLER Maxim

GEOLOGIST, OFFICE James Doan

DRILLING EQUIPMENT. METHOD HSA

SIZE. TYPE OF BIT

SAMPLING METHOD Split SPOON

START. FINISH DATE

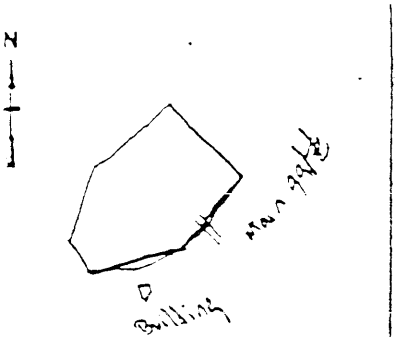
WELL INSTALLED? YES ☑ NO ☐

CASING MAT./ DIA. Stainless Steel / 2"

SCREEN: TYPE SLOT MAT. Stainless LENGTH 10' DIA. 2" SLOT SIZE .020

ELEVATION OF: GROUND SURFACE TOP OF WELL CASING TOP & BOTTOM SCREEN GW SURFACE DATE
(FT. ABOVE M.S.L.)

REMARKS:



DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS
	24'		7	Top 5" Wood	stiff → soft
5		24"	5	Bottom 19" Greyish red clays, No Rocks	little to No H_2O
	26'		5	~~Reddish Grey clays w/ some rocks~~	
10	30'		1	Top 2" Wood – Maybe from a plug in Bottom of auger	Soft Wet.
		12"	1	Bottom 10" Reddish / Grey Clays w/ some Rx Frag Pebbles	
	32'		1		
	32	0"	2	There wasn't a basket in the spoon.	
			5		
	34'		8		
			6		
15	34'	0"	50/0"	Bed Rock	Bottom of Borring
	36'				

WELL CONST. | GRAPHIC LITHOLOGY LOG

Little = 10-20%, Some = 20-35%, And = 35-50%

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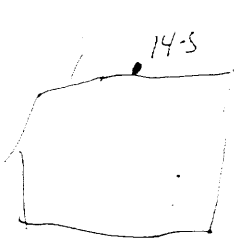
TEST BORING LOG



BORING NO. 14-S

PROJECT NO.. NAME UNION ROAD | LOCATION Buffalo NY

DRILLING CONTRACTOR/ DRILLER Maxim Technologies

GEOLOGIST, OFFICE Mark Cambra NES Danbury, CT

DRILLING EQUIPMENT, METHOD	SIZE, TYPE OF BIT	SAMPLING METHOD	START, FINISH DATE
HSA	6" HSA	AF	8/19/97

WELL INSTALLED? YES ☑ NO ☐	CASING MAT./DIA.	SCREEN: TYPE	MAT.	LENGTH	DIA.	SLOT SIZE
	Steel 4"	Slotted	Stainless Steel	10	2"	020

ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE | TOP OF WELL CASING | TOP & BOTTOM SCREEN | GW SURFACE DATE 8/19/97

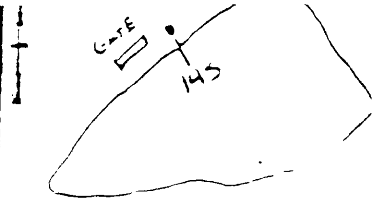
REMARKS: Replaced Previous 14-S well.

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHOLOG
				Topsoil			
				Fill - Reddish brown Sandy Clay		grout	
						3.8 Bentonite	
5						5.3	
						6.8	
				Reddish Brown Clay	SAND		
10							
15						16.8	
				End of Boring		17.3	

See 14-S Previous

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core



TEST BORING LOG

BORING NO.	14-S
PROJECT NO., NAME	UNION ROAD 2035-200
LOCATION	BUFFALO NY
DRILLING CONTRACTOR/DRILLER	MAXIM
GEOLOGIST, OFFICE	JOHN J ZACHER JR
DRILLING EQUIPMENT, METHOD	HSA
SIZE, TYPE OF BIT	6" HSA
SAMPLING METHOD	SPLIT SPOON
START, FINISH DATE	12-30-96
WELL INSTALLED?	YES ☒ NO ☐
CASING MAT./DIA.	STAINLESS STEEL/2"
SCREEN: TYPE	SLOT
MAT.	STAINLESS
LENGTH	10
DIA.	2"
SLOT SIZE	0.020

ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE | TOP OF WELL CASING | TOP & BOTTOM SCREEN | GW SURFACE | DATE

REMARKS:

LOG OF TEST BORING

SAMPLING STARTS AT 4' B.G.

A Bonds 8/19/97

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS
4'–6'		20"	7, 14, 17, 12	TOP 1" - WOOD; 1-11" - BROWN CLAY W/LITTLE GRAVEL; 11-17" CINDERS; 17-20 BROWN CLAY W/SOME ORGANIC	STIFF, DRY; DRY; STIFF, DRY
6'–8'		19"	19, 19, 17, 23	0-7" - FILL - CINDERS, STONES, BRICK. 7-19" - BROWN CLAY W GREY VARBING	STIFF, TRACE H2O
8'–10'		22"	5, 7, 9, 10	0-7" BROWN CLAY W/ LITTLE ROCKS (1/4") 7-22" RED/BROWN CLAY	STIFF, LITTLE H2O; STIFF, LITTLE H2O
10'–12'		22"	16, 12, 13, 14	RED/BROWN CLAY, TRACE ORGANICS (ROOTS)	STIFF - LITTLE H2O
12'–14'		24"	5, 7, 8, 10	RED/BROWN CLAY - SOME GREY VARBING	STIFF LITTLE H2O; 4" SOME H2O
14'–16'		24"	3, 5, 5, 9	RED/BROWN CLAY SOME GREY VARBING	STIFF / LITTLE H2O
16'–18'		24"	12, 13, 15, 13	RED/BROWN CLAY W/SOME GREY	STIFF - LITTLE H2O
18'–20'		24"	0, 3, 3, 2	0-4" MIX BROWN/GREY CLAY; 4-24" GREY SANDY CLAY (40-50%)	MEDSTIFF SOME H2O; SOFT, WET

WELL CONST. / GRAPHIC LOG: 13, -Bent, 17, 19

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

TEST BORING LOG

BORING NO. 145

PROJECT NO., NAME | LOCATION

DRILLING CONTRACTOR/DRILLER

GEOLOGIST, OFFICE

DRILLING EQUIPMENT, METHOD | SIZE, TYPE OF BIT | SAMPLING METHOD | START, FINISH DA

WELL INSTALLED? YES ☐ NO ☐ | CASING MAT./DIA. | SCREEN: TYPE MAT. LENGTH DIA. SLOT SIZE

ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE | TOP OF WELL CASING | TOP & BOTTOM SCREEN | GW SURFACE | DATE

REMARKS:

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LOG
20			6 9	GREY CLAY	SOFT, WET		
22		18"	3 7				
22			weight of	GREY CLAY	VERY SOFT, WET		
24		15"	ROD				
24			0	GREY CLAY	SOFT, WET		
25		18"	0 3				
26			2				
26			2	GREY CLAY	SOFT		
28		24"	3 3		SATURATED)		
28			3	G-S GREY CLAY	SATURATED, SOFT		
29			0				
30		24"	0 1 4	5-20' GREY CLAY, SOME ROCKS BOB	VERY WET SOFT		

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

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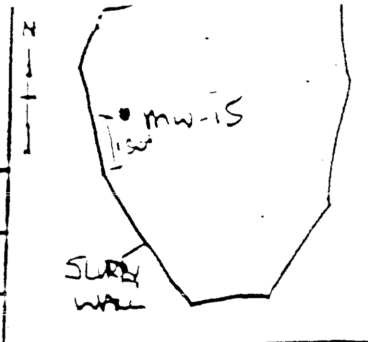
TEST BORING LOG



BORING NO. mw-15

PROJECT NO., NAME Union Road

LOCATION On Landfill Cap

DRILLING CONTRACTOR/DRILLER Maxim - Empire · P. Bence

GEOLOGIST, OFFICE Hanlon / Szewaka Danbury

DRILLING EQUIPMENT, METHOD B53 ATV HSA

SIZE, TYPE OF BIT 6.25" H.S.A

SAMPLING METHOD SS

START, FINISH DATE 2/20/06

WELL INSTALLED? YES ☒ NO ☐

CASING MAT., DIA. SS 2"

SCREEN: TYPE **MAT.** SS **LENGTH** 10' **DIA.** 2" **SLOT SIZE** 0.10

ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE 618.8 · TOP OF WELL CASING 620.0' · TOP & BOTTOM SCREEN 610'-600' · GW SURFACE NA · DATE 2/20/06

REMARKS: Elevation and depths relative to precap surface

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
0–2		2'	26/8	Brown graded clay silt & gravel. Fill organic. Tan/Brown. Hard/firm. Moist (frozen) + little 1/4" gravel.			
2–4		1'	13/4	Tan/brown clay, firm, no coarse materials. Rec. remaining.			
4–6		1.5'	27/8	Coarse fill mat'l coarse. Black sand & gravel w/ trace fines. Tan. 1" subangular rock frag. Tan firm silt clay. No coarse mat'l	Grout →		
6–8		1.5'	11/54	Grey/green clay, no coarse material, soft. Trace silt	Fine sand →		
8–10		1.8'	8/6	Same but black. Silty clay. Trace orange. Same but grey/grey. Silty clay.	Course sand →		
10–12		2'	5/8	Grey/gray silt. Some clay. Soft.			
12–14		1.5'	6/56	Same			
14–16		1.5'	4/8	Same			
16–18		2'	4	Same			

EOB 19.0'

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

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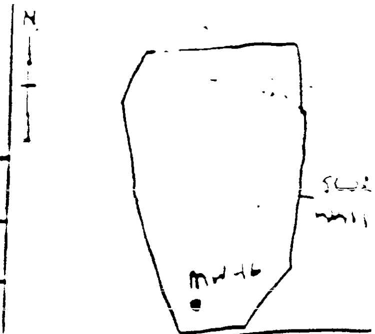

TEST BORING LOG

BORING NO. MW-16			
PROJECT NO., NAME: UNION ROAD	LOCATION: CAP INTERIOR		
DRILLING CONTRACTOR/DRILLER: MAXIM/EMPIRE BRUCE			
GEOLOGIST/OFFICE: HANDEX/SZUMANA Danbury			
DRILLING EQUIPMENT, METHOD: CME 850 HSA	SIZE, TYPE OF BIT: 6 1/4"	SAMPLING METHOD: SS	START, FINISH DATE: 2/21/96
WELL INSTALLED? YES ☒ NO ☐	CASING MAT./DIA.: 2" SS	SCREEN: TYPE 0.20 MAT. SS LENGTH 10 DIA. 2"	SLOT SIZE 0.20
ELEVATION OF: (FT. ABOVE M.S.L.)	GROUND SURFACE: ~~618.8~~ 618.9	TOP OF WELL CASING: 620.0	TOP & BOTTOM SCREEN: ~~48.8~~ 610.0 - 600.0
GW SURFACE: NA	DATE: 2/21/96		

REMARKS: ALL ELEVATIONS AND DEPTHS RELATIVE TO PRE-CAP GRADE

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
0–2'		2.0'	35	Hard Brown Clay, 10% Gravel	Frozen		
2'–4'		1.5'	20	Upper 12" same; Bottom 6" CINDERS	DRY		
4'–6'		1.0'	8/ft	SAME	DRY	Grout →	
6'–8'		9"	12/ft	TAN SAND, SILT, SUBANGULAR ROCK FRAGS WELL GRADED; 1" of BLACK CINDER [illegible]		Fine Sand →	
8'–10'		2'	5/ft	TAN CLAYS, NO COARSE MATERIAL; SOFT TAN/BROWN CLAY, NO COARSE MATERIAL. SLIGHT Fe STAINING			
10'–12'		1.5'	5/ft	SAME but gray/green; SAME + TRACE ORGANICS.			
12'–14'		1.5'	5/ft	SAME			
14'–16'		1.5'	4/ft	SAME + some (20%) ROCK FRAGS TO 1/4", ANGULAR, IN BOTTOM 6"			
16'–18'		1.5'	12/ft	SAME.	MOIST		
18'				EOB 19.0'		Coarse sand →	

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

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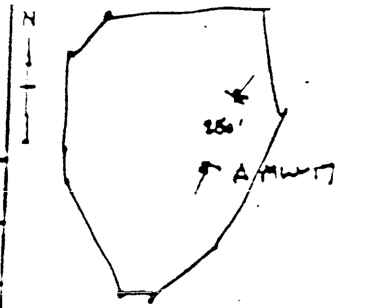
TEST BORING LOG



BORING NO.	
MW-17	
PROJECT NO., NAME: Union Road	LOCATION: Landfill cap
DRILLING CONTRACTOR/DRILLER: Maxim-Empire / P. Bence	
GEOLOGIST, OFFICE: M. Sewaka / Danbury	

DRILLING EQUIPMENT, METHOD	SIZE, TYPE OF BIT	SAMPLING METHOD	START, FINISH DATE
	6.25" HSA	2" SS	2/22/96

WELL INSTALLED?	CASING MAT./DIA.	SCREEN: TYPE	MAT.	LENGTH	DIA.	SLOT SIZE
YES ☒ NO ☐	2" SS		SS	10'	2	20

ELEVATION OF: (FT. ABOVE M.S.L.)	GROUND SURFACE	TOP OF WELL CASING	TOP & BOTTOM SCREEN	GW SURFACE	DATE

REMARKS:

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS
0–2'		1.25'	20/ft	Tan/brown clay. Frozen. No coarse material	Frozen
2'–4'		.25'	42/ft	2' Black/dark red silty sand. Gravel present. Fe⁺ staining.	Wet
4'–6'		1.0'	11/ft	4' Tan/brown clay soft. No coarse material. Fe⁺ staining	Dry
				5' Brown/black clay. Trace organics. Fe⁺ staining. Rock frags.	
6'–8'		1.25'	24/ft	6.5' Black clay. 30% organics (wood). Trace coarse material (cinder, gravel). 8'	
8'–10		1.5'	11/ft	Soft brown clay. Fe⁺ staining. No coarse mat'l. Trace black cinder fill mat'l.	
10–12'		0.5'	11/ft	Same	
12'–14'		0	7/ft	No recovery	Wet
14'–16		0	8/ft	No recovery	
16–18		0.8'	11/ft	Same. No fill mat'l. Trace organics & angular gravel.	
18–20		1.5	14/ft	18.5 Grey/green clay w/ black staining. Trace organics (wood). No coarse mat'l. Fe⁺ staining (slight)	

WELL CONST.: grout

GRAPHIC LITHO LOG

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

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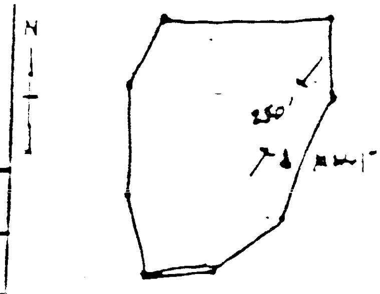
TEST BORING LOG



BORING NO.	MW-17
PROJECT NO., NAME	Union Road
LOCATION	Landfill cap
DRILLING CONTRACTOR/DRILLER	Mukia-Empire D. Benge
GEOLOGIST, OFFICE	M. Szwaya Danbury
DRILLING EQUIPMENT, METHOD	B53 HSA
SIZE, TYPE OF BIT	6.25" HSA
SAMPLING METHOD	2" SS
START, FINISH DATE	2/22/96
WELL INSTALLED?	YES ☑ NO ☐
CASING MAT./DIA.	2" SS
SCREEN: TYPE / MAT.	SS
LENGTH / DIA. / SLOT SIZE	10' / 2" / 20

ELEVATION OF: (FT. ABOVE M.S.L.)	GROUND SURFACE	TOP OF WELL CASING	TOP & BOTTOM SCREEN	GW SURFACE	DATE
	619.1	620'	605'-595'	~608'	2/22

REMARKS: Elevations & depths relative to pre-cap tops.

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
20–22'		2'	14/ft.	(SAME) Grey/black sand w/ brown staining. Trace organics. No clean mat'l. Slight odor staining	WRT ↓		
22–24'		1.5'	15/ft	23.0' Black silt & sand. Trace organic mat'l.			
24'				E.O.B. 24.0'			

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%
Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

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44 SHELTER ROCK ROAD
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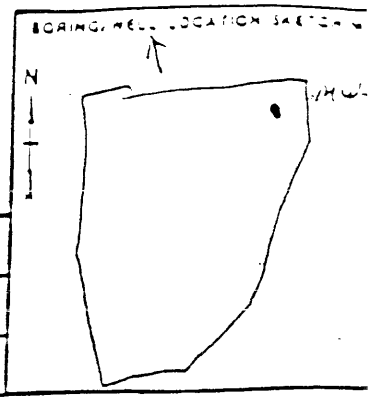

TEST BORING LOG

BORING NO. MW-3	
PROJECT NO.. NAME UNION ROAD	LOCATION CAP INTERIOR
DRILLING CONTRACTOR/ DRILLER MAINE EMPIRE PHIL BENGE	
GEOLOGIST/ OFFICE Hanlon/Schmidt, DANBURY	
DRILLING EQUIPMENT. METHOD CME 750	SIZE TYPE OF BIT 6¼" HSA / SAMPLING METHOD SS / START. FINISH DAT 2/19/96
WELL INSTALLED? YES ☒ NO ☐	CASING MAT./DIA. SS 2" / SCREEN: TYPE MAT. SS LENGTH 10' DIA. 2" SLOT SIZE 0.20
ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE 619.1	TOP OF WELL CASING 620.0 / TOP & BOTTOM SCREEN 605.0 - 595.0 / GW SURFACE NA / DATE 2/19/96
REMARKS: ELEVATIONS AND DEPTHS RELATIVE TO PRE-CAP SURFACE	

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING — DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHOLOGY
		2'	32/FT	Tan clay, Hard, No coarse, Dry	(Topsoil)		
		1'	10/FT	Tan clay, Firm ~~SFT~~, No coarse, Dry			
5		1'	12/FT	Tan/brown Clay, Firm, No Coarse, Dry	grout		
		2'	15/FT	Brown clay, ~~SFT~~ Firm, No Coarse, Dry Festering			
		1'	12/FT	Same			
10		1.5'	24/FT	Same w/ trace organics + SH bottom 6"			
		1.5'	27/FT	Same w/ trace rock frags (angular, fine)	Fine Sand		
15		1.5'	20/FT	Same (5% clast to 10%)			
		2'	34/FT	Same	Coarse Sand		
		1.5	4/FT	Same but SAT + MOIST			

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

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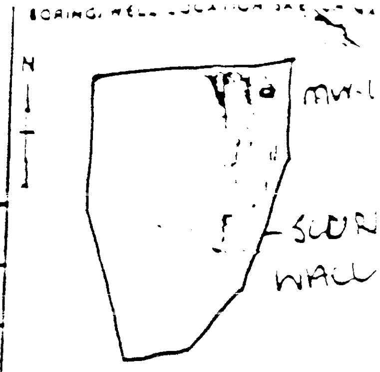
TEST BORING LOG



BORING NO.	MW-18
PROJECT NO., NAME	UNION ROAD
LOCATION	INSIDE CAP AREA
DRILLING CONTRACTOR/DRILLER	MARTIN/EMPIRE P. BENKE
GEOLOGIST, OFFICE	HANDEX/SEWARD DANOZZI
DRILLING EQUIPMENT, METHOD	CME 850 HSA
SIZE, TYPE OF BIT	6 1/4 HSA
SAMPLING METHOD	SS
START, FINISH DATE	2/19/96
WELL INSTALLED?	YES ☒ NO ☐
CASING MAT./DIA.	SS 2"
SCREEN: TYPE / MAT.	SS
LENGTH	10'
DIA.	2"
SLOT SIZE	0.20

ELEVATION OF: (FT. ABOVE M.S.L.)	GROUND SURFACE	TOP OF WELL CASING	TOP & BOTTOM SCREEN	GW SURFACE	DATE
	619.1	620.0	605.0 - 595.0	NA	2/19/96

REMARKS: ELEVATIONS AND DEPTHS RELATIVE TO PRE-CAP SURFACE

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
20	7	1'	9/FT	Same, Trace Black Shale Chips	Coarse Sand →		
	8	2'	3/FT	Brown Sandy Clay, 20% organic Very Soft Trace Rock Frags Bottom 6" Very Soft Wet Brown Clay trace Rock fragments angular largest ~1"			
25							
				EOB 24.5'			
10							
15							

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

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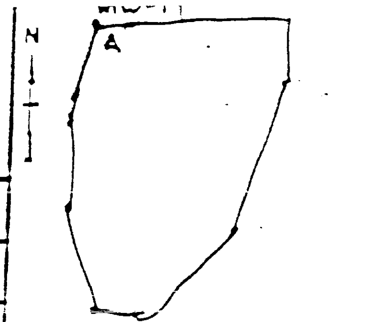

TEST BORING LOG

BORING NO. MW-19

PROJECT NO., NAME: Union Road

LOCATION: Landfill Cap

DRILLING CONTRACTOR/DRILLER: Mann-Lambae, P. Bence

GEOLOGIST, OFFICE: Szwaka Danbury

DRILLING EQUIPMENT, METHOD: B53 HSA

SIZE/TYPE OF BIT: 6.25" HSA

SAMPLING METHOD: 2" S.S

START, FINISH DATE: 2/22/96

WELL INSTALLED? YES ☒ NO ☐

CASING MAT./DIA.: 2" SS

SCREEN: TYPE — **MAT.** SS — **LENGTH** 10' **DIA.** 2" **SLOT SIZE** 20

ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE 618.5' — TOP OF WELL CASING 617.5' — TOP & BOTTOM SCREEN 605' - 595' — GW SURFACE unk. — DATE 2/22/96

REMARKS: Elevation & depth relative to pre-cap surface

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS
0–2'		1.25	15/ft	Well-graded sand, silt & gravel. Tan/brown. Frozen/Hard	Frozen
2'–4'		1.0'	12/ft	2' Firm brown/tan clay. Fe+ & black staining. No coarse mat'l.	0.0
4'–6'		1.5	15/ft	Same	
6'–8'		1.5'	26/ft	7.0' 8.0 Same with trace 1/4" gravel (rounded). V. hard	0.0
8'–10		0.5'	62/ft	Tan, dry, hard, clay & silt. Fe+ staining. Trace gravel. Occas. single black organic mat'l & staining	
10–12'		1.75'	24/ft	11 Brown, firm, dry clay. Trace organics. Appears as vertical roots; 12' organic mat'l. Gravels are frags.	
12'–14		1.0'	14/ft	Black, wet, silty sand. Some gravel. Organic. Petroleum odor. Trace organics	WET
14–16		1.0'	10/ft	Same. Slight sheen present. Brick, black frags. Present.	
16–18'		1.0'	6/ft	16' Soft, wet, gray/gray clay, black mottling from organics. Trace organic mat'l. Fe+ staining. No coarse mat'l.	
18'–20		1.25'	11/ft	18.5 Same as above tan/brown clay, gray streaks, no coarse mat'l. Fe+ staining. Firm.	E.O.B @ 20'

WELL CONST.: Grout; Fine Sand; Coarse Sand

GRAPHIC LITHO LOG

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

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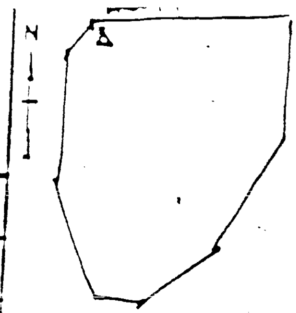
TEST BORING LOG



BORING NO. MW-19

PROJECT NO., NAME: Union Road	LOCATION: Landfill Cap
DRILLING CONTRACTOR/DRILLER: Maxim-Empire, P. Bence	
GEOLOGIST, OFFICE: Sewaya, Danbury	

DRILLING EQUIPMENT, METHOD	SIZE/TYPE OF BIT	SAMPLING METHOD	START, FINISH DATE
B58 HSA	6.25" HSA	2" SS	2/23/96

WELL INSTALLED?	CASING MAT./DIA.	SCREEN: TYPE	MAT.	LENGTH	DIA.	SLOT SIZE
YES ☒ NO ☐	2" SS		SS	10'	2"	20

ELEVATION OF: (FT. ABOVE M.S.L.)	GROUND SURFACE	TOP OF WELL CASING	TOP & BOTTOM SCREEN	GW SURFACE	DATE
	618.5'	617.5	605' - 595'	[illegible]	2/23/96

REMARKS: Elevations & depths relative to pre-cap elev.

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
				← 20' E.O.B →			
5							
10							
15							

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

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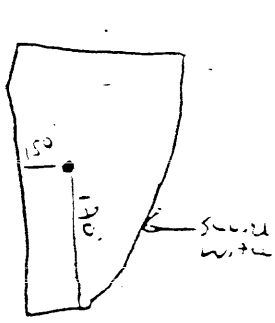
TEST BORING LOG



BORING NO. MW-20			
PROJECT NO., NAME UNION RD	LOCATION INTERIM CAP		
DRILLING CONTRACTOR/DRILLER MAXIM/EMPIRE BENCE/BOITNOTT			
GEOLOGIST, OFFICE HANSON/SUWATA DANBURY			
DRILLING EQUIPMENT, METHOD CME 850 HSA	SIZE, TYPE OF BIT 6¼"	SAMPLING METHOD SS	START, FINISH DATE 2/2/96
WELL INSTALLED? YES ☒ NO ☐	CASING MAT./DIA. SS 7"	SCREEN: TYPE MAT. SS LENGTH 10' DIA. 7"	SLOT SIZE 0.20
ELEVATION OF: (FT. ABOVE M.S.L.)	GROUND SURFACE 614.6	TOP OF WELL CASING 617.0	TOP & BOTTOM SCREEN 607.0 – 597.0
GW SURFACE NA	DATE 2/11/96		

REMARKS: ELEVATION AND DEPTHS RELATIVE TO PRE-CAP SURFACE

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHOLOGY
		1.5	8	Brown Clay; NO coarse, frozen, BOTTOM 4" Black w/15% organics	FROZEN		
		1.0	26	FIRM Brown Clay trace organics and silt	moist		
5		1.5	19	Same BOTTOM 12" Black fine granular material w/charcoal odor, 10% organics 10% "FOAM BOARD"	moist		
		2'	14	Black Firm Clay 10% organics TRACE 1/2" Rock Frags	moist		
10		1.5	24	BOTTOM 4" Firm tan Clay, NO coarse			
		5"	16	First 6" Same w/organics 1st Gray Sandy Clay Next 6" Red Sand w/Black Cinders Some Clay Next 6" WHITE Cindery ash w/30% wood	moist		
		0.5'	6	Soft tan Clay, NO coarse	wet		
				Fine sand/silt red w/Black Stringy 10% organics			
15		2	8	Fine Black Fine Sand Trace red fine sand	~~DRY~~ moist		
		1.5	3	Same Trace organics	WET		
		1.0	3	Brown Clay + SAND w/Black Stringy, Strong Petroleum ODOR, Sheening, 20% rock frags upto 0.5"	WET		

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

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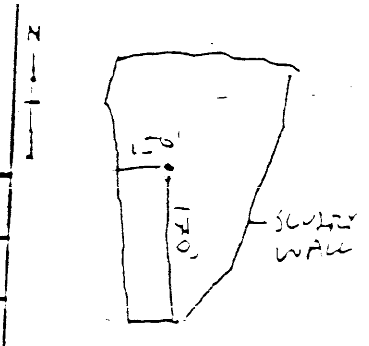
TEST BORING LOG



BORING NO. MW-20

PROJECT NO., NAME: UNION ROAD

LOCATION: INTERIOR OF CAP

DRILLING CONTRACTOR/DRILLER: MAXIM / EMILE BENOE

GEOLOGIST, OFFICE: HANLON/SWAIN DANBURY

DRILLING EQUIPMENT, METHOD: CME 850 HSA

SIZE, TYPE OF BIT: 6¼"

SAMPLING METHOD: SS

START, FINISH DATE: 2/21/96

WELL INSTALLED? YES ☒ NO ☐

CASING MAT./DIA.: SS 2"

SCREEN: TYPE — MAT. SS LENGTH 10' DIA. 2" SLOT SIZE 0.010

ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE ~~627.6~~ 624.6 TOP OF WELL CASING 627.0 TOP & BOTTOM SCREEN 607.0 - 597.0 GW SURFACE NA DATE 2/21/96

REMARKS: ELEVATIONS AND DEPTHS RELATIVE TO PRE-CAP GRADE

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS
20		0	3	~~[illegible]~~ ? No recovery	
		2.0	8	Same w/rks up to 1.5" grades into finer material w/30% organics	
				Bottom 3" Black clay, no coarse, trace organics	
25			7	Soft gray green clay, trace 1/8" rock frags. No odor, no petroleum	
			6	Same no rock frags	coarse sand
				EOB 29.0'	
30					
15					

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

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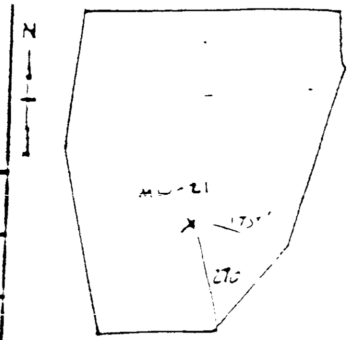
TEST BORING LOG



BORING NO.	MW-21
PROJECT NO., NAME	Union Road
LOCATION	Landfill cap
DRILLING CONTRACTOR/DRILLER	Maxim - Empire
GEOLOGIST, OFFICE	Szwaja / Hawley Danbury
DRILLING EQUIPMENT, METHOD	B53 HSA
SIZE, TYPE OF BIT	6.25" HSA
SAMPLING METHOD	2" SS
START, FINISH DATE	2/22/96
WELL INSTALLED?	YES ☒ NO ☐
CASING MAT./DIA.	2" SS
SCREEN: TYPE	MAT. S.S. LENGTH 10' DIA. 2" SLOT SIZE 20

ELEVATION OF: (FT. ABOVE M.S.L.)	GROUND SURFACE	TOP OF WELL CASING	TOP & BOTTOM SCREEN	GW SURFACE	DATE
	623.9	625'	595' - 605'	unk	2/22/96

REMARKS: All elevations & depths relative to pre-cap grade

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/6"	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
				Brown frozen clay	Frozen		
2'		2'	41/6	Black coal and cinder crushed fill material, trace organics. Frozen / very hard.	Air hammer on SS		
		1.25'	unk	Same	blown. Use manual 140# hammer.		
4'							
5		1.25'	9/6	Same w/ grey/black clay. Fe²⁺ staining. 10-15% organics. Black coal cinders present.	024		
6		1'	50/6	→ Light tan, dry, sand & gravel. No fines, angular (?) → Black & dark red cinder fill material. Dry. Trace fines, rock frags, angular. → Maroon silt & sand. Poorly graded. Dry.			
8'		1'	7/6	Same w/ major gravel (1/4") rock & trace fines, rounded. Black silt & fine sand. Trace organics. Dry.			
10		1.25'	9/6	Poorly graded red sand. No coarse material. Dry. Fe²⁺ staining.			
12		0'	15/6				
14'							
15		1'	5/6	Same			
16'		0.5'	9/6	Red silt & sand, with gravel & rock matl.	Moist		
18'			4/6	Same			

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

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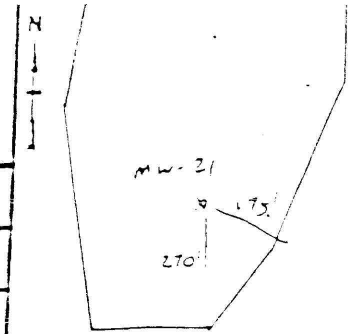
TEST BORING LOG



BORING NO.	MW-21
PROJECT NO., NAME	Union Road
LOCATION	Landfill Cap
DRILLING CONTRACTOR/DRILLER	Maxim-Empire ; D. Rence
GEOLOGIST, OFFICE	M. Szulka ; Danbury
DRILLING EQUIPMENT, METHOD	355 HSA
SIZE, TYPE OF BIT	6.25" H.S.A.
SAMPLING METHOD	2" SS
START, FINISH DA	2/22/9_
WELL INSTALLED?	YES ☒ NO ☐
CASING MAT./DIA.	2" SS
SCREEN: TYPE	MAT. S.S. LENGTH 10' DIA. 2" SLOT SIZE 20

ELEVATION OF: (FT. ABOVE M.S.L.)	GROUND SURFACE	TOP OF WELL CASING	TOP & BOTTOM SCREEN	GW SURFACE	DATE
	623.9	625'	607'-597'	unk	2/22/_

REMARKS: All Elevations & Depths relative to landfill grade

LOG OF TEST BORING

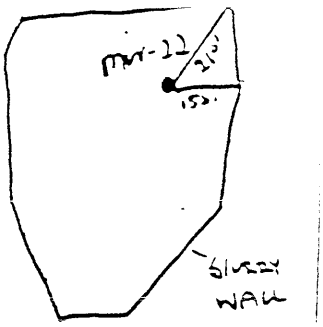
DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
		0.25'	40/4	Some 2" Rock Blocked SS opening			
22		1.0	19/ft	Black silt & sand, Angular Rock Frags. Slight petrol. odor			
24		1.5	11/ft	Gray clay no waste material			
25							
				EOB @ 26'			
30							
35							

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

DANBURY, CT 06810
(203) 796-5279

TEST BORING LOG



BORING NO. MW-22	
PROJECT NO., NAME: UNION ROAD	LOCATION: ENGINE LANDFILL CAP
DRILLING CONTRACTOR/DRILLER: MAXIM ENGINE — D. BENÉ	
GEOLOGIST, OFFICE: HANLON/SZUWALA, DANBURY	
DRILLING EQUIPMENT, METHOD: CME 55B, HSA	SIZE, TYPE OF BIT: 6.25" HSA — SAMPLING METHOD: SS — START, FINISH DATE: 2/20/96
WELL INSTALLED? YES ☒ NO ☐ — CASING MAT./DIA.: 2" SS	SCREEN: TYPE 10 SLOT MAT. SS — LENGTH 10' DIA. 2" SLOT SIZE 10
ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE: 623.4 — TOP OF WELL CASING: 626.40 — TOP & BOTTOM SCREEN: 606.0' - 596.0' — GW SURFACE: NA — DATE: 2/20/96	
REMARKS: ~2' ABOVE CURRENT SURFACE — PRE-CAP SURFACE	

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING — DESCRIPTION	REMARKS
2		2'	13/46	TAN CLAY, WET. FIRM. BOTTOM 6" POSS. ORGANIC, BLACK STAIN, 20% ORGANIC & COARSE MAT'L	
		1'	5/16	SAME. NOT AS COARSE	
4'					
5		1.5'	12/16	SAME RED FINE/MED. SAND. NO FINES MOSTLY GRAVEL	
6'				SAME	
		1'	10/46	CINDER FILL MATERIAL, SOME BLACK MATERIAL, ROCK FRAGS TO 1/2",	
8'		1'	5/16	SAME W/ 1/2" ROCK WALL-LIKE MAT'L	
10		1'	4/12	SAME	
12		1'	5/16	SOME WOOD WASTE & FE STAINING	
14					
15		1'	2/16	SAME	FINE SAND
16		1'	2/16	SAME	
18		1'	6/16	SOME BRICK FRAGS,	COARSE SAND

WELL CONST. | GRAPHIC LITHOLOG

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

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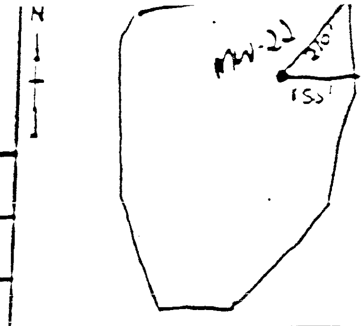
TEST BORING LOG



BORING NO. MW-22		
PROJECT NO., NAME: Union Road	LOCATION: Inside Cap	
DRILLING CONTRACTOR/DRILLER: Maxim-Empire P. Dence		
GEOLOGIST, OFFICE: Hanlon / Szewczyk Danbury		
DRILLING EQUIPMENT, METHOD: CME 85S	SIZE, TYPE OF BIT: 6.25" HSA	SAMPLING METHOD: SS
START, FINISH DATE: 2/20/96		
WELL INSTALLED? YES ☒ NO ☐	CASING MAT./DIA.: 2" SS	SCREEN: TYPE — MAT. SS — LENGTH 10' — DIA. 2" — SLOT SIZE 10
ELEVATION OF: (FT. ABOVE M.S.L.)	GROUND SURFACE: 623.4	TOP OF WELL CASING: 626.40
TOP & BOTTOM SCREEN: 606' 596'	GW SURFACE: NA	DATE: 2/20/96

REMARKS: PRE-CAP SURFACE

LOG OF TEST BORING

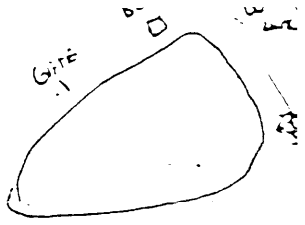
DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
20–22		6"	15/ft	Angular gravelly mat'l, asphalt, wood & sheen, trace wet 2" angular rock.			
22–24		6"	15/ft	Same			
24–26		1'	11/ft	Grey clay, firm, trace cinders, no coarse mat'l.	Coarse sand		
26–28		2'	9/ft	Same			

EOB 28.0'

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

TEST BORING LOG



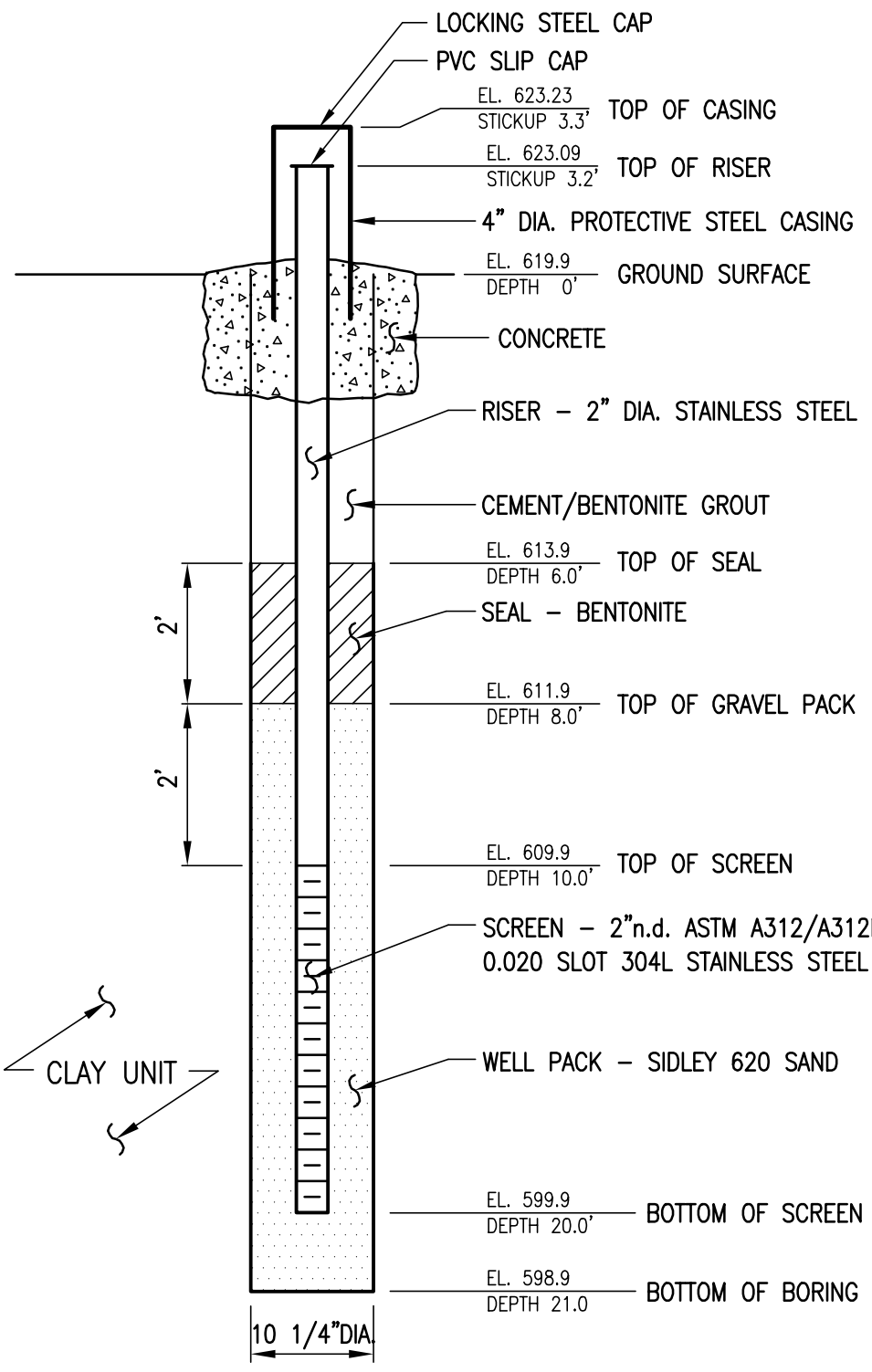
BORING NO. 23S	
PROJECT NO., NAME UNION ROAD 2035-200	LOCATION BUFFALO NY
DRILLING CONTRACTOR/DRILLER MAXIM	
GEOLOGIST, OFFICE JOHN J ZACHER JR	
DRILLING EQUIPMENT, METHOD HSA	SIZE, TYPE OF BIT 10" HSA / SAMPLING METHOD SPLIT SPOON / START, FINISH DA 1-6-97
WELL INSTALLED? YES ☒ NO ☐ / CASING MAT./DIA. STAINLESS STEEL 2"	SCREEN: TYPE SLOT MAT. STAINLESS LENGTH 10' DIA. 2" SLOT SIZE 0.02
ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE	TOP OF WELL CASING TOP & BOTTOM SCREEN GW SURFACE DATE
REMARKS:	

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (IN)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING — DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC
				SAMPLING STARTS 2' BG.			
2							
	2'	-	4	0-4 TOPSOIL/SAND			
		15"	3	4-15 RED/BROWN CLAY	STIFF - DRY		
	4'		9	15-18 RED/BROWN CLAY, SOME ORG.	STIFF TRACE H2O		
	4		4	0-15 RED/BROWN CLAY	STIFF, TRACE H2O		
5		21"	6	15-21 SOME MOISTURE			
	6		6				
	6		8	0-10 RED/BROWN CLAY	MEDSTIFF DAMP		
		24"	6	10-14 RED/BROWN - GREY CLAY	MEDSTIFF DAMP.		
	8		4	14-24 GREY CLAY	MEDSTIFF, DAMP.		
	8		2	GREY CLAY, LITTLE SAND, LITTLE RKS	SOFT, WET		
		12"	2				
10	10		2				
	10		6	GREY CLAY, LITTLE SAND, LITTLE RKS	SOFT WET		
		17"	5				
	12		4				
	12		2	GREY CLAY, LITTLE SAND, LITTLE RKS	SOFT WET		
		8"	3				
	14		4				
	14		4	GREY CLAY, LITTLE SAND LITTLE RKS	SOFT, WET		
15		10"	3				
	16		3	BOB 16			

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

MW–10S

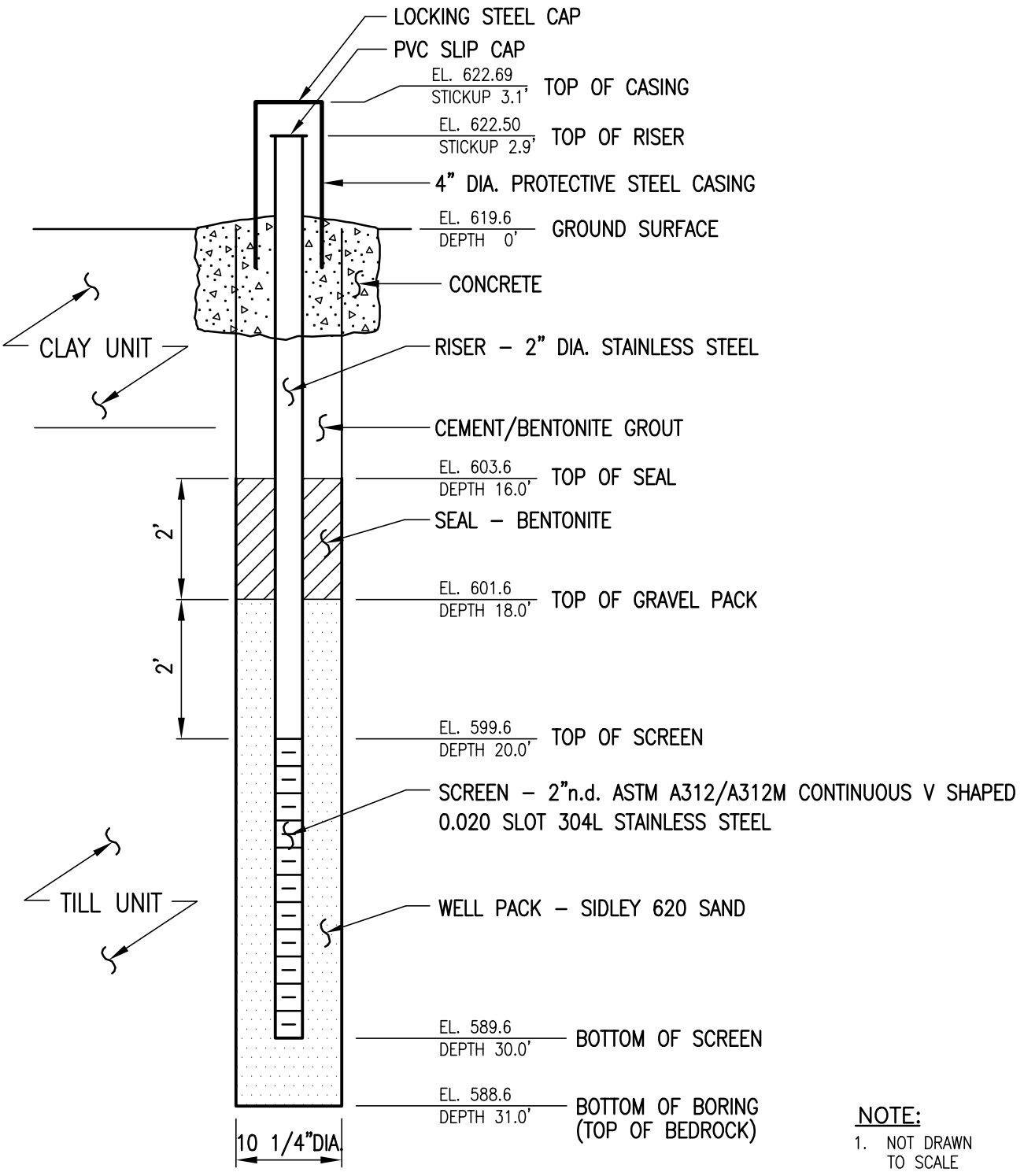


NOTE:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

REVISION NO.		PROJECT	UNION ROAD CHEEKTOWAGA, NEW YORK	Unicorn Management Consultants, LLC 52 FEDERAL ROAD DANBURY, CT (203) 205-9000	PROJECT # 2011–200
NO.	DATE				FILENAME: 2035200A
					SCALE: NTS / DATE: 1/15/02
		DRAWING	SHALLOW GROUNDWATER MONITORING WELL DETAIL		BY: AD / CK:
					FIGURE # MW–10S

MW–10M



NOTE:

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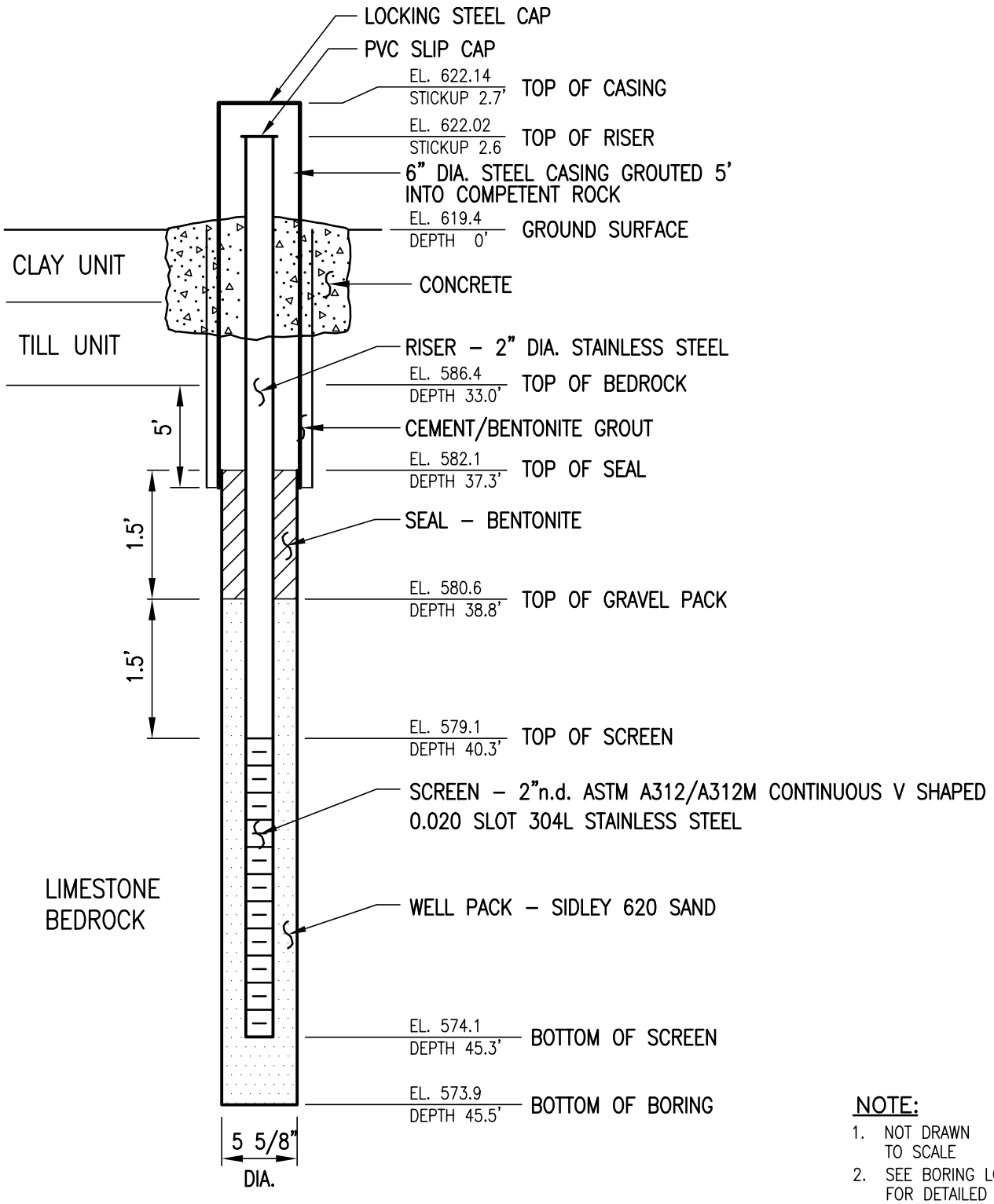
REVISION NO.		PROJECT	UNION ROAD CHEEKTOWAGA, NEW YORK	Unicorn Management Consultants, LLC 52 FEDERAL ROAD DANBURY, CT (203) 205-9000	PROJECT # 2011–200
NO.	DATE				FILENAME: 2035200A
					SCALE: NTS / DATE: 1/15/02
		DRAWING	MEDIUM GROUNDWATER MONITORING WELL DETAIL		BY: AD / CK:
					FIGURE # MW–10M

MW–10D



NOTE:

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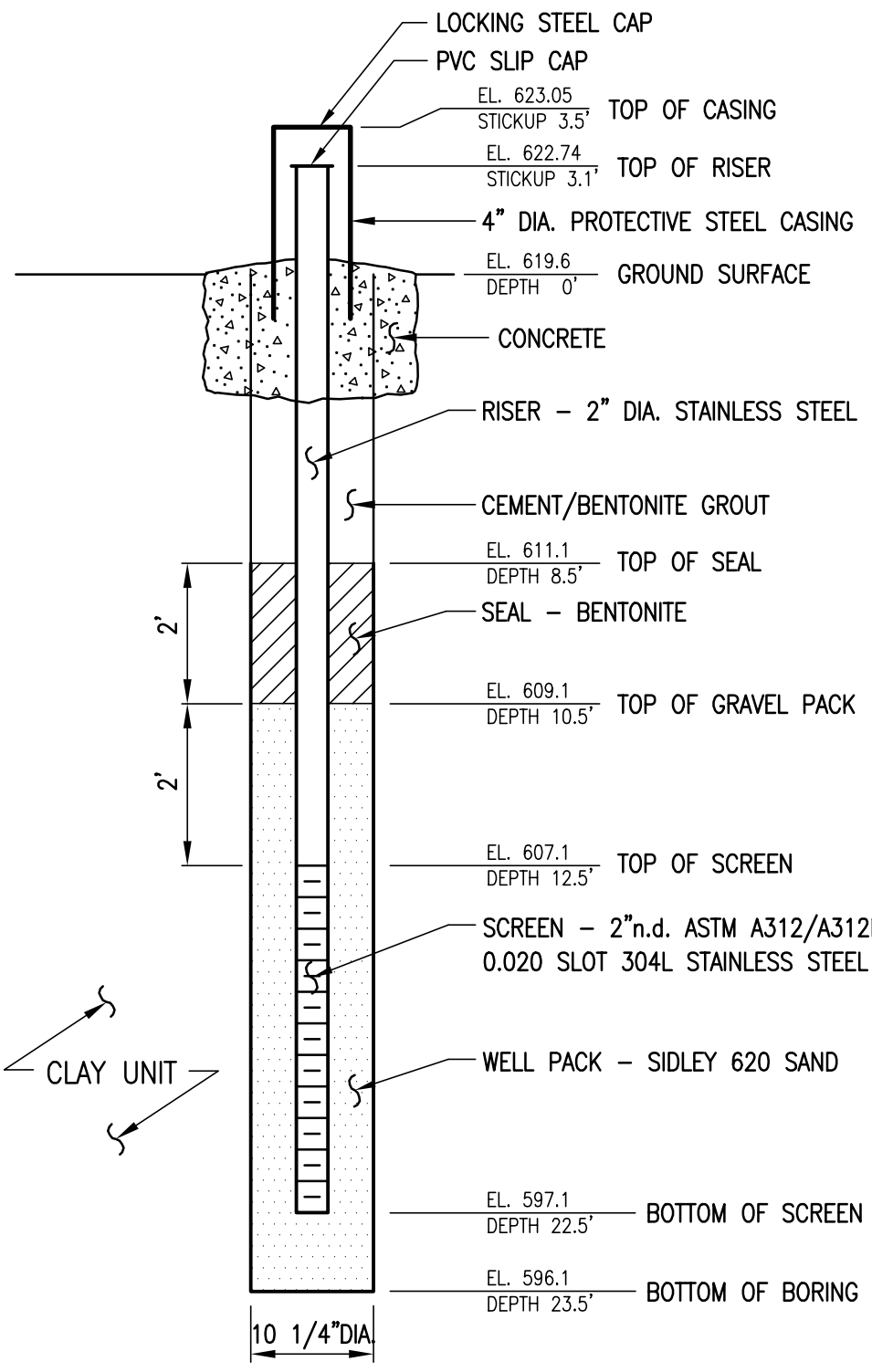
REVISION NO.		PROJECT	UNION ROAD CHEEKTOWAGA, NEW YORK	Unicorn Management Consultants, LLC 52 FEDERAL ROAD DANBURY, CT (203) 205-9000	PROJECT # 2011–200
NO.	DATE				FILENAME: 2035200A
		DRAWING	BEDROCK GROUNDWATER MONITORING WELL DETAIL		SCALE: NTS DATE: 1/15/02
					BY: AD CK:
					FIGURE # MW–10D

MW–11S

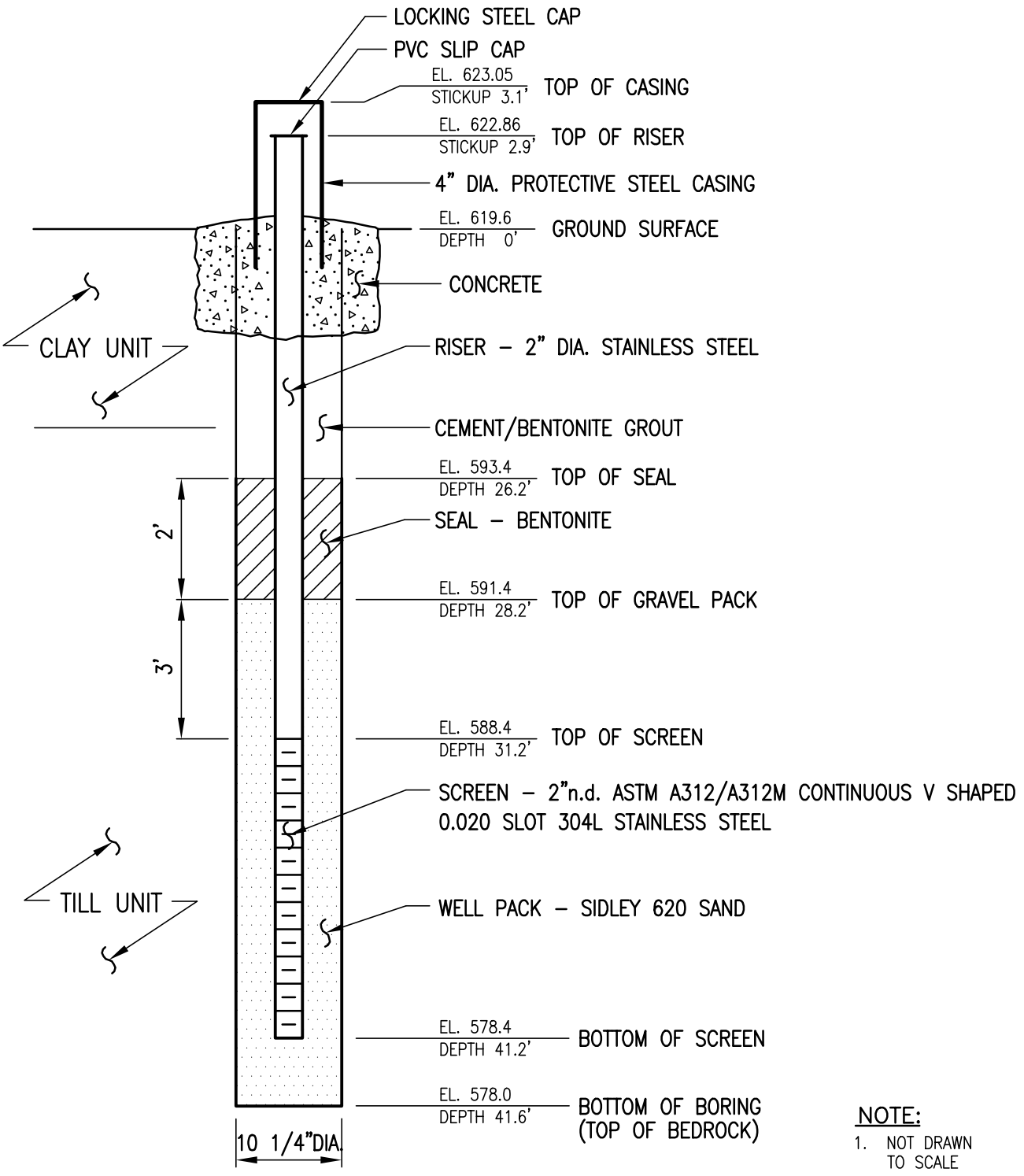


NOTE:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

REVISION NO.		PROJECT	UNION ROAD CHEEKTOWAGA, NEW YORK	Unicorn Management Consultants, LLC 52 FEDERAL ROAD DANBURY, CT (203) 205-9000	PROJECT # 2011–200
NO.	DATE				FILENAME: 2035200A
					SCALE: NTS / DATE: 1/15/02
		DRAWING	SHALLOW GROUNDWATER MONITORING WELL DETAIL		BY: AD / CK:
					FIGURE # MW–11S

MW–11M



NOTE:

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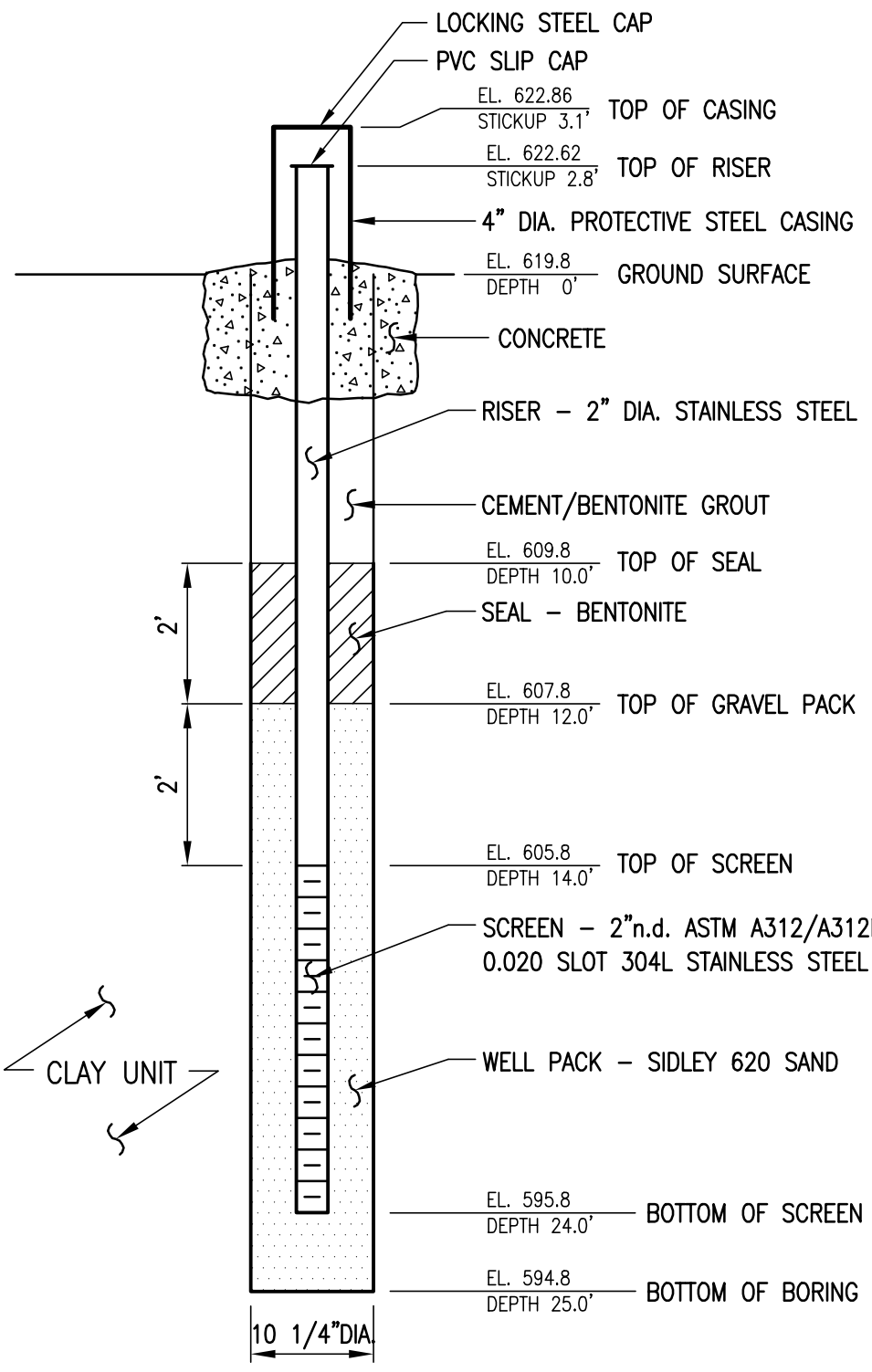
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

REVISION NO.		PROJECT	UNION ROAD CHEEKTOWAGA, NEW YORK	Unicorn Management Consultants, LLC 52 FEDERAL ROAD DANBURY, CT (203) 205-9000	PROJECT # 2011–200
NO.	DATE				FILENAME: 2035200A
					SCALE: NTS / DATE: 1/15/02
		DRAWING	MEDIUM GROUNDWATER MONITORING WELL DETAIL		BY: AD / CK:
					FIGURE # MW–11M

MW–12S

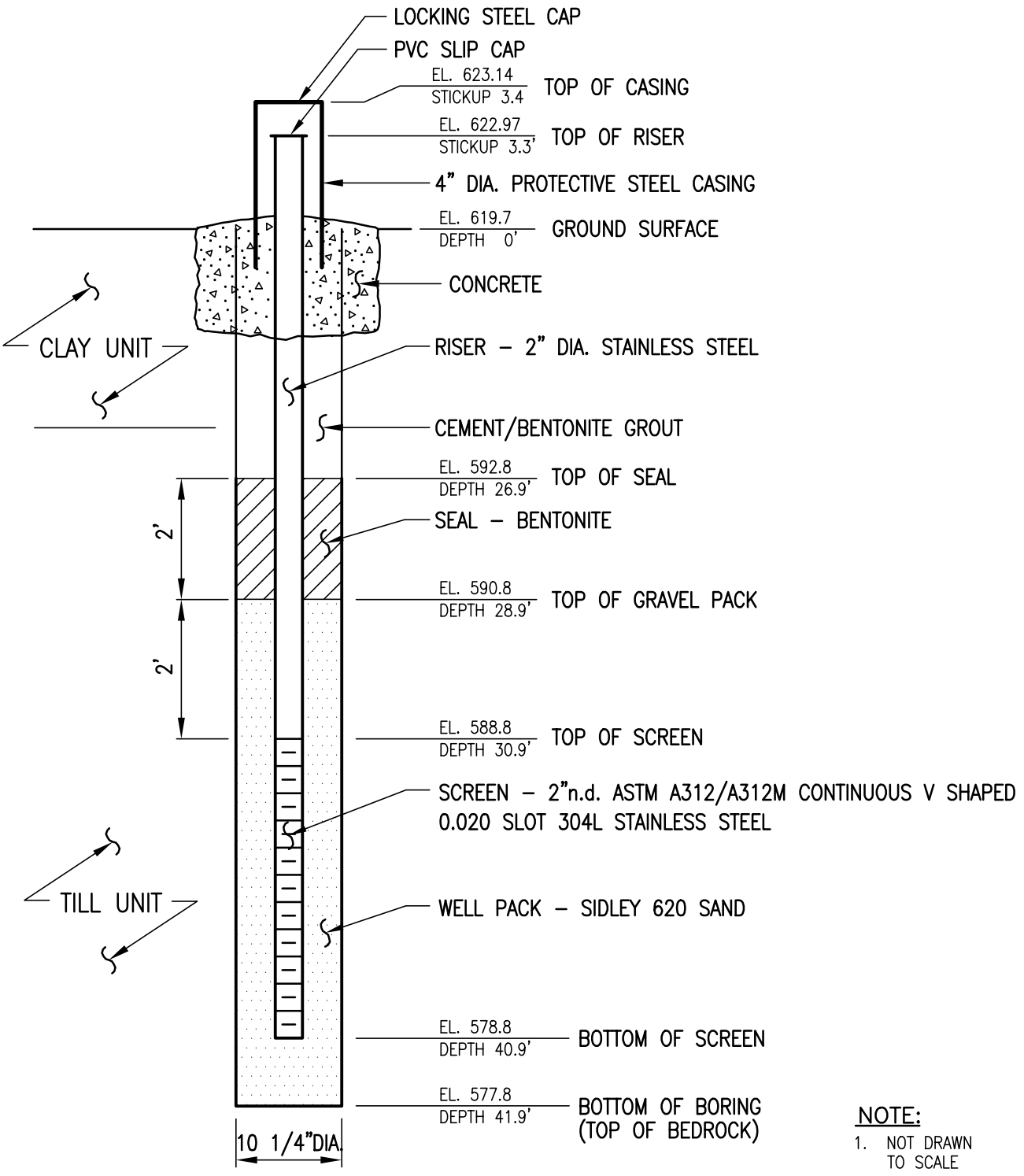


NOTE:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

REVISION NO.		PROJECT	UNION ROAD CHEEKTOWAGA, NEW YORK	Unicorn Management Consultants, LLC 52 FEDERAL ROAD DANBURY, CT (203) 205-9000	PROJECT # 2011–200
NO.	DATE				FILENAME: 2035200A
					SCALE: NTS / DATE: 1/15/02
		DRAWING	SHALLOW GROUNDWATER MONITORING WELL DETAIL		BY: AD / CK:
					FIGURE # MW–12S

MW–12M

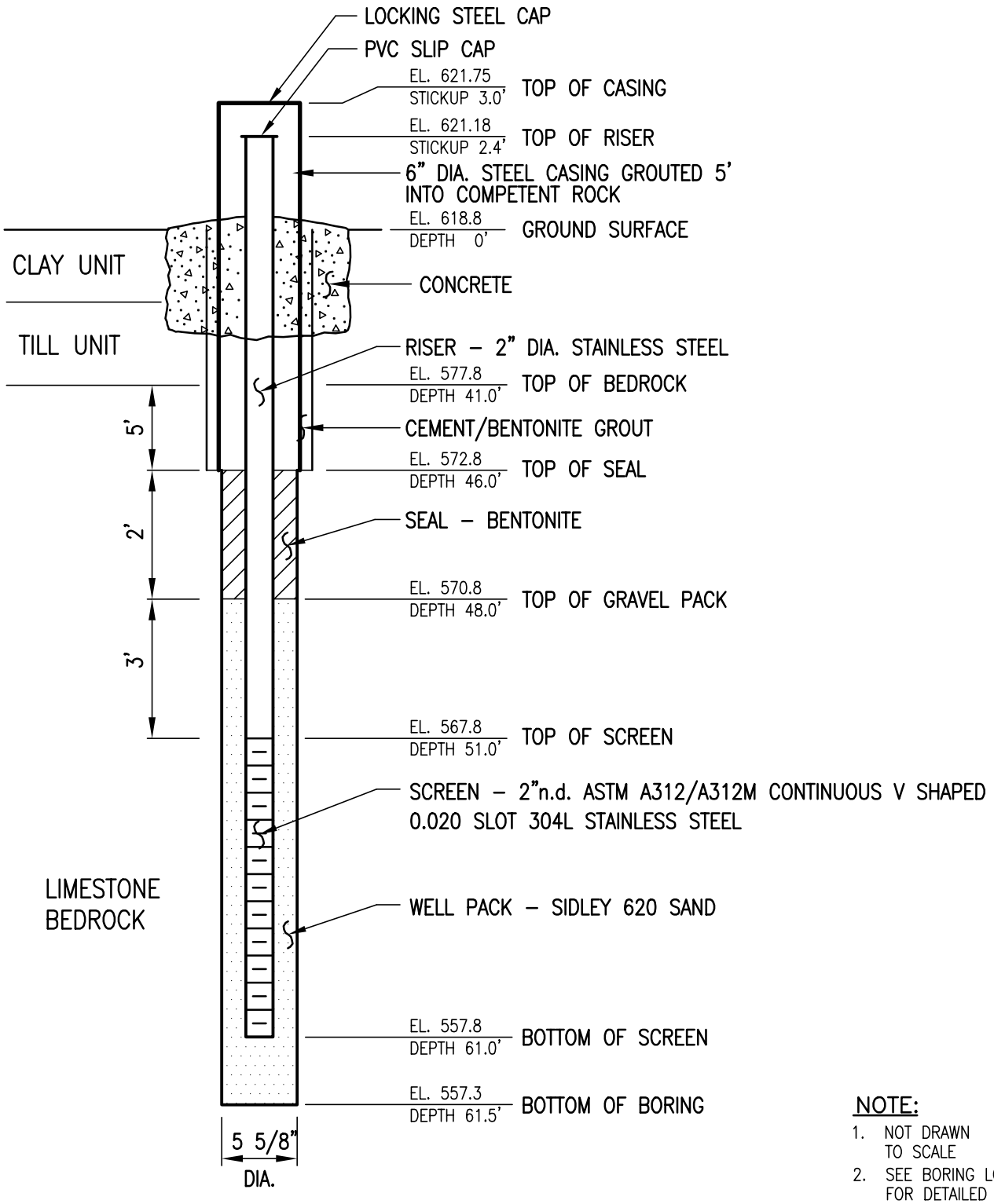


NOTE:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

REVISION NO.		PROJECT	UNION ROAD CHEEKTOWAGA, NEW YORK	Unicorn Management Consultants, LLC 52 FEDERAL ROAD DANBURY, CT (203) 205-9000	PROJECT # 2011–200
NO.	DATE				FILENAME: 2035200A
					SCALE: NTS / DATE: 1/15/02
		DRAWING	MEDIUM GROUNDWATER MONITORING WELL DETAIL		BY: AD / CK:
					FIGURE # MW–12M

MW–12D



NOTE:

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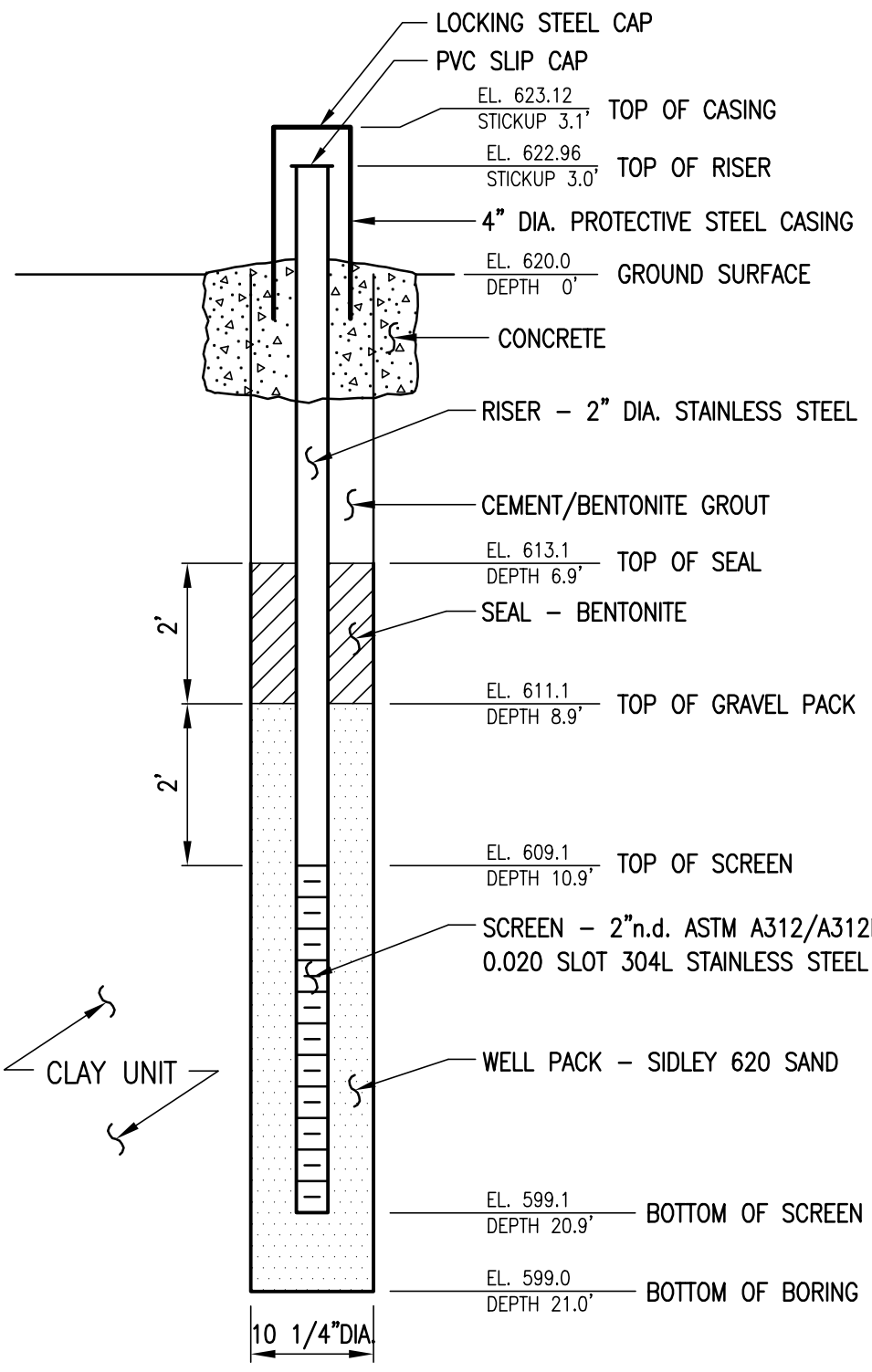
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

REVISION NO.		PROJECT	UNION ROAD CHEEKTOWAGA, NEW YORK	Unicorn Management Consultants, LLC 52 FEDERAL ROAD DANBURY, CT (203) 205-9000	PROJECT # 2011–200
NO.	DATE				FILENAME: 2035200A
					SCALE: NTS / DATE: 1/15/02
		DRAWING	BEDROCK GROUNDWATER MONITORING WELL DETAIL		BY: AD / CK:
					FIGURE # MW–12D

MW–13S

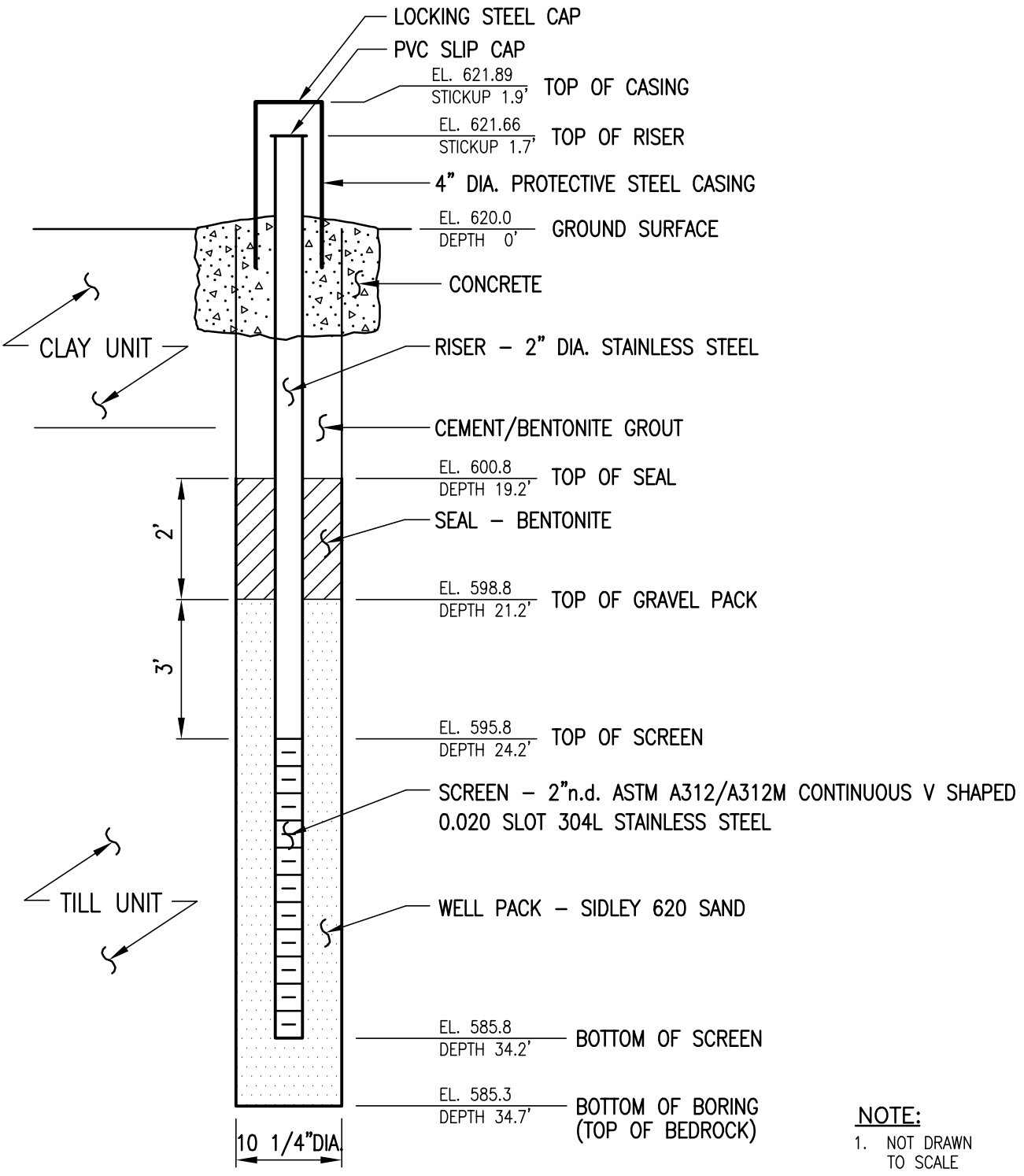


NOTE:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

REVISION NO.		PROJECT	UNION ROAD CHEEKTOWAGA, NEW YORK	Unicorn Management Consultants, LLC 52 FEDERAL ROAD DANBURY, CT (203) 205-9000	PROJECT # 2011–200
NO.	DATE				FILENAME: 2035200A
					SCALE: NTS / DATE: 1/15/02
		DRAWING	SHALLOW GROUNDWATER MONITORING WELL DETAIL		BY: AD / CK:
					FIGURE # MW–13S

MW–13M

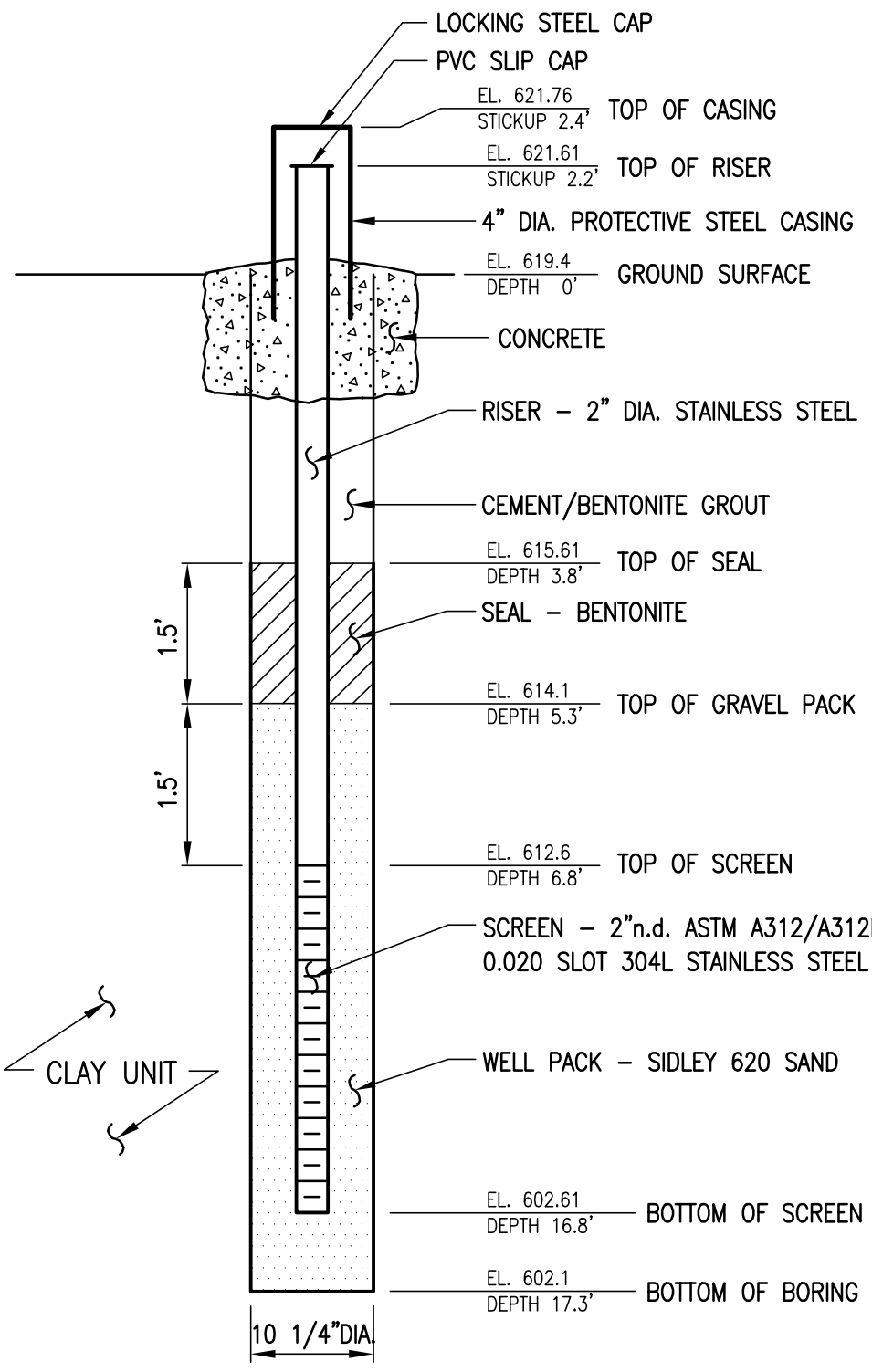


NOTE:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

REVISION NO.		PROJECT	UNION ROAD CHEEKTOWAGA, NEW YORK	Unicorn Management Consultants, LLC 52 FEDERAL ROAD DANBURY, CT (203) 205-9000	PROJECT # 2011–200
NO.	DATE				FILENAME: 2035200A
					SCALE: NTS / DATE: 1/15/02
		DRAWING	MEDIUM GROUNDWATER MONITORING WELL DETAIL		BY: AD / CK:
					FIGURE # MW–13M

MW–14S

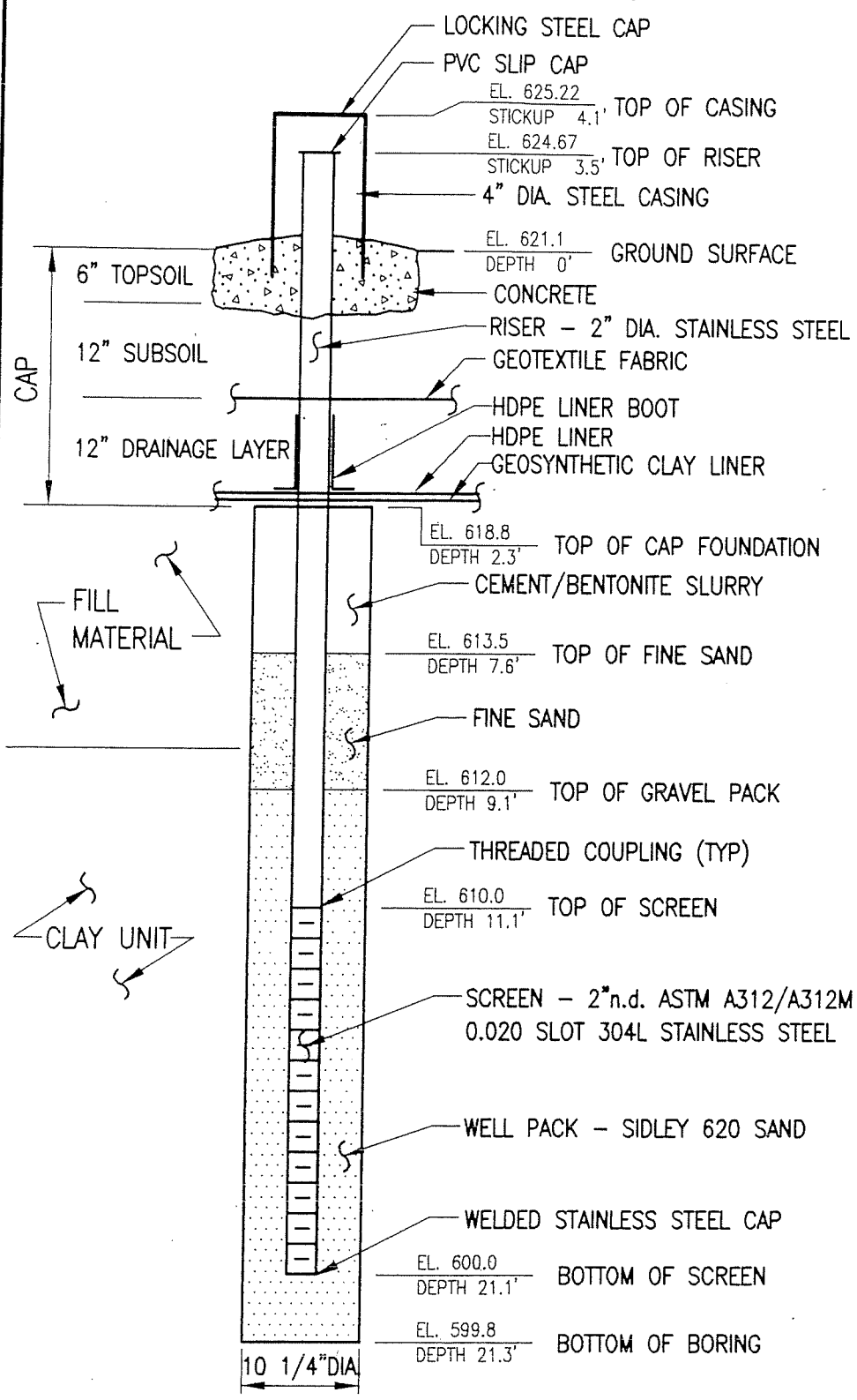


NOTE:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

REVISION NO.		PROJECT	UNION ROAD CHEEKTOWAGA, NEW YORK	Unicorn Management Consultants, LLC 52 FEDERAL ROAD DANBURY, CT (203) 205-9000	PROJECT # 2011–200
NO.	DATE				FILENAME: 2035200A
					SCALE: NTS / DATE: 1/15/02
		DRAWING	SHALLOW GROUNDWATER MONITORING WELL DETAIL		BY: AD / CK:
					FIGURE # MW–14S

MW-15

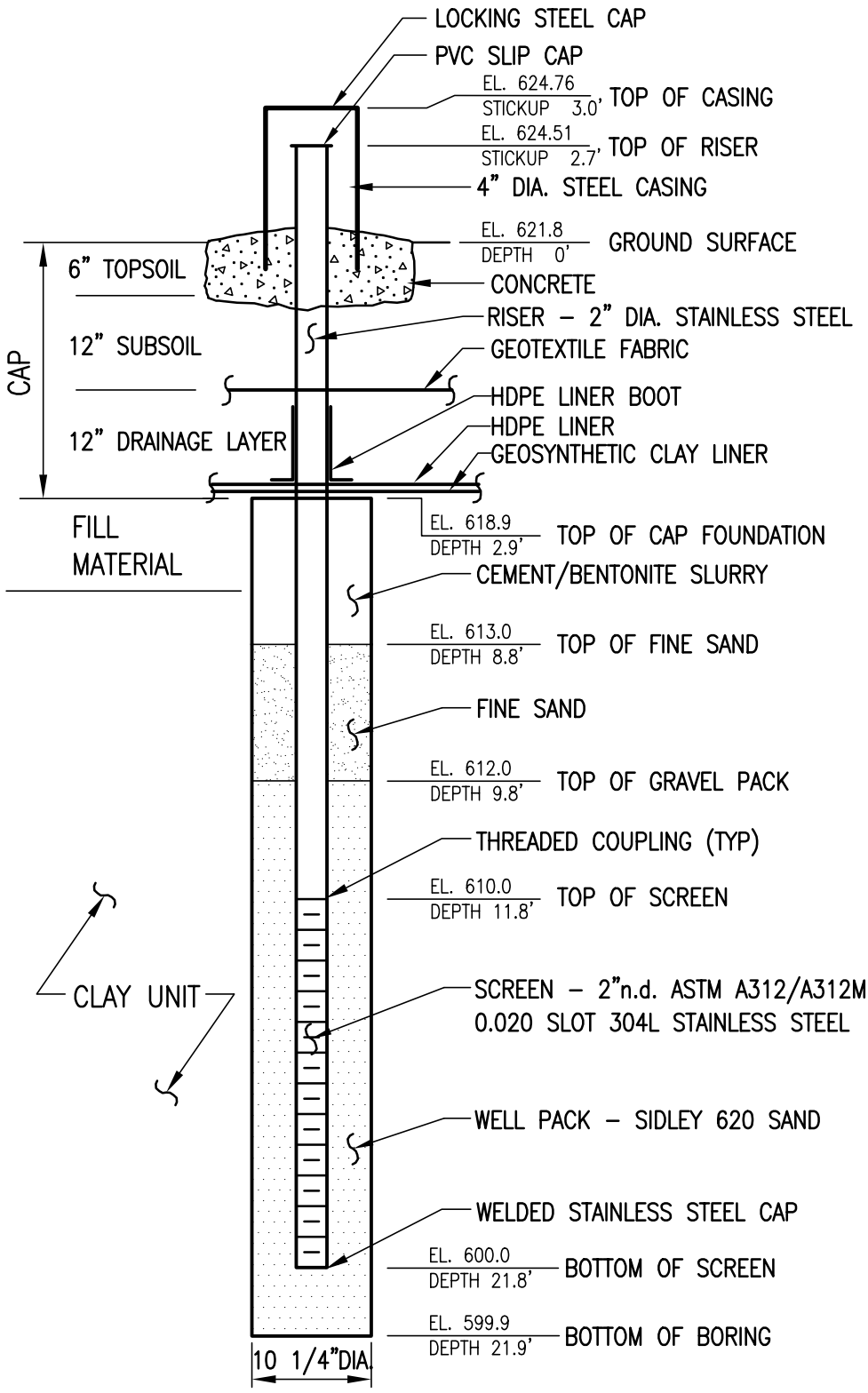


NOTE:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

DOCUMENT CONTROL NO.	PROJECT	UNION ROAD CHEEKTOWAGA, NEW YORK	INTEGRATED ENVIRONMENTAL SERVICES A DIVISION OF NES, INC.	PROJECT # 2045-200 FILENAME: 20352004 SCALE: NTS DATE: 9/18/95 BY: AD CK:
REVISION NO.	DRAWING	GROUNDWATER OBSERVATION WELL DETAIL		FIGURE # MW-15

MW–16

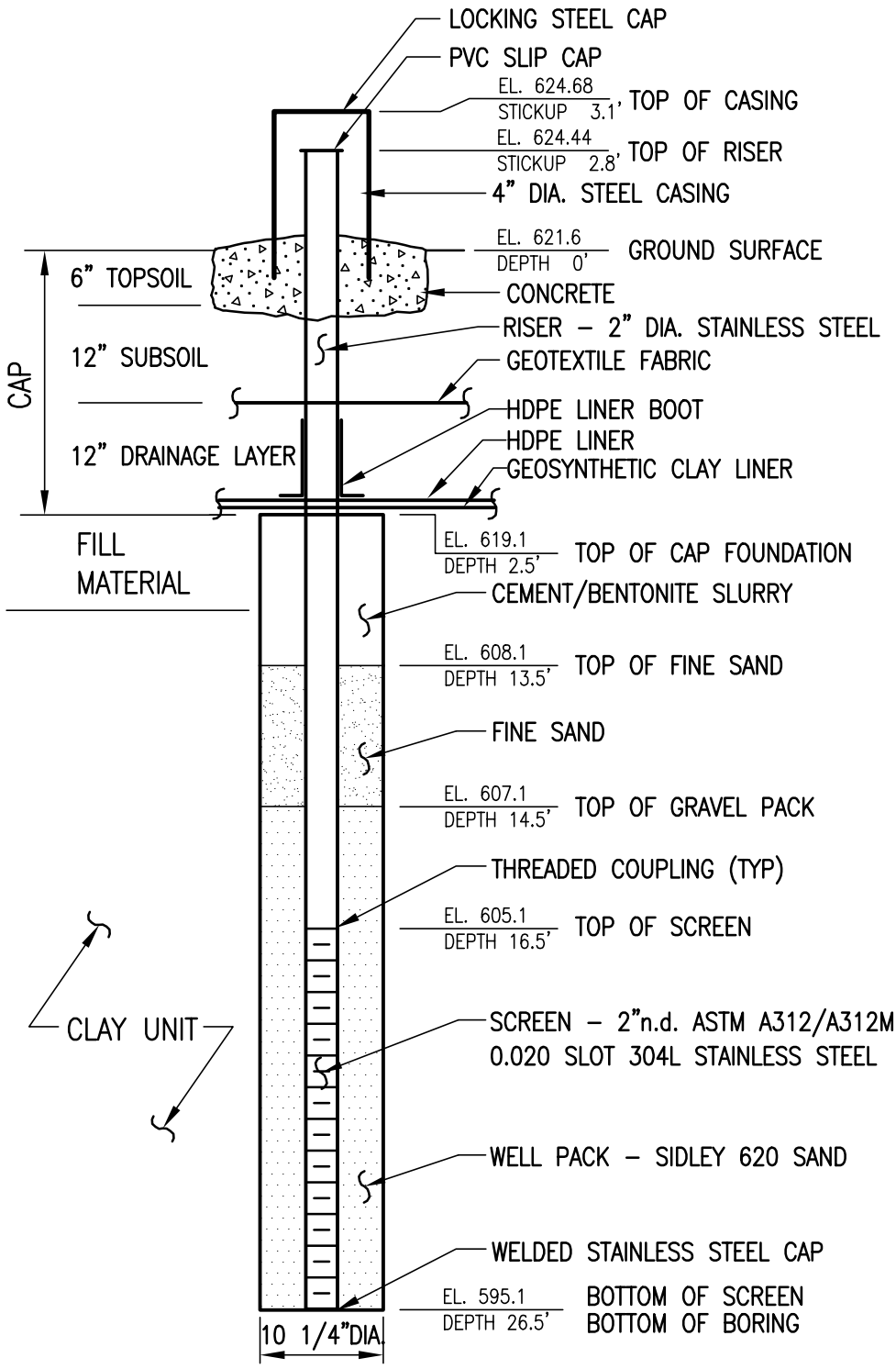


NOTE:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

REVISION NO.		PROJECT	UNION ROAD CHEEKTOWAGA, NEW YORK	Unicorn Management Consultants, LLC 52 FEDERAL ROAD DANBURY, CT (203) 205-9000	PROJECT # 2011–200
NO.	DATE				FILENAME: 2035200A
					SCALE: NTS / DATE: 1/15/02
		DRAWING	GROUNDWATER OBSERVATION WELL DETAIL		BY: AD / CK:
					FIGURE # MW–16

MW–17

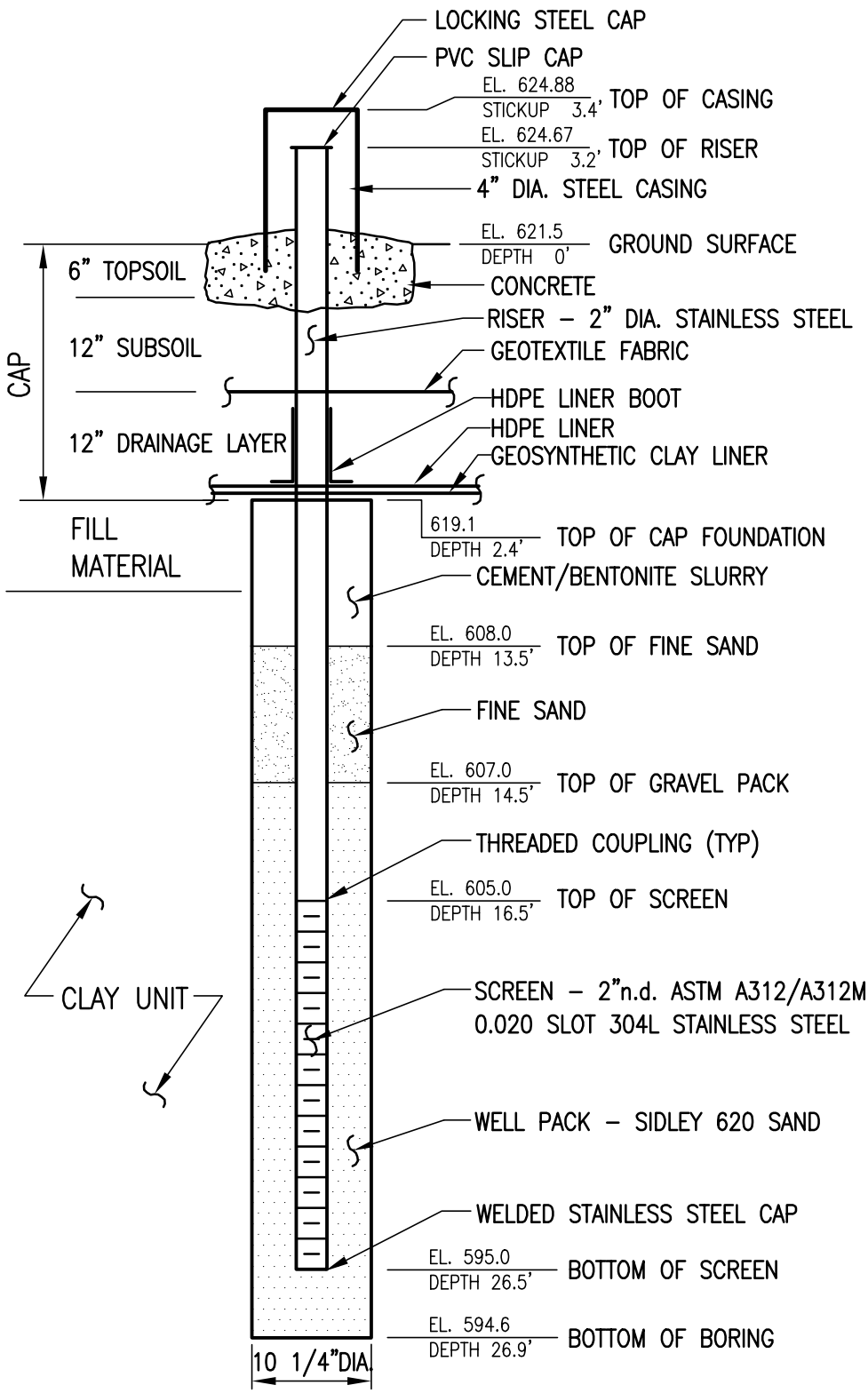


NOTE:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

REVISION NO.		PROJECT	UNION ROAD CHEEKTOWAGA, NEW YORK	Unicorn Management Consultants, LLC 52 FEDERAL ROAD DANBURY, CT (203) 205-9000	PROJECT # 2011–200 FILENAME: 2035200A SCALE: NTS DATE: 1/15/02 BY: AD CK:
NO.	DATE	DRAWING	GROUNDWATER OBSERVATION WELL DETAIL		FIGURE # MW–17

MW–18

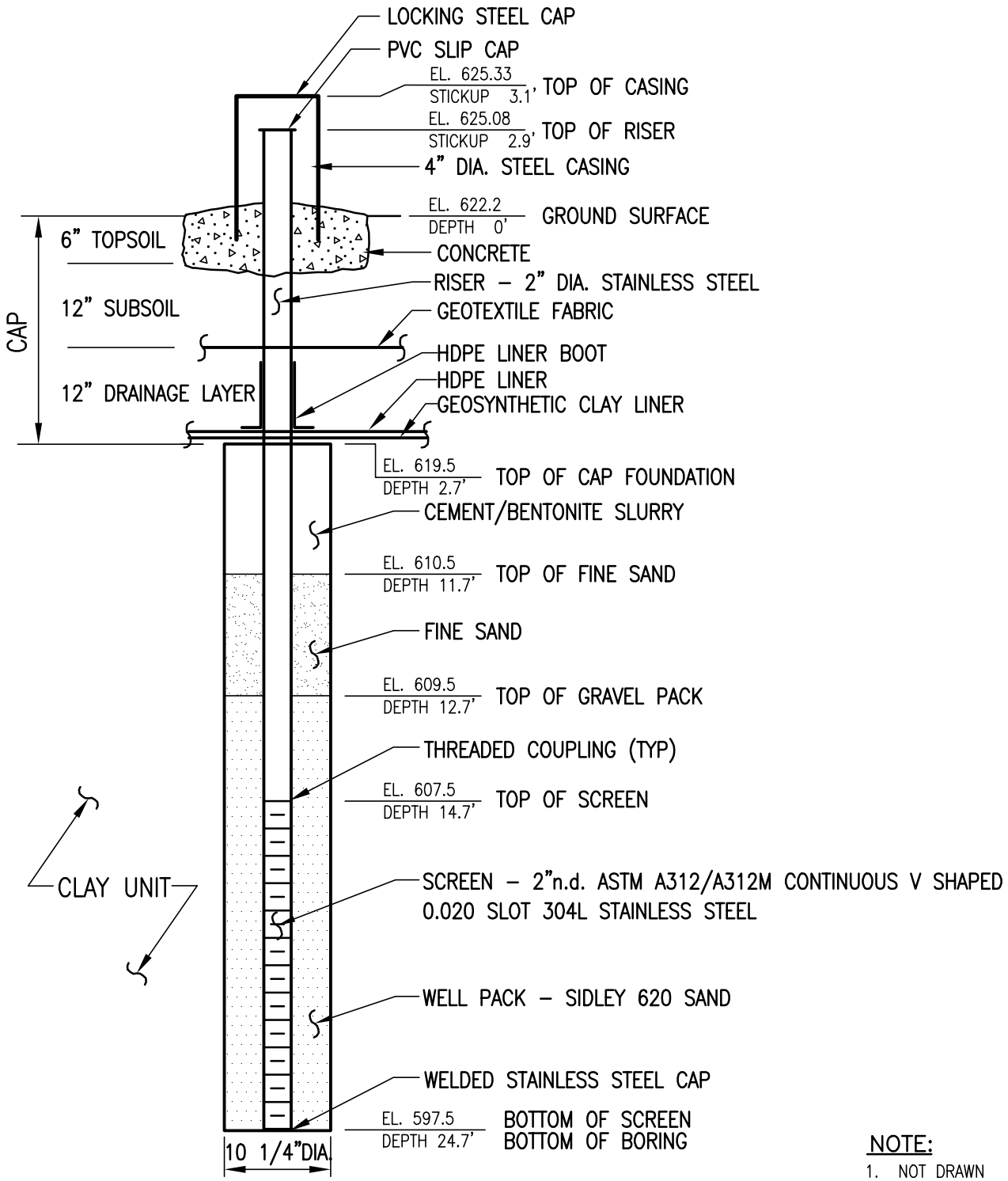


NOTE:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

REVISION NO.		PROJECT	UNION ROAD CHEEKTOWAGA, NEW YORK	Unicorn Management Consultants, LLC 52 FEDERAL ROAD DANBURY, CT (203) 205-9000	PROJECT # 2011–200
NO.	DATE				FILENAME: 2035200A
					SCALE: NTS / DATE: 1/15/02
		DRAWING	GROUNDWATER OBSERVATION WELL DETAIL		BY: AD / CK:
					FIGURE # MW–18

MW–19

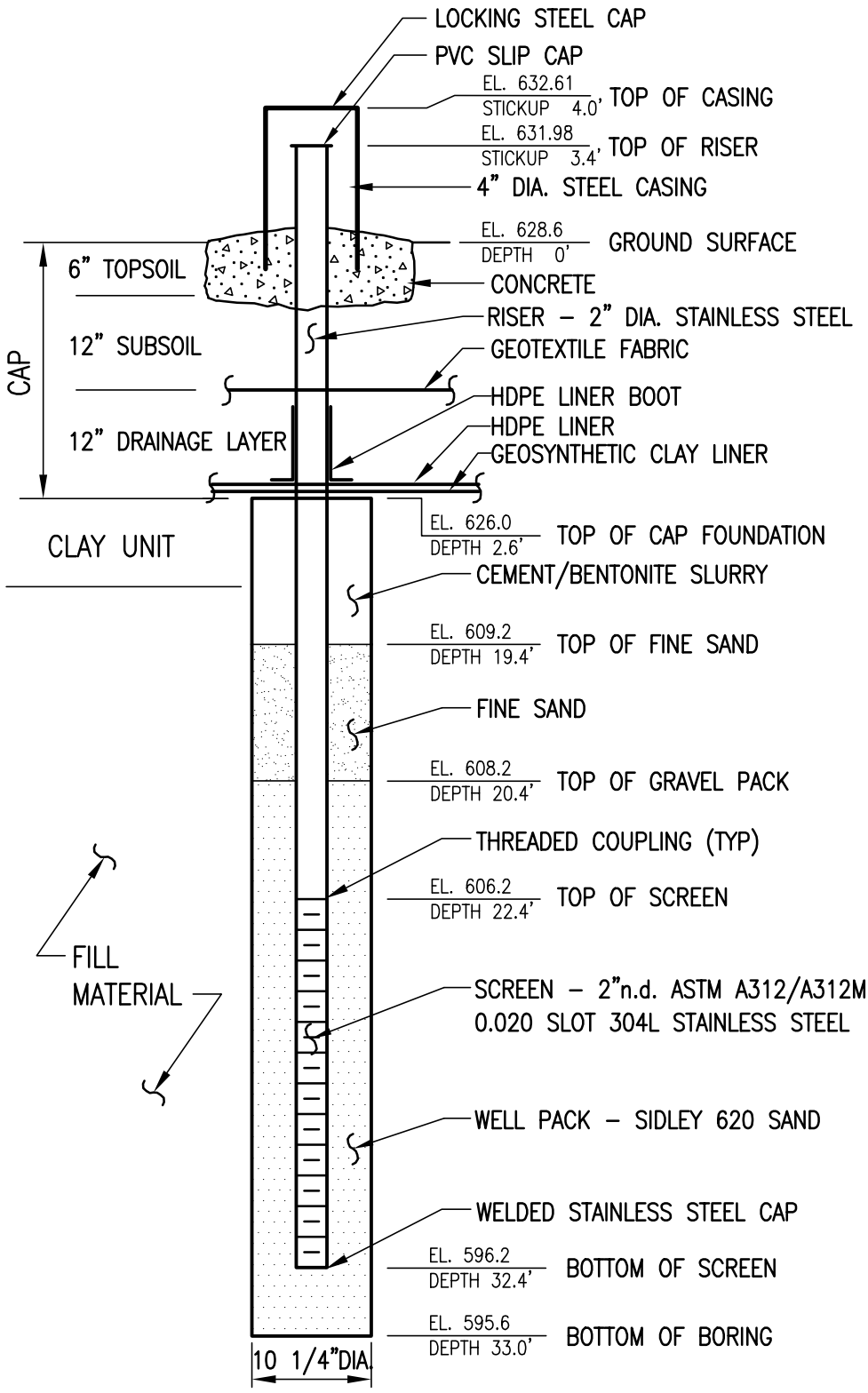


NOTE:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

REVISION NO.		PROJECT	UNION ROAD CHEEKTOWAGA, NEW YORK	Unicorn Management Consultants, LLC 52 FEDERAL ROAD DANBURY, CT (203) 205-9000	PROJECT # 2011–200
NO.	DATE				FILENAME: 2035200A
					SCALE: NTS / DATE: 1/15/02
		DRAWING	GROUNDWATER OBSERVATION WELL DETAIL		BY: AD / CK:
					FIGURE # MW–19

MW–20



NOTE:

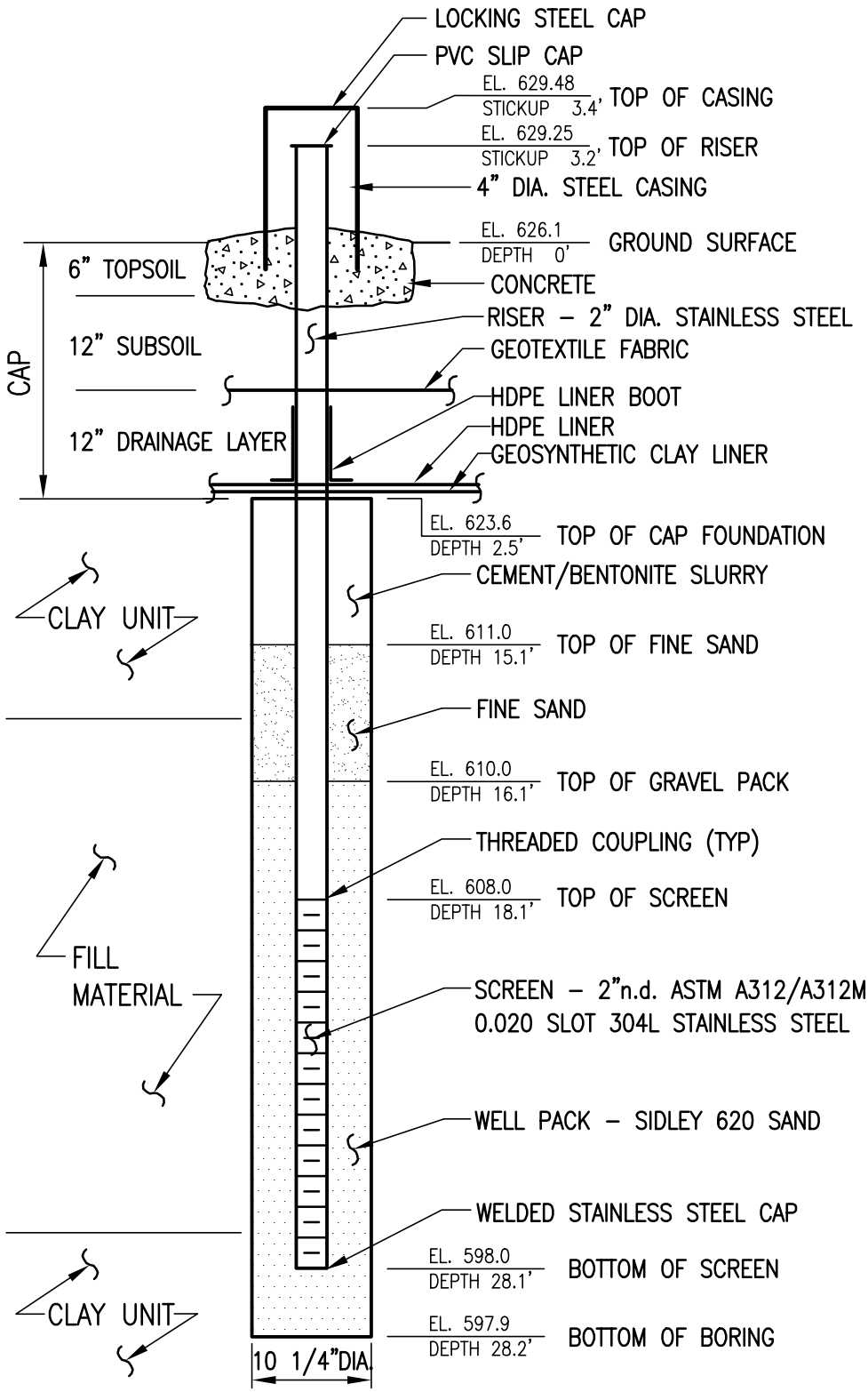
1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

REVISION NO.				
NO.	DATE	PROJECT	UNION ROAD CHEEKTOWAGA, NEW YORK	
		DRAWING	GROUNDWATER OBSERVATION WELL DETAIL	

Unicorn Management Consultants, LLC
52 FEDERAL ROAD
DANBURY, CT
(203) 205-9000

PROJECT #	2011–200
FILENAME:	2035200A
SCALE: NTS	DATE: 1/15/02
BY: AD	CK:
FIGURE #	MW–20

MW–21

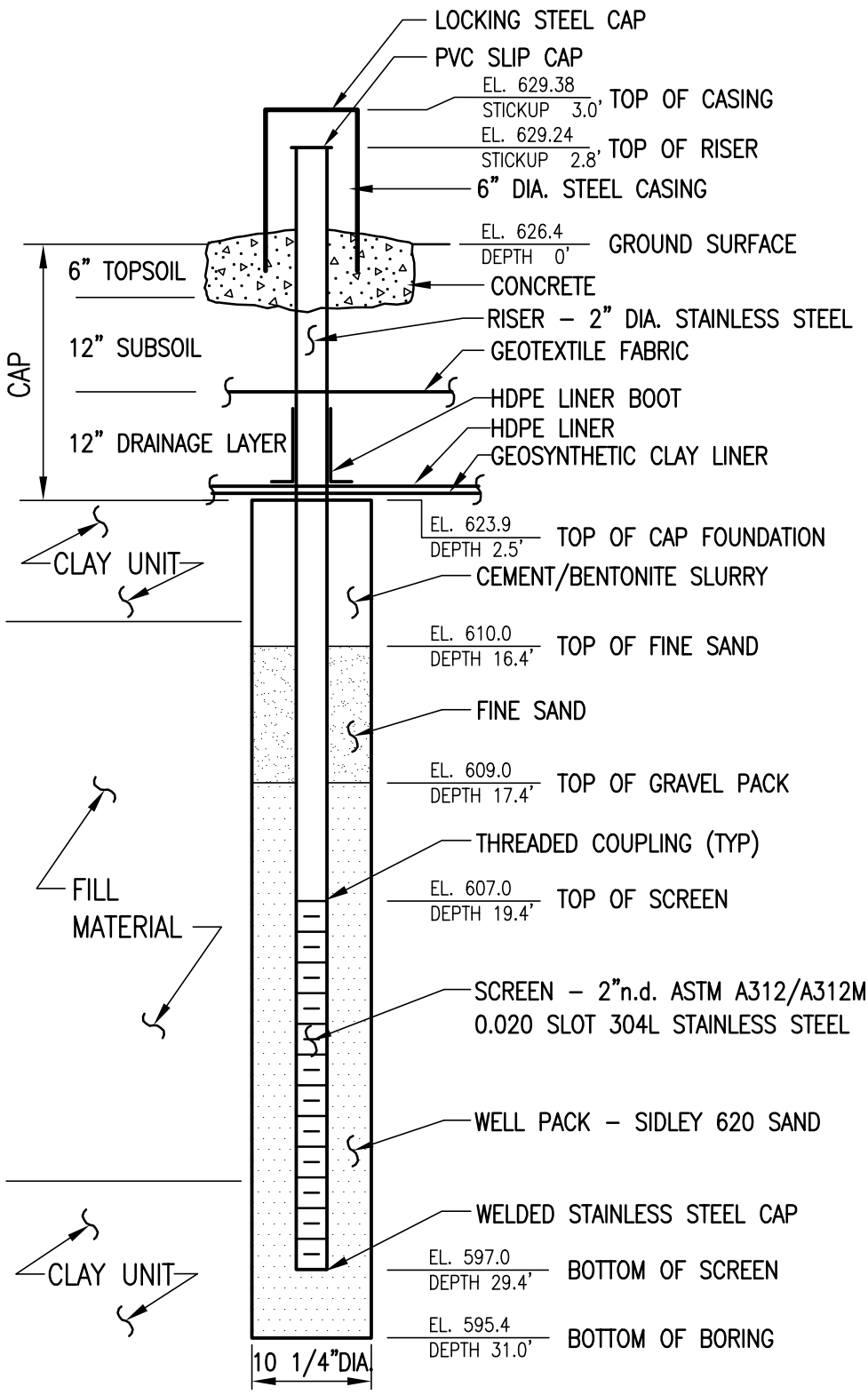


NOTE:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

REVISION NO.		PROJECT	UNION ROAD CHEEKTOWAGA, NEW YORK	Unicorn Management Consultants, LLC 52 FEDERAL ROAD DANBURY, CT (203) 205-9000	PROJECT # 2011–200 FILENAME: 2035200A SCALE: NTS DATE: 1/15/02 BY: AD CK:
NO.	DATE	DRAWING	GROUNDWATER OBSERVATION WELL DETAIL		FIGURE # MW–21

MW–22

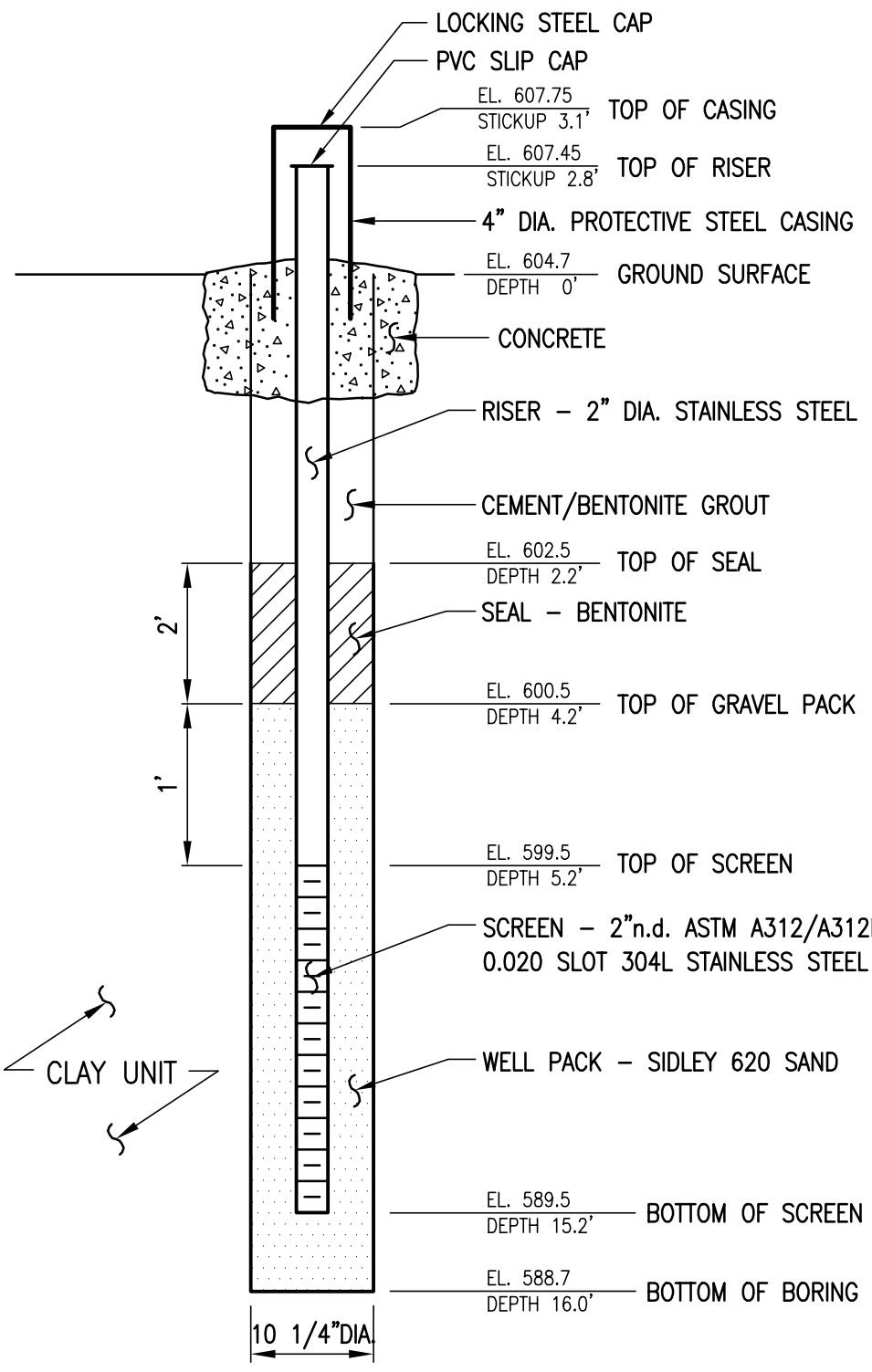


NOTE:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

REVISION NO.		PROJECT	UNION ROAD CHEEKTOWAGA, NEW YORK	Unicorn Management Consultants, LLC 52 FEDERAL ROAD DANBURY, CT (203) 205-9000	PROJECT # 2011–200
NO.	DATE				FILENAME: 2035200A
					SCALE: NTS / DATE: 1/15/02
		DRAWING	GROUNDWATER OBSERVATION WELL DETAIL		BY: AD / CK:
					FIGURE # MW–22

MW–23S



NOTE:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

REVISION NO.		PROJECT	UNION ROAD CHEEKTOWAGA, NEW YORK	Unicorn Management Consultants, LLC 52 FEDERAL ROAD DANBURY, CT (203) 205-9000	PROJECT # 2011–200 FILENAME: 2035200A SCALE: NTS DATE: 1/15/02 BY: AD CK:
NO.	DATE	DRAWING	SHALLOW GROUNDWATER MONITORING WELL DETAIL		FIGURE # MW–23S

APPENDIX B

LABORATORY REPORT

September 18, 2019 Service Request No:R1908663

Mr. Michael Persico
Unicorn Management Consultants
52 Federal Road
Suite 2C
Danbury, CT 06810

Laboratory Results for: Union Road

Dear Mr.Persico,

Enclosed are the results of the sample(s) submitted to our laboratory September 09, 2019
For your reference, these analyses have been assigned our service request number **R1908663.**

All testing was performed according to our laboratory's quality assurance program and met the requirements of the TNI standards except as noted in the case narrative report. Any testing not included in the lab's accreditation is identified on a Non-Certified Analytes report. All results are intended to be considered in their entirety. ALS Environmental is not responsible for use of less than the complete report. Results apply only to the individual samples submitted to the lab for analysis, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s), and represented by Laboratory Control Sample control limits. Any events, such as QC failures or Holding Time exceedances, which may add to the uncertainty are explained in the report narrative or are flagged with qualifiers. The flags are explained in the Report Qualifiers and Definitions page of this report.

Please contact me if you have any questions. My extension is 7475. You may also contact me via email at Meghan.Pedro@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Meghan Pedro
Project Manager

ADDRESS 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
PHONE +1 585 288 5380 | FAX +1 585 288 8475
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

ALS Environmental

Client: Unicorn Management Consultants
Project: Union Road
Sample Matrix: Water

Service Request: R1908663
Date Received: 09/09/2019

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 II level requested by the client.

Sample Receipt:

Eleven water samples were received for analysis at ALS Environmental on 09/09/2019. 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.

Semivolatiles by GC/MS:

Method 8270D, 09/12/2019: 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.

Method 8270D, 09/12/2019: 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) 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 8270D, 09/13/2019: 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) 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 8270D, 09/11/2019: 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.

Metals:

No significant anomalies were noted with this analysis.

General Chemistry:

No significant anomalies were noted with this analysis.

Volatiles by GC/MS:

Method 8260C, 09/16/2019: The Continuing Calibration Verification (CCV) exceeded control limits for: Acetone. All detected concentrations for the analyte(s) in samples associated with this CCV should be considered as estimated.

Approved by Meghan Pedro Date 09/18/2019

SAMPLE DETECTION SUMMARY

CLIENT ID: MW-10D			Lab ID: R1908663-003			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Acetone	10			10	ug/L	8260C

CLIENT ID: MW-12M			Lab ID: R1908663-007			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Bis(2-ethylhexyl) Phthalate	120	D		20	ug/L	8270D

CLIENT ID: MW-13S			Lab ID: R1908663-009			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Acetone	12			10	ug/L	8260C

CLIENT ID: MW-14S			Lab ID: R1908663-011			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Acetone	14			10	ug/L	8260C

Sample Receipt Information

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Unicorn Management Consultants **Service Request:**R1908663
Project: Union Road/2011-200

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
R1908663-001	MW-10S	9/8/2019	1135
R1908663-002	MW-10M	9/8/2019	1130
R1908663-003	MW-10D	9/9/2019	0745
R1908663-004	MW-11S	9/9/2019	0815
R1908663-005	MW-11M	9/9/2019	0850
R1908663-006	MW-12S	9/9/2019	0955
R1908663-007	MW-12M	9/9/2019	1000
R1908663-008	MW-12D	9/9/2019	1030
R1908663-009	MW-13S	9/9/2019	0855
R1908663-010	MW-13M	9/9/2019	0825
R1908663-011	MW-14S	9/9/2019	0935

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM 58525

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE _____ OF _____

Project Name: Union Road	Project Number: ~~2011-100~~ 2011-200
Project Manager: Michael Persico	Report CC: Ftreja@unicornmgt.com
Company/Address: Unicorn Management Consultants, LLC 52 Federal Road, suite 2C Danbury, CT 06810	
Phone: 203-205-9000	Email: mpersico@unicornmgt.com
Sampler's Signature: UMC	Sampler's Printed Name: UMC

ANALYSIS REQUESTED *(Include Method Number and Container Preservative)*

PRESERVATIVE: 1 0 0 3

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GC/MS VOAs ◦ 8260 ◦ 624 ◦ CLP	GC/MS SVOAs ◦ 8270 ◦ 625	GC VOAs ◦ 8021 ◦ 601/602	PESTICIDES ◦ 8081 ◦ 608	PCBs ◦ 8082 ◦ 608	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	Oil and Grease							
MW-10S		9/9/19	1135	AQ	7	X	X				X	X								
MW-10M		9/9/19	1130	AQ	7	X	X				X	X								
MW-10D		9/9/19	0745	AQ	7	X	X				X	X								
MW-11S		9/9/19	0815	AQ	7	X	X				X	X								
MW-11M		9/9/19	0850	AQ	7	X	X				X	X								
MW-12S		9/9/19	0955	AQ	7	X	X				X	X								
MW-12M		9/9/19	1000	AQ	7	X	X				X	X								
MW-12D		9/9/19	1030	AQ	7	X	X				X	X								
MW-13S		9/9/19	0855	AQ	7	X	X				X	X								
MW-13M		9/9/19	0825	AQ	7	X	X				X	X								
MW-14S		9/9/19	0935	AQ	7	X	X				X	X								

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

REMARKS/ ALTERNATE DESCRIPTION

SPECIAL INSTRUCTIONS/COMMENTS
Metals arsenic & lead (Dissolved) * Please Filter *

See QAPP ☐

STATE WHERE SAMPLES WERE COLLECTED NY

TURNAROUND REQUIREMENTS
_____ RUSH (SURCHARGES APPLY)
_____ 1 day _____ 2 day _____ 3 day
_____ 4 day _____ 5 day
X Standard (10 business days-No Surcharge)

REQUESTED REPORT DATE _____

REPORT REQUIREMENTS
X I. Results Only
_____ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
_____ III. Results + QC and Calibration Summaries
_____ IV. Data Validation Report with Raw Data

Edata X Yes _____ No

INVOICE INFORMATION
PO# ~~2011-100~~ 2011-200
BILL TO: Isabel Miller
imiller@unicornmgt.com

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature	Signature	Signature	Signature	Signature	Signature
Printed Name: Michael Persico	Printed Name: Daniel Walc	Printed Name	Printed Name	Printed Name	Printed Name
Firm: UMC	Firm: ALS	Firm	Firm	Firm	Firm
Date/Time: 9/9/19 1410	Date/Time: 9/9/19/1410	Date/Time	Date/Time	Date/Time	Date/Time

R1908663 5
Unicorn Management Consultants
Union Road

Distribution: White - Lab Copy; Yellow - Return to Originator

Cooler Receipt and Preservation Check Form

R1908663 5
Unicorn Management Consultants
Union Road

Project/Client Unicorn Folder Number .

Cooler received on 9/9/19 by: dh/dl **COURIER:** ALS UPS FEDEX VELOCITY CLIENT

1	Were **Custody seals** on outside of cooler?	Y (N)	5a	**Perchlorate** samples have required headspace?	Y N ~~NA~~
2	**Custody papers** properly completed (ink, signed)?	(Y) N	5b	Did VOA vials, Alk,or Sulfide have sig* **bubbles**?	(Y) N NA
3	Did all bottles arrive in good **condition** (unbroken)?	(Y) N	6	Where did the bottles originate?	ALS/ROC CLIENT
4	Circle: **Wet Ice Dry Ice Gel packs** present?	(Y) N	7	Soil VOA received as: Bulk Encore 5035set	NA

8. Temperature Readings Date: 9/9/19 Time: 1416 ID: IR#7 IR#10 From: Temp Blank Sample Bottle

Observed Temp (°C)	7.8	3.6	3.6				
Correction Factor (°C)	+0.3	+0.0	+0.0				
Corrected Temp (°C)	8.1	3.6	3.6				
Temp from:Type of bottle	1L Amber	40mL vial	40mL vial				
Within 0-6°C?	(Y) N	(Y) N	(Y) N	Y N	Y N	Y N	Y N
If <0°C, were samples frozen?	Y N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: Ice melted Poorly Packed (described below) Same Day Rule

&Client Approval to Run Samples: Standing Approval Client aware at drop-off Client notified by:

All samples held in storage location: R-002 by dh/dl on 9/9/19 at 1416
5035 samples placed in storage location: by on at

Cooler Breakdown/Preservation Check**: Date: 9/9/19 Time: 1926 by: dhw

9.	Were all bottle labels complete (*i.e.* analysis, preservation, etc.)?	(YES)	NO
10.	Did all bottle labels and tags agree with custody papers?	(YES)	NO
11.	Were correct containers used for the tests indicated?	(YES)	NO
12.	Were 5035 vials acceptable (no extra labels, not leaking)?	YES	NO (N/A)
13.	Air Samples: Cassettes / Tubes Intact with MS? Canisters Pressurized		Tedlar® Bags Inflated (N/A)

pH	Lot of test paper	Reagent	Preserved? Yes	Preserved? No	Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
≥12		NaOH								
≤2		HNO_3								
≤2		H_2SO_4			198368	7/20				
<4		$NaHSO_4$								
5-9		For 608pest			No=Notify for 3day					
Residual Chlorine (-)		For CN, Phenol, 625, 608pest, 522			If +, contact PM to add $Na_2S_2O_3$ (625, 608, CN), ascorbic (phenol).					
		$Na_2S_2O_3$								
		ZnAcetate	-	-			**VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical preservatives are checked (not just representatives).			
		HCl	**	**	411810					

Bottle lot numbers: 9-093-001, 060719-10K
Explain all Discrepancies/ Other Comments:
x 2 vials for: MW-10M

CLRES	BULK
DO	FLDT
HPROD	HGFB
HTR	LL3541
PH	SUB
SO3	MARRS
ALS	REV

Labels secondary reviewed by: dh
PC Secondary Review: *significant air bubbles: VOA > 5-6 mm : WC >1 in. diameter

Miscellaneous Forms

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

REPORT QUALIFIERS AND DEFINITIONS

U	Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.
J	Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).
B	Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.
E	Inorganics- Concentration is estimated due to the serial dilution was outside control limits.
E	Organics- Concentration has exceeded the calibration range for that specific analysis.
D	Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.
*	Indicates that a quality control parameter has exceeded laboratory limits. Under the ñNotesò column of the Form I, this qualifier denotes analysis was performed out of Holding Time.
H	Analysis was performed out of hold time for tests that have an ñimmediateò hold time criteria.
#	Spike was diluted out.
+	Correlation coefficient for MSA is <0.995.
N	Inorganics- Matrix spike recovery was outside laboratory limits.
N	Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
S	Concentration has been determined using Method of Standard Additions (MSA).
W	Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
P	Concentration >40% difference between the two GC columns.
C	Confirmed by GC/MS
Q	DoD reports: indicates a pesticide/Aroclor is not confirmed (Ó100% Difference between two GC columns).
X	See Case Narrative for discussion.
MRL LOQ	Method Reporting Limit. Also known as: Limit of Quantitation (LOQ) The lowest concentration at which the method analyte may be reliably quantified under the method conditions.
MDL	Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).
LOD	Limit of Detection. A value at or above the MDL which has been verified to be detectable.
ND	Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.

Rochester Lab ID # for State Certifications[1]

Connecticut ID # PH0556	Maine ID #NY0032	Pennsylvania ID# 68-786
Delaware Approved	New Hampshire ID # 2941	Rhode Island ID # 158
DoD ELAP #65817	New York ID # 10145	Virginia #460167
Florida ID # E87674	North Carolina #676	

[1] Analyses were performed according to our laboratoryôs NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory or go to https://www.alsglobal.com/locations/americas/north-america/usa/new-york/rochester-environmental

ALS Laboratory Group

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Client: Unicorn Management Consultants **Service Request:** R1908663
Project: Union Road/2011-200

Sample Name: MW-10S **Date Collected:** 09/8/19
Lab Code: R1908663-001 **Date Received:** 09/9/19
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
1664A		STALARICO
6010C	AKONZEL	KMCLAEN
8260C		KRUEST
8270D	KSERCU	JMISIUREWICZ

Sample Name: MW-10M **Date Collected:** 09/8/19
Lab Code: R1908663-002 **Date Received:** 09/9/19
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
1664A		STALARICO
6010C	AKONZEL	KMCLAEN
8260C		KRUEST
8270D	KSERCU	JMISIUREWICZ

Sample Name: MW-10D **Date Collected:** 09/9/19
Lab Code: R1908663-003 **Date Received:** 09/9/19
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
1664A		STALARICO
6010C	AKONZEL	KMCLAEN
8260C		KRUEST
8270D	KSERCU	JMISIUREWICZ

Sample Name: MW-11S **Date Collected:** 09/9/19
Lab Code: R1908663-004 **Date Received:** 09/9/19
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
1664A		STALARICO

Client: Unicorn Management Consultants **Service Request:** R1908663
Project: Union Road/2011-200

Sample Name: MW-11S **Date Collected:** 09/9/19
Lab Code: R1908663-004 **Date Received:** 09/9/19
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
6010C	AKONZEL	KMCLAEN
8260C		KRUEST
8270D	KSERCU	JMISIUREWICZ

Sample Name: MW-11M **Date Collected:** 09/9/19
Lab Code: R1908663-005 **Date Received:** 09/9/19
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
1664A		STALARICO
6010C	AKONZEL	KMCLAEN
8260C		KRUEST
8270D	KSERCU	JMISIUREWICZ

Sample Name: MW-12S **Date Collected:** 09/9/19
Lab Code: R1908663-006 **Date Received:** 09/9/19
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
1664A		STALARICO
6010C	AKONZEL	KMCLAEN
8260C		KRUEST
8270D	KSERCU	JMISIUREWICZ

Sample Name: MW-12M **Date Collected:** 09/9/19
Lab Code: R1908663-007 **Date Received:** 09/9/19
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
1664A		STALARICO
6010C	AKONZEL	KMCLAEN

Client: Unicorn Management Consultants **Service Request:** R1908663
Project: Union Road/2011-200

Sample Name: MW-12M **Date Collected:** 09/9/19
Lab Code: R1908663-007 **Date Received:** 09/9/19
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST
8270D	KSERCU	JMISIUREWICZ

Sample Name: MW-12M **Date Collected:** 09/9/19
Lab Code: R1908663-007.R01 **Date Received:** 09/9/19
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
8270D	KSERCU	JMISIUREWICZ

Sample Name: MW-12D **Date Collected:** 09/9/19
Lab Code: R1908663-008 **Date Received:** 09/9/19
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
1664A		STALARICO
6010C	AKONZEL	KMCLAEN
8260C		KRUEST
8270D	KSERCU	JMISIUREWICZ

Sample Name: MW-13S **Date Collected:** 09/9/19
Lab Code: R1908663-009 **Date Received:** 09/9/19
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
1664A		STALARICO
6010C	AKONZEL	KMCLAEN
8260C		KRUEST
8270D	KSERCU	JMISIUREWICZ

Client: Unicorn Management Consultants **Service Request:** R1908663
Project: Union Road/2011-200

Sample Name: MW-13M **Date Collected:** 09/9/19
Lab Code: R1908663-010 **Date Received:** 09/9/19
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
1664A		STALARICO
6010C	AKONZEL	KMCLAEN
8260C		KRUEST
8270D	KSERCU	JMISIUREWICZ

Sample Name: MW-14S **Date Collected:** 09/9/19
Lab Code: R1908663-011 **Date Received:** 09/9/19
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
1664A		STALARICO
6010C	AKONZEL	KMCLAEN
8260C		KRUEST
8270D	KSERCU	JMISIUREWICZ

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	200.2
200.8	200.2
6010C	3005A/3010A
6020A	ILM05.3
9014 Cyanide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Acid Soluble	9030B
9056A Bomb (Halogens)	5050A
9066 Manual Distillation	9065
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3005A/3010A
6010 SPLP (1312) extract	3005A/3010A
7196A	3060A
7199	3060A
9056A Halogens/Halides	5050
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction

For analytical methods not listed, the preparation method is the same as the analytical method reference.

Sample Results

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Volatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/08/19 11:35
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-10S	**Units:**	ug/L
Lab Code:	R1908663-001	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Acetone	ND U	10	1	09/16/19 16:20	
Benzene	ND U	5.0	1	09/16/19 16:20	
Bromodichloromethane	ND U	5.0	1	09/16/19 16:20	
Bromoform	ND U	5.0	1	09/16/19 16:20	
Bromomethane	ND U	5.0	1	09/16/19 16:20	
2-Butanone (MEK)	ND U	10	1	09/16/19 16:20	
Carbon Disulfide	ND U	10	1	09/16/19 16:20	
Carbon Tetrachloride	ND U	5.0	1	09/16/19 16:20	
Chlorobenzene	ND U	5.0	1	09/16/19 16:20	
Chloroethane	ND U	5.0	1	09/16/19 16:20	
Chloroform	ND U	5.0	1	09/16/19 16:20	
Chloromethane	ND U	5.0	1	09/16/19 16:20	
Dibromochloromethane	ND U	5.0	1	09/16/19 16:20	
1,1-Dichloroethane	ND U	5.0	1	09/16/19 16:20	
1,2-Dichloroethane	ND U	5.0	1	09/16/19 16:20	
1,1-Dichloroethene	ND U	5.0	1	09/16/19 16:20	
cis-1,2-Dichloroethene	ND U	5.0	1	09/16/19 16:20	
trans-1,2-Dichloroethene	ND U	5.0	1	09/16/19 16:20	
1,2-Dichloropropane	ND U	5.0	1	09/16/19 16:20	
cis-1,3-Dichloropropene	ND U	5.0	1	09/16/19 16:20	
trans-1,3-Dichloropropene	ND U	5.0	1	09/16/19 16:20	
Ethylbenzene	ND U	5.0	1	09/16/19 16:20	
2-Hexanone	ND U	10	1	09/16/19 16:20	
Methylene Chloride	ND U	5.0	1	09/16/19 16:20	
4-Methyl-2-pentanone (MIBK)	ND U	10	1	09/16/19 16:20	
Styrene	ND U	5.0	1	09/16/19 16:20	
1,1,2,2-Tetrachloroethane	ND U	5.0	1	09/16/19 16:20	
Tetrachloroethene	ND U	5.0	1	09/16/19 16:20	
Toluene	ND U	5.0	1	09/16/19 16:20	
1,1,1-Trichloroethane	ND U	5.0	1	09/16/19 16:20	
1,1,2-Trichloroethane	ND U	5.0	1	09/16/19 16:20	
Trichloroethene	ND U	5.0	1	09/16/19 16:20	
Vinyl Chloride	ND U	5.0	1	09/16/19 16:20	
o-Xylene	ND U	5.0	1	09/16/19 16:20	
m,p-Xylenes	ND U	5.0	1	09/16/19 16:20	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/08/19 11:35
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-10S	**Units:**	ug/L
Lab Code:	R1908663-001	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	100	85 - 122	09/16/19 16:20	
Toluene-d8	102	87 - 121	09/16/19 16:20	
Dibromofluoromethane	100	89 - 119	09/16/19 16:20	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/08/19 11:30
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-10M	**Units:**	ug/L
Lab Code:	R1908663-002	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Acetone	ND U	10	1	09/16/19 16:42	
Benzene	ND U	5.0	1	09/16/19 16:42	
Bromodichloromethane	ND U	5.0	1	09/16/19 16:42	
Bromoform	ND U	5.0	1	09/16/19 16:42	
Bromomethane	ND U	5.0	1	09/16/19 16:42	
2-Butanone (MEK)	ND U	10	1	09/16/19 16:42	
Carbon Disulfide	ND U	10	1	09/16/19 16:42	
Carbon Tetrachloride	ND U	5.0	1	09/16/19 16:42	
Chlorobenzene	ND U	5.0	1	09/16/19 16:42	
Chloroethane	ND U	5.0	1	09/16/19 16:42	
Chloroform	ND U	5.0	1	09/16/19 16:42	
Chloromethane	ND U	5.0	1	09/16/19 16:42	
Dibromochloromethane	ND U	5.0	1	09/16/19 16:42	
1,1-Dichloroethane	ND U	5.0	1	09/16/19 16:42	
1,2-Dichloroethane	ND U	5.0	1	09/16/19 16:42	
1,1-Dichloroethene	ND U	5.0	1	09/16/19 16:42	
cis-1,2-Dichloroethene	ND U	5.0	1	09/16/19 16:42	
trans-1,2-Dichloroethene	ND U	5.0	1	09/16/19 16:42	
1,2-Dichloropropane	ND U	5.0	1	09/16/19 16:42	
cis-1,3-Dichloropropene	ND U	5.0	1	09/16/19 16:42	
trans-1,3-Dichloropropene	ND U	5.0	1	09/16/19 16:42	
Ethylbenzene	ND U	5.0	1	09/16/19 16:42	
2-Hexanone	ND U	10	1	09/16/19 16:42	
Methylene Chloride	ND U	5.0	1	09/16/19 16:42	
4-Methyl-2-pentanone (MIBK)	ND U	10	1	09/16/19 16:42	
Styrene	ND U	5.0	1	09/16/19 16:42	
1,1,2,2-Tetrachloroethane	ND U	5.0	1	09/16/19 16:42	
Tetrachloroethene	ND U	5.0	1	09/16/19 16:42	
Toluene	ND U	5.0	1	09/16/19 16:42	
1,1,1-Trichloroethane	ND U	5.0	1	09/16/19 16:42	
1,1,2-Trichloroethane	ND U	5.0	1	09/16/19 16:42	
Trichloroethene	ND U	5.0	1	09/16/19 16:42	
Vinyl Chloride	ND U	5.0	1	09/16/19 16:42	
o-Xylene	ND U	5.0	1	09/16/19 16:42	
m,p-Xylenes	ND U	5.0	1	09/16/19 16:42	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/08/19 11:30
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-10M	**Units:**	ug/L
Lab Code:	R1908663-002	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	95	85 - 122	09/16/19 16:42	
Toluene-d8	99	87 - 121	09/16/19 16:42	
Dibromofluoromethane	97	89 - 119	09/16/19 16:42	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 07:45
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-10D	**Units:**	ug/L
Lab Code:	R1908663-003	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Acetone	**10**	10	1	09/16/19 17:04	
Benzene	ND U	5.0	1	09/16/19 17:04	
Bromodichloromethane	ND U	5.0	1	09/16/19 17:04	
Bromoform	ND U	5.0	1	09/16/19 17:04	
Bromomethane	ND U	5.0	1	09/16/19 17:04	
2-Butanone (MEK)	ND U	10	1	09/16/19 17:04	
Carbon Disulfide	ND U	10	1	09/16/19 17:04	
Carbon Tetrachloride	ND U	5.0	1	09/16/19 17:04	
Chlorobenzene	ND U	5.0	1	09/16/19 17:04	
Chloroethane	ND U	5.0	1	09/16/19 17:04	
Chloroform	ND U	5.0	1	09/16/19 17:04	
Chloromethane	ND U	5.0	1	09/16/19 17:04	
Dibromochloromethane	ND U	5.0	1	09/16/19 17:04	
1,1-Dichloroethane	ND U	5.0	1	09/16/19 17:04	
1,2-Dichloroethane	ND U	5.0	1	09/16/19 17:04	
1,1-Dichloroethene	ND U	5.0	1	09/16/19 17:04	
cis-1,2-Dichloroethene	ND U	5.0	1	09/16/19 17:04	
trans-1,2-Dichloroethene	ND U	5.0	1	09/16/19 17:04	
1,2-Dichloropropane	ND U	5.0	1	09/16/19 17:04	
cis-1,3-Dichloropropene	ND U	5.0	1	09/16/19 17:04	
trans-1,3-Dichloropropene	ND U	5.0	1	09/16/19 17:04	
Ethylbenzene	ND U	5.0	1	09/16/19 17:04	
2-Hexanone	ND U	10	1	09/16/19 17:04	
Methylene Chloride	ND U	5.0	1	09/16/19 17:04	
4-Methyl-2-pentanone (MIBK)	ND U	10	1	09/16/19 17:04	
Styrene	ND U	5.0	1	09/16/19 17:04	
1,1,2,2-Tetrachloroethane	ND U	5.0	1	09/16/19 17:04	
Tetrachloroethene	ND U	5.0	1	09/16/19 17:04	
Toluene	ND U	5.0	1	09/16/19 17:04	
1,1,1-Trichloroethane	ND U	5.0	1	09/16/19 17:04	
1,1,2-Trichloroethane	ND U	5.0	1	09/16/19 17:04	
Trichloroethene	ND U	5.0	1	09/16/19 17:04	
Vinyl Chloride	ND U	5.0	1	09/16/19 17:04	
o-Xylene	ND U	5.0	1	09/16/19 17:04	
m,p-Xylenes	ND U	5.0	1	09/16/19 17:04	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 07:45
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-10D	**Units:**	ug/L
Lab Code:	R1908663-003	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	96	85 - 122	09/16/19 17:04	
Toluene-d8	99	87 - 121	09/16/19 17:04	
Dibromofluoromethane	96	89 - 119	09/16/19 17:04	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 08:15
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-11S	**Units:**	ug/L
Lab Code:	R1908663-004	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Acetone	ND U	10	1	09/16/19 17:26	
Benzene	ND U	5.0	1	09/16/19 17:26	
Bromodichloromethane	ND U	5.0	1	09/16/19 17:26	
Bromoform	ND U	5.0	1	09/16/19 17:26	
Bromomethane	ND U	5.0	1	09/16/19 17:26	
2-Butanone (MEK)	ND U	10	1	09/16/19 17:26	
Carbon Disulfide	ND U	10	1	09/16/19 17:26	
Carbon Tetrachloride	ND U	5.0	1	09/16/19 17:26	
Chlorobenzene	ND U	5.0	1	09/16/19 17:26	
Chloroethane	ND U	5.0	1	09/16/19 17:26	
Chloroform	ND U	5.0	1	09/16/19 17:26	
Chloromethane	ND U	5.0	1	09/16/19 17:26	
Dibromochloromethane	ND U	5.0	1	09/16/19 17:26	
1,1-Dichloroethane	ND U	5.0	1	09/16/19 17:26	
1,2-Dichloroethane	ND U	5.0	1	09/16/19 17:26	
1,1-Dichloroethene	ND U	5.0	1	09/16/19 17:26	
cis-1,2-Dichloroethene	ND U	5.0	1	09/16/19 17:26	
trans-1,2-Dichloroethene	ND U	5.0	1	09/16/19 17:26	
1,2-Dichloropropane	ND U	5.0	1	09/16/19 17:26	
cis-1,3-Dichloropropene	ND U	5.0	1	09/16/19 17:26	
trans-1,3-Dichloropropene	ND U	5.0	1	09/16/19 17:26	
Ethylbenzene	ND U	5.0	1	09/16/19 17:26	
2-Hexanone	ND U	10	1	09/16/19 17:26	
Methylene Chloride	ND U	5.0	1	09/16/19 17:26	
4-Methyl-2-pentanone (MIBK)	ND U	10	1	09/16/19 17:26	
Styrene	ND U	5.0	1	09/16/19 17:26	
1,1,2,2-Tetrachloroethane	ND U	5.0	1	09/16/19 17:26	
Tetrachloroethene	ND U	5.0	1	09/16/19 17:26	
Toluene	ND U	5.0	1	09/16/19 17:26	
1,1,1-Trichloroethane	ND U	5.0	1	09/16/19 17:26	
1,1,2-Trichloroethane	ND U	5.0	1	09/16/19 17:26	
Trichloroethene	ND U	5.0	1	09/16/19 17:26	
Vinyl Chloride	ND U	5.0	1	09/16/19 17:26	
o-Xylene	ND U	5.0	1	09/16/19 17:26	
m,p-Xylenes	ND U	5.0	1	09/16/19 17:26	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 08:15
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-11S	**Units:**	ug/L
Lab Code:	R1908663-004	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	97	85 - 122	09/16/19 17:26	
Toluene-d8	101	87 - 121	09/16/19 17:26	
Dibromofluoromethane	97	89 - 119	09/16/19 17:26	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 08:50
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-11M	**Units:**	ug/L
Lab Code:	R1908663-005	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Acetone	ND U	10	1	09/16/19 17:47	
Benzene	ND U	5.0	1	09/16/19 17:47	
Bromodichloromethane	ND U	5.0	1	09/16/19 17:47	
Bromoform	ND U	5.0	1	09/16/19 17:47	
Bromomethane	ND U	5.0	1	09/16/19 17:47	
2-Butanone (MEK)	ND U	10	1	09/16/19 17:47	
Carbon Disulfide	ND U	10	1	09/16/19 17:47	
Carbon Tetrachloride	ND U	5.0	1	09/16/19 17:47	
Chlorobenzene	ND U	5.0	1	09/16/19 17:47	
Chloroethane	ND U	5.0	1	09/16/19 17:47	
Chloroform	ND U	5.0	1	09/16/19 17:47	
Chloromethane	ND U	5.0	1	09/16/19 17:47	
Dibromochloromethane	ND U	5.0	1	09/16/19 17:47	
1,1-Dichloroethane	ND U	5.0	1	09/16/19 17:47	
1,2-Dichloroethane	ND U	5.0	1	09/16/19 17:47	
1,1-Dichloroethene	ND U	5.0	1	09/16/19 17:47	
cis-1,2-Dichloroethene	ND U	5.0	1	09/16/19 17:47	
trans-1,2-Dichloroethene	ND U	5.0	1	09/16/19 17:47	
1,2-Dichloropropane	ND U	5.0	1	09/16/19 17:47	
cis-1,3-Dichloropropene	ND U	5.0	1	09/16/19 17:47	
trans-1,3-Dichloropropene	ND U	5.0	1	09/16/19 17:47	
Ethylbenzene	ND U	5.0	1	09/16/19 17:47	
2-Hexanone	ND U	10	1	09/16/19 17:47	
Methylene Chloride	ND U	5.0	1	09/16/19 17:47	
4-Methyl-2-pentanone (MIBK)	ND U	10	1	09/16/19 17:47	
Styrene	ND U	5.0	1	09/16/19 17:47	
1,1,2,2-Tetrachloroethane	ND U	5.0	1	09/16/19 17:47	
Tetrachloroethene	ND U	5.0	1	09/16/19 17:47	
Toluene	ND U	5.0	1	09/16/19 17:47	
1,1,1-Trichloroethane	ND U	5.0	1	09/16/19 17:47	
1,1,2-Trichloroethane	ND U	5.0	1	09/16/19 17:47	
Trichloroethene	ND U	5.0	1	09/16/19 17:47	
Vinyl Chloride	ND U	5.0	1	09/16/19 17:47	
o-Xylene	ND U	5.0	1	09/16/19 17:47	
m,p-Xylenes	ND U	5.0	1	09/16/19 17:47	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 08:50
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-11M	**Units:**	ug/L
Lab Code:	R1908663-005	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	98	85 - 122	09/16/19 17:47	
Toluene-d8	101	87 - 121	09/16/19 17:47	
Dibromofluoromethane	100	89 - 119	09/16/19 17:47	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 09:55
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-12S	**Units:**	ug/L
Lab Code:	R1908663-006	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Acetone	ND U	10	1	09/16/19 18:09	
Benzene	ND U	5.0	1	09/16/19 18:09	
Bromodichloromethane	ND U	5.0	1	09/16/19 18:09	
Bromoform	ND U	5.0	1	09/16/19 18:09	
Bromomethane	ND U	5.0	1	09/16/19 18:09	
2-Butanone (MEK)	ND U	10	1	09/16/19 18:09	
Carbon Disulfide	ND U	10	1	09/16/19 18:09	
Carbon Tetrachloride	ND U	5.0	1	09/16/19 18:09	
Chlorobenzene	ND U	5.0	1	09/16/19 18:09	
Chloroethane	ND U	5.0	1	09/16/19 18:09	
Chloroform	ND U	5.0	1	09/16/19 18:09	
Chloromethane	ND U	5.0	1	09/16/19 18:09	
Dibromochloromethane	ND U	5.0	1	09/16/19 18:09	
1,1-Dichloroethane	ND U	5.0	1	09/16/19 18:09	
1,2-Dichloroethane	ND U	5.0	1	09/16/19 18:09	
1,1-Dichloroethene	ND U	5.0	1	09/16/19 18:09	
cis-1,2-Dichloroethene	ND U	5.0	1	09/16/19 18:09	
trans-1,2-Dichloroethene	ND U	5.0	1	09/16/19 18:09	
1,2-Dichloropropane	ND U	5.0	1	09/16/19 18:09	
cis-1,3-Dichloropropene	ND U	5.0	1	09/16/19 18:09	
trans-1,3-Dichloropropene	ND U	5.0	1	09/16/19 18:09	
Ethylbenzene	ND U	5.0	1	09/16/19 18:09	
2-Hexanone	ND U	10	1	09/16/19 18:09	
Methylene Chloride	ND U	5.0	1	09/16/19 18:09	
4-Methyl-2-pentanone (MIBK)	ND U	10	1	09/16/19 18:09	
Styrene	ND U	5.0	1	09/16/19 18:09	
1,1,2,2-Tetrachloroethane	ND U	5.0	1	09/16/19 18:09	
Tetrachloroethene	ND U	5.0	1	09/16/19 18:09	
Toluene	ND U	5.0	1	09/16/19 18:09	
1,1,1-Trichloroethane	ND U	5.0	1	09/16/19 18:09	
1,1,2-Trichloroethane	ND U	5.0	1	09/16/19 18:09	
Trichloroethene	ND U	5.0	1	09/16/19 18:09	
Vinyl Chloride	ND U	5.0	1	09/16/19 18:09	
o-Xylene	ND U	5.0	1	09/16/19 18:09	
m,p-Xylenes	ND U	5.0	1	09/16/19 18:09	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 09:55
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-12S	**Units:**	ug/L
Lab Code:	R1908663-006	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	99	85 - 122	09/16/19 18:09	
Toluene-d8	102	87 - 121	09/16/19 18:09	
Dibromofluoromethane	98	89 - 119	09/16/19 18:09	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 10:00
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-12M	**Units:**	ug/L
Lab Code:	R1908663-007	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Acetone	ND U	10	1	09/16/19 18:31	
Benzene	ND U	5.0	1	09/16/19 18:31	
Bromodichloromethane	ND U	5.0	1	09/16/19 18:31	
Bromoform	ND U	5.0	1	09/16/19 18:31	
Bromomethane	ND U	5.0	1	09/16/19 18:31	
2-Butanone (MEK)	ND U	10	1	09/16/19 18:31	
Carbon Disulfide	ND U	10	1	09/16/19 18:31	
Carbon Tetrachloride	ND U	5.0	1	09/16/19 18:31	
Chlorobenzene	ND U	5.0	1	09/16/19 18:31	
Chloroethane	ND U	5.0	1	09/16/19 18:31	
Chloroform	ND U	5.0	1	09/16/19 18:31	
Chloromethane	ND U	5.0	1	09/16/19 18:31	
Dibromochloromethane	ND U	5.0	1	09/16/19 18:31	
1,1-Dichloroethane	ND U	5.0	1	09/16/19 18:31	
1,2-Dichloroethane	ND U	5.0	1	09/16/19 18:31	
1,1-Dichloroethene	ND U	5.0	1	09/16/19 18:31	
cis-1,2-Dichloroethene	ND U	5.0	1	09/16/19 18:31	
trans-1,2-Dichloroethene	ND U	5.0	1	09/16/19 18:31	
1,2-Dichloropropane	ND U	5.0	1	09/16/19 18:31	
cis-1,3-Dichloropropene	ND U	5.0	1	09/16/19 18:31	
trans-1,3-Dichloropropene	ND U	5.0	1	09/16/19 18:31	
Ethylbenzene	ND U	5.0	1	09/16/19 18:31	
2-Hexanone	ND U	10	1	09/16/19 18:31	
Methylene Chloride	ND U	5.0	1	09/16/19 18:31	
4-Methyl-2-pentanone (MIBK)	ND U	10	1	09/16/19 18:31	
Styrene	ND U	5.0	1	09/16/19 18:31	
1,1,2,2-Tetrachloroethane	ND U	5.0	1	09/16/19 18:31	
Tetrachloroethene	ND U	5.0	1	09/16/19 18:31	
Toluene	ND U	5.0	1	09/16/19 18:31	
1,1,1-Trichloroethane	ND U	5.0	1	09/16/19 18:31	
1,1,2-Trichloroethane	ND U	5.0	1	09/16/19 18:31	
Trichloroethene	ND U	5.0	1	09/16/19 18:31	
Vinyl Chloride	ND U	5.0	1	09/16/19 18:31	
o-Xylene	ND U	5.0	1	09/16/19 18:31	
m,p-Xylenes	ND U	5.0	1	09/16/19 18:31	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 10:00
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-12M	**Units:**	ug/L
Lab Code:	R1908663-007	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	97	85 - 122	09/16/19 18:31	
Toluene-d8	101	87 - 121	09/16/19 18:31	
Dibromofluoromethane	96	89 - 119	09/16/19 18:31	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 10:30
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-12D	**Units:**	ug/L
Lab Code:	R1908663-008	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Acetone	ND U	10	1	09/16/19 18:53	
Benzene	ND U	5.0	1	09/16/19 18:53	
Bromodichloromethane	ND U	5.0	1	09/16/19 18:53	
Bromoform	ND U	5.0	1	09/16/19 18:53	
Bromomethane	ND U	5.0	1	09/16/19 18:53	
2-Butanone (MEK)	ND U	10	1	09/16/19 18:53	
Carbon Disulfide	ND U	10	1	09/16/19 18:53	
Carbon Tetrachloride	ND U	5.0	1	09/16/19 18:53	
Chlorobenzene	ND U	5.0	1	09/16/19 18:53	
Chloroethane	ND U	5.0	1	09/16/19 18:53	
Chloroform	ND U	5.0	1	09/16/19 18:53	
Chloromethane	ND U	5.0	1	09/16/19 18:53	
Dibromochloromethane	ND U	5.0	1	09/16/19 18:53	
1,1-Dichloroethane	ND U	5.0	1	09/16/19 18:53	
1,2-Dichloroethane	ND U	5.0	1	09/16/19 18:53	
1,1-Dichloroethene	ND U	5.0	1	09/16/19 18:53	
cis-1,2-Dichloroethene	ND U	5.0	1	09/16/19 18:53	
trans-1,2-Dichloroethene	ND U	5.0	1	09/16/19 18:53	
1,2-Dichloropropane	ND U	5.0	1	09/16/19 18:53	
cis-1,3-Dichloropropene	ND U	5.0	1	09/16/19 18:53	
trans-1,3-Dichloropropene	ND U	5.0	1	09/16/19 18:53	
Ethylbenzene	ND U	5.0	1	09/16/19 18:53	
2-Hexanone	ND U	10	1	09/16/19 18:53	
Methylene Chloride	ND U	5.0	1	09/16/19 18:53	
4-Methyl-2-pentanone (MIBK)	ND U	10	1	09/16/19 18:53	
Styrene	ND U	5.0	1	09/16/19 18:53	
1,1,2,2-Tetrachloroethane	ND U	5.0	1	09/16/19 18:53	
Tetrachloroethene	ND U	5.0	1	09/16/19 18:53	
Toluene	ND U	5.0	1	09/16/19 18:53	
1,1,1-Trichloroethane	ND U	5.0	1	09/16/19 18:53	
1,1,2-Trichloroethane	ND U	5.0	1	09/16/19 18:53	
Trichloroethene	ND U	5.0	1	09/16/19 18:53	
Vinyl Chloride	ND U	5.0	1	09/16/19 18:53	
o-Xylene	ND U	5.0	1	09/16/19 18:53	
m,p-Xylenes	ND U	5.0	1	09/16/19 18:53	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 10:30
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-12D	**Units:**	ug/L
Lab Code:	R1908663-008	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	96	85 - 122	09/16/19 18:53	
Toluene-d8	100	87 - 121	09/16/19 18:53	
Dibromofluoromethane	96	89 - 119	09/16/19 18:53	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 08:55
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-13S	**Units:**	ug/L
Lab Code:	R1908663-009	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Acetone	**12**	10	1	09/16/19 19:15	
Benzene	ND U	5.0	1	09/16/19 19:15	
Bromodichloromethane	ND U	5.0	1	09/16/19 19:15	
Bromoform	ND U	5.0	1	09/16/19 19:15	
Bromomethane	ND U	5.0	1	09/16/19 19:15	
2-Butanone (MEK)	ND U	10	1	09/16/19 19:15	
Carbon Disulfide	ND U	10	1	09/16/19 19:15	
Carbon Tetrachloride	ND U	5.0	1	09/16/19 19:15	
Chlorobenzene	ND U	5.0	1	09/16/19 19:15	
Chloroethane	ND U	5.0	1	09/16/19 19:15	
Chloroform	ND U	5.0	1	09/16/19 19:15	
Chloromethane	ND U	5.0	1	09/16/19 19:15	
Dibromochloromethane	ND U	5.0	1	09/16/19 19:15	
1,1-Dichloroethane	ND U	5.0	1	09/16/19 19:15	
1,2-Dichloroethane	ND U	5.0	1	09/16/19 19:15	
1,1-Dichloroethene	ND U	5.0	1	09/16/19 19:15	
cis-1,2-Dichloroethene	ND U	5.0	1	09/16/19 19:15	
trans-1,2-Dichloroethene	ND U	5.0	1	09/16/19 19:15	
1,2-Dichloropropane	ND U	5.0	1	09/16/19 19:15	
cis-1,3-Dichloropropene	ND U	5.0	1	09/16/19 19:15	
trans-1,3-Dichloropropene	ND U	5.0	1	09/16/19 19:15	
Ethylbenzene	ND U	5.0	1	09/16/19 19:15	
2-Hexanone	ND U	10	1	09/16/19 19:15	
Methylene Chloride	ND U	5.0	1	09/16/19 19:15	
4-Methyl-2-pentanone (MIBK)	ND U	10	1	09/16/19 19:15	
Styrene	ND U	5.0	1	09/16/19 19:15	
1,1,2,2-Tetrachloroethane	ND U	5.0	1	09/16/19 19:15	
Tetrachloroethene	ND U	5.0	1	09/16/19 19:15	
Toluene	ND U	5.0	1	09/16/19 19:15	
1,1,1-Trichloroethane	ND U	5.0	1	09/16/19 19:15	
1,1,2-Trichloroethane	ND U	5.0	1	09/16/19 19:15	
Trichloroethene	ND U	5.0	1	09/16/19 19:15	
Vinyl Chloride	ND U	5.0	1	09/16/19 19:15	
o-Xylene	ND U	5.0	1	09/16/19 19:15	
m,p-Xylenes	ND U	5.0	1	09/16/19 19:15	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 08:55
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-13S	**Units:**	ug/L
Lab Code:	R1908663-009	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	97	85 - 122	09/16/19 19:15	
Toluene-d8	101	87 - 121	09/16/19 19:15	
Dibromofluoromethane	98	89 - 119	09/16/19 19:15	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 08:25
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-13M	**Units:**	ug/L
Lab Code:	R1908663-010	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Acetone	ND U	10	1	09/16/19 19:37	
Benzene	ND U	5.0	1	09/16/19 19:37	
Bromodichloromethane	ND U	5.0	1	09/16/19 19:37	
Bromoform	ND U	5.0	1	09/16/19 19:37	
Bromomethane	ND U	5.0	1	09/16/19 19:37	
2-Butanone (MEK)	ND U	10	1	09/16/19 19:37	
Carbon Disulfide	ND U	10	1	09/16/19 19:37	
Carbon Tetrachloride	ND U	5.0	1	09/16/19 19:37	
Chlorobenzene	ND U	5.0	1	09/16/19 19:37	
Chloroethane	ND U	5.0	1	09/16/19 19:37	
Chloroform	ND U	5.0	1	09/16/19 19:37	
Chloromethane	ND U	5.0	1	09/16/19 19:37	
Dibromochloromethane	ND U	5.0	1	09/16/19 19:37	
1,1-Dichloroethane	ND U	5.0	1	09/16/19 19:37	
1,2-Dichloroethane	ND U	5.0	1	09/16/19 19:37	
1,1-Dichloroethene	ND U	5.0	1	09/16/19 19:37	
cis-1,2-Dichloroethene	ND U	5.0	1	09/16/19 19:37	
trans-1,2-Dichloroethene	ND U	5.0	1	09/16/19 19:37	
1,2-Dichloropropane	ND U	5.0	1	09/16/19 19:37	
cis-1,3-Dichloropropene	ND U	5.0	1	09/16/19 19:37	
trans-1,3-Dichloropropene	ND U	5.0	1	09/16/19 19:37	
Ethylbenzene	ND U	5.0	1	09/16/19 19:37	
2-Hexanone	ND U	10	1	09/16/19 19:37	
Methylene Chloride	ND U	5.0	1	09/16/19 19:37	
4-Methyl-2-pentanone (MIBK)	ND U	10	1	09/16/19 19:37	
Styrene	ND U	5.0	1	09/16/19 19:37	
1,1,2,2-Tetrachloroethane	ND U	5.0	1	09/16/19 19:37	
Tetrachloroethene	ND U	5.0	1	09/16/19 19:37	
Toluene	ND U	5.0	1	09/16/19 19:37	
1,1,1-Trichloroethane	ND U	5.0	1	09/16/19 19:37	
1,1,2-Trichloroethane	ND U	5.0	1	09/16/19 19:37	
Trichloroethene	ND U	5.0	1	09/16/19 19:37	
Vinyl Chloride	ND U	5.0	1	09/16/19 19:37	
o-Xylene	ND U	5.0	1	09/16/19 19:37	
m,p-Xylenes	ND U	5.0	1	09/16/19 19:37	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 08:25
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-13M	**Units:**	ug/L
Lab Code:	R1908663-010	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	98	85 - 122	09/16/19 19:37	
Toluene-d8	101	87 - 121	09/16/19 19:37	
Dibromofluoromethane	97	89 - 119	09/16/19 19:37	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 09:35
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-14S	**Units:**	ug/L
Lab Code:	R1908663-011	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Acetone	**14**	10	1	09/16/19 19:58	
Benzene	ND U	5.0	1	09/16/19 19:58	
Bromodichloromethane	ND U	5.0	1	09/16/19 19:58	
Bromoform	ND U	5.0	1	09/16/19 19:58	
Bromomethane	ND U	5.0	1	09/16/19 19:58	
2-Butanone (MEK)	ND U	10	1	09/16/19 19:58	
Carbon Disulfide	ND U	10	1	09/16/19 19:58	
Carbon Tetrachloride	ND U	5.0	1	09/16/19 19:58	
Chlorobenzene	ND U	5.0	1	09/16/19 19:58	
Chloroethane	ND U	5.0	1	09/16/19 19:58	
Chloroform	ND U	5.0	1	09/16/19 19:58	
Chloromethane	ND U	5.0	1	09/16/19 19:58	
Dibromochloromethane	ND U	5.0	1	09/16/19 19:58	
1,1-Dichloroethane	ND U	5.0	1	09/16/19 19:58	
1,2-Dichloroethane	ND U	5.0	1	09/16/19 19:58	
1,1-Dichloroethene	ND U	5.0	1	09/16/19 19:58	
cis-1,2-Dichloroethene	ND U	5.0	1	09/16/19 19:58	
trans-1,2-Dichloroethene	ND U	5.0	1	09/16/19 19:58	
1,2-Dichloropropane	ND U	5.0	1	09/16/19 19:58	
cis-1,3-Dichloropropene	ND U	5.0	1	09/16/19 19:58	
trans-1,3-Dichloropropene	ND U	5.0	1	09/16/19 19:58	
Ethylbenzene	ND U	5.0	1	09/16/19 19:58	
2-Hexanone	ND U	10	1	09/16/19 19:58	
Methylene Chloride	ND U	5.0	1	09/16/19 19:58	
4-Methyl-2-pentanone (MIBK)	ND U	10	1	09/16/19 19:58	
Styrene	ND U	5.0	1	09/16/19 19:58	
1,1,2,2-Tetrachloroethane	ND U	5.0	1	09/16/19 19:58	
Tetrachloroethene	ND U	5.0	1	09/16/19 19:58	
Toluene	ND U	5.0	1	09/16/19 19:58	
1,1,1-Trichloroethane	ND U	5.0	1	09/16/19 19:58	
1,1,2-Trichloroethane	ND U	5.0	1	09/16/19 19:58	
Trichloroethene	ND U	5.0	1	09/16/19 19:58	
Vinyl Chloride	ND U	5.0	1	09/16/19 19:58	
o-Xylene	ND U	5.0	1	09/16/19 19:58	
m,p-Xylenes	ND U	5.0	1	09/16/19 19:58	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 09:35
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-14S	**Units:**	ug/L
Lab Code:	R1908663-011	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	97	85 - 122	09/16/19 19:58	
Toluene-d8	100	87 - 121	09/16/19 19:58	
Dibromofluoromethane	98	89 - 119	09/16/19 19:58	

Semivolatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/08/19 11:35
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-10S	**Units:**	ug/L
Lab Code:	R1908663-001	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	ND U	9.3	1	09/11/19 22:48	9/10/19	
1,2-Dichlorobenzene	ND U	9.3	1	09/11/19 22:48	9/10/19	
1,3-Dichlorobenzene	ND U	9.3	1	09/11/19 22:48	9/10/19	
1,4-Dichlorobenzene	ND U	9.3	1	09/11/19 22:48	9/10/19	
2,4,5-Trichlorophenol	ND U	9.3	1	09/11/19 22:48	9/10/19	
2,4,6-Trichlorophenol	ND U	9.3	1	09/11/19 22:48	9/10/19	
2,4-Dichlorophenol	ND U	9.3	1	09/11/19 22:48	9/10/19	
2,4-Dimethylphenol	ND U	9.3	1	09/11/19 22:48	9/10/19	
2,4-Dinitrophenol	ND U	47	1	09/11/19 22:48	9/10/19	
2,4-Dinitrotoluene	ND U	9.3	1	09/11/19 22:48	9/10/19	
2,6-Dinitrotoluene	ND U	9.3	1	09/11/19 22:48	9/10/19	
2-Chloronaphthalene	ND U	9.3	1	09/11/19 22:48	9/10/19	
2-Chlorophenol	ND U	9.3	1	09/11/19 22:48	9/10/19	
2-Methylnaphthalene	ND U	9.3	1	09/11/19 22:48	9/10/19	
2-Methylphenol	ND U	9.3	1	09/11/19 22:48	9/10/19	
2-Nitroaniline	ND U	47	1	09/11/19 22:48	9/10/19	
2-Nitrophenol	ND U	9.3	1	09/11/19 22:48	9/10/19	
3,3'-Dichlorobenzidine	ND U	9.3	1	09/11/19 22:48	9/10/19	
3- and 4-Methylphenol Coelution	ND U	9.3	1	09/11/19 22:48	9/10/19	
3-Nitroaniline	ND U	47	1	09/11/19 22:48	9/10/19	
4,6-Dinitro-2-methylphenol	ND U	47	1	09/11/19 22:48	9/10/19	
4-Bromophenyl Phenyl Ether	ND U	9.3	1	09/11/19 22:48	9/10/19	
4-Chloro-3-methylphenol	ND U	9.3	1	09/11/19 22:48	9/10/19	
4-Chloroaniline	ND U	9.3	1	09/11/19 22:48	9/10/19	
4-Chlorophenyl Phenyl Ether	ND U	9.3	1	09/11/19 22:48	9/10/19	
4-Nitroaniline	ND U	47	1	09/11/19 22:48	9/10/19	
4-Nitrophenol	ND U	47	1	09/11/19 22:48	9/10/19	
Acenaphthene	ND U	9.3	1	09/11/19 22:48	9/10/19	
Acenaphthylene	ND U	9.3	1	09/11/19 22:48	9/10/19	
Anthracene	ND U	9.3	1	09/11/19 22:48	9/10/19	
Benz(a)anthracene	ND U	9.3	1	09/11/19 22:48	9/10/19	
Benzo(a)pyrene	ND U	9.3	1	09/11/19 22:48	9/10/19	
Benzo(b)fluoranthene	ND U	9.3	1	09/11/19 22:48	9/10/19	
Benzo(g,h,i)perylene	ND U	9.3	1	09/11/19 22:48	9/10/19	
Benzo(k)fluoranthene	ND U	9.3	1	09/11/19 22:48	9/10/19	
Benzyl Alcohol	ND U	9.3	1	09/11/19 22:48	9/10/19	
2,2'-Oxybis(1-chloropropane)	ND U	9.3	1	09/11/19 22:48	9/10/19	
Bis(2-chloroethoxy)methane	ND U	9.3	1	09/11/19 22:48	9/10/19	
Bis(2-chloroethyl) Ether	ND U	9.3	1	09/11/19 22:48	9/10/19	
Bis(2-ethylhexyl) Phthalate	ND U	9.7	1	09/11/19 22:48	9/10/19	
Butyl Benzyl Phthalate	ND U	9.3	1	09/11/19 22:48	9/10/19	
Carbazole	ND U	9.3	1	09/11/19 22:48	9/10/19	
Chrysene	ND U	9.3	1	09/11/19 22:48	9/10/19	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/08/19 11:35
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-10S	**Units:**	ug/L
Lab Code:	R1908663-001	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Di-n-butyl Phthalate	ND U	9.3	1	09/11/19 22:48	9/10/19	
Di-n-octyl Phthalate	ND U	9.3	1	09/11/19 22:48	9/10/19	
Dibenz(a,h)anthracene	ND U	9.3	1	09/11/19 22:48	9/10/19	
Dibenzofuran	ND U	9.3	1	09/11/19 22:48	9/10/19	
Diethyl Phthalate	ND U	9.3	1	09/11/19 22:48	9/10/19	
Dimethyl Phthalate	ND U	9.3	1	09/11/19 22:48	9/10/19	
Fluoranthene	ND U	9.3	1	09/11/19 22:48	9/10/19	
Fluorene	ND U	9.3	1	09/11/19 22:48	9/10/19	
Hexachlorobenzene	ND U	9.3	1	09/11/19 22:48	9/10/19	
Hexachlorobutadiene	ND U	9.3	1	09/11/19 22:48	9/10/19	
Hexachlorocyclopentadiene	ND U	9.3	1	09/11/19 22:48	9/10/19	
Hexachloroethane	ND U	9.3	1	09/11/19 22:48	9/10/19	
Indeno(1,2,3-cd)pyrene	ND U	9.3	1	09/11/19 22:48	9/10/19	
Isophorone	ND U	9.3	1	09/11/19 22:48	9/10/19	
N-Nitrosodi-n-propylamine	ND U	9.3	1	09/11/19 22:48	9/10/19	
N-Nitrosodimethylamine	ND U	9.3	1	09/11/19 22:48	9/10/19	
N-Nitrosodiphenylamine	ND U	9.3	1	09/11/19 22:48	9/10/19	
Naphthalene	ND U	9.3	1	09/11/19 22:48	9/10/19	
Nitrobenzene	ND U	9.3	1	09/11/19 22:48	9/10/19	
Pentachlorophenol (PCP)	ND U	47	1	09/11/19 22:48	9/10/19	
Phenanthrene	ND U	9.3	1	09/11/19 22:48	9/10/19	
Phenol	ND U	9.3	1	09/11/19 22:48	9/10/19	
Pyrene	ND U	9.3	1	09/11/19 22:48	9/10/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	77	35 - 141	09/11/19 22:48	
2-Fluorobiphenyl	71	31 - 118	09/11/19 22:48	
2-Fluorophenol	36	10 - 105	09/11/19 22:48	
Nitrobenzene-d5	71	31 - 110	09/11/19 22:48	
Phenol-d6	21	10 - 107	09/11/19 22:48	
p-Terphenyl-d14	30	10 - 165	09/11/19 22:48	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/08/19 11:30
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-10M	**Units:**	ug/L
Lab Code:	R1908663-002	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	ND U	9.3	1	09/11/19 23:18	9/10/19	
1,2-Dichlorobenzene	ND U	9.3	1	09/11/19 23:18	9/10/19	
1,3-Dichlorobenzene	ND U	9.3	1	09/11/19 23:18	9/10/19	
1,4-Dichlorobenzene	ND U	9.3	1	09/11/19 23:18	9/10/19	
2,4,5-Trichlorophenol	ND U	9.3	1	09/11/19 23:18	9/10/19	
2,4,6-Trichlorophenol	ND U	9.3	1	09/11/19 23:18	9/10/19	
2,4-Dichlorophenol	ND U	9.3	1	09/11/19 23:18	9/10/19	
2,4-Dimethylphenol	ND U	9.3	1	09/11/19 23:18	9/10/19	
2,4-Dinitrophenol	ND U	47	1	09/11/19 23:18	9/10/19	
2,4-Dinitrotoluene	ND U	9.3	1	09/11/19 23:18	9/10/19	
2,6-Dinitrotoluene	ND U	9.3	1	09/11/19 23:18	9/10/19	
2-Chloronaphthalene	ND U	9.3	1	09/11/19 23:18	9/10/19	
2-Chlorophenol	ND U	9.3	1	09/11/19 23:18	9/10/19	
2-Methylnaphthalene	ND U	9.3	1	09/11/19 23:18	9/10/19	
2-Methylphenol	ND U	9.3	1	09/11/19 23:18	9/10/19	
2-Nitroaniline	ND U	47	1	09/11/19 23:18	9/10/19	
2-Nitrophenol	ND U	9.3	1	09/11/19 23:18	9/10/19	
3,3'-Dichlorobenzidine	ND U	9.3	1	09/11/19 23:18	9/10/19	
3- and 4-Methylphenol Coelution	ND U	9.3	1	09/11/19 23:18	9/10/19	
3-Nitroaniline	ND U	47	1	09/11/19 23:18	9/10/19	
4,6-Dinitro-2-methylphenol	ND U	47	1	09/11/19 23:18	9/10/19	
4-Bromophenyl Phenyl Ether	ND U	9.3	1	09/11/19 23:18	9/10/19	
4-Chloro-3-methylphenol	ND U	9.3	1	09/11/19 23:18	9/10/19	
4-Chloroaniline	ND U	9.3	1	09/11/19 23:18	9/10/19	
4-Chlorophenyl Phenyl Ether	ND U	9.3	1	09/11/19 23:18	9/10/19	
4-Nitroaniline	ND U	47	1	09/11/19 23:18	9/10/19	
4-Nitrophenol	ND U	47	1	09/11/19 23:18	9/10/19	
Acenaphthene	ND U	9.3	1	09/11/19 23:18	9/10/19	
Acenaphthylene	ND U	9.3	1	09/11/19 23:18	9/10/19	
Anthracene	ND U	9.3	1	09/11/19 23:18	9/10/19	
Benz(a)anthracene	ND U	9.3	1	09/11/19 23:18	9/10/19	
Benzo(a)pyrene	ND U	9.3	1	09/11/19 23:18	9/10/19	
Benzo(b)fluoranthene	ND U	9.3	1	09/11/19 23:18	9/10/19	
Benzo(g,h,i)perylene	ND U	9.3	1	09/11/19 23:18	9/10/19	
Benzo(k)fluoranthene	ND U	9.3	1	09/11/19 23:18	9/10/19	
Benzyl Alcohol	ND U	9.3	1	09/11/19 23:18	9/10/19	
2,2'-Oxybis(1-chloropropane)	ND U	9.3	1	09/11/19 23:18	9/10/19	
Bis(2-chloroethoxy)methane	ND U	9.3	1	09/11/19 23:18	9/10/19	
Bis(2-chloroethyl) Ether	ND U	9.3	1	09/11/19 23:18	9/10/19	
Bis(2-ethylhexyl) Phthalate	ND U	9.7	1	09/11/19 23:18	9/10/19	
Butyl Benzyl Phthalate	ND U	9.3	1	09/11/19 23:18	9/10/19	
Carbazole	ND U	9.3	1	09/11/19 23:18	9/10/19	
Chrysene	ND U	9.3	1	09/11/19 23:18	9/10/19	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/08/19 11:30
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-10M	**Units:**	ug/L
Lab Code:	R1908663-002	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Di-n-butyl Phthalate	ND U	9.3	1	09/11/19 23:18	9/10/19	
Di-n-octyl Phthalate	ND U	9.3	1	09/11/19 23:18	9/10/19	
Dibenz(a,h)anthracene	ND U	9.3	1	09/11/19 23:18	9/10/19	
Dibenzofuran	ND U	9.3	1	09/11/19 23:18	9/10/19	
Diethyl Phthalate	ND U	9.3	1	09/11/19 23:18	9/10/19	
Dimethyl Phthalate	ND U	9.3	1	09/11/19 23:18	9/10/19	
Fluoranthene	ND U	9.3	1	09/11/19 23:18	9/10/19	
Fluorene	ND U	9.3	1	09/11/19 23:18	9/10/19	
Hexachlorobenzene	ND U	9.3	1	09/11/19 23:18	9/10/19	
Hexachlorobutadiene	ND U	9.3	1	09/11/19 23:18	9/10/19	
Hexachlorocyclopentadiene	ND U	9.3	1	09/11/19 23:18	9/10/19	
Hexachloroethane	ND U	9.3	1	09/11/19 23:18	9/10/19	
Indeno(1,2,3-cd)pyrene	ND U	9.3	1	09/11/19 23:18	9/10/19	
Isophorone	ND U	9.3	1	09/11/19 23:18	9/10/19	
N-Nitrosodi-n-propylamine	ND U	9.3	1	09/11/19 23:18	9/10/19	
N-Nitrosodimethylamine	ND U	9.3	1	09/11/19 23:18	9/10/19	
N-Nitrosodiphenylamine	ND U	9.3	1	09/11/19 23:18	9/10/19	
Naphthalene	ND U	9.3	1	09/11/19 23:18	9/10/19	
Nitrobenzene	ND U	9.3	1	09/11/19 23:18	9/10/19	
Pentachlorophenol (PCP)	ND U	47	1	09/11/19 23:18	9/10/19	
Phenanthrene	ND U	9.3	1	09/11/19 23:18	9/10/19	
Phenol	ND U	9.3	1	09/11/19 23:18	9/10/19	
Pyrene	ND U	9.3	1	09/11/19 23:18	9/10/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	78	35 - 141	09/11/19 23:18	
2-Fluorobiphenyl	64	31 - 118	09/11/19 23:18	
2-Fluorophenol	39	10 - 105	09/11/19 23:18	
Nitrobenzene-d5	68	31 - 110	09/11/19 23:18	
Phenol-d6	24	10 - 107	09/11/19 23:18	
p-Terphenyl-d14	29	10 - 165	09/11/19 23:18	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 07:45
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-10D	**Units:**	ug/L
Lab Code:	R1908663-003	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	ND U	9.3	1	09/12/19 16:41	9/10/19	
1,2-Dichlorobenzene	ND U	9.3	1	09/12/19 16:41	9/10/19	
1,3-Dichlorobenzene	ND U	9.3	1	09/12/19 16:41	9/10/19	
1,4-Dichlorobenzene	ND U	9.3	1	09/12/19 16:41	9/10/19	
2,4,5-Trichlorophenol	ND U	9.3	1	09/12/19 16:41	9/10/19	
2,4,6-Trichlorophenol	ND U	9.3	1	09/12/19 16:41	9/10/19	
2,4-Dichlorophenol	ND U	9.3	1	09/12/19 16:41	9/10/19	
2,4-Dimethylphenol	ND U	9.3	1	09/12/19 16:41	9/10/19	
2,4-Dinitrophenol	ND U	47	1	09/12/19 16:41	9/10/19	
2,4-Dinitrotoluene	ND U	9.3	1	09/12/19 16:41	9/10/19	
2,6-Dinitrotoluene	ND U	9.3	1	09/12/19 16:41	9/10/19	
2-Chloronaphthalene	ND U	9.3	1	09/12/19 16:41	9/10/19	
2-Chlorophenol	ND U	9.3	1	09/12/19 16:41	9/10/19	
2-Methylnaphthalene	ND U	9.3	1	09/12/19 16:41	9/10/19	
2-Methylphenol	ND U	9.3	1	09/12/19 16:41	9/10/19	
2-Nitroaniline	ND U	47	1	09/12/19 16:41	9/10/19	
2-Nitrophenol	ND U	9.3	1	09/12/19 16:41	9/10/19	
3,3'-Dichlorobenzidine	ND U	9.3	1	09/12/19 16:41	9/10/19	
3- and 4-Methylphenol Coelution	ND U	9.3	1	09/12/19 16:41	9/10/19	
3-Nitroaniline	ND U	47	1	09/12/19 16:41	9/10/19	
4,6-Dinitro-2-methylphenol	ND U	47	1	09/12/19 16:41	9/10/19	
4-Bromophenyl Phenyl Ether	ND U	9.3	1	09/12/19 16:41	9/10/19	
4-Chloro-3-methylphenol	ND U	9.3	1	09/12/19 16:41	9/10/19	
4-Chloroaniline	ND U	9.3	1	09/12/19 16:41	9/10/19	
4-Chlorophenyl Phenyl Ether	ND U	9.3	1	09/12/19 16:41	9/10/19	
4-Nitroaniline	ND U	47	1	09/12/19 16:41	9/10/19	
4-Nitrophenol	ND U	47	1	09/12/19 16:41	9/10/19	
Acenaphthene	ND U	9.3	1	09/12/19 16:41	9/10/19	
Acenaphthylene	ND U	9.3	1	09/12/19 16:41	9/10/19	
Anthracene	ND U	9.3	1	09/12/19 16:41	9/10/19	
Benz(a)anthracene	ND U	9.3	1	09/12/19 16:41	9/10/19	
Benzo(a)pyrene	ND U	9.3	1	09/12/19 16:41	9/10/19	
Benzo(b)fluoranthene	ND U	9.3	1	09/12/19 16:41	9/10/19	
Benzo(g,h,i)perylene	ND U	9.3	1	09/12/19 16:41	9/10/19	
Benzo(k)fluoranthene	ND U	9.3	1	09/12/19 16:41	9/10/19	
Benzyl Alcohol	ND U	9.3	1	09/12/19 16:41	9/10/19	
2,2'-Oxybis(1-chloropropane)	ND U	9.3	1	09/12/19 16:41	9/10/19	
Bis(2-chloroethoxy)methane	ND U	9.3	1	09/12/19 16:41	9/10/19	
Bis(2-chloroethyl) Ether	ND U	9.3	1	09/12/19 16:41	9/10/19	
Bis(2-ethylhexyl) Phthalate	ND U	9.7	1	09/12/19 16:41	9/10/19	
Butyl Benzyl Phthalate	ND U	9.3	1	09/12/19 16:41	9/10/19	
Carbazole	ND U	9.3	1	09/12/19 16:41	9/10/19	
Chrysene	ND U	9.3	1	09/12/19 16:41	9/10/19	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 07:45
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-10D	**Units:**	ug/L
Lab Code:	R1908663-003	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Di-n-butyl Phthalate	ND U	9.3	1	09/12/19 16:41	9/10/19	
Di-n-octyl Phthalate	ND U	9.3	1	09/12/19 16:41	9/10/19	
Dibenz(a,h)anthracene	ND U	9.3	1	09/12/19 16:41	9/10/19	
Dibenzofuran	ND U	9.3	1	09/12/19 16:41	9/10/19	
Diethyl Phthalate	ND U	9.3	1	09/12/19 16:41	9/10/19	
Dimethyl Phthalate	ND U	9.3	1	09/12/19 16:41	9/10/19	
Fluoranthene	ND U	9.3	1	09/12/19 16:41	9/10/19	
Fluorene	ND U	9.3	1	09/12/19 16:41	9/10/19	
Hexachlorobenzene	ND U	9.3	1	09/12/19 16:41	9/10/19	
Hexachlorobutadiene	ND U	9.3	1	09/12/19 16:41	9/10/19	
Hexachlorocyclopentadiene	ND U	9.3	1	09/12/19 16:41	9/10/19	
Hexachloroethane	ND U	9.3	1	09/12/19 16:41	9/10/19	
Indeno(1,2,3-cd)pyrene	ND U	9.3	1	09/12/19 16:41	9/10/19	
Isophorone	ND U	9.3	1	09/12/19 16:41	9/10/19	
N-Nitrosodi-n-propylamine	ND U	9.3	1	09/12/19 16:41	9/10/19	
N-Nitrosodimethylamine	ND U	9.3	1	09/12/19 16:41	9/10/19	
N-Nitrosodiphenylamine	ND U	9.3	1	09/12/19 16:41	9/10/19	
Naphthalene	ND U	9.3	1	09/12/19 16:41	9/10/19	
Nitrobenzene	ND U	9.3	1	09/12/19 16:41	9/10/19	
Pentachlorophenol (PCP)	ND U	47	1	09/12/19 16:41	9/10/19	
Phenanthrene	ND U	9.3	1	09/12/19 16:41	9/10/19	
Phenol	ND U	9.3	1	09/12/19 16:41	9/10/19	
Pyrene	ND U	9.3	1	09/12/19 16:41	9/10/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	77	35 - 141	09/12/19 16:41	
2-Fluorobiphenyl	77	31 - 118	09/12/19 16:41	
2-Fluorophenol	35	10 - 105	09/12/19 16:41	
Nitrobenzene-d5	72	31 - 110	09/12/19 16:41	
Phenol-d6	19	10 - 107	09/12/19 16:41	
p-Terphenyl-d14	43	10 - 165	09/12/19 16:41	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 08:15
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-11S	**Units:**	ug/L
Lab Code:	R1908663-004	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	ND U	9.3	1	09/12/19 17:10	9/10/19	
1,2-Dichlorobenzene	ND U	9.3	1	09/12/19 17:10	9/10/19	
1,3-Dichlorobenzene	ND U	9.3	1	09/12/19 17:10	9/10/19	
1,4-Dichlorobenzene	ND U	9.3	1	09/12/19 17:10	9/10/19	
2,4,5-Trichlorophenol	ND U	9.3	1	09/12/19 17:10	9/10/19	
2,4,6-Trichlorophenol	ND U	9.3	1	09/12/19 17:10	9/10/19	
2,4-Dichlorophenol	ND U	9.3	1	09/12/19 17:10	9/10/19	
2,4-Dimethylphenol	ND U	9.3	1	09/12/19 17:10	9/10/19	
2,4-Dinitrophenol	ND U	47	1	09/12/19 17:10	9/10/19	
2,4-Dinitrotoluene	ND U	9.3	1	09/12/19 17:10	9/10/19	
2,6-Dinitrotoluene	ND U	9.3	1	09/12/19 17:10	9/10/19	
2-Chloronaphthalene	ND U	9.3	1	09/12/19 17:10	9/10/19	
2-Chlorophenol	ND U	9.3	1	09/12/19 17:10	9/10/19	
2-Methylnaphthalene	ND U	9.3	1	09/12/19 17:10	9/10/19	
2-Methylphenol	ND U	9.3	1	09/12/19 17:10	9/10/19	
2-Nitroaniline	ND U	47	1	09/12/19 17:10	9/10/19	
2-Nitrophenol	ND U	9.3	1	09/12/19 17:10	9/10/19	
3,3'-Dichlorobenzidine	ND U	9.3	1	09/12/19 17:10	9/10/19	
3- and 4-Methylphenol Coelution	ND U	9.3	1	09/12/19 17:10	9/10/19	
3-Nitroaniline	ND U	47	1	09/12/19 17:10	9/10/19	
4,6-Dinitro-2-methylphenol	ND U	47	1	09/12/19 17:10	9/10/19	
4-Bromophenyl Phenyl Ether	ND U	9.3	1	09/12/19 17:10	9/10/19	
4-Chloro-3-methylphenol	ND U	9.3	1	09/12/19 17:10	9/10/19	
4-Chloroaniline	ND U	9.3	1	09/12/19 17:10	9/10/19	
4-Chlorophenyl Phenyl Ether	ND U	9.3	1	09/12/19 17:10	9/10/19	
4-Nitroaniline	ND U	47	1	09/12/19 17:10	9/10/19	
4-Nitrophenol	ND U	47	1	09/12/19 17:10	9/10/19	
Acenaphthene	ND U	9.3	1	09/12/19 17:10	9/10/19	
Acenaphthylene	ND U	9.3	1	09/12/19 17:10	9/10/19	
Anthracene	ND U	9.3	1	09/12/19 17:10	9/10/19	
Benz(a)anthracene	ND U	9.3	1	09/12/19 17:10	9/10/19	
Benzo(a)pyrene	ND U	9.3	1	09/12/19 17:10	9/10/19	
Benzo(b)fluoranthene	ND U	9.3	1	09/12/19 17:10	9/10/19	
Benzo(g,h,i)perylene	ND U	9.3	1	09/12/19 17:10	9/10/19	
Benzo(k)fluoranthene	ND U	9.3	1	09/12/19 17:10	9/10/19	
Benzyl Alcohol	ND U	9.3	1	09/12/19 17:10	9/10/19	
2,2'-Oxybis(1-chloropropane)	ND U	9.3	1	09/12/19 17:10	9/10/19	
Bis(2-chloroethoxy)methane	ND U	9.3	1	09/12/19 17:10	9/10/19	
Bis(2-chloroethyl) Ether	ND U	9.3	1	09/12/19 17:10	9/10/19	
Bis(2-ethylhexyl) Phthalate	ND U	9.7	1	09/12/19 17:10	9/10/19	
Butyl Benzyl Phthalate	ND U	9.3	1	09/12/19 17:10	9/10/19	
Carbazole	ND U	9.3	1	09/12/19 17:10	9/10/19	
Chrysene	ND U	9.3	1	09/12/19 17:10	9/10/19	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 08:15
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-11S	**Units:**	ug/L
Lab Code:	R1908663-004	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Di-n-butyl Phthalate	ND U	9.3	1	09/12/19 17:10	9/10/19	
Di-n-octyl Phthalate	ND U	9.3	1	09/12/19 17:10	9/10/19	
Dibenz(a,h)anthracene	ND U	9.3	1	09/12/19 17:10	9/10/19	
Dibenzofuran	ND U	9.3	1	09/12/19 17:10	9/10/19	
Diethyl Phthalate	ND U	9.3	1	09/12/19 17:10	9/10/19	
Dimethyl Phthalate	ND U	9.3	1	09/12/19 17:10	9/10/19	
Fluoranthene	ND U	9.3	1	09/12/19 17:10	9/10/19	
Fluorene	ND U	9.3	1	09/12/19 17:10	9/10/19	
Hexachlorobenzene	ND U	9.3	1	09/12/19 17:10	9/10/19	
Hexachlorobutadiene	ND U	9.3	1	09/12/19 17:10	9/10/19	
Hexachlorocyclopentadiene	ND U	9.3	1	09/12/19 17:10	9/10/19	
Hexachloroethane	ND U	9.3	1	09/12/19 17:10	9/10/19	
Indeno(1,2,3-cd)pyrene	ND U	9.3	1	09/12/19 17:10	9/10/19	
Isophorone	ND U	9.3	1	09/12/19 17:10	9/10/19	
N-Nitrosodi-n-propylamine	ND U	9.3	1	09/12/19 17:10	9/10/19	
N-Nitrosodimethylamine	ND U	9.3	1	09/12/19 17:10	9/10/19	
N-Nitrosodiphenylamine	ND U	9.3	1	09/12/19 17:10	9/10/19	
Naphthalene	ND U	9.3	1	09/12/19 17:10	9/10/19	
Nitrobenzene	ND U	9.3	1	09/12/19 17:10	9/10/19	
Pentachlorophenol (PCP)	ND U	47	1	09/12/19 17:10	9/10/19	
Phenanthrene	ND U	9.3	1	09/12/19 17:10	9/10/19	
Phenol	ND U	9.3	1	09/12/19 17:10	9/10/19	
Pyrene	ND U	9.3	1	09/12/19 17:10	9/10/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	74	35 - 141	09/12/19 17:10	
2-Fluorobiphenyl	76	31 - 118	09/12/19 17:10	
2-Fluorophenol	35	10 - 105	09/12/19 17:10	
Nitrobenzene-d5	74	31 - 110	09/12/19 17:10	
Phenol-d6	21	10 - 107	09/12/19 17:10	
p-Terphenyl-d14	46	10 - 165	09/12/19 17:10	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 08:50
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-11M	**Units:**	ug/L
Lab Code:	R1908663-005	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	ND U	9.3	1	09/12/19 17:40	9/10/19	
1,2-Dichlorobenzene	ND U	9.3	1	09/12/19 17:40	9/10/19	
1,3-Dichlorobenzene	ND U	9.3	1	09/12/19 17:40	9/10/19	
1,4-Dichlorobenzene	ND U	9.3	1	09/12/19 17:40	9/10/19	
2,4,5-Trichlorophenol	ND U	9.3	1	09/12/19 17:40	9/10/19	
2,4,6-Trichlorophenol	ND U	9.3	1	09/12/19 17:40	9/10/19	
2,4-Dichlorophenol	ND U	9.3	1	09/12/19 17:40	9/10/19	
2,4-Dimethylphenol	ND U	9.3	1	09/12/19 17:40	9/10/19	
2,4-Dinitrophenol	ND U	47	1	09/12/19 17:40	9/10/19	
2,4-Dinitrotoluene	ND U	9.3	1	09/12/19 17:40	9/10/19	
2,6-Dinitrotoluene	ND U	9.3	1	09/12/19 17:40	9/10/19	
2-Chloronaphthalene	ND U	9.3	1	09/12/19 17:40	9/10/19	
2-Chlorophenol	ND U	9.3	1	09/12/19 17:40	9/10/19	
2-Methylnaphthalene	ND U	9.3	1	09/12/19 17:40	9/10/19	
2-Methylphenol	ND U	9.3	1	09/12/19 17:40	9/10/19	
2-Nitroaniline	ND U	47	1	09/12/19 17:40	9/10/19	
2-Nitrophenol	ND U	9.3	1	09/12/19 17:40	9/10/19	
3,3'-Dichlorobenzidine	ND U	9.3	1	09/12/19 17:40	9/10/19	
3- and 4-Methylphenol Coelution	ND U	9.3	1	09/12/19 17:40	9/10/19	
3-Nitroaniline	ND U	47	1	09/12/19 17:40	9/10/19	
4,6-Dinitro-2-methylphenol	ND U	47	1	09/12/19 17:40	9/10/19	
4-Bromophenyl Phenyl Ether	ND U	9.3	1	09/12/19 17:40	9/10/19	
4-Chloro-3-methylphenol	ND U	9.3	1	09/12/19 17:40	9/10/19	
4-Chloroaniline	ND U	9.3	1	09/12/19 17:40	9/10/19	
4-Chlorophenyl Phenyl Ether	ND U	9.3	1	09/12/19 17:40	9/10/19	
4-Nitroaniline	ND U	47	1	09/12/19 17:40	9/10/19	
4-Nitrophenol	ND U	47	1	09/12/19 17:40	9/10/19	
Acenaphthene	ND U	9.3	1	09/12/19 17:40	9/10/19	
Acenaphthylene	ND U	9.3	1	09/12/19 17:40	9/10/19	
Anthracene	ND U	9.3	1	09/12/19 17:40	9/10/19	
Benz(a)anthracene	ND U	9.3	1	09/12/19 17:40	9/10/19	
Benzo(a)pyrene	ND U	9.3	1	09/12/19 17:40	9/10/19	
Benzo(b)fluoranthene	ND U	9.3	1	09/12/19 17:40	9/10/19	
Benzo(g,h,i)perylene	ND U	9.3	1	09/12/19 17:40	9/10/19	
Benzo(k)fluoranthene	ND U	9.3	1	09/12/19 17:40	9/10/19	
Benzyl Alcohol	ND U	9.3	1	09/12/19 17:40	9/10/19	
2,2'-Oxybis(1-chloropropane)	ND U	9.3	1	09/12/19 17:40	9/10/19	
Bis(2-chloroethoxy)methane	ND U	9.3	1	09/12/19 17:40	9/10/19	
Bis(2-chloroethyl) Ether	ND U	9.3	1	09/12/19 17:40	9/10/19	
Bis(2-ethylhexyl) Phthalate	ND U	9.7	1	09/12/19 17:40	9/10/19	
Butyl Benzyl Phthalate	ND U	9.3	1	09/12/19 17:40	9/10/19	
Carbazole	ND U	9.3	1	09/12/19 17:40	9/10/19	
Chrysene	ND U	9.3	1	09/12/19 17:40	9/10/19	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 08:50
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-11M	**Units:**	ug/L
Lab Code:	R1908663-005	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Di-n-butyl Phthalate	ND U	9.3	1	09/12/19 17:40	9/10/19	
Di-n-octyl Phthalate	ND U	9.3	1	09/12/19 17:40	9/10/19	
Dibenz(a,h)anthracene	ND U	9.3	1	09/12/19 17:40	9/10/19	
Dibenzofuran	ND U	9.3	1	09/12/19 17:40	9/10/19	
Diethyl Phthalate	ND U	9.3	1	09/12/19 17:40	9/10/19	
Dimethyl Phthalate	ND U	9.3	1	09/12/19 17:40	9/10/19	
Fluoranthene	ND U	9.3	1	09/12/19 17:40	9/10/19	
Fluorene	ND U	9.3	1	09/12/19 17:40	9/10/19	
Hexachlorobenzene	ND U	9.3	1	09/12/19 17:40	9/10/19	
Hexachlorobutadiene	ND U	9.3	1	09/12/19 17:40	9/10/19	
Hexachlorocyclopentadiene	ND U	9.3	1	09/12/19 17:40	9/10/19	
Hexachloroethane	ND U	9.3	1	09/12/19 17:40	9/10/19	
Indeno(1,2,3-cd)pyrene	ND U	9.3	1	09/12/19 17:40	9/10/19	
Isophorone	ND U	9.3	1	09/12/19 17:40	9/10/19	
N-Nitrosodi-n-propylamine	ND U	9.3	1	09/12/19 17:40	9/10/19	
N-Nitrosodimethylamine	ND U	9.3	1	09/12/19 17:40	9/10/19	
N-Nitrosodiphenylamine	ND U	9.3	1	09/12/19 17:40	9/10/19	
Naphthalene	ND U	9.3	1	09/12/19 17:40	9/10/19	
Nitrobenzene	ND U	9.3	1	09/12/19 17:40	9/10/19	
Pentachlorophenol (PCP)	ND U	47	1	09/12/19 17:40	9/10/19	
Phenanthrene	ND U	9.3	1	09/12/19 17:40	9/10/19	
Phenol	ND U	9.3	1	09/12/19 17:40	9/10/19	
Pyrene	ND U	9.3	1	09/12/19 17:40	9/10/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	76	35 - 141	09/12/19 17:40	
2-Fluorobiphenyl	75	31 - 118	09/12/19 17:40	
2-Fluorophenol	39	10 - 105	09/12/19 17:40	
Nitrobenzene-d5	75	31 - 110	09/12/19 17:40	
Phenol-d6	23	10 - 107	09/12/19 17:40	
p-Terphenyl-d14	38	10 - 165	09/12/19 17:40	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 09:55
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-12S	**Units:**	ug/L
Lab Code:	R1908663-006	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	ND U	9.3	1	09/12/19 18:09	9/10/19	
1,2-Dichlorobenzene	ND U	9.3	1	09/12/19 18:09	9/10/19	
1,3-Dichlorobenzene	ND U	9.3	1	09/12/19 18:09	9/10/19	
1,4-Dichlorobenzene	ND U	9.3	1	09/12/19 18:09	9/10/19	
2,4,5-Trichlorophenol	ND U	9.3	1	09/12/19 18:09	9/10/19	
2,4,6-Trichlorophenol	ND U	9.3	1	09/12/19 18:09	9/10/19	
2,4-Dichlorophenol	ND U	9.3	1	09/12/19 18:09	9/10/19	
2,4-Dimethylphenol	ND U	9.3	1	09/12/19 18:09	9/10/19	
2,4-Dinitrophenol	ND U	47	1	09/12/19 18:09	9/10/19	
2,4-Dinitrotoluene	ND U	9.3	1	09/12/19 18:09	9/10/19	
2,6-Dinitrotoluene	ND U	9.3	1	09/12/19 18:09	9/10/19	
2-Chloronaphthalene	ND U	9.3	1	09/12/19 18:09	9/10/19	
2-Chlorophenol	ND U	9.3	1	09/12/19 18:09	9/10/19	
2-Methylnaphthalene	ND U	9.3	1	09/12/19 18:09	9/10/19	
2-Methylphenol	ND U	9.3	1	09/12/19 18:09	9/10/19	
2-Nitroaniline	ND U	47	1	09/12/19 18:09	9/10/19	
2-Nitrophenol	ND U	9.3	1	09/12/19 18:09	9/10/19	
3,3'-Dichlorobenzidine	ND U	9.3	1	09/12/19 18:09	9/10/19	
3- and 4-Methylphenol Coelution	ND U	9.3	1	09/12/19 18:09	9/10/19	
3-Nitroaniline	ND U	47	1	09/12/19 18:09	9/10/19	
4,6-Dinitro-2-methylphenol	ND U	47	1	09/12/19 18:09	9/10/19	
4-Bromophenyl Phenyl Ether	ND U	9.3	1	09/12/19 18:09	9/10/19	
4-Chloro-3-methylphenol	ND U	9.3	1	09/12/19 18:09	9/10/19	
4-Chloroaniline	ND U	9.3	1	09/12/19 18:09	9/10/19	
4-Chlorophenyl Phenyl Ether	ND U	9.3	1	09/12/19 18:09	9/10/19	
4-Nitroaniline	ND U	47	1	09/12/19 18:09	9/10/19	
4-Nitrophenol	ND U	47	1	09/12/19 18:09	9/10/19	
Acenaphthene	ND U	9.3	1	09/12/19 18:09	9/10/19	
Acenaphthylene	ND U	9.3	1	09/12/19 18:09	9/10/19	
Anthracene	ND U	9.3	1	09/12/19 18:09	9/10/19	
Benz(a)anthracene	ND U	9.3	1	09/12/19 18:09	9/10/19	
Benzo(a)pyrene	ND U	9.3	1	09/12/19 18:09	9/10/19	
Benzo(b)fluoranthene	ND U	9.3	1	09/12/19 18:09	9/10/19	
Benzo(g,h,i)perylene	ND U	9.3	1	09/12/19 18:09	9/10/19	
Benzo(k)fluoranthene	ND U	9.3	1	09/12/19 18:09	9/10/19	
Benzyl Alcohol	ND U	9.3	1	09/12/19 18:09	9/10/19	
2,2'-Oxybis(1-chloropropane)	ND U	9.3	1	09/12/19 18:09	9/10/19	
Bis(2-chloroethoxy)methane	ND U	9.3	1	09/12/19 18:09	9/10/19	
Bis(2-chloroethyl) Ether	ND U	9.3	1	09/12/19 18:09	9/10/19	
Bis(2-ethylhexyl) Phthalate	ND U	9.7	1	09/12/19 18:09	9/10/19	
Butyl Benzyl Phthalate	ND U	9.3	1	09/12/19 18:09	9/10/19	
Carbazole	ND U	9.3	1	09/12/19 18:09	9/10/19	
Chrysene	ND U	9.3	1	09/12/19 18:09	9/10/19	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 09:55
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-12S	**Units:**	ug/L
Lab Code:	R1908663-006	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Di-n-butyl Phthalate	ND U	9.3	1	09/12/19 18:09	9/10/19	
Di-n-octyl Phthalate	ND U	9.3	1	09/12/19 18:09	9/10/19	
Dibenz(a,h)anthracene	ND U	9.3	1	09/12/19 18:09	9/10/19	
Dibenzofuran	ND U	9.3	1	09/12/19 18:09	9/10/19	
Diethyl Phthalate	ND U	9.3	1	09/12/19 18:09	9/10/19	
Dimethyl Phthalate	ND U	9.3	1	09/12/19 18:09	9/10/19	
Fluoranthene	ND U	9.3	1	09/12/19 18:09	9/10/19	
Fluorene	ND U	9.3	1	09/12/19 18:09	9/10/19	
Hexachlorobenzene	ND U	9.3	1	09/12/19 18:09	9/10/19	
Hexachlorobutadiene	ND U	9.3	1	09/12/19 18:09	9/10/19	
Hexachlorocyclopentadiene	ND U	9.3	1	09/12/19 18:09	9/10/19	
Hexachloroethane	ND U	9.3	1	09/12/19 18:09	9/10/19	
Indeno(1,2,3-cd)pyrene	ND U	9.3	1	09/12/19 18:09	9/10/19	
Isophorone	ND U	9.3	1	09/12/19 18:09	9/10/19	
N-Nitrosodi-n-propylamine	ND U	9.3	1	09/12/19 18:09	9/10/19	
N-Nitrosodimethylamine	ND U	9.3	1	09/12/19 18:09	9/10/19	
N-Nitrosodiphenylamine	ND U	9.3	1	09/12/19 18:09	9/10/19	
Naphthalene	ND U	9.3	1	09/12/19 18:09	9/10/19	
Nitrobenzene	ND U	9.3	1	09/12/19 18:09	9/10/19	
Pentachlorophenol (PCP)	ND U	47	1	09/12/19 18:09	9/10/19	
Phenanthrene	ND U	9.3	1	09/12/19 18:09	9/10/19	
Phenol	ND U	9.3	1	09/12/19 18:09	9/10/19	
Pyrene	ND U	9.3	1	09/12/19 18:09	9/10/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	78	35 - 141	09/12/19 18:09	
2-Fluorobiphenyl	76	31 - 118	09/12/19 18:09	
2-Fluorophenol	36	10 - 105	09/12/19 18:09	
Nitrobenzene-d5	74	31 - 110	09/12/19 18:09	
Phenol-d6	22	10 - 107	09/12/19 18:09	
p-Terphenyl-d14	48	10 - 165	09/12/19 18:09	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 10:00
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-12M	**Units:**	ug/L
Lab Code:	R1908663-007	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	ND	U	9.3	1	09/12/19 18:37	9/10/19	
1,2-Dichlorobenzene	ND	U	9.3	1	09/12/19 18:37	9/10/19	
1,3-Dichlorobenzene	ND	U	9.3	1	09/12/19 18:37	9/10/19	
1,4-Dichlorobenzene	ND	U	9.3	1	09/12/19 18:37	9/10/19	
2,4,5-Trichlorophenol	ND	U	9.3	1	09/12/19 18:37	9/10/19	
2,4,6-Trichlorophenol	ND	U	9.3	1	09/12/19 18:37	9/10/19	
2,4-Dichlorophenol	ND	U	9.3	1	09/12/19 18:37	9/10/19	
2,4-Dimethylphenol	ND	U	9.3	1	09/12/19 18:37	9/10/19	
2,4-Dinitrophenol	ND	U	47	1	09/12/19 18:37	9/10/19	
2,4-Dinitrotoluene	ND	U	9.3	1	09/12/19 18:37	9/10/19	
2,6-Dinitrotoluene	ND	U	9.3	1	09/12/19 18:37	9/10/19	
2-Chloronaphthalene	ND	U	9.3	1	09/12/19 18:37	9/10/19	
2-Chlorophenol	ND	U	9.3	1	09/12/19 18:37	9/10/19	
2-Methylnaphthalene	ND	U	9.3	1	09/12/19 18:37	9/10/19	
2-Methylphenol	ND	U	9.3	1	09/12/19 18:37	9/10/19	
2-Nitroaniline	ND	U	47	1	09/12/19 18:37	9/10/19	
2-Nitrophenol	ND	U	9.3	1	09/12/19 18:37	9/10/19	
3,3'-Dichlorobenzidine	ND	U	9.3	1	09/12/19 18:37	9/10/19	
3- and 4-Methylphenol Coelution	ND	U	9.3	1	09/12/19 18:37	9/10/19	
3-Nitroaniline	ND	U	47	1	09/12/19 18:37	9/10/19	
4,6-Dinitro-2-methylphenol	ND	U	47	1	09/12/19 18:37	9/10/19	
4-Bromophenyl Phenyl Ether	ND	U	9.3	1	09/12/19 18:37	9/10/19	
4-Chloro-3-methylphenol	ND	U	9.3	1	09/12/19 18:37	9/10/19	
4-Chloroaniline	ND	U	9.3	1	09/12/19 18:37	9/10/19	
4-Chlorophenyl Phenyl Ether	ND	U	9.3	1	09/12/19 18:37	9/10/19	
4-Nitroaniline	ND	U	47	1	09/12/19 18:37	9/10/19	
4-Nitrophenol	ND	U	47	1	09/12/19 18:37	9/10/19	
Acenaphthene	ND	U	9.3	1	09/12/19 18:37	9/10/19	
Acenaphthylene	ND	U	9.3	1	09/12/19 18:37	9/10/19	
Anthracene	ND	U	9.3	1	09/12/19 18:37	9/10/19	
Benz(a)anthracene	ND	U	9.3	1	09/12/19 18:37	9/10/19	
Benzo(a)pyrene	ND	U	9.3	1	09/12/19 18:37	9/10/19	
Benzo(b)fluoranthene	ND	U	9.3	1	09/12/19 18:37	9/10/19	
Benzo(g,h,i)perylene	ND	U	9.3	1	09/12/19 18:37	9/10/19	
Benzo(k)fluoranthene	ND	U	9.3	1	09/12/19 18:37	9/10/19	
Benzyl Alcohol	ND	U	9.3	1	09/12/19 18:37	9/10/19	
2,2'-Oxybis(1-chloropropane)	ND	U	9.3	1	09/12/19 18:37	9/10/19	
Bis(2-chloroethoxy)methane	ND	U	9.3	1	09/12/19 18:37	9/10/19	
Bis(2-chloroethyl) Ether	ND	U	9.3	1	09/12/19 18:37	9/10/19	
Bis(2-ethylhexyl) Phthalate	**120**	**D**	20	2	09/13/19 17:00	9/10/19	
Butyl Benzyl Phthalate	ND	U	9.3	1	09/12/19 18:37	9/10/19	
Carbazole	ND	U	9.3	1	09/12/19 18:37	9/10/19	
Chrysene	ND	U	9.3	1	09/12/19 18:37	9/10/19	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 10:00
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-12M	**Units:**	ug/L
Lab Code:	R1908663-007	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Di-n-butyl Phthalate	ND U	9.3	1	09/12/19 18:37	9/10/19	
Di-n-octyl Phthalate	ND U	9.3	1	09/12/19 18:37	9/10/19	
Dibenz(a,h)anthracene	ND U	9.3	1	09/12/19 18:37	9/10/19	
Dibenzofuran	ND U	9.3	1	09/12/19 18:37	9/10/19	
Diethyl Phthalate	ND U	9.3	1	09/12/19 18:37	9/10/19	
Dimethyl Phthalate	ND U	9.3	1	09/12/19 18:37	9/10/19	
Fluoranthene	ND U	9.3	1	09/12/19 18:37	9/10/19	
Fluorene	ND U	9.3	1	09/12/19 18:37	9/10/19	
Hexachlorobenzene	ND U	9.3	1	09/12/19 18:37	9/10/19	
Hexachlorobutadiene	ND U	9.3	1	09/12/19 18:37	9/10/19	
Hexachlorocyclopentadiene	ND U	9.3	1	09/12/19 18:37	9/10/19	
Hexachloroethane	ND U	9.3	1	09/12/19 18:37	9/10/19	
Indeno(1,2,3-cd)pyrene	ND U	9.3	1	09/12/19 18:37	9/10/19	
Isophorone	ND U	9.3	1	09/12/19 18:37	9/10/19	
N-Nitrosodi-n-propylamine	ND U	9.3	1	09/12/19 18:37	9/10/19	
N-Nitrosodimethylamine	ND U	9.3	1	09/12/19 18:37	9/10/19	
N-Nitrosodiphenylamine	ND U	9.3	1	09/12/19 18:37	9/10/19	
Naphthalene	ND U	9.3	1	09/12/19 18:37	9/10/19	
Nitrobenzene	ND U	9.3	1	09/12/19 18:37	9/10/19	
Pentachlorophenol (PCP)	ND U	47	1	09/12/19 18:37	9/10/19	
Phenanthrene	ND U	9.3	1	09/12/19 18:37	9/10/19	
Phenol	ND U	9.3	1	09/12/19 18:37	9/10/19	
Pyrene	ND U	9.3	1	09/12/19 18:37	9/10/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	80	35 - 141	09/12/19 18:37	
2-Fluorobiphenyl	75	31 - 118	09/12/19 18:37	
2-Fluorophenol	35	10 - 105	09/12/19 18:37	
Nitrobenzene-d5	71	31 - 110	09/12/19 18:37	
Phenol-d6	22	10 - 107	09/12/19 18:37	
p-Terphenyl-d14	53	10 - 165	09/12/19 18:37	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 10:30
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-12D	**Units:**	ug/L
Lab Code:	R1908663-008	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	ND U	9.7	1	09/12/19 19:06	9/10/19	
1,2-Dichlorobenzene	ND U	9.7	1	09/12/19 19:06	9/10/19	
1,3-Dichlorobenzene	ND U	9.7	1	09/12/19 19:06	9/10/19	
1,4-Dichlorobenzene	ND U	9.7	1	09/12/19 19:06	9/10/19	
2,4,5-Trichlorophenol	ND U	9.7	1	09/12/19 19:06	9/10/19	
2,4,6-Trichlorophenol	ND U	9.7	1	09/12/19 19:06	9/10/19	
2,4-Dichlorophenol	ND U	9.7	1	09/12/19 19:06	9/10/19	
2,4-Dimethylphenol	ND U	9.7	1	09/12/19 19:06	9/10/19	
2,4-Dinitrophenol	ND U	49	1	09/12/19 19:06	9/10/19	
2,4-Dinitrotoluene	ND U	9.7	1	09/12/19 19:06	9/10/19	
2,6-Dinitrotoluene	ND U	9.7	1	09/12/19 19:06	9/10/19	
2-Chloronaphthalene	ND U	9.7	1	09/12/19 19:06	9/10/19	
2-Chlorophenol	ND U	9.7	1	09/12/19 19:06	9/10/19	
2-Methylnaphthalene	ND U	9.7	1	09/12/19 19:06	9/10/19	
2-Methylphenol	ND U	9.7	1	09/12/19 19:06	9/10/19	
2-Nitroaniline	ND U	49	1	09/12/19 19:06	9/10/19	
2-Nitrophenol	ND U	9.7	1	09/12/19 19:06	9/10/19	
3,3'-Dichlorobenzidine	ND U	9.7	1	09/12/19 19:06	9/10/19	
3- and 4-Methylphenol Coelution	ND U	9.7	1	09/12/19 19:06	9/10/19	
3-Nitroaniline	ND U	49	1	09/12/19 19:06	9/10/19	
4,6-Dinitro-2-methylphenol	ND U	49	1	09/12/19 19:06	9/10/19	
4-Bromophenyl Phenyl Ether	ND U	9.7	1	09/12/19 19:06	9/10/19	
4-Chloro-3-methylphenol	ND U	9.7	1	09/12/19 19:06	9/10/19	
4-Chloroaniline	ND U	9.7	1	09/12/19 19:06	9/10/19	
4-Chlorophenyl Phenyl Ether	ND U	9.7	1	09/12/19 19:06	9/10/19	
4-Nitroaniline	ND U	49	1	09/12/19 19:06	9/10/19	
4-Nitrophenol	ND U	49	1	09/12/19 19:06	9/10/19	
Acenaphthene	ND U	9.7	1	09/12/19 19:06	9/10/19	
Acenaphthylene	ND U	9.7	1	09/12/19 19:06	9/10/19	
Anthracene	ND U	9.7	1	09/12/19 19:06	9/10/19	
Benz(a)anthracene	ND U	9.7	1	09/12/19 19:06	9/10/19	
Benzo(a)pyrene	ND U	9.7	1	09/12/19 19:06	9/10/19	
Benzo(b)fluoranthene	ND U	9.7	1	09/12/19 19:06	9/10/19	
Benzo(g,h,i)perylene	ND U	9.7	1	09/12/19 19:06	9/10/19	
Benzo(k)fluoranthene	ND U	9.7	1	09/12/19 19:06	9/10/19	
Benzyl Alcohol	ND U	9.7	1	09/12/19 19:06	9/10/19	
2,2'-Oxybis(1-chloropropane)	ND U	9.7	1	09/12/19 19:06	9/10/19	
Bis(2-chloroethoxy)methane	ND U	9.7	1	09/12/19 19:06	9/10/19	
Bis(2-chloroethyl) Ether	ND U	9.7	1	09/12/19 19:06	9/10/19	
Bis(2-ethylhexyl) Phthalate	ND U	9.7	1	09/12/19 19:06	9/10/19	
Butyl Benzyl Phthalate	ND U	9.7	1	09/12/19 19:06	9/10/19	
Carbazole	ND U	9.7	1	09/12/19 19:06	9/10/19	
Chrysene	ND U	9.7	1	09/12/19 19:06	9/10/19	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 10:30
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-12D	**Units:**	ug/L
Lab Code:	R1908663-008	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Di-n-butyl Phthalate	ND U	9.7	1	09/12/19 19:06	9/10/19	
Di-n-octyl Phthalate	ND U	9.7	1	09/12/19 19:06	9/10/19	
Dibenz(a,h)anthracene	ND U	9.7	1	09/12/19 19:06	9/10/19	
Dibenzofuran	ND U	9.7	1	09/12/19 19:06	9/10/19	
Diethyl Phthalate	ND U	9.7	1	09/12/19 19:06	9/10/19	
Dimethyl Phthalate	ND U	9.7	1	09/12/19 19:06	9/10/19	
Fluoranthene	ND U	9.7	1	09/12/19 19:06	9/10/19	
Fluorene	ND U	9.7	1	09/12/19 19:06	9/10/19	
Hexachlorobenzene	ND U	9.7	1	09/12/19 19:06	9/10/19	
Hexachlorobutadiene	ND U	9.7	1	09/12/19 19:06	9/10/19	
Hexachlorocyclopentadiene	ND U	9.7	1	09/12/19 19:06	9/10/19	
Hexachloroethane	ND U	9.7	1	09/12/19 19:06	9/10/19	
Indeno(1,2,3-cd)pyrene	ND U	9.7	1	09/12/19 19:06	9/10/19	
Isophorone	ND U	9.7	1	09/12/19 19:06	9/10/19	
N-Nitrosodi-n-propylamine	ND U	9.7	1	09/12/19 19:06	9/10/19	
N-Nitrosodimethylamine	ND U	9.7	1	09/12/19 19:06	9/10/19	
N-Nitrosodiphenylamine	ND U	9.7	1	09/12/19 19:06	9/10/19	
Naphthalene	ND U	9.7	1	09/12/19 19:06	9/10/19	
Nitrobenzene	ND U	9.7	1	09/12/19 19:06	9/10/19	
Pentachlorophenol (PCP)	ND U	49	1	09/12/19 19:06	9/10/19	
Phenanthrene	ND U	9.7	1	09/12/19 19:06	9/10/19	
Phenol	ND U	9.7	1	09/12/19 19:06	9/10/19	
Pyrene	ND U	9.7	1	09/12/19 19:06	9/10/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	79	35 - 141	09/12/19 19:06	
2-Fluorobiphenyl	82	31 - 118	09/12/19 19:06	
2-Fluorophenol	42	10 - 105	09/12/19 19:06	
Nitrobenzene-d5	79	31 - 110	09/12/19 19:06	
Phenol-d6	25	10 - 107	09/12/19 19:06	
p-Terphenyl-d14	63	10 - 165	09/12/19 19:06	

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 08:55
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-13S	**Units:**	ug/L
Lab Code:	R1908663-009	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	ND U	10	1	09/12/19 19:34	9/10/19	
1,2-Dichlorobenzene	ND U	10	1	09/12/19 19:34	9/10/19	
1,3-Dichlorobenzene	ND U	10	1	09/12/19 19:34	9/10/19	
1,4-Dichlorobenzene	ND U	10	1	09/12/19 19:34	9/10/19	
2,4,5-Trichlorophenol	ND U	10	1	09/12/19 19:34	9/10/19	
2,4,6-Trichlorophenol	ND U	10	1	09/12/19 19:34	9/10/19	
2,4-Dichlorophenol	ND U	10	1	09/12/19 19:34	9/10/19	
2,4-Dimethylphenol	ND U	10	1	09/12/19 19:34	9/10/19	
2,4-Dinitrophenol	ND U	50	1	09/12/19 19:34	9/10/19	
2,4-Dinitrotoluene	ND U	10	1	09/12/19 19:34	9/10/19	
2,6-Dinitrotoluene	ND U	10	1	09/12/19 19:34	9/10/19	
2-Chloronaphthalene	ND U	10	1	09/12/19 19:34	9/10/19	
2-Chlorophenol	ND U	10	1	09/12/19 19:34	9/10/19	
2-Methylnaphthalene	ND U	10	1	09/12/19 19:34	9/10/19	
2-Methylphenol	ND U	10	1	09/12/19 19:34	9/10/19	
2-Nitroaniline	ND U	50	1	09/12/19 19:34	9/10/19	
2-Nitrophenol	ND U	10	1	09/12/19 19:34	9/10/19	
3,3'-Dichlorobenzidine	ND U	10	1	09/12/19 19:34	9/10/19	
3- and 4-Methylphenol Coelution	ND U	10	1	09/12/19 19:34	9/10/19	
3-Nitroaniline	ND U	50	1	09/12/19 19:34	9/10/19	
4,6-Dinitro-2-methylphenol	ND U	50	1	09/12/19 19:34	9/10/19	
4-Bromophenyl Phenyl Ether	ND U	10	1	09/12/19 19:34	9/10/19	
4-Chloro-3-methylphenol	ND U	10	1	09/12/19 19:34	9/10/19	
4-Chloroaniline	ND U	10	1	09/12/19 19:34	9/10/19	
4-Chlorophenyl Phenyl Ether	ND U	10	1	09/12/19 19:34	9/10/19	
4-Nitroaniline	ND U	50	1	09/12/19 19:34	9/10/19	
4-Nitrophenol	ND U	50	1	09/12/19 19:34	9/10/19	
Acenaphthene	ND U	10	1	09/12/19 19:34	9/10/19	
Acenaphthylene	ND U	10	1	09/12/19 19:34	9/10/19	
Anthracene	ND U	10	1	09/12/19 19:34	9/10/19	
Benz(a)anthracene	ND U	10	1	09/12/19 19:34	9/10/19	
Benzo(a)pyrene	ND U	10	1	09/12/19 19:34	9/10/19	
Benzo(b)fluoranthene	ND U	10	1	09/12/19 19:34	9/10/19	
Benzo(g,h,i)perylene	ND U	10	1	09/12/19 19:34	9/10/19	
Benzo(k)fluoranthene	ND U	10	1	09/12/19 19:34	9/10/19	
Benzyl Alcohol	ND U	10	1	09/12/19 19:34	9/10/19	
2,2'-Oxybis(1-chloropropane)	ND U	10	1	09/12/19 19:34	9/10/19	
Bis(2-chloroethoxy)methane	ND U	10	1	09/12/19 19:34	9/10/19	
Bis(2-chloroethyl) Ether	ND U	10	1	09/12/19 19:34	9/10/19	
Bis(2-ethylhexyl) Phthalate	ND U	10	1	09/12/19 19:34	9/10/19	
Butyl Benzyl Phthalate	ND U	10	1	09/12/19 19:34	9/10/19	
Carbazole	ND U	10	1	09/12/19 19:34	9/10/19	
Chrysene	ND U	10	1	09/12/19 19:34	9/10/19	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 08:55
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-13S	**Units:**	ug/L
Lab Code:	R1908663-009	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Di-n-butyl Phthalate	ND U	10	1	09/12/19 19:34	9/10/19	
Di-n-octyl Phthalate	ND U	10	1	09/12/19 19:34	9/10/19	
Dibenz(a,h)anthracene	ND U	10	1	09/12/19 19:34	9/10/19	
Dibenzofuran	ND U	10	1	09/12/19 19:34	9/10/19	
Diethyl Phthalate	ND U	10	1	09/12/19 19:34	9/10/19	
Dimethyl Phthalate	ND U	10	1	09/12/19 19:34	9/10/19	
Fluoranthene	ND U	10	1	09/12/19 19:34	9/10/19	
Fluorene	ND U	10	1	09/12/19 19:34	9/10/19	
Hexachlorobenzene	ND U	10	1	09/12/19 19:34	9/10/19	
Hexachlorobutadiene	ND U	10	1	09/12/19 19:34	9/10/19	
Hexachlorocyclopentadiene	ND U	10	1	09/12/19 19:34	9/10/19	
Hexachloroethane	ND U	10	1	09/12/19 19:34	9/10/19	
Indeno(1,2,3-cd)pyrene	ND U	10	1	09/12/19 19:34	9/10/19	
Isophorone	ND U	10	1	09/12/19 19:34	9/10/19	
N-Nitrosodi-n-propylamine	ND U	10	1	09/12/19 19:34	9/10/19	
N-Nitrosodimethylamine	ND U	10	1	09/12/19 19:34	9/10/19	
N-Nitrosodiphenylamine	ND U	10	1	09/12/19 19:34	9/10/19	
Naphthalene	ND U	10	1	09/12/19 19:34	9/10/19	
Nitrobenzene	ND U	10	1	09/12/19 19:34	9/10/19	
Pentachlorophenol (PCP)	ND U	50	1	09/12/19 19:34	9/10/19	
Phenanthrene	ND U	10	1	09/12/19 19:34	9/10/19	
Phenol	ND U	10	1	09/12/19 19:34	9/10/19	
Pyrene	ND U	10	1	09/12/19 19:34	9/10/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	84	35 - 141	09/12/19 19:34	
2-Fluorobiphenyl	81	31 - 118	09/12/19 19:34	
2-Fluorophenol	42	10 - 105	09/12/19 19:34	
Nitrobenzene-d5	79	31 - 110	09/12/19 19:34	
Phenol-d6	25	10 - 107	09/12/19 19:34	
p-Terphenyl-d14	53	10 - 165	09/12/19 19:34	

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 08:25
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-13M	**Units:**	ug/L
Lab Code:	R1908663-010	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	ND U	9.7	1	09/12/19 20:02	9/10/19	
1,2-Dichlorobenzene	ND U	9.7	1	09/12/19 20:02	9/10/19	
1,3-Dichlorobenzene	ND U	9.7	1	09/12/19 20:02	9/10/19	
1,4-Dichlorobenzene	ND U	9.7	1	09/12/19 20:02	9/10/19	
2,4,5-Trichlorophenol	ND U	9.7	1	09/12/19 20:02	9/10/19	
2,4,6-Trichlorophenol	ND U	9.7	1	09/12/19 20:02	9/10/19	
2,4-Dichlorophenol	ND U	9.7	1	09/12/19 20:02	9/10/19	
2,4-Dimethylphenol	ND U	9.7	1	09/12/19 20:02	9/10/19	
2,4-Dinitrophenol	ND U	49	1	09/12/19 20:02	9/10/19	
2,4-Dinitrotoluene	ND U	9.7	1	09/12/19 20:02	9/10/19	
2,6-Dinitrotoluene	ND U	9.7	1	09/12/19 20:02	9/10/19	
2-Chloronaphthalene	ND U	9.7	1	09/12/19 20:02	9/10/19	
2-Chlorophenol	ND U	9.7	1	09/12/19 20:02	9/10/19	
2-Methylnaphthalene	ND U	9.7	1	09/12/19 20:02	9/10/19	
2-Methylphenol	ND U	9.7	1	09/12/19 20:02	9/10/19	
2-Nitroaniline	ND U	49	1	09/12/19 20:02	9/10/19	
2-Nitrophenol	ND U	9.7	1	09/12/19 20:02	9/10/19	
3,3'-Dichlorobenzidine	ND U	9.7	1	09/12/19 20:02	9/10/19	
3- and 4-Methylphenol Coelution	ND U	9.7	1	09/12/19 20:02	9/10/19	
3-Nitroaniline	ND U	49	1	09/12/19 20:02	9/10/19	
4,6-Dinitro-2-methylphenol	ND U	49	1	09/12/19 20:02	9/10/19	
4-Bromophenyl Phenyl Ether	ND U	9.7	1	09/12/19 20:02	9/10/19	
4-Chloro-3-methylphenol	ND U	9.7	1	09/12/19 20:02	9/10/19	
4-Chloroaniline	ND U	9.7	1	09/12/19 20:02	9/10/19	
4-Chlorophenyl Phenyl Ether	ND U	9.7	1	09/12/19 20:02	9/10/19	
4-Nitroaniline	ND U	49	1	09/12/19 20:02	9/10/19	
4-Nitrophenol	ND U	49	1	09/12/19 20:02	9/10/19	
Acenaphthene	ND U	9.7	1	09/12/19 20:02	9/10/19	
Acenaphthylene	ND U	9.7	1	09/12/19 20:02	9/10/19	
Anthracene	ND U	9.7	1	09/12/19 20:02	9/10/19	
Benz(a)anthracene	ND U	9.7	1	09/12/19 20:02	9/10/19	
Benzo(a)pyrene	ND U	9.7	1	09/12/19 20:02	9/10/19	
Benzo(b)fluoranthene	ND U	9.7	1	09/12/19 20:02	9/10/19	
Benzo(g,h,i)perylene	ND U	9.7	1	09/12/19 20:02	9/10/19	
Benzo(k)fluoranthene	ND U	9.7	1	09/12/19 20:02	9/10/19	
Benzyl Alcohol	ND U	9.7	1	09/12/19 20:02	9/10/19	
2,2'-Oxybis(1-chloropropane)	ND U	9.7	1	09/12/19 20:02	9/10/19	
Bis(2-chloroethoxy)methane	ND U	9.7	1	09/12/19 20:02	9/10/19	
Bis(2-chloroethyl) Ether	ND U	9.7	1	09/12/19 20:02	9/10/19	
Bis(2-ethylhexyl) Phthalate	ND U	9.7	1	09/12/19 20:02	9/10/19	
Butyl Benzyl Phthalate	ND U	9.7	1	09/12/19 20:02	9/10/19	
Carbazole	ND U	9.7	1	09/12/19 20:02	9/10/19	
Chrysene	ND U	9.7	1	09/12/19 20:02	9/10/19	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 08:25
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-13M	**Units:**	ug/L
Lab Code:	R1908663-010	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Di-n-butyl Phthalate	ND U	9.7	1	09/12/19 20:02	9/10/19	
Di-n-octyl Phthalate	ND U	9.7	1	09/12/19 20:02	9/10/19	
Dibenz(a,h)anthracene	ND U	9.7	1	09/12/19 20:02	9/10/19	
Dibenzofuran	ND U	9.7	1	09/12/19 20:02	9/10/19	
Diethyl Phthalate	ND U	9.7	1	09/12/19 20:02	9/10/19	
Dimethyl Phthalate	ND U	9.7	1	09/12/19 20:02	9/10/19	
Fluoranthene	ND U	9.7	1	09/12/19 20:02	9/10/19	
Fluorene	ND U	9.7	1	09/12/19 20:02	9/10/19	
Hexachlorobenzene	ND U	9.7	1	09/12/19 20:02	9/10/19	
Hexachlorobutadiene	ND U	9.7	1	09/12/19 20:02	9/10/19	
Hexachlorocyclopentadiene	ND U	9.7	1	09/12/19 20:02	9/10/19	
Hexachloroethane	ND U	9.7	1	09/12/19 20:02	9/10/19	
Indeno(1,2,3-cd)pyrene	ND U	9.7	1	09/12/19 20:02	9/10/19	
Isophorone	ND U	9.7	1	09/12/19 20:02	9/10/19	
N-Nitrosodi-n-propylamine	ND U	9.7	1	09/12/19 20:02	9/10/19	
N-Nitrosodimethylamine	ND U	9.7	1	09/12/19 20:02	9/10/19	
N-Nitrosodiphenylamine	ND U	9.7	1	09/12/19 20:02	9/10/19	
Naphthalene	ND U	9.7	1	09/12/19 20:02	9/10/19	
Nitrobenzene	ND U	9.7	1	09/12/19 20:02	9/10/19	
Pentachlorophenol (PCP)	ND U	49	1	09/12/19 20:02	9/10/19	
Phenanthrene	ND U	9.7	1	09/12/19 20:02	9/10/19	
Phenol	ND U	9.7	1	09/12/19 20:02	9/10/19	
Pyrene	ND U	9.7	1	09/12/19 20:02	9/10/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	79	35 - 141	09/12/19 20:02	
2-Fluorobiphenyl	80	31 - 118	09/12/19 20:02	
2-Fluorophenol	39	10 - 105	09/12/19 20:02	
Nitrobenzene-d5	78	31 - 110	09/12/19 20:02	
Phenol-d6	24	10 - 107	09/12/19 20:02	
p-Terphenyl-d14	39	10 - 165	09/12/19 20:02	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 09:35
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-14S	**Units:**	ug/L
Lab Code:	R1908663-011	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	ND U	9.3	1	09/12/19 20:31	9/10/19	
1,2-Dichlorobenzene	ND U	9.3	1	09/12/19 20:31	9/10/19	
1,3-Dichlorobenzene	ND U	9.3	1	09/12/19 20:31	9/10/19	
1,4-Dichlorobenzene	ND U	9.3	1	09/12/19 20:31	9/10/19	
2,4,5-Trichlorophenol	ND U	9.3	1	09/12/19 20:31	9/10/19	
2,4,6-Trichlorophenol	ND U	9.3	1	09/12/19 20:31	9/10/19	
2,4-Dichlorophenol	ND U	9.3	1	09/12/19 20:31	9/10/19	
2,4-Dimethylphenol	ND U	9.3	1	09/12/19 20:31	9/10/19	
2,4-Dinitrophenol	ND U	47	1	09/12/19 20:31	9/10/19	
2,4-Dinitrotoluene	ND U	9.3	1	09/12/19 20:31	9/10/19	
2,6-Dinitrotoluene	ND U	9.3	1	09/12/19 20:31	9/10/19	
2-Chloronaphthalene	ND U	9.3	1	09/12/19 20:31	9/10/19	
2-Chlorophenol	ND U	9.3	1	09/12/19 20:31	9/10/19	
2-Methylnaphthalene	ND U	9.3	1	09/12/19 20:31	9/10/19	
2-Methylphenol	ND U	9.3	1	09/12/19 20:31	9/10/19	
2-Nitroaniline	ND U	47	1	09/12/19 20:31	9/10/19	
2-Nitrophenol	ND U	9.3	1	09/12/19 20:31	9/10/19	
3,3'-Dichlorobenzidine	ND U	9.3	1	09/12/19 20:31	9/10/19	
3- and 4-Methylphenol Coelution	ND U	9.3	1	09/12/19 20:31	9/10/19	
3-Nitroaniline	ND U	47	1	09/12/19 20:31	9/10/19	
4,6-Dinitro-2-methylphenol	ND U	47	1	09/12/19 20:31	9/10/19	
4-Bromophenyl Phenyl Ether	ND U	9.3	1	09/12/19 20:31	9/10/19	
4-Chloro-3-methylphenol	ND U	9.3	1	09/12/19 20:31	9/10/19	
4-Chloroaniline	ND U	9.3	1	09/12/19 20:31	9/10/19	
4-Chlorophenyl Phenyl Ether	ND U	9.3	1	09/12/19 20:31	9/10/19	
4-Nitroaniline	ND U	47	1	09/12/19 20:31	9/10/19	
4-Nitrophenol	ND U	47	1	09/12/19 20:31	9/10/19	
Acenaphthene	ND U	9.3	1	09/12/19 20:31	9/10/19	
Acenaphthylene	ND U	9.3	1	09/12/19 20:31	9/10/19	
Anthracene	ND U	9.3	1	09/12/19 20:31	9/10/19	
Benz(a)anthracene	ND U	9.3	1	09/12/19 20:31	9/10/19	
Benzo(a)pyrene	ND U	9.3	1	09/12/19 20:31	9/10/19	
Benzo(b)fluoranthene	ND U	9.3	1	09/12/19 20:31	9/10/19	
Benzo(g,h,i)perylene	ND U	9.3	1	09/12/19 20:31	9/10/19	
Benzo(k)fluoranthene	ND U	9.3	1	09/12/19 20:31	9/10/19	
Benzyl Alcohol	ND U	9.3	1	09/12/19 20:31	9/10/19	
2,2'-Oxybis(1-chloropropane)	ND U	9.3	1	09/12/19 20:31	9/10/19	
Bis(2-chloroethoxy)methane	ND U	9.3	1	09/12/19 20:31	9/10/19	
Bis(2-chloroethyl) Ether	ND U	9.3	1	09/12/19 20:31	9/10/19	
Bis(2-ethylhexyl) Phthalate	ND U	9.7	1	09/12/19 20:31	9/10/19	
Butyl Benzyl Phthalate	ND U	9.3	1	09/12/19 20:31	9/10/19	
Carbazole	ND U	9.3	1	09/12/19 20:31	9/10/19	
Chrysene	ND U	9.3	1	09/12/19 20:31	9/10/19	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 09:35
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-14S	**Units:**	ug/L
Lab Code:	R1908663-011	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Di-n-butyl Phthalate	ND U	9.3	1	09/12/19 20:31	9/10/19	
Di-n-octyl Phthalate	ND U	9.3	1	09/12/19 20:31	9/10/19	
Dibenz(a,h)anthracene	ND U	9.3	1	09/12/19 20:31	9/10/19	
Dibenzofuran	ND U	9.3	1	09/12/19 20:31	9/10/19	
Diethyl Phthalate	ND U	9.3	1	09/12/19 20:31	9/10/19	
Dimethyl Phthalate	ND U	9.3	1	09/12/19 20:31	9/10/19	
Fluoranthene	ND U	9.3	1	09/12/19 20:31	9/10/19	
Fluorene	ND U	9.3	1	09/12/19 20:31	9/10/19	
Hexachlorobenzene	ND U	9.3	1	09/12/19 20:31	9/10/19	
Hexachlorobutadiene	ND U	9.3	1	09/12/19 20:31	9/10/19	
Hexachlorocyclopentadiene	ND U	9.3	1	09/12/19 20:31	9/10/19	
Hexachloroethane	ND U	9.3	1	09/12/19 20:31	9/10/19	
Indeno(1,2,3-cd)pyrene	ND U	9.3	1	09/12/19 20:31	9/10/19	
Isophorone	ND U	9.3	1	09/12/19 20:31	9/10/19	
N-Nitrosodi-n-propylamine	ND U	9.3	1	09/12/19 20:31	9/10/19	
N-Nitrosodimethylamine	ND U	9.3	1	09/12/19 20:31	9/10/19	
N-Nitrosodiphenylamine	ND U	9.3	1	09/12/19 20:31	9/10/19	
Naphthalene	ND U	9.3	1	09/12/19 20:31	9/10/19	
Nitrobenzene	ND U	9.3	1	09/12/19 20:31	9/10/19	
Pentachlorophenol (PCP)	ND U	47	1	09/12/19 20:31	9/10/19	
Phenanthrene	ND U	9.3	1	09/12/19 20:31	9/10/19	
Phenol	ND U	9.3	1	09/12/19 20:31	9/10/19	
Pyrene	ND U	9.3	1	09/12/19 20:31	9/10/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	78	35 - 141	09/12/19 20:31	
2-Fluorobiphenyl	73	31 - 118	09/12/19 20:31	
2-Fluorophenol	40	10 - 105	09/12/19 20:31	
Nitrobenzene-d5	65	31 - 110	09/12/19 20:31	
Phenol-d6	23	10 - 107	09/12/19 20:31	
p-Terphenyl-d14	41	10 - 165	09/12/19 20:31	

Metals

ALS Environmental—Rochester Laboratory
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Phone (585) 288-5380 Fax (585) 288-8475
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Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/08/19 11:35
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-10S	**Basis:**	NA
Lab Code:	R1908663-001		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Dissolved	6010C	ND U	ug/L	10	1	09/16/19 17:40	09/12/19	
Lead, Dissolved	6010C	ND U	ug/L	50	1	09/16/19 17:40	09/12/19	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/08/19 11:30
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-10M	**Basis:**	NA
Lab Code:	R1908663-002		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Dissolved	6010C	ND U	ug/L	10	1	09/16/19 17:43	09/12/19	
Lead, Dissolved	6010C	ND U	ug/L	50	1	09/16/19 17:43	09/12/19	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 07:45
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-10D	**Basis:**	NA
Lab Code:	R1908663-003		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Dissolved	6010C	ND U	ug/L	10	1	09/16/19 17:46	09/12/19	
Lead, Dissolved	6010C	ND U	ug/L	50	1	09/16/19 17:46	09/12/19	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 08:15
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-11S	**Basis:**	NA
Lab Code:	R1908663-004		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Dissolved	6010C	ND U	ug/L	10	1	09/16/19 17:50	09/12/19	
Lead, Dissolved	6010C	ND U	ug/L	50	1	09/16/19 17:50	09/12/19	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 08:50
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-11M	**Basis:**	NA
Lab Code:	R1908663-005		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Dissolved	6010C	ND U	ug/L	10	1	09/16/19 17:53	09/12/19	
Lead, Dissolved	6010C	ND U	ug/L	50	1	09/16/19 17:53	09/12/19	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 09:55
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-12S	**Basis:**	NA
Lab Code:	R1908663-006		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Dissolved	6010C	ND U	ug/L	10	1	09/16/19 17:56	09/12/19	
Lead, Dissolved	6010C	ND U	ug/L	50	1	09/16/19 17:56	09/12/19	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 10:00
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-12M	**Basis:**	NA
Lab Code:	R1908663-007		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Dissolved	6010C	ND U	ug/L	10	1	09/16/19 18:00	09/12/19	
Lead, Dissolved	6010C	ND U	ug/L	50	1	09/16/19 18:00	09/12/19	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 10:30
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-12D	**Basis:**	NA
Lab Code:	R1908663-008		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Dissolved	6010C	ND U	ug/L	10	1	09/16/19 18:09	09/12/19	
Lead, Dissolved	6010C	ND U	ug/L	50	1	09/16/19 18:09	09/12/19	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 08:55
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-13S	**Basis:**	NA
Lab Code:	R1908663-009		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Dissolved	6010C	ND U	ug/L	10	1	09/16/19 18:13	09/12/19	
Lead, Dissolved	6010C	ND U	ug/L	50	1	09/16/19 18:13	09/12/19	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 08:25
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-13M	**Basis:**	NA
Lab Code:	R1908663-010		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Dissolved	6010C	ND U	ug/L	10	1	09/16/19 18:16	09/12/19	
Lead, Dissolved	6010C	ND U	ug/L	50	1	09/16/19 18:16	09/12/19	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 09:35
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-14S	**Basis:**	NA
Lab Code:	R1908663-011		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Dissolved	6010C	ND U	ug/L	10	1	09/16/19 18:19	09/12/19	
Lead, Dissolved	6010C	ND U	ug/L	50	1	09/16/19 18:19	09/12/19	

General Chemistry

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Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/08/19 11:35
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-10S	**Basis:**	NA
Lab Code:	R1908663-001		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Oil and Grease, Total (HEM)	1664A	ND U	mg/L	4.7	1	09/16/19 09:00	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/08/19 11:30
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-10M	**Basis:**	NA
Lab Code:	R1908663-002		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Oil and Grease, Total (HEM)	1664A	ND U	mg/L	4.7	1	09/16/19 09:00	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 07:45
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-10D	**Basis:**	NA
Lab Code:	R1908663-003		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Oil and Grease, Total (HEM)	1664A	ND U	mg/L	4.9	1	09/16/19 09:00	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 08:15
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-11S	**Basis:**	NA
Lab Code:	R1908663-004		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Oil and Grease, Total (HEM)	1664A	ND U	mg/L	4.7	1	09/16/19 09:00	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 08:50
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-11M	**Basis:**	NA
Lab Code:	R1908663-005		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Oil and Grease, Total (HEM)	1664A	ND U	mg/L	4.8	1	09/16/19 09:00	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 09:55
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-12S	**Basis:**	NA
Lab Code:	R1908663-006		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Oil and Grease, Total (HEM)	1664A	ND U	mg/L	5.1	1	09/16/19 09:00	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 10:00
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-12M	**Basis:**	NA
Lab Code:	R1908663-007		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Oil and Grease, Total (HEM)	1664A	ND U	mg/L	4.7	1	09/16/19 09:00	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 10:30
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-12D	**Basis:**	NA
Lab Code:	R1908663-008		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Oil and Grease, Total (HEM)	1664A	ND U	mg/L	5.1	1	09/16/19 09:00	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 08:55
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-13S	**Basis:**	NA
Lab Code:	R1908663-009		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Oil and Grease, Total (HEM)	1664A	ND U	mg/L	5.2	1	09/16/19 09:00	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 08:25
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-13M	**Basis:**	NA
Lab Code:	R1908663-010		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Oil and Grease, Total (HEM)	1664A	ND U	mg/L	4.7	1	09/16/19 09:00	

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Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	09/09/19 09:35
Sample Matrix:	Water	**Date Received:**	09/09/19 14:10
Sample Name:	MW-14S	**Basis:**	NA
Lab Code:	R1908663-011		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Oil and Grease, Total (HEM)	1664A	ND U	mg/L	5.0	1	09/16/19 09:00	

QC Summary Forms

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Volatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory
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Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Unicorn Management Consultants **Service Request:** R1908663
Project: Union Road/2011-200
Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Extraction Method: EPA 5030C

Sample Name	Lab Code	4-Bromofluorobenzene 85-122	Toluene-d8 87-121	Dibromofluoromethane 89-119
MW-10S	R1908663-001	100	102	100
MW-10M	R1908663-002	95	99	97
MW-10D	R1908663-003	96	99	96
MW-11S	R1908663-004	97	101	97
MW-11M	R1908663-005	98	101	100
MW-12S	R1908663-006	99	102	98
MW-12M	R1908663-007	97	101	96
MW-12D	R1908663-008	96	100	96
MW-13S	R1908663-009	97	101	98
MW-13M	R1908663-010	98	101	97
MW-14S	R1908663-011	97	100	98
Method Blank	RQ1910372-04	97	101	96
Lab Control Sample	RQ1910372-03	97	98	97

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1910372-04	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Acetone	ND U	10	1	09/16/19 12:14	
Benzene	ND U	5.0	1	09/16/19 12:14	
Bromodichloromethane	ND U	5.0	1	09/16/19 12:14	
Bromoform	ND U	5.0	1	09/16/19 12:14	
Bromomethane	ND U	5.0	1	09/16/19 12:14	
2-Butanone (MEK)	ND U	10	1	09/16/19 12:14	
Carbon Disulfide	ND U	10	1	09/16/19 12:14	
Carbon Tetrachloride	ND U	5.0	1	09/16/19 12:14	
Chlorobenzene	ND U	5.0	1	09/16/19 12:14	
Chloroethane	ND U	5.0	1	09/16/19 12:14	
Chloroform	ND U	5.0	1	09/16/19 12:14	
Chloromethane	ND U	5.0	1	09/16/19 12:14	
Dibromochloromethane	ND U	5.0	1	09/16/19 12:14	
1,1-Dichloroethane	ND U	5.0	1	09/16/19 12:14	
1,2-Dichloroethane	ND U	5.0	1	09/16/19 12:14	
1,1-Dichloroethene	ND U	5.0	1	09/16/19 12:14	
cis-1,2-Dichloroethene	ND U	5.0	1	09/16/19 12:14	
trans-1,2-Dichloroethene	ND U	5.0	1	09/16/19 12:14	
1,2-Dichloropropane	ND U	5.0	1	09/16/19 12:14	
cis-1,3-Dichloropropene	ND U	5.0	1	09/16/19 12:14	
trans-1,3-Dichloropropene	ND U	5.0	1	09/16/19 12:14	
Ethylbenzene	ND U	5.0	1	09/16/19 12:14	
2-Hexanone	ND U	10	1	09/16/19 12:14	
Methylene Chloride	ND U	5.0	1	09/16/19 12:14	
4-Methyl-2-pentanone (MIBK)	ND U	10	1	09/16/19 12:14	
Styrene	ND U	5.0	1	09/16/19 12:14	
1,1,2,2-Tetrachloroethane	ND U	5.0	1	09/16/19 12:14	
Tetrachloroethene	ND U	5.0	1	09/16/19 12:14	
Toluene	ND U	5.0	1	09/16/19 12:14	
1,1,1-Trichloroethane	ND U	5.0	1	09/16/19 12:14	
1,1,2-Trichloroethane	ND U	5.0	1	09/16/19 12:14	
Trichloroethene	ND U	5.0	1	09/16/19 12:14	
Vinyl Chloride	ND U	5.0	1	09/16/19 12:14	
o-Xylene	ND U	5.0	1	09/16/19 12:14	
m,p-Xylenes	ND U	5.0	1	09/16/19 12:14	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1910372-04	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	97	85 - 122	09/16/19 12:14	
Toluene-d8	101	87 - 121	09/16/19 12:14	
Dibromofluoromethane	96	89 - 119	09/16/19 12:14	

Client: Unicorn Management Consultants
Project: Union Road/2011-200
Sample Matrix: Water

Service Request: R1908663
Date Analyzed: 09/16/19

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

Lab Control Sample
RQ1910372-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Acetone	8260C	18.6	20.0	93	40-161
Benzene	8260C	19.3	20.0	97	79-119
Bromodichloromethane	8260C	19.0	20.0	95	81-123
Bromoform	8260C	19.3	20.0	97	65-146
Bromomethane	8260C	23.1	20.0	116	42-166
2-Butanone (MEK)	8260C	15.6	20.0	78	61-137
Carbon Disulfide	8260C	17.7	20.0	88	66-128
Carbon Tetrachloride	8260C	19.7	20.0	99	70-127
Chlorobenzene	8260C	18.7	20.0	94	80-121
Chloroethane	8260C	18.1	20.0	90	62-131
Chloroform	8260C	18.0	20.0	90	79-120
Chloromethane	8260C	18.1	20.0	91	65-135
Dibromochloromethane	8260C	19.2	20.0	96	72-128
1,1-Dichloroethane	8260C	18.4	20.0	92	80-124
1,2-Dichloroethane	8260C	17.8	20.0	89	71-127
1,1-Dichloroethene	8260C	19.1	20.0	96	71-118
cis-1,2-Dichloroethene	8260C	18.6	20.0	93	80-121
trans-1,2-Dichloroethene	8260C	18.3	20.0	92	73-118
1,2-Dichloropropane	8260C	18.8	20.0	94	80-119
cis-1,3-Dichloropropene	8260C	18.2	20.0	91	77-122
trans-1,3-Dichloropropene	8260C	18.9	20.0	95	71-133
Ethylbenzene	8260C	18.8	20.0	94	76-120
2-Hexanone	8260C	15.8	20.0	79	63-124
Methylene Chloride	8260C	16.4	20.0	82	73-122
4-Methyl-2-pentanone (MIBK)	8260C	16.7	20.0	84	66-124
Styrene	8260C	19.3	20.0	96	80-124
1,1,2,2-Tetrachloroethane	8260C	18.5	20.0	93	78-126
Tetrachloroethene	8260C	17.4	20.0	87	72-125
Toluene	8260C	19.9	20.0	99	79-119
1,1,1-Trichloroethane	8260C	18.8	20.0	94	75-125
1,1,2-Trichloroethane	8260C	19.4	20.0	97	82-121
Trichloroethene	8260C	18.6	20.0	93	74-122
Vinyl Chloride	8260C	18.5	20.0	93	74-159

Client: Unicorn Management Consultants
Project: Union Road/2011-200
Sample Matrix: Water

Service Request: R1908663
Date Analyzed: 09/16/19

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

Lab Control Sample
RQ1910372-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
o-Xylene	8260C	18.8	20.0	94	79-123
m,p-Xylenes	8260C	39.9	40.0	100	80-126

Semivolatile Organic Compounds by GC/MS

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Phone (585) 288-5380 Fax (585) 288-8475
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Client: Unicorn Management Consultants **Service Request:** R1908663
Project: Union Road/2011-200
Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Extraction Method: EPA 3510C

Sample Name	Lab Code	2,4,6-Tribromophenol 35-141	2-Fluorobiphenyl 31-118	2-Fluorophenol 10-105
MW-10S	R1908663-001	77	71	36
MW-10M	R1908663-002	78	64	39
MW-10D	R1908663-003	77	77	35
MW-11S	R1908663-004	74	76	35
MW-11M	R1908663-005	76	75	39
MW-12S	R1908663-006	78	76	36
MW-12M	R1908663-007	80	75	35
MW-12D	R1908663-008	79	82	42
MW-13S	R1908663-009	84	81	42
MW-13M	R1908663-010	79	80	39
MW-14S	R1908663-011	78	73	40
Method Blank	RQ1910037-01	76	74	39
Lab Control Sample	RQ1910037-02	97	90	46
Duplicate Lab Control Sample	RQ1910037-03	97	91	45

Client: Unicorn Management Consultants **Service Request:** R1908663
Project: Union Road/2011-200
Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Extraction Method: EPA 3510C

Sample Name	Lab Code	Nitrobenzene-d5 31-110	Phenol-d6 10-107	p-Terphenyl-d14 10-165
MW-10S	R1908663-001	71	21	30
MW-10M	R1908663-002	68	24	29
MW-10D	R1908663-003	72	19	43
MW-11S	R1908663-004	74	21	46
MW-11M	R1908663-005	75	23	38
MW-12S	R1908663-006	74	22	48
MW-12M	R1908663-007	71	22	53
MW-12D	R1908663-008	79	25	63
MW-13S	R1908663-009	79	25	53
MW-13M	R1908663-010	78	24	39
MW-14S	R1908663-011	65	23	41
Method Blank	RQ1910037-01	75	24	74
Lab Control Sample	RQ1910037-02	83	31	83
Duplicate Lab Control Sample	RQ1910037-03	86	30	77

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1910037-01	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	ND U	10	1	09/11/19 18:54	9/10/19	
1,2-Dichlorobenzene	ND U	10	1	09/11/19 18:54	9/10/19	
1,3-Dichlorobenzene	ND U	10	1	09/11/19 18:54	9/10/19	
1,4-Dichlorobenzene	ND U	10	1	09/11/19 18:54	9/10/19	
2,4,5-Trichlorophenol	ND U	10	1	09/11/19 18:54	9/10/19	
2,4,6-Trichlorophenol	ND U	10	1	09/11/19 18:54	9/10/19	
2,4-Dichlorophenol	ND U	10	1	09/11/19 18:54	9/10/19	
2,4-Dimethylphenol	ND U	10	1	09/11/19 18:54	9/10/19	
2,4-Dinitrophenol	ND U	50	1	09/11/19 18:54	9/10/19	
2,4-Dinitrotoluene	ND U	10	1	09/11/19 18:54	9/10/19	
2,6-Dinitrotoluene	ND U	10	1	09/11/19 18:54	9/10/19	
2-Chloronaphthalene	ND U	10	1	09/11/19 18:54	9/10/19	
2-Chlorophenol	ND U	10	1	09/11/19 18:54	9/10/19	
2-Methylnaphthalene	ND U	10	1	09/11/19 18:54	9/10/19	
2-Methylphenol	ND U	10	1	09/11/19 18:54	9/10/19	
2-Nitroaniline	ND U	50	1	09/11/19 18:54	9/10/19	
2-Nitrophenol	ND U	10	1	09/11/19 18:54	9/10/19	
3,3'-Dichlorobenzidine	ND U	10	1	09/11/19 18:54	9/10/19	
3- and 4-Methylphenol Coelution	ND U	10	1	09/11/19 18:54	9/10/19	
3-Nitroaniline	ND U	50	1	09/11/19 18:54	9/10/19	
4,6-Dinitro-2-methylphenol	ND U	50	1	09/11/19 18:54	9/10/19	
4-Bromophenyl Phenyl Ether	ND U	10	1	09/11/19 18:54	9/10/19	
4-Chloro-3-methylphenol	ND U	10	1	09/11/19 18:54	9/10/19	
4-Chloroaniline	ND U	10	1	09/11/19 18:54	9/10/19	
4-Chlorophenyl Phenyl Ether	ND U	10	1	09/11/19 18:54	9/10/19	
4-Nitroaniline	ND U	50	1	09/11/19 18:54	9/10/19	
4-Nitrophenol	ND U	50	1	09/11/19 18:54	9/10/19	
Acenaphthene	ND U	10	1	09/11/19 18:54	9/10/19	
Acenaphthylene	ND U	10	1	09/11/19 18:54	9/10/19	
Anthracene	ND U	10	1	09/11/19 18:54	9/10/19	
Benz(a)anthracene	ND U	10	1	09/11/19 18:54	9/10/19	
Benzo(a)pyrene	ND U	10	1	09/11/19 18:54	9/10/19	
Benzo(b)fluoranthene	ND U	10	1	09/11/19 18:54	9/10/19	
Benzo(g,h,i)perylene	ND U	10	1	09/11/19 18:54	9/10/19	
Benzo(k)fluoranthene	ND U	10	1	09/11/19 18:54	9/10/19	
Benzyl Alcohol	ND U	10	1	09/11/19 18:54	9/10/19	
2,2'-Oxybis(1-chloropropane)	ND U	10	1	09/11/19 18:54	9/10/19	
Bis(2-chloroethoxy)methane	ND U	10	1	09/11/19 18:54	9/10/19	
Bis(2-chloroethyl) Ether	ND U	10	1	09/11/19 18:54	9/10/19	
Bis(2-ethylhexyl) Phthalate	ND U	10	1	09/11/19 18:54	9/10/19	
Butyl Benzyl Phthalate	ND U	10	1	09/11/19 18:54	9/10/19	
Carbazole	ND U	10	1	09/11/19 18:54	9/10/19	
Chrysene	ND U	10	1	09/11/19 18:54	9/10/19	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1910037-01	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Di-n-butyl Phthalate	ND U	10	1	09/11/19 18:54	9/10/19	
Di-n-octyl Phthalate	ND U	10	1	09/11/19 18:54	9/10/19	
Dibenz(a,h)anthracene	ND U	10	1	09/11/19 18:54	9/10/19	
Dibenzofuran	ND U	10	1	09/11/19 18:54	9/10/19	
Diethyl Phthalate	ND U	10	1	09/11/19 18:54	9/10/19	
Dimethyl Phthalate	ND U	10	1	09/11/19 18:54	9/10/19	
Fluoranthene	ND U	10	1	09/11/19 18:54	9/10/19	
Fluorene	ND U	10	1	09/11/19 18:54	9/10/19	
Hexachlorobenzene	ND U	10	1	09/11/19 18:54	9/10/19	
Hexachlorobutadiene	ND U	10	1	09/11/19 18:54	9/10/19	
Hexachlorocyclopentadiene	ND U	10	1	09/11/19 18:54	9/10/19	
Hexachloroethane	ND U	10	1	09/11/19 18:54	9/10/19	
Indeno(1,2,3-cd)pyrene	ND U	10	1	09/11/19 18:54	9/10/19	
Isophorone	ND U	10	1	09/11/19 18:54	9/10/19	
N-Nitrosodi-n-propylamine	ND U	10	1	09/11/19 18:54	9/10/19	
N-Nitrosodimethylamine	ND U	10	1	09/11/19 18:54	9/10/19	
N-Nitrosodiphenylamine	ND U	10	1	09/11/19 18:54	9/10/19	
Naphthalene	ND U	10	1	09/11/19 18:54	9/10/19	
Nitrobenzene	ND U	10	1	09/11/19 18:54	9/10/19	
Pentachlorophenol (PCP)	ND U	50	1	09/11/19 18:54	9/10/19	
Phenanthrene	ND U	10	1	09/11/19 18:54	9/10/19	
Phenol	ND U	10	1	09/11/19 18:54	9/10/19	
Pyrene	ND U	10	1	09/11/19 18:54	9/10/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	76	35 - 141	09/11/19 18:54	
2-Fluorobiphenyl	74	31 - 118	09/11/19 18:54	
2-Fluorophenol	39	10 - 105	09/11/19 18:54	
Nitrobenzene-d5	75	31 - 110	09/11/19 18:54	
Phenol-d6	24	10 - 107	09/11/19 18:54	
p-Terphenyl-d14	74	10 - 165	09/11/19 18:54	

Client: Unicorn Management Consultants
Project: Union Road/2011-200
Sample Matrix: Water

Service Request: R1908663
Date Analyzed: 09/11/19

Duplicate Lab Control Sample Summary
Semivolatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ1910037-02			RQ1910037-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,2,4-Trichlorobenzene	8270D	39.2	50.0	78	38.5	50.0	77	10-127	1	30
1,2-Dichlorobenzene	8270D	34.2	50.0	68	33.9	50.0	68	23-130	<1	30
1,3-Dichlorobenzene	8270D	33.2	50.0	66	33.1	50.0	66	21-90	<1	30
1,4-Dichlorobenzene	8270D	33.7	50.0	67	32.8	50.0	66	10-124	2	30
2,4,5-Trichlorophenol	8270D	51.8	50.0	104	50.3	50.0	101	48-134	3	30
2,4,6-Trichlorophenol	8270D	55.5	50.0	111	52.5	50.0	105	44-135	6	30
2,4-Dichlorophenol	8270D	46.7	50.0	93	45.8	50.0	92	48-127	1	30
2,4-Dimethylphenol	8270D	44.6	50.0	89	43.6	50.0	87	59-113	2	30
2,4-Dinitrophenol	8270D	49.0 J	50.0	98	47.3 J	50.0	95	21-154	3	30
2,4-Dinitrotoluene	8270D	56.2	50.0	112	53.3	50.0	107	54-130	5	30
2,6-Dinitrotoluene	8270D	53.8	50.0	108	51.1	50.0	102	51-127	6	30
2-Chloronaphthalene	8270D	44.3	50.0	89	42.0	50.0	84	40-108	6	30
2-Chlorophenol	8270D	38.0	50.0	76	36.1	50.0	72	42-112	5	30
2-Methylnaphthalene	8270D	39.4	50.0	79	38.5	50.0	77	34-102	3	30
2-Methylphenol	8270D	33.1	50.0	66	30.5	50.0	61	47-100	8	30
2-Nitroaniline	8270D	46.6 J	50.0	93	43.1 J	50.0	86	52-133	8	30
2-Nitrophenol	8270D	47.1	50.0	94	46.1	50.0	92	43-131	2	30
3,3'-Dichlorobenzidine	8270D	49.2	50.0	98	46.0	50.0	92	43-126	6	30
3- and 4-Methylphenol Coelution	8270D	28.0	50.0	56	26.1	50.0	52	40-92	7	30
3-Nitroaniline	8270D	44.5 J	50.0	89	41.1 J	50.0	82	42-111	8	30
4,6-Dinitro-2-methylphenol	8270D	48.3 J	50.0	97	44.2 J	50.0	88	36-152	10	30
4-Bromophenyl Phenyl Ether	8270D	49.9	50.0	100	47.6	50.0	95	48-114	5	30
4-Chloro-3-methylphenol	8270D	45.5	50.0	91	43.3	50.0	87	52-113	4	30
4-Chloroaniline	8270D	43.3	50.0	87	41.1	50.0	82	44-109	6	30
4-Chlorophenyl Phenyl Ether	8270D	48.5	50.0	97	45.7	50.0	91	51-107	6	30
4-Nitroaniline	8270D	46.1 J	50.0	92	42.0 J	50.0	84	54-133	9	30
4-Nitrophenol	8270D	21.9 J	50.0	44	18.1 J	50.0	36	10-126	20	30
Acenaphthene	8270D	46.2	50.0	92	44.6	50.0	89	52-107	3	30
Acenaphthylene	8270D	44.1	50.0	88	42.4	50.0	85	55-109	3	30
Anthracene	8270D	49.0	50.0	98	47.1	50.0	94	55-116	4	30
Benz(a)anthracene	8270D	46.2	50.0	92	44.9	50.0	90	61-121	2	30
Benzo(a)pyrene	8270D	47.5	50.0	95	47.3	50.0	95	44-114	<1	30
Benzo(b)fluoranthene	8270D	44.4	50.0	89	43.3	50.0	87	62-115	2	30

Client: Unicorn Management Consultants
Project: Union Road/2011-200
Sample Matrix: Water

Service Request: R1908663
Date Analyzed: 09/11/19

Duplicate Lab Control Sample Summary
Semivolatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ1910037-02			RQ1910037-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Benzo(g,h,i)perylene	8270D	53.3	50.0	107	52.1	50.0	104	63-136	3	30
Benzo(k)fluoranthene	8270D	49.8	50.0	100	49.7	50.0	99	49-133	1	30
Benzyl Alcohol	8270D	35.6	50.0	71	34.1	50.0	68	31-109	4	30
2,2'-Oxybis(1-chloropropane)	8270D	36.3	50.0	73	35.6	50.0	71	32-122	3	30
Bis(2-chloroethoxy)methane	8270D	43.1	50.0	86	41.4	50.0	83	55-110	4	30
Bis(2-chloroethyl) Ether	8270D	36.7	50.0	73	36.0	50.0	72	46-102	1	30
Bis(2-ethylhexyl) Phthalate	8270D	47.0	50.0	94	44.9	50.0	90	51-132	4	30
Butyl Benzyl Phthalate	8270D	48.8	50.0	98	46.6	50.0	93	41-148	5	30
Carbazole	8270D	47.8	50.0	96	45.4	50.0	91	56-139	5	30
Chrysene	8270D	45.6	50.0	91	44.9	50.0	90	57-118	1	30
Di-n-butyl Phthalate	8270D	51.2	50.0	102	47.9	50.0	96	57-128	6	30
Di-n-octyl Phthalate	8270D	43.8	50.0	88	43.4	50.0	87	62-124	1	30
Dibenz(a,h)anthracene	8270D	46.2	50.0	92	45.2	50.0	90	54-135	2	30
Dibenzofuran	8270D	49.9	50.0	100	47.1	50.0	94	55-110	6	30
Diethyl Phthalate	8270D	53.2	50.0	106	50.4	50.0	101	53-113	5	30
Dimethyl Phthalate	8270D	50.0	50.0	100	46.9	50.0	94	51-112	6	30
Fluoranthene	8270D	48.8	50.0	98	46.7	50.0	93	66-127	5	30
Fluorene	8270D	46.5	50.0	93	44.1	50.0	88	54-106	6	30
Hexachlorobenzene	8270D	50.5	50.0	101	49.3	50.0	99	53-123	2	30
Hexachlorobutadiene	8270D	43.1	50.0	86	42.3	50.0	85	16-95	1	30
Hexachlorocyclopentadiene	8270D	24.5	50.0	49	22.8	50.0	46	10-99	6	30
Hexachloroethane	8270D	32.3	50.0	65	31.6	50.0	63	15-92	3	30
Indeno(1,2,3-cd)pyrene	8270D	50.7	50.0	101	48.5	50.0	97	62-137	4	30
Isophorone	8270D	43.8	50.0	88	43.5	50.0	87	50-116	1	30
N-Nitrosodi-n-propylamine	8270D	36.4	50.0	73	36.7	50.0	73	49-115	<1	30
N-Nitrosodimethylamine	8270D	21.2	50.0	42	20.1	50.0	40	31-70	5	30
N-Nitrosodiphenylamine	8270D	51.0	50.0	102	45.7	50.0	91	45-123	11	30
Naphthalene	8270D	37.6	50.0	75	37.1	50.0	74	38-99	1	30
Nitrobenzene	8270D	41.9	50.0	84	41.5	50.0	83	46-108	1	30
Pentachlorophenol (PCP)	8270D	44.2 J	50.0	88	43.9 J	50.0	88	29-164	<1	30
Phenanthrene	8270D	47.3	50.0	95	45.1	50.0	90	58-118	5	30
Phenol	8270D	17.5	50.0	35	16.4	50.0	33	10-113	6	30
Pyrene	8270D	43.0	50.0	86	40.9	50.0	82	61-122	5	30

Metals

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	R1908663-MB1		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Dissolved	6010C	ND U	ug/L	10	1	09/16/19 17:30	09/12/19	
Lead, Dissolved	6010C	ND U	ug/L	50	1	09/16/19 17:30	09/12/19	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	R1908663-MB2		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Dissolved	6010C	ND U	ug/L	10	1	09/16/19 17:33	09/12/19	
Lead, Dissolved	6010C	ND U	ug/L	50	1	09/16/19 17:33	09/12/19	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Unicorn Management Consultants
Project: Union Road/2011-200
Sample Matrix: Water

Service Request: R1908663
Date Analyzed: 09/16/19

Lab Control Sample Summary
Inorganic Parameters

Units:ug/L
Basis:NA

Lab Control Sample
R1908663-LCS

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic, Dissolved	6010C	45	40	112	80-120
Lead, Dissolved	6010C	534	500	107	80-120

General Chemistry

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	R1908663-MB1		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Oil and Grease, Total (HEM)	1664A	ND U	mg/L	5.0	1	09/16/19 09:00	

Analytical Report

Client:	Unicorn Management Consultants	**Service Request:**	R1908663
Project:	Union Road/2011-200	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	R1908663-MB2		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Oil and Grease, Total (HEM)	1664A	ND U	mg/L	5.0	1	09/16/19 09:00	

Client: Unicorn Management Consultants
Project: Union Road/2011-200
Sample Matrix: Water

Service Request: R1908663
Date Analyzed: 09/16/19

Duplicate Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

			Lab Control Sample			Duplicate Lab Control Sample					
			R1908663-LCS1			R1908663-DLCS1					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Oil and Grease, Total (HEM)	1664A	35.6	41.1	86	37.1	41.1	90	78-114	4	18

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Unicorn Management Consultants
Project: Union Road/2011-200
Sample Matrix: Water

Service Request: R1908663
Date Analyzed: 09/16/19

Duplicate Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

			Lab Control Sample			Duplicate Lab Control Sample					
			R1908663-LCS2			R1908663-DLCS2					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Oil and Grease, Total (HEM)	1664A	33.4	41.1	81	35.9	41.1	87	78-114	7	18