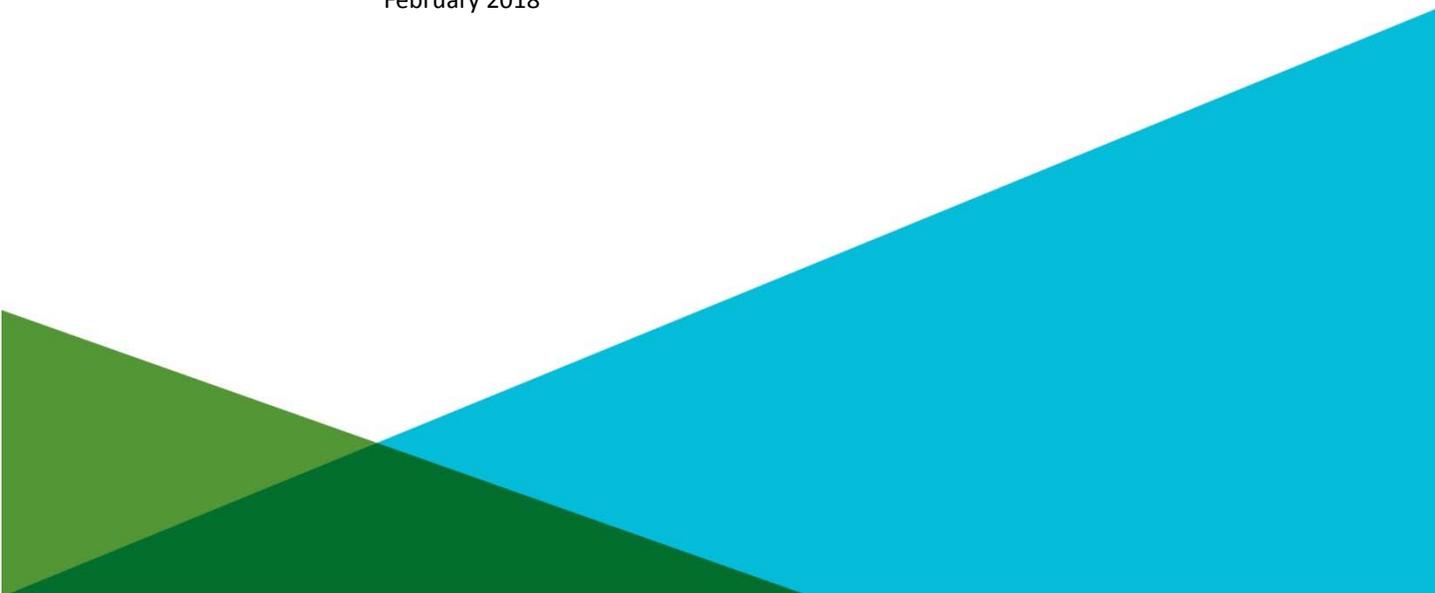


SITE MANAGEMENT PERIODIC REVIEW REPORT
OWEGO FORMER MGP SITE (#754008)
OWEGO, NEW YORK

by Haley & Aldrich of New York
Rochester, New York

for New York State Department of Environmental Conservation
Albany, New York

File No. 40490-005
February 2018





HALEY & ALDRICH OF NEW YORK
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28 February 2018
File No. 40490-005

New York State Department of Environmental Conservation
Division of Environmental Remediation, Remedial Bureau C
625 Broadway, 11th Floor
Albany, New York 12233-7014

Attention: Scott Deyette

Subject: Site Management Periodic Review Report
Owego Former MGP Site (No. 754008)
Owego, New York

Dear Mr. Deyette:

On behalf of New York State Electric & Gas (NYSEG), Haley & Aldrich of New York is pleased to submit the enclosed Periodic Review Report (PRR) and completed Institutional and Engineering Controls Certification Form which documents the implementation of and compliance with the Site Management Plan (SMP) for the Owego Former Manufactured Gas Plant (MGP) Site (No. 754008) located on East Main Street in Owego, New York.

This PRR has been prepared in response to the letter from the Department of Environmental Conservation (NYSDEC) to NYSEG dated 19 December 2017. If there are any questions regarding this submittal, please feel free to contact NYSEG Project Manager Tracy Blazicek at 607.762.8839.

Sincerely yours,
HALEY & ALDRICH OF NEW YORK

A handwritten signature in blue ink, appearing to read 'Douglas C. Allen'.

Douglas C. Allen, P.G.
Senior Project Manager

Enclosures

c: NYSEG; Mr. Tracy Blazicek, CHMM

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Executive Summary

The Owego Former Manufactured Gas Plant (MGP) Site operated from 1856 to 1935 at a 1.0-acre parcel located on East Main Street in Owego, New York. The area around the Site is primarily residential except for an automotive repair facility located to the east of the property. From September 1994 to July 1995, approximately 13,500 tons of soil were removed from the Site and the unsaturated zone confirmation samples met the Site clean-up objective of 500 parts per million (ppm) for total polycyclic aromatic hydrocarbons (PAHs). The excavation was advanced to the groundwater table at approximately 18 to 20 feet (ft) below ground surface and included the upper 2 ft of soil across the Site. As part of the remedy, a vegetated soil cover was placed on the Site.

From December 1999 to June 2001, field investigations determined that a continuing cyanide plume was emanating from a diffused on-site source of cyanide. Modeling performed using existing data at the time predicted the diffused cyanide source would be depleted in approximately 22 years. Periodic groundwater monitoring has continued to the present day to confirm there is not a “sustained off-site exceedance of groundwater standards which warrants active remediation”, as described in the April 1994 Record of Decision.

The engineering control (EC) at the Site consists of a vegetated soil cover. Institutional Controls (ICs) include land use and groundwater use limitations such that excavations are not performed at the Site and Site groundwater is not used for any purpose without the prior approval of the New York State Department of Environmental Conservation (NYSDEC) or another Relevant Agency of the State. These measures have been in place for many years and are effective in preventing exposure to Site contaminants.

Table of Contents

	Page
Executive Summary	i
List of Tables	iii
List of Figures	iii
1. Introduction	1
1.1 SITE OVERVIEW	1
1.2 REPORT ORGANIZATION	1
2. Evaluation of Remedy Performance, Effectiveness, and Protectiveness	2
3. IC/EC Plan Compliance Report	3
4. Monitoring Plan Compliance Report	4
5. Conclusions	5
6. References	6

Tables

Figures

Appendix A – Time Series for Total Cyanide and Benzene in Groundwater

Appendix B – Institutional and Engineering Controls Certification Form

Appendix C – Site Photographs

List of Tables

Table No.	Title
I	Summary of Groundwater Analytical Results
II	Reporting Period Groundwater Monitoring Program Summary

List of Figures

Figure No.	Title
1	Project Locus
2	Site Plan with Groundwater Elevations
3	Total Cyanide and Benzene in Groundwater

1. Introduction

1.1 SITE OVERVIEW

The Owego Former Manufactured Gas Plant (MPG) Site (the Site) is located on East Main Street in Owego, New York, approximately 1,200 feet (ft) north of the Susquehanna River (Figure 1). As shown in Figure 2, the 1-acre triangular parcel is bounded by East Main Street to the north; the former Erie-Lackawanna rail-bed, an active rail line, to the southwest; and a former lumber mill to the east, currently operating as an automotive repair facility. The surrounding area, except for the auto repair facility to the east, is generally residential.

The MGP at the Owego Site operated from 1856 to 1935. It is believed that both coal carbonization and carbureted water gas processes may have been used at the Site, although there appears to be no historical evidence of an oil or naphtha storage vessel on-site. There were three historic gas holders (one was subgrade) on-site, along with wood and brick buildings that housed the retorts, boiler, purifying room, regulators and other operational features of the former MGP.

From September 1994 to July 1995, the former subgrade holder and its contents were removed, along with soils adjacent to the former holder. Approximately 13,500 tons of soils were removed from the excavation, which extended down to the groundwater table at approximately 18 to 20 feet (ft) below grade. Verification samples were collected at the limits of the excavation that showed that the unsaturated zone confirmation samples were below the clean-up objective of 500 parts per million (ppm) of total polycyclic aromatic hydrocarbons (PAHs). In addition to the deep excavation, the upper 2 ft of soil (surface soil) on the entire Site was removed.

From December 1999 to June 2001, field investigations were completed to determine the nature and extent of a continuing dissolved cyanide plume. The multi-phased field effort included subsurface soil sampling and the installation of piezometers for groundwater flow and quality monitoring. The field investigations determined that groundwater flows to the southwest on-site and then more southerly as it moves off-site. The investigations also determined that there was a diffused on-site source of cyanide remaining below the groundwater table in the area of the former remedial excavation and that there were not sustained off-site exceedances of the New York State Department of Environmental Conservation (NYSDEC) Class GA groundwater quality standard for total cyanide (200 micrograms per liter, µg/L). As part of this work, groundwater fate and transport modeling based on the available data using the Electric Power Research Institute (EPRI) MYGRTTM V3.0 model indicated that the diffused source of the cyanide plume would be depleted in approximately 22 years without further active remedial measures.

The engineering control (EC) at the Site consists of a soil cover system, while groundwater and land use restrictions were implemented for institutional control (IC). Since 2003, selected wells and piezometers have been periodically sampled for cyanide and benzene.

1.2 REPORT ORGANIZATION

After this introductory section, this report is organized as follows:

- Section 2 evaluates the performance, effectiveness, and protectiveness of the existing remedy;
- Section 3 provides a summary of remedy Institutional Controls and Engineering Controls (IC/EC);
- Section 4 describes the monitoring program since 2013; and,
- Section 5 provides the overall conclusions of the PRR.

2. Evaluation of Remedy Performance, Effectiveness, and Protectiveness

The remedial excavation performed from September 1994 to July 1995 removed MGP-related impacts in the unsaturated zone exceeding the soil clean-up objective of 500 ppm of total PAHs. Field investigations and analysis of soil and groundwater data from 1999 to 2001 indicated that the dissolved cyanide plume would be depleted in approximately 22 years and that there would not be sustained off-site exceedances of NYSDEC Class GA groundwater quality standards. A groundwater monitoring program was initiated for cyanide and benzene to document the decline in cyanide concentrations and confirm that off-site groundwater concentrations were not sustained above NYSDEC Class GA groundwater quality standards.

A site plan with groundwater elevations from the latest (August 2017) monitoring event is provided as Figure 2. The historical total cyanide and benzene concentrations from existing wells and piezometers are presented in Table I. The existing groundwater sampling locations are shown on Figure 3 with analytical results from 2013 to the present. In addition, time series plots of total cyanide and benzene concentrations at selected wells and piezometers are provided in Appendix A.

The remedy for the Site has included soil excavation and removal, ECs and ICs. The remedy performance, effectiveness, and protectiveness can be summarized as follows:

- The EC consisting of a vegetated soil cover at the Site is still in place and protecting trespassers to the Site from exposure to soils beneath the soil cover;
- Based on the off-site groundwater data collected to date during the groundwater monitoring program, there is not a “sustained off-site exceedance of NYS groundwater quality standards which warrants active remediation”, as described in the April 1994 Record of Decision for the Site;
- ICs in effect for the Site prohibit use of the groundwater for any purpose without first obtaining a written waiver of such prohibition from the NYSDEC or another Relevant Agency of the State; and,
- ICs in effect for the Site include land use restrictions to ensure maintenance of the soil cover and oversight of excavation activities to prevent exposure to, or release of, contaminants.

3. IC/EC Plan Compliance Report

The IC/EC Certification Form is attached as Appendix B, and this section briefly summarizes the status of the controls at the Site. NYSEG maintains ownership of the parcel where the former MGP Site was located, and there are no plans to transfer ownership at this time. The soil cover EC is observed regularly by field staff during routine groundwater monitoring and is found to be competent with a grass cover present. Photos of the Site from February 2018 are provided in Appendix C. Land use and groundwater use ICs are in place at the Site such that excavations are not performed at the Site and the Site groundwater is not used for any purpose without the prior approval of NYSDEC or another Relevant Agency of the State. These measures are effective in preventing potential exposure to Site contaminants.

4. Monitoring Plan Compliance Report

The monitoring plan for the Site during this Periodic Review Report (PRR) reporting period included the sampling of three monitoring wells and three piezometers for total cyanide and benzene, as summarized in Table II. At the request of the property owner, monitoring well MW-9S was decommissioned on 28 May 2016 and per a decommissioning approval letter from NYSDEC dated 12 May 2016, piezometer PZ-10 was included in the May/June 2016 and August 2017 sampling events to confirm plume stability. As shown in Table II, monitoring well MW-2 was not sampled during the August 2017 sampling event due to a blockage in the well.

The groundwater results for total cyanide and benzene collected during the PRR reporting period are included in Table I. In addition, time series plots of the total cyanide and benzene data are provided as Appendix A. The groundwater monitoring was completed according to the plan during the PRR reporting period and the data demonstrate that there is not a “sustained off-site exceedance of groundwater standards which warrants remediation”, as described in the April 1994 Record of Decision for the Site. A Fifteen-Year Groundwater Monitoring Summary Report is currently being prepared that will evaluate the total cyanide and benzene concentration trends over time.

5. Conclusions

During the reporting period of January 2013 to January 2018, the EC and ICs at the Site performed as intended. No excavation activities were performed at the Site and the vegetated soil cover is in good functional condition. No use of Site groundwater has occurred. The groundwater monitoring program for the Site (as set forth in the Ten-Year Report) was performed and the results indicated that there was no sustained off-site exceedance of NYSDEC Class GA groundwater standards. The remedies for the Site, consisting of excavation of impacted materials and now ongoing groundwater monitoring, are effective in protecting human health and the environment.

6. References

1. Ish Inc. February 2013. Periodic Review Report for the Owego Former MGP Site.

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TABLES

TABLE I
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
OWEGO FORMER MGP SITE
OWEGO, NEW YORK

NYSDEC TOGS 1.1.1 Class GA Water Quality Standards			Chemical Name Cyanide, Total	Benzene
			200	1
			ug/L	ug/L
	Sample Type	Sample Name		
MW-1				
08/28/1995	N	MW-1-082895	< 10	< 5
10/16/1995	N	MW-1-101695	< 10	< 5
01/24/1996	N	MW-1-012496	< 10	< 5
04/15/1996	N	MW-1-041596	< 10	< 5
07/25/1996	N	MW-1-072596	< 10	< 5
10/15/1996	N	MW-1-101596	< 10	< 5
01/20/1997	N	MW-1-012097	< 10	< 10
05/07/1997	N	MW-1-050797	< 10	< 10
04/29/1998	N	MW-1-042998	< 20	< 0.2
10/19/1998	N	MW-1-101998	< 10	< 0.5
04/16/1999	N	MW-1-041699	< 100	< 0.2
12/14/1999	N	MW-1-121499	< 20	-
04/26/2000	N	MW-1-042600	< 20	-
09/28/2000	N	MW-1-092800	< 20	-
04/22/2003	N	MW-1-042203	-	< 0.1
MW-11				
01/24/2001	N	MW-11-012401	544	-
06/20/2001	N	MW-11-062001	542	-
04/22/2003	N	MW-11-042203	-	< 0.1
04/23/2003	N	MW-11-042303	148	-
10/22/2003	N	MW-11-102203	352	-
04/14/2004	N	MW-11-041404	192	< 0.1
10/29/2004	N	MW-11-102904	328	-
04/08/2005	N	MW-11-040805	96	-
10/04/2005	N	MW-11-100405	181	-
10/03/2006	N	MW-11-100306	204	-
10/23/2007	N	MW-11-102307	79.9	-
MW-2				
08/28/1995	N	MW-2-082895	1900	88
10/16/1995	N	MW-2-101695	2180	44
01/24/1996	N	MW-2-012496	1700	< 5
04/15/1996	N	MW-2-041596	457	70
07/25/1996	N	MW-2-072596	566	48
10/15/1996	N	MW-2-101596	1490	120
01/20/1997	N	MW-2-012097	496	74
04/29/1997	N	MW-2-042997	798	40
04/29/1998	N	MW-2-042998	290	47
10/19/1998	N	MW-2-101998	3150	47
04/16/1999	N	MW-2-041699	1210	1
12/14/1999	N	MW-2-121499	1230	-
04/26/2000	N	MW-2-042600	540	-
06/20/2000	N	MW-2-062000	550	-
06/20/2000	FD	MW-2-062000-DUP	460	-
09/28/2000	N	MW-2-092800	2750	-
01/24/2001	N	MW-2-012401	248	-
01/24/2001	FD	MW-2-012401-DUP	238	-
06/20/2001	N	MW-2-062001	181	-
04/22/2003	N	MW-2-042203	-	0.9
04/23/2003	N	MW-2-042303	274	-
04/23/2003	FD	MW-2-042303-DUP	279	-
10/22/2003	N	MW-2-102203	79	0.5
10/22/2003	FD	MW-2-102203-DUP	80	-

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SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
OWEGO FORMER MGP SITE
OWEGO, NEW YORK

NYSDEC TOGS 1.1.1 Class GA Water Quality Standards		Chemical Name	Cyanide, Total	Benzene
		Units	200 ug/L	1 ug/L
Sample Type	Sample Name			
MW-2 (continued)				
04/14/2004	N	MW-2-041404	183	1.3
04/14/2004	FD	MW-2-041404-DUP	173	-
10/29/2004	N	MW-2-102904	256	1.1
10/29/2004	FD	MW-2-102904-DUP	250	-
04/08/2005	N	MW-2-040805	43	< 0.2
04/08/2005	FD	MW-2-040805-DUP	49	-
10/04/2005	N	MW-2-100405	58	13
10/04/2005	FD	MW-2-100405-DUP	59	-
02/14/2006	N	MW-2-021406	-	1.2
10/03/2006	N	MW-2-100306	115	5.6
10/03/2006	FD	MW-2-100306-DUP	110	-
10/23/2007	N	MW-2-102307	36.1	11
10/23/2007	FD	MW-2-102307-DUP	39.9	-
10/28/2008	N	MW-2-102808	85.6	34
10/28/2008	FD	MW-2-102808-DUP	12.6	-
10/26/2009	N	MW-2-102609	84	23
10/26/2010	N	MW-2-102610	51.9	1.2
10/25/2011	N	MW-2-102511	9.6	5.1
10/16/2012	N	MW-2-101612	98	21
07/11/2014	N	2293-071114-1510	-	13
07/11/2014	FD	2293-071114-0001	-	11
04/21/2015	N	MW02-042115-1325	-	0.82 J
04/21/2015	FD	0123-042115-0001	-	0.85 J
06/10/2016	N	MW02-061016-1200	-	< 1
MW-4				
08/28/1995	N	MW-4-082895	797	< 5
10/16/1995	N	MW-4-101695	996	< 5
01/24/1996	N	MW-4-012496	797	< 5
04/15/1996	N	MW-4-041596	1190	< 5
07/25/1996	N	MW-4-072596	3900	< 5
10/15/1996	N	MW-4-101596	1380	< 5
01/20/1997	N	MW-4-012097	757	< 10
04/29/1997	N	MW-4-042997	4180	< 10
04/29/1998	N	MW-4-042998	1600	-
10/19/1998	N	MW-4-101998	998	-
04/16/1999	N	MW-4-041699	630	-
12/14/1999	N	MW-4-121499	330	-
04/26/2000	N	MW-4-042600	570	-
09/28/2000	N	MW-4-092800	620	-
01/24/2001	N	MW-4-012401	725	-
06/20/2001	N	MW-4-062001	2240	-
04/22/2003	N	MW-4-042203	-	< 0.1
04/23/2003	N	MW-4-042303	2010	-
10/22/2003	N	MW-4-102203	1150	< 0.1
04/14/2004	N	MW-4-041404	1010	< 0.1
10/29/2004	N	MW-4-102904	1690	< 0.1
04/08/2005	N	MW-4-040805	744	< 0.2
10/04/2005	N	MW-4-100405	404	270
02/14/2006	N	MW-4-021406	-	1.7
10/03/2006	N	MW-4-100306	2240	1.3
10/23/2007	N	MW-4-102307	234	< 0.2
10/28/2008	N	MW-4-102808	90.4	< 1

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OWEGO FORMER MGP SITE
OWEGO, NEW YORK

NYSDEC TOGS 1.1.1 Class GA Water Quality Standards			Chemical Name Cyanide, Total 200 ug/L	Benzene 1 ug/L
	Sample Type	Sample Name	Units	
MW-4 (continued)				
10/26/2009	N	MW-4-102609	145	0.64
10/26/2009	FD	MW-4-102609-DUP	211	0.45
10/26/2010	N	MW-4-102610	180	< 1
10/26/2010	FD	MW-4-102610-DUP	207	< 1
10/25/2011	N	MW-4-102511	2700	< 1
10/25/2011	FD	MW-4-102511-DUP	2900	< 1
03/12/2012	N	MW-4-031212	810	-
03/12/2012	FD	MW-4-031212-DUP	990	-
10/16/2012	N	MW-4-101612	610	0.7
10/16/2012	FD	MW-4-101612-DUP	650	0.47
07/11/2014	N	2293-071114-1355	1700	-
04/21/2015	N	MW04-042115-1135	400	-
05/26/2016	N	MW04-052616-1325	3300 J	-
08/23/2017	N	MW04-082317-1245	5700	-
MW-7				
08/28/1995	N	MW-7-082895	196	< 5
10/16/1995	N	MW-7-101695	462	< 5
01/24/1996	N	MW-7-012496	443	< 5
04/15/1996	N	MW-7-041596	84	< 5
07/25/1996	N	MW-7-072596	228	< 5
10/15/1996	N	MW-7-101596	126	190
01/20/1997	N	MW-7-012097	102	< 10
04/29/1997	N	MW-7-042997	182	< 10
04/29/1998	N	MW-7-042998	100	0.3
10/19/1998	N	MW-7-101998	318	19
04/16/1999	N	MW-7-041699	160	3.3
12/14/1999	N	MW-7-121499	60	-
04/26/2000	N	MW-7-042600	90	-
09/28/2000	N	MW-7-092800	180	-
01/24/2001	N	MW-7-012401	200	-
06/20/2001	N	MW-7-062001	99	-
04/22/2003	N	MW-7-042203	-	< 0.1
04/23/2003	N	MW-7-042303	159	-
10/22/2003	N	MW-7-102203	184	< 0.1
04/14/2004	N	MW-7-041404	132	< 0.1
10/29/2004	N	MW-7-102904	227	< 0.1
04/08/2005	N	MW-7-040805	82	3.8
10/04/2005	N	MW-7-100405	68	32
02/14/2006	N	MW-7-021406	-	< 0.2
10/03/2006	N	MW-7-100306	148	< 0.2
10/23/2007	N	MW-7-102307	49.5	< 0.2
10/28/2008	N	MW-7-102808	59.5	6.1
10/26/2009	N	MW-7-102609	60.2	< 1
10/26/2010	N	MW-7-102610	23.7	< 1
10/25/2011	N	MW-7-102511	55	< 1
10/16/2012	N	MW-7-101612	50	< 1
MW-9D				
08/28/1995	N	MW-9D-082895	< 10	< 5
10/16/1995	N	MW-9D-101695	< 10	< 5
01/24/1996	N	MW-9D-012496	< 10	< 5
04/15/1996	N	MW-9D-041596	18	< 5
07/25/1996	N	MW-9D-072596	< 10	< 5

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OWEGO FORMER MGP SITE
OWEGO, NEW YORK

NYSDEC TOGS 1.1.1 Class GA Water Quality Standards		Chemical Name	Cyanide, Total	Benzene
		Units	ug/L	ug/L
	Sample Type	Sample Name		
MW-9D (continued)				
10/15/1996	N	MW-9D-101596	11	< 5
01/20/1997	N	MW-9D-012097	< 10	< 10
04/29/1997	N	MW-9D-042997	< 10	< 10
04/29/1998	N	MW-9D-042998	-	< 0.2
MW-9S				
08/28/1995	N	MW-9S-082895	180	< 5
10/16/1995	N	MW-9S-101695	118	< 5
01/24/1996	N	MW-9S-012496	62	< 5
04/15/1996	N	MW-9S-041596	60	< 5
07/25/1996	N	MW-9S-072596	76	< 5
10/15/1996	N	MW-9S-101596	62	< 5
01/20/1997	N	MW-9S-012097	49	< 10
04/29/1997	N	MW-9S-042997	77	< 10
04/29/1998	N	MW-9S-042998	50	< 0.2
10/19/1998	N	MW-9S-101998	113	-
04/16/1999	N	MW-9S-041699	50	-
12/14/1999	N	MW-9S-121499	80	-
04/26/2000	N	MW-9S-042600	30	-
09/28/2000	N	MW-9S-092800	70	-
01/24/2001	N	MW-9S-012401	53	-
06/20/2001	N	MW-9S-062001	48	-
04/22/2003	N	MW-9S-042203	-	< 0.1
04/23/2003	N	MW-9S-042303	28	-
10/22/2003	N	MW-9S-102203	85	< 0.1
04/14/2004	N	MW-9S-041404	63	< 0.1
10/29/2004	N	MW-9S-102904	114	< 0.1
04/08/2005	N	MW-9S-040805	44	< 0.2
10/04/2005	N	MW-9S-100405	94	< 0.2
10/03/2006	N	MW-9S-100306	81	< 0.2
10/23/2007	N	MW-9S-102307	65.2	< 0.2
10/28/2008	N	MW-9S-102808	68.9	-
10/26/2009	N	MW-9S-102609	46.9	-
10/26/2010	N	MW-9S-102610	24.4	-
10/25/2011	N	MW-9S-102511	230	-
03/12/2012	N	MW-9S-031212	130	-
10/16/2012	N	MW-9S-101612	120	-
07/11/2014	N	3159-071114-1750	140	-
04/21/2015	N	MW9S-042115-1440	18	-
05/26/2016	N	MW9S-052616-1125	51 J	-
PZ-1				
12/15/1999	N	PZ-1-121599	< 5	-
06/19/2000	N	PZ-1-061900	67	-
09/28/2000	N	PZ-1-092800	< 20	-
04/22/2003	N	PZ-1-042203	-	< 0.1
PZ-2				
12/15/1999	N	PZ-2-121599	241	-
06/19/2000	N	PZ-2-061900	9800	-
09/28/2000	N	PZ-2-092800	1550	-
01/24/2001	N	PZ-2-012401	1320	-
06/20/2001	N	PZ-2-062001	1540	-
06/20/2001	FD	PZ-2-062001-DUP	1650	-

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OWEGO FORMER MGP SITE
OWEGO, NEW YORK

NYSDEC TOGS 1.1.1 Class GA Water Quality Standards		Chemical Name	Cyanide, Total	Benzene
		Units	200 ug/L	1 ug/L
Sample Type	Sample Name			
PZ-2 (continued)				
04/22/2003	N	PZ-2-042203	-	< 0.1
04/23/2003	N	PZ-2-042303	3230	-
10/22/2003	N	PZ-2-102203	1860	-
04/14/2004	N	PZ-2-041404	1470	-
08/03/2004	N	PZ-2-080304	804	-
10/29/2004	N	PZ-2-102904	1410	-
04/08/2005	N	PZ-2-040805	1020	-
10/04/2005	N	PZ-2-100405	535	-
10/03/2006	N	PZ-2-100306	989	-
10/23/2007	N	PZ-2-102307	352	-
10/28/2008	N	PZ-2-102808	242	-
10/26/2009	N	PZ-2-102609	< 10	-
10/26/2010	N	PZ-2-102610	262	-
10/25/2011	N	PZ-2-102511	270	-
03/12/2012	N	PZ-2-031212	730	-
10/16/2012	N	PZ-2-101612	460	-
07/11/2014	N	3159-071114-1520	2900 J	-
04/21/2015	N	PZ02-042115-1155	580	-
05/26/2016	N	PZ02-052616-1635	2700 J	-
08/23/2017	N	PZ02-082317-1430	3600	-
PZ-3				
12/15/1999	N	PZ-3-121599	696	-
12/15/1999	FD	PZ-3-121599-DUP	682	-
06/19/2000	N	PZ-3-061900	380	-
06/19/2000	FD	PZ-3-061900-DUP	440	-
09/28/2000	N	PZ-3-092800	200	-
01/24/2001	N	PZ-3-012401	265	-
06/20/2001	N	PZ-3-062001	400	-
04/22/2003	N	PZ-3-042203	-	12
04/23/2003	N	PZ-3-042303	646	-
10/22/2003	N	PZ-3-102203	210	-
04/14/2004	N	PZ-3-041404	327	-
10/29/2004	N	PZ-3-102904	167	-
04/08/2005	N	PZ-3-040805	22	-
10/04/2005	N	PZ-3-100405	190	-
10/03/2006	N	PZ-3-100306	213	-
10/23/2007	N	PZ-3-102307	166	-
PZ-6				
12/15/1999	N	PZ-6-121599	14	-
06/19/2000	N	PZ-6-061900	21	-
01/24/2001	N	PZ-6-012401	< 3	-
04/22/2003	N	PZ-6-042203	-	< 0.1
02/14/2006	N	PZ-6-021406	-	< 0.2
10/03/2006	N	PZ-6-100306	-	< 0.2
10/23/2007	N	PZ-6-102307	-	< 0.2
PZ-7				
12/15/1999	N	PZ-7-121599	65	-
06/19/2000	N	PZ-7-061900	49	-
09/28/2000	N	PZ-7-092800	80	-
01/24/2001	N	PZ-7-012401	73	-
06/20/2001	N	PZ-7-062001	30	-

TABLE I
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
OWEGO FORMER MGP SITE
OWEGO, NEW YORK

NYSDEC TOGS 1.1.1 Class GA Water Quality Standards		Chemical Name	Cyanide, Total	Benzene
		Units	200 ug/L	1 ug/L
	Sample Type	Sample Name		
PZ-7 (continued)				
04/22/2003	N	PZ-7-042203	-	< 0.1
02/14/2006	N	PZ-7-021406	-	< 0.2
10/03/2006	N	PZ-7-100306	-	< 0.2
10/23/2007	N	PZ-7-102307	-	< 0.2
PZ-8				
12/15/1999	N	PZ-8-121599	296	-
12/15/1999	FD	PZ-8-121599-DUP	296	-
06/19/2000	N	PZ-8-061900	94	-
09/28/2000	N	PZ-8-092800	300	-
01/24/2001	N	PZ-8-012401	358	-
04/22/2003	N	PZ-8-042203	-	1200
02/14/2006	N	PZ-8-021406	-	580
10/03/2006	N	PZ-8-100306	-	500
10/23/2007	N	PZ-8-102307	-	670
10/28/2008	N	PZ-8-102808	-	590
10/26/2009	N	PZ-8-102609	-	1100
10/26/2010	N	PZ-8-102610	-	770
10/25/2011	N	PZ-8-102511	-	150
10/16/2012	N	PZ-8-101612	-	530
07/11/2014	N	3159-071114-1640	-	810
04/21/2015	N	PZ08-042115-1315	-	140
05/26/2016	N	PZ08-052616-1515	-	65 J
05/26/2016	FD	4527-052616-0001	-	57 J
08/23/2017	N	PZ08-082317-1300	-	380
08/23/2017	FD	1234-082317-0002	-	380
PZ-10				
06/19/2000	N	PZ-10-061900	60	-
09/28/2000	N	PZ-10-092800	< 20	-
01/24/2001	N	PZ-10-012401	< 3	-
06/20/2001	N	PZ-10-062001	< 3	-
04/22/2003	N	PZ-10-042203	-	< 0.1
04/23/2003	N	PZ-10-042303	< 3	-
10/22/2003	N	PZ-10-102203	< 3	-
04/14/2004	N	PZ-10-041404	< 3	-
10/29/2004	N	PZ-10-102904	8	-
04/08/2005	N	PZ-10-040805	5	-
10/04/2005	N	PZ-10-100405	< 3	-
10/03/2006	N	PZ-10-100306	< 3	-
10/23/2007	N	PZ-10-102307	< 3	-
05/26/2016	N	PZ10-052616-1335	< 10 J	0.11 R
08/23/2017	N	PZ10-082317-1545	< 10	< 1
PZ-11				
06/19/2000	N	PZ-11-061900	120	-
09/28/2000	N	PZ-11-092800	160	-
01/24/2001	N	PZ-11-012401	78	-
06/20/2001	N	PZ-11-062001	162	-
04/22/2003	N	PZ-11-042203	-	< 0.1
04/23/2003	N	PZ-11-042303	84	-
10/22/2003	N	PZ-11-102203	91	< 0.1
04/14/2004	N	PZ-11-041404	74	< 0.1
10/29/2004	N	PZ-11-102904	137	< 0.1

TABLE I
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
OWEGO FORMER MGP SITE
OWEGO, NEW YORK

NYSDEC TOGS 1.1.1 Class GA Water Quality Standards		Chemical Name	Cyanide, Total	Benzene
		Units	200	1
			ug/L	ug/L
	Sample Type	Sample Name		
PZ-11 (continued)				
04/08/2005	N	PZ-11-040805	95	< 0.2
10/04/2005	N	PZ-11-100405	39	< 0.2
10/03/2006	N	PZ-11-100306	111	0.5
10/23/2007	N	PZ-11-102307	41.5	< 0.2
PZ-12				
06/19/2000	N	PZ-12-061900	45	-
01/24/2001	N	PZ-12-012401	< 3	-
04/22/2003	N	PZ-12-042203	-	< 0.1
PZ-14				
06/19/2000	N	PZ-14-061900	< 10	-
PZ-15				
06/19/2000	N	PZ-15-061900	< 10	-

Notes and Abbreviations:

1. Results were compared to TOGS Water Quality Standards, Table 1, Class GA (June 1998). Exceedances are shaded.
2. <: Result is not detected above the indicated reporting limit.
J: Estimated result.
R: Rejected during validation.
3. Results in **bold** are detected.
4. Sample type codes: N - Normal, FD - Field Duplicate
5. Samples collected prior to July 2014 were obtained from Ish Inc.

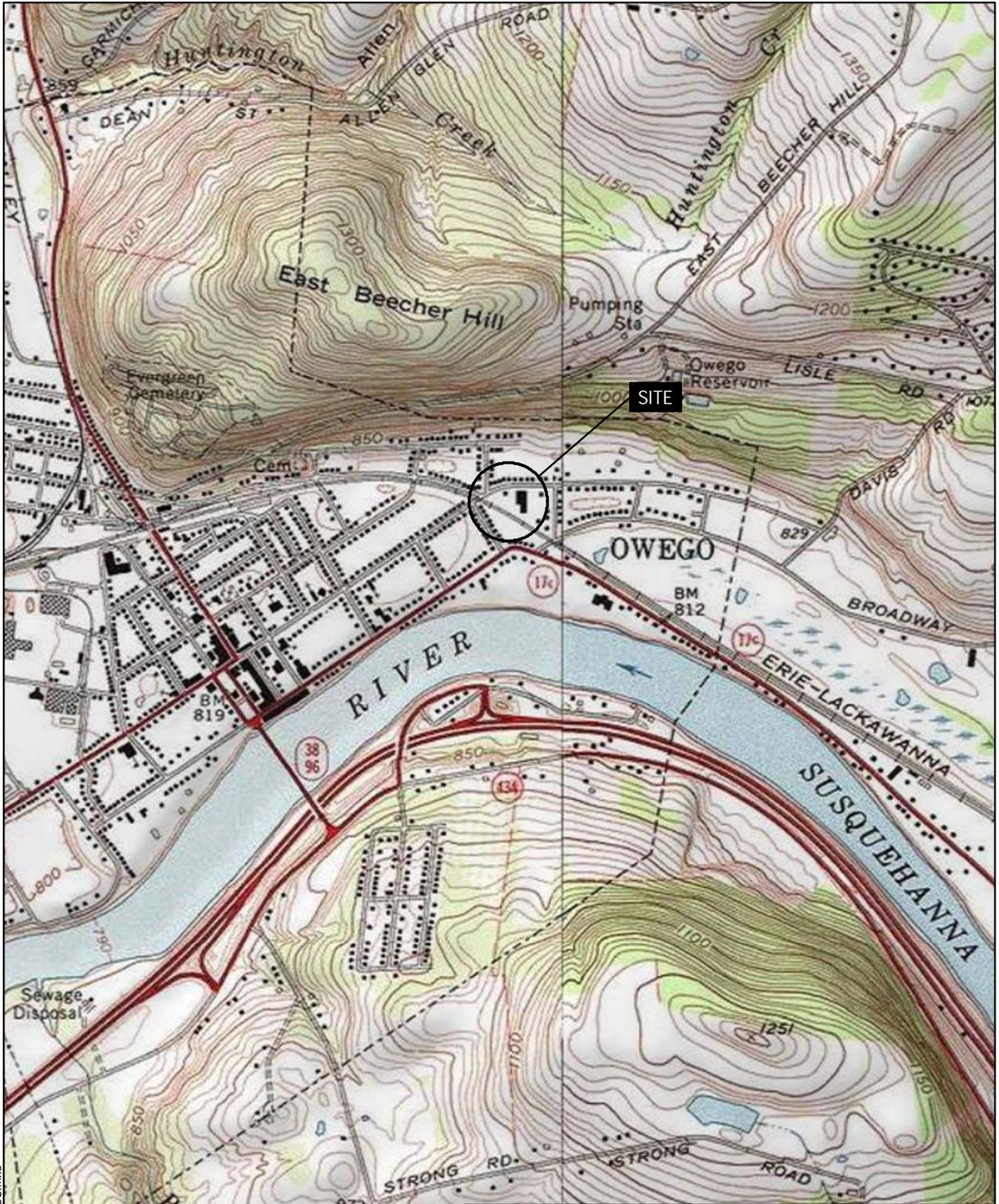
TABLE II
REPORTING PERIOD GROUNDWATER MONITORING PROGRAM SUMMARY
OWEGO FORMER MGP SITE
OWEGO, NEW YORK

	MW-2	MW-4	MW-9S	PZ-2	PZ-8	PZ-10
July 2014	BZ	CN	CN	CN	BZ	NS
April 2015	BZ	CN	CN	CN	BZ	NS
May/June 2016	BZ	CN	CN	CN	BZ	CN & BZ
August 2017	NS	CN	NS	CN	BZ	CN & BZ

Notes and Abbreviations:

1. CN: Total cyanide
2. BZ: Benzene
3. NS: Not sampled

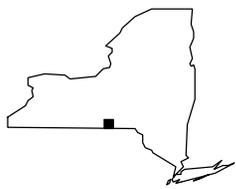
FIGURES



G:\40490_Owego\GIS\40490-SITE-LOCUS.mxd

MAP SOURCE: ESRI

SITE COORDINATES : 42°06'29"N,76°15'09"W



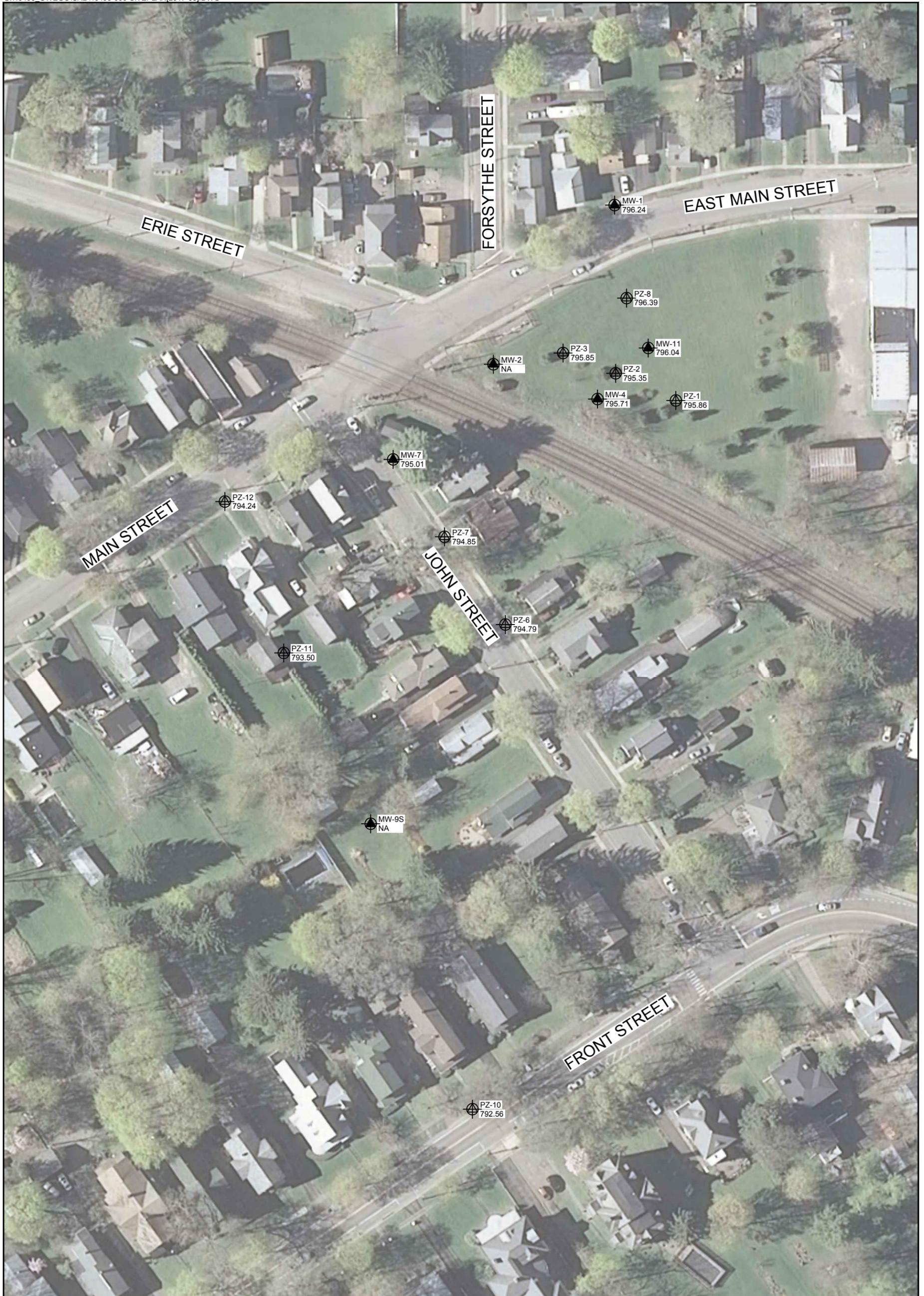
**HALEY
ALDRICH**

OWEGO FORMER MGP SITE
NEW YORK STATE ELECTRIC & GAS
OWEGO, NEW YORK

PROJECT LOCUS

APPROXIMATE SCALE: 1 IN = 2,000 FT
FEBRUARY 2018

FIGURE 1



LEGEND	
	MONITORING WELL
	PIEZOMETER

- NOTES**
1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
 2. GROUNDWATER ELEVATIONS WERE MEASURED ON 23 AUGUST 2017.
 3. MW-2 WAS NOT MEASURED DUE TO AN OBSTRUCTION INSIDE THE WELL CASING.
 4. MW-9S WAS NOT MEASURED.



HALEY ALDRICH OWEGO FORMER MGP SITE
 NEW YORK STATE ELECTRIC & GAS
 OWEGO, NEW YORK

**SITE PLAN WITH
 GROUNDWATER ELEVATIONS**

SCALE: AS SHOWN
 FEBRUARY 2018

FIGURE 2



LEGEND

-  MONITORING WELL
-  PIEZOMETER

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. DATABOX RESULT UNITS ARE UG/L.
3. J: ESTIMATED RESULT
4. R: REJECTED DURING VALIDATION
5. /: INDICATES DUPLICATE SAMPLE RESULT
6. RESULTS WERE COMPARED AGAINST TOGS WATER QUALITY STANDARDS. EXCEEDANCES ARE SHOWN IN RED.



OWEGO FORMER MGP SITE
 NEW YORK STATE ELECTRIC & GAS
 OWEGO, NEW YORK

**TOTAL CYANIDE AND BENZENE
 IN GROUNDWATER**

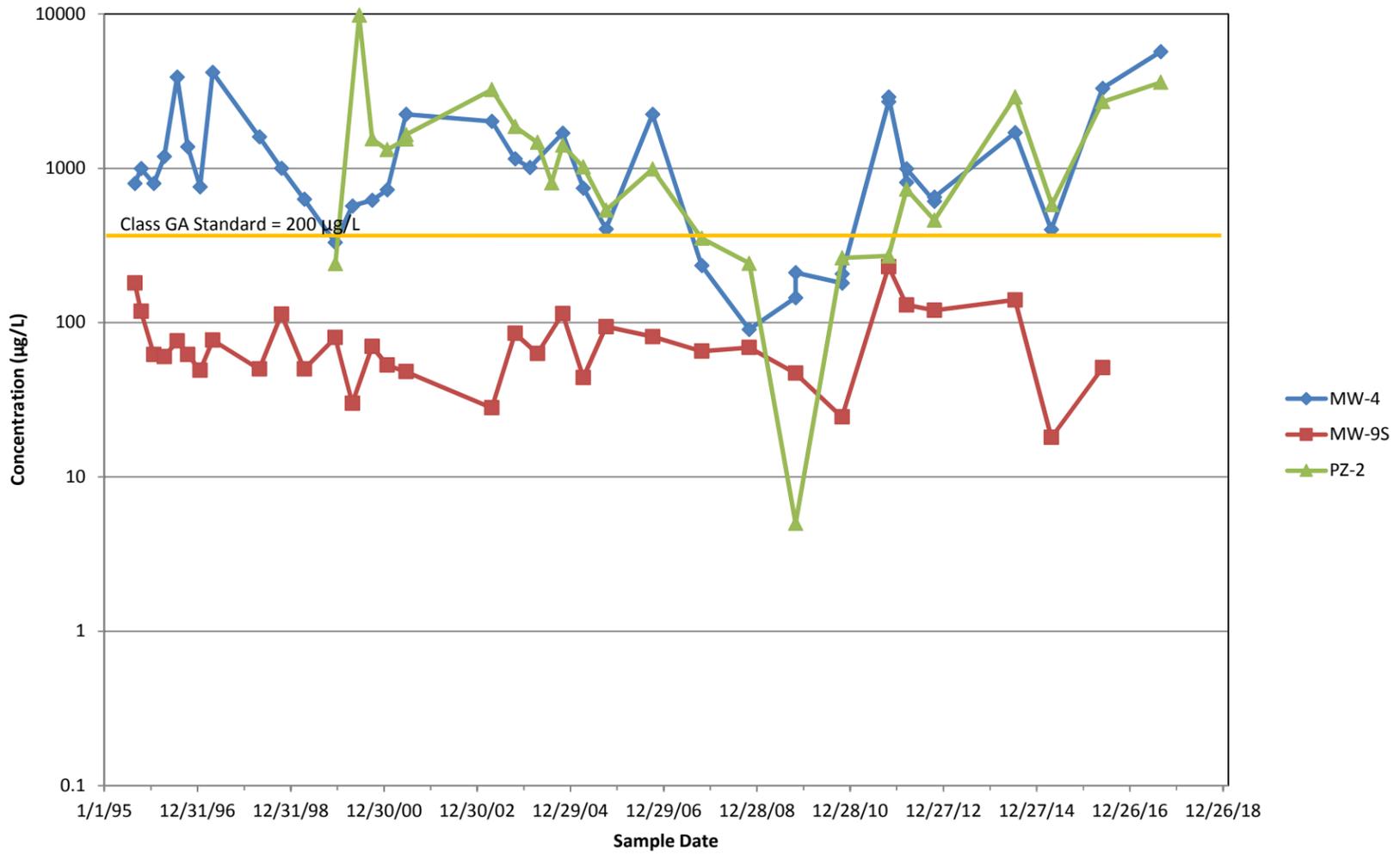
SCALE: AS SHOWN
 FEBRUARY 2018

FIGURE 3

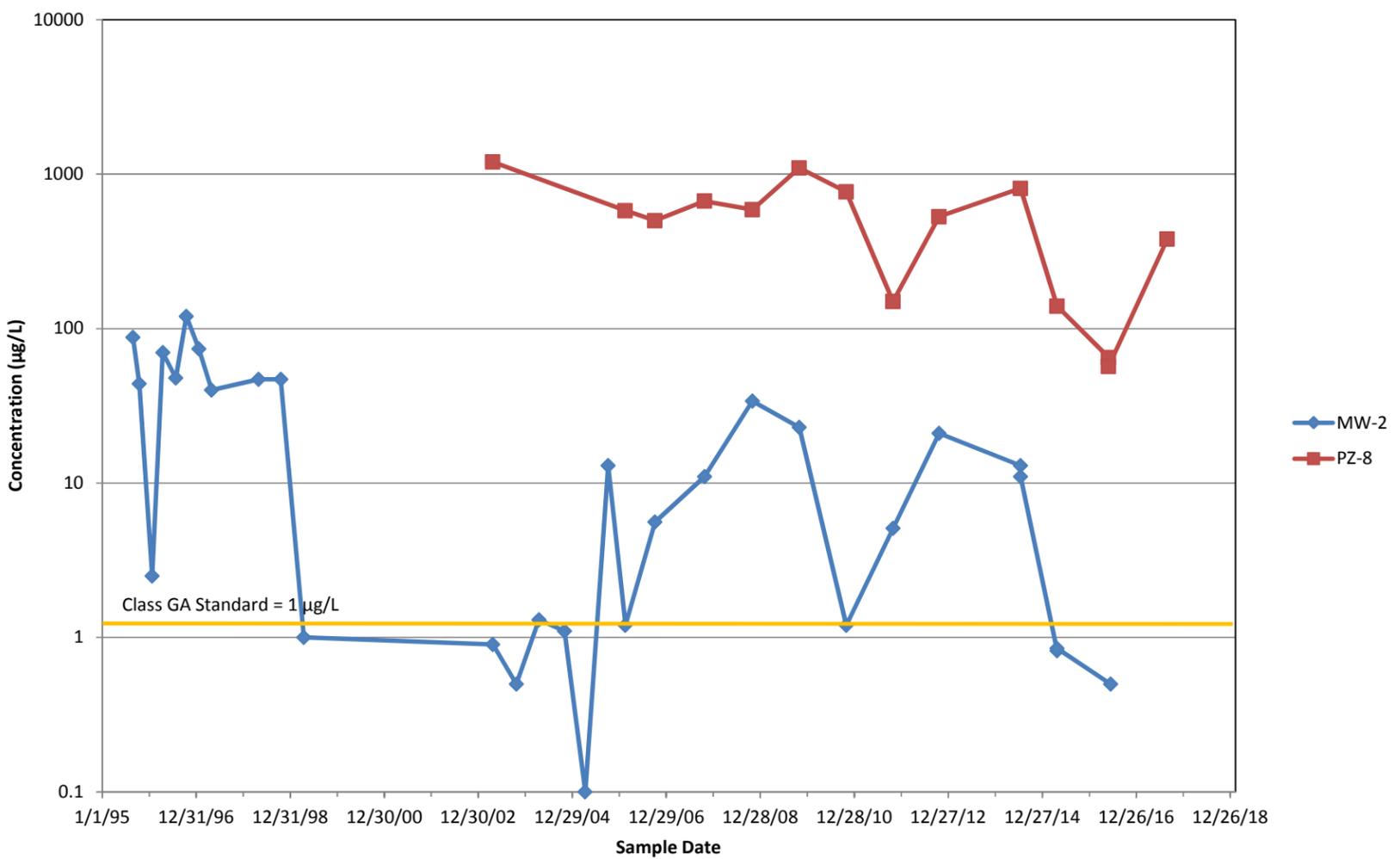
APPENDIX A

Time Series for Total Cyanide and Benzene in Groundwater

Total Cyanide in Groundwater



Benzene in Groundwater



APPENDIX B

Institutional and Engineering Controls Certification Form



Enclosure 2
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form



	Site Details	Box 1
Site No. 754008		
Site Name NYSEG - Owego Coal Gas MGP		
Site Address: East Main Street Zip Code: 13827		
City/Town: Owego		
County: Tioga		
Site Acreage: 1.0		
Reporting Period: January 30, 2013 to January 30, 2018		
		YES NO
1. Is the information above correct?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If NO, include handwritten above or on a separate sheet.		
2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.		
5. Is the site currently undergoing development?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		Box 2
		YES NO
6. Is the current site use consistent with the use(s) listed below? Industrial	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7. Are all ICs/ECs in place and functioning as designed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.		
A Corrective Measures Work Plan must be submitted along with this form to address these issues.		
_____ Signature of Owner, Remedial Party or Designated Representative		_____ Date

Description of Institutional Controls

<u>Parcel</u>	<u>Owner</u>	<u>Institutional Control</u>
	NYSE & G	Ground Water Use Restriction Soil Management Plan Landuse Restriction Site Management Plan
Deed Restrictions, Groundwater Use Restrictions, Site Management Plan. Periodic certification.		

NOW, THEREFORE, the Declarant agrees to the conditions and restrictions listed below and hereby notify all interested parties, owners, lessees, licensees, and operators of the Property, or any portion thereof, that the following is required of each of them while owning, leasing, or operating the Property:

First, the portion of the Property subject to this Declaration of Covenants and Restrictions is as shown on the survey map attached to this Declaration and made a part hereof, marked Appendix A, and is more particularly described in the description of the site attached to this Declaration and made a part hereof, marked Appendix B (hereinafter referred to as the "Site").

Second, the Declarant and any subsequent owner(s) of all or any portion of the Site, and each lessee, licensee or operator of all or any portion of the Site, shall prohibit and refrain from using the groundwater underlying the Site for any reason without first obtaining a written waiver of such prohibition from the New York State Department of Environmental Conservation or any New York State agency or agencies subsequently created to protect the environment of the State and the health of the State's citizens (such New York State agencies being collectively referred to hereafter as the "Relevant Agencies").

Third, the Declarant and any subsequent owner(s) of all or any portion of the Site, and each lessee, licensee, or operator of all or any portion of the Site: (a) shall permit NYSEG to install, use, operate, and maintain in place upon or under the Site engineering controls as are required by NYSEG or the Relevant Agencies, including but not limited to those engineering controls described in Appendix C, attached hereto and made part hereof, and (b) shall not disturb, remove, or otherwise interfere with the installation, use, operation, and maintenance in place of such engineering controls, unless in each instance they first obtain a written waiver of such prohibition from NYSEG and the Relevant Agencies.

Fourth, the Declarant and any subsequent owner(s) of all or any portion of the Site, and each lessee, licensee, or operator of all or any portion of the Site, shall permit the placement and continuance in full force and effect of any and all institutional controls touching or affecting the Site that are required by the Relevant Agencies, including any that are required to be obtained and maintained by NYSEG, and such owner(s), including the Declarant, and each such lessee, licensee, or operator shall not remove or modify any such institutional control without in each instance first obtaining a written waiver of such requirement from the Relevant Agencies.

Fifth, this Declaration and the obligations and restrictions contained herein is and shall be deemed a covenant running with the land and shall be binding upon the Declarant, each lessee, licensee, and operator of all or any portion of the Site, and upon future owner(s) of all or any portion of the Site. The owner(s) of all or any portion of the Site, including the Declarant, and each lessee, licensee, or operator of all or any portion of the Site, do hereby consent to the enforcement by NYSEG and the Relevant Agencies of the prohibitions and restrictions contained herein that are required to be recorded by the ROD, and hereby covenant not to contest the authority of NYSEG or the Relevant Agencies to seek enforcement.

Sixth, the Declarant and any subsequent owner(s) of all or any portion of the Site shall notify any person who intends to excavate on the Site of the requirements of this Declaration in advance and shall require that

such

person notify NYSEG and the Relevant Agencies in writing no less than thirty (30) days prior to performing any excavation to allow NYSEG and the Relevant Agencies to inform such person of any conditions or measures necessary to prevent exposure to, or release of, contaminants. Such written notification must include a work schedule and a description of the activities to be undertaken which at a minimum must conform to the requirements of the Excavation Protocol in Appendix F.

Seventh, the Declarant and any subsequent owner(s) of all or any portion of the Property, and each lessee, licensee, or operator of all or any portion of the Property, shall use the Property only for commercial, industrial or recreational purposes, and not for residential or educational purposes of any kind, as defined by the local zoning ordinance as of the date of this Declaration, without first obtaining the prior written consent of NYSEG and the Relevant Agencies.

Eighth, while this Declaration is in effect, the Declarant and any subsequent owner(s) of all or any portion of the Property, shall allow, and shall obtain any and all consents or agreements from any and all lessees, licensees, or operators on the Property to allow NYSEG, its agents and representatives, and agents and representatives from the Relevant Agencies and any other federal, state, or local regulatory or administrative agency, department, or authority having jurisdiction over the Property or the Site, access to the Property to: (a) inspect and evaluate the Site, (b) study the continued effectiveness of any institutional or engineering controls installed now or in the future on the Site, and (c) conduct investigation and/or remediation on the Site so as to ensure the protection of the public health and safety and the environment, or as otherwise required by the Consent Order.

Ninth, the Declarant and any subsequent owner(s) of all or any portion of the Property shall provide prior notice to any and all subsequent owners, transferees, and lessees of all or any portion of the Property, as well as any licensees, contractors, utility companies, and operators on the Property, of the restrictions and obligations set forth in this Declaration. Further, the Declarant and any subsequent owner(s) of all or any portion of the Property shall cause all leases, grants, and other written transfers of any interest in the Property, as well as any written licenses and agreements with licensees, contractors, utility companies, and/or operators on the Property, to contain a provision expressly requiring all such transferees, lessees, grantees, licensees, contractors, utility companies, and operators to take and/or use the Property subject to the restrictions contained herein and to comply with all, and not to violate any, of the conditions of this Declaration. Nothing contained in this Paragraph shall be construed as limiting any obligation of the Declarant or any subsequent owner(s) of all or any portion of the Property to provide any notice required by any law, regulation, or order of any governmental body, agency, or authority.

Tenth, if any court of competent jurisdiction determines that any provision of this Declaration is invalid or unenforceable, such provision shall be deemed deleted from this instrument as though it had never been included herein and the remaining provisions of this Declaration shall remain in full force and effect.

Eleventh, this Declaration, and all restrictions and obligations contained herein, shall be binding upon the Declarant and upon the Declarant's successors and assigns while each is an owner, lessee, licensee, or operator of the Property, as well as upon NYSEG upon any sale or disposition of all or any portion of the Property and/or Site.

Twelfth, the restrictions and obligations provided herein are enforceable by NYSEG upon any sale or other disposition of all or any portion of the Property and/or Site, and/or the Relevant Agencies against any person who violates this Declaration. A violation of this Declaration shall not affect the status of the ownership of: or title to, the Property.

Thirteenth, this Declaration may be modified, amended, or terminated only upon filing of an instrument executed by the Relevant Agencies in the Office of the Clerk for the County of Tioga expressly modifying, amending, or terminating this Declaration.

Fourteenth, the terms of this Declaration are summarized in Appendix E, attached hereto and made part hereof, which summary does not alter, modify diminish, or expand upon the terms, covenants, or restrictions contained in this Declaration.

Box 4

Description of Engineering Controls

Parcel

Engineering Control

Cover System

Deed Restrictions, Groundwaer Use Restrictions, Site Management Plan. Periodic certification.

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

- a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;
- b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and complete.

YES NO

2. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

- (a) the Institutional Control and/or Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;
- (b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;
- (c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;
- (d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and
- (e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES NO

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative

Date

IC CERTIFICATIONS
SITE NO. 754008

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 1,2, and 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Douglas C. Allen, P.G. at Haley & Aldrich of New York
200 Town Centre Drive, Suite 2, Rochester, NY 14623
print name print business address

am certifying as Designated Representative (Owner or Remedial Party)

for the Site named in the Site Details Section of this form.



Signature of Owner, Remedial Party, or Designated Representative
Rendering Certification

2/28/2018

Date

IC/EC CERTIFICATIONS

Box 7

Qualified Environmental Professional Signature

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Douglas C. Allen, P.G. at Haley & Aldrich of New York
200 Town Centre Drive, Suite 2, Rochester, NY 14623
print name print business address

I am certifying as a Qualified Environmental Professional for the Owner
(Owner or Remedial Party)



Signature of Qualified Environmental Professional, for
the Owner or Remedial Party, Rendering Certification

Stamp
(Required for PE)

02/28/2018

Date

APPENDIX C

Site Photographs

Owego Former MGP Site
Owego, New York
File No. 40490-005
Date Photographs Taken: 26 February 2018



Photo 1: Owego Former MGP Site, looking east.



Photo 2: Owego Former MGP Site, looking north

Owego Former MGP Site
Owego, New York
File No. 40490-005
Date Photographs Taken: 26 February 2018



Photo 3: Owego Former MGP Site, looking southwest.



Photo 4: Owego Former MGP Site, looking east

Owego Former MGP Site
Owego, New York
File No. 40490-005
Date Photographs Taken: 26 February 2018



Photo 5: Railroad tracks abutting the Site to the west/southwest with piezometer PZ-3 in the foreground.



Photo 6: Auto repair property abutting the Site to the east