Groundwater
Extraction and Treatment
Remedial Design Plan Addendum

Former General Circuits Facility
95 Mt. Read Blvd.
Rochester, New York
NYSDEC Site Number C8-28-085

Prepared For: 95 Mount Read Blvd., LLC
770 Rock Beach Road
Rochester, New York

Prepared By: Day Environmental Inc.
1563 Lyell Avenue
Rochester, New York 14614

Project No. 3681R-05

Date: August 2012

New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 8
6274 East Avon-Lima Road, Avon, New York 14414-9519
Phone: (585) 226-5353 • **FAX:** (585) 226-8139
Website: www.dec.ny.gov

Joe Martens
Commissioner

September 6, 2012

Mr. Thomas Maguire
770 Rock Beach Road
Rochester, New York 14617

Dear Mr. Maguire:

Subject: General Circuits Brownfield Cleanup Program Site #C828085
Groundwater Extraction and Treatment Remedial Design Plan Addendum; August 2012
95 Mount Read Boulevard, Rochester, New York

The New York State Department of Environmental Conservation (NYSDEC) has completed its review of the document entitled *Groundwater Extraction and Treatment Remedial Design Plan Addendum* (the Work Plan) dated August 2012 and prepared by Day Environmental Inc. In accordance with 6 NYCRR Part 375-1.6, NYSDEC has determined that the Work Plan, with modifications, substantially addresses the requirements of the Brownfield Cleanup Agreement. The modifications are as follows:

1. Community air monitoring will be performed in accordance with the Community Air Monitoring Program included in the December 2007 Remedial Design Plan.

With the understanding that the above noted modifications are agreed to, the Work Plan is hereby approved. Please notify me at least 7 days in advance of any field activities.

If you choose not to accept the NYSDEC proposed modifications, you are required to notify this office within 20 days after receipt of this letter.

Thank you for your continued cooperation in this matter and please contact me at (585) 226-5357 if you have any questions.

Sincerely,

Frank Sowers

Frank Sowers, P.E.
Environmental Engineer 2

ec:

B. Kline	J. Kosmala
B. Putzig	M. Doroski
J. Charles	P. Sylvestri

CERTIFICATION

I, Barton F. Kline, certify that I am currently a NYS registered professional engineer and that this Design Plan Addendum was prepared in accordance with applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

077874	August 30, 2012	B. F. Kline
NYS Professional Engineer #	Date	Signature

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1.0 Introduction

This Addendum (Addendum Work Plan) to the Groundwater Extraction and Treatment Remedial Design Work Plan (RDWP) summarizes the work to be completed to incorporate two additional groundwater extraction wells into the existing Groundwater Extraction and Treatment (GWE&T) system installed as part of the Brownfield Cleanup Program (BCP) at the former General Circuits BCP Site (New York State Department of Environmental Conservation (NYSDEC) Site ID #C828085) located at 95 Mt. Read Boulevard, Rochester, New York (Site). A project locus map is included as Figure 1.

The activities described in this Addendum Work Plan are consistent with the remedial goals described in the Record of Decision (ROD) for the Site. Specifically, the intent of work described herein is to facilitate removal of volatile organic compound (VOC) constituents from areas containing high dissolved concentrations in groundwater as part of the GWE&T remedial phase. While the primary purpose of the GWE&T remedial effort is to remove chromium from groundwater, expansion of the GWE&T system to also remove VOC's is of potential benefit to subsequent in-situ groundwater remedial activities, which are typically more efficient when applied to remedy lower concentrations of contaminants (i.e. VOCs) in groundwater. Additionally, expansion of the GWE&T in accordance with this Work Plan Addendum is also expected to increase the rate of chromium removal from groundwater.

1.1 Background

The GWE&T system was installed and became operational at the Site in July 2008. Details of the GWE&T system installation and start-up are described in the Construction Completion Report (CCR) dated March 2010. Currently, the groundwater extraction system consists of five groundwater extraction wells that discharge to a groundwater treatment system for removal of chromium and VOC's prior to permitted discharge to the sanitary sewer system. Refer to Figure 2 and Figure 3 for the layout and process and instrumentation schematic, respectively. Monitoring and extraction well locations are also shown on Figure 2.

One of the recommendations included in the 2011 Annual Progress Report (APR) for the GWE&T system operation was to evaluate expanding the groundwater extraction system to increase VOC removal. A preliminary evaluation was subsequently completed, as presented in DAY's letter to Mr. Frank Sowers (NYSDEC) of March 12, 2012, and as summarized below.

1.2 Nature and Extent of VOCs in Groundwater

In reviewing available Site data, it was observed that the highest VOC concentrations in groundwater detected at the Site to date have been at MW-9 (see Figure 2). MW-9 is a shallow well (12-foot depth), at which a VOC concentration of 156 mg/l was detected in 1998. This was the most recent sample at this location, as MW-9 is not routinely sampled under the current Site Management Plan monitoring program. VOC's most recently

detected at other wells that are not routinely monitored were significantly lower (20 mg/l detected at MW-10 in 1998, and much lower at other locations).

Of the locations that are routinely monitored, MW-30 (20-foot depth) consistently contains the highest concentration of VOC's. VOC's at MW-30 have ranged from 85 to 131 mg/l over the prior five routine monitoring events (2009-2011). With the exception of the existing extraction wells (VOC concentrations ranging from 5 to 23 mg/l at EW-1, EW-2 and EW-3), VOC concentrations detected at the other routinely sampled monitoring wells are much lower (typically in the range of 0 to 3 mg/l).

Based upon the above data, it appears that the highest concentrations of VOC's in groundwater are in the vicinity of MW-9 and MW-30. In terms of depth, testing performed at MW-17 (in close proximity to MW-9) provided VOC results of only approximately 5 mg/l at each 5-foot isolated interval in bedrock from 18 to 37 feet below ground surface. As such, it appears that the highest concentrations of VOC's in groundwater are in the uppermost groundwater layer (saturated overburden and top of bedrock).

1.3 Objective

The objective of this Addendum Work Plan is to expand the groundwater extraction system to provide for removal of VOCs from areas of high concentrations in groundwater as part of the GWE&T remedial phase.

MW-9 and MW-30, the locations at which the highest concentrations of VOC's were detected in groundwater, are in the middle of the existing extraction well field (between EW-1, EW-2 and EW-3). While smaller concentrations of VOC's are being captured by these existing extraction wells, two new extraction wells will be added to the GWE&T network, one each at, or in the immediate vicinity of, MW-9 and MW-30, to directly target the areas of greatest VOC concentrations detected in groundwater. MW-30 is of similar depth and construction to the existing extraction wells, and will be directly converted into an extraction well. MW-9, a shallow well, cannot be readily converted into an extraction well of the desired depth, and as such, a new extraction well be installed in the vicinity of MW-9.

The existing extraction wells in this area have an average steady-state extraction rate of approximately 0.1 GPM per well. The installed groundwater treatment system processes and equipment were designed to accommodate continuous flow rates of up to 10 gallons per minute (GPM). As the current maximum observed flow rate through the existing GWE&T system is only 2.6 GPM, no changes to the treatment system or processes are anticipated to be necessary, and this Work Plan Addendum is limited to the addition of the two extraction wells identified above.

2.0 Scope of Work

The work to be preformed under this Work Plan Addendum is described in the subsections presented below, and is in general accordance with the December 2007 RDWP.

2.1 Well Installation

Appendix A of this Work Plan Addendum contains the boring and well installation logs for MW-30, including the subsurface sequential stratigraphic boundaries and Photoionization Detector (PID) measurements recorded during MW-30 borehole advancement and well construction specifications. Since MW-30 is of similar depth and construction to the existing indoor extraction wells (EW-1 through EW-3), it will be converted into an extraction well (EW-6) as described in Section 2.3, and only one new well (EW-7) will be installed as a part of this Addendum Work Plan.

As with installation of the existing indoor extraction wells (EW-1 through EW-3), the precise location of extraction well EW-7 will be determined in the field, and will be dependent upon access limitations, buried utilities, etc. The borehole will be advanced approximately 5 feet (ft.) beyond auger refusal (i.e., into fractured bedrock). It is anticipated that the final depth of the extraction well EW-7 borehole will be approximately 15 to 20 ft. below the ground surface (bgs).

DAY will retain the services of a subcontractor to provide a rotary drill-rig, crew and materials to install extraction well EW-7. The well will initially be drilled using hollow stem augers (HSA) to advance the boring, and overburden samples will be collected ahead of the augers using a spilt spoon sampling device driven with a 140-pound hammer free falling 30 inches in general conformance with American Society for Testing and Materials (ASTM) Standard 1586. The boring will be sampled to auger refusal, which is expected to occur at approximately 10 ft to 15 ft. bgs. Subsequent to auger refusal, HA rock coring (or similar) equipment will be used to advance the extraction well EW-7 borehole an additional 5 ft. into fractured bedrock for a total depth of 15 to 20 ft. bgs.

Extraction well MW-7 will be a 2-inch diameter well, with 10 ft. of flush-coupled No. 20 slot stainless steel screen installed at the bottom of the overburden/bedrock interface borehole with 2-inch diameter PVC riser extending to ground surface. The well screen will be surrounded by a sand pack extending 2 ft. above the top of screen. A minimum 2-foot thick bentonite seal will follow the sand pack, with cement/grout above the bentonite seal extending to approximately one-foot below grade. Extraction well EW-7 will be covered with a sealing well cap, and protected with a flush mounted protective curb box sealed in-place with concrete/grout.

Information recorded during the advancement of extraction well EW-7 will include:

- Date, boring identification, and project identification.
- Name of individual developing the log.

- Name of drilling company.
- Drill make and model.
- Identification of any alternative drilling methods used.
- Depths recorded in feet and fractions thereof (tenths of feet) referenced to ground surface.
- The length of the sample interval and percentage of sample recovered.
- The depth of the first encountered water table, along with the method of determination, referenced to the ground surface.
- Drilling and borehole characteristics.
- Sequential stratigraphic boundaries.
- PID screening results of ambient headspace air above selected samples.
- Amount of water (if any) lost to borehole during coring.

A temporary decontamination pad will be constructed to decontaminate "in-hole" drilling equipment by steam cleaning. The decontamination liquids will be pumped into NYSDOT-approved 55-gallon drums that are labeled and staged on-site for processing through the groundwater treatment system. In addition, the soils and decontamination pad will also be containerized in NYSDOT-approved 55-gallon drums that are labeled and staged on site in accordance with applicable regulations for treatment/disposal by 95 Mt. Read Blvd., LLC.

2.2 Well Development

Although EW-6 is a pre-existing well, it will be re-developed to remove any sediment that may have accumulated since time of initial development, as well as to obtain current well development data. It is anticipated that groundwater extraction wells EW-6 and EW-7 will be developed approximately one week after well EW-7 is installed. Well development will be performed utilizing either dedicated polyethylene bailers with dedicated cord, or a pump and dedicated tubing. No fluids will be added to the extraction wells during development, and the equipment will be decontaminated prior to and following development of each well. The well development procedures will be as follows:

- Obtain pre-development static water level readings.
- Calculate water/sediment volume in well.
- Select development method and set up equipment depending on method used.
- Begin pumping or bailing.
- Collect initial field water quality measurements (e.g., conductance, temperature, turbidity, and PID readings). Record water quantities removed and pumping rates utilized.
- Collect field water quality measurements every five to ten gallons of water removed.
- Stop development when water quality criteria are met.
- Obtain post-development water level readings.
- Document development procedures, measurements, quantities, etc.

Well development will continue until the following criteria is achieved:

- pH, conductance, and temperature are relatively stable for three consecutive measurements, and/or
- A minimum of five well volumes have been removed (dependent on the volume of water introduced during the well installation, development will continue until a comparable volume of water is removed from the well - alternatively, if the amount of water is too great, DAY may wait three to four weeks for the water to dissipate into the aquifer prior to performing well development).

The development water will be discharged to the head of the groundwater treatment system. The solids, if any, will be containerized, labeled and staged on-site in accordance with applicable regulations for treatment/disposal by 95 Mt. Read Blvd., LLC.

2.3 Extraction Well Equipment

To complete the installation of extraction wells EW-6 and EW-7, the flooring at each well will be saw cut, and the necessary equipment (i.e., pump, tubing, modified curb box, etc.) will be installed in the wells and tied into the existing treatment system in accordance with the specifications, equipment and construction details provided in Figure 2. The extraction well equipment and details are consistent with the existing indoor extraction wells (EW-1 through EW-3) at the Site, and will similarly include the use of controllerless, air-operated well pumps to eliminate the need for controllers, valves, and operational adjustments.

2.4 Start-Up and Testing

Following development of extraction well EW-7, but prior to tying the extraction well into the groundwater extraction system, background conditions at this location will be assessed. Specifically, prior to collecting representative groundwater samples for laboratory analysis, the depth to static water and the presence of dense non-aqueous phase liquids (DNAPL) will be measured using a Heron Oil/Water Interface Meter (or equivalent). Subsequently, extraction well EW-7 will be purged by removing a minimum of three well volumes of water, or to dryness, and allowed to recharge to a minimum of 90% of its original static water level prior to sampling; however, regardless of recharge rate, extraction well EW-7 will be sampled within 24 hours of purging. Extraction well EW-7 will be sampled using a new, dedicated disposable bailer with dedicated cord. In addition to collecting an analytical laboratory sample, an additional sample will be obtained to evaluate field parameters (i.e., pH, specific conductivity, temperature, turbidity, etc.) using a Horiba U-22 Meter (or equivalent). The field parameters will be presented on the monitoring well sampling log.

The analytical laboratory sample will be placed in laboratory supplied containers, labeled and preserved with ice. The sample will be transported under chain-of-custody control to

a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP)-certified analytical laboratory, and will be tested for the following parameters:

- United States Environmental Protection Agency (USEPA) halogenated VOCs using method 8260; and
- Total and hexavalent chromium using USEPA method 200.7 and SW 7196A.

[Note: Several samples have been previously collected from monitoring well MW-30 (i.e., extraction well EW-6), and these results will be used as the background dissolved constituent concentrations for this location.]

Groundwater extraction rates will initially be monitored using temporary cycle counters on the airlines feeding the two new extraction well pumps. Daily flow readings will be recorded for a minimum period of two full weeks during the start-up period, following which flow measurements at these wells will be collected in the manner and at the frequencies prescribed in the Site Management Plan. Subsequent analytical laboratory samples will similarly be collected in accordance with the schedule presented in the Site Management Plan. Specifically, extraction wells EW-6 and EW-7 will be sampled on a biannual basis and tested for field parameters, halogenated VOCs and total and hexavalent chromium using USEPA method 200.7 and SW 7196A.

3.0 Health and Safety

The December 2007 RDWP contains a Health and Safety Plan (HASP) that is applicable to and will be implemented during the activities presented in this RDWP Addendum. The provisions within the HASP were developed on a similar scope of work during the construction of the GWE&T. The Site safety officer will be responsible for ensuring that personnel involved with implementing this RDWP addendum will adhere to the December 2007 RDWP HASP.

4.0 Quality Assurance/Quality Control

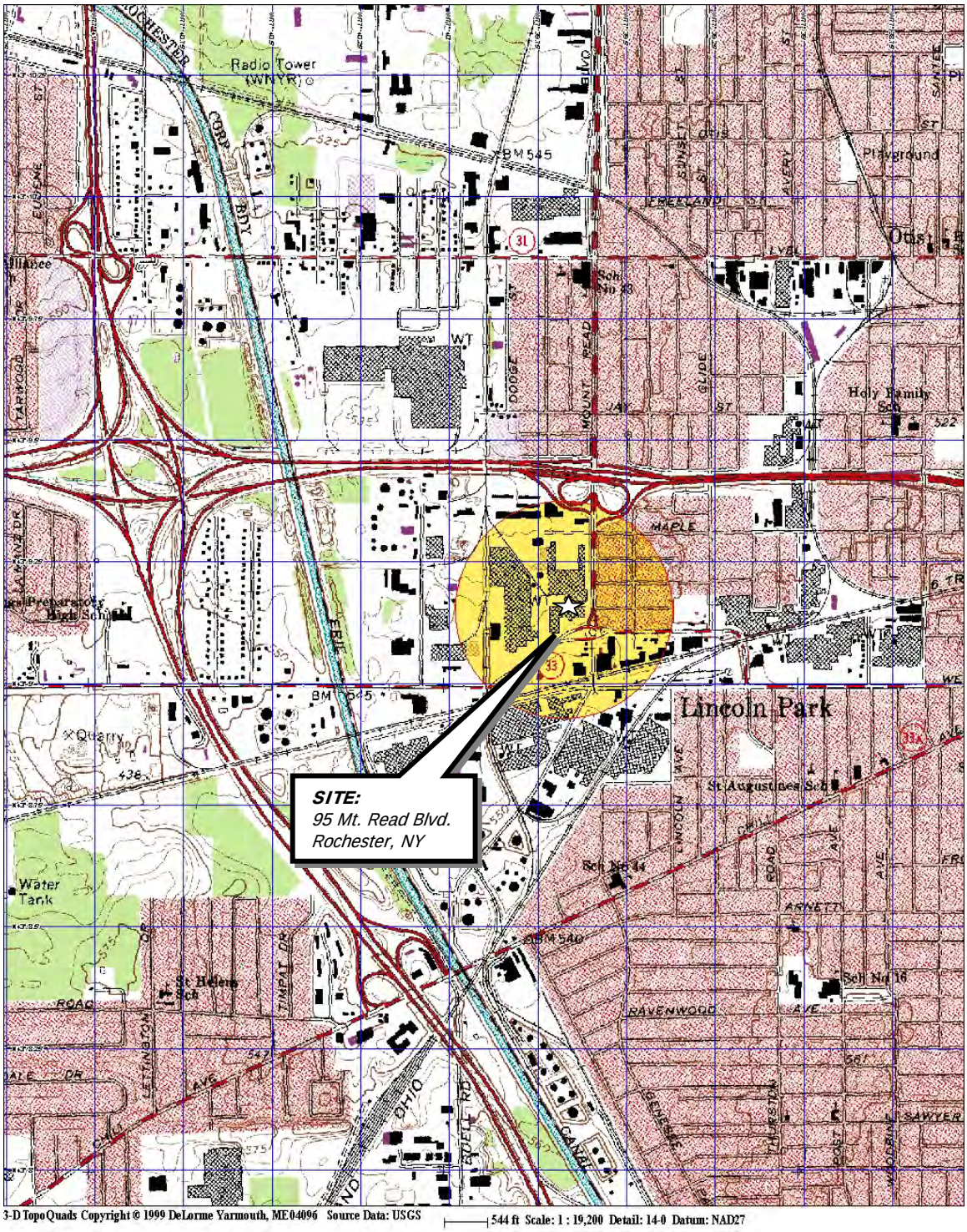
The test methods, Quality Assurance/Quality Control (QA/QC) protocol (i.e., MS/MSD analysis), and equipment decontamination procedures will be conducted in accordance with the specifications and procedures identified in the December 2007 RDWP. The laboratory data will be reported using the NYSDEC ASP category B deliverable format and NYSDEC EQUIS format. It is assumed that a Data Usability Summary Report (DUSR) will not be required to be completed for the analytical laboratory data generated as part of this Addendum RDWP.

5.0 Schedule

It is anticipated that installation of extraction well EW-7 and the conversion of monitoring well MW-30 to extraction well EW-6 will be completed within three months of receipt of approval from NYSDEC to proceed with the Addendum Work Plan activities. Systems start-up, field testing, and analytical testing will be subsequently performed over a 6-week period following completion of the installation activities. Results of the start-up and testing activities will be included in the monthly progress reports and annual progress report.

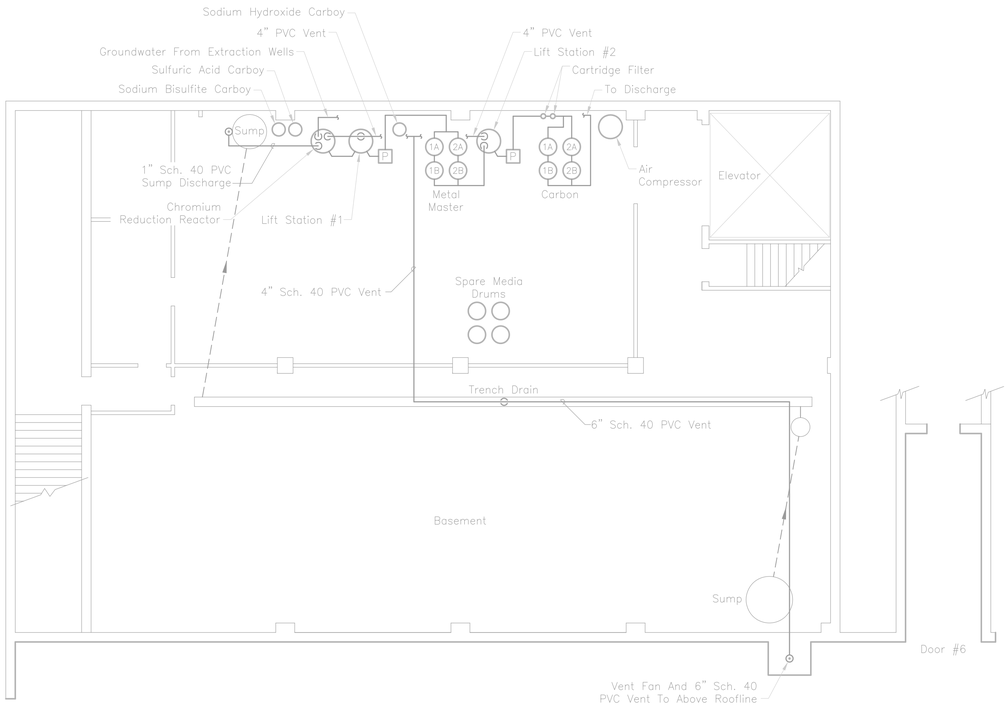
Following completion of the installation, start-up and testing activities identified in this Work Plan Addendum, the Interim Site Management Plan and GWE&T Construction Completion Report will be revised to incorporate the two additional extraction wells and associated system modifications and related documentation (i.e., test boring log, well sampling logs, etc.), as applicable. It is estimated that revisions to these documents will be completed within three months of completion of the start-up and testing activities.

FIGURES



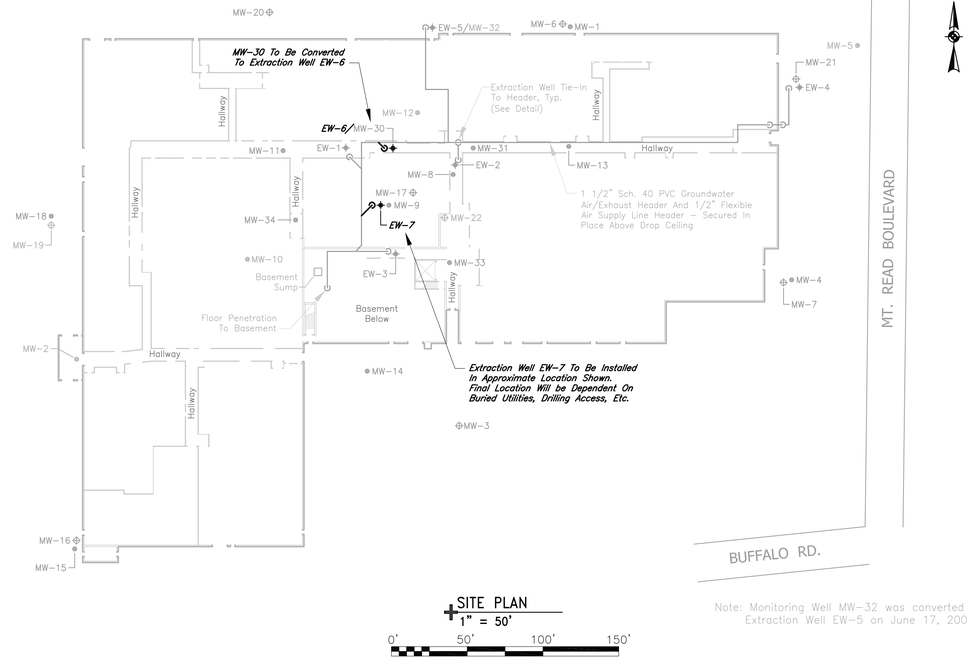
Drawing Produced From: 3-D TopoQuads, DeLorme Map Co., referencing USGS quad map Rochester West (NY) 1995. Site Lat/Long: N43d-09.15' – W77d-39.67'

DATE **11-15-2011** DRAWN BY **RJM** SCALE **1" = 2000'**	day DAY ENVIRONMENTAL, INC. ENVIRONMENTAL CONSULTANTS ROCHESTER, NEW YORK 14606	PROJECT TITLE **95 MT. READ BOULEVARD** **ROCHESTER, NEW YORK** **Groundwater Extraction and Treatment Remedial Design Work Plan Addendum** DRAWING TITLE **PROJECT LOCUS MAP**	PROJECT NO. **3681R-05** **FIGURE 1**



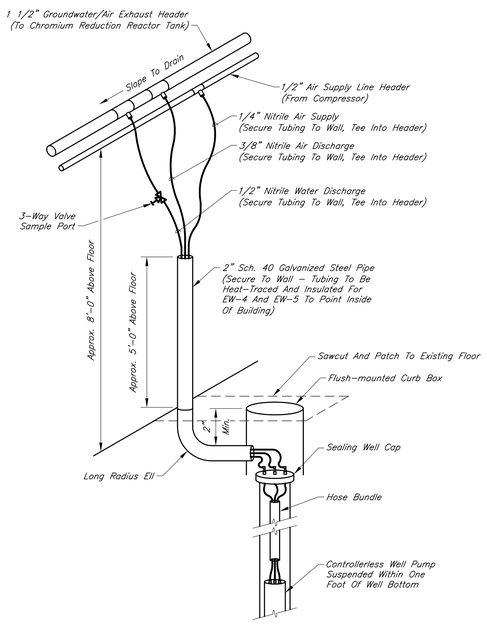
Note: All Locations Approximate.

BASEMENT PLAN VIEW
1/8" = 1'-0"
0' 8' 16' 24'

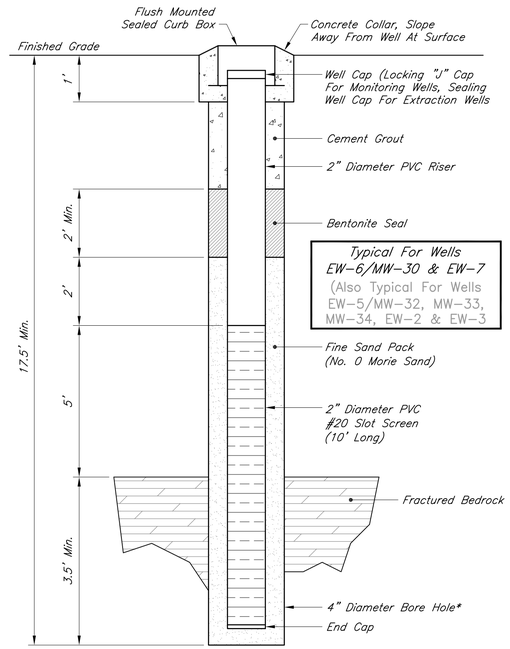


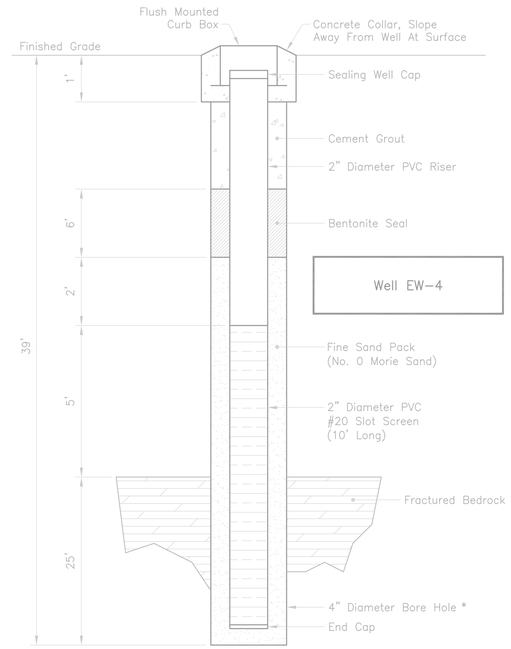
SITE PLAN
1" = 50'
0' 50' 100' 150'

Note: Monitoring Well MW-32 was converted to Extraction Well EW-5 on June 17, 2009.



DETAIL – WELL PUMP
NOT TO SCALE





* Note: 4" Diameter Bore Hole Was Extended Into Bedrock To Point Of Refusal, Following Which 2" Boring (Unscreened) Was Used To Reach Total Indicated Depth.

TYPICAL MONITORING WELL DIAGRAM
NOT TO SCALE

Reference Files Attached:
REF1: 3681R-Basement Plan Oct-09.dwg
REF2: 3681R-Plan June 2012
REF3: 3681R-Well Pump June 2012
REF4: Well Detail June 2012
REF5:
REF6:
REF7:
REF8:
REF9:
REF10:

File Name: P:\Drawings\Maps\A\3681R\Record Drawings\3681R-Plot Sheet June 2012.dwg
Layout Name: CCR 1
Time Plotted: Monday, July 09, 2012 1:46:55 PM
Pen Setting File: 800dpsFullcolor.ctb

ANSI "D" (22x34)
DayEnv_AnsiD

PROJECT MANAGER	DATE
BFK	09-2007
DRAWN BY	DATE DRAWN
RJM	06-15-2012
CHECKED BY	DATE
BFK	06-28-2012
APPROVED BY	DATE
BFK	07-09-2012
SCALE	DATE ISSUED
As Noted	07-09-2012

DAY ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS
THIS DOCUMENT MAY NOT BE ALTERED WITHOUT THE EXPRESS CONSENT OF DAY ENVIRONMENTAL, INC.

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REVISIONS

day
DAY ENVIRONMENTAL, INC.
EMPIRE STATE BUILDING
ROCHESTER, NEW YORK 14608
NEW YORK: NEW YORK 10016-0710

PROJECT TITLE
95 MT. READ BOULEVARD
ROCHESTER, NEW YORK
GROUNDWATER EXTRACTION AND TREATMENT
REMEDIAL DESIGN WORK PLAN ADDENDUM

DRAWING TITLE
Plan Views And Details

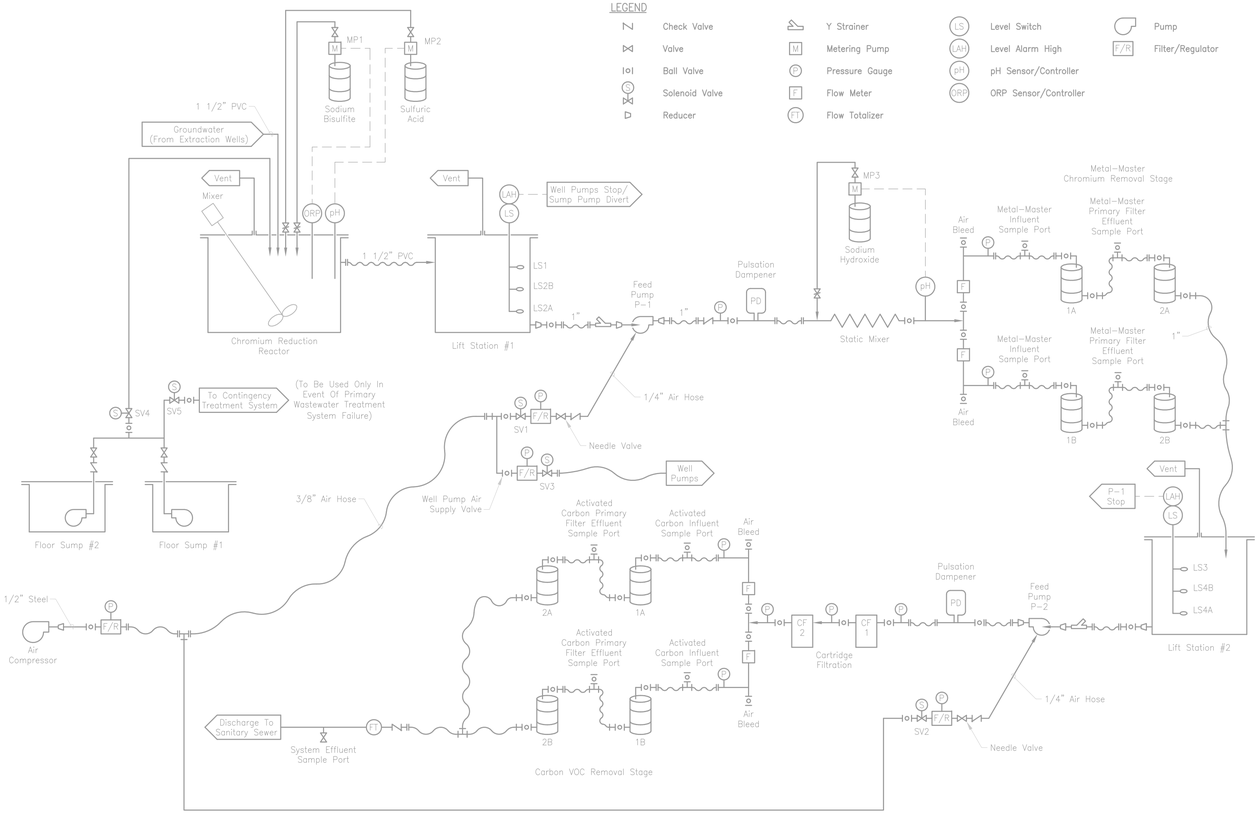
PROJECT NO.
3681R-05

FIGURE NO.
FIGURE 2

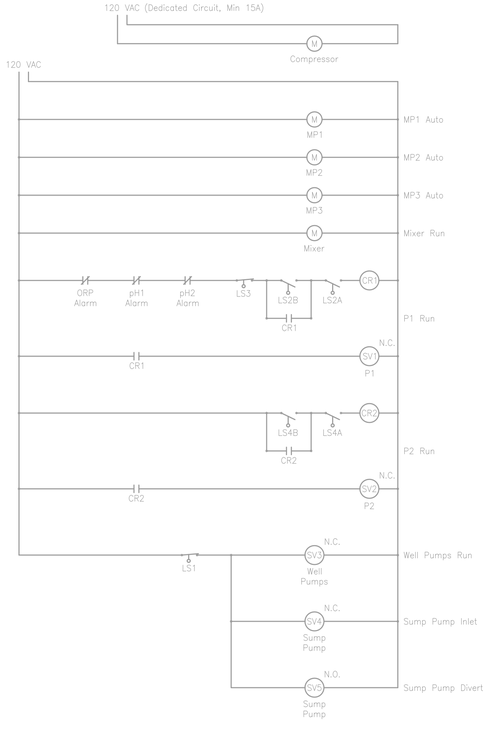
95 MT READ BLVD
INDUSTRIAL WASTEWATER PRETREATMENT SYSTEM

SYSTEM	ITEM	DESCRIPTION	MFR	MODEL
Chromium Reduction	Tank	150-gal polyethylene tank (31"D x 48"H) with cover	Chem-Tainer	---
	Tank Stand	steel mixer support floor stand	Chem-Tainer	---
	Mixer	1/3 HP; min 32"L, 1/2" dia. shaft; clamp-mount	Neptune	---
	pH Controller	on-off dual pH/ORP controller; min. 2 SPDT relays	Rosemount	1055-01-11-22-32
	pH Probe	pH sensor with 25-ft cable	Rosemount	396P-01-10-55
	pH Cartridge	ORP sensor with 25-ft cable	Rosemount	396P-01-12-55
	Acid Metering Pump	14 GPD; 100:1 turndown; manual control	LMI	AA141-353SP
	Bisulfite Metering Pump	18 GPD; 100:1 turndown; manual control	LMI	AA181-393BI
Lift Station #1	Tank	150-gal polyethylene tank (31"D x 48"H) with cover	Chem-Tainer	---
	Float Switches	3-wire polypropylene float, 10A, 20' cord	Conery	
	Pump	1/2" PP diaphragm pump; 13 GPM max; vton seals	ARO	666053-333
	Pulsation Dampener	PP dampener; 85% pulsation reduction @ 60 psi, 5 GPM	ARO	SB10P-APS-A
pH Adjustment	Static Mixer	1" PVC static mixer	---	---
	Caustic Metering Pump	24 GPD; 1000:1 turndown; 4-20mA control; remote on-off	LMI	AA951-393BI
	pH Controller	proportional pH controller	LMI	DP5000
	pH Probe	pH probe	Sensorex	S650CD
	pH Cartridge	pH probe cable assembly; 10'L	Sensorex	S653TC-10-BNC
Metal Master Filtration	Flowmeters	1.0 to 10.0 GPM; 1" FNPT ends	Blue White	F-400N
	Chromium Filters	Chromium Removal Media Drums	Terrenew	MetalMaster
Lift Station #2	Tank	100-gal polyethylene tank (28"D x 42"H) with cover	Chem-Tainer	---
	Float Switches	3-wire polypropylene float, 10A, 20' cord	Conery	---
	Pump	1/2" PP diaphragm pump; 13 GPM max; vton seals	ARO	666053-333
	Pulsation Dampener	PP dampener; 85% pulsation reduction @ 60 psi, 5 GPM	ARO	SB10P-APS-A
Cartridge Filtration	Filter Housings	4.5" x 20" filter housing; 1" FNPT ends	---	---
	Cartridge Filters	4.5" x 20" filter; 50-micron	---	---
	Cartridge Filters	4.5" x 20" filter; 5-micron	---	---
Carbon Filtration	Flowmeters	1.0 to 10.0 GPM; 1" FNPT ends	Blue White	F-400N
	Carbon Filter	High-surface area carbon media drums	Terrenew	Carphene
	Flow Totalizer	5/8" x 3/4"; 0.5 to 20 GPM; totalizer in gallons	Neptune	---
Well Pumps	EW-1 thru EW-3, EW-5, ***EW-6, EW-7***	***2.0 GPM max; bottom inlet; 20" activation level***	***QED***	***AP2B (short)***
	EW-4	2.3 GPM max; bottom inlet; 35" activation level	QED	AP2B (long)
	Cycle Counters	digital display	QED	---
	Well Cap	vacuum sealing cap with tubing adapters	QED	---
Compressed Air System	Compressor	Oilless; 1.6 HP; 6.0 CFM @ 90 psi	Porter-Cable	C3151
	Filter / Regulator	compact 5-micron filter, 0-125 psi regulator; 1/2" NPT ends	Wilkerson	B18-04-FK00
Alarm	Hi Level Alarm	float w/ 10' cord; panel w/ alarm light, 85 dB horn, test + silence	Conery	LA10H

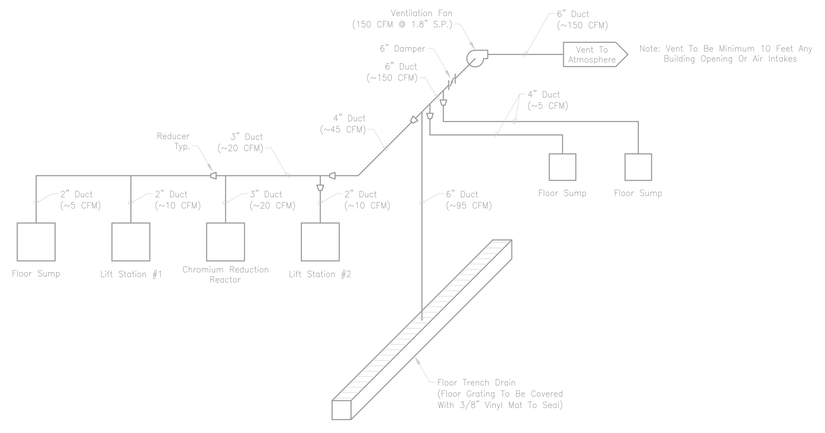
EQUIPMENT LIST
NOT TO SCALE



PROCESS & INSTRUMENTATION SCHEMATIC
NOT TO SCALE



ELECTRICAL SCHEMATIC
NOT TO SCALE



VENTILATION SCHEMATIC
NOT TO SCALE

	DATE	BY
7		
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REVISIONS

PROJECT MANAGER	BFK
DRAWN BY	RJM
DESIGNED BY	BFK
APPROVED BY	BFK
SCALE	As Noted
DATE	09-2007
DATE DRAWN	06-15-2012
DATE	06-15-2012
DATE	07-09-2012
DATE ISSUED	07-09-2012

DAY ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS
ROCHESTER, NEW YORK 14606
NEW YORK: NEW YORK 10016-0710

PROJECT TITLE
95 MT. READ BOULEVARD
ROCHESTER, NEW YORK

GROUNDWATER EXTRACTION AND TREATMENT
REMEDIAL DESIGN WORK PLAN ADDENDUM

DRAWING TITLE
Equipment List And Schematics

PROJECT NO.
3681R-05

FIGURE NO.
FIGURE 3

Reference Files Attached:
REF1: 3681R-Elec Schematic-RD
REF2: 3681R-Equipment List June 2012
REF3: 3681R-Schematic RD
REF4: 3681R-Ventilation
REF5:
REF6:
REF7:
REF8:
REF9:
REF10:

File Name: P:\Drawings\Wagark\3681R\Record Drawings\3681fs-Plot Sheet June 2012.dwg
Layout Name: C2R 2
Time Plotted: Monday, July 09, 2012 1:51:36 PM
Pen Setting File: 800pdfullcolor.ctb

ANSI "D" (22x34)
DayEnv_AnsiD

APPENDIX A

BORING LOG AND WELL CONSTRUCTION COMPLETION LOG

Monitoring Well MW-30

day

ENVIRONMENTAL CONSULTANTS

DAY ENVIRONMENTAL, INC.

AN AFFILIATE OF DAY ENGINEERING, P.C

Project #: 3681R-05
Project Address: 95 Mt. Read Boulevard
Rochester, New York
DAY Representative: T. DiNardo
Drilling Contractor: Nothnagle
Sampling Method: Hollow Storm Auger

TEST BORING MW-30

Ground Elevation: NA Datum: NA
Date Started: 3/4/2006 Date Ended: 3/5/2006
Borehole Depth: 20.5' Borehole Diameter: 4.25"
Completion Method: ■ Well Installed ☐ Backfilled with Grout ☐ Backfilled with Cuttings
Water Level (Date/Time):

Depth (ft)	Blows per 0.5 ft.	Sample Number	Sample Depth (ft)	% Recovery	N-Value or RQD%	PID Reading (ppm)	Sample Description	Notes
0						3.1	7"Concrete, Gravel/crushed Stone sub-base	
1						8.0	Brown SILT, trace Sand, moist	
2	NA	S-1	0-4	95%	NA	1.0		
3								
4						0.0		
5						1		
6	NA	S-2	4-8	80%	NA	60		
7								
8						10	Gray GRAVEL, moist	
9						60	Brown SILT, trace Sand, moist ...wet	
10	NA	S-3	8-11	100%	NA	1		
11							Brown SAND, some Silt, wet	
12						100		
13	NA	S-4	12-16	100%	NA	300	Gray SAND, some Silt, wet	
14						2600		
							Auger refusal @ 14.6' (see next page)	

Notes: 1) Water levels were made at the times and under conditions stated. Fluctuations of groundwater levels may occur due to seasonal factors and other conditions.
2) Stratification lines represent approximate boundaries. Transitions may be gradual.
3) PID readings are referenced to a benzene standard measured in the headspace above the sample using a MiniRae 2000 equipped with a 10.6 eV lamp.
4) NA = Not Available or Not Applicable
5) Headspace PID readings may be influenced by moisture

TEST BORING MW-30

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day
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Project #: 3681R-05
Project Address: 95 Mt. Read Boulevard
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Sampling Method: Hollow Storm Auger

TEST BORING MW-30

Ground Elevation: NA Datum: NA
Date Started: 3/4/2006 Date Ended: 3/5/2006
Borehole Depth: 20.5' Borehole Diameter: 4.25"
Completion Method: ■ Well Installed ☐ Backfilled with Grout ☐ Backfilled with Cuttings
Water Level (Date/Time):

Depth (ft)	Blows per 0.5 ft.	Sample Number	Sample Depth (ft)	% Recovery	N-Value or RQD%	PID Reading (ppm)	Sample Description	Notes
15							Rounded weathered LOCKPORT DOLOMITE with angular/vertical fractures	
16	NA	NA	NA	85	68	0.0		
17								
18								
19								
20								
21							Bottom of Coring (20.5')	

Notes:
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2) Stratification lines represent approximate boundaries. Transitions may be gradual.
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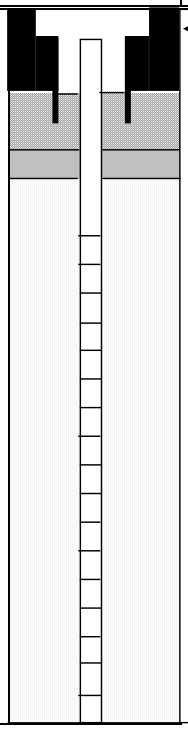
MONITORING WELL INSTALLATION LOG

Project #: 3681R-05
Project Address: 95 Mt. Read Boulevard
Rochester, New York
DAY Representative:
Drilling Contractor: Nothnagle Drilling

MONITORING WELL MW-30

Ground Elevation: NA Datum: NA
Date Started: 3/4/2006 Date Ended: 3/4/2006
Water Level (Date/Time):

Refer to Test Boring Log TB-MW-30 for Soil Description



Flush Mounted Roadbox
Depth to Top of Riser Pipe (ft)
1.0 Depth to Bottom of Cement Surface Patch (ft)
Backfill Type Sand

3.0 Depth to Top of Bentonite Seal (ft)
7.0 Depth to Bottom of Bentonite Seal (ft)

8.8 Depth to Top of Well Screen (ft)

4.25 Diameter of Borehole (in)

Backfill Type

2.0 Inside Diameter of Well (in)

Type of Pipe PVC
Screen slot size 20

18.8 Depth to Bottom of Well Screen (ft)

19.0 Depth of Borehole (ft)

Notes/Materials Used

Water 60 Gallons lost

Bentonite 3/4 bag

Sand 2 1/4 bags

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MONITORING WELL MW-30

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