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# **Letter of Transmittal**

Attention: Josh	Cook - NYSDEC	Date: 11/28/07							
Project reference:	Port Jervis Pike St. MGP Site, Port Jervis, NY NYSDEC Site # 03-36-049V	Project :	number:	05090-020					
We are sending y	ou the following:								
Number of original  1	s: Number of copies:  1	Description: Supplemental Investigation Work Plan Port Jervis Pike Street MGP Site Port Jervis, NY, November 27, 2007							

James H. Edwards, Senior Geologist

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November 27, 2007

Mr. Josh Cook
MGP Remedial Section
Bureau of Western Remedial Action
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233-7010

DEC 0 4 2007

Divisi

Subject: Supplemental Investigation Work Plan

Port Jervis Pike Street MGP Site NYSDEC Site No. 03-36-049V Port Jervis, New York

Dear Mr. Cook.

On behalf of our client Orange and Rockland Utilities (O&R), ENSR Corporation (dba The RETEC Group, Inc. [RETEC]) has prepared this Supplemental Investigation (SI) Work Plan to present the scope of work and methods for performing additional investigation work at the former Pike Street manufactured gas plant (MGP) site and an adjoining off-site property located in the City of Port Jervis, New York.

# **Background and objectives**

Supplemental investigation work is proposed for two areas including the off site-property located at 28 Pike Street, and portions of the O&R Operating Center property to the north and west of the 28 Pike Street property.

Soil and groundwater samples have previously been collected during 2 sampling events performed at the 28 Pike Street property. The results of sampling performed during the Remedial Investigation (RI) for the MGP site were presented in the document entitled "Remedial Investigation Report Phase II, Port Jervis Manufactured Gas Plan Site, Port Jervis New York", dated October 25, 2006. The results of sampling performed during a SI are presented in the document entitled "Supplemental Investigation Report, Pike Street Former Manufactured Gas Plant Site, Port Jervis, New York", dated January 24, 2007. The locations of the soil and groundwater samples previously collected at the property and in the surrounding areas of the O&R property are shown on Figure 1.

The owner of the property at 28 Pike Street has requested that additional sampling be performed to further assess the presence or absence of possibly MGP-related constituents of concern (COC) on the property. SI samples are proposed for the area of the property near former Tar Well S on the adjacent O&R Operations property, and beneath a dining room area of the property building. The owner of the property has indicated that, based on his observations made prior to the construction of the building addition in this area, that impacted soil may be present at this location.

SI sampling is also proposed for 2 areas on the O&R Operating Center property. Soil borings will be advanced inside the O&R building in the footprint of former Tar Well S to assess whether there is a



subsurface structure present, and if there is tar or impacted soil at this location. Sampling will also be performed in the paved area to the east of the facility. The owner of the property at 28 Pike Street has indicated that he has observed wastes being disposed of in this area of the O&R property.

#### SI scope-of-work

The proposed scope-of-work for the SI includes the following:

- Subsurface utility clearance;
- Subsurface soil borings and soil sampling;
- Monitoring well installation;
- · Groundwater sampling:
- · Surveying; and
- Report preparation.

The location of each SI sampling point is shown on the attached Figures 1 and 2. Unless specified below, the methods used to perform the field work and laboratory analyses for the SI will be consistent with the NYSDEC-approved methods used to complete the RI for the MGP site. The tasks for the SI are described below.

## Subsurface utility clearance

RETEC will contact Dig Safely NY to coordinate the identification and location of subsurface utilities in the investigation area. Additional utility clearance will be performed by a private utility locating service using ground penetrating radar (GPR) and electromagnetic induction (EI) instruments.

# Subsurface soil borings

Twenty-nine subsurface soil borings will be advanced during the SI. The boring designations, the anticipated completion depths, the sample rationale and the laboratory analyses to be performed are summarized in Table 1. The subsurface soil borings in the area of Tar Well S and the 28 Pike Street property are shown in red on Figure 1. The borings include the following:

- SB1(07) and SB2(07). Two soil borings will be advanced in the footprint of former Tar Well S to assess the presence or absence of a subsurface structure or impacted soil. The borings are located in an office area inside the O&R Operations building.
- SB3(07). A boring will be advanced in the alley on the 28 Pike Street property at a location between Tar Well S and the basement of the building at the property to assess soil conditions in this area.
- SB4(07) and SB5(07). Two borings will be advanced in the dining room area in the northwest corner of the 28 Pike Street property.
- SB6(07) to SB24(07). These borings are located in a grid pattern across the reported disposal area shown in red on Figure 2.
- SB25(07)/GRMW1. A boring will be advanced on the 28 Pike Street property at a location adjacent to the reported disposal area where visibly impacted soil was observed during the SI

performed in 2006. A monitoring well will be installed to further assess groundwater quality at this location.

- SB26(07)/MW20S. A boring will be advanced on the O&R property at a location adjacent to RI boring DP10. The boring will be located in the lawn between the O&R Building and the sidewalk, or in the sidewalk depending on drill rig access and subsurface utilities in this area. A monitoring well will be installed to further assess groundwater quality at this location.
- SB27(07)/GRMW2. A boring will be advanced between GRSB1 and GRSB2 at the northwestern edge of the 28 Pike Street property. A monitoring well will be installed to obtain a groundwater sample and to further assess the direction of groundwater flow at this location.
- SB28(07) and SB29(07). Two borings will be advanced in the loading dock area adjacent to the O&R Operations Building (Figure 2).

### Soil boring methods

The borings in the buildings and in the alley will be advanced using direct-push drilling methods. A Geoprobe Macro-core™ sampler will be used to collect soil samples from the ground surface to the bottom of each boring. The borings will be advanced with either a small direct-push drilling rig or an electric jackhammer.

The borings outside of the buildings will be advanced with a hollow-stem auger (HSA) drilling rig. A Macro-core™ sampler or split-spoon samplers will be used to collect soil samples from the ground surface to the bottom of each boring.

There will be three target depths for the borings outside of the buildings. The target completion depths for the borings are summarized in Table 1. Borings SB9(07), SB10(07), and SB29(07) will be advanced to a shallow depth (approximately 4 feet below ground surface [ft bgs]) since these borings are located above a storm sewer pipe. The target depth for the majority of the borings will be approximately 13-15 ft bgs, to the approximate depth of the groundwater table. If refusal is encountered above the water table at these locations, the borings will be relocated and retried. A minimum of seven soil borings will be advanced down to the gravel and cobble layer which is present at a depth of approximately 30-35 feet bgs. These borings will be advanced to this depth because MGP residuals have been observed in this subsurface layer further to the west in the former MGP process area on the O&R property. Two of these borings will be located on the southeast side of the Canal Raceway and the others distributed evenly across the investigation area (Table 1).

Based on the previous soil borings completed at the O&R and 28 Pike Street properties, historic fill material is present at or near the ground surface in investigation areas. The historic fill may be present due to MGP operations, or at 28 Pike Street, may be present due to the past use of coal for heating purposes. For this investigation, historic fill material will only be submitted for laboratory analyses if the fill is observed to have elevated field photo-ionization detector (PID) readings during field screening of soil samples, or if visual and/or olfactory observations indicate the presence of oil or tar impacts. The characteristics of the fill layer, if present, will be described in the borelogs which will be prepared for the investigation report.

Subsurface soil samples will be obtained for laboratory analyses biased to intervals with elevated PID readings, or visual and/or olfactory observations. Where visible evidence of residuals is not observed, and the results of the PID screening of soil samples are not found to be significantly elevated, a laboratory sample will be collected to document "non-impacted" soil conditions. For the borings in the

O&R and 28 Pike Street Buildings, these samples will be collected from the interval from the water table to 1 foot below the water table.

The objectives of the sampling in the reported disposal area are to characterize visibly impacted intervals, when observed, and to confirm non-impacted conditions at two depth intervals throughout the investigation area. These intervals are between 3-4 ft bgs, and from the water table to 1 foot below the water table. Samples will be collected at the groundwater table for several of the borings regardless of any other sampling that is determined to be necessary based on the field screening. These borings include SB7, SB13, SB15, and SB22. This sampling strategy will provide general coverage of the area to be investigated at the target interval (at the water table). The anticipated completion depths for each of the borings and the target sample depths are summarized on Table 1. The final sample depths will be determined in the field based on the subsurface conditions encountered.

### Monitoring well borings

As indicated above, the borings for the installation of monitoring wells GRMW1, GRMW2, and MW20S will be completed using HSA drilling methods. The monitoring wells will be constructed and developed according to methods provided in the RI Work Plan for the O&R site. Two-inch PVC wells will be installed in the borings. The wells will be constructed using 10 foot long PVC well screens which will be positioned to straddle the water table (2 feet above, 8 feet below). Placement of the well screens at this depth at GRMW1 will screen the impacted soil zone that was observed during the SI work performed in 2006 at this location.

# **Groundwater sampling**

One groundwater sample will be collected from a temporary well (TW7) that will be installed in the basement of the 28 Pike Street building. The purpose of this sample will be to obtain additional groundwater data at this location. This location was sampled during the SI work performed in 2006 (sample TW4); however the bottles for the semi-volatile organic compound (SVOC) analyses were broken during shipment to the laboratory. Re-sampling of this location will provide SVOC data for groundwater at a location on the 28 Pike Street property that is near Tar Well S on the O&R property. As shown on Table 1, the sample will also be analyzed for volatile organic compounds (VOCs), polychlorinated biphenols (PCBs), Target Analyte List (TAL) metals, and cyanide.

The water sample will be collected by advancing a Geoprobe SP-15 groundwater sampler to a depth of approximately 5 feet below the groundwater table. Polyethylene tubing and a peristaltic pump will be used to purge the equipment until the groundwater is observed to be relatively free of turbidity. Water quality parameters including oxidation-reduction potential (ORP), temperature, pH, and conductivity will be recorded as the well is being purged. Sampling will be accomplished with the pump and tubing.

Groundwater samples will also be collected from wells GRMW1 and GRMW2 which will be located on the 28 Pike Street property. The wells will be purged and sampled using the low-flow method described in the RI Work Plan.

A groundwater sample will be collected from RI well MW14S, a well located within the area to be investigated during this SI. A sample will also be collected from newly installed well MW20S on the O&R property.



### Survey and site maps

At the conclusion of the SI field activities, the soil boring and monitoring well locations will be surveyed by a New York State Professional Land Surveyor (PLS). Building dimensions for the 28 Pike Street Property will be re-measured and the measurements used to update the base map for the property. The vertical elevations of the ground surface for the borings, and the ground surface and top of PVC riser (groundwater elevation reference point) will be surveyed so that a map of the direction of groundwater flow across the investigation area can be prepared. The maps will be included in the final SI Report.

### **Analytical program**

The subsurface soil samples and the groundwater samples collected during the SI will be analyzed by STL\Test America Laboratory of Pittsburgh, PA using the most current methods specified in the NYSDEC Analytical Services Protocol (July 2005). A Category B Deliverable package will be prepared by the laboratory.

With one exception, the methods to be used will be consistent with the methods used during the RI. PCB analysis has been added for the SI samples to obtain additional information for the evaluation of possible waste disposal on the O&R property since electrical equipment including transformers have previously been stored in the reported disposal investigation area.

The laboratory analyses for the SI are summarized as follows:

- VOCs by NYSDEC ASP Method OLMO4.2;
- SVOCs (SVOCs) by NYSDEC ASP Method OLMO4.2;
- PCBs by NYSDEC ASP Method OLMO4.2;
- Metals Target Analyte List (TAL) Metals: aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, mercury, nickel, potassium, selenium, silver, sodium, thallium, vanadium, and zinc by NYSDEC ASP Method ILMO4.1; and
- Total Cyanide NYSDEC ASP Method ILMO4.1.

Following receipt of the laboratory results, a RETEC chemist will prepare a Data Usability Summary Report (DUSR). Data quality issues, if any, will be discussed in the final SI Report.

### SI report

Following completion of the field work and receipt and validation of the laboratory data, RETEC will prepare a report summarizing the information obtained during the SI. The report will include:

- A description of the SI investigation activities;
- A description of the physical observations made during the field investigation;
- An update of the site map to include the locations of the new data points;
- A map showing the direction of groundwater flow in the investigation area;
- A borelog for each soil boring and the temporary monitoring well;

- Tabulation of the chemical data provided by the laboratory;
- · The DUSR; and
- A set of conclusions for the SI.

The NYSDEC ASP Category B data package will be provided to NYSDEC as a separate submittal for quality control review.

If you have any questions regarding the information presented in this letter, please do not hesitate to contact me at (607) 277-5716. Please direct the Department's official response to Maribeth McCormick of O&R at (845) 577-3534. Following approval of the scope-of-work provided in this letter, the field sampling event will be scheduled.

Sincerely yours,

direct

James H. Edwards Senior Geologist Bruce Coulombe, P.G. Senior Hydrogeologist

JHE:mlr

Attachments:

Table 1 – SI Sample Summary

Figure 1 – SI Sample Locations – O&R Facility and 28 Pike Street Property

Figure 2 – SI Sample Locations – Reported Disposal Area

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File: 05090-020-400

Table 1 SI Sample Summary

Samula Decianation						Cail Analus				0	um di t A l		
Sample Designation Analyses	Sample Location and/or Rationale	Target Completion	Target Sample	voc	svoc	Soil Analys PCB	TAL Metals	Total CN	VOC	SVOC	undwater An	TAL Metals	Total CN
Method		Depth	Depth	OLMO4.1	OLMO4.1	OLMO4.1	ILMO4.1	ILMO4.1	OLMO4.1	OLMO4.1	OLMQ4.1	ILMO4.1	ILMO4.1
QA/QC Requirements Subsurface Soil Borings			L	ASP B	ASP B	ASP B	ASP B	ASP B	ASP B	ASP B	ASP B	ASP B	ASP B
	Evaluate if structure or impacted soil is present in Tar	13-15 feet bgs; or to	Most impacted interval. If no visible impacts								27.75		
SB1(07)	Well S area	refusal	sample collected at water table.	1	1	11	1	1			0.110		
SB2(07)	Evaluate if structure or impacted soil is present in Tar Well S area	13-15 feet bgs; or to refusal	Most impacted interval. If no visible impacts sample collected at water table.	1 1	1 1	1	1 1	1 1			144	7 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	
SB3(07)	Assess soil conditions in alley between Tar Well S and	13-15 feet bgs; or to	Most impacted interval. If no visible impacts			<u>.</u>	<u> </u>						
	28 Pike Street basement Assess soil conditions in the footprint of the dining area	refusal 13-15 feet bgs; or to	sample collected at water table.  Most impacted interval. If no visible impacts	11	11	11	1	1					
\$B4(07)	on the property at 28 Pike Street	refusal	sample collected at water table.	1	1	1	1 1	1					
SB5(07)	Assess soil conditions in the footprint of the dining area	13-15 feet bgs; or to	Most impacted interval. If no visible impacts	4	4			_					
	on the property at 28 Pike Street	refusal	sample collected at water table.  Most impacted interval. If no visible impacts	1 2	1	1	1 1	1					
SB6(07)	Assess soil conditions in reported waste disposal area	30-35 feet bgs	sample collected at 3-4 feet bgs.	1	1	1	1	1					
SB7(07)	Assess soil conditions in reported waste disposal area	13-15 feet bgs	Most impacted interval. A sample will be collected at water table.(Note 1)	2	2	2	2	2					
SB8(07)	Assess soil conditions in reported waste disposal area	30-35 feet bas	Most impacted interval. If no visible impacts		_								
		00-00 lock bgs	sample collected at 3-4 feet bgs.  Most impacted interval. If no visible impacts	1	1	1	1	1					
SB9(07)	Assess soil conditions in reported waste disposal area	4 feet bgs	sample collected at 3-4 feet bgs.	1	1	1	1	1					
SB10(07)	Assess soil conditions in reported waste disposal area	4 feet bgs	Most impacted interval. If no visible impacts sample collected at 3-4 feet bgs.	1	1	1		4					
00111000		40.454.41	Most impacted interval. If no visible impacts	1 1	<u> </u>	1 1	1 1						
SB11(07)	Assess soil conditions in reported waste disposal area	13-15 feet bgs	sample collected at 3-4 feet bgs.	11	1	11	1	1					
SB12(07)	Assess soil conditions in reported waste disposal area	30-35 feet bgs	Most impacted interval. If no visible impacts sample collected at water table.	1	1 1	1 1	1 1	1					
SB13(07)	Assess soil conditions in reported waste disposal area	13-15 feet bgs	Most impacted interval. A sample will be			<u> </u>							
			collected at water table.(Note 1)  Most impacted interval. If no visible impacts	2	2	2	2	2					
SB14(07)	Assess soil conditions in reported waste disposal area	13-15 feet bgs	sample collected at 3-4 feet bgs.	1	1	11	1	11					
SB15(07)	Assess soil conditions in reported waste disposal area	13-15 feet bgs	Most impacted interval. A sample will be collected at water table.(Note 1)	2	2	2	2	2					
SB16(07)	Assess cell conditions in reported uncto dispesse area	12 15 foot has	Most impacted interval. If no visible impacts	<del></del>	-	-							
3510(07)	Assess soil conditions in reported waste disposal area	13-15 feet bgs	sample collected at 3-4 feet bgs.	1	1	1	1	1					
SB17(07)	Assess soil conditions in reported waste disposal area	30-35 feet bgs	Most impacted interval. If no visible impacts sample collected at water table.	1	1 1	1	1 1	1					
SB18(07)	Assess soil conditions in reported waste disposal area	13-15 feet bgs	Most impacted interval. If no visible impacts										
			sample collected at 3-4 feet bgs.  Most impacted interval. If no visible impacts	1	1	1	1	1					
SB19(07)	Assess soil conditions in reported waste disposal area	13-15 feet bgs	sample collected at water table.	11	1	1	1	1					
SB20(07)	Assess soil conditions in reported waste disposal area	30-35 feet bgs	Most impacted interval. If no visible impacts sample collected at 3-4 feet bgs.	,	1 1	1	1 1	1					
SB21(07)	Access soil conditions in reported waste disposal area	13-15 feet bgs	Most impacted interval. If no visible impacts	<del></del>	<del>-</del>	<del>-</del>	<u> </u>	<del>-</del>					
3B21(U1)	Assess soil conditions in reported waste disposal area	13-15 leet bgs	sample collected at water table.  Most impacted interval. A sample will be	11	1	1	1	1					
SB22(07)	Assess soil conditions in reported waste disposal area	30-35 feet bgs	collected at water table.(Note 1)	2	2	2	2	2					
SB23(07)	Assess soil conditions in reported waste disposal area	13-15 feet bgs	Most impacted interval. If no visible impacts										ĺ
			sample collected at 3-4 feet bgs.  Most impacted interval. If no visible impacts	1	1	11	1	1					
SB24(07)	Assess soil conditions in reported waste disposal area	13-15 feet bgs	sample collected at 3-4 feet bgs.	1	1	1	1	11					
SB25(07)	Assess soil conditions on the 28 Pike Street property in area adjacent to the reported waste disposal area	25 feet bgs	Most impacted interval. If no visible impacts sample collected at 3-4 feet bgs.	1	1	1	1	1					
	Assess soil conditions on the O&R property in area		sample collected at 3-4 feet bgs.		'		'	<u> </u>					
SB26(07)	adjacent to RI boring DP10 and the 28 Pike Street	25 feet bgs	Most impacted interval. If no visible impacts								2		
	property		sample collected at 3-4 feet bgs.  Most impacted interval. If no visible impacts	1	1	1	1	1					
SB27(07)	Assess soil conditions on the 28 Pike Street property in area adjacent to the reported waste disposal area	25 feet bgs	sample collected at 3-4 feet bgs.	1	1	1	1	1					
SB28(07)	Assess soil conditions in reported waste disposal area -	13-15 feet bgs	Most impacted interval. If no visible impacts			40							
	loading dock area  Assess soil conditions in reported waste disposal area -	W	sample collected at 3-4 feet bgs.  Most impacted interval. If no visible impacts	1	1	1	1	1					
SB29(07)	loading dock area	13-15 feet bgs	sample collected at 3-4 feet bgs.	1	1	1	1	1			- V		
Soil QA/QC	QA/QC Sample	NIA	N/A	0			_	2			35		
Matrix Spike	QA/QC Sample	NA NA	NA NA	2	2	2	2	2 2		05.	1		
Matrix Spike Duplicate	QA/QC Sample	NA	NA NA	2	2	2	2	2					
Groundwater Is	Re-sample temporary well in the basement of the 28		Ι										
TWP7	Pike Street property	NA	5 feet below water table						1	1	1	1	1
	Assess groundwater conditions on the 28 Pike Street property in area adjacent to the reported waste disposal		- ST								138		
GRMW1 a	area	NA	Middle of screened interval - to be determined	i					1	1	1	1	1
	Assess groundwater conditions on the 28 Pike Street property in area adjacent to the reported waste disposal										9		
	property in area adjacent to the reported waste disposal area	NA	Middle of screened interval - to be determined	i					1	1	1	1	1
Oldmitt	Assess groundwater conditions in the reported waste										15.		
A	disposal investigation area	NA	Middle of screened interval						1	111	1	11	1
MW14S											1.0		
MW14S 0	Assess groundwater conditions on the O&R property in		I										
MW14S 0  A  A  A  A  A  A  A  A  B  A  A  B  A  B  A  B  B		NA	Middle of screened interval - to be determined	1					1	1	1	1	1
MW14S c A A MW20S E Groundwater QA/QC	Assess groundwater conditions on the O&R property in area adjacent to the 28 Pike Street property and RI Boring DP10			i							1		
MW14S control of the	Assess groundwater conditions on the O&R property in area adjacent to the 28 Pike Street property and RI	NA	NA NA	1					1 1 1	1 1 1	1 1 1	1 1 1	1 1 1
MW14S c  A  MW20S E  Groundwater QA/QC  Duplicate C  Matrix Spike C  Matrix Spike Upplicate	Assess groundwater conditions on the O&R property in area adjacent to the 28 Pike Street property and RI Boring DP10 QA/QC Sample			1					1	1		1	1



