



November 30, 2010

Mr. Andrew Fan  
US EPA Region III, 3WC23  
1650 Arch Street  
Philadelphia, PA 19103-2029

Ms. Barbara Brown  
Project Coordinator  
Maryland Department of the Environment  
1800 Washington Blvd.  
Baltimore, Maryland 21230

**Re: Consent Decree, Civil Action Nos. JFM-97-558, JFM-97-559  
*Coke Oven Area Interim Measures Progress Report - October 2010***

Dear Mr. Fan and Ms. Brown:

Enclosed with this correspondence is the *Coke Oven Area Interim Measures Progress Report October 2010* completed for the Severstal Sparrows Point Facility in accordance with the requirements outlined in US EPA's September 2, 2010 approval letter for the Coke Oven Area Interim Measures work associated with the referenced Consent Decree. The report summarizes implementation progress for the approved interim measures (IMs) that have been developed to address identified environmental conditions at the Coke Oven Area through October 31, 2010.

As of October 31, 2010, Cell 1 and Cell 6 are operational and Cell 4 is in the process of being evaluated and designed. All three Cells are addressed in this progress report. The other Cells are in various stages of evaluation, design, and under permitting considerations by Maryland Department of the Environment (MDE).

Please contact me at (410) 388-6622 should questions arise during your review of the enclosed progress report.

Sincerely,

A handwritten signature in blue ink that reads "Russell Becker". The signature is fluid and cursive, with the first name "Russell" and last name "Becker" clearly legible.

Russell Becker  
Division Manager, Environmental Engineering and Affairs

Enclosure

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# MultiMedia Consent Decree

## Document Certification

### *Coke Oven Area Interim Measures Progress Report (October 2010)*

November 30, 2010

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.



Russell Becker  
Division Manager  
Environmental Engineering and Affairs

Severstal Sparrows Point LLC

# COKE OVEN AREA INTERIM MEASURES PROGRESS REPORT (OCTOBER 2010)

*Prepared for*

Severstal-Sparrows Point, LLC  
Sparrows Point, Maryland



November 30, 2010

# URS

URS Corporation  
200 Orchard Ridge Drive, Suite 101  
Gaithersburg, MD 20878  
Project no. 15302307

# Coke Oven Area Interim Remedial Measures Progress Report

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## Introduction

In accordance with US EPA's September 2, 2010 letter, this document is the second progress report that summarizes implementation progress for the United States Environmental Protection Agency (US EPA)-approved interim measures (IMs) that have been developed to address identified environmental conditions at the Coke Oven Area (COA) Special Study Area at the Severstal Sparrows Point Facility located in Sparrows Point, Maryland. This progress report summarizes IM progress for October 2010.

For mutual ease of understanding, and as agreed during the June 3, 2010 teleconference with US EPA, the following designations are applied in this document to the six (6) IM "Cells" (**Figure 1**) at the COA:

- Cell 1: Prototype Air Sparge/Soil Vapor Extraction (AS/SVE) System in the Former Benzol Processing Area,
- Cell 2: AS/SVE and Dual Phase Groundwater Extraction System in Former Coal Storage Area,
- Cell 3: AS/SVE System in "Cove" Area,
- Cell 4: In-Situ Anaerobic Bio-treatment Area in Coal Tar Area,
- Cell 5: Groundwater Extraction at the Turning Basin Area, and
- Cell 6: LNAPL Recovery at the Former Benzol Processing Area.

As of October 31, 2010, Cell 1 and Cell 6 continue to be operational and the planned in-situ enhanced anaerobic bioremediation system at Cell 4 is in the process of being evaluated and designed. All three Cells are addressed in this progress report. The other Cells are in various stages of evaluation, design, and under permitting considerations by Maryland Department of the Environment (MDE).

# Coke Oven Area Interim Remedial Measures Progress Report

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## Cell 1: Prototype AS/SVE System in the Former Benzol Processing Area

US EPA's March 2, 2010 letter approved the air sparge/soil vapor extraction (AS/SVE) interim measure for Cell 1, as originally proposed by Severstal. This cell consists of a prototype IM, which includes AS/SVE coupled with vapor destruction via an internal combustion engine (ICE). Design of this system includes air sparging groundwater wells and vapor collection trenches as shown schematically on **Figure 2**.

**Figure 3** shows the system layout of Cell 1, which consists of the following major components:

- Three (3) generally parallel and interconnected vapor collection trenches approximately 500 feet long and 60 feet apart, fitted with perforated 4-inch DR-17 high-density polyethylene (HDPE) pipe. Fifteen (15) vertical extraction risers are connected to a common suction header,
- Sixteen (16) air sparge wells located between the trenches,
- At-grade, 4-inch DR-17 HDPE sparge and suction headers fitted with control valves for 2-inch DR-17 HDPE sparge and suction laterals,
- One (1) ICE unit for extraction vacuum and vapor destruction, which is equipped with an integral Becker KDT series air compressor for sparge air, and
- Perimeter slag berm for system demarcation and protection from vehicular traffic.

Operational performance of Cell 1 during this reporting period is summarized in **Table 1**. In summary, the ICE operated roughly 66% during this reporting period. Benzene removal rates averaged approximately 12.5 pounds per day during this period. Severstal is continuing to evaluate possible methods for enhancing benzene recovery. The ICE catalytic converter destruction efficiency has exceeded 95%.

Soil gas and ICE exhaust gas samples were collected to evaluate system performance. Calibrated field instruments (e.g., photoionization detector [PID]) and ICE system-calculated vapor concentrations were also used to evaluate system performance. The untreated soil gas samples were collected in Tedlar<sup>®</sup> bags and the ICE exhaust sample collected in a 6-liter SUMMA can. All gas samples were submitted to TestAmerica Laboratories, Inc. Knoxville, Tennessee laboratory for analysis by US EPA Method TO-15. These data are summarized in **Table 2**.

## Coke Oven Area Interim Remedial Measures Progress Report

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From **Table 2**, influent soil gas hydrocarbon concentrations, collected on October 5, 2010, was 664 parts per million by volume (ppmv). As indicated above, Severstal is evaluating measures to maximize benzene concentration in the extracted soil gas in order to maximize benzene recovery and destruction.

Groundwater samples were collected on October 29, 2010 from the following wells:

- BP-MW-09 (upgradient of Cell 1),
- CO18-PZM006 (upgradient of Cell 1 at edge of berm), and
- CO02-PZM006 (downgradient of Cell 1).

The groundwater samples were submitted to Analytical Laboratory Services, Inc. of Middletown, Pennsylvania for the analyses summarized in **Table 3**. **Table 4** presents the VOC results for the prior reporting period. These data indicate benzene is the most prevalent volatile organic compound (VOC) constituent.

Overall, Severstal is continuing to operate the prototype system and is evaluating measures to maximize hydrocarbon concentration in the extracted soil gas in order to maximize hydrocarbon recovery and destruction. These measures include:

- Performing tests to assess trench vapor capture effectiveness,
- Varying sparge air and vapor extraction locations using different configurations than previously tested,
- Varying sparge air volume and pressure at levels different than previously applied, and
- Evaluating different technologies to enhance vapor extraction.

## Coke Oven Area Interim Remedial Measures Progress Report

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### Cell 4: In-Situ Anaerobic Bio-treatment Area in Coal Tar Area

US EPA's March 2, 2010 letter approved the in-situ bio-treatment concept for Cell 4 (**Figure 4**), as originally proposed by Severstal. As discussed in last month's progress report, baseline groundwater data and a microbial conditions evaluation using Bio-Trap<sup>®</sup> Samplers (Bio-Traps) were performed in July 2010 as the first step to developing a preliminary conceptual design.

Severstal is continuing efforts toward designing, installing and operating the planned in-situ enhanced anaerobic bioremediation system at Cell 4. These activities include:

1. Design and install a groundwater re-circulation system to deliver bionutrients to the subsurface.
2. Supplement the depleted nutrients that are necessary to support general microbial activities, including nitrate and phosphorous. Commercially available bionutrients (such as VB591 from BioNutra Tech) are being evaluated.
3. Monitor the progress of target compound degradation and microbial activities by sampling and analyzing groundwater as necessary.

Severstal is expecting to begin installation and construction activities the first quarter of 2011.

# Coke Oven Area Interim Remedial Measures Progress Report

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## Cell 6: LNAPL Extraction at the Former Benzol Processing Area

The Cell 6 LNAPL monitoring and recovery system was monitored approximately weekly during October (five site visits). **Table 5** summarizes LNAPL occurrence and recovery observed during the reporting period and **Figure 5** illustrates the well locations.

During October, approximately 236 gallons of LNAPL was recovered, bringing the total recovered LNAPL to 1,789 gallons as of October 28. The LNAPL was recovered from the following wells:

Well	LNAPL Recovery (gal)		Notes
	During October	Total thru October 28	
BP-MW-05	166	1,550	
RW-04	61	130	
BP-MW-08	8.2	100	
BP-MW-11	0	7.8	(a)
RW-1	1	1	(b)

(a) Recovery system moved from BP-MW-11 to BP-MW-08 on September 8, 2010.

(b) Manual bailing.

The wells are presented in **Table 4** in the order of decreasing LNAPL occurrence/recovery. During the reporting period LNAPL has been observed in the wells listed below. Manual bailing of RW-1 was initiated on October 28.

- BP-MW-11 (0.1 feet),
- BP-MW-10 (0.02 feet),
- RW-1 (0.06 to 0.95 feet),
- RW-2 (0 to 0.21 feet), and
- RW-3 (0.16 to 0.34 feet).

LNAPL was not observed in wells RW-5, BP-MW-07, BP-MW-06, BP-MW-09, or CO19-PZM004.



## **FIGURES**



**Legend**

◆ Existing Monitoring Well

**INTERIM MEASURES TREATMENT CELLS**

"Cell 1": Prototype AS/SVE System in Benzol Area

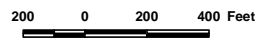
"Cell 2": AS/SVE and Dual Phase GW Treatment/Injection System in the Former Coal Storage Area

"Cell 3": AS/SVE System in the "Cove" Area

"Cell 4": In-Situ Anaerobic Bio-treatment System in the Coal Tar Area

"Cell 5": Groundwater Extraction/Treatment/Injection at the Turning Basin Area

"Cell 6": LNAPL Recovery at the Former Benzol Processing Area



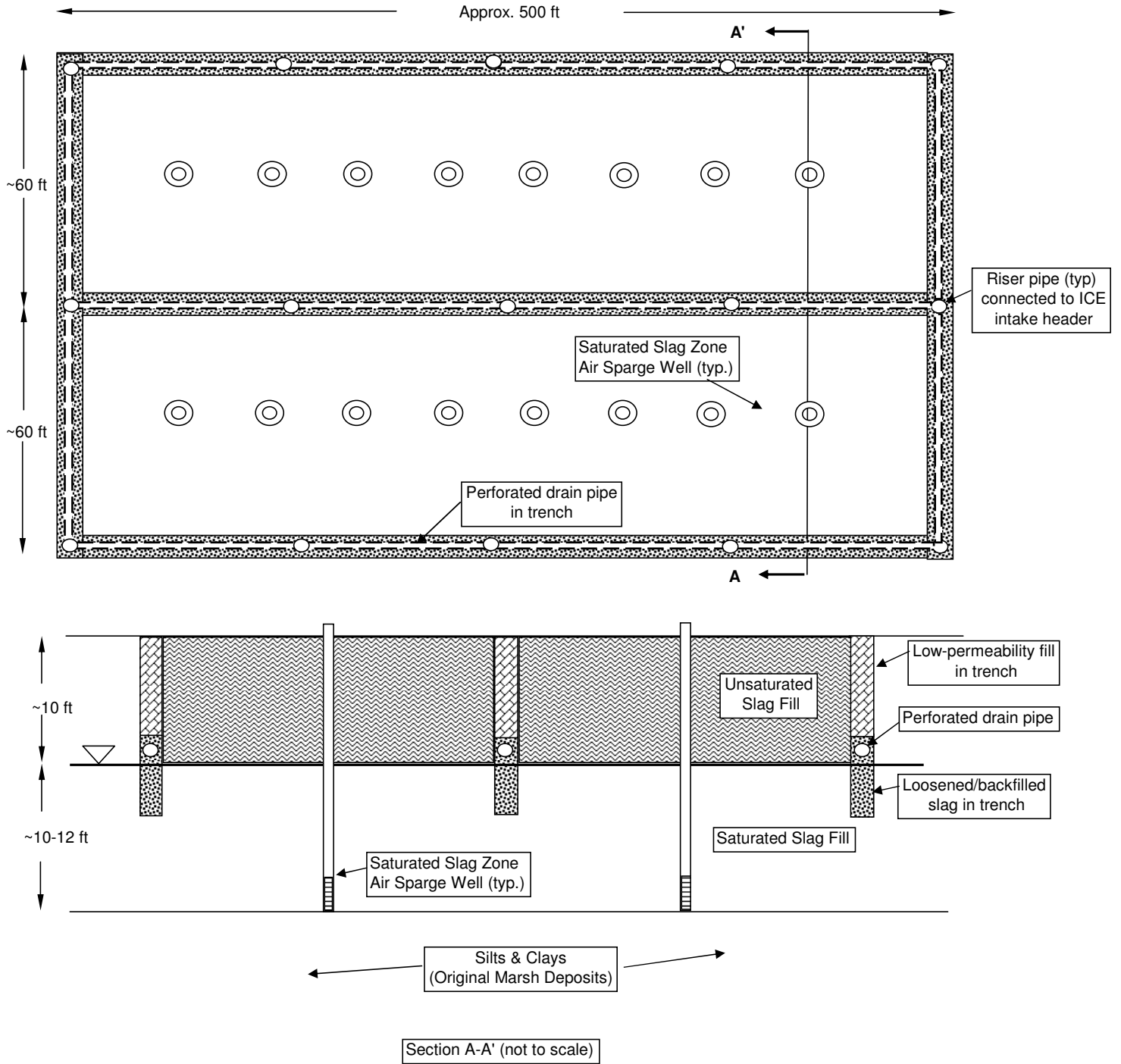
CLIENT: Sparrows Point	LOCATION: Baltimore, MD
DATE: 06/11/10	FILE: G:\Projects\Sparrows Point\Project\2010\CokeOven-and-CokePoint-6-Prototype Cells_rev1.mxd
GIS: AER	
CHECKED: RL	
SENIOR: BE	



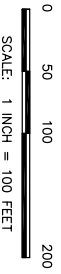
**Figure 1**  
**Interim Measures Treatment Areas**

Image source: World Imagery, ESRI, GeoEye, 2009.

**Figure 2**  
**Schematic Diagram**  
**Cell 1: Prototype AS/SVE System in Former Benzol Processing Area**  
**Former Coke Oven Area Interim Remedial Measures**  
**Severstal Sparrows Point, LLC**



LEGEND:	
V-1	TRENCH VAPOR EXTRACTION RISER
EXT-1	SVE PILOT TEST EXTRACTION WELL
OBS-1	SVE PILOT TEST OBSERVATION WELL
CO18-PZM006	EXISTING MONITORING WELL
AS-2	AIR SPARGE WELL
---	VAPOR COLLECTION TRENCHES
---	FORMER STRUCTURES (DEMOLISHED)



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Checked by: JH  
Date: 10/27/10

AS-BUILT LAYOUT PLAN  
CELL 1: FORMER BENZOL PROCESSING AREA  
SEVERSTAL SPARROWS POINT, LLC FACILITY  
BALTIMORE, MARYLAND  
FIGURE 3

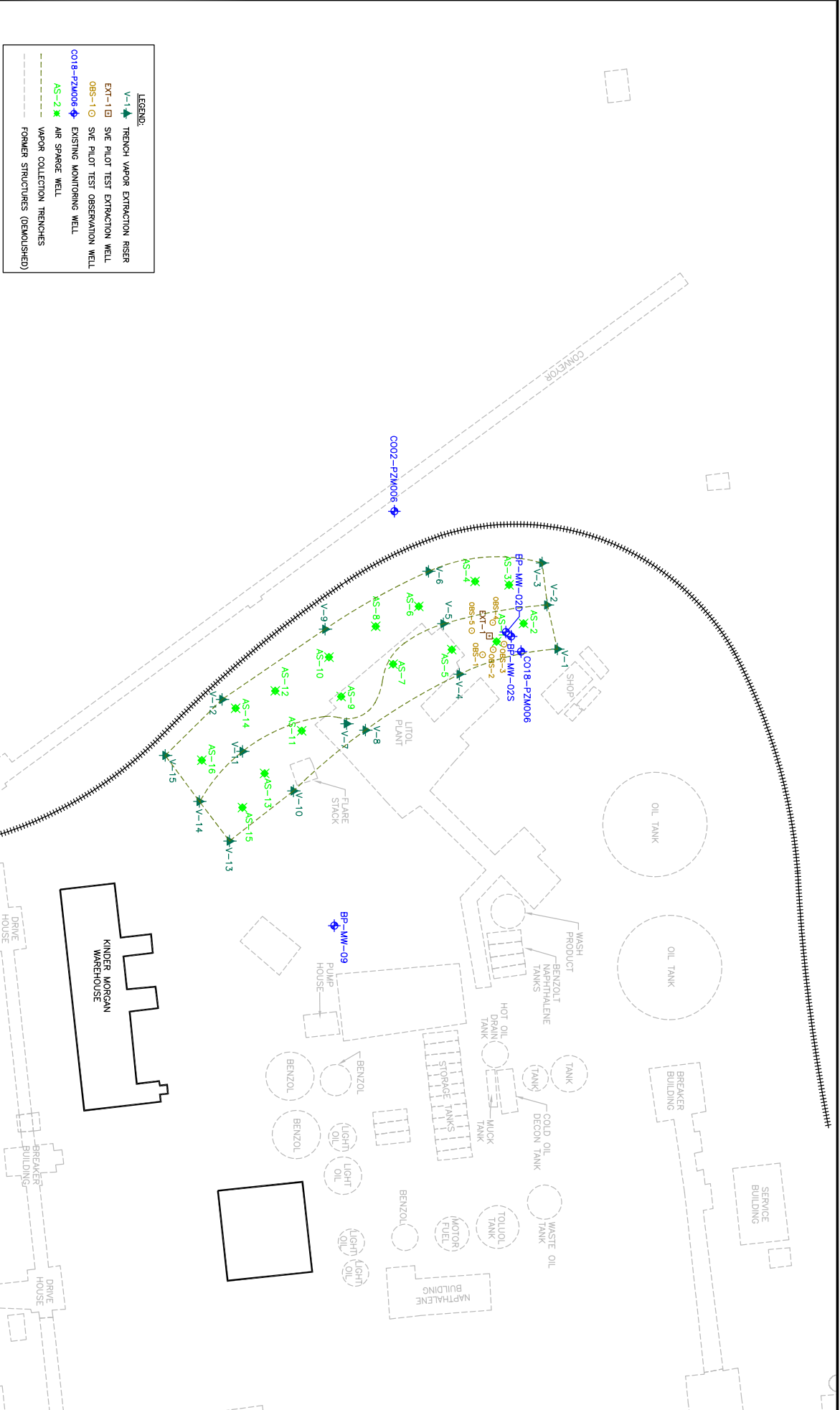

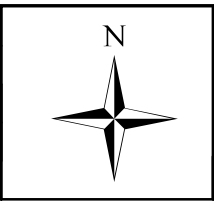






Image source: World Imagery, ESRI, GeoEye, 2009.

CLIENT	Sparrows Point		
LOCATION	Baltimore, MD		
 200 Orchard Ridge Drive Gaithersburg, MD 20878	GIS BY	JK	10/13/10
	CHK BY	BE	10/14/10
	PM	BE	10/14/10



**Figure 4**  
**Existing Cell 4 Wells**

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CLIENT Sparrows Point

LOCATION Baltimore, MD

**URS**  
200 Orchard Ridge Drive  
Gaithersburg, MD 20878

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PM	BE	10/14/10



**Figure 5**  
**LNAPL Monitoring and Recovery Wells**

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# **TABLES**

**Table 1**  
**Summary of Operating Conditions**  
**Cell 1: Prototype AS/SVE System in Former Benzol Processing Area**  
**Former Coke Oven Area Interim Remedial Measures**  
**Severstal Sparrows Point, LLC**

<b>Parameter</b>	<b>Units</b>	<b>Quantity</b>
Total ICE Operating Time (October 1 - October 31, 2010)	hours	338
Overall ICE Operational Time	%	65.8
Estimated Total Hydrocarbons Destroyed	pounds	176.2
Estimated Hydrocarbon Removal Rate	pounds/hour	0.52



**Table 2**  
**Summary of Soil Gas Analytical Results**  
**Cell 1: Prototype AS/SVE System in Former Benzol Processing Area**  
**Former Coke Oven Area Interim Remedial Measures**  
**Severstal Sparrows Point, LLC**

	Sample ID	ICE Influent	ICE Exhaust
	Date	10/5/2010	10/5/2010
	Time	12:54	12:58
	Dilution Factor	50395.00	1341.4
Analyte	Units		
<b>TO-15 Volatile Organics</b>			
trans-1,3-Dichloropropene	ppb	< 10,000 U	< 270 U
Acetone	ppb	< 250,000 U	< 6,700 U
Ethylbenzene	ppb	< 10,000 U	< 270 U
2-Hexanone	ppb	< 25,000 U	< 670 U
Methylene Chloride	ppb	< 25,000 U	< 670 U
<b>Benzene</b>	ppb	<b>560,000</b>	<b>13,000</b>
1,1,2,2-Tetrachloroethane	ppb	< 10,000 U	< 270 U
Tetrachloroethene	ppb	< 10,000 U	< 270 U
<b>Toluene</b>	ppb	<b>71,000</b>	<b>1,700</b>
1,1,1-Trichloroethane	ppb	< 10,000 U	< 270 U
1,1,2-Trichloroethane	ppb	< 10,000 U	< 270 U
<b>Trichloroethene</b>	ppb	< 10,000 U	< 270 U
Vinyl Chloride	ppb	< 10,000 U	< 270 U
o-Xylene	ppb	< 10,000 U	< 270 U
<b>m-Xylene &amp; p-Xylene</b>	ppb	<b>13,000</b>	<b>430</b>
2-Butanone (MEK)	ppb	< 50,000 U	< 1,300 U
4-Methyl-2-pentanone (MIBK)	ppb	< 25,000 U	< 670 U
Bromoform	ppb	< 10,000 U	< 270 U
Carbon Disulfide	ppb	< 25,000 U	< 670 U
Carbon tetrachloride	ppb	< 10,000 U	< 270 U
Chlorobenzene	ppb	< 10,000 U	< 270 U
Chloroethane	ppb	< 10,000 U	< 270 U
Chloroform	ppb	< 10,000 U	< 270 U
1,1-Dichloroethane	ppb	< 10,000 U	< 270 U
1,2-Dichloroethane	ppb	< 10,000 U	< 270 U
1,1-Dichloroethene	ppb	< 10,000 U	< 270 U
trans-1,2-Dichloroethene	ppb	< 10,000 U	< 270 U
1,2-Dichloropropane	ppb	< 10,000 U	< 270 U
cis-1,3-Dichloropropene	ppb	< 10,000 U	< 270 U
<b>Total Volatile Organics</b>	ppb	<b>644,000</b>	<b>15,130</b>
<b>Hydrocarbons</b>			
Methane	%	< 0.26 U	

**Notes:**

<Blank>

= Not measured

**BOLD**

= Analyte detected

ppb

= parts per billion

</U

= Analyte not detected above corresponding Reporting Limit

%

= Percent

**Table 3**  
**Summary of Groundwater Analytical Results**  
**Cell 1: Prototype AS/SVE System in Former Benzol Processing Area**  
**Former Coke Oven Area Interim Remedial Measures**  
**Severstal Sparrows Point, LLC**

Sample ID	CO02-PZM006	CO18-PZM006	BP-MW-09	
Date	10/29/2010	10/29/2010	10/29/2010	
Analyte	Units			
<b>Water Quality Parameters</b>				
Temperature	deg C	20.90	22.44	18.30
pH	std units	7.97	7.32	11.7
ORP	mV	-268	-71	-387
Conductivity	mS/cm	1.370	1.950	2.380
Turbidity	NTU	15.5	5.8	3.2
DO	mg/L	0.87	0.47	0.26
<b>Volatile Organics</b>				
Acetone	µg/L	< 5,000 U	< 10,000 U	< 5,000 U
<b>Benzene</b>	µg/L	<b>444,100</b>	<b>928,000</b>	<b>259,000</b>
Bromoform	µg/L	< 500 U	< 1,000 U	< 500 U
2-Butanone	µg/L	< 5,000 U	< 10,000 U	< 5,000 U
Carbon Disulfide	µg/L	< 500 U	< 1,000 U	< 500 U
Carbon Tetrachloride	µg/L	< 500 U	< 1,000 U	< 500 U
Chlorobenzene	µg/L	< 500 U	< 1,000 U	< 500 U
Chloroethane	µg/L	< 500 U	< 1,000 U	< 500 U
Chloroform	µg/L	< 500 U	< 1,000 U	< 500 U
1,1-Dichloroethane	µg/L	< 500 U	< 1,000 U	< 500 U
1,2-Dichloroethane	µg/L	< 500 U	< 1,000 U	< 500 U
1,1-Dichloroethene	µg/L	< 500 U	< 1,000 U	< 500 U
trans-1,2-Dichloroethene	µg/L	< 500 U	< 1,000 U	< 500 U
1,2-Dichloropropane	µg/L	< 500 U	< 1,000 U	< 500 U
cis-1,3-Dichloropropene	µg/L	< 500 U	< 1,000 U	< 500 U
trans-1,3-Dichloropropene	µg/L	< 500 U	< 1,000 U	< 500 U
<b>Ethylbenzene</b>	µg/L	<b>732</b>	< 1,000 U	<b>2,620</b>
2-Hexanone	µg/L	< 2,500 U	< 5,000 U	< 2,500 U
4-Methyl-2-Pentanone (MIBK)	µg/L	< 2,500 U	< 5,000 U	< 2,500 U
Methylene Chloride	µg/L	< 500 U	< 1,000 U	< 500 U
1,1,1,2-Tetrachloroethane	µg/L	< 500 U	< 1,000 U	< 500 U
1,1,1,2,2-Tetrachloroethane	µg/L	< 500 U	< 1,000 U	< 500 U
Tetrachloroethene	µg/L	< 500 U	< 1,000 U	< 500 U
<b>Toluene</b>	µg/L	<b>49,600</b>	<b>67,100</b>	<b>64,500</b>
<b>Xylenes, Total</b>	µg/L	<b>7,480</b>	<b>4,960</b>	<b>37,400</b>
1,1,1-Trichloroethane	µg/L	< 500 U	< 1,000 U	< 500 U
1,1,2-Trichloroethane	µg/L	< 500 U	< 1,000 U	< 500 U
Trichloroethene	µg/L	< 500 U	< 1,000 U	< 500 U
Vinyl Chloride	µg/L	< 500 U	< 1,000 U	< 500 U

**Notes:**

<Blank>	= Not measured
<b>Bold</b>	= Analyte Detected
deg C	= Degree Celcius
mg/L	= milligrams per liter
mS/cm	= Microsiemens per Centimeter
mV	= Millivolts
NA	= Standard not available or not currently established
NTU	= Nephelometric Turbidity Units
ORP	= Oxidation Reduction Potential
std units	= Standard units
</U	= Analyte not detected above corresponding Reporting Limit
µg/L	= micrograms per liter

Table 4

Summary of Previous Groundwater Analytical Results  
 Cell 1: Prototype AS/SVE System in Former Benzol Processing Area  
 Former Coke Oven Area Interim Remedial Measures  
 Severstal Sparrows Point, LLC

Sample ID	Date	CO016-PZM006	CO-15-PZM005	CO02-PZM006	CO02-PZM006	CO02-PZM006	CO18-PZM006	CO18-PZM006	CO18-PZM006	BP-MW-09	BP-MW-09	BP-MW-09
Analyte	Units	7/7/2010	7/8/2010	7/7/2010	8/25/2010	9/27/2010	7/8/2010	8/25/2010	9/27/2010	7/8/2010	8/25/2010	9/27/2010
<b>Water Quality Parameters</b>												
Temperature	deg C	17.64	17.76	19.67	19.46	20.08	18.20	21.46	22.28	18.21	18.76	20.45
pH	std units	12.51	8.58	8.72	8.06	8.15	7.43	7.25	7.8	12.51	11.32	11.68
ORP	mV	-325	-211	-208	-269	-255	-178	-140	-143	-289	-261	-380
Conductivity	mS/cm	0.772	0.654	0.900	1.220	1.130	0.869	1.520	1.750	1.840	2.270	2.000
Turbidity	NTU	0.1	0.0	0.0	1.5	0.9	0.0	11.3	24.5	0.0	3.8	1.5
DO	mg/L	0.21	0.00	0.00	0.45	0.00	0.00	0.44	0.00	0.00	1.70	0.00
<b>Volatile Organics</b>												
Acetone	µg/L	< 50.0 U	< 5,000 U	< 50.0 U	< 5,000 U	< 50.0 U	< 5,000 U	< 5,000 U	< 50.0 U	< 5,000 U	< 5,000 U	< 50.0 U
Benzene	µg/L	176,000	539,000	692,000	441,000	672,000	689,000	941,000	1,010,000	239,000	204,000	221,000
Bromoforn	µg/L	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U
2-Butanone	µg/L	< 50.0 U	< 5,000 U	< 50.0 U	< 5,000 U	< 50.0 U	< 5,000 U	< 5,000 U	< 50.0 U	< 5,000 U	< 5,000 U	< 50.0 U
Carbon Disulfide	µg/L	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U
Carbon Tetrachloride	µg/L	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U
Chlorobenzene	µg/L	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U
Chloroethane	µg/L	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U
Chloroform	µg/L	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U
1,1-Dichloroethane	µg/L	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U
1,2-Dichloroethane	µg/L	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U
1,1-Dichloroethene	µg/L	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U
trans-1,2-Dichloroethene	µg/L	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U
1,2-Dichloropropane	µg/L	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U
cis-1,3-Dichloropropene	µg/L	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U
trans-1,3-Dichloropropene	µg/L	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U
Ethylbenzene	µg/L	438	1,270	715	796	780	1,050	< 500 U	340	3,420	2,630	2,580
2-Hexanone	µg/L	< 25.0 U	< 2,500 U	< 25.0 U	< 2,500 U	< 25.0 U	< 2,500 U	< 2,500 U	< 25.0 U	< 2,500 U	< 2,500 U	< 25.0 U
4-Methyl-2-Pentanone (MIBK)	µg/L	< 25.0 U	< 2,500 U	< 25.0 U	< 2,500 U	< 25.0 U	< 2,500 U	< 2,500 U	< 25.0 U	< 2,500 U	< 2,500 U	< 25.0 U
Methylene Chloride	µg/L	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U
1,1,1,2-Tetrachloroethane	µg/L	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U
1,1,2,2-Tetrachloroethane	µg/L	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U
Tetrachloroethene	µg/L	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U
Toluene	µg/L	30,200	72,900	82,200	72,900	60,900	77,100	91,000	75,700	75,300	81,100	54,100
Xylenes, Total	µg/L	2,870	9,270	7,610	6,110	6,200	14,100	8,680	5,960	50,300	40,700	36,300
1,1,1-Trichloroethane	µg/L	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U
1,1,2-Trichloroethane	µg/L	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U
Trichloroethene	µg/L	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U
Vinyl Chloride	µg/L	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U	< 500 U	< 500 U	< 5.0 U

**Table 5**  
**LNAPL Occurrence and Recovery**  
**Cell 6: LNAPL Recovery System in Former Benzol Processing Area**  
**Former Coke Oven Area Interim Remedial Measures**  
**Severstal Sparrows Point, LLC**

Well	LNAPL Occurrence During October (ft)	Total LNAPL Recovery Period		Total LNAPL Recovered thru October 28, 2010 (gal)	LNAPL Recovered during October 2010 (gal)
		Begin	End		
BP-MW-05	generally about 3	28-Jan	On-going	1,550	166
RW-04	0.1 to 1.6	23-Jul	On-going	130	61
BP-MW-08	trace to 2.9	8-Sep	On-going	100	8.2
BP-MW-11	0.1	23-Jul	8-Sep	7.8	0
BP-MW-10	0.02	na	na	0	na
RW-1	0.06 to 0.95	28-Oct	On-going	1	1
RW-2	0 to 0.21	na	na	0	na
RW-3	0.16 to 0.34	na	na	0	na
RW-5	none	na	na	0	na
BP-MW-07	trace	na	na	0	na
BP-MW-06	none	na	na	0	na
BP-MW-09	none	na	na	0	na
CO19-PZM004	none	na	na	0	na