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ENVIRONMENT

Mr. Christopher Saari
Wisconsin Department of Natural Resources
2501 Golf Course Road
Ashland, WI 54806

Subject:
Supplemental Off-Property Investigation Summary Report
Former Koppers Inc. Facility – Superior, WI
WDNR BRRTs No: 02-16-000484
WDNR Facility ID: 816009810

Date:
April 15, 2014

Contact:
David Bessingpas

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218-829-4607

Email:
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Our ref:
B0039290.0000.00003

Dear Mr. Saari:

On behalf of Beazer East, Inc. (Beazer), ARCADIS is submitting to the Wisconsin Department of Natural Resources (WDNR) two copies of the *Supplemental Off-Property Investigation Summary Report*, which presents the results of supplemental investigation activities completed within the off-property portion of the Former Koppers Inc. Facility in Superior, Wisconsin (the Site) between August 2013 and January 2014. Investigation activities were completed in accordance the *Work Plan for Supplemental Off-Property Investigations*, which was submitted to WDNR on June 28, 2013, and conditionally approved by WDNR in a letter to Beazer dated July 3, 2013. A few proposed additions/modifications to the approved scope of work were discussed with and approved by WDNR during an October 18, 2013 conference call.

Should you have any questions or comments regarding the enclosed document, please contact me (218-89-4607) or Jane Patarcity of Beazer (412-208-8813).

Sincerely,

ARCADIS U.S., Inc.

David Bessingpas

David Bessingpas
Sr. Project Manager

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John Robinson, WDNR
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Stu Messur, Anchor QEA

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Beazer East, Inc.

Supplemental Off-Property Investigation Summary Report

Former Koppers Inc. Facility
Superior, Wisconsin

April 2014

Supplemental Off-Property Investigation Summary Report

Former Koppers Inc. Facility
Superior, Wisconsin

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April 2014

ARCADIS

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1. Introduction

On behalf of Beazer East, Inc. (Beazer), ARCADIS has prepared this *Supplemental Off-Property Investigation Summary Report* to present the results of supplemental investigation activities completed within the off-property portion of the Former Koppers Inc. Facility in Superior, Wisconsin (the Site) between August 2013 and January 2014. Investigation activities were completed in accordance the *Work Plan for Supplemental Off-Property Investigations* (Work Plan; ARCADIS, 2013a), which was submitted to the Wisconsin Department of Natural Resources (WDNR) on June 28, 2013, and conditionally approved by WDNR in a letter to Beazer dated July 3, 2013 (WDNR, 2013a). A few proposed additions/modifications to the approved scope of work were discussed with and approved by WDNR during an October 18, 2013 conference call.

The overall objective of the investigation activities was to address "data gaps" identified by WDNR based on their review of the historical investigation data presented in the *Off-Property Data Summary Report* (Blasland, Bouck & Lee, Inc., 2006). These data gaps were indicated in a letter from WDNR to Beazer dated October 9, 2012 (WDNR, 2012). The following specific investigation objectives were identified in the Work Plan:

- Assess the presence of impacts at higher flood elevations at the edges of the Crawford Creek floodplain
- Assess the presence of impacts in certain low-lying/ponded areas and other WDNR-specified areas within the Crawford Creek floodplain
- Delineate the horizontal and vertical extent of visible impacts at certain historical investigation locations
- Assess polycyclic aromatic hydrocarbon (PAH) concentrations in visibly unimpacted soils located below visibly impacted soils
- Assess groundwater concentrations within, below, and outside of visibly impacted areas

2. Scope of Work

2.1 Overview

As outlined in the Work Plan, the supplemental investigation activities included the advancement of soil borings (hand auger and direct push), collection and analysis of soil samples, installation of temporary monitoring wells, and collection and analysis of groundwater samples. Table 1 summarizes the scope of work proposed in the Work Plan as well as the actual completed scope of work. Investigation activities were conducted in accordance with the procedures outlined in the Work Plan, and the *Standard Operating Procedure for Collecting Soil Samples, Cleaning Field Equipment, and Collecting Equipment Blank Samples* (ARCADIS, 2013b), which was submitted to WDNR via e-mail on August 19, 2013. Surveyed investigation locations are shown on Figures 1A and 1B. Figure 1A shows sample locations from this supplemental investigation as well as prior investigations, whereas Figure 1B shows the new locations only.

Hand auger borings, soil sampling, and groundwater sampling were conducted by ARCADIS. Direct push soil boring and temporary monitoring well installation were conducted by Matrix Environmental, LLC of Morris, Minnesota, under the direction of ARCADIS. Survey of the borings and wells was conducted by LHB, Inc. of Duluth, Minnesota.

Investigation-derived wastes (e.g., disposable investigation equipment, disposable personal protective equipment, soil cuttings from direct push soil borings and monitoring well installations, equipment cleaning fluids, purge water from well development and groundwater sampling) were containerized in drums and shipped off-Site for disposal.

Additional details regarding the completed investigation scope of work are provided in the subsections below.

2.2 Hand Auger Soil Borings/Soil Sampling and Analysis

Hand auger soil borings were advanced at 13 locations (HA-1 through HA-13; Figures 1A and 1B) along four transects, as proposed in the Work Plan (Table 1). The hand auger borings were advanced along transects oriented perpendicular to the edge of the Crawford Creek floodplain, targeting specific flood elevations, as summarized in the following table:

Boring ID	Below 2-Year Flood Elev. (612.6 ft AMSL)	Between 2- and 25-Year Flood Elev. (612.6-617.2 ft AMSL)	Between 25- and 100-Year Flood Elev. (617.2-619.0 ft AMSL)	Above 100-Year Flood Elev. (619.0 ft AMSL)
HA-1				X
HA-2			X	
HA-3		X		
HA-4				X
HA-5			X	
HA-6		X		
HA-7				X
HA-8			X	
HA-9				X
HA-10			X	
HA-11		X		
HA-12	X			
HA-13		X		

Notes: Flood elevations for Crawford Creek based on Nemadji River flood flows and water surface elevations obtained from *Flood Frequency Characteristics of Wisconsin Streams* (U.S. Geological Survey [USGS], 2003), adjusted to correlate with Federal Emergency Management Agency 100-year flood elevation (NGVD 29).
ft AMSL = feet above mean sea level

The hand auger soil boring locations proposed in the Work Plan were modified as necessary to correlate to the targeted elevations specified in the table above. Recovered soils from each boring were screened with a photoionization detector (PID) and logged for soil type and visual/olfactory evidence of impacts as a function of depth. All hand auger borings were backfilled with soil cuttings upon completion. As further discussed in Section 3.1.1, no visible impacts were observed at any of the hand auger boring locations. Accordingly, no step-out hand auger borings were necessary.

At hand auger boring locations HA-1, HA-4, HA-7, and HA-9, soil samples were collected from the 0- to 0.5-foot and 0.5- to 1-foot depth intervals. Samples were submitted to TestAmerica in Pittsburgh, Pennsylvania for laboratory analysis of PAHs (United States Environmental Protection Agency [USEPA] Method 8270) and to Vista Analytical Laboratory in El Dorado Hills, California for analysis of polychlorinated dibenzo-p-dioxins/polychlorinated dibenzofurans (PCDDs/PCDFs; USEPA Method 8290).

2.3 Direct Push Soil Borings/Soil Sampling and Analysis

A total of 29 direct push soil borings were advanced at 23 locations[1] (SB-1 through SB-23; Figures 1A and 1B), including 14 locations as proposed in the Work Plan, plus nine additional/step-out locations. The step-out locations were added to achieve the delineation

[1] Multiple borings were advanced at locations designed for shallow and deep monitoring well pairs.

objectives for certain locations as outlined in the Work Plan (Table 1)[2]. An all-terrain vehicle (ATV)-mounted Geoprobe® direct push rig was used to complete the soil borings.

Recovered soils from each boring were screened with a PID and logged for soil type and visual/olfactory evidence of impacts as a function of depth. As further discussed in Section 2.4, 13 of the 29 borings were completed as temporary monitoring wells. At three of the 13 borings where wells were installed, no visible impacts were observed in the initial deep boring, and the adjacent boring for the shallow well was blind drilled (i.e., no soil logging was performed). Borings that were not completed as temporary monitoring wells were tremie grouted upon completion.

At soil boring locations SB-2, SB-3, SB-12, SB-16, SB-18, and SB-22, soil samples were collected from two consecutive 0.5-foot visibly unimpacted intervals below the deepest observed visibly impacted interval. Samples were submitted to TestAmerica in Pittsburgh, Pennsylvania for laboratory analysis of PAHs by USEPA Method 8270. The uppermost samples were all analyzed, and the deeper samples were held pending the results of the upper samples. As discussed in Section 3.2.2, based on the results of the uppermost samples, only one deeper sample was released for analysis.

2.4 Temporary Monitoring Wells

A total of 13 temporary monitoring wells were installed, consisting of the following (Figures 1A and 1B):

- TMW-2A and TMW-12A – shallow wells screened across visibly impacted soil zones (intermittent clay fractures with creosote-like product)
- TMW-2 and TMW-12C – deep wells screened across visibly unimpacted soil zones located below visibly impacted soil zones
- TMW-12B – intermediate well screened across intermittent, thin sand seams with creosote-like product
- TMW-5A, TMW-8A, and TMW-11A – shallow wells screened across visibly unimpacted soil zones
- TMW-5, TMW-8, and TMW-11 – deep wells screened across visibly unimpacted soil zones
- TMW-19C and TMW-23 – deep wells screened across visibly unimpacted soil zones – located downgradient of and installed as replacement wells for TMW-12C and TMW-2, respectively[3]

[2] The step-out boring approach was outlined in the WDNR-approved Work Plan. Additional step-out borings were proposed and approved by WDNR during an October 18, 2013 conference call.

With the exception of TMW-12C, TMW-19C, and TMW-23, the wells were installed within direct push boreholes. At the above-referenced three wells, the direct push boreholes were overdrilled with hollow-stem augers, and the wells were installed through the augers. All of the wells were developed following installation and prior to sampling. The development process involved surging the well screens for 10 minutes, followed by repeated bailing or pumping dry and allowing the well to recharge.

Well TMW-12C was abandoned on November 20, 2013, following installation of the replacement well TMW-19C. Wells TMW-8/8A, TMW-11/11A, TMW-12A/B, and TMW-19C were abandoned on April 8 and 9, 2014. The remaining wells (TMW-2/2A, TMW-5/5A, and TMW-23) could not be accessed in April due to flooding conditions, and will be abandoned as soon as field conditions allow.

2.5 Groundwater Sampling and Analysis

Two groundwater sampling events were conducted: 1) from October 23 through 28, 2013 and 2) from January 12 through 14, 2014. Groundwater samples were submitted to TriMatrix Laboratories, Inc. of Grand Rapids, Michigan for laboratory analysis of volatile organic compounds (VOCs; USEPA Method 8021B/8260B) and semivolatile organic compounds (SVOCs; USEPA Method 8270C). As discussed with WDNR during an October 18, 2013 conference call, and confirmed via an October 22, 2013 e-mail from WDNR (WDNR, 2013b), both filtered and unfiltered samples were collected for both VOCs and SVOCs to assess potential turbidity effects due to the anticipated inability to conduct low-flow sampling.

During both sampling events, static water levels were unable to be sustained during low-flow pumping, so the wells were pumped dry and samples were collected following recharge. Most wells required several iterations of pumping and recharge to obtain the volume of groundwater necessary to fill all of the sample containers. At certain wells, only a minimal volume of water was able to be collected for certain analyses, and at two wells (TMW-11A in October 2013 and TMW-5A in January 2014), all of the samples could not be collected due to insufficient recharge during the mobilization. Table 2 summarizes the completed sampling scope during each event.

[3] As further discussed in Section 3.3, wells TMW-2 and TMW-12C were replaced based on well development observations that indicated a bad annular seal or drag-down of impacts from shallower intervals. This was discussed with and approved by WDNR during a conference call on October 18, 2013.

3. Results

3.1 Hand Auger Soil Borings

3.1.1 Boring Depths and Visual Observations

Hand auger soil borings were advanced at 13 locations (HA-1 through HA-13; Figures 1A and 1B). The total depth of each boring, maximum PID readings, and intervals where visual/olfactory impacts were observed are summarized in Table 3. With the exception of HA-10, all hand auger borings achieved the targeted depth of 4 feet below ground surface (bgs). At HA-10, equipment refusal was encountered at 2.9 feet bgs. Maximum PID readings ranged from 0.8 to 23.5 parts per million. As indicated in Table 3, no visual/ olfactory impacts were observed at any of the 13 hand auger borings.

3.1.2 Soil Sampling and Analysis

Soil samples were collected from the 0- to 0.5-foot and 0.5- to 1-foot depth intervals at hand auger boring locations HA-1, HA-4, HA-7, and HA-9 (Figures 1A and 1B) for laboratory analysis of PAHs and PCDDs/PCDFs. The analytical results are summarized in Table 4, and data validation reports (including laboratory analytical data sheets) are provided in Appendix B. The spatial distribution of PAHs and PCDDs/PCDF in surficial (0- to 1-foot depth interval) floodplain materials (for 2013 and prior samples) is depicted on Figures 2 and 3, respectively.

As indicated in Table 4, one or more PAHs was detected in five of the eight samples collected in 2013, with total PAH concentrations in the five samples ranging from 0.021 to 1.21 milligrams per kilogram (mg/kg). One or more PCDD/PCDF congener was detected in all eight samples, with 2,3,7,8-tetrachlorodibenzo-*p*-dioxin (TCDD) toxicity equivalent (TEQ) concentrations ranging from 0.00001 to 0.00194 micrograms per kilogram (µg/kg). The concentrations in the 2013 samples are generally consistent with or lower than concentrations in "background" samples collected in 2005 (see Figures 2 and 3).

3.1.2.1 Investigation Objectives Evaluation

The following bullets/tables summarize the hand auger soil sample analytical results with respect to the location-specific delineation objectives outlined in the Work Plan:

- HA-1 delineation objective: delineate PAHs beyond 1999 sample FP-15-175'R and PCDDs/PCDFs beyond 2005 sample SOIL-T24:

Delineation Results for HA-1

	Total PAH Conc. (mg/kg)		TCDD-TEQ Conc. (µg/kg)	
	Previous	Step-Out	Previous	Step-Out
Sample ID:	**FP-15-175'R**	**HA-1**	**SOIL-T24**	**HA-1**
0-0.5'	69.5	0.021 [0.127]	2.3E-1	5.9E-4 [3.2E-4]
0.5-1'	1,080	ND	NA	4.2E-5

Notes: ND = not detected, NA = not analyzed, [ ] = duplicate result

- HA-4 delineation objective: delineate PAHs beyond 1999 sample FP-14-5'L:

Delineation Results for HA-4

	Total PAH Conc. (mg/kg)	
	Previous	Step-Out
Sample ID:	**FP-14-5'L**	**HA-4**
0-0.5'	183	0.078
0.5-1'	36.7	ND

Note: ND = not detected

- HA-7 delineation objective: delineate PAHs beyond 1999 sample FP-15-125'L and PCDDs/PCDFs beyond 2005 sample SOIL-T23:

Delineation Results for HA-7

	Total PAH Conc. (mg/kg)		TCDD-TEQ Conc. (µg/kg)	
	Previous	Step-Out	Previous	Step-Out
Sample ID:	**FP-15-125'L**	**HA-7**	**SOIL-T23**	**HA-7**
0-0.5'	15.8	0.173	1.5E-1	1.1E-3
0.5-1'	348	ND	NA	1.7E-4

Notes: ND = not detected, NA = not analyzed

- HA-9 delineation objective: delineate PCDDs/PCDFs beyond 2005 sample SOIL-T1:

Delineation Results for HA-9

	TCDD-TEQ Conc. (µg/kg)	
	Previous	Step-Out
Sample ID:	**SOIL-T1**	**HA-9**
0-0.5'	1.4E-1	3.4E-4
0.5-1'	NA	1.0E-5

Note: NA = not analyzed

As indicated above, all of the location-specific delineation objectives were achieved, with PAH and PCDD/PCDF concentrations in the 2013 step-out samples ranging from two to five orders of magnitude lower than the corresponding concentrations in the previous samples from 1999 and 2005.

3.2 Direct Push Soil Borings

3.2.1 Boring Depths and Visual Observations

Twenty-nine direct push soil borings were advanced at 23 locations (SB-1 through SB-23; Figures 1A and 1B). Appendix A includes detailed soil boring logs for each of the 29 borings and Table 5 summarizes the total depth of each boring and intervals where visual/olfactory impacts were observed. The spatial distribution of visual impacts observed in subsurface floodplain materials (for 2013 and prior investigation locations) is depicted on Figure 4.

As indicated in Table 5, 23 of the 29 soil borings were advanced to depths ranging from 20 to 41 feet bgs. Five borings, where shallow temporary monitoring wells were installed, were advanced to depths ranging from 12 to 15 feet bgs. One boring was terminated at 10 feet bgs to avoid drag-down of visual impacts observed at shallower depths.

Consistent with the protocol developed and used for previous investigations for the Site, the recovered soils were characterized as follows:

- Type 1 – contains creosote-like product (typically in clay fractures or sand/organic seams)
- Type 2 – exhibits a creosote-like odor, staining and/or sheen, but does not contain creosote-like product
- Type 3 – does not exhibit visual evidence of impacts (i.e., no staining, sheens, or product) or creosote-like odor

In summary, visual/olfactory impacts were encountered at 11 of the 29 direct push soil borings (Table 5). At eight of the 11 borings, creosote-like product was encountered, either in clay fractures or in thin organic/sand seams (Type 1). At the other three borings, creosote-like odors, staining, and/or sheens were encountered, but not creosote-like product (Type 2).

The following table summarizes the borings/intervals where Type 1 and 2 material was observed in the 11 borings (important: see note below table):

Summary of Soil Borings with Type A and B Materials*

ID	Total Depth (feet bgs)	Type 1		Type 2
		Creosote-Like Product in Clay Fractures (feet bgs)	Creosote-Like Product in Organic/Sand Seams (feet bgs)	Creosote-Like Odor, Staining, or Sheens (feet bgs)
SB-2	30	11.3-11.4	7.1 (organics)	0-6.2 (odor/stain/sheen) 15-20.1 (odor/stain)
SB-2A	15	1.2-1.8, 5-14.3	N/A	0-1.8, 6.3-7.1, 10-15 (odor/stain)
SB-3	25	5.6-7.5	N/A	0-15.8 (odor/stain/sheen) 1.5-2.2, 10-14.5 (stain)
SB-12	40	5.1-10, 25.4-30	5.2-5.3, 5.6-5.7, 5.8-6.6 (organics) 26.6-26.8, 27.4-27.8 (clayey sand)	0-30 (odor) 0.8, 5.1-15, 25.4-30 (stain)
SB-12A	15	5-14	N/A	0-15 (odor/stain/sheen)
SB-12B	30	5.8-10, 11.3-14	15.9-16.2, 20.1-20.7, 26.8-27.6 (sand)	0-30 (odor) 0.4-0.7, 5-16.8, 20.1-27.6 (stain) 22.3, 26.6 (sheen)
SB-13	30	N/A	N/A	2.5 (odor, stain)
SB-16	35	N/A	16.2-16.5 (sand)	0.6-30 (odor) 0.6-0.8, 16.2-16.8, 20.2-21.3, 27.4-27.5 (stain) 10.5-10.8, 26-26.1 (sheen)
SB-18	40	N/A	N/A	28.3-32.2 (odor) 29.1, 30.9-31.1 (stain)
SB-21	10	5-10	N/A	0-10 (odor/stain/sheen)
SB-22	30	N/A	N/A	0.6-21.1 (odor) 0.4-15 (stain/sheen) 16.7-20.3 (stain)

*Notes: For simplicity, intervals in this table represent the general intervals within which the described condition was observed – impacted materials were generally present in thin, sporadic fractures or seams, not continuously throughout the denoted intervals. Refer to Table 5 and boring logs in Appendix A for additional details.
N/A = not applicable

3.2.1.1 Investigation Objectives Evaluation

The following bullets summarize the 2013 soil boring visual observations with respect to the location-specific delineation/assessment objectives outlined in the Work Plan (refer to Figure 4 for locations):

- SB-1, SB-3, SB-4, SB-6, SB-7, SB-8, and SB-14 assessment objective: assess the presence of visible impacts in various low-lying/ponded areas and/or at locations requested by WDNR

- In 2013 borings SB-1, SB-6, SB-7 and SB-8, advanced in low-lying/ponded areas and/or at locations requested by WDNR on the west side of Crawford Creek, no visible impacts or odors were observed. Boring depths ranged from 25-30 feet.
- In 2013 boring SB-3, advanced in a low-lying/ponded area on the west side of Crawford Creek, creosote-like product was observed in clay fractures (Type 1) within the 5.6-7.5 foot interval, and creosote-like odors, staining, and/or sheens were observed within the 0-15.8 foot interval. Boring depth was 25 feet – no visible impacts or odors were observed from 15.8-25 feet.
- In 2013 boring SB-4, advanced as a step-out from SB-3, no visible impacts or odors were observed. Boring depth was 20 feet.
- In 2013 boring SB-14, advanced at a location requested by WDNR on the east side of Crawford Creek, no visible impacts or odors were observed. Boring depth was 25 feet.

- SB-2 and SB-23 delineation objective: delineate vertical extent of visible impacts observed at 2003 test pits N2-1, N3-1, and N3-3

  <u>2003 Results</u>

  - In 2003 test pit N2-1, a black stained layer (Type 2) was observed from 1-3.5 feet, creosote-like product in clay fractures (Type 1) was observed from 3.5-7 foot interval, and odor/sheens (Type 2) were observed within the 7-10 foot interval. Test pit depth was 10 feet.
  - In 2003 test pit N3-1, creosote-like product in clay fractures (Type 1) was observed within the 5-12 foot interval. Test pit depth was 12 feet.
  - In 2003 test pit N3-3, a black stained layer (Type 2) was observed from 0.5-1.5 feet, and creosote-like product in clay fractures (Type 1) was observed within the 1.5-12 foot interval. Test pit depth was 12 feet.

  <u>2013 Results</u>

  - In 2013 boring SB-2, advanced between N2-1, N3-1, and N3-3, creosote-like product was observed in a thin organics seam (Type 1) at 7.5 feet, creosote-like product was observed in clay fractures (Type 1) from 11.3-11.4 feet, and creosote-like odors, staining, and/or sheens were observed intermittently within the 0-20.1 foot interval. Boring depth was 30 feet – no visible impacts or odors were observed from 20.1-30 feet.
  - In 2013 boring SB-23, advanced as a step-out from SB-2, no visible impacts or odors were observed. Boring depth was 30 feet.

- SB-5 delineation objective: delineate horizontal extent of visible impacts observed at 2003 test pit N3-4

  2003 Results

  - In 2003 test pit N3-4, creosote-like product in clay fractures (Type 1) was observed within the 0-6.5 foot interval. Test pit depth was 9 feet.

  2013 Results

  - In 2013 boring SB-5, advanced as a step-out from N3-4, no visible impacts or odors were observed. Boring depth was 30 feet.

- SB-9 and SB-10 delineation objective: delineate horizontal/vertical extent of visible impacts observed at 2003 test pits S23-4, S24-4, and S25-3

  2003 Results

  - In 2003 test pit S23-4, a black stained layer (Type 2) was observed from 1-5 feet, and creosote-like product in clay fractures (Type 1) was observed within the 5-14 foot interval. Test pit depth was 14 feet.
  - In 2003 test pit S24-4, a black stained layer (Type 2) was observed from 0.5-5 feet, and creosote-like product in clay fractures (Type 1) was observed within the 5-11 foot interval. Test pit depth was 14 feet.
  - In 2003 test pit S25-3, a black stained layer with creosote-like product seams (Type 1) was observed from 3-8 feet, and creosote-like product in clay fractures (Type 1) was observed within the 8-11 foot interval. Test pit depth was 14 feet.

  2013 Results

  - In 2013 boring SB-9, advanced as a step-out from (and between) S24-4 and S25-3, no visible impacts or odors were observed. Boring depth was 25 feet.
  - In 2013 boring SB-10, advanced as a step-out from (and between) S23-4 and S24-4, no visible impacts or odors were observed. Boring depth was 25 feet.

- SB-11 delineation objective: delineate horizontal extent of visible impacts observed at 2003 test pits S21-4 and S22-4

  2003 Results

  - In 2003 test pit S21-4, a black stained layer (Type 2) was observed from 2-3 feet. Test pit depth was 9 feet.
  - In 2003 test pit S22-4, a black stained layer (Type 2) was observed from 2-3 feet, and creosote-like product in clay fractures (Type 1) was observed within the 3-10 foot interval. Test pit depth was 12 feet.

2013 Results

- In 2013 boring SB-11, advanced as a step-out from (and between) S21-4 and S22-4, no visible impacts or odors were observed. Boring depth was 25 feet.

· SB-15 and SB-16 delineation objective: delineate vertical extent of visible impacts observed at 2003 test pit S11-1

2003 Results

- In 2003 test pit S11-1, a black stained layer (Type 2) was observed from 2.5-5 feet, and creosote-like product in clay fractures (Type 1) was observed within the 5-17 foot interval. Test pit depth was 17 feet.

2013 Results

- In 2013 boring SB-15, advanced approximately 20 feet east of S11-1, no visible impacts or odors were observed. Boring depth was 25 feet.
- In 2013 boring SB-16, advanced adjacent to S11-1, creosote-like product was observed in a thin sand seam (Type 1) from 16.2-16.5 feet and creosote-like odors, staining, and/or sheens were observed intermittently within the 0.6-30 foot interval. Boring depth was 35 feet – no visible impacts or odors were observed from 30-35 feet.

· SB-17 delineation objective: delineate horizontal extent of visible impacts observed at 2003 test pits S3-2 and S4-2

2003 Results

- In 2003 test pit S3-2, creosote-like product in clay fractures (Type 1) was observed within the 4-9 foot interval. Test pit depth was 11 feet.
- In 2003 test pit S4-2, creosote-like product in clay fractures (Type 1) was observed within the 4-9 foot interval. Test pit depth was 11.5 feet.

2013 Results

- In 2013 boring SB-17, advanced as a step-out from (and between) S3-2 and S4-2, no visible impacts or odors were observed. Boring depth was 25 feet.

In addition to the assessment/delineation objectives specified in the Work Plan and summarized above, additional delineation borings (SB-13 and SB-18 through SB-22) were advanced based on the observations in 2013 soil borings SB-12/12A/12B. In 2013 soil borings SB-12/12A/12B, creosote-like product was observed in intermittent clay fractures (Type 1) within the 5-14 and 25.4-30 foot intervals; creosote-like product was observed in intermittent, thin organics seams (Type 1) within the 5.2-6.6 foot interval; creosote-like

product was observed in intermittent, thin sand seams (Type 1) within the 15.9-27.8 foot interval; and creosote-like odors, staining, and/or sheens (Type 2) were intermittently observed within the 0-30 foot interval. Boring depths for SB-12/12A/12B ranged from 15-40 feet – no visible impacts or odors were observed from 30-40 feet. The horizontal extent of Type 1 material (creosote-like product in clay fractures and sand/organics seams) observed at SB-12/12A/12C was delineated by SB-13 to the northeast; SB-18 and SB-19 to the northwest; SB-20 to the southwest; and SB-22 to the southeast (refer to Table 5 and Figure 4).

In summary, as indicated in the information presented above and as shown on Figure 4, the horizontal and vertical extent of visibly impacted materials within the targeted floodplain investigation areas has been delineated.

3.2.2 Soil Sampling and Analysis

Soil samples were collected from two consecutive 0.5-foot visibly unimpacted (i.e., Type 3) intervals below the deepest observed visibly impacted interval at borings SB-2, SB-3, SB-12, SB-16, SB-18, and SB-22 (Figures 1A and 1B) for laboratory analysis of PAHs. The uppermost samples were all analyzed, while the deeper samples were held pending the results of the upper samples. Based on the results of the uppermost samples, only one deeper sample (SB-12, 30.5-31') was released for analysis. The analytical results are summarized in Table 6, and data validation reports (including laboratory analytical data sheets) are provided in Appendix B.

As indicated in in Table 6, one or more PAHs was detected in five of the seven samples, with total PAH concentrations in the five samples ranging from 0.031 to 40.4 mg/kg. It should be noted that the sample with the highest concentration (SB-12, 30-30.5') was collected from a depth interval immediately below Type 1 material (creosote-like product in clay fractures). Also, the duplicate sample collected from SB-12 (30-30.5') had significantly lower concentrations (0.823 mg/kg total PAHs), compared to the parent sample (40.4 mg/kg total PAHs). All samples had total PAH concentrations below the previously calculated average of 91 mg/kg for Type 3 samples (based on the pre-2013 dataset), and with the exception of the sample SB-12 (30-30.5'), all samples had total PAH concentrations below the previously calculated median of 4.5 mg/kg for Type 3 samples. Accordingly, the 2013 soil sampling data support the previously presented visual/analytical data correlation for PAHs (i.e., visibly impacted materials have relatively higher PAH concentrations and visibly unimpacted materials have relatively lower PAH concentrations).

3.3 Temporary Monitoring Wells

Thirteen temporary monitoring wells were installed (Figures 1A and 1B). Detailed well construction logs for each of the 13 wells are provided in Appendix A. Well construction and survey information are also summarized in Table 7, along with the soil zone screened by each well.

The temporary monitoring wells were constructed using 3/4-inch Schedule 40, polyvinyl chloride materials, with 0.010-inch slot pre-packed screens. Screen lengths were 10 feet, except for TMW-12B, TMW-12C, and TMW-19C, where 5-foot-long screens were used to target specific soil zones. The remaining annular space around the pre-paced well screens was filled with Red Flint #15 or 40 Well Pack, to the extent possible. The annular space above the sand pack was filled with bentonite.

Well development information/observations are summarized in Table 8. All of the wells were developed by surging the well screens for 10 minutes, followed by repeated bailing or pumping dry and allowing to recharge. One to five well volumes of groundwater were purged from each well during development.

As indicated in Table 8, odor, sheens, and product were observed in the purge water or on bailers/tubing during development of TMW-2 and TMW-12C, which were screened in visibly unimpacted zones below visibly impacted zones. These observations indicated either that a proper annular seal was not achieved, or that drag-down of impacts from shallower intervals occurred during drilling. Accordingly, these two wells were re-installed at the same depth intervals at visibly unimpacted locations downgradient of the original well locations.[4]

At well TMW-12B (screened across thin, creosote-impacted sand seams observed within the 25-30 foot depth interval), creosote-like product was observed during gauging on September 23, 2013, prior to attempting development. Attempts were made to measure the thickness of accumulated product in the well using an oil/water interface probe and weighted measuring tape, but an accurate measurement could not be obtained. Approximately 6.5 gallons of a product/silt/clay mixture was removed from TMW-12B using a peristaltic pump between September 24 and 25, 2013. An additional approximately 5.5 gallons of product/silt/clay was removed from TMW-12B between October 23 and 25, 2013 during the first groundwater sampling event. Another approximately 3 gallons of a product/silt/clay was removed from TMW-12B on April 8, 2014 prior to abandoning the well.

[4] Replacement of TMW-2 and TMW-12C was discussed with and approved by WDNR during an October 18, 2013 conference call.

3.4 Groundwater Sampling and Analysis

Two groundwater sampling events were conducted: 1) from October 23 through 28, 2013 and 2) from January 12 through 14, 2014. A round of water level measurements was conducted at all temporary monitoring wells prior to sampling during each event (October 23, 2013 and January 12, 2014); the associated data are summarized in Table 9.

The analytical results for both groundwater sampling events are summarized in Table 10, and data validation reports (including laboratory analytical data sheets) are provided in Appendix B. Table 10 also compares the analytical results to WDNR Preventive Action Limits (PALs) and Enforcement Standards (ESs), in order to gauge the relative magnitude of the detected concentrations.

PALs/ESs for Site-related constituents[5] were exceeded in samples from TMW-2A (benzene, naphthalene, other PAHs, and pentachlorophenol), TMW-11A (naphthalene), and TMW-12A (benzene, naphthalene, and other PAHs).

Groundwater analytical results were generally consistent between the October 2013 and January 2014 sampling events. One exception was the increased PAH concentrations in the unfiltered sample collected at TMW-12A. The increased concentrations are attributable to the presence of trace blebs of creosote-like product that were observed in the purge water from this well during the January 2014 sampling event.

Concentrations in filtered samples were generally lower than in unfiltered samples for both sampling events, indicating that at least some portion of the constituents was associated with the soil particulates.

3.4.1 Investigation Objectives Evaluation

The following bullets summarize the groundwater sample analytical results with respect to the location-specific objectives outlined in the Work Plan (refer to Figures 1A and 1B for well locations):

- TMW-2A/23 objective: assess groundwater conditions within (TMW-2A) and below (TMW-23) visibly impacted soils

[5] 2,6-dinitrotoluene and bis(2-ethylhexyl)phthalate concentrations exceeded ESs in TMW-23 (January 2014 filtered sample) and TMW-11A (January 2014 filtered sample), respectively; but these constituents are not considered to be Site-related.

- TMW-2A, screened from 5-15 feet bgs within Type 1 soils, had total BTEX[6] concentrations ranging from 58 to 174 µg/L and total PAH concentrations ranging from 3,044 to 5,800 µg/L
- TMW-23, screened from 20-30 feet bgs within Type 3 soils (located below and downgradient of the TMW-2A screened interval), had total BTEX concentrations ranging from non-detect to 0.21 µg/L and total PAH concentrations ranging from non-detect to 0.04 µg/L

· TMW-5A/5 objective: assess groundwater conditions in "shallow" (TMW-5A) and "deep" (TMW-5) visibly unimpacted (i.e., Type 3) soils

- TMW-5A, screened from 2-12 feet bgs within Type 3 soils, had total BTEX concentrations ranging from non-detect to 0.35 µg/L and total PAH concentrations ranging from 0.14 to 0.55 µg/L
- TMW-5, screened from 20-30 feet bgs within Type 3 soils, had total BTEX concentrations ranging from non-detect to 2.92 µg/L and total PAH concentrations ranging from non-detect to 0.05 µg/L

· TMW-8A/8 objective: assess groundwater conditions in "shallow" (TMW-8A) and "deep" (TMW-8) visibly unimpacted (i.e., Type 3) soils

- TMW-8A, screened from 2-12 feet bgs within Type 3 soils, had total PAH concentrations ranging from non-detect to 0.07 µg/L (BTEX were not detected)
- TMW-8, screened from 20-30 feet bgs within Type 3 soils, had total PAH concentrations ranging from non-detect to 0.12 µg/L (BTEX were not detected)

· TMW-11A/11 objective: assess groundwater conditions in "shallow" (TMW-11A) and "deep" (TMW-11) visibly unimpacted (i.e., Type 3) soils

- TMW-11A, screened from 2-12 feet bgs within Type 3 soils, had total BTEX concentrations ranging from non-detect to 1.89 µg/L and total PAH concentrations ranging from non-detect to 136 µg/L
- TMW-11, screened from 20-30 feet bgs within Type 3 soils, had total PAH concentrations ranging from non-detect to 0.62 µg/L (BTEX were not detected)

· TMW-12A/19C objective: assess groundwater conditions within (TMW-12A) and below (TMW-19C) visibly impacted soils

- TMW-12A, screened from 5-15 feet bgs within Type 1 soils, had total BTEX concentrations ranging from 118 to 316 µg/L and total PAH concentrations ranging from 4,030 to 206,080 µg/L

[6] Total BTEX equals the sum of the concentrations of benzene, toluene, ethylbenzene, and xylenes.

- TMW-19C, screened from 35-40 feet bgs within Type 3 soils (located below and downgradient of the TMW-12A screened interval), had total PAH concentrations ranging from 1.9 to 3.4 µg/L (BTEX were not detected)

As indicated in the bullets above and the data summarized in Table 10, wells screened in visibly unimpacted (Type 3) soil zones – both below and adjacent to visibly impacted soil zones – had total BTEX and total PAH concentrations that ranged from one to seven orders of magnitude lower than concentrations in wells screened in visibly impacted (Type 1) soil zones. These data indicate that groundwater impacts are present only in the immediate vicinity of visibly impacted soil zones (i.e., impacted groundwater does not migrate significant distances either laterally or vertically from the visibly impacted soil zones). This finding is consistent with the low-permeability nature of the predominately clay soils, and also the groundwater fate and transport characteristics for the on-property portion of the Site, where similar geology is present.

4. Summary and Conclusions

This section summarizes the completed supplemental off-property investigation activities, notes whether modifications to the conceptual site model have occurred based on the supplemental investigation results, and discusses whether the investigation objectives outlined in the Work Plan were achieved.

Assess the presence of impacts at higher flood elevations at the edges of the Crawford Creek floodplain.

Hand auger soil borings were advanced at 13 locations along four transects oriented perpendicular to the edge of the Crawford Creek floodplain, targeting specific flood elevations. No visual/olfactory impacts were observed at any of the 13 borings. Eight soil samples were collected from four locations (above the 100-year flood elevation at each transect). One or more PAHs was detected in five of the eight samples, and one or more PCDD/PCDF congener was detected in all eight samples. The concentrations in the 2013 samples are generally consistent with or lower than concentrations in "background" samples collected in 2005 (see Figures 2 and 3). In addition, all of the location-specific delineation objectives specified in the Work Plan were achieved, with PAH and PCDD/PCDF concentrations in the 2013 step-out samples ranging from two to five orders of magnitude lower than the corresponding concentrations in the previous samples from 1999 and 2005.

Based on the 2013 investigations, Site-related impacts are not present at higher flood elevations at the edges of the Crawford Creek floodplain, and the horizontal extent of PAH and PCDD/PCDF impacts within the floodplain has been adequately delineated.

Assess the presence of impacts in certain low-lying/ponded areas and other WDNR-specified areas within the Crawford Creek floodplain and delineate the horizontal and vertical extent of visible impacts at certain historical investigation locations.

Twenty-nine direct push soil borings were advanced at 23 locations, including the 14 locations proposed in the Work Plan, plus additional step-out borings as needed to achieve the delineation objectives. Visual/olfactory impacts were encountered at 11 of the 29 direct push soil borings. Creosote-like product was encountered at eight of the 11 borings, either in clay fractures or in organic/sand seams. At the other three borings, creosote-like odors, staining, and/or sheens were encountered, but not creosote-like product. In general, visual observations from the 2013 direct push soil borings support the previous conceptual site model for the nature and extent of impacted materials within the Crawford Creek floodplain, with two exceptions:

1. Creosote-like product was observed in isolated clay fractures to depths of up to 30 feet bgs. Previously, the maximum depth that these conditions were observed to be present was 17 feet bgs (based on equipment limitations during test pit excavations in 2003).
2. In three of the 29 direct push soil borings advanced in the floodplain in 2013, creosote-like product was observed in thin, isolated sand seams, at depths ranging from 15.9 to 27.8 feet bgs. Although not previously encountered in the Crawford Creek floodplain (likely because previous investigations did not reach depths were sand seams are present), the presence of thin, isolated sand seams is consistent with observations from historical soil borings advanced in the on-property portion of the Site (*RCRA Facility Investigation Report* [Fluor Daniel GTI, 1997]).

The horizontal and vertical extent of visibly impacted materials within the targeted floodplain investigation areas has been adequately delineated.

Assess PAH concentrations in visibly unimpacted soils located below visibly impacted soils.

Seven soil samples were collected from the direct push borings from the visibly unimpacted soils located below visibly impacted soils. One or more PAHs was detected in five of the seven samples. All samples had total PAH concentrations below the previously calculated average of 91 mg/kg for Type 3 samples (based on the pre-2013 dataset), and with the exception of the sample SB-12 (30-30.5'), all samples had total PAH concentrations below the previously calculated median of 4.5 mg/kg for Type 3 samples. Accordingly, the 2013 soil sampling data support the previously presented visual/analytical data correlation for PAHs (i.e., visibly impacted materials have relatively high PAH concentrations and visibly unimpacted materials have relatively low PAH concentrations).

Assess groundwater concentrations within, below and outside of visibly impacted areas.

Thirteen temporary monitoring wells were installed, and two rounds of groundwater sampling were conducted. Shallow (screen intervals ranging from 2 to 15 feet bgs) and deep (screen intervals ranging from 20-40 feet bgs) wells were installed. Soil zones screened by the wells included visibly impacted (two shallow wells and one intermediate well), visibly unimpacted below visibly impacted (two deep wells, and two replacement wells), and visibly unimpacted (three shallow/deep well pairs). Creosote-like product accumulated in one of the wells (TMW-12B, screened across visibly impacted seams from 25 to 30 feet bgs); approximately 15 gallons of a product/silt/clay mixture were removed from this well over the course of three removal events. Trace blebs of creosote-like product were also observed in the purge water from well TMW-12A (screened across visibly impacted clay fractures from 5 to 15 feet bgs, and located immediately adjacent to TMW-12B).

Wells screened in visibly unimpacted soil zones – both below and adjacent to visibly impacted soil zones – had total BTEX and total PAH concentrations that ranged from one to seven orders of magnitude lower than concentrations in wells screened in visibly impacted soil zones. These data indicate that groundwater impacts are present only in the immediate vicinity of visibly impacted soil zones (i.e., impacted groundwater does not migrate significant distances either laterally or vertically from the visibly impacted soil zones). This finding is consistent with the low-permeability nature of the predominately clay soils, and also the groundwater fate and transport characteristics for the on-property portion of the Site, where similar geology is present.

The supplemental investigation activities described herein have achieved the investigation objectives outlined in the Work Plan, and have addressed the "data gaps" identified in an October 9, 2012 letter from WDNR to Beazer. The supplemental investigations, combined with previous investigations, have adequately characterized the nature and extent of impacts in the off-property investigation area to proceed with a Corrective Measures Study.

5. References

ARCADIS, 2013a. *Work Plan for Supplemental Off-Property Investigations*. June 28, 2013.

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WDNR, 2013a. Letter to Beazer: *Conditional Approval – Work Plan for Supplemental Off-Property Investigations.* July 3, 2013.

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ARCADIS

Tables

Table 1 - Scope of Work Summary
Supplemental Off-Property Investigation
Former Koppers Inc. Facility - Superior, WI

Work Plan ID	Field ID	Location Description	Objective(s)	Work Plan Scope	Actual Scope
A	HA-6	Step-out from former sample location FP-14-5'L, between 2- and 25-year flood elevations	- Assess visual impacts at higher flood elevations	- Hand auger boring to 4' (deeper if impacts observed at bottom) - visual	- Hand auger boring to 4'
B	HA-5	Step-out from HA-6 (A), between 25- and 100-year flood elevations	- Assess visual impacts at higher flood elevations	- Hand auger boring to 4' (deeper if impacts observed at bottom) - visual	- Hand auger boring to 4'
C	HA-4	Step-out from HA-5 (B), above 100-year flood elevation/debris line	- Assess visual impacts and PAH/dioxin concentrations in surface soils at higher flood elevations (delineate PAHs beyond FP-14-5'L)	- Hand auger boring to 4' (deeper if impacts observed at bottom) - visual (additional step-out boring(s) if visible impacts observed) - Sample 0-0.5' and 0.5-1' intervals for PAHs and dioxins (at this location, or first visibly unimpacted step-out boring, if applicable)	- Hand auger boring to 4' - Sample 0-0.5' and 0.5-1' intervals for PAHs and dioxins/furans
D	SB-10	Step-out from (and between) former test pits S23-4 and S24-4, between 2- and 25-year flood elevations	- Delineate horizontal/vertical extent of visible impacts observed at former test pits S23-4 and S24-4 - Assess PAH concentrations in visibly unimpacted soils located below visibly impacted soils	- Direct push boring to ~25' - visual (additional step-out boring(s) if visual impacts observed) - If visible impacts observed, sample 0.5' visibly unimpacted soil interval immediately below deepest observed visibly impacted interval for PAHs (applies to original location only; not step-outs)	- Direct push boring to 25'
E	SB-9	Step-out from (and between) former test pits S24-4 and S25-3, below 2-year flood elevation (near former location FP-15-175'R)	- Delineate horizontal extent of visible impacts observed at former test pits S24-4 and S25-3 - Assess visual impacts at higher flood elevations - Assess PAH concentrations in visibly unimpacted soils located below visibly impacted soils	- Direct push boring to ~25' - visual (additional step-out boring(s) if visual impacts observed) - If visible impacts observed, sample 0.5' visibly unimpacted soil interval immediately below deepest observed visibly impacted interval for PAHs	- Direct push boring to 25'
F	HA-3	Step-out from SB-9 (E), between 2- and 25-year flood elevations	- Assess visual impacts at higher flood elevations	- Hand auger boring to 4' (deeper if impacts observed at bottom) - visual	- Hand auger boring to 4'
G	HA-2	Step-out from HA-3 (F), between 25- and 100-year flood elevations	- Assess visual impacts at higher flood elevations	- Hand auger boring to 4' (deeper if impacts observed at bottom) - visual	- Hand auger boring to 4'
H	HA-1	Step-out from HA-2 (G), above 100-year flood elevation/debris line	- Assess visual impacts and PAH/dioxin concentrations at higher flood elevations (delineate PAHs beyond FP-15-175'R and dioxins beyond SOIL-T24)	- Hand auger boring to 4' (deeper if impacts observed at bottom) - visual (additional step-out boring(s) if visible impacts observed) - Sample 0-0.5' and 0.5-1' intervals for PAHs and dioxins (at this location, or first visibly unimpacted step-out boring, if applicable)	- Hand auger boring to 4.2' - Sample 0-0.5' and 0.5-1' intervals for PAHs and dioxins/furans
I	SB-11, SB-11A (TMW-11, TMW-11A)	Step-out from (and between) former test pits S21-4 and S22-4, below 2-year flood elevation	- Delineate horizontal extent of visible impacts observed at former test pits S21-4 and S22-4 - Assess visual impacts at higher flood elevations - Assess groundwater concentrations outside visible impacted area - Assess PAH concentrations in visibly unimpacted soils located below visibly impacted soils	- Direct push boring to ~30' - visual (additional step-out boring(s) if visual impacts observed) - Shallow and deep temporary well pair (at original boring location, or first step out where no visible impacts observed) - If visible impacts observed, sample 0.5' visibly unimpacted soil interval immediately below deepest observed visibly impacted interval for PAHs	- Direct push borings to 30' (SB-11) and 12' (SB-11A) - Wells screened from 20-30' (TMW-11) and 2-12' (TMW-11A)
J	HA-13	Step-out from SB-11 (I), between 2- and 25-year flood elevations	- Assess visual impacts at higher flood elevations	- Hand auger boring to 4' (deeper if impacts observed at bottom) - visual	- Hand auger boring to 4'
K	HA-8	Step-out from HA-13 (J), between 25- and 100-year flood elevations	- Assess visual impacts at higher flood elevations	- Hand auger boring to 4' (deeper if impacts observed at bottom) - visual	- Hand auger boring to 4'

Table 1 - Scope of Work Summary
Supplemental Off-Property Investigation
Former Koppers Inc. Facility - Superior, WI

Work Plan ID	Field ID	Location Description	Objective(s)	Work Plan Scope	Actual Scope
L	HA-7	Step-out from HA-8 (K), above 100-year flood elevation/debris line	-Assess visual impacts and PAH/dioxin concentrations at higher flood elevations (delineate PAHs beyond FP-15-125'L and dioxins beyond SOIL-T23)	- Hand auger boring to 4' (deeper if impacts observed at bottom) - visual (additional step-out boring(s) if visible impacts observed) - Sample 0-0.5' and 0.5-1' intervals for PAHs and dioxins (at this location, or first visibly unimpacted step-out boring, if applicable)	- Hand auger boring to 4' - Sample 0-0.5' and 0.5-1' intervals for PAHs and dioxins/furans
M	SB-12, SB-12A, SB-12B (TMW-12C, TMW-12A, TMW-12B)	Between former test pits S21-1 and S20-3 (in former tributary flowpath area)	- Assess groundwater concentrations within/below visibly impacted area - Assess PAH concentrations in visibly unimpacted soils located below visibly impacted soils	- Direct push boring to ~30' - visual - Shallow and deep temporary well pair (one screened within visibly impacted zone, one below visibly impacted zone) - If visible impacts observed, sample 0.5' visibly unimpacted soil interval immediately below deepest observed visibly impacted interval for PAHs	- Direct push borings to 15' (SB-12A), 30' bgs (SB-12B) and 40' (SB-12/12C) - Wells screened from 5-15' (TMW-12A), 25-30' (TMW-12B) and 35-40' (TMW-12C) - Sample 30-30.5' and 30.5-31' intervals (SB-12/12C) for PAHs
	SB-13	Step-out from SB-12; approx. 107' NE	Horizontal delineation of visible impacts observed at SB-12	N/A (step-out)	- Direct push boring to 30'
	SB-18	Step-out from SB-12; approx. 42' W/NW	Horizontal delineation of visible impacts observed at SB-12	N/A (step-out)	- Direct push boring to 40' - Sample 34-34.5' and 34.5-35' intervals for PAHs
	SB-20	Step-out from SB-12; approx. 57' SW	Horizontal delineation of visible impacts observed at SB-12	N/A (step-out)	- Direct push boring to 30'
	SB-19 (TMW-19C)	Step-out from SB-18; approx. 41' NW	Horizontal delineation of visible impacts observed at SB-12/SB-18; install replacement well for TMW-12C in visibly clean/downgradient location	N/A (step-out)	- Direct push/hollow-stem auger boring to 41' - Well screened from 35-40'
	SB-21	Step-out from SB-12; approx. 54' E/SE	Horizontal delineation of visible impacts observed at SB-12	N/A (step-out)	- Direct push boring to 10' (impacts were observed, so boring was terminated and another step-out was performed)
	SB-22	Step-out from SB-21; approx. 56' E/SE	Horizontal delineation of visible impacts observed at SB-12/SB-21	N/A (step-out)	- Direct push boring to 30' - Sampled 21.2-21.7' and 21.7-22.2' intervals for PAHs
N	SB-15	Near former test pit S11-1	- Delineate vertical extent of visible impacts observed at former test pit S11-1 - Assess PAH concentrations in visibly unimpacted soils located below visibly impacted soils	- Direct push boring to ~25' - visual - If visible impacts observed, sample 0.5' visibly unimpacted soil interval immediately below deepest observed visibly impacted interval for PAHs	- Direct push boring to 25'
	SB-16	Step-out from SB-15; approx. 14' W/NW (towards creek and test pit S11-1)	Same as SB-15; step-out added because no impacts were observed at SB-15, so vertical delineation objective was not achieved	N/A (step-out)	- Direct push boring to 35' - Sample 30-30.5' and 30.5-31' intervals for PAHs
O	SB-17	Step-out from (and between) former test pits S3-2 and S4-2	- Delineate horizontal extent of visible impacts observed at former test pits S3-2 and S4-2 - Assess PAH concentrations in visibly unimpacted soils located below visibly impacted soils	- Direct push boring to ~25' - visual (additional step-out boring(s) if visual impacts observed) - If visible impacts observed, sample 0.5' visibly unimpacted soil interval immediately below deepest observed visibly impacted interval for PAHs	- Direct push boring to 25'

Table 1 - Scope of Work Summary
Supplemental Off-Property Investigation
Former Koppers Inc. Facility - Superior, WI

Work Plan ID	Field ID	Location Description	Objective(s)	Work Plan Scope	Actual Scope
P	SB-2, SB-2A (TMW-2, TMW-2A)	Between former test pits N2-1, N3-1 and N3-3 (in former beaver pond area)	- Delineate vertical extent of visible impacts observed at former test pit N2-1, N3-1 and N3-3 - Assess groundwater concentrations within/below visibly impacted area - Assess PAH concentrations in visibly unimpacted soils located below visibly impacted soils	- Direct push boring to ~30' - visual - Shallow and deep temporary well pair (one screened within visibly impacted zone, one below visibly impacted zone) - If visible impacts observed, sample 0.5' visibly unimpacted soil interval immediately below deepest observed visibly impacted interval for PAHs	- Direct push borings to 30' (SB-2) and 15' (SB-2A) - Wells screened from 20-30' (TMW-2) and 5-15' (TMW-2A) - Sample 25-25.5' and 25.5-26' intervals (SB-2) for PAHs
	SB-23 (TMW-23)	Step-out from SB-2; approx. 54' N/NW	Install replacement well for TMW-2 in visibly clean/downgradient location	N/A (step-out)	- Direct push/hollow-stem auger boring to 30' - Well screened from 20-30'
Q	SB-5, SB-5A (TMW-5, TMW-5A)	Step out from former test pit N3-4	- Delineate horizontal extent of visible impacts observed at former test pit N3-4 (former beaver pond area) - Assess groundwater concentrations outside visible impacted area - Assess PAH concentrations in visibly unimpacted soils located below visibly impacted soils	- Direct push boring to ~30' - visual (additional step-out boring(s) if visual impacts observed) - Shallow and deep temporary well pair (at original boring location, or first step out where no visible impacts observed) - If visible impacts observed, sample 0.5' visibly unimpacted soil interval immediately below deepest observed visibly impacted interval for PAHs	- Direct push borings to 30' (SB-5) and 12' (SB-5A) - Wells screened from 20-30' (TMW-5) and 2-12' (TMW-5A)
R	HA-12	Step-out from SOIL-T1, below 2-year flood elevation	- Assess visual impacts at higher flood elevations	- Hand auger boring to 4' (deeper if impacts observed at bottom) - visual	- Hand auger boring to 4'
S	HA-11	Step-out from HA-12 (R), between 2- and 25-year flood elevations	- Assess visual impacts at higher flood elevations	- Hand auger boring to 4' (deeper if impacts observed at bottom) - visual	- Hand auger boring to 4'
T	HA-10	Step-out from HA-11 (S), between 25- and 100-year flood elevations	- Assess visual impacts at higher flood elevations	- Hand auger boring to 4' (deeper if impacts observed at bottom) - visual	- Hand auger boring to 2.85' (equipment refusal)
U	HA-9	Step-out from HA-10 (T), above 100-year flood elevation/debris line	- Assess visual impacts and PAH/dioxin concentrations at higher flood elevations (delineate dioxins beyond SOIL-T1)	- Hand auger boring to 4' (deeper if impacts observed at bottom) - visual (additional step-out boring(s) if visible impacts observed) - Sample 0-0.5' and 0.5-1' intervals for PAHs and dioxins (at this location, or first visibly unimpacted step-out boring, if applicable)	- Hand auger boring to 4' - Sample 0-0.5' and 0.5-1' intervals for PAHs and dioxins/furans
V	SB-8, SB-8A (TMW-8, TMW-8A)	Along west side of Crawford Creek, approx. midway between confluence with Tributary and RR embankment, in low-lying/ponded area, near 2005 composite sample transect SOIL-T13	- Assess visual impacts in low-lying/ponded area - Assess groundwater concentrations outside visible impacted area - Assess PAH concentrations in visibly unimpacted soils located below visibly impacted soils	- Direct push boring to ~30' - visual (additional step-out boring(s) if visual impacts observed) - Shallow and deep temporary well pair (at original boring location, or first step out where no visible impacts observed) - If visible impacts observed, sample 0.5' visibly unimpacted soil interval immediately below deepest observed visibly impacted interval for PAHs	- Direct push borings to 30' (SB-8) and 12' bgs (SB-8A) - Wells screened from 20-30' (TMW-8) and 2-12' (TMW-8A)
W	SB-6	Along west side of Crawford Creek, in low-lying/ponded area, between 2005 composite sample transects SOIL-T10 and SOIL-T12	- Assess visual impacts in low-lying/ponded area - Assess PAH concentrations in visibly unimpacted soils located below visibly impacted soils	- Direct push boring to ~25' - visual (additional step-out boring(s) if visual impacts observed) - If visible impacts observed, sample 0.5' visibly unimpacted soil interval immediately below deepest observed visibly impacted interval for PAHs	- Direct push boring to 25'

Table 1 - Scope of Work Summary
Supplemental Off-Property Investigation
Former Koppers Inc. Facility - Superior, WI

Work Plan ID	Field ID	Location Description	Objective(s)	Work Plan Scope	Actual Scope
X	SB-3	Along west side of Crawford Creek, in low-lying/ponded area, near 2005 composite sample transect SOIL-T6	- Assess visual impacts in low-lying/ponded area - Assess PAH concentrations in visibly unimpacted soils located below visibly impacted soils	- Direct push boring to ~25' - visual (additional step-out boring(s) if visual impacts observed) - If visible impacts observed, sample 0.5' visibly unimpacted soil interval immediately below deepest observed visibly impacted interval for PAHs	- Direct push boring to 25' - Sample 15.5-16' and 16-16.5' intervals for PAHs
	SB-4	Step-out from SB-3; approx. 48' N/NW	Horizontal delineation of visible impacts observed at SB-3	N/A (step-out)	- Direct push boring to 20'
Y	SB-1	Along west side of Crawford Creek, in low-lying/ponded area, near 2005 composite sample transect SOIL-T1	- Assess visual impacts in low-lying/ponded area - Assess PAH concentrations in visibly unimpacted soils located below visibly impacted soils	- Direct push boring to ~25' - visual (additional step-out boring(s) if visual impacts observed) - If visible impacts observed, sample 0.5' visibly unimpacted soil interval immediately below deepest observed visibly impacted interval for PAHs	- Direct push boring to 25'
Z	SB-14	Along east side of Crawford Creek, near the confluence of the former tributary flowpath (as shown on a 1973 aerial photograph) with Crawford Creek	- Assess visual impacts in previously uninvestigated area - Assess PAH concentrations in visibly unimpacted soils located below visibly impacted soils	- Direct push boring to ~25' - visual (additional step-out boring(s) if visual impacts observed) - If visible impacts observed, sample 0.5' visibly unimpacted soil interval immediately below deepest observed visibly impacted interval for PAHs	- Direct push boring to 25'
AA	SB-7	Along west side of Crawford Creek, between proposed investigation locations V and W	- Assess visual impacts in previously uninvestigated area - Assess PAH concentrations in visibly unimpacted soils located below visibly impacted soils	- Direct push boring to ~25' - visual (additional step-out boring(s) if visual impacts observed) - If visible impacts observed, sample 0.5' visibly unimpacted soil interval immediately below deepest observed visibly impacted interval for PAHs	- Direct push boring to 25'

Notes:
bgs - below ground surface
PAHs - polycyclic aromatic hydrocarbons
N/A - not applicable

Table 2 - Groundwater Sampling Scope Summary
Supplemental Off-Property Investigation
Former Koppers Inc. Facility - Superior, WI

Well ID	October 25-28, 2013				January 12-14, 2014			
	Filtered		Unfiltered		Filtered		Unfiltered	
	VOCs	SVOCs	VOCs	SVOCs	VOCs	SVOCs	VOCs	SVOCs
TMW-2A	X	X	X	X	X	X	X	X
TMW-2	N/A - not sampled (bad seal, install replacement well)				N/A - sampled replacement well TMW-23 instead			
TMW-5A	X	X	X	X	X	X	Note 3	Note 3
TMW-5	X	X	X	X	X	X	X	X
TMW-8A	X	X	X	X	X	X	X	X
TMW-8	X	X	X	X	X	X	X	X
TMW-11A	X	X	X	Note 3	X	X	X	X
TMW-11	X	X	X	X	X	X	X	X
TMW-12A	X	X	X	X	X	X	X	X
TMW-12B	N/A - not sampled due to presence of free product in well							
TMW-12C	NA - not sampled (bad seal, install replacement well)				N/A - sampled replacement well TMW-19C instead			
TMW-19C[1]	N/A - well not installed yet				X	X	X	X
TMW-23[2]	N/A - well not installed yet				X	X	X	X

Notes:
N/A - not applicable
SVOCs - semivolatile organic compounds (USEPA Method 8270)
USEPA - United States Environmental Protection Agency
VOCs - volatile organic compounds (USEPA Method 8021B/8260B)
1. TMW-19C installed as a replacement well for TMW-12C.
2. TMW-23 installed as a replacement well for TMW-2.
3. Certain samples were not able to be collected due to slow recharge rates encountered during sampling.

Table 3 - Hand Auger Soil Boring Summary
Supplemental Off-Property Investigation
Former Koppers Inc. Facility - Superior, WI

ID	Work Plan ID	Date Completed	Ground Surface Elevation (feet AMSL)	Total Depth (feet bgs)	Analytical Sample Intervals (feet bgs)	Max. PID Reading (ppm)	Visual/Olfactory Impacts
HA-1	H	8/20/13	621.69	4.2	0-0.5, 0.5-1	10.5	None
HA-2	G	8/20/13	617.20	4.0	N/A	1.4	None
HA-3	F	8/20/13	615.08	4.0	N/A	14.8	None
HA-4	C	8/20/13	620.71	4.0	0-0.5, 0.5-1	4.2	None
HA-5	B	8/20/13	618.10	4.0	N/A	3.7	None
HA-6	A	8/20/13	615.98	4.0	N/A	4.2	None
HA-7	L	8/20/13	620.12	4.0	0-0.5, 0.5-1	0.8	None
HA-8	K	8/20/13	618.29	4.0	N/A	10.9	None
HA-9	U	8/21/13	621.82	4.0	0-0.5, 0.5-1	3.9	None
HA-10	T	8/21/13	618.49	2.9	N/A	23.5	None
HA-11	S	8/21/13	614.55	4.0	N/A	1.6	None
HA-12	R	8/21/13	610.62	4.0	N/A	1.4	None
HA-13	J	8/21/13	615.01	4.0	N/A	2.0	None

Notes:
AMSL - above mean sea level (NAVD 88)
bgs - below ground surface
PID - photoionization detector
ppm - parts per million
N/A - not applicable

Table 4 - Hand Auger Soil Sample Analytical Results
Supplemental Off-Property Investigation
Former Koppers Inc. Facility - Superior, WI

Location ID:		HA-1	HA-1	HA-4	HA-4	HA-7	HA-7
Depth (feet bgs):		0 - 0.5	0.5 - 1	0 - 0.5	0.5 - 1	0 - 0.5	0.5 - 1
Date Collected:	Units	8/20/13	8/20/13	8/20/13	8/20/13	8/20/13	8/20/13
PAHs							
Acenaphthene	mg/kg	0.0084 U [0.0079 U]	0.008 U	0.0081 U	0.0079 U	0.0081 U	0.008 U
Acenaphthylene	mg/kg	0.01 U [0.0094 U]	0.0096 U	0.0097 U	0.0094 U	0.0097 U	0.0095 U
Anthracene	mg/kg	0.0086 U [0.0081 U]	0.0082 U	0.0083 U	0.008 U	0.0083 U	0.0081 U
Benzo(a)anthracene	mg/kg	0.011 U [0.012 J]	0.01 U	0.011 U	0.01 U	0.018 J	0.01 U
Benzo(a)pyrene	mg/kg	0.0088 U [0.012 J]	0.0084 U	0.0085 U	0.0082 U	0.011 J	0.0083 U
Benzo(b)fluoranthene	mg/kg	0.014 U [0.017 J]	0.013 U	0.018 J	0.013 U	0.025 J	0.013 U
Benzo(g,h,i)perylene	mg/kg	0.0087 U [0.015 J]	0.0083 U	0.012 J	0.0082 U	0.017 J	0.0083 U
Benzo(k)fluoranthene	mg/kg	0.018 U [0.017 U]	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U
Chrysene	mg/kg	0.011 J [0.016 J]	0.01 U	0.01 U	0.0098 U	0.031 J	0.0099 U
Dibenzo(a,h)anthracene	mg/kg	0.0098 U [0.0092 U]	0.0093 U	0.0094 U	0.0091 U	0.0094 U	0.0092 U
Fluoranthene	mg/kg	0.01 J [0.015 J]	0.0089 U	0.013 J	0.0088 U	0.022 J	0.0089 U
Fluorene	mg/kg	0.012 U [0.011 U]	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
Indeno(1,2,3-cd)pyrene	mg/kg	0.009 U [0.011 J]	0.0086 U	0.011 J	0.0085 U	0.013 J	0.0086 U
Naphthalene	mg/kg	0.0076 U [0.0071 U]	0.0072 U	0.0073 U	0.0071 U	0.0073 U	0.0072 U
Phenanthrene	mg/kg	0.014 U [0.018 J]	0.013 U	0.014 J	0.013 U	0.021 J	0.013 U
Pyrene	mg/kg	0.0089 U [0.011 J]	0.0085 U	0.01 J	0.0083 U	0.015 J	0.0084 U
Total PAHs	mg/kg	0.021 J [0.127 J]	ND	0.078 J	ND	0.173 J	ND
PCDDs/PCDFs							
1,2,3,4,6,7,8-HpCDD	µg/kg	0.0142 [0.00806]	0.00121 J	0.0408	0.00262	0.0287	0.00171 J
1,2,3,4,6,7,8-HpCDF	µg/kg	0.0036 [0.00207 J]	0.000292 J	0.00881	0.000634 J	0.00736	0.000701 J
1,2,3,4,7,8,9-HpCDF	µg/kg	0.000308 UX [0.000177 UX]	0.0000378 U	0.000843 J	0.0000513 UX	0.000771 J	0.0000961 U
1,2,3,4,7,8-HxCDD	µg/kg	0.000194 J [0.000172 U]	0.000156 U	0.000613 J	0.0000682 U	0.000249 J	0.000221 U
1,2,3,4,7,8-HxCDF	µg/kg	0.000444 J [0.000247 J]	0.0000475 J	0.000951 J	0.000062 U	0.000872 J	0.0000934 U
1,2,3,6,7,8-HxCDD	µg/kg	0.00067 J [0.000433 J]	0.00016 U	0.0018 J	0.000191 J	0.00102 J	0.000195 J
1,2,3,6,7,8-HxCDF	µg/kg	0.000265 J [0.000135 UX]	0.0000407 U	0.000338 UX	0.0000613 U	0.00035 J	0.0000986 J
1,2,3,7,8,9-HxCDD	µg/kg	0.0005 J [0.000321 J]	0.000173 U	0.00123 J	0.000146 J	0.0005 J	0.000254 U
1,2,3,7,8,9-HxCDF	µg/kg	0.000078 U [0.0000617 U]	0.0000429 U	0.000244 U	0.0000261 U	0.000181 UX	0.000148 U
1,2,3,7,8-PeCDD	µg/kg	0.000144 UX [0.000163 UX]	0.0000543 UX	0.000639 J	0.0000907 U	0.000181 J	0.000109 J
1,2,3,7,8-PeCDF	µg/kg	0.000112 UX [0.000112 UX]	0.0000415 UX	0.000189 J	0.0000644 U	0.000153 UX	0.000126 U
2,3,4,6,7,8-HxCDF	µg/kg	0.000335 J [0.00022 J]	0.0000478 U	0.000529 J	0.0000757 U	0.000439 J	0.000117 U
2,3,4,7,8-PeCDF	µg/kg	0.000398 J [0.000227 J]	0.0000598 J	0.000403 J	0.0000621 U	0.000345 J	0.000103 U
2,3,7,8-TCDD	µg/kg	0.0000552 U [0.0000772 U]	0.0000889 U	0.000132 UX	0.0000511 U	0.0000571 U	0.000105 U
2,3,7,8-TCDF	µg/kg	0.0002 UX [0.000106 U]	0.0000975 U	0.000213 J	0.000057 U	0.000216 J	0.000101 U
OCDD	µg/kg	0.171 [0.074]	0.0133	0.428	0.0313	0.349 J	0.0171
OCDF	µg/kg	0.0143 [0.0076]	0.000524 J	0.0407	0.00231 J	0.0315	0.00136 J
TOTAL HpCDD	µg/kg	0.0292 [0.0162]	0.00237	0.0949	0.00592	0.0585	0.00366
TOTAL HpCDF	µg/kg	0.0137 [0.00724]	0.000292	0.0367	0.00215	0.0308	0.00159
TOTAL HxCDD	µg/kg	0.00639 [0.00254]	0.000507	0.0227	0.00132	0.00825	0.000645
TOTAL HxCDF	µg/kg	0.00563 [0.00325]	0.000307	0.013	0.000671	0.0104	0.000848
TOTAL PeCDD	µg/kg	0.00226 [0.000795]	0.000345	0.00667	0.0000624	0.00123	0.000746
TOTAL PeCDF	µg/kg	0.00295 [0.00126]	0.000111	0.00278	0.0000633	0.00283	0.000675
TOTAL TCDD	µg/kg	0.0011 [0.000273]	0.000382 U	0.000578	0.000366	0.00254	0.000432
TOTAL TCDF	µg/kg	0.0026 [0.000736]	0.000174	0.000376	0.000408	0.00381	0.000404
TCDD TEQ (NDs=0)	µg/kg	0.000594 [0.000316]	0.0000419	0.00194	0.0000763	0.00113	0.000168

See Notes on Page 3.

Table 4 - Hand Auger Soil Sample Analytical Results
Supplemental Off-Property Investigation
Former Koppers Inc. Facility - Superior, WI

Location ID:		HA-9	HA-9
Depth (feet bgs):		0 - 0.5	0.5 - 1
Date Collected:	Units	8/21/13	8/21/13
PAHs			
Acenaphthene	mg/kg	0.0083 U	0.0079 U
Acenaphthylene	mg/kg	0.019 J	0.0094 U
Anthracene	mg/kg	0.015 J	0.008 U
Benzo(a)anthracene	mg/kg	0.13	0.011 J
Benzo(a)pyrene	mg/kg	0.098	0.0082 U
Benzo(b)fluoranthene	mg/kg	0.15	0.013 U
Benzo(g,h,i)perylene	mg/kg	0.059 J	0.0082 U
Benzo(k)fluoranthene	mg/kg	0.035 J	0.017 U
Chrysene	mg/kg	0.13	0.0098 U
Dibenzo(a,h)anthracene	mg/kg	0.023 J	0.0091 U
Fluoranthene	mg/kg	0.26	0.015 J
Fluorene	mg/kg	0.011 U	0.011 U
Indeno(1,2,3-cd)pyrene	mg/kg	0.059 J	0.0085 U
Naphthalene	mg/kg	0.0074 U	0.0071 U
Phenanthrene	mg/kg	0.055 J	0.013 U
Pyrene	mg/kg	0.18	0.012 J
Total PAHs	mg/kg	1.21 J	0.038 J
PCDDs/PCDFs			
1,2,3,4,6,7,8-HpCDD	µg/kg	0.00503	0.000576 J
1,2,3,4,6,7,8-HpCDF	µg/kg	0.00121 J	0.000294 J
1,2,3,4,7,8,9-HpCDF	µg/kg	0.000126 U	0.0000451 U
1,2,3,4,7,8-HxCDD	µg/kg	0.000223 U	0.000218 U
1,2,3,4,7,8-HxCDF	µg/kg	0.000205 J	0.0000598 U
1,2,3,6,7,8-HxCDD	µg/kg	0.000341 J	0.00024 U
1,2,3,6,7,8-HxCDF	µg/kg	0.000179 UX	0.0000599 U
1,2,3,7,8,9-HxCDD	µg/kg	0.000354 J	0.00024 U
1,2,3,7,8,9-HxCDF	µg/kg	0.0000879 U	0.000095 U
1,2,3,7,8-PeCDD	µg/kg	0.000151 J	0.0000888 U
1,2,3,7,8-PeCDF	µg/kg	0.0000991 UX	0.0000856 U
2,3,4,6,7,8-HxCDF	µg/kg	0.000214 J	0.0000725 U
2,3,4,7,8-PeCDF	µg/kg	0.000194 UX	0.0000835 U
2,3,7,8-TCDD	µg/kg	0.000105 U	0.0000975 U
2,3,7,8-TCDF	µg/kg	0.000139 U	0.000053 U
OCDD	µg/kg	0.0426 J	0.00375 J
OCDF	µg/kg	0.00225 J	0.000171 J
TOTAL HpCDD	µg/kg	0.011	0.00131
TOTAL HpCDF	µg/kg	0.00249	0.000294
TOTAL HxCDD	µg/kg	0.00373	0.000503
TOTAL HxCDF	µg/kg	0.002	0.0000706 U
TOTAL PeCDD	µg/kg	0.000873	0.0000852
TOTAL PeCDF	µg/kg	0.00123	0.000168 U
TOTAL TCDD	µg/kg	0.00276	0.000583
TOTAL TCDF	µg/kg	0.00319	0.000568 U
TCDD TEQ (NDs=0)	µg/kg	0.000338	0.00001

See Notes on Page 3.

Table 4 - Hand Auger Soil Sample Analytical Results
Supplemental Off-Property Investigation
Former Koppers Inc. Facility - Superior, WI

Notes:
bgs - below ground surface
mg/kg - milligrams per kilogram
µg/kg - micrograms per kilogram
PAHs - polycyclic aromatic hydrocarbons (USEPA Method 8270C)
PCDDs/PCDFs - polychlorinated dibenzo-p-dioxins/polychlorinated dibenzofurans (USEPA Method 8290)
TCDD TEQ - 2,3,7,8 tetrachlorinated dibenzo-p-dioxin toxic equivalent (calculated with WHO-2005 toxic equivalency factors [TEFs]; assumes non-detects have a concentration of zero)
USEPA - United States Environmental Protection Agency
[ ] - duplicate sample result
J - indicates an estimated value
U - not detected above reporting limit shown
UX - elevated detection limit as estimated maximum possible concentration (EMPC)
ND - not detected

Table 5 - Direct Push Soil Boring Summary
Supplemental Off-Property Investigation
Former Koppers Inc. Facility - Superior, WI

ID	Work Plan ID	Date Completed	Total Depth (feet bgs)	Analytical Sample Intervals (feet bgs)	Visual/Olfactory Impacts [1]		TMW ID
					Type 1	Type 2	
SB-1	Y	8/21/13	25	N/A	None	None	N/A
SB-2	P	8/21/13	30	25-25.5, 25.5-26	- Organics seam with creosote-like product at 7.1' - Creosote-like product in clay fractures from 11.3-11.4'	- Creosote-like odor and sheen from 0-5' - Black staining from 0.5-0.6', 6-6.2' - Creosote-like odor and black staining from 15-20.1'	TMW-2
SB-2A		8/21/13	15	N/A	- Creosote-like product in clay fractures at/from 1.2-1.8', 5-10', 10.8', 11.2', 11.5-11.8', 12', 12.3', 12.5-12.7', 13.2-13.3', 13.7-13.8', and 13.9-14.3'	- Creosote-like odor and black/brown staining from 0-1.8' - Creosote-like odor and staining from 6.3-7.1' and 10-15'	TMW-2A
SB-3	X	8/21/13	25	15.5-16, 16-16.5	- Creosote-like product in clay fractures at/from 5.6-5.7', 6.1-6.3', 6.7-6.8', and 7.3-7.5'	- Creosote-like odor 0-15.8' - Sheen from 0-15' - Black staining from 1.5-2.2' and 10-14.5'	N/A
SB-4	N/A	8/21/13	20	N/A	None	None	N/A
SB-5	Q	8/21/13	30	N/A	None	None	TMW-5
SB-5A		8/21/13	12	N/A	N/A - blind drill for shallow well installation	N/A - blind drill for shallow well installation	TMW-5A
SB-6	W	8/22/13	25	N/A	None	None	N/A
SB-7	AA	8/22/13	25	N/A	None	None	N/A
SB-8	V	8/22/13	30	N/A	None	None	TMW-8
SB-8A		8/22/13	12	N/A	N/A - blind drill for shallow well installation	N/A - blind drill for shallow well installation	TMW-8A
SB-9	E	8/22/13	25	N/A	None	None	N/A
SB-10	D	8/22/13	25	N/A	None	None	N/A
SB-11	I	8/22/13	30	N/A	None	None	TMW-11
SB-11A		8/22/13	12	N/A	N/A - blind drill for shallow well installation	N/A - blind drill for shallow well installation	TMW-11A
SB-12	M	8/23/13	40	30-30.5, 30.5-31	- Creosote-like product in clay fractures from 5-10' and 25.4-30' - Creosote-like product in organics from 5.2-5.3', 5.6-5.7', and 5.8-6.6' - Creosote-like product in clayey sand from 26.6-26.8' and 27.4-27.8'	- Creosote-like odor from 0-30' - Black/brown staining at/from 0.8', 5.1-15', and 25.4-30'	TMW-12C
SB-12A		9/12/13	15	N/A	- Creosote-like product in clay fractures from 5-14'	- Creosote-like odor from 0-15' - Black/brown staining from 0.8-14' - Sheen from 0.8-1.2' and 5-14'	TMW-12A
SB-12B		9/12/13	30	N/A	- Creosote-like product in clay fractures from 5.8-10' and 11.3-14' - Creosote-like product in sand from 15.9-16.2, 20.1-20.7', and 26.8-27.6'	- Creosote-like odor from 0-30' - Black/brown staining from 0.4-0.7', 5-16.8', and 20.1-27.6' - Sheen at 22.3' and 26.6'	TMW-12B
SB-13	N/A	9/12/13	30	N/A	None	- Creosote-like odor and black staining at 2.5'	N/A
SB-14	Z	9/13/13	25	N/A	None	None	N/A

Table 5 - Direct Push Soil Boring Summary
Supplemental Off-Property Investigation
Former Koppers Inc. Facility - Superior, WI

ID	Work Plan ID	Date Completed	Total Depth (feet bgs)	Analytical Sample Intervals (feet bgs)	Visual/Olfactory Impacts [1]		TMW ID
					Type 1	Type 2	
SB-15	N	9/13/13	25	N/A	None	None	N/A
SB-16		9/13/13	35	30-30.5, 30.5-31	- Creosote-like product in sand from 16.2-16.5'	- Creosote-like odor from 0.6-30' (not continuous) - Black staining from 0.6-0.8', 16.2-16.8, 20.2-21.3', and 27.4-27.5' - Sheen from 10.5-10.8' and 26-26.1'	N/A
SB-17	O	9/13/13	25	N/A	None	None	N/A
SB-18	N/A	11/19/13	40	34-34.5. 34.5-35	None	- Creosote-like odor from 28.3-29.3' and 30-32.2' - Sheen at/from 29.1' and 30.9-31.1'	N/A
SB-19	N/A	11/19/13	41	N/A	None	None	TMW-19C (replacement for TMW-12C)
SB-20	N/A	11/19/13	30	N/A	None	None	N/A
SB-21	N/A	11/19/13	10	N/A	- Creosote-like product in clay fractures from 5-10' Note: Boring was terminated at 10' to avoid potential drag-down of shallow impacts	- Creosote-like odor from 0-10' - Black/brown staining from 0.3-10' - Sheen from 5-10' Note: Boring was terminated at 10' to avoid potential drag-down of shallow impacts	N/A
SB-22	N/A	11/20/13	30	21.2-21.7, 21.7-22.2	None	- Creosote-like odor from 0.6-21.1' - Sheen from 0.4-15' - Black/brown staining from 0.4-15' and 16.7-20.3	N/A
SB-23	N/A	12/18/13	30	N/A	None	None	TMW-23 (replacement for TMW-2)

Notes:
bgs - below ground surface
N/A - not applicable
TMW - temporary monitoring well
[1] Type 1 - creosote-like product in clay fractures or sand/organic seams
Type 2 - creosote-like odor, staining and/or sheens, but no product
Type 3 - no visible impacts

Table 6 - Direct Push Soil Sample Analytical Results
Supplemental Off-Property Investigation
Former Koppers Inc. Facility - Superior, WI

Location ID:		SB-2	SB-3	SB-12	SB-12	SB-16	SB-18	SB-22
Depth (feet bgs):		25 - 25.5	15.5 - 16	30 - 30.5	30.5 - 31	30 - 30.5	34 - 34.5	21.2 - 21.7
Date Collected:	Units	8/21/13	8/21/13	8/23/13	8/23/13	9/13/13	11/19/13	11/20/13
PAHs								
Acenaphthene	mg/kg	0.0085 U	0.0088 U	4.1 J [0.063 J]	0.0098 U	0.0098 J	0.0092 U	0.0087 U
Acenaphthylene	mg/kg	0.01 U	0.01 U	0.081 J [0.012 U]	0.012 U	0.01 U	0.011 U	0.01 U
Anthracene	mg/kg	0.0087 U	0.0089 U	1.1 J [0.023 J]	0.01 U	0.0085 U	0.0094 U	0.0088 U
Benzo(a)anthracene	mg/kg	0.011 U	0.011 U	1.2 J [0.039 J]	0.013 U	0.011 U	0.012 U	0.011 U
Benzo(a)pyrene	mg/kg	0.0088 U	0.0091 U	0.43 J [0.015 J]	0.01 U	0.0087 U	0.0096 U	0.009 U
Benzo(b)fluoranthene	mg/kg	0.014 U	0.014 U	0.68 J [0.025 J]	0.016 U	0.014 U	0.015 U	0.014 U
Benzo(g,h,i)perylene	mg/kg	0.0088 U	0.0091 U	0.15 [0.011 U]	0.01 U	0.0086 U	0.0096 U	0.009 U
Benzo(k)fluoranthene	mg/kg	0.018 U	0.018 U	0.2 [0.021 U]	0.021 U	0.018 U	0.019 U	0.018 U
Chrysene	mg/kg	0.011 U	0.011 U	0.91 J [0.03 J]	0.012 U	0.01 U	0.011 U	0.011 U
Dibenzo(a,h)anthracene	mg/kg	0.0098 U	0.01 U	0.067 J [0.012 U]	0.011 U	0.0097 U	0.011 U	0.01 U
Fluoranthene	mg/kg	0.0095 U	0.0098 U	5.9 J [0.17 J]	0.011 U	0.032 J	0.01 U	0.0096 U
Fluorene	mg/kg	0.012 U	0.012 U	3.6 J [0.018 J]	0.013 U	0.011 U	0.013 U	0.012 U
Indeno(1,2,3-cd)pyrene	mg/kg	0.0091 U	0.0094 U	0.15 [0.011 U]	0.011 U	0.009 U	0.0099 U	0.0093 U
Naphthalene	mg/kg	0.0076 U	0.089 J	8.7 J [0.1 J]	0.031 J	0.0075 U	0.058 J	0.0078 U
Phenanthrene	mg/kg	0.014 U	0.015 U	9.5 J [0.23 J]	0.016 U	0.045 J	0.015 U	0.014 U
Pyrene	mg/kg	0.0089 U	0.0092 U	3.6 J [0.11 J]	0.01 U	0.022 J	0.0097 U	0.0091 U
Total PAHs	mg/kg	ND	0.089 J	40.4 J [0.823 J]	0.031 J	0.1088 J	0.058 J	ND

Notes:
bgs - below ground surface
mg/kg - milligrams per kilogram
ND - not detected
PAHs - polycyclic aromatic hydrocarbons (USEPA Method 8270C)
[ ] - duplicate sample result
J - indicates an estimated value
U - not detected above reporting limit shown

Table 7 - Temporary Monitoring Well Construction Summary
Supplemental Off-Property Investigation
Former Koppers Inc. Facility - Superior, WI

Well ID	Date Installed	Ground Elevation (feet AMSL)	TOC Elevation (feet AMSL)	Stickup Height (feet ags)	Well/Screen Material	Well/ Screen Diameter (inches)	Screen Slot Size (inches)	Screen Interval (feet bgs)	Screen Length (feet)	Soil Zone Screened[3]
TMW-2A	8/21/13	604.30	606.22	1.92	Schd. 40 PVC	3/4	0.010	5-15	10	Type 1 (clay, organics)
TMW-2	8/21/13	603.65	607.63	3.98	Schd. 40 PVC	3/4	0.010	20-30	10	Type 3 (clay), below Type 1
TMW-5A	8/21/13	610.36	613.31	2.95	Schd. 40 PVC	3/4	0.010	2-12	10	Type 3 (clay)
TMW-5	8/21/13	610.60	613.44	2.84	Schd. 40 PVC	3/4	0.010	20-30	10	Type 3 (clay)
TMW-8A	8/22/13	605.29	608.30	3.01	Schd. 40 PVC	3/4	0.010	2-12	10	Type 3 (clay)
TMW-8	8/22/13	605.27	609.07	3.80	Schd. 40 PVC	3/4	0.010	20-30	10	Type 3 (clay)
TMW-11A	8/22/13	610.37	613.33	2.96	Schd. 40 PVC	3/4	0.010	2-12	10	Type 3 (clay)
TMW-11	8/22/13	611.01	614.19	3.18	Schd. 40 PVC	3/4	0.010	20-30	10	Type 3 (clay)
TMW-12A	9/12/13	608.42	611.63	3.21	Schd. 40 PVC	3/4	0.010	5-15	10	Type 1 (clay)
TMW-12B	9/12/13	608.28	612.02	3.74	Schd. 40 PVC	3/4	0.010	25-30	5	Type 1 (sand)
TMW-12C	9/12/13	608.42	611.93	3.51	Schd. 40 PVC	3/4	0.010	35-40	5	Type 3 (clay), below Type 1
TMW-19C[1,4]	12/17/13	608.76	612.26	3.50	Schd. 40 PVC	3/4	0.010	35-40	5	Type 3 (clay), below/ downgradient of Type 1
TMW-23[2]	12/18/13	604.88	607.25	2.37	Schd. 40 PVC	3/4	0.010	20-30	10	Type 3 (clay), below/ downgradient of Type 1

Notes:
ags - above ground surface
AMSL - above mean sea level (NAVD 88)
bgs - below ground surface
TOC - top of casing
1. TMW-19C installed as a replacement well for TMW-12C.
2. TMW-23 installed as a replacement well for TMW-2.
3. Type 1 - creosote-like product in clay fractures or sand/organic seams
   Type 2 - creosote-like odor, staining and/or sheens, but no product
   Type 3 - no visible impacts
4. TMW-19C originally installed on 11/19/13, but due to borehole collapse preventing good bentonite seal placement, overdrilled (with augers) and re-installed on 12/17/13.

Table 8 - Temporary Monitoring Well Development Summary
Supplemental Off-Property Investigation
Former Koppers Inc. Facility - Superior, WI

Well ID	Date Developed	Measured Depth to Water (feet bTOC)	Measured Total Well Depth (feet bTOC)	Water Column (feet)	Vol. Water in Well (gallons)	# Times Bailed/ Pumped Dry	Total Vol. Water Removed (gallons)	# Well Volumes Removed	Purge Water Description
TMW-2A	9/23,25/13	3.12	16.80	13.68	0.36	2	1	3	Light brown, turbid, no sheen, slight odor
TMW-2	9/23-25/13	4.41	33.18	28.77	0.75	3	3.5	5	Light brown, turbid, very slight sheen and odor, product on bailer
TMW-5A	9/23/13	10.97	15.09	4.12	0.11	1	0.25	2	Light brown, turbid, no sheen , no odor
TMW-5	9/23-25/13	9.80	32.03	22.23	0.58	3	1.25	2	Light brown, turbid, no sheen , no odor
TMW-8A	9/23-25/13	3.52	14.98	11.46	0.30	3	1.5	5	Light brown, turbid, no sheen, no odor, eventually turned clear
TMW-8	9/23-25/13	4.58	33.10	28.52	0.74	3	5	7	Light gray, turbid, no sheen, no odor, eventually turned less turbid
TMW-11A	9/24/13	10.86	15.10	4.24	0.11	1	0.25	2	Light brown, turbid, no sheen, no odor
TMW-11	9/24-25/13	7.00	33.06	26.06	0.68	2	1	1	Light brown, turbid, no sheen, no odor
TMW-12A	9/24-25/13	7.64	20.02	12.38	0.32	2	1.25	4	Light brown, turbid, odor and sheen present, product on tubing
TMW-12B	N/A - did not develop due to the presence of free product in the well								
TMW-12C	9/24/13	7.79	45.12	37.33	0.97	2	1.75	2	Light brown, turbid, odor and sheen present, some product also present
TMW-19C[1]	12/19/13	9.48	43.60	34.12	0.89	2	1.5	2	Light brown, turbid, no sheen, no odor
TMW-23[2]	1/4/14	17.90	32.92	15.02	0.39	1	2	5	Light brown, turbid, no sheen, no odor

Notes:
bTOC - below top of casing
N/A - not applicable
1. TMW-19C installed as a replacement well for TMW-12C.
2. TMW-23 installed as a replacement well for TMW-2.

Table 9 - Groundwater Level Measurements
Supplemental Off-Property Investigation
Former Koppers Inc. Facility - Superior, WI

Well ID	Date	TOC Elevation (feet AMSL)	Depth to Water (feet bTOC)	Groundwater Elevation (feet AMSL)
TMW-2A	10/23/13	606.22	2.14	604.08
	1/12/14	606.22	2.64	603.58
TMW-2	10/23/13	607.63	3.42	604.21
	1/12/14	607.63	4.15	603.48
TMW-5A	10/23/13	613.31	4.49	608.82
	1/12/14	613.31	10.66	602.65
TMW-5	10/23/13	613.44	9.91	603.53
	1/12/14	613.44	9.14	604.30
TMW-8A[1]	10/23/13	608.30	2.20	606.10
	1/12/14	608.30	3.57	604.73
TMW-8[1]	10/23/13	609.07	4.19	604.88
	1/12/14	609.07	3.71	605.36
TMW-11A	10/23/13	613.33	9.78	603.55
	1/12/14	613.33	7.89	605.44
TMW-11	10/23/13	614.19	8.51	605.68
	1/12/14	614.19	6.64	607.55
TMW-12A	10/23/13	611.63	3.71	607.92
	1/12/14	611.63	5.89	605.74
TMW-12B	10/23/13	612.02	5.50	606.52
	1/12/14	612.02	5.51	606.51
TMW-12C	10/23/13	611.93	4.95	606.98
	1/12/14	Well abandoned on 11/20/13		
TMW-19C	1/12/14	612.26	5.18	607.08
TMW-23	1/12/14	607.25	8.25	599.00

Notes:
AMSL - above mean sea level (NAVD 88)
bTOC - below top of casing
TOC - top of casing
1. 1/12/14 measurements at TMW-8A and TMW-8 made after breaking through ice in well casing.

Table 10 - Groundwater Sample Analytical Results
Supplemental Off-Property Investigation
Former Koppers Inc. Facility - Superior, WI

Well ID:				TMW-2A				TMW-23[1]	
Screen Interval (feet bgs):				5-15				20-30	
Soil Zone Screened:				Type 1 (clay, organics)				Type 3 (clay), below/ DG of Type 1	
Filtered/Unfiltered:		WDNR	WDNR	Unfiltered		Filtered		Unfiltered	Filtered
Sampling Event:	Units	PAL*	ES*	Oct-13	Jan-14	Oct-13	Jan-14	Jan-14	Jan-14
Volatile Organic Compounds									
1,1,1-Trichloroethane	µg/L	40	200	1 U	50 U	1 U	20 U	1 U	1 U
1,2,4-Trimethylbenzene	µg/L	96	480	37	24 J	8.7	10 J	1 U	1 U
1,3,5-Trimethylbenzene	µg/L			15	11 J	3.5	5 J	1 U	1 U
Benzene	µg/L	0.5	5	**7**	50 U	**4**	20 U	1 U	1 U
Chlorobenzene	µg/L	- -	- -	NA	50 U	NA	20 U	1 U	1 U
Chloromethane	µg/L	3	30	1 U	NA	1 U	NA	NA	NA
Ethylbenzene	µg/L	140	700	40	30 J	12	16 J	1 U	1 U
Methyl(tert)butyl ether	µg/L	12	60	5 U	250 U	5 U	100 U	5 U	5 U
N-butylbenzene	µg/L	- -	- -	1 U	50 U	1 U	20 U	1 U	1 U
N-propylbenzene	µg/L	- -	- -	0.93 J	50 U	1 U	20 U	1 U	1 U
Styrene	µg/L	10	100	1 U	50 U	1 U	20 U	1 U	1 U
Toluene	µg/L	160	800	25	26 J	11	16 J	1 U	1 U
M&P-xylene	µg/L	400	2,000	70	50 J	20	28 J	2 U	0.21 J
O-xylene	µg/L			32	26 J	11	15 J	1 U	1 U
Naphthalene	µg/L	10	100	**12,000 DJ**	**7,900**	**6,400 DJ**	**2,800**	1 U	1 U
Total BTEX	µg/L	- -	- -	174	143	58	75	ND	0.21
Semivolatile Organic Compounds									
3-methylcholanthrene	µg/L	- -	- -	21 U	200 UJ	21 U	310 UJ	2.3 U	2 U
4,6-dinitro- 2-methylphenol	µg/L	- -	- -	53 U	500 UJ	53 U	780 UJ	5.8 U	5.6 UJ
4-chlorophenylphenyl- ether	µg/L	- -	- -	5.3 U	50 UJ	5.3 U	78 UJ	0.58 UJ	0.5 UJ
1,2,4-Trichlorobenzene	µg/L	14	70	5.3 U	50 UJ	5.3 U	78 UJ	0.58 UJ	0.5 U
1,2-Dichlorobenzene	µg/L	60	600	5.3 U	50 UJ	5.3 U	78 UJ	0.58 UJ	0.5 U
1,3-Dichlorobenzene	µg/L	120	600	5.3 U	50 UJ	5.3 U	78 UJ	0.58 UJ	0.5 U
1,4-Dichlorobenzene	µg/L	15	75	5.3 U	50 UJ	5.3 U	78 UJ	0.58 UJ	0.5 U
1-Methylnaphthalene	µg/L	- -	- -	170	150 J	94	69 J	0.58 U	0.5 U
2,3,4,6-Tetrachlorophenol	µg/L	- -	- -	53 U	500 UJ	53 U	780 UJ	5.8 U	5.6 UJ
2,3,5,6-Tetrachlorophenol	µg/L	- -	- -	110 U	1,000 UJ	110 U	1,600 UJ	12 UJ	11 UJ
2,4,5-Trichlorophenol	µg/L	- -	- -	5.3 U	50 UJ	5.3 U	78 UJ	0.58 U	0.56 UJ
2,4,6-Trichlorophenol	µg/L	- -	- -	5.3 U	50 UJ	5.3 U	78 UJ	0.58 U	0.56 UJ
2,4-Dichlorophenol	µg/L	- -	- -	5.3 U	50 UJ	5.3 U	78 UJ	0.58 U	0.56 UJ
2,4-Dimethylphenol	µg/L	- -	- -	170	120 J	170	180 J	1.2 U	1.1 UJ
2,4-Dinitrophenol	µg/L	- -	- -	53 U	500 UJ	53 U	780 UJ	5.8 UJ	5.6 UJ
2,4-Dinitrotoluene	µg/L	0.005	0.05	5.3 U	50 UJ	5.3 U	78 UJ	0.58 UJ	0.5 U
2,6-dinitrotoluene	µg/L	0.005	0.05	5.3 U	50 UJ	5.3 U	78 UJ	0.58 UJ	**0.11 J**
2-Chloronaphthalene	µg/L	- -	- -	5.3 U	50 UJ	5.3 U	78 UJ	0.58 UJ	0.5 UJ
2-Chlorophenol	µg/L	- -	- -	5.3 U	50 UJ	5.3 U	78 UJ	0.58 UJ	0.56 UJ
2-Methylnaphthalene	µg/L	- -	- -	320 D	260 J	150	110 J	0.58 UJ	0.5 UJ
2-Methylphenol	µg/L	- -	- -	40	19 J	44	39 J	0.58 UJ	0.56 UJ
2-Nitroaniline	µg/L	- -	- -	5.3 U	50 UJ	5.3 U	78 UJ	0.58 U	0.5 U
2-Nitrophenol	µg/L	- -	- -	5.3 U	50 UJ	5.3 U	78 UJ	0.58 U	0.56 UJ
3,3'-dichlorobenzidine	µg/L	- -	- -	11 U	100 UJ	11 U	160 UJ	1.2 UJ	1 UJ
3-nitroaniline	µg/L	- -	- -	11 U	100 UJ	11 U	160 UJ	1.2 U	1 U
4-bromophenyl phenylether	µg/L	- -	- -	5.3 U	50 UJ	5.3 U	78 UJ	0.58 UJ	0.5 UJ
4-chloro-3-methylphenol	µg/L	- -	- -	5.3 U	50 UJ	5.3 U	78 UJ	0.58 UJ	0.56 UJ
4-chloroaniline	µg/L	- -	- -	11 U	100 UJ	11 U	160 UJ	1.2 UJ	1 U
4-methylphenol	µg/L	- -	- -	100	56 J	88	130 J	0.58 UJ	0.56 UJ
4-nitroaniline	µg/L	- -	- -	11 UJ	100 UJ	11 UJ	160 UJ	1.2 U	1 U
4-nitrophenol	µg/L	- -	- -	53 U	500 UJ	53 U	780 UJ	5.8 UJ	5.6 UJ

See Notes on Page 13.

Table 10 - Groundwater Sample Analytical Results
Supplemental Off-Property Investigation
Former Koppers Inc. Facility - Superior, WI

Well ID:				TMW-2A				TMW-23[1]	
Screen Interval (feet bgs):				5-15				20-30	
Soil Zone Screened:				Type 1 (clay, organics)				Type 3 (clay), below/ DG of Type 1	
Filtered/Unfiltered:		WDNR	WDNR	Unfiltered		Filtered		Unfiltered	Filtered
Sampling Event:	Units	PAL*	ES*	Oct-13	Jan-14	Oct-13	Jan-14	Jan-14	Jan-14
Acenaphthene	µg/L	- -	- -	270 D	240 J	110	98 J	0.58 UJ	0.5 UJ
Acenaphthylene	µg/L	- -	- -	0.85 J	50 UJ	0.43 J	78 UJ	0.58 UJ	0.5 UJ
Anthracene	µg/L	600	3,000	9.5	21 J	5.3 U	78 UJ	0.58 UJ	0.5 UJ
Benzo (a) anthracene	µg/L	- -	- -	6.6	12 J	5.3 U	78 UJ	0.58 UJ	0.5 UJ
Benzo (a) pyrene	µg/L	0.02	0.2	**2.4 J**	50 UJ	5.3 U	78 UJ	0.58 UJ	0.5 U
Benzo (b) fluoranthene	µg/L	0.02	0.2	**3.8 J**	**6.3 J**	5.3 U	78 UJ	0.58 UJ	0.5 U
Benzo (g,h,i) perylene	µg/L	- -	- -	0.74 J	50 UJ	5.3 U	78 UJ	0.58 UJ	0.5 UJ
Benzo (k) fluoranthene	µg/L	- -	- -	1.6 J	50 UJ	5.3 U	78 UJ	0.58 UJ	0.5 U
Benzoic acid	µg/L	- -	- -	36 J	R	37 J	R	R	R
Benzyl alcohol	µg/L	- -	- -	5.3 U	50 UJ	5.3 U	78 UJ	0.58 UJ	0.5 U
Bis (2-chloroethoxy)- methane	µg/L	- -	- -	5.3 U	50 UJ	5.3 U	78 UJ	0.58 UJ	0.5 U
Bis (2-chloroethyl) ether	µg/L	- -	- -	5.3 U	50 UJ	5.3 U	78 UJ	0.58 UJ	0.5 U
Bis (2-chloroisopropyl)-ether	µg/L	- -	- -	5.3 U	50 UJ	5.3 U	78 UJ	0.58 UJ	0.5 UJ
Bis (2-ethylhexyl)- phthalate	µg/L	0.6	6	5.3 U	50 UJ	5.3 U	78 UJ	0.58 UBJ	0.5 UBJ
Butyl benzyl phthalate	µg/L	- -	- -	11 U	100 UJ	11 U	160 UJ	1.2 UJ	1 UJ
Chrysene	µg/L	0.02	0.2	**4.8 J**	**8.4 J**	5.3 U	78 UJ	0.58 UJ	0.5 U
Dibenzo (a,h) anthracene	µg/L	- -	- -	5.3 U	50 UJ	5.3 U	78 UJ	0.58 UJ	0.5 UJ
Dibenzofuran	µg/L	- -	- -	120	100 J	15	30 J	0.58 UJ	0.5 UJ
Diethylphthalate	µg/L			1.2 J		1.5 J	78 UJ	0.58 UBJ	0.58 UB
Dimethylphthalate	µg/L	- -	- -	5.3 U	50 UJ	5.3 U	78 UJ	0.1 J	0.12 J
Di-n-butylphthalate	µg/L	- -	- -	11 U	100 UJ	11 U	160 UJ	2.3 UB	1 UB
Di-n-octylphthalate	µg/L	- -	- -	5.3 U	50 UJ	5.3 U	78 UJ	0.58 UJ	0.5 UJ
Fluoranthene	µg/L	80	400	34	46 J	5.3 U	78 UJ	0.58 U	0.5 U
Fluorene	µg/L	80	400	**110**	**100 J**	16	27 J	0.58 UJ	0.5 UJ
Hexachlorobenzene	µg/L	0.1	1	5.3 U	50 UJ	5.3 U	78 UJ	0.58 UJ	0.5 UJ
Hexachlorobutadiene	µg/L	- -	- -	5.3 U	50 UJ	5.3 U	78 UJ	0.58 UJ	0.5 UJ
Hexachlorocyclopentadiene	µg/L	- -	- -	5.3 U	50 UJ	5.3 U	78 UJ	0.58 UJ	0.56 UJ
Hexachloroethane	µg/L	- -	- -	5.3 U	50 UJ	5.3 U	78 UJ	0.58 UJ	0.5 U
Indeno (1,2,3-cd) pyrene	µg/L	- -	- -	5.3 U	50 UJ	5.3 U	78 UJ	0.58 UJ	0.5 UJ
Isophorone	µg/L	- -	- -	5.3 U	50 UJ	5.3 U	78 UJ	1.7	1.6
Naphthalene	µg/L	10	100	**5,200 D**	**5,000 DJ**	**4,100 D**	**2,900 J**	0.58 UJ	0.04 J
Nitrobenzene	µg/L	- -	- -	5.3 U	50 UJ	5.3 U	78 UJ	0.58 UJ	0.5 UJ
N-nitrosodi-n-propylamine	µg/L	- -	- -	5.3 U	50 UJ	5.3 U	78 UJ	0.58 UJ	0.5 U
N-nitroso-di-phenylamine	µg/L	0.7	7	5.3 U	50 UJ	5.3 U	78 UJ	0.58 UJ	0.56 UJ
Pentachlorophenol	µg/L	0.1	1	5.3 U	50 UJ	**2.9 J**	78 UJ	0.58 U	0.56 UJ
Phenanthrene	µg/L	- -	- -	130	140 J	0.53 J	19 J	0.58 UJ	0.5 UJ
Phenol	µg/L	400	2,000	11	50 UJ	11	78 UJ	0.58 UJ	0.56 UJ
Pyrene	µg/L	50	250	26	36 J	5.3 U	78 UJ	0.58 UJ	0.5 U
Total PAHs	µg/L	- -	- -	5,800 J	5,610 J	4,227J	3,044 J	ND	0.04 J

See Notes on Page 13.

Table 10 - Groundwater Sample Analytical Results
Supplemental Off-Property Investigation
Former Koppers Inc. Facility - Superior, WI

Well ID:				TMW-5A			TMW-5			
Screen Interval (feet bgs):				2-12			20-30			
Soil Zone Screened:				Type 3 (clay)			Type 3 (clay)			
Filtered/Unfiltered:		WDNR PAL*	WDNR ES*	Unfiltered	Filtered		Unfiltered		Filtered	
Sampling Event:	Units			Oct-13	Oct-13	Jan-14	Oct-13	Jan-14	Oct-13	Jan-14
Volatile Organic Compounds										
1,1,1-Trichloroethane	µg/L	40	200	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-Trimethylbenzene	µg/L	96	480	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	µg/L			1 U	1 U	1 U	1 U	1 U	1 U	1 U
Benzene	µg/L	0.5	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	µg/L	- -	- -	NA	NA	1 U	NA	1 U	NA	1 U
Chloromethane	µg/L	3	30	1 U	1 UJ	NA	1 U	NA	1 U	NA
Ethylbenzene	µg/L	140	700	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methyl(tert)butyl ether	µg/L	12	60	5 U	5 U	5 U	5 U	5 U	5 U	5 U
N-butylbenzene	µg/L	- -	- -	1 U	1 U	1 U	1 U	1 U	1 U	1 U
N-propylbenzene	µg/L	- -	- -	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	µg/L	10	100	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	µg/L	160	800	1 U	1 U	0.35 J	1 U	1 U	1 U	2.3
M&P-xylene	µg/L	400	2,000	2 U	2 U	2 U	2 U	2 U	2 U	0.38 J
O-xylene	µg/L			1 U	1 U	1 U	1 U	1 U	1 U	0.24 J
Naphthalene	µg/L	10	100	1 UJ	1 U	1 U	1 UJ	1 U	1 UJ	1 U
Total BTEX	µg/L	- -	- -	ND	ND	0.35	ND	ND	ND	2.92
Semivolatile Organic Compounds										
3-methylcholanthrene	µg/L	- -	- -	2.2 U	5.7 U	3.2 U	2 U	2.4 U	2.2 U	2.3 U
4,6-dinitro- 2-methylphenol	µg/L	- -	- -	5.6 U	14 U	R	5 U	5.9 U	5.6 U	5.7 U
4-chlorophenylphenyl- ether	µg/L	- -	- -	0.56 U	1.4 U	0.81 U	0.5 U	0.59 U	0.56 U	0.57 U
1,2,4-Trichlorobenzene	µg/L	14	70	0.56 U	1.4 U	0.81 U	0.5 U	0.59 U	0.56 U	0.57 U
1,2-Dichlorobenzene	µg/L	60	600	0.56 U	1.4 U	0.81 U	0.5 U	0.59 U	0.56 U	0.57 U
1,3-Dichlorobenzene	µg/L	120	600	0.56 U	1.4 U	0.81 U	0.5 U	0.59 U	0.56 U	0.57 U
1,4-Dichlorobenzene	µg/L	15	75	0.56 U	1.4 U	0.81 U	0.5 U	0.59 U	0.56 U	0.57 U
1-Methylnaphthalene	µg/L	- -	- -	0.56 U	1.4 U	0.81 U	0.5 U	0.59 U	0.56 U	0.57 U
2,3,4,6-Tetrachlorophenol	µg/L	- -	- -	5.6 U	14 U	R	5 U	5.9 U	5.6 U	5.7 U
2,3,5,6-Tetrachlorophenol	µg/L	- -	- -	11 U	29 U	R	10 U	12 U	11 U	11 U
2,4,5-Trichlorophenol	µg/L	- -	- -	0.56 U	1.4 U	R	0.5 U	0.59 U	0.56 U	0.57 U
2,4,6-Trichlorophenol	µg/L	- -	- -	0.56 U	1.4 U	R	0.5 U	0.59 U	0.56 U	0.57 U
2,4-Dichlorophenol	µg/L	- -	- -	0.56 U	1.4 U	R	0.5 U	0.59 U	0.56 U	0.57 U
2,4-Dimethylphenol	µg/L	- -	- -	1.1 U	2.9 U	R	1 U	1.2 U	1.1 U	1.1 U
2,4-Dinitrophenol	µg/L	- -	- -	5.6 U	14 U	R	5 U	5.9 U	5.6 U	5.7 U
2,4-Dinitrotoluene	µg/L	0.005	0.05	0.56 U	1.4 U	0.81 U	0.5 U	0.59 U	0.56 U	0.57 U
2,6-dinitrotoluene	µg/L	0.005	0.05	0.56 U	1.4 U	0.81 U	0.5 U	0.59 U	0.56 U	0.57 U
2-Chloronaphthalene	µg/L	- -	- -	0.56 U	1.4 U	0.81 U	0.5 U	0.59 U	0.56 U	0.57 U
2-Chlorophenol	µg/L	- -	- -	0.56 U	1.4 U	R	0.5 U	0.59 U	0.56 U	0.57 U
2-Methylnaphthalene	µg/L	- -	- -	0.56 U	1.4 U	0.032 J	0.5 U	0.59 U	0.56 U	0.57 U
2-Methylphenol	µg/L	- -	- -	0.56 U	1.4 U	R	0.5 U	0.59 U	0.56 U	0.57 U
2-Nitroaniline	µg/L	- -	- -	0.56 U	1.4 U	0.81 U	0.5 U	0.59 U	0.56 U	0.57 U
2-Nitrophenol	µg/L	- -	- -	0.56 U	1.4 U	R	0.5 U	0.59 U	0.56 U	0.57 U
3,3'-dichlorobenzidine	µg/L	- -	- -	1.1 U	2.9 U	1.6 U	1 U	1.2 U	1.1 U	1.1 U
3-nitroaniline	µg/L	- -	- -	1.1 U	2.9 U	1.6 U	1 U	1.2 U	1.1 U	1.1 U
4-bromophenyl phenylether	µg/L	- -	- -	0.56 U	1.4 U	0.81 U	0.5 U	0.59 U	0.56 U	0.57 U
4-chloro-3-methylphenol	µg/L	- -	- -	0.56 U	1.4 U	R	0.5 U	0.59 U	0.56 U	0.57 U
4-chloroaniline	µg/L	- -	- -	1.1 U	2.9 U	1.6 U	1 U	1.2 U	1.1 U	1.1 U
4-methylphenol	µg/L	- -	- -	0.56 U	1.4 U	R	0.5 U	0.59 U	0.56 U	0.57 U
4-nitroaniline	µg/L	- -	- -	1.1 U	2.9 U	1.6 U	1 U	1.2 U	1.1 U	1.1 U
4-nitrophenol	µg/L	- -	- -	5.6 UJ	14 UJ	R	5 UJ	5.9 UJ	5.6 UJ	5.7 UJ

See Notes on Page 13.

Table 10 - Groundwater Sample Analytical Results
Supplemental Off-Property Investigation
Former Koppers Inc. Facility - Superior, WI

Well ID:				TMW-5A			TMW-5			
Screen Interval (feet bgs):				2-12			20-30			
Soil Zone Screened:				Type 3 (clay)			Type 3 (clay)			
Filtered/Unfiltered:		WDNR PAL*	WDNR ES*	Unfiltered	Filtered		Unfiltered		Filtered	
Sampling Event:	Units			Oct-13	Oct-13	Jan-14	Oct-13	Jan-14	Oct-13	Jan-14
Acenaphthene	µg/L	- -	- -	0.56 U	1.4 U	0.11 J	0.5 U	0.59 U	0.56 U	0.57 U
Acenaphthylene	µg/L	- -	- -	0.56 U	1.4 U	0.81 U	0.5 U	0.59 U	0.56 U	0.57 U
Anthracene	µg/L	600	3,000	0.56 U	1.4 U	0.81 U	0.5 U	0.59 U	0.56 U	0.57 U
Benzo (a) anthracene	µg/L	- -	- -	0.56 U	1.4 U	0.81 U	0.5 U	0.59 U	0.56 U	0.57 U
Benzo (a) pyrene	µg/L	0.02	0.2	0.56 U	1.4 U	0.81 U	0.5 U	0.59 U	0.56 U	0.57 U
Benzo (b) fluoranthene	µg/L	0.02	0.2	0.56 U	1.4 U	0.81 U	0.5 U	0.59 U	0.56 U	0.57 U
Benzo (g,h,i) perylene	µg/L	- -	- -	0.56 U	1.4 U	0.81 U	0.5 U	0.59 U	0.56 U	0.57 U
Benzo (k) fluoranthene	µg/L	- -	- -	0.56 U	1.4 U	0.81 U	0.5 U	0.59 U	0.56 U	0.57 U
Benzoic acid	µg/L	- -	- -	R	R	R	R	R	R	R
Benzyl alcohol	µg/L	- -	- -	0.56 U	1.4 U	0.81 U	0.5 U	0.59 U	0.56 U	0.57 U
Bis (2-chloroethoxy)- methane	µg/L	- -	- -	0.56 U	1.4 U	0.81 U	0.5 U	0.59 U	0.56 U	0.57 U
Bis (2-chloroethyl) ether	µg/L	- -	- -	0.56 U	1.4 U	0.81 U	0.5 U	0.59 U	0.56 U	0.57 U
Bis (2-chloroisopropyl)-ether	µg/L	- -	- -	0.56 U	1.4 U	0.81 U	0.5 U	0.59 U	0.56 U	0.57 U
Bis (2-ethylhexyl)- phthalate	µg/L	0.6	6	0.29 J	0.49 J	0.81 UB	0.15 J	0.59 UB	0.19 J	0.57 UB
Butyl benzyl phthalate	µg/L	- -	- -	0.11 J	0.17 J	1.6 U	1 U	1.2 U	1.1 U	1.1 UB
Chrysene	µg/L	0.02	0.2	0.56 U	1.4 U	0.81 U	0.5 U	0.59 U	0.56 U	0.57 U
Dibenzo (a,h) anthracene	µg/L	- -	- -	0.56 U	1.4 U	0.81 U	0.5 U	0.59 U	0.56 U	0.57 U
Dibenzofuran	µg/L	- -	- -	0.56 U	1.4 U	0.81 U	0.5 U	0.59 U	0.56 U	0.57 U
Diethylphthalate	µg/L			0.56 UB	1.4 UB	0.95 UB	0.5 UB	0.59 UB	0.5 UB	0.57 UB
Dimethylphthalate	µg/L	- -	- -	0.56 U	1.4 U	0.81 U	0.5 U	0.59 U	0.56 U	0.57 U
Di-n-butylphthalate	µg/L	- -	- -	0.57 J	0.77 J	3.7 UB	0.24 J	1.7 UB	0.16 J	2.5 UB
Di-n-octylphthalate	µg/L	- -	- -	0.56 U	1.4 U	0.81 U	0.5 U	0.59 U	0.56 U	0.57 U
Fluoranthene	µg/L	80	400	0.56 U	1.4 U	0.81 U	0.5 U	0.59 U	0.56 U	0.57 U
Fluorene	µg/L	80	400	0.56 U	1.4 U	0.81 U	0.5 U	0.59 U	0.56 U	0.57 U
Hexachlorobenzene	µg/L	0.1	1	0.56 U	1.4 U	0.81 U	0.5 U	0.59 U	0.56 U	0.57 U
Hexachlorobutadiene	µg/L	- -	- -	0.56 U	1.4 U	0.81 U	0.5 U	0.59 U	0.56 U	0.57 U
Hexachlorocyclopentadiene	µg/L	- -	- -	0.56 U	1.4 U	R	0.5 U	0.59 UJ	0.56 U	0.57 UJ
Hexachloroethane	µg/L	- -	- -	0.56 U	1.4 U	0.81 U	0.5 U	0.59 U	0.56 U	0.57 U
Indeno (1,2,3-cd) pyrene	µg/L	- -	- -	0.56 U	1.4 U	0.81 U	0.5 U	0.59 U	0.56 U	0.57 U
Isophorone	µg/L	- -	- -	0.56 U	1.4 U	0.81 U	0.5 U	0.59 U	0.56 U	0.57 U
Naphthalene	µg/L	10	100	0.56 U	1.4 U	0.34 J	0.053 J	0.59 U	0.56 U	0.57 U
Nitrobenzene	µg/L	- -	- -	0.56 U	1.4 U	0.81 U	0.5 U	0.59 U	0.56 U	0.57 U
N-nitrosodi-n-propylamine	µg/L	- -	- -	0.56 U	1.4 U	0.81 U	0.5 U	0.59 U	0.56 U	0.57 U
N-nitroso-di-phenylamine	µg/L	0.7	7	0.56 U	1.4 U	R	0.5 U	0.59 U	0.56 U	0.57 U
Pentachlorophenol	µg/L	0.1	1	0.56 U	1.4 U	R	0.5 U	0.59 U	0.56 U	0.57 U
Phenanthrene	µg/L	- -	- -	0.067 J	0.14 J	0.097 J	0.5 U	0.59 U	0.56 U	0.57 U
Phenol	µg/L	400	2,000	0.56 U	2.8	R	0.5 U	0.59 U	0.18 J	0.57 U
Pyrene	µg/L	50	250	0.11 J	1.4 U	0.81 U	0.5 U	0.59 U	0.56 U	0.57 U
Total PAHs	µg/L	- -	- -	0.177 J	0.14 J	0.547 J	0.053 J	ND	ND	ND

See Notes on Page 13.

Table 10 - Groundwater Sample Analytical Results
Supplemental Off-Property Investigation
Former Koppers Inc. Facility - Superior, WI

Well ID:				TMW-8A			
Screen Interval (feet bgs):				2-12			
Soil Zone Screened:				Type 3 (clay)			
Filtered/Unfiltered:		WDNR PAL*	WDNR ES*	Unfiltered		Filtered	
Sampling Event:	Units			Oct-13	Jan-14	Oct-13	Jan-14
Volatile Organic Compounds							
1,1,1-Trichloroethane	µg/L	40	200	1 U [1 U]	1 U	1 U [1 U]	1 U
1,2,4-Trimethylbenzene	µg/L	96	480	0.69 J [1 U]	1 U	1 U [1 U]	1 U
1,3,5-Trimethylbenzene	µg/L			1 U [1 U]	1 U	1 U [1 U]	1 U
Benzene	µg/L	0.5	5	1 U [1 U]	1 U	1 U [1 U]	1 U
Chlorobenzene	µg/L	- -	- -	NA	1 U	NA	1 U
Chloromethane	µg/L	3	30	1 U [1 U]	NA	1 U [1 U]	NA
Ethylbenzene	µg/L	140	700	1 U [1 U]	1 U	1 U [1 U]	1 U
Methyl(tert)butyl ether	µg/L	12	60	5 U [5 U]	5 U	5 U [5 U]	5 U
N-butylbenzene	µg/L	- -	- -	1 U [1 U]	1 U	1 U [1 U]	1 U
N-propylbenzene	µg/L	- -	- -	1 U [1 U]	1 U	1 U [1 U]	1 U
Styrene	µg/L	10	100	1 U [1 U]	1 U	1 U [1 U]	1 U
Toluene	µg/L	160	800	1 U [1 U]	1 U	1 U [1 U]	1 U
M&P-xylene	µg/L	400	2,000	2 U [2 U]	2 U	2 U [2 U]	2 U
O-xylene	µg/L			1 U [1 U]	1 U	1 U [1 U]	1 U
Naphthalene	µg/L	10	100	1 UJ [1 UJ]	1 U	1 UJ [1 UJ]	1 U
Total BTEX	µg/L	- -	- -	ND [ND]	ND	ND [ND]	ND
Semivolatile Organic Compounds							
3-methylcholanthrene	µg/L	- -	- -	2 U [2 U]	2.4 U	2 U [2 U]	2.5 U
4,6-dinitro- 2-methylphenol	µg/L	- -	- -	5 U [5 U]	5.9 U	5 U [5 U]	6.2 U
4-chlorophenylphenyl- ether	µg/L	- -	- -	0.5 U [0.052 J]	0.59 U	0.5 U [0.5 U]	0.62 U
1,2,4-Trichlorobenzene	µg/L	14	70	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
1,2-Dichlorobenzene	µg/L	60	600	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
1,3-Dichlorobenzene	µg/L	120	600	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
1,4-Dichlorobenzene	µg/L	15	75	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
1-Methylnaphthalene	µg/L	- -	- -	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
2,3,4,6-Tetrachlorophenol	µg/L	- -	- -	5 U [5 U]	5.9 U	5 U [5 U]	6.2 U
2,3,5,6-Tetrachlorophenol	µg/L	- -	- -	10 U [10 U]	12 U	10 U [10 U]	12 U
2,4,5-Trichlorophenol	µg/L	- -	- -	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
2,4,6-Trichlorophenol	µg/L	- -	- -	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
2,4-Dichlorophenol	µg/L	- -	- -	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
2,4-Dimethylphenol	µg/L	- -	- -	1 U [1 U]	1.2 U	1 U [1 U]	1.2 U
2,4-Dinitrophenol	µg/L	- -	- -	5 U [5 U]	5.9 UJ	5 U [5 U]	6.2 UJ
2,4-Dinitrotoluene	µg/L	0.005	0.05	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
2,6-dinitrotoluene	µg/L	0.005	0.05	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
2-Chloronaphthalene	µg/L	- -	- -	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
2-Chlorophenol	µg/L	- -	- -	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
2-Methylnaphthalene	µg/L	- -	- -	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
2-Methylphenol	µg/L	- -	- -	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
2-Nitroaniline	µg/L	- -	- -	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
2-Nitrophenol	µg/L	- -	- -	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
3,3'-dichlorobenzidine	µg/L	- -	- -	1 U [1 U]	1.2 U	1 U [1 U]	1.2 U
3-nitroaniline	µg/L	- -	- -	1 U [1 U]	1.2 U	1 U [1 U]	1.2 U
4-bromophenyl phenylether	µg/L	- -	- -	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
4-chloro-3-methylphenol	µg/L	- -	- -	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
4-chloroaniline	µg/L	- -	- -	1 U [1 U]	1.2 U	1 U [1 U]	1.2 U
4-methylphenol	µg/L	- -	- -	0.5 U [0.5 U]	0.59 U	0.89 [0.24 J]	0.62 U
4-nitroaniline	µg/L	- -	- -	1 U [1 U]	1.2 U	1 U [1 U]	1.2 U
4-nitrophenol	µg/L	- -	- -	5 UJ [5 UJ]	5.9 UJ	5 UJ [5 UJ]	6.2 UJ

See Notes on Page 13.

Table 10 - Groundwater Sample Analytical Results
Supplemental Off-Property Investigation
Former Koppers Inc. Facility - Superior, WI

Well ID:				TMW-8A			
Screen Interval (feet bgs):				2-12			
Soil Zone Screened:				Type 3 (clay)			
Filtered/Unfiltered:		WDNR	WDNR	Unfiltered		Filtered	
Sampling Event:	Units	PAL*	ES*	Oct-13	Jan-14	Oct-13	Jan-14
Acenaphthene	µg/L	- -	- -	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
Acenaphthylene	µg/L	- -	- -	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
Anthracene	µg/L	600	3,000	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
Benzo (a) anthracene	µg/L	- -	- -	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
Benzo (a) pyrene	µg/L	0.02	0.2	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
Benzo (b) fluoranthene	µg/L	0.02	0.2	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
Benzo (g,h,i) perylene	µg/L	- -	- -	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
Benzo (k) fluoranthene	µg/L	- -	- -	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
Benzoic acid	µg/L	- -	- -	R [R]	R	R [R]	R
Benzyl alcohol	µg/L	- -	- -	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
Bis (2-chloroethoxy)- methane	µg/L	- -	- -	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
Bis (2-chloroethyl) ether	µg/L	- -	- -	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
Bis (2-chloroisopropyl)-ether	µg/L	- -	- -	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
Bis (2-ethylhexyl)- phthalate	µg/L	0.6	6	0.18 J [0.24 J]	0.59 UB	0.21 J [0.42 J]	0.62 UB
Butyl benzyl phthalate	µg/L	- -	- -	1 U [0.072 J]	1.2 UB	1 U [0.063 J]	1.2 UB
Chrysene	µg/L	0.02	0.2	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
Dibenzo (a,h) anthracene	µg/L	- -	- -	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
Dibenzofuran	µg/L	- -	- -	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
Diethylphthalate	µg/L			0.5 UB [0.5 UB]	0.59 UB	0.5 UB [0.5 UB]	0.62 UB
Dimethylphthalate	µg/L	- -	- -	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
Di-n-butylphthalate	µg/L	- -	- -	1 U [0.15 J]	1.2 U	0.16 J [0.18 J]	1.2 U
Di-n-octylphthalate	µg/L	- -	- -	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
Fluoranthene	µg/L	80	400	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
Fluorene	µg/L	80	400	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
Hexachlorobenzene	µg/L	0.1	1	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
Hexachlorobutadiene	µg/L	- -	- -	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
Hexachlorocyclopentadiene	µg/L	- -	- -	0.5 U [0.5 U]	0.59 UJ	0.5 U [0.5 U]	0.62 UJ
Hexachloroethane	µg/L	- -	- -	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
Indeno (1,2,3-cd) pyrene	µg/L	- -	- -	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
Isophorone	µg/L	- -	- -	0.5 U [0.5 U]	0.094 J	0.13 J [0.5 U]	0.099 J
Naphthalene	µg/L	10	100	0.5 U [0.5 U]	0.59 U	0.071 J [0.053 J]	0.049 J
Nitrobenzene	µg/L	- -	- -	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
N-nitrosodi-n-propylamine	µg/L	- -	- -	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
N-nitroso-di-phenylamine	µg/L	0.7	7	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
Pentachlorophenol	µg/L	0.1	1	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
Phenanthrene	µg/L	- -	- -	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
Phenol	µg/L	400	2,000	0.5 U [0.5 U]	0.59 U	0.14 J [0.5 U]	0.62 U
Pyrene	µg/L	50	250	0.5 U [0.5 U]	0.59 U	0.5 U [0.5 U]	0.62 U
Total PAHs	µg/L	- -	- -	ND [ND]	ND	0.071 J [0.053 J]	0.049 J

See Notes on Page 13.

Table 10 - Groundwater Sample Analytical Results
Supplemental Off-Property Investigation
Former Koppers Inc. Facility - Superior, WI

Well ID:				TMW-8			
Screen Interval (feet bgs):				20-30			
Soil Zone Screened:				Type 3 (clay)			
Filtered/Unfiltered:		WDNR PAL*	WDNR ES*	Unfiltered		Filtered	
Sampling Event:	Units			Oct-13	Jan-14	Oct-13	Jan-14
Volatile Organic Compounds							
1,1,1-Trichloroethane	µg/L	40	200	1 U	1 U [1 U]	1 U	1 U [1 U]
1,2,4-Trimethylbenzene	µg/L	96	480	1 U	1 U [1 U]	1 U	1 U [1 U]
1,3,5-Trimethylbenzene	µg/L			1 U	1 U [1 U]	1 U	1 U [1 U]
Benzene	µg/L	0.5	5	1 U	1 U [1 U]	1 U	1 U [1 U]
Chlorobenzene	µg/L	- -	- -	NA	1 U [1 U]	NA	1 U [1 U]
Chloromethane	µg/L	3	30	1 U	NA	1 U	NA
Ethylbenzene	µg/L	140	700	1 U	1 U [1 U]	1 U	1 U [1 U]
Methyl(tert)butyl ether	µg/L	12	60	5 U	5 U [5 U]	5 U	5 U [5 U]
N-butylbenzene	µg/L	- -	- -	1 U	1 U [1 U]	1 U	1 U [1 U]
N-propylbenzene	µg/L	- -	- -	1 U	1 U [1 U]	1 U	1 U [1 U]
Styrene	µg/L	10	100	1 U	1 U [1 U]	1 U	1 U [1 U]
Toluene	µg/L	160	800	1 U	1 U [1 U]	1 U	1 U [1 U]
M&P-xylene	µg/L	400	2,000	2 U	2 U [2 U]	2 U	2 U [2 U]
O-xylene	µg/L			1 U	1 U [1 U]	1 U	1 U [1 U]
Naphthalene	µg/L	10	100	1 UJ	1 U [1 U]	1 UJ	1 U [1 U]
Total BTEX	µg/L	- -	- -	ND	ND [ND]	ND	ND [ND]
Semivolatile Organic Compounds							
3-methylcholanthrene	µg/L	- -	- -	2.2 U	2.6 U [2.6 U]	2.2 U	2 U [2.2 U]
4,6-dinitro- 2-methylphenol	µg/L	- -	- -	5.5 U	6.5 U [6.4 U]	5.6 U	5 UJ [5.6 U]
4-chlorophenylphenyl- ether	µg/L	- -	- -	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 U [0.56 U]
1,2,4-Trichlorobenzene	µg/L	14	70	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 U [0.56 U]
1,2-Dichlorobenzene	µg/L	60	600	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 U [0.56 U]
1,3-Dichlorobenzene	µg/L	120	600	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 U [0.56 U]
1,4-Dichlorobenzene	µg/L	15	75	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 U [0.56 U]
1-Methylnaphthalene	µg/L	- -	- -	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 U [0.56 U]
2,3,4,6-Tetrachlorophenol	µg/L	- -	- -	5.5 U	6.5 U [6.4 U]	5.6 U	5 UJ [5.6 U]
2,3,5,6-Tetrachlorophenol	µg/L	- -	- -	11 U	13 U [13 U]	11 U	10 UJ [11 U]
2,4,5-Trichlorophenol	µg/L	- -	- -	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 UJ [0.56 U]
2,4,6-Trichlorophenol	µg/L	- -	- -	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 UJ [0.56 U]
2,4-Dichlorophenol	µg/L	- -	- -	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 UJ [0.56 U]
2,4-Dimethylphenol	µg/L	- -	- -	1.1 U	1.3 U [1.3 U]	1.1 U	1 UJ [1.1 U]
2,4-Dinitrophenol	µg/L	- -	- -	5.5 U	6.5 U [6.4 UJ]	5.6 U	5 UJ [5.6 UJ]
2,4-Dinitrotoluene	µg/L	0.005	0.05	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 U [0.56 U]
2,6-dinitrotoluene	µg/L	0.005	0.05	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 U [0.56 U]
2-Chloronaphthalene	µg/L	- -	- -	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 U [0.56 U]
2-Chlorophenol	µg/L	- -	- -	0.55 U	0.65 U [0.64 U]	0.56 UJ	0.5 UJ [0.56 U]
2-Methylnaphthalene	µg/L	- -	- -	0.55 U	0.65 U [0.64 U]	0.033 J	0.5 U [0.56 U]
2-Methylphenol	µg/L	- -	- -	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 UJ [0.56 U]
2-Nitroaniline	µg/L	- -	- -	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 U [0.56 U]
2-Nitrophenol	µg/L	- -	- -	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 UJ [0.56 U]
3,3'-dichlorobenzidine	µg/L	- -	- -	1.1 U	1.3 U [1.3 U]	1.1 U	1 U [1.1 U]
3-nitroaniline	µg/L	- -	- -	1.1 U	1.3 U [1.3 U]	1.1 U	1 U [1.1 U]
4-bromophenyl phenylether	µg/L	- -	- -	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 U [0.56 U]
4-chloro-3-methylphenol	µg/L	- -	- -	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 UJ [0.56 U]
4-chloroaniline	µg/L	- -	- -	1.1 U	1.3 U [1.3 U]	1.1 U	1 U [1.1 U]
4-methylphenol	µg/L	- -	- -	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 UJ [0.56 U]
4-nitroaniline	µg/L	- -	- -	1.1 U	1.3 U [1.3 U]	1.1 UJ	1 U [1.1 U]
4-nitrophenol	µg/L	- -	- -	5.5 UJ	6.5 UJ [6.4 UJ]	5.6 U	5 UJ [5.6 UJ]

See Notes on Page 13.

Table 10 - Groundwater Sample Analytical Results
Supplemental Off-Property Investigation
Former Koppers Inc. Facility - Superior, WI

Well ID:				TMW-8			
Screen Interval (feet bgs):				20-30			
Soil Zone Screened:				Type 3 (clay)			
Filtered/Unfiltered:		WDNR	WDNR	Unfiltered		Filtered	
Sampling Event:	Units	PAL*	ES*	Oct-13	Jan-14	Oct-13	Jan-14
Acenaphthene	µg/L	- -	- -	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 U [0.56 U]
Acenaphthylene	µg/L	- -	- -	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 U [0.56 U]
Anthracene	µg/L	600	3,000	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 U [0.56 U]
Benzo (a) anthracene	µg/L	- -	- -	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 U [0.56 U]
Benzo (a) pyrene	µg/L	0.02	0.2	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 U [0.56 U]
Benzo (b) fluoranthene	µg/L	0.02	0.2	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 U [0.56 U]
Benzo (g,h,i) perylene	µg/L	- -	- -	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 U [0.56 U]
Benzo (k) fluoranthene	µg/L	- -	- -	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 U [0.56 U]
Benzoic acid	µg/L	- -	- -	R	R [R]	1.4 J	R [R]
Benzyl alcohol	µg/L	- -	- -	0.55 U	0.31 J [0.64 U]	0.56 UJ	0.5 U [0.56 U]
Bis (2-chloroethoxy)- methane	µg/L	- -	- -	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 U [0.56 U]
Bis (2-chloroethyl) ether	µg/L	- -	- -	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 U [0.56 U]
Bis (2-chloroisopropyl)-ether	µg/L	- -	- -	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 U [0.56 U]
Bis (2-ethylhexyl)- phthalate	µg/L	0.6	6	0.15 J	0.65 UB [0.64 UB]	0.56 U	0.5 UB [0.56 UB]
Butyl benzyl phthalate	µg/L	- -	- -	1.1 U	1.3 UB [1.3 UB]	1.1 U	1 U [1.1 UB]
Chrysene	µg/L	0.02	0.2	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 U [0.56 U]
Dibenzo (a,h) anthracene	µg/L	- -	- -	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 U [0.56 U]
Dibenzofuran	µg/L	- -	- -	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 U [0.56 U]
Diethylphthalate	µg/L			0.55 UB	0.65 UB [0.64 UB]	0.56 UB	0.57 UB [0.56 UB]
Dimethylphthalate	µg/L	- -	- -	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 U [0.56 U]
Di-n-butylphthalate	µg/L	- -	- -	0.16 J	1.4 UB [4.8 UB]	0.18 J	1 UB [3.7 UB]
Di-n-octylphthalate	µg/L	- -	- -	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 U [0.56 U]
Fluoranthene	µg/L	80	400	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 U [0.56 U]
Fluorene	µg/L	80	400	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 U [0.56 U]
Hexachlorobenzene	µg/L	0.1	1	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 U [0.56 U]
Hexachlorobutadiene	µg/L	- -	- -	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 U [0.56 U]
Hexachlorocyclopentadiene	µg/L	- -	- -	0.55 U	0.65 UJ [0.64 UJ]	0.56 U	0.5 UJ [0.56 UJ]
Hexachloroethane	µg/L	- -	- -	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 U [0.56 U]
Indeno (1,2,3-cd) pyrene	µg/L	- -	- -	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 U [0.56 U]
Isophorone	µg/L	- -	- -	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 U [0.56 U]
Naphthalene	µg/L	10	100	0.077 J	0.65 U [0.64 U]	0.12 J	0.5 U [0.56 U]
Nitrobenzene	µg/L	- -	- -	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 U [0.56 U]
N-nitrosodi-n-propylamine	µg/L	- -	- -	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 U [0.56 U]
N-nitroso-di-phenylamine	µg/L	0.7	7	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 UJ [0.56 U]
Pentachlorophenol	µg/L	0.1	1	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 UJ [0.56 U]
Phenanthrene	µg/L	- -	- -	0.55 U	0.078 J [0.064 J]	0.56 U	0.5 U [0.56 U]
Phenol	µg/L	400	2,000	0.55 U	0.65 U [0.64 U]	0.56 UJ	0.5 UJ [0.56 U]
Pyrene	µg/L	50	250	0.55 U	0.65 U [0.64 U]	0.56 U	0.5 U [0.56 U]
Total PAHs	µg/L	- -	- -	0.077 J	0.078 J [0.064 J]	0.12 J	ND [ND]

See Notes on Page 13.

Table 10 - Groundwater Sample Analytical Results
Supplemental Off-Property Investigation
Former Koppers Inc. Facility - Superior, WI

Well ID:				TMW-11A				TMW-11			
Screen Interval (feet bgs):				2-12				20-30			
Soil Zone Screened:				Type 3 (clay)				Type 3 (clay)			
Filtered/Unfiltered:		WDNR PAL*	WDNR ES*	Unfiltered		Filtered		Unfiltered		Filtered	
Sampling Event:	Units			Oct-13	Jan-14	Oct-13	Jan-14	Oct-13	Jan-14	Oct-13	Jan-14
Volatile Organic Compounds											
1,1,1-Trichloroethane	µg/L	40	200	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-Trimethylbenzene	µg/L	96	480	1 U	1 U	0.9 J	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	µg/L			1 U	1 U	0.49 J	1 U	1 U	1 U	1 U	1 U
Benzene	µg/L	0.5	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	µg/L	- -	- -	NA	1 U	NA	1 U	NA	1 U	NA	1 U
Chloromethane	µg/L	3	30	1 UJ	NA	1 UJ	NA	1 UJ	NA	1 U	NA
Ethylbenzene	µg/L	140	700	1 U	1 U	0.45 J	1 U	1 U	1 U	1 U	1 U
Methyl(tert)butyl ether	µg/L	12	60	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
N-butylbenzene	µg/L	- -	- -	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
N-propylbenzene	µg/L	- -	- -	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	µg/L	10	100	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	µg/L	160	800	1 U	0.39 J	1 U	1 U	1 U	1 U	1 U	1 U
M&P-xylene	µg/L	400	2,000	2 U	0.36 J	0.9 J	2 U	2 U	2 U	2 U	2 U
O-xylene	µg/L			1 U	1 U	0.54 J	1 U	1 U	1 U	1 U	1 U
Naphthalene	µg/L	10	100	1 U	1 U	**410 DJ**	1 U	1 U	1 U	1 UJ	0.56 J
Total BTEX	µg/L	- -	- -	ND	0.75	1.89	ND	ND	ND	ND	ND
Semivolatile Organic Compounds											
3-methylcholanthrene	µg/L	- -	- -	NA	15 U	2.7 U	2 U	2 U	3.2 U	2 U	2.3 U
4,6-dinitro- 2-methylphenol	µg/L	- -	- -	NA	38 U	6.7 U	R	5 U	8.1 U	5 U	5.8 U
4-chlorophenylphenyl- ether	µg/L	- -	- -	NA	3.8 U	0.67 U	0.5 U	0.5 U	0.81 U	0.5 U	0.58 U
1,2,4-Trichlorobenzene	µg/L	14	70	NA	3.8 U	0.67 U	0.5 U	0.5 U	0.81 U	0.5 U	0.58 U
1,2-Dichlorobenzene	µg/L	60	600	NA	3.8 U	0.67 U	0.5 U	0.5 U	0.81 U	0.5 U	0.58 U
1,3-Dichlorobenzene	µg/L	120	600	NA	3.8 U	0.67 U	0.5 U	0.5 U	0.81 U	0.5 U	0.58 U
1,4-Dichlorobenzene	µg/L	15	75	NA	3.8 U	0.67 U	0.5 U	0.5 U	0.81 U	0.5 U	0.58 U
1-Methylnaphthalene	µg/L	- -	- -	NA	3.8 U	8.5	0.5 U	0.5 U	0.81 U	0.5 U	0.58 U
2,3,4,6-Tetrachlorophenol	µg/L	- -	- -	NA	38 U	6.7 U	R	5 U	8.1 U	5 U	5.8 U
2,3,5,6-Tetrachlorophenol	µg/L	- -	- -	NA	77 U	13 U	R	10 U	16 U	10 U	12 U
2,4,5-Trichlorophenol	µg/L	- -	- -	NA	3.8 U	0.67 U	R	0.5 U	0.81 U	0.5 U	0.58 U
2,4,6-Trichlorophenol	µg/L	- -	- -	NA	3.8 U	0.67 U	R	0.5 U	0.81 U	0.5 U	0.58 U
2,4-Dichlorophenol	µg/L	- -	- -	NA	3.8 U	0.67 U	R	0.5 U	0.81 U	0.5 U	0.58 U
2,4-Dimethylphenol	µg/L	- -	- -	NA	7.7 U	1.2 J	R	1 U	1.6 U	1 U	1.2 U
2,4-Dinitrophenol	µg/L	- -	- -	NA	38 UJ	6.7 U	R	5 U	8.1 UJ	5 U	5.8 U
2,4-Dinitrotoluene	µg/L	0.005	0.05	NA	3.8 U	0.67 U	0.5 U	0.5 U	0.81 U	0.5 U	0.58 U
2,6-dinitrotoluene	µg/L	0.005	0.05	NA	3.8 U	0.67 U	0.5 U	0.5 U	0.81 U	0.5 U	0.58 U
2-Chloronaphthalene	µg/L	- -	- -	NA	3.8 U	0.67 U	0.5 U	0.5 U	0.81 U	0.5 U	0.58 U
2-Chlorophenol	µg/L	- -	- -	NA	3.8 U	0.67 U	R	0.5 U	0.81 U	0.5 U	0.58 U
2-Methylnaphthalene	µg/L	- -	- -	NA	3.8 U	9.3	0.5 U	0.5 U	0.048 J	0.5 U	0.023 J
2-Methylphenol	µg/L	- -	- -	NA	3.8 U	0.67 U	R	0.5 U	0.81 U	0.5 U	0.58 U
2-Nitroaniline	µg/L	- -	- -	NA	3.8 U	0.67 U	0.5 U	0.5 U	0.81 U	0.5 U	0.58 U
2-Nitrophenol	µg/L	- -	- -	NA	3.8 U	0.67 U	R	0.5 U	0.81 U	0.5 U	0.58 U
3,3'-dichlorobenzidine	µg/L	- -	- -	NA	7.7 U	1.3 U	1 U	1 U	1.6 U	1 U	1.2 U
3-nitroaniline	µg/L	- -	- -	NA	7.7 U	1.3 U	1 U	1 U	1.6 U	1 U	1.2 U
4-bromophenyl phenylether	µg/L	- -	- -	NA	3.8 U	0.67 U	0.5 U	0.5 U	0.81 U	0.5 U	0.58 U
4-chloro-3-methylphenol	µg/L	- -	- -	NA	3.8 U	0.67 U	R	0.5 U	0.81 U	0.5 U	0.58 U
4-chloroaniline	µg/L	- -	- -	NA	7.7 U	1.3 U	1 U	1 U	1.6 U	1 U	1.2 U
4-methylphenol	µg/L	- -	- -	NA	3.8 U	0.67 U	R	0.5 U	0.81 U	0.5 U	0.58 U
4-nitroaniline	µg/L	- -	- -	NA	7.7 U	1.3 U	1 U	1 U	1.6 U	1 U	1.2 U
4-nitrophenol	µg/L	- -	- -	NA	38 UJ	6.7 UJ	R	5 UJ	8.1 UJ	5 UJ	5.8 UJ

See Notes on Page 13.

Table 10 - Groundwater Sample Analytical Results
Supplemental Off-Property Investigation
Former Koppers Inc. Facility - Superior, WI

Well ID:				TMW-11A				TMW-11			
Screen Interval (feet bgs):				2-12				20-30			
Soil Zone Screened:				Type 3 (clay)				Type 3 (clay)			
Filtered/Unfiltered:		WDNR	WDNR	Unfiltered		Filtered		Unfiltered		Filtered	
Sampling Event:	Units	PAL*	ES*	Oct-13	Jan-14	Oct-13	Jan-14	Oct-13	Jan-14	Oct-13	Jan-14
Acenaphthene	µg/L	- -	- -	NA	3.8 U	19	0.5 U	0.5 U	0.81 U	0.5 U	0.58 U
Acenaphthylene	µg/L	- -	- -	NA	3.8 U	0.67 U	0.5 U	0.5 U	0.81 U	0.5 U	0.58 U
Anthracene	µg/L	600	3,000	NA	3.8 U	0.67 U	0.5 U	0.5 U	0.81 U	0.5 U	0.58 U
Benzo (a) anthracene	µg/L	- -	- -	NA	3.8 U	0.67 U	0.5 U	0.5 U	0.81 U	0.5 U	0.58 U
Benzo (a) pyrene	µg/L	0.02	0.2	NA	3.8 U	0.67 U	0.5 U	0.5 U	0.81 U	0.5 U	0.58 U
Benzo (b) fluoranthene	µg/L	0.02	0.2	NA	3.8 U	0.67 U	0.5 U	0.5 U	0.81 U	0.5 U	0.58 U
Benzo (g,h,i) perylene	µg/L	- -	- -	NA	3.8 U	0.67 U	0.5 U	0.5 U	0.81 U	0.5 U	0.58 U
Benzo (k) fluoranthene	µg/L	- -	- -	NA	3.8 U	0.67 U	0.5 U	0.5 U	0.81 U	0.5 U	0.58 U
Benzoic acid	µg/L	- -	- -	NA	R	R	R	R	R	R	R
Benzyl alcohol	µg/L	- -	- -	NA	3.8 U	0.67 U	0.5 U	0.5 U	0.21 J	0.5 U	0.58 U
Bis (2-chloroethoxy)- methane	µg/L	- -	- -	NA	3.8 U	0.67 U	0.5 U	0.5 U	0.81 U	0.5 U	0.58 U
Bis (2-chloroethyl) ether	µg/L	- -	- -	NA	3.8 U	0.67 U	0.5 U	0.5 U	0.81 U	0.5 U	0.58 U
Bis (2-chloroisopropyl)-ether	µg/L	- -	- -	NA	3.8 U	0.67 U	0.5 U	0.5 U	0.81 U	0.5 U	0.58 U
Bis (2-ethylhexyl)- phthalate	µg/L	0.6	6	NA	**220 D**	0.2 J	0.5 UB	0.2 J	1.5 UB	0.12 J	0.58 UB
Butyl benzyl phthalate	µg/L	- -	- -	NA	3.9 J	1.3 U	1 U	1 U	1.6 UB	0.061 J	1.2 U
Chrysene	µg/L	0.02	0.2	NA	3.8 U	0.67 U	0.5 U	0.5 U	0.81 U	0.5 U	0.58 U
Dibenzo (a,h) anthracene	µg/L	- -	- -	NA	3.8 U	0.67 U	0.5 U	0.5 U	0.81 U	0.5 U	0.58 U
Dibenzofuran	µg/L	- -	- -	NA	3.8 U	3.8	0.5 U	0.5 U	0.81 U	0.5 U	0.58 U
Diethylphthalate	µg/L			NA	1.6 J	0.67 UB	0.5 UB	0.5 UB	0.81 UB	0.5 UB	0.58 UB
Dimethylphthalate	µg/L	- -	- -	NA	3.8 U	0.67 U	0.5 U	0.5 U	0.81 U	0.5 U	0.58 U
Di-n-butylphthalate	µg/L	- -	- -	NA	17 UB	0.21 J	1 UB	0.14 J	1.6 UB	0.14 J	1.2 UB
Di-n-octylphthalate	µg/L	- -	- -	NA	3.8 U	0.67 U	0.5 U	0.5 U	0.81 U	0.5 U	0.58 U
Fluoranthene	µg/L	80	400	NA	3.8 U	0.67 U	0.5 U	0.5 U	0.15 J	0.5 U	0.58 U
Fluorene	µg/L	80	400	NA	3.8 U	5.9	0.5 U	0.5 U	0.81 U	0.5 U	0.58 U
Hexachlorobenzene	µg/L	0.1	1	NA	3.8 U	0.67 U	0.5 U	0.5 U	0.81 U	0.5 U	0.58 U
Hexachlorobutadiene	µg/L	- -	- -	NA	3.8 U	0.67 U	0.5 U	0.5 U	0.81 U	0.5 U	0.58 U
Hexachlorocyclopentadiene	µg/L	- -	- -	NA	3.8 UJ	0.67 U	R	0.5 U	0.81 UJ	0.5 U	0.58 UJ
Hexachloroethane	µg/L	- -	- -	NA	3.8 U	0.67 U	0.5 U	0.5 U	0.81 U	0.5 U	0.58 U
Indeno (1,2,3-cd) pyrene	µg/L	- -	- -	NA	3.8 U	0.67 U	0.5 U	0.5 U	0.81 U	0.5 U	0.58 U
Isophorone	µg/L	- -	- -	NA	3.8 U	0.67 U	0.5 U	0.5 U	0.081 J	0.5 U	0.58 U
Naphthalene	µg/L	10	100	NA	3.8 U	**110 D**	0.12 J	0.5 U	0.13 J	0.5 U	0.45 J
Nitrobenzene	µg/L	- -	- -	NA	3.8 U	0.67 U	0.5 U	0.5 U	0.81 U	0.5 U	0.58 U
N-nitrosodi-n-propylamine	µg/L	- -	- -	NA	3.8 U	0.67 U	0.5 U	0.5 U	0.81 U	0.5 U	0.58 U
N-nitroso-di-phenylamine	µg/L	0.7	7	NA	3.8 U	0.67 U	R	0.5 U	0.81 U	0.5 U	0.58 U
Pentachlorophenol	µg/L	0.1	1	NA	3.8 U	0.67 U	R	0.5 U	0.81 U	0.5 U	0.58 U
Phenanthrene	µg/L	- -	- -	NA	3.8 U	0.76	0.5 U	0.5 U	0.19 J	0.5 U	0.58 U
Phenol	µg/L	400	2,000	NA	3.8 U	0.67 U	R	0.5 U	0.81 U	0.5 U	0.58 U
Pyrene	µg/L	50	250	NA	3.8 U	0.67 U	0.5 U	0.5 U	0.15 J	0.5 U	0.58 U
Total PAHs	µg/L	- -	- -	NA	ND	135.66	0.12 J	ND	0.62 J	ND	0.45 J

See Notes on Page 13.

Table 10 - Groundwater Sample Analytical Results
Supplemental Off-Property Investigation
Former Koppers Inc. Facility - Superior, WI

Well ID:				TMW-12A[3]				TMW-19C[2]	
Screen Interval (feet bgs):				5-15				35-40	
Soil Zone Screened:				Type 1 (clay)				Type 3 (clay), below/ DG of Type 1	
Filtered/Unfiltered:		WDNR PAL*	WDNR ES*	Unfiltered		Filtered		Unfiltered	Filtered
Sampling Event:	Units			Oct-13	Jan-14	Oct-13	Jan-14	Jan-14	Jan-14
Volatile Organic Compounds									
1,1,1-Trichloroethane	µg/L	40	200	1 U	100 U	1 U	20 U	1 U	1 U
1,2,4-Trimethylbenzene	µg/L	96	480	32	61 J	41	12 J	1 U	1 U
1,3,5-Trimethylbenzene	µg/L			12	25 J	16	5.6 J	1 U	1 U
Benzene	µg/L	0.5	5	**22**	**39 J**	**30**	**25**	1 U	1 U
Chlorobenzene	µg/L	- -	- -	NA	100 U	NA	20 U	1 U	1 U
Chloromethane	µg/L	3	30	1 U	NA	1 U	NA	NA	NA
Ethylbenzene	µg/L	140	700	32	47 J	34	14 J	1 U	1 U
Methyl(tert)butyl ether	µg/L	12	60	5 U	500 U	5 U	100 U	5 U	5 U
N-butylbenzene	µg/L	- -	- -	1 U	100 U	1 U	20 U	1 U	1 U
N-propylbenzene	µg/L	- -	- -	0.86 J	100 U	0.95 J	20 U	1 U	1 U
Styrene	µg/L	10	100	1 U	100 U	1.4	20 U	1 U	1 U
Toluene	µg/L	160	800	42	66 J	45	31	1 U	1 U
M&P-xylene	µg/L	400	2,000	61	110 J	69	33 J	2 U	2 U
O-xylene	µg/L			30	54 J	36	15 J	1 U	1 U
Naphthalene	µg/L	10	100	**9,200 DJ**	**13,000**	**6,700 DJ**	**3,800**	1 U	1 U
Total BTEX	µg/L	- -	- -	187	316	214	118	ND	ND
Semivolatile Organic Compounds									
3-methylcholanthrene	µg/L	- -	- -	22 U	430 UJ	20 U	400 UJ	2.3 U	2.5 U
4,6-dinitro- 2-methylphenol	µg/L	- -	- -	56 U	1,100 UJ	50 U	1,000 UJ	5.8 U	6.3 U
4-chlorophenylphenyl- ether	µg/L	- -	- -	5.6 U	110 UJ	5 U	100 UJ	0.58 U	0.63 U
1,2,4-Trichlorobenzene	µg/L	14	70	5.6 U	110 UJ	5 U	100 UJ	0.58 U	0.63 U
1,2-Dichlorobenzene	µg/L	60	600	5.6 U	110 UJ	5 U	100 UJ	0.58 U	0.63 U
1,3-Dichlorobenzene	µg/L	120	600	5.6 U	110 UJ	5 U	100 UJ	0.58 U	0.63 U
1,4-Dichlorobenzene	µg/L	15	75	5.6 U	110 UJ	5 U	100 UJ	0.58 U	0.63 U
1-Methylnaphthalene	µg/L	- -	- -	210	8,600 DJ	98	110 J	0.12 J	0.11 J
2,3,4,6-Tetrachlorophenol	µg/L	- -	- -	56 U	1,100 UJ	50 U	1,000 UJ	5.8 U	6.3 U
2,3,5,6-Tetrachlorophenol	µg/L	- -	- -	110 U	2,100 UJ	100 U	2,000 UJ	12 U	13 U
2,4,5-Trichlorophenol	µg/L	- -	- -	5.6 U	110 UJ	5 U	100 UJ	0.58 U	0.63 U
2,4,6-Trichlorophenol	µg/L	- -	- -	5.6 U	110 UJ	5 U	100 UJ	0.58 U	0.63 U
2,4-Dichlorophenol	µg/L	- -	- -	5.6 U	110 UJ	5 U	100 UJ	0.58 U	0.63 U
2,4-Dimethylphenol	µg/L	- -	- -	880 D	2,100 J	990 D	2,500 J	1.2 U	1.3 U
2,4-Dinitrophenol	µg/L	- -	- -	56 U	1,100 UJ	50 U	1,000 UJ	5.8 U	6.3 U
2,4-Dinitrotoluene	µg/L	0.005	0.05	5.6 U	110 UJ	5 U	100 UJ	0.58 U	0.63 U
2,6-dinitrotoluene	µg/L	0.005	0.05	5.6 U	110 UJ	5 U	100 UJ	0.58 U	0.63 U
2-Chloronaphthalene	µg/L	- -	- -	1.1 J	110 UJ	0.82 J	100 UJ	0.58 U	0.63 U
2-Chlorophenol	µg/L	- -	- -	5.6 U	110 UJ	5 U	100 UJ	0.58 U	0.63 U
2-Methylnaphthalene	µg/L	- -	- -	370 D	18,000 DJ	150	210 J	0.14 J	0.14 J
2-Methylphenol	µg/L	- -	- -	230	510 J	170	460 J	0.58 U	0.63 U
2-Nitroaniline	µg/L	- -	- -	5.6 U	110 UJ	5 U	100 UJ	0.58 U	0.63 U
2-Nitrophenol	µg/L	- -	- -	5.6 U	110 UJ	5 U	100 UJ	0.58 U	0.63 U
3,3'-dichlorobenzidine	µg/L	- -	- -	11 U	210 UJ	10 U	200 UJ	1.2 U	1.3 U
3-nitroaniline	µg/L	- -	- -	11 U	210 UJ	10 U	200 UJ	1.2 U	1.3 U
4-bromophenyl phenylether	µg/L	- -	- -	5.6 U	110 UJ	5 U	100 UJ	0.58 U	0.63 U
4-chloro-3-methylphenol	µg/L	- -	- -	5.6 U	110 UJ	5 U	100 UJ	0.58 U	0.63 U
4-chloroaniline	µg/L	- -	- -	11 U	210 UJ	10 U	200 UJ	1.2 U	1.3 U
4-methylphenol	µg/L	- -	- -	750 D	2,300 J	780 D	2,500 J	0.58 U	0.63 U
4-nitroaniline	µg/L	- -	- -	11 UJ	210 UJ	10 UJ	200 UJ	1.2 U	1.3 U
4-nitrophenol	µg/L	- -	- -	56 U	1,100 UJ	50 U	1,000 UJ	5.8 UJ	6.3 UJ

See Notes on Page 13.

Table 10 - Groundwater Sample Analytical Results
Supplemental Off-Property Investigation
Former Koppers Inc. Facility - Superior, WI

Well ID:				TMW-12A[3]				TMW-19C[2]	
Screen Interval (feet bgs):				5-15				35-40	
Soil Zone Screened:				Type 1 (clay)				Type 3 (clay), below/ DG of Type 1	
Filtered/Unfiltered:		WDNR	WDNR	Unfiltered		Filtered		Unfiltered	Filtered
Sampling Event:	Units	PAL*	ES*	Oct-13	Jan-14	Oct-13	Jan-14	Jan-14	Jan-14
Acenaphthene	µg/L	- -	- -	250	18,000 DJ	84	140 J	0.058 J	0.076 J
Acenaphthylene	µg/L	- -	- -	6	220 J	2.1 J	100 UJ	0.58 U	0.63 U
Anthracene	µg/L	600	3,000	11	**3,100 J**	1.4 J	100 UJ	0.12 J	0.089 J
Benzo (a) anthracene	µg/L	- -	- -	3.4 J	3,900 J	5 U	100 UJ	0.07 J	0.63 U
Benzo (a) pyrene	µg/L	0.02	0.2	**1.3 J**	**1,600 J**	5 U	100 UJ	0.58 U	0.63 U
Benzo (b) fluoranthene	µg/L	0.02	0.2	**1.9 J**	**2,400 J**	5 U	100 UJ	0.58 U	0.63 U
Benzo (g,h,i) perylene	µg/L	- -	- -	5.6 U	490 J	5 U	100 UJ	0.58 U	0.63 U
Benzo (k) fluoranthene	µg/L	- -	- -	0.89 J	1,300 J	5 U	100 UJ	0.58 U	0.63 U
Benzoic acid	µg/L	- -	- -	R	R	R	R	R	R
Benzyl alcohol	µg/L	- -	- -	5.6 U	110 UJ	5 U	100 UJ	0.53 J	0.38 J
Bis (2-chloroethoxy)- methane	µg/L	- -	- -	5.6 U	110 UJ	1.2 J	100 UJ	0.58 U	0.63 U
Bis (2-chloroethyl) ether	µg/L	- -	- -	5.6 U	110 UJ	5 U	100 UJ	0.58 U	0.63 U
Bis (2-chloroisopropyl)-ether	µg/L	- -	- -	5.6 U	110 UJ	5 U	100 UJ	0.58 U	0.63 U
Bis (2-ethylhexyl)- phthalate	µg/L	0.6	6	5.6 U	110 UJ	5 U	100 UJ	0.58 UB	0.63 UB
Butyl benzyl phthalate	µg/L	- -	- -	11 U	210 UJ	10 U	200 UJ	1.2 U	1.3 U
Chrysene	µg/L	0.02	0.2	**2.4 J**	**2,400 J**	5 U	100 UJ	0.58 U	0.63 U
Dibenzo (a,h) anthracene	µg/L	- -	- -	5.6 U	180 J	5 U	100 UJ	0.58 U	0.63 U
Dibenzofuran	µg/L	- -	- -	140	12,000 DJ	12	68 J	0.047 J	0.63 U
Diethylphthalate	µg/L			1.1 J	110 UJ	2 J	100 UJ	0.72 UB	0.84 UB
Dimethylphthalate	µg/L	- -	- -	5.6 U	110 UJ	5 U	100 UJ	0.081 J	0.089 J
Di-n-butylphthalate	µg/L	- -	- -	11 U	210 UJ	10 U	200 UJ	1.4 UB	1.3 UB
Di-n-octylphthalate	µg/L	- -	- -	5.6 U	110 UJ	5 U	100 UJ	0.58 U	0.63 U
Fluoranthene	µg/L	80	400	24	**22,000 DJ**	5 U	100 UJ	0.43 J	0.089 J
Fluorene	µg/L	80	400	**120**	**15,000 DJ**	10	54 J	0.14 J	0.13 J
Hexachlorobenzene	µg/L	0.1	1	5.6 U	110 UJ	5 U	100 UJ	0.58 U	0.63 U
Hexachlorobutadiene	µg/L	- -	- -	5.6 U	110 UJ	5 U	100 UJ	0.58 U	0.63 U
Hexachlorocyclopentadiene	µg/L	- -	- -	5.6 U	110 UJ	5 U	100 UJ	0.58 UJ	0.63 UJ
Hexachloroethane	µg/L	- -	- -	5.6 U	110 UJ	5 U	100 UJ	0.58 U	0.63 U
Indeno (1,2,3-cd) pyrene	µg/L	- -	- -	5.6 U	490 J	5 U	100 UJ	0.58 U	0.63 U
Isophorone	µg/L	- -	- -	5.6 U	110 UJ	5 U	100 UJ	2.4	2.3
Naphthalene	µg/L	10	100	**6,700 D**	**78,000 DJ**	**4,100 D**	**3,800 J**	0.19 J	0.27 J
Nitrobenzene	µg/L	- -	- -	5.6 U	110 UJ	5 U	100 UJ	0.58 U	0.63 U
N-nitrosodi-n-propylamine	µg/L	- -	- -	5.6 U	110 UJ	5 U	100 UJ	0.58 U	0.63 U
N-nitroso-di-phenylamine	µg/L	0.7	7	5.6 U	110 UJ	5 U	100 UJ	0.58 U	0.63 U
Pentachlorophenol	µg/L	0.1	1	5.6 U	110 UJ	5 U	100 UJ	0.58 U	0.63 U
Phenanthrene	µg/L	- -	- -	130	41,000 DJ	0.71 J	36 J	2	1.3
Phenol	µg/L	400	2,000	42	62 J	23	62 J	0.58 U	0.63 U
Pyrene	µg/L	50	250	15	**16,000 DJ**	5 U	100 UJ	0.35 J	0.63 U
Total PAHs	µg/L	- -	- -	7,266 J	206,080 J	4,198 J	4,030 J	3.358 J	1.954 J

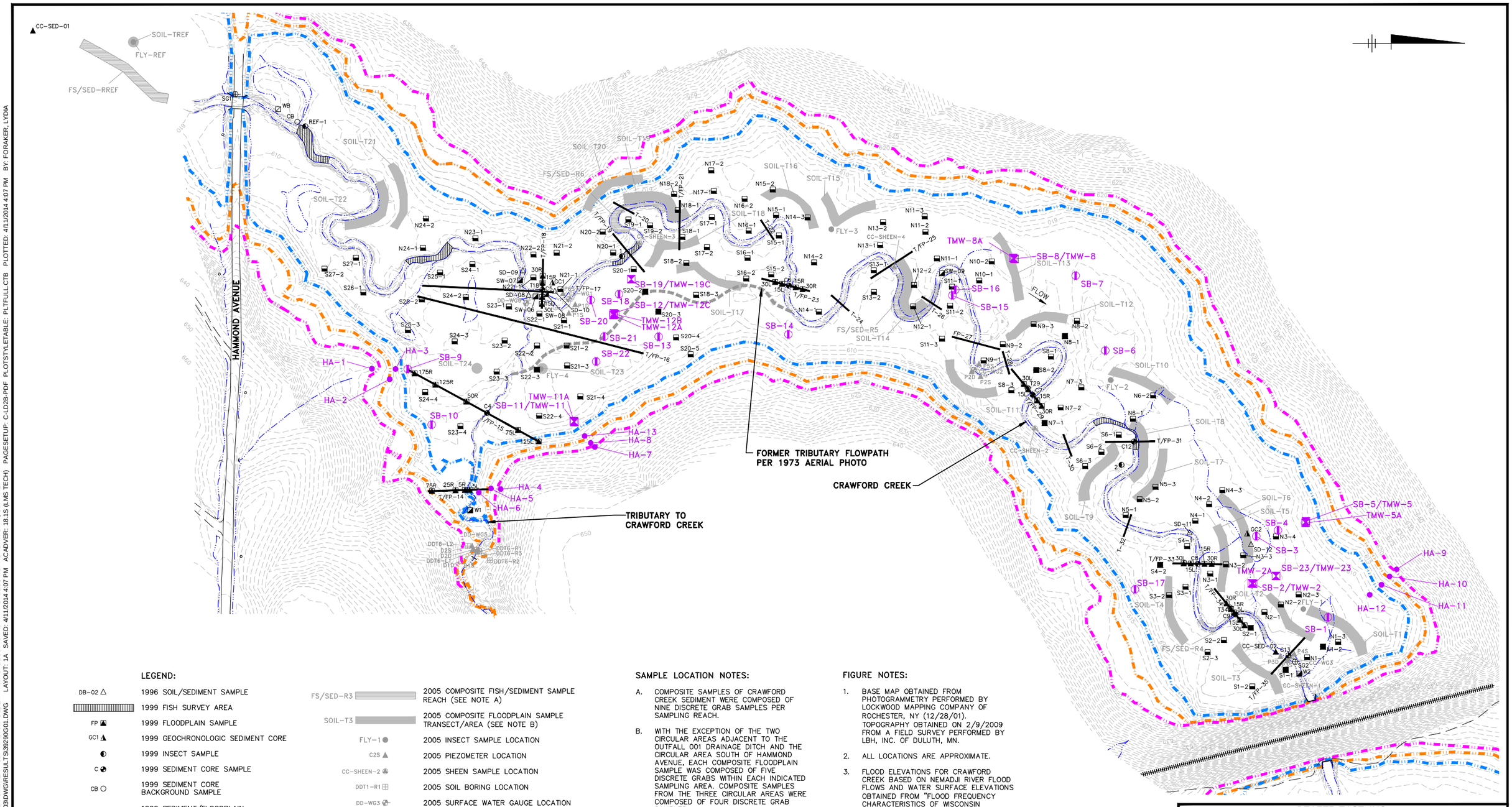
See Notes on Page 13.

Table 10 - Groundwater Sample Analytical Results
Supplemental Off-Property Investigation
Former Koppers Inc. Facility - Superior, WI

Notes:
bgs - below ground surface
BTEX - benzene, toluene, ethylbenzene, xylenes
DG - downgradient
ES - Enforcement Standard (Wisconsin Administrative Code, Chapter NR 140, Appendix I to Table 1)
NA - not analyzed
ND - not detected
PAHs - polycyclic aromatic hydrocarbons
PAL - Preventive Action Limit (Wisconsin Administrative Code, Chapter NR 140, Appendix I to Table 1)
WDNR - Wisconsin Department of Natural Resources
µg/L - micrograms per liter
J - indicates an estimated value
U - not detected above the reporting limit shown
UB - compound considered non-detect at the listed value due to associated blank contamination
UJ - the compound was not detected above the reported sample quantitation limit; however, the reported limit is approximate and may or may not represent the actual limit of quantitation
D - concentration is based on a diluted sample analysis
DJ - concentration is based on a diluted sample analysis; estimated value
R - the sample results are rejected (refer to Data Validation Report for details)
[ ] - duplicate sample results
Bold/light shading - indicates result above PAL
Bold/dark shading - indicates result above ES
1. Replacement well for TMW-2.
2. Replacement well for TMW-12C.
3. Trace blebs of creosote-like product were present in the purge water at TMW-12A during the January 2014 sampling event.
4. Type 1 - creosote-like product in clay fractures or sand/organic seams
   Type 2 - creosote-like odor, staining and/or sheens, but no product
   Type 3 - no visible impacts

ARCADIS

Figures



LEGEND:

DB-02 △	1996 SOIL/SEDIMENT SAMPLE
	1999 FISH SURVEY AREA
FP ▲	1999 FLOODPLAIN SAMPLE
GC1 ▲	1999 GEOCHRONOLOGIC SEDIMENT CORE
◐	1999 INSECT SAMPLE
C ◕	1999 SEDIMENT CORE SAMPLE
CB ○	1999 SEDIMENT CORE BACKGROUND SAMPLE
	1999 SEDIMENT/FLOODPLAIN BORING TRANSECT
SG ⊕	1999 STAFF GAUGE
T ◉	1999 TRANSECT SAMPLE
W ◪	1999 WATER SAMPLE
WB ⊠	1999 WATER BACKGROUND SAMPLE
■	2003 FLOODPLAIN SAMPLE
▲	2003 SEDIMENT SAMPLE
N6-1	2003 TEST PIT
FS/SED-R3	2005 COMPOSITE FISH/SEDIMENT SAMPLE REACH (SEE NOTE A)
SOIL-T3	2005 COMPOSITE FLOODPLAIN SAMPLE TRANSECT/AREA (SEE NOTE B)
FLY-1 ●	2005 INSECT SAMPLE LOCATION
C2S ▲	2005 PIEZOMETER LOCATION
CC-SHEEN-2	2005 SHEEN SAMPLE LOCATION
DDT1-R1	2005 SOIL BORING LOCATION
DD-WG3	2005 SURFACE WATER GAUGE LOCATION
SB-3 ◐	2013 DIRECT PUSH BORING
SB-2/TMW-2 ⊠	2013 DIRECT PUSH BORING/TEMPORARY MONITORING WELL
HA-1 ●	2013 HAND AUGER BORING
	2-YEAR FLOOD ELEVATION – 613 FT AMSL
	25-YEAR FLOOD ELEVATION – 617 FT AMSL
	100-YEAR FLOOD ELEVATION – 619 FT AMSL

SAMPLE LOCATION NOTES:

A. COMPOSITE SAMPLES OF CRAWFORD CREEK SEDIMENT WERE COMPOSED OF NINE DISCRETE GRAB SAMPLES PER SAMPLING REACH.

B. WITH THE EXCEPTION OF THE TWO CIRCULAR AREAS ADJACENT TO THE OUTFALL 001 DRAINAGE DITCH AND THE CIRCULAR AREA SOUTH OF HAMMOND AVENUE, EACH COMPOSITE FLOODPLAIN SAMPLE WAS COMPOSED OF FIVE DISCRETE GRABS WITHIN EACH INDICATED SAMPLING AREA. COMPOSITE SAMPLES FROM THE THREE CIRCULAR AREAS WERE COMPOSED OF FOUR DISCRETE GRAB SAMPLES.

FIGURE NOTES:

1. BASE MAP OBTAINED FROM PHOTOGRAMMETRY PERFORMED BY LOCKWOOD MAPPING COMPANY OF ROCHESTER, NY (12/28/01). TOPOGRAPHY OBTAINED ON 2/9/2009 FROM A FIELD SURVEY PERFORMED BY LBH, INC. OF DULUTH, MN.
2. ALL LOCATIONS ARE APPROXIMATE.
3. FLOOD ELEVATIONS FOR CRAWFORD CREEK BASED ON NEMADJI RIVER FLOOD FLOWS AND WATER SURFACE ELEVATIONS OBTAINED FROM "FLOOD FREQUENCY CHARACTERISTICS OF WISCONSIN STREAMS" (USGS, 2003), ADJUSTED TO CORRELATE WITH FEMA 100-YEAR FLOOD ELEVATION (NGVD 29).

0 100' 200'
GRAPHIC SCALE

BEAZER EAST, INC.
FORMER KOPPERS INC. FACILITY
SUPERIOR, WISCONSIN
SUPPLEMENTAL OFF-PROPERTY INVESTIGATION SUMMARY REPORT

INVESTIGATION LOCATIONS (HISTORICAL AND NEW)

ARCADIS

FIGURE
1A

CITY: SYRACUSE DIV/GROUP: ENVCAD DB: L. FORAKER LD: PIC: J. HOLDEN PM: D. BESSINGPAS TM: D. BESSINGPAS LYR: ON=*;OFF=*REF*
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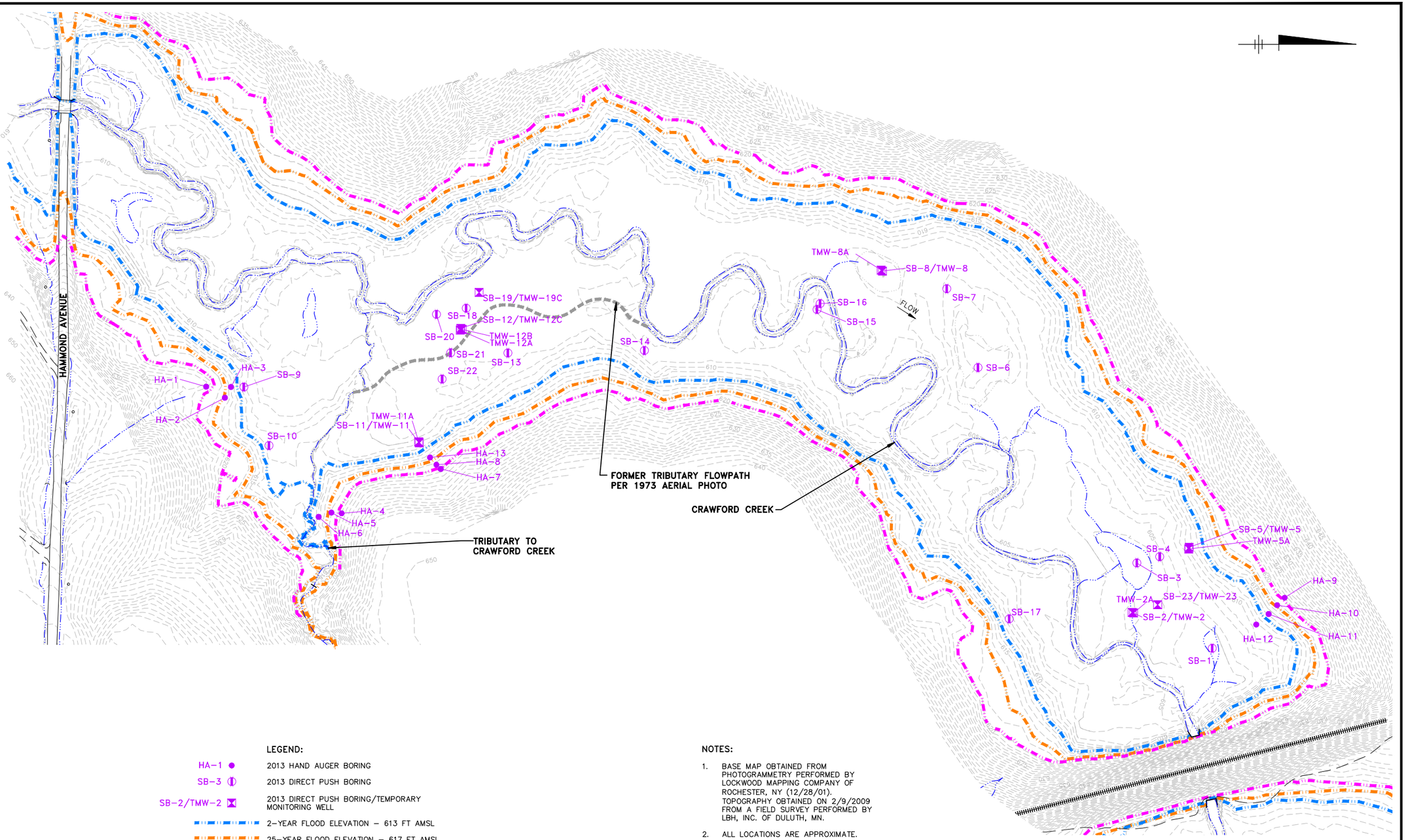

LEGEND:

HA–1 ●	2013 HAND AUGER BORING
SB–3 ◐	2013 DIRECT PUSH BORING
SB–2/TMW–2 ⧓	2013 DIRECT PUSH BORING/TEMPORARY MONITORING WELL
	2–YEAR FLOOD ELEVATION – 613 FT AMSL
	25–YEAR FLOOD ELEVATION – 617 FT AMSL
	100–YEAR FLOOD ELEVATION – 619 FT AMSL

NOTES:

1. BASE MAP OBTAINED FROM PHOTOGRAMMETRY PERFORMED BY LOCKWOOD MAPPING COMPANY OF ROCHESTER, NY (12/28/01). TOPOGRAPHY OBTAINED ON 2/9/2009 FROM A FIELD SURVEY PERFORMED BY LBH, INC. OF DULUTH, MN.
2. ALL LOCATIONS ARE APPROXIMATE.
3. FLOOD ELEVATIONS FOR CRAWFORD CREEK BASED ON NEMADJI RIVER FLOOD FLOWS AND WATER SURFACE ELEVATIONS OBTAINED FROM "FLOOD FREQUENCY CHARACTERISTICS OF WISCONSIN STREAMS" (USGS, 2003), ADJUSTED TO CORRELATE WITH FEMA 100–YEAR FLOOD ELEVATION (NGVD 29).

0 100' 200'
GRAPHIC SCALE

BEAZER EAST, INC.
FORMER KOPPERS INC. FACILITY
SUPERIOR, WISCONSIN
SUPPLEMENTAL OFF-PROPERTY INVESTIGATION SUMMARY REPORT

INVESTIGATION LOCATIONS (NEW ONLY)

ARCADIS

FIGURE
1B

CITY: SYRACUSE DIV/GROUP: ENVCAD DB: L.FORAKER LD: PIC: J. HOLDEN PM: D. BESSINGPAS TM: D. BESSINGPAS LYR: ON=*; OFF=*REF*
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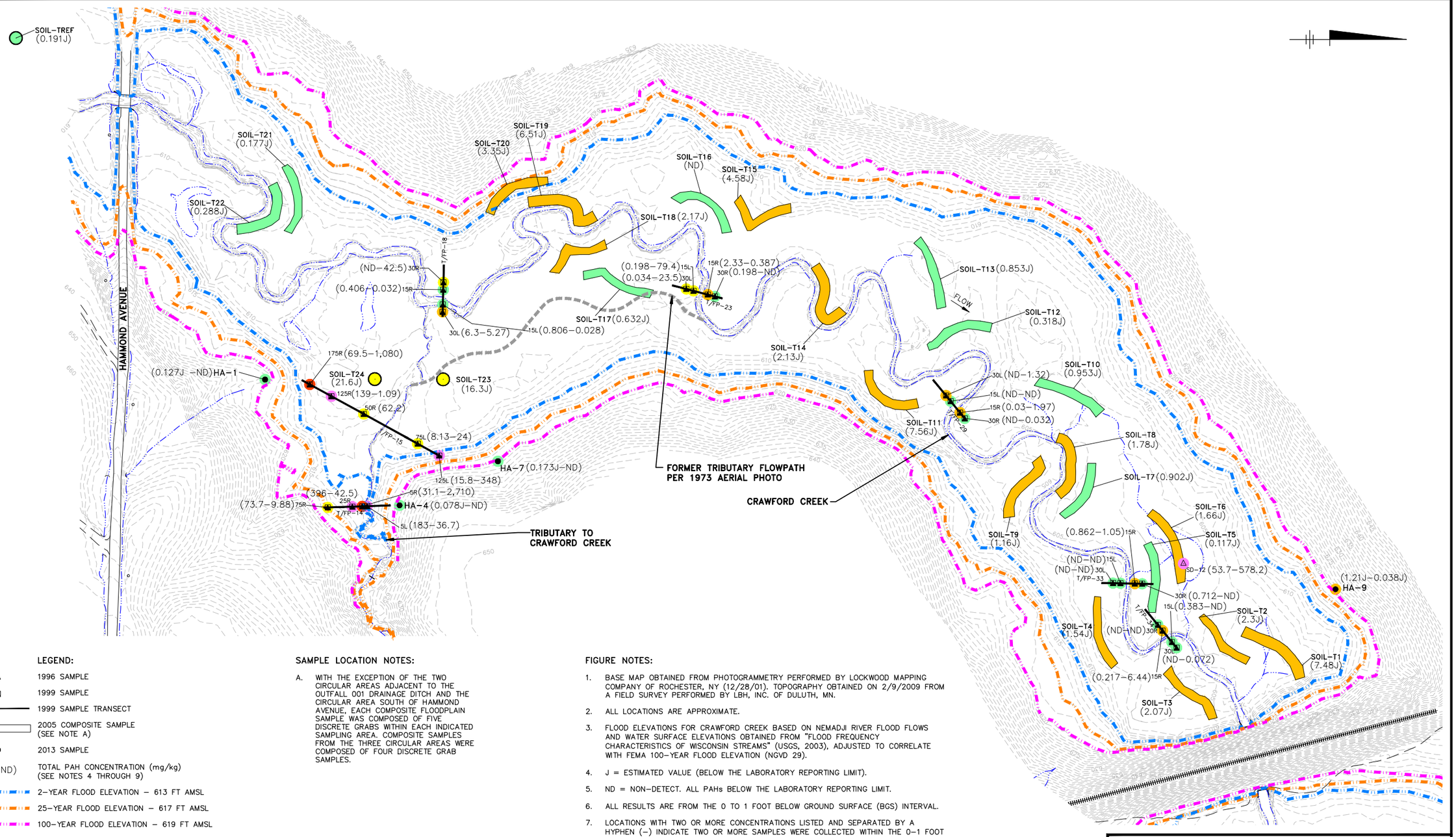

LEGEND:

SD-12 △	1996 SAMPLE
FP	1999 SAMPLE
	1999 SAMPLE TRANSECT
SOIL-T3	2005 COMPOSITE SAMPLE (SEE NOTE A)
HA-1 ●	2013 SAMPLE
(0.173J-ND)	TOTAL PAH CONCENTRATION (mg/kg) (SEE NOTES 4 THROUGH 9)
	2-YEAR FLOOD ELEVATION – 613 FT AMSL
	25-YEAR FLOOD ELEVATION – 617 FT AMSL
	100-YEAR FLOOD ELEVATION – 619 FT AMSL

CONCENTRATION RANGES

- <1 mg/kg
- 1 – 10 mg/kg
- 10 – 100 mg/kg
- 100 – 1,000 mg/kg
- >1,000 mg/kg

SAMPLE LOCATION NOTES:

A. WITH THE EXCEPTION OF THE TWO CIRCULAR AREAS ADJACENT TO THE OUTFALL 001 DRAINAGE DITCH AND THE CIRCULAR AREA SOUTH OF HAMMOND AVENUE, EACH COMPOSITE FLOODPLAIN SAMPLE WAS COMPOSED OF FIVE DISCRETE GRABS WITHIN EACH INDICATED SAMPLING AREA. COMPOSITE SAMPLES FROM THE THREE CIRCULAR AREAS WERE COMPOSED OF FOUR DISCRETE GRAB SAMPLES.

FIGURE NOTES:

1. BASE MAP OBTAINED FROM PHOTOGRAMMETRY PERFORMED BY LOCKWOOD MAPPING COMPANY OF ROCHESTER, NY (12/28/01). TOPOGRAPHY OBTAINED ON 2/9/2009 FROM A FIELD SURVEY PERFORMED BY LBH, INC. OF DULUTH, MN.
2. ALL LOCATIONS ARE APPROXIMATE.
3. FLOOD ELEVATIONS FOR CRAWFORD CREEK BASED ON NEMADJI RIVER FLOOD FLOWS AND WATER SURFACE ELEVATIONS OBTAINED FROM "FLOOD FREQUENCY CHARACTERISTICS OF WISCONSIN STREAMS" (USGS, 2003), ADJUSTED TO CORRELATE WITH FEMA 100-YEAR FLOOD ELEVATION (NGVD 29).
4. J = ESTIMATED VALUE (BELOW THE LABORATORY REPORTING LIMIT).
5. ND = NON-DETECT. ALL PAHs BELOW THE LABORATORY REPORTING LIMIT.
6. ALL RESULTS ARE FROM THE 0 TO 1 FOOT BELOW GROUND SURFACE (BGS) INTERVAL.
7. LOCATIONS WITH TWO OR MORE CONCENTRATIONS LISTED AND SEPARATED BY A HYPHEN (–) INDICATE TWO OR MORE SAMPLES WERE COLLECTED WITHIN THE 0–1 FOOT DEPTH INTERVAL. THE RESULTS ARE LISTED FROM THE MOST SHALLOW INTERVAL CONCENTRATION TO THE DEEPEST INTERVAL CONCENTRATION.
8. WHEN CALCULATING TOTAL PAHs, NON-DETECTS WERE GIVEN A VALUE OF ZERO.
9. WHEN A DUPLICATE SAMPLE WAS COLLECTED, THE HIGHER RESULT OF THE SAMPLE AND ITS DUPLICATE IS SHOWN.

0 100' 200'
GRAPHIC SCALE

BEAZER EAST, INC.
FORMER KOPPERS INC. FACILITY
SUPERIOR, WISCONSIN
SUPPLEMENTAL OFF-PROPERTY INVESTIGATION SUMMARY REPORT

SURFICIAL (0 - 1') BANK/FLOODPLAIN MATERIAL ANALYTICAL RESULTS - PAHs

ARCADIS

FIGURE 2

CITY: SYRACUSE DIV/GROUP: ENVCAD DB: L. FORAKER LD: PIC: J. HOLDEN PM: D. BESSINGPAS TM: D. BESSINGPAS LYR: ON=*;OFF=*REF*
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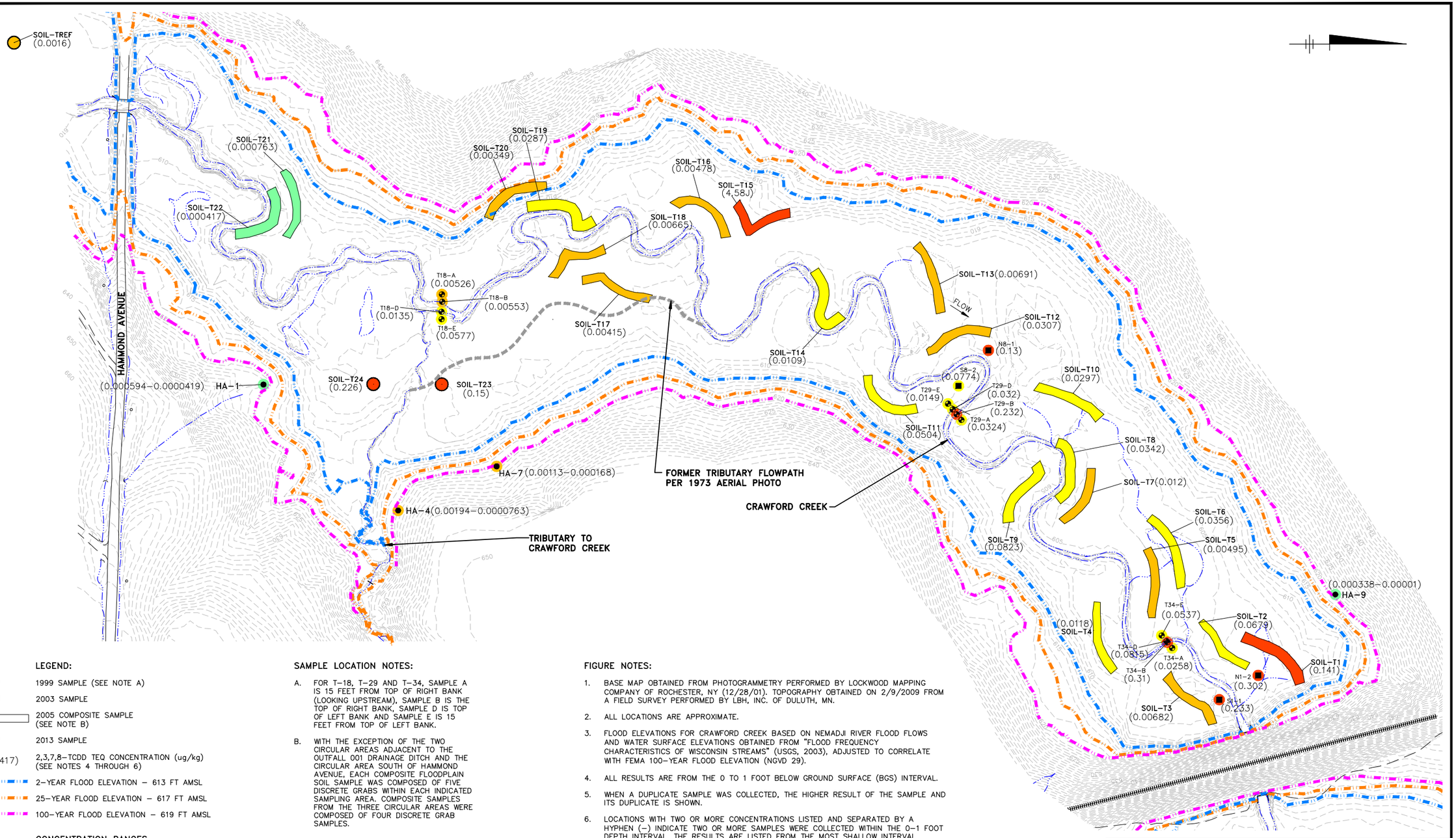

LEGEND:

- T29-D — 1999 SAMPLE (SEE NOTE A)
- ■ — 2003 SAMPLE
- SOIL-T3 — 2005 COMPOSITE SAMPLE (SEE NOTE B)
- HA-1 ● — 2013 SAMPLE
- (0.000417) — 2,3,7,8-TCDD TEQ CONCENTRATION (ug/kg) (SEE NOTES 4 THROUGH 6)
- 2-YEAR FLOOD ELEVATION – 613 FT AMSL
- 25-YEAR FLOOD ELEVATION – 617 FT AMSL
- 100-YEAR FLOOD ELEVATION – 619 FT AMSL

CONCENTRATION RANGES

- <0.001 ug/kg
- 0.001 – 0.01 ug/kg
- 0.01 – 0.1 ug/kg
- >0.1 ug/kg

SAMPLE LOCATION NOTES:

A. FOR T-18, T-29 AND T-34, SAMPLE A IS 15 FEET FROM TOP OF RIGHT BANK (LOOKING UPSTREAM), SAMPLE B IS THE TOP OF RIGHT BANK, SAMPLE D IS TOP OF LEFT BANK AND SAMPLE E IS 15 FEET FROM TOP OF LEFT BANK.

B. WITH THE EXCEPTION OF THE TWO CIRCULAR AREAS ADJACENT TO THE OUTFALL 001 DRAINAGE DITCH AND THE CIRCULAR AREA SOUTH OF HAMMOND AVENUE, EACH COMPOSITE FLOODPLAIN SOIL SAMPLE WAS COMPOSED OF FIVE DISCRETE GRABS WITHIN EACH INDICATED SAMPLING AREA. COMPOSITE SAMPLES FROM THE THREE CIRCULAR AREAS WERE COMPOSED OF FOUR DISCRETE GRAB SAMPLES.

FIGURE NOTES:

1. BASE MAP OBTAINED FROM PHOTOGRAMMETRY PERFORMED BY LOCKWOOD MAPPING COMPANY OF ROCHESTER, NY (12/28/01). TOPOGRAPHY OBTAINED ON 2/9/2009 FROM A FIELD SURVEY PERFORMED BY LBH, INC. OF DULUTH, MN.
2. ALL LOCATIONS ARE APPROXIMATE.
3. FLOOD ELEVATIONS FOR CRAWFORD CREEK BASED ON NEMADJI RIVER FLOOD FLOWS AND WATER SURFACE ELEVATIONS OBTAINED FROM "FLOOD FREQUENCY CHARACTERISTICS OF WISCONSIN STREAMS" (USGS, 2003), ADJUSTED TO CORRELATE WITH FEMA 100-YEAR FLOOD ELEVATION (NGVD 29).
4. ALL RESULTS ARE FROM THE 0 TO 1 FOOT BELOW GROUND SURFACE (BGS) INTERVAL.
5. WHEN A DUPLICATE SAMPLE WAS COLLECTED, THE HIGHER RESULT OF THE SAMPLE AND ITS DUPLICATE IS SHOWN.
6. LOCATIONS WITH TWO OR MORE CONCENTRATIONS LISTED AND SEPARATED BY A HYPHEN (–) INDICATE TWO OR MORE SAMPLES WERE COLLECTED WITHIN THE 0–1 FOOT DEPTH INTERVAL. THE RESULTS ARE LISTED FROM THE MOST SHALLOW INTERVAL CONCENTRATION TO THE DEEPEST INTERVAL CONCENTRATION.

0 100' 200'
GRAPHIC SCALE

BEAZER EAST, INC.
FORMER KOPPERS INC. FACILITY
SUPERIOR, WISCONSIN
SUPPLEMENTAL OFF-PROPERTY INVESTIGATION SUMMARY REPORT

SURFICIAL (0 - 1') BANK/FLOODPLAIN MATERIAL ANALYTICAL RESULTS - PCDDs/PCDFs

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FIGURE 3

CITY: SYRACUSE DIV/GROUP: ENVCAD DB: L.FORAKER LD: PIC: J. HOLDEN PM: D. BESSINGPAS TM: D. BESSINGPAS LYR: ON=*; OFF=*REF*
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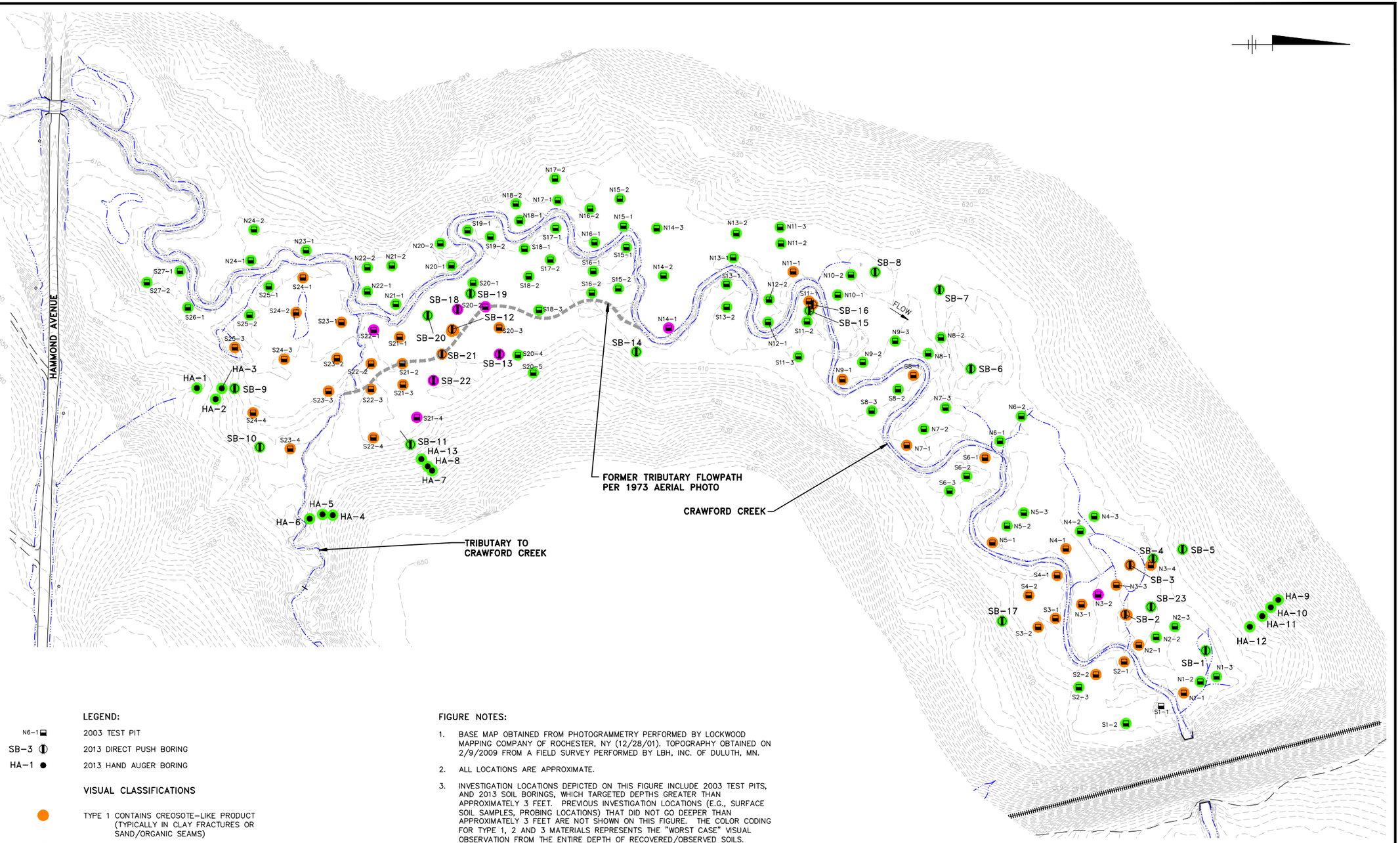

LEGEND:

N6-1	2003 TEST PIT
SB-3	2013 DIRECT PUSH BORING
HA-1	2013 HAND AUGER BORING

VISUAL CLASSIFICATIONS

- TYPE 1 CONTAINS CREOSOTE-LIKE PRODUCT (TYPICALLY IN CLAY FRACTURES OR SAND/ORGANIC SEAMS)
- TYPE 2 EXHIBITS A CREOSOTE-LIKE ODOR, STAINING AND/OR SHEEN, BUT DOES NOT CONTAIN CREOSOTE-LIKE PRODUCT
- TYPE 3 DOES NOT EXHIBIT VISUAL EVIDENCE OF IMPACTS (i.e., NO STAINING, SHEENS OR PRODUCT) OR CREOSOTE-LIKE ODOR

FIGURE NOTES:

1. BASE MAP OBTAINED FROM PHOTOGRAMMETRY PERFORMED BY LOCKWOOD MAPPING COMPANY OF ROCHESTER, NY (12/28/01). TOPOGRAPHY OBTAINED ON 2/9/2009 FROM A FIELD SURVEY PERFORMED BY LBH, INC. OF DULUTH, MN.
2. ALL LOCATIONS ARE APPROXIMATE.
3. INVESTIGATION LOCATIONS DEPICTED ON THIS FIGURE INCLUDE 2003 TEST PITS, AND 2013 SOIL BORINGS, WHICH TARGETED DEPTHS GREATER THAN APPROXIMATELY 3 FEET. PREVIOUS INVESTIGATION LOCATIONS (E.G., SURFACE SOIL SAMPLES, PROBING LOCATIONS) THAT DID NOT GO DEEPER THAN APPROXIMATELY 3 FEET ARE NOT SHOWN ON THIS FIGURE. THE COLOR CODING FOR TYPE 1, 2 AND 3 MATERIALS REPRESENTS THE "WORST CASE" VISUAL OBSERVATION FROM THE ENTIRE DEPTH OF RECOVERED/OBSERVED SOILS.

0 100' 200'
GRAPHIC SCALE

BEAZER EAST, INC.
FORMER KOPPERS INC. FACILITY
SUPERIOR, WISCONSIN
SUPPLEMENTAL OFF-PROPERTY INVESTIGATION SUMMARY REPORT

SUMMARY OF VISUAL OBSERVATIONS FOR SUBSURFACE MATERIALS

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FIGURE
4

ARCADIS

Appendices

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Appendix A

Soil Boring and Monitoring Well Construction Logs

Date Start/Finish: 8/21/13 **Drilling Company:** Matrix Environmental, LLC **Driller's Name:** Cord Anderson **Drilling Method:** Direct Push **Auger Size:** NA **Rig Type:** Geoprobe **Sampling Method:** Macrocore	**Northing:** 549255.61 **Easting:** 1446701.71 **Casing Elevation:** NA **Borehole Depth:** 25' bgs **Surface Elevation:** 605.00' AMSL **Descriptions By:** Kelly Hoehn	**Well/Boring ID:** **SB-1** **Client:** Beazer East, Inc. **Location:** Former Koppers Inc. Facility Superior, WI

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	605	MC-1	0-5	2.8	0.0 0.0		5YR 4/4 reddish brown LEAN to FAT CLAY, little Silt, trace fine to medium Sand, medium to high plasticity, no dilatancy, soft, moist. Organics at 10" bgs (black coloring). 5YR 3/2 dark reddish brown from 1.7 to 2.1' bgs.	
5	600	MC-2	5-10	5.0	0.0 0.0		5YR 4/4 reddish brown LEAN to FAT CLAY, trace Silt, medium to high plasticity, no dilatancy, medium stiff, moist. Gray coloration from 6.1 to 6.3' bgs. Gray coloration from 7.8 to 8.7' bgs. Black coloration from 9.3 to 9.4' bgs.	Borehole backfilled (grout to grade).
10	595	MC-3	10-15	5.0	0.0 0.0		5YR 4/4 reddish brown LEAN to FAT CLAY, trace Silt, medium to high plasticity, no dilatancy, stiff, moist. Black/Gray coloration from 10 to 10.6' bgs.	
15	590						5YR 4/4 reddish brown LEAN to FAT CLAY, medium to high plasticity, no dilatancy, soft to medium stiff; 5Y 4/1 dark gray coloration throughout. 2.5YR 4/4 reddish brown from 15 to 15.8' bgs.	

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Remarks: bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

Client: Beazer East, Inc.

Well/Boring ID: **SB-1**

Borehole Depth: 25' bgs

Site Location:
Former Koppers Inc. Facility
Superior, WI

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
	MC-4	15-20	5.0	0.0 0.0			
20 585							
	MC-5	20-25	5.0	0.0 0.0		5YR 4/3 reddish brown (20 to 22.7' bgs with 5Y 4/1 dark gray coloration throughout) LEAN to FAT CLAY, little to trace Silt, medium to high plasticity, no dilatancy, very soft to medium stiff. 10YR 4/1 dark gray from 22.7 to 24' bgs. 5YR 4/4 reddish brown from 24 to 25' bgs.	Borehole backfilled (grout to grade).
25 580						End of Boring at 25' bgs.	
30 575							
35 570							

Remarks: bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

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Date Start/Finish: 8/21/13 **Drilling Company:** Matrix Environmental, LLC **Driller's Name:** Cord Anderson **Drilling Method:** Direct Push **Auger Size:** NA **Rig Type:** Geoprobe **Sampling Method:** Macrocore	**Northing:** 549094.00 **Easting:** 1446628.93 **Casing Elevation:** 607.63' AMSL **Borehole Depth:** 30' bgs **Surface Elevation:** 603.65' AMSL **Descriptions By:** Kelly Hoehn	**Well/Boring ID:** SB-2/TMW-2 **Client:** Beazer East, Inc. **Location:** Former Koppers Inc. Facility Superior, WI

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
605							3.98' Stickup Height (ags)
0							
	MC-1	0-5	2.9	8.7 14.0		5YR 3/3 dark reddish brown LEAN to FAT CLAY, little Silt, medium to high plasticity, no dilatancy, very soft to soft, moist; strong creosote-like odor, creosote-like product (sheen) evident throughout recovery. Some very fine to fine Sand, black staining from 0.5 to 0.6' bgs.	2.25" diameter borehole
600							
5	MC-2	5-10	4.2	18.1 10.9		Heavy black/brown staining from 6.0 to 6.2' bgs. Organics seam with creosote-like product at 7.1' bgs.	1" Sch. 40 PVC riser (3.98' ags-20' bgs) Bentonite Granules (0' bgs-19' bgs)
595							
10	MC-3	10-15	1.6	26.0		Very soft, medium dense from 10 to 15' bgs. Creosote-like product leaching from Clay from 11.3 to 11.4' bgs.	
590							
15						5YR 3/3 dark reddish brown LEAN to FAT CLAY, medium to high plasticity, no dilatancy, soft, medium dense; creosote-like odor, minimal black staining throughout.	

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Remarks: ags = above ground surface; bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

Analytical samples collected from 25-25.5' bgs and 25.5-26' bgs.

Client: Beazer East, Inc.

Well/Boring ID: **SB-2/TMW-2**

Borehole Depth: 30' bgs

Site Location:
Former Koppers Inc. Facility
Superior, WI

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
					0.7			Bentonite Granules (0' bgs-19' bgs)
		MC-4	15-20	3.5	0.6		Wood pieces with strong creosote-like odor at 17.8' bgs.	1" Sch. 40 PVC riser (3.98' ags-20' bgs)
	585						10YR 3/3 dark brown LEAN CLAY, little Silt, medium plasticity, no dilatancy, soft, moist; black staining, slight creosote-like odor.	
20							5YR 4/3 reddish brown LEAN CLAY, little Silt, medium plasticity, no dilatancy, medium stiff to stiff, moist; dark greenish gray coloration (GLEY 1 4/10Y) at 20.8 to 21.2', 21.7 to 22.3', 22.7 to 23.5', 24.1 to 24.2' and 24.7 to 24.9' bgs.	
		MC-5	20-25	5.0	1.6			Sand Pack - Red Flint #40 (19' bgs-30' bgs)
	580				1.6			
25							5YR 4/4 reddish brown LEAN CLAY, little Silt, medium plasticity, no dilatancy, medium stiff to stiff, moist.	1" Sch. 40 PVC Screen Slot Size 0.01" (20' bgs-30' bgs) with pre-pack screen
		MC-6	25-30	5.0	0.1			
	575				2.2			
30							End of Boring at 30' bgs.	
	570							
35								

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Remarks: ags = above ground surface; bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

Analytical samples collected from 25-25.5' bgs and 25.5-26' bgs.

Date Start/Finish: 8/21/13
Drilling Company: Matrix Environmental, LLC
Driller's Name: Cord Anderson
Drilling Method: Direct Push
Auger Size: NA
Rig Type: Geoprobe
Sampling Method: Macrocore

Northing: 549097.19
Easting: 1446630.14
Casing Elevation: 606.22' AMSL

Borehole Depth: 15' bgs
Surface Elevation: 604.3' AMSL

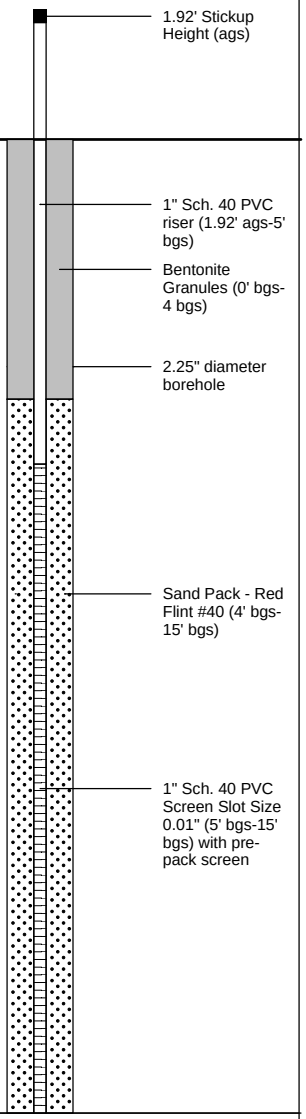
Descriptions By: Kelly Hoehn

Well/Boring ID: **SB-2A/TMW-2A**

Client: Beazer East, Inc.

Location: Former Koppers Inc. Facility
Superior, WI

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
605						
0						5YR 3/3 dark reddish brown LEAN CLAY, little Silt, medium plasticity, no dilatancy, soft, moist; strong creosote-like odor and staining (black/brown) throughout.
						Creosote-like product leaching out of Clay from 1.2 to 1.8' bgs.
	MC-1	0-5	1.8	499.1		
600						
5						Creosote-like product leaching out of Clay from 5 to 10' bgs.
				28.5		
						Heavy creosote-like staining/odor at 6.3 to 7.1' bgs.
	MC-2	5-10	3.4			
				90.3		
595						
10						5YR 3/3 dark reddish brown LEAN CLAY, medium plasticity, no dilatancy, soft (10 to 10.8' bgs), medium stiff (10.8 to 13.3' bgs), stiff (13.3 to 15' bgs); creosote-like staining (sheen) throughout. creosote-like product leaching out of Clay - heavy creosote-like staining at 10.8', 11.2', 11.5 to 11.8', 12', 12.3', 12.5 to 12.7', 13.2 to 13.3', 13.7 to 13.8' and 13.9' to 14.3' bgs.
				15.5		
	MC-3	10-15	5.0			
				13.5		
590						
15						End of Boring at 15' bgs.



Well/Boring Construction

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Remarks: ags = above ground surface; bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

Date Start/Finish: 8/21/13 **Drilling Company:** Matrix Environmental, LLC **Driller's Name:** Cord Anderson **Drilling Method:** Direct Push **Auger Size:** NA **Rig Type:** Geoprobe **Sampling Method:** Macrocore	**Northing:** 549103.44 **Easting:** 1446529.56 **Casing Elevation:** NA **Borehole Depth:** 25' bgs **Surface Elevation:** 603.55' AMSL **Descriptions By:** Kelly Hoehn	**Well/Boring ID:** **SB-3** **Client:** Beazer East, Inc. **Location:** Former Koppers Inc. Facility Superior, WI

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
605							
0							
	MC-1	0-5	2.2	23.8		5YR 3/3 dark reddish brown LEAN CLAY, little Silt, medium plasticity, no dilatancy, soft to very soft, moist, creosote-like sheen/odor throughout. Black silt seam at 4" bgs. Black staining from 1.5 to 2.2' bgs. Fibrous wood pieces with strong creosote-like odor/black staining at 2' bgs.	
600							
5	MC-2	5-10	3.1	27.1		5YR 3/3 dark reddish brown LEAN CLAY, little Silt, medium plasticity, no dilatancy, soft to very soft, moist to very moist; heavy creosote-like sheen throughout, creosote-like product leaches out of clay with heavy creosote-like free product/staining at 5.6 to 5.7', 6.1 to 6.3', 6.7' to 6.8' and 7.3' to 7.5' bgs.	Borehole backfilled (grout to grade).
595							
10	MC-3	10-15	4.5	18.4		5YR 3/3 dark reddish brown LEAN CLAY, little Silt, medium plasticity, no dilatancy, soft to medium stiff, moist to wet, strong creosote-like odor and minor sheen throughout, minor black staining from 10 to 13.3' bgs.	
590						Medium Sand seams with heavy creosote-like staining and odor from 13.3 to 13.5' bgs. Black staining with strong creosote-like odor in Clay from 13.5 to 13.8' bgs. Medium Sand seams with heavy creosote-like staining and odor from 13.8 to 14.1' bgs. Black staining with strong creosote-like odor in Clay from 14.1 to 14.5' bgs.	
15						10YR 3/3 dark brown LEAN CLAY, little Silt, medium plasticity, no dilatancy, soft to medium stiff, moist; minor creosote-like odor from 15 to 15.8' bgs.	

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Remarks: bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

Analytical samples collected from 15.5-16' bgs and 16-16.5' bgs.

Client: Beazer East, Inc.

Well/Boring ID: **SB-3**

Borehole Depth: 25' bgs

Site Location:
Former Koppers Inc. Facility
Superior, WI

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
585	MC-4	15-20	5.0	3.0			
20						5YR 4/4 reddish brown LEAN to FAT CLAY, little Silt, medium to high plasticity, no dilatancy, soft, moist.	Borehole backfilled (grout to grade).
	MC-5	20-25	5.0	0.0			
580				0.0			
25						End of Boring at 25' bgs.	
575							
30							
570							
35							

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Remarks: bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

Analytical samples collected from 15.5-16' bgs and 16-16.5' bgs.

Date Start/Finish: 8/21/13 **Drilling Company:** Matrix Environmental, LLC **Driller's Name:** Cord Anderson **Drilling Method:** Direct Push **Auger Size:** NA **Rig Type:** Geoprobe **Sampling Method:** Macrocore	**Northing:** 549149.67 **Easting:** 1446514.96 **Casing Elevation:** NA **Borehole Depth:** 20' bgs **Surface Elevation:** 604.80' AMSL **Descriptions By:** Kelly Hoehn	**Well/Boring ID:** **SB-4** **Client:** Beazer East, Inc. **Location:** Former Koppers Inc. Facility Superior, WI

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
0 / 605						Topsoil.	
						5YR 4/4 reddish brown LEAN to FAT CLAY, little to trace Silt, medium to high plasticity, no dilatancy, soft, moist.	
	MC-1	0-5	2.5	0.0			
5 / 600						5YR 4/6 yellowish red LEAN to FAT CLAY, trace Silt, medium to high plasticity, no dilatancy, medium stiff, moist.	
	MC-2	5-10	5.0	0.0 0.0		10YR 4/3 brown colorations from 8.8 to 8.9' bgs. 10YR 3/3 dark brown fine to medium silty Sand (dry) at 9.2' bgs. 10YR 4/3 brown colorations from 9.7 to 9.9' bgs.	Borehole backfilled (grout to grade).
10 / 595						5YR 4/4 reddish brown LEAN to FAT CLAY, trace Silt, medium to high plasticity, no dilatancy, medium stiff, moist.	
	MC-3	10-15	5.0	0.0 0.0		10YR 4/2 dark grayish brown coloration from 10 to 13' bgs.	
15 / 590						5YR 4/4 reddish brown FAT CLAY, trace Silt, high plasticity, no dilatancy, medium stiff, moist; GLEY 1 5/10Y greenish gray colorations from 16.2 to 16.5', 17.3 to 17.6', 18 to 18.7' and 19.4 to 19.8' bgs.	

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Remarks: bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

Client: Beazer East, Inc.

Well/Boring ID: **SB-4**

Borehole Depth: 20' bgs

Site Location:
Former Koppers Inc. Facility
Superior, WI

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
585	MC-4	15-20	5.0	0.0 0.0			Borehole backfilled (grout to grade).
20						End of Boring at 20' bgs.	
580 (25)							
575 (30)							
570 (35)							

Remarks: bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

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Date Start/Finish: 8/21/13
Drilling Company: Matrix Environmental, LLC
Driller's Name: Cord Anderson
Drilling Method: Direct Push
Auger Size: NA
Rig Type: Geoprobe
Sampling Method: Macrocore

Northing: 549209.17
Easting: 1446497.78
Casing Elevation: 613.44' AMSL

Borehole Depth: 30' bgs
Surface Elevation: 610.60' AMSL

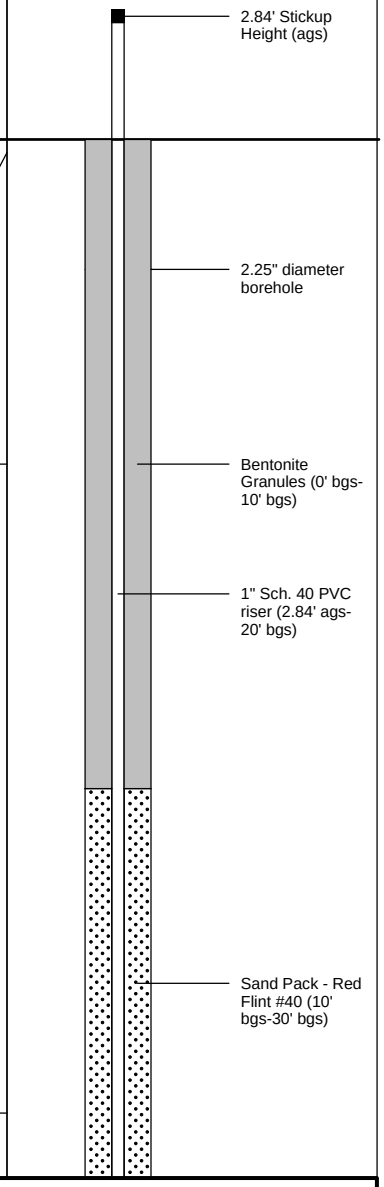
Descriptions By: Kelly Hoehn

Well/Boring ID: **SB-5/TMW-5**

Client: Beazer East, Inc.

Location: Former Koppers Inc. Facility
Superior, WI

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0 / 610	MC-1	0-5	2.3	0.0 0.0		Black SILT (TOPSOIL), some Organics, crumbly, dry. 5YR 4/6 yellowish red FAT CLAY, trace Silt, high plasticity, no dilatancy, stiff, moist.
5 / 605	MC-2	5-10	5.0	0.0 0.0		FAT CLAY, little to trace Silt, high plasticity, no dilatancy, medium stiff to stiff, moist. Large angular Pebbles, dry at 8 to 8.2' and 8.4' bgs. Gray coloration at 8.5 and 8.8' bgs.
10 / 600	MC-3	10-15	5.0	0.0 0.0		Large angular Pebbles, dry at 9.8' bgs. Dark gray coloration from 10 to 15' bgs. Very large angular Pebbles at 10.7' bgs.
15 / 595						10YR 4/4 dark yellowish brown FAT CLAY, little to trace Silt, high plasticity, no dilatancy, medium stiff to soft; dark gray coloration at 15.2 to 15.8', 16.2 to 16.4', 17.4 to 17.8', 18.3', and 19.3 to 19.9' bgs.



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Remarks: ags = above ground surface; bgs = below ground surface; NA - not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

Client: Beazer East, Inc.

Well/Boring ID: **SB-5/TMW-5**

Borehole Depth: 30' bgs

Site Location:
Former Koppers Inc. Facility
Superior, WI

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
		MC-4	15-20	5.0	0.0			1" Sch. 40 PVC riser (2.84' ags-20' bgs)
					0.0			
20	590						10YR 4/4 dark yellowish brown LEAN to FAT CLAY, trace Silt, medium to high plasticity, no dilatancy, soft, moist; 10YR 4/1 dark gray mottling from 20 to 22.8' bgs.	
		MC-5	20-25	5.0	0.0		10YR 4/1 dark gray from 22.8 to 23.8' bgs.	Sand Pack - Red Flint #40 (10' bgs-30' bgs)
					0.0		5YR 4/4 reddish brown from 23.8 to 25' bgs.	
25	585						10YR 4/4 dark yellowish brown LEAN to FAT CLAY, trace Silt, medium to high plasticity, no dilatancy, soft, moist.	1" Sch. 40 PVC Screen Slot Size 0.01" (20' bgs-30' bgs) with pre-pack screen
		MC-6	25-30	5.0	0.0			
					0.0		Dark gray coloration from 28.9 to 29.1' bgs.	
30	580						End of Boring at 30' bgs.	
35	575							

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Remarks: ags = above ground surface; bgs = below ground surface; NA - not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

Date Start/Finish: 8/21/13
Drilling Company: Matrix Environmental, LLC
Driller's Name: Cord Anderson
Drilling Method: Direct Push
Auger Size: NA
Rig Type: Geoprobe
Sampling Method: Macrocore

Northing: 549208.48
Easting: 1446501.06
Casing Elevation: 613.31' AMSL

Borehole Depth: 12' bgs
Surface Elevation: 610.36' AMSL

Descriptions By: Kelly Hoehn

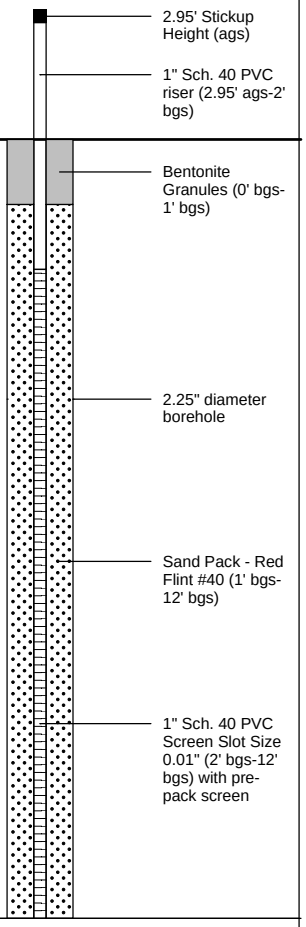
Well/Boring ID: **SB-5A/TMW-5A**

Client: Beazer East, Inc.

Location: Former Koppers Inc. Facility
Superior, WI

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0 / 610	MC-1	0-5	2.2	0.0 0.0		Black SILT (TOPSOIL), some Organics, crumbly, dry. 5YR 4/6 yellowish red FAT CLAY, trace Silt, high plasticity, no dilatancy, stiff, moist.
5 / 605	MC-2	5-10	5.0	0.0 0.0		FAT CLAY, little to trace Silt, high plasticity, no dilatancy, medium stiff to stiff, moist. Large angular Pebbles, dry at 8 to 8.2' and 8.4' bgs. Gray coloration at 8.5 and 8.8' bgs.
10 / 600	NA	10-12	NA	0.0		Large angular Pebbles, dry at 9.8' bgs. Dark gray coloration from 10 to 15' bgs. Very large angular Pebbles at 10.7' bgs.
15 / 595						End of Boring at 12' bgs.

Well/Boring Construction



Remarks: ags = above ground surface; bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

Soil descriptions from SB-5/TMW-5.

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Date Start/Finish: 8/22/13
Drilling Company: Matrix Environmental, LLC
Driller's Name: Cord Anderson
Drilling Method: Direct Push
Auger Size: NA
Rig Type: Geoprobe
Sampling Method: Macrocore

Northing: 548783.19
Easting: 1446135.27
Casing Elevation: NA

Borehole Depth: 25' bgs
Surface Elevation: 604.67' AMSL

Descriptions By: Kelly Hoehn

Well/Boring ID: **SB-6**

Client: Beazer East, Inc.

Location: Former Koppers Inc. Facility
Superior, WI

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
605							
0	MC-1	0-5	2.0	0.0		5YR 3/2 dark reddish brown LEAN to FAT CLAY, trace Silt, medium to high plasticity, no dilatancy, very soft, moist. 5YR 2.5/2 dark reddish brown Organics from 0 to 1' bgs.	
600							
5	MC-2	5-10	3.1	0.1 0.4		5YR 4/3 reddish brown LEAN to FAT CLAY, trace Silt, medium to high plasticity, no dilatancy, very soft to medium stiff, moist. 5YR 3/2 dark reddish brown Organics from 5.7 to 6' bgs.	Borehole backfilled (grout to grade).
595							
10	MC-3	10-15	4.5	0.0		7.5YR 4/4 brown LEAN to FAT CLAY, little Silt, medium to high plasticity, no dilatancy, soft to medium stiff; Clay has air pockets (not dense). Dark gray coloration from 12.6 to 12.8' bgs.	
590							
15						5YR 3/3 dark reddish brown LEAN to FAT CLAY, little Silt, trace Organics, medium to high plasticity, no dilatancy, soft to medium stiff.	

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Remarks: bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

Client: Beazer East, Inc.

Well/Boring ID: **SB-6**

Borehole Depth: 25' bgs

Site Location:
Former Koppers Inc. Facility
Superior, WI

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
		MC-4	15-20	1.3	0.1			
20	585						5YR 3/3 dark reddish brown LEAN to FAT CLAY, little Silt, trace fine to medium Sand, medium to high plasticity, no dilatancy, soft.	Borehole backfilled (grout to grade).
							5YR 3/3 dark reddish brown, LEAN CLAY, little Silt to medium Sand, medium plasticity, no dilatancy, soft.	
		MC-5	20-25	1.1	0.1		Round to subround medium poorly graded SAND, some Clay to Silt, medium dense, well sorted, moist.	
25	580							
							End of Boring at 25' bgs.	
30	575							
35	570							

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Remarks: bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

Date Start/Finish: 8/22/13
Drilling Company: Matrix Environmental, LLC
Driller's Name: Cord Anderson
Drilling Method: Direct Push
Auger Size: NA
Rig Type: Geoprobe
Sampling Method: Macrocore

Northing: 548720.10
Easting: 1445976.39
Casing Elevation: NA

Borehole Depth: 25' bgs
Surface Elevation: 606.12' AMSL

Descriptions By: Kelly Hoehn

Well/Boring ID: **SB-7**

Client: Beazer East, Inc.

Location: Former Koppers Inc. Facility
Superior, WI

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
0 / 605	MC-1	0-5	0.7	0.0		5YR 3/3 dark reddish brown LEAN to FAT CLAY, little Silt, trace Organics, medium to high plasticity, no dilatancy, stiff to medium stiff, moist.	
5 / 600	MC-2	5-10	5.0	0.0 0.0		5YR 4/4 reddish brown LEAN to FAT CLAY, little Silt, medium to high plasticity, no dilatancy, soft to medium stiff, moist. Dark gray coloring and Organics from 5.7 to 6.1' bgs.	Borehole backfilled (grout to grade).
10 / 595	MC-3	10-15	5.0	0.0 0.0		5YR 4/4 reddish brown LEAN to FAT CLAY, little Silt, medium to high plasticity, no dilatancy, soft to medium stiff, moist. Slight dark gray coloring 10 to 12.1' bgs. Black coloring, some to little Silt, trace Organics (wood), very soft, 12.3 to 13.7' bgs.	
15						5YR 4/3 reddish brown LEAN to FAT CLAY, little Silt, medium to high plasticity, no dilatancy, medium stiff to stiff, moist.	

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Remarks: bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

Client: Beazer East, Inc.

Well/Boring ID: **SB-7**

Borehole Depth: 25' bgs

Site Location:
Former Koppers Inc. Facility
Superior, WI

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
	590							
		MC-4	15-20	5.0	0.0			
					0.0			
20							5YR 4/4 reddish brown LEAN to FAT CLAY, little Silt, medium to high plasticity, no dilatancy, soft to medium stiff, moist.	Borehole backfilled (grout to grade).
	585				0.0			
		MC-5	20-25	5.0				
					0.0			
25							End of Boring at 25' bgs.	
	580							
30								
	575							
35								

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Remarks: bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

Date Start/Finish: 8/22/13 **Drilling Company:** Matrix Environmental, LLC **Driller's Name:** Cord Anderson **Drilling Method:** Direct Push **Auger Size:** NA **Rig Type:** Geoprobe **Sampling Method:** Macrocore	**Northing:** 548590.80 **Easting:** 1445940.49 **Casing Elevation:** 609.07' AMSL **Borehole Depth:** 30' bgs **Surface Elevation:** 605.27' AMSL **Descriptions By:** Kelly Hoehn	**Well/Boring ID:** **SB-8/TMW-8** **Client:** Beazer East, Inc. **Location:** Former Koppers Inc. Facility Superior, WI

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
								3.80' Stickup Height (ags)
0	605	MC-1	0-5	2.4	0.0		5YR 3/3 dark reddish brown LEAN to FAT CLAY, little Silt and Organics (wood pieces), medium to high plasticity, no dilatancy, soft, moist.	2.25" diameter borehole
5	600	MC-2	5-10	4.6	0.0 0.0		5YR 2.5/2 dark reddish brown (mottled black/reddish brown) LEAN to FAT CLAY, little to trace Silt, medium to high plasticity, no dilatancy. Brown/black Wood pieces, wet from 5.4 to 5.5' bgs. Organics (wood) at 6.3' bgs. 5YR 3/3 dark reddish brown from 7.6 to 10' bgs.	1" Sch. 40 PVC riser (3.80' ags-20' bgs) Bentonite Granules (0' bgs-16.5' bgs)
10	595	MC-3	10-15	5.0	0.0 0.0		5YR 4/4 reddish brown LEAN to FAT CLAY, little to trace Silt, medium to high plasticity, no dilatancy, medium stiff to stiff, moist; dark gray coloration at 12.1 to 12.6', 13.2 to 13.3', 14.3 to 14.' bgs.	
15	590						10YR 4/4 dark yellowish brown FAT CLAY, little Silt, trace small to medium Pebbles, medium to high plasticity, no dilatancy, medium stiff to soft, moist; slight dark gray mottling throughout.	

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Remarks: ags = above ground surface; bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

Client: Beazer East, Inc.

Well/Boring ID: **SB-8/TMW-8**

Borehole Depth: 30' bgs

Site Location:
Former Koppers Inc. Facility
Superior, WI

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
		MC-4	15-20	5.0	0.0 0.0			Bentonite Granules (0' bgs-16.5' bgs) 1" Sch. 40 PVC riser (3.80' ags-20' bgs)
20	585	MC-5	20-25	5.0	0.0 0.0		LEAN to FAT CLAY, little Silt, medium to high plasticity, no dilatancy, medium stiff to stiff, moist; 5YR 4/3 reddish brown at 20 to 20.1', 20.2 to 20.8' and 21.4 to 21.8' bgs; 5YR 3/3 dark reddish brown at 23.9 to 25' bgs; and 10YR 4/1 dark gray at 20.1 to 20.2', 20.8 to 21.4' and 21.8 to 23.9' bgs. Slightly moist to dry from 21.8 to 23.9' bgs. Large Pebbles at 22.4' bgs.	Sand Pack - Red Flint #40 (16.5' bgs-30' bgs)
25	580	MC-6	25-30	5.0	0.0 0.0		5YR 4/4 reddish brown LEAN to FAT CLAY, little Silt, medium to high plasticity, no dilatancy, soft, moist.	1" Sch. 40 PVC Screen Slot Size 0.01" (20' bgs-30' bgs) with pre-pack screen
30	575						End of Boring at 30' bgs.	
35	570							

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Remarks: ags = above ground surface; bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

Date Start/Finish: 8/22/13
Drilling Company: Matrix Environmental, LLC
Driller's Name: Cord Anderson
Drilling Method: Direct Push
Auger Size: NA
Rig Type: Geoprobe
Sampling Method: Macrocore

Northing: 548588.18
Easting: 1445938.60
Casing Elevation: 608.30' AMSL

Borehole Depth: 12' bgs
Surface Elevation: 605.29' AMSL

Descriptions By: Kelly Hoehn

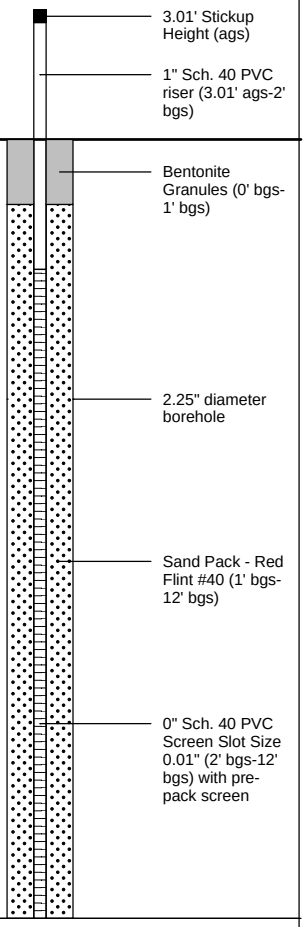
Well/Boring ID: **SB-8A/TMW-8A**

Client: Beazer East, Inc.

Location: Former Koppers Inc. Facility
Superior, WI

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	605	MC-1	0-5	2.4	0.0		5YR 3/3 dark reddish brown LEAN to FAT CLAY, little Silt and Organics (wood pieces), medium to high plasticity, no dilatancy, soft, moist.
5	600	MC-2	5-10	4.6	0.0		5YR 2.5/2 dark reddish brown (mottled black/reddish brown) LEAN to FAT CLAY, little to trace Silt, medium to high plasticity, no dilatancy. Brown/black Wood pieces, wet from 5.4 to 5.5' bgs. Organics (wood) at 6.3' bgs. 5YR 3/3 dark reddish brown from 7.6 to 10' bgs.
10	595	NA	10-12	NA	0.0		5YR 4/4 reddish brown LEAN to FAT CLAY, little to trace Silt, medium to high plasticity, no dilatancy, medium stiff to stiff, moist.
15	590						End of Boring at 12' bgs.

Well/Boring Construction



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Remarks: ags = above ground surface; bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

Soil descriptions from SB-8/TMW-8.

Date Start/Finish: 8/22/13
Drilling Company: Matrix Environmental, LLC
Driller's Name: Cord Anderson
Drilling Method: Direct Push
Auger Size: NA
Rig Type: Geoprobe
Sampling Method: Macrocore

Northing: 547302.72
Easting: 1446174.68
Casing Elevation: NA

Borehole Depth: 25' bgs
Surface Elevation: 611.29' AMSL

Descriptions By: Kelly Hoehn

Well/Boring ID: **SB-9**

Client: Beazer East, Inc.

Location: Former Koppers Inc. Facility
Superior, WI

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
0 / 610	MC-1	0-5	3.3	0.0 0.0		Black SILT (TOPSOIL) and Organics, no plasticity, no dilatancy, dry. 2.5YR 4/4 reddish brown, LEAN to FAT CLAY, trace Silt, medium to high plasticity, no dilatancy, medium stiff to stiff, moist.	
5 / 605	MC-2	5-10	5.0	0.0 0.0		5YR 4/4 reddish brown, LEAN to FAT CLAY, trace Silt to medium Sand, trace small to medium Pebbles, subround to angular, medium to high plasticity, no dilatancy, moist.	Borehole backfilled (grout to grade).
10 / 600	MC-3	10-15	5.0	0.0 0.0		5YR 4/4 reddish brown, LEAN to FAT CLAY, little to trace Silt, medium to high plasticity, no dilatancy, medium stiff, moist. Dark gray/green coloration from 12 to 12.2' bgs.	
15						5YR 4/4 reddish brown, LEAN to FAT CLAY, little Silt, medium to high plasticity, no dilatancy, medium stiff, moist. Medium Pebbles at 15.4' bgs.	

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Remarks: bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

Client: Beazer East, Inc.

Well/Boring ID: **SB-9**

Borehole Depth: 25' bgs

Site Location:
Former Koppers Inc. Facility
Superior, WI

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
595	MC-4	15-20	5.0	0.0 0.0		Medium Pebbles at 17.1' bgs.	
20							
590	MC-5	20-25	5.0	0.0 0.0		5YR 4/3 reddish brown, FAT CLAY, little Silt, medium to high plasticity, no dilatancy, soft, moist to very moist.	Borehole backfilled (grout to grade).
25						End of Boring at 25' bgs.	
585							
30							
580							
35							

Remarks: bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

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Date Start/Finish: 8/22/13
Drilling Company: Matrix Environmental, LLC
Driller's Name: Cord Anderson
Drilling Method: Direct Push
Auger Size: NA
Rig Type: Geoprobe
Sampling Method: Macrocore

Northing: 547353.41
Easting: 14466292.55
Casing Elevation: NA

Borehole Depth: 25' bgs
Surface Elevation: 611.9' AMSL

Descriptions By: Kelly Hoehn

Well/Boring ID: **SB-10**

Client: Beazer East, Inc.

Location: Former Koppers Inc. Facility
Superior, WI

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
0 / 610	MC-1	0-5	2.3	0.0		Black SILT (TOPSOIL), trace Organics, crumbly, dry. 5YR 4/4 reddish brown LEAN to FAT CLAY, trace Silt, medium to high plasticity, no dilatancy, medium stiff, moist.	
5 / 605	MC-2	5-10	5.0	0.0 0.0		5YR 4/4 reddish brown LEAN to FAT CLAY, little Silt, trace fine Sand, medium Sand to medium Pebbles, medium to high plasticity, no dilatancy, medium stiff, moist.	Borehole backfilled (grout to grade).
10 / 600	MC-3	10-15	4.2	0.0 0.0		5YR 4/4 reddish brown LEAN to FAT CLAY, little Silt, medium to high plasticity, no dilatancy, medium stiff to stiff, moist; dark grayish green coloration at 10.1 to 10.2', 10.5 to 10.7', 12.4 to 12.8', 13 to 13.1' and 13.8 to 14.2' bgs. Large Pebbles from 11.1 to 11.2' bgs. Large Pebbles from 11.7 to 12' bgs.	
15						7.5YR 4/2 brown (with dark gray mottling) FAT CLAY, little Silt, high plasticity, no dilatancy, moist to very moist. Medium stiff from 15 to 15.9' bgs.	

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Remarks: bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

Client: Beazer East, Inc.

Well/Boring ID: **SB-10**

Borehole Depth: 25' bgs

Site Location:
Former Koppers Inc. Facility
Superior, WI

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
595	MC-4	15-20	4.7	0.0 0.0		5YR 3/3 dark reddish brown, soft from 15.9 to 19.7' bgs.	
20						10YR 3/2 very dark grayish brown, soft from 19.6 to 20' bgs.	
590	MC-5	20-25	5.0	0.0 0.0		2.5Y 4/1 dark gray LEAN to FAT CLAY, little Silt, medium to high plasticity, no dilatancy, medium stiff, moist. 5YR 4/3 reddish brown at 20.3' bgs. 5YR 4/3 reddish brown LEAN CLAY, some to little fine to medium Sand and Silt, trace coarse Sand to small Pebbles, subround to subangular, medium plasticity, no dilatancy, medium stiff to stiff, moist. 5YR 4/4 reddish brown LEAN to FAT CLAY, trace Silt, medium to high plasticity, no dilatancy, medium stiff, moist.	Borehole backfilled (grout to grade).
25						End of Boring at 25' bgs.	
585							
30							
580							
35							

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Remarks: bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

Date Start/Finish: 8/22/13 **Drilling Company:** Matrix Environmental, LLC **Driller's Name:** Cord Anderson **Drilling Method:** Direct Push **Auger Size:** NA **Rig Type:** Geoprobe **Sampling Method:** Macrocore	**Northing:** 547656.77 **Easting:** 1446287.34 **Casing Elevation:** 614.19' AMSL **Borehole Depth:** 30' bgs **Surface Elevation:** 611.01' AMSL **Descriptions By:** Kelly Hoehn	**Well/Boring ID:** **SB-11/TMW-11** **Client:** Beazer East, Inc. **Location:** Former Koppers Inc. Facility Superior, WI

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
								3.18' Stickup Height (ags)
0	610	MC-1	0-5	3.5	0.0 0.0		Black SILT (TOPSOIL), trace Organics (roots), crumbly, dry. 5YR 4/4 reddish brown LEAN CLAY, trace Silt, medium plasticity, no dilatancy, hard, slightly moist. 5YR 3/3 dark reddish brown with Roots from 1 to 1.3' and 1.9 to 2.0' bgs.	2.25" diameter borehole
5	605	MC-2	5-10	5.0	0.0 0.0		2.5YR 4/4 reddish brown LEAN to FAT CLAY, trace Silt and medium Sand, subangular, medium to high plasticity, no dilatancy, very stiff to stiff, moist.	1" Sch. 40 PVC riser (3.18' ags-20' bgs) Bentonite Granules (0' bgs-19' bgs)
10	600	MC-3	10-15	5.0	0.0 0.0		5YR 4/4 reddish brown LEAN to FAT CLAY, little Silt, trace medium Sand to medium Pebbles, subangular, medium to high plasticity, no dilatancy, medium stiff, moist. Dark reddish brown CLAYEY SAND, medium to coarse, some very coarse Sand to medium Pebbles, subround to angular, dense, slightly moist.	
15	595						5YR 4/4 reddish brown LEAN to FAT CLAY, little Silt, trace medium Sand to medium Pebbles, subangular, medium to high plasticity, no dilatancy, soft to medium stiff, moist.	

Remarks: ags = above ground surface; bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

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Client: Beazer East, Inc.

Well/Boring ID: **SB-11/TMW-11**

Borehole Depth: 30' bgs

Site Location:
Former Koppers Inc. Facility
Superior, WI

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
		MC-4	15-20	5.0	0.0			Bentonite Granules (0' bgs-19' bgs)
					0.0			1" Sch. 40 PVC riser (3.18' ags-20' bgs)
20	590						Soft, very moist from 20 to 25' bgs.	
		MC-5	20-25	5.0	0.0			Sand Pack - Red Flint #40 (19' bgs-30' bgs)
					0.0			
25	585	MC-6	25-30	4.8	0.0		5YR 4/4 reddish brown LEAN to FAT CLAY, little Silt, medium to high plasticity, no dilatancy, soft, very moist; 5YR 4/3 reddish brown from 26.3 to 27.1' bgs.	1" Sch. 40 PVC Screen Slot Size 0.01" (20' bgs-30' bgs) with pre-pack screen
							7.5YR 4/1 dark gray (mottled with reddish brown) LEAN to FAT CLAY, little Silt, medium to high plasticity, no dilatancy, medium stiff, moist.	
					0.0		5YR 4/3 reddish brown LEAN to FAT CLAY, little Silt, medium to high plasticity, no dilatancy, medium stiff, moist.	
30	580						End of Boring at 30' bgs.	
35								

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Date Start/Finish: 8/22/13
Drilling Company: Matrix Environmental, LLC
Driller's Name: Cord Anderson
Drilling Method: Direct Push
Auger Size: NA
Rig Type: Geoprobe
Sampling Method: Macrocore

Northing: 547655.77
Easting: 1446285.27
Casing Elevation: 613.33' AMSL

Borehole Depth: 12' bgs
Surface Elevation: 610.37' AMSL

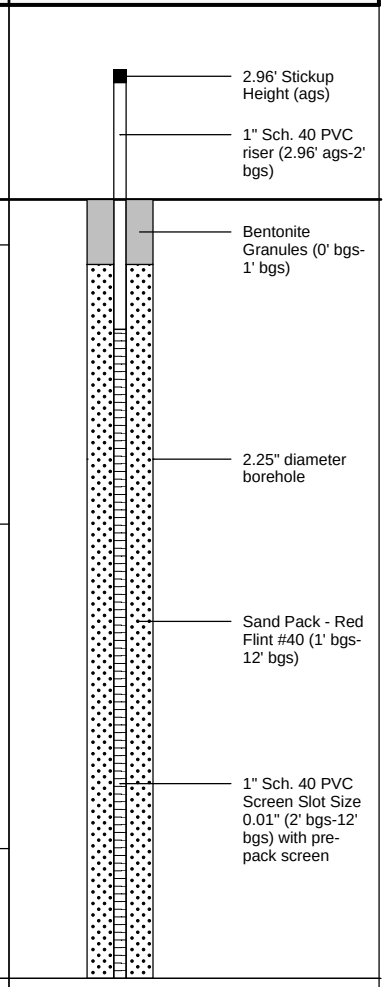
Descriptions By: Kelly Hoehn

Well/Boring ID: **SB-11A/TMW-11A**

Client: Beazer East, Inc.

Location: Former Koppers Inc. Facility
Superior, WI

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	610						Black SILT (TOPSOIL), trace Organics (roots), crumbly, dry.
		MC-1	0-5	3.5	0.0		5YR 4/4 reddish brown LEAN CLAY, trace Silt, medium plasticity, no dilatancy, hard, slightly moist.
					0.0		5YR 3/3 dark reddish brown with Roots from 1 to 1.3' and 1.9 to 2.0' bgs.
5	605	MC-2	5-10	5.0	0.0		2.5YR 4/4 reddish brown LEAN to FAT CLAY, trace Silt and medium Sand, subangular, medium to high plasticity, no dilatancy, very stiff to stiff, moist.
					0.0		
10	600	NA	10-12	NA	0.0		5YR 4/4 reddish brown LEAN to FAT CLAY, little Silt, trace medium Sand to medium Pebbles, subangular, medium to high plasticity, no dilatancy, medium stiff, moist.
15	595						End of Boring at 12' bgs.



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Soil descriptions from SB-11/TMW-11.

Date Start/Finish: 9/12/13
Drilling Company: Matrix Environmental, LLC
Driller's Name: Cord Anderson
Drilling Method: Direct Push
Auger Size: NA
Rig Type: Geoprobe
Sampling Method: Macrocore

Northing: 547739.33
Easting: 1446059.83
Casing Elevation: 611.63' AMSL

Borehole Depth: 15' bgs
Surface Elevation: 608.42' AMSL

Descriptions By: Kelly Hoehn

Well/Boring ID: **SB-12A/TMW-12A**

Client: Beazer East, Inc.

Location: Former Koppers Inc. Facility
Superior, WI

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
610						
0						5YR 3/3 dark reddish brown LEAN to FAT CLAY, little Silt, Organics, medium to high plasticity, soft to medium stiff, moist; mild creosote-like odor.
						Black SILT, some Clay, Organics, low plasticity, no dilatancy; moderate creosote-like odor; sheen, black/brown staining on Organics.
						5YR 3/2 dark reddish brown LEAN to FAT CLAY, little Silt, trace Organics, medium to high plasticity, no dilatancy, soft, moist; creosote-like odor, minor black/brown staining.
605	MC-1	0-5	1.6	97.7		
5						5YR 3/3 dark reddish brown LEAN to FAT CLAY, little Silt, medium to high plasticity, no dilatancy, soft to medium stiff, moist; black/brown staining and moderate sheen throughout; stong creosote-like odor, creosote-like product leaching out.
				84.9		
	MC-2	5-10	3.5			
600				80.0		Organic parting, black, fibrous, strong creosote-like odor at 8.3' bgs.
10						Medium stiff from 10 to 14' bgs.
				90.5		
	MC-3	10-15	4.8			
595						
				173		5YR 3/3 dark reddish brown LEAN to FAT CLAY, some Silt to fine Sand, medium to high plasticity, no dilatancy, soft, moist; creosote-like odor.
15						End of Boring at 15' bgs.

Well/Boring Construction

- 3.21' Stickup Height (ags)
- 1" Sch. 40 PVC riser (3.21' ags-5' bgs)
- Bentonite Granules (0' bgs-3.5' bgs)
- 2.25" diameter borehole
- Sand Pack - Red Flint #40 (3.5' bgs-15' bgs)
- 1" Sch. 40 PVC Screen Slot Size 0.01" (5' bgs-15' bgs) with pre-pack screen

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Date Start/Finish: 9/12/13 **Drilling Company:** Matrix Environmental, LLC **Driller's Name:** Cord Anderson **Drilling Method:** Direct Push **Auger Size:** NA **Rig Type:** Geoprobe **Sampling Method:** Macrocore	**Northing:** 547743.12 **Easting:** 1446058.36 **Casing Elevation:** 612.02' AMSL **Borehole Depth:** 30' bgs **Surface Elevation:** 608.28' AMSL **Descriptions By:** Kelly Hoehn	**Well/Boring ID:** **SB-12B/TMW-12B** **Client:** Beazer East, Inc. **Location:** Former Koppers Inc. Facility Superior, WI

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
610							3.74' Stickup Height (ags)
0						10YR 3/3 dark brown LEAN CLAY, Organics, medium plasticity, no to slow dilatancy, very soft, moist to wet; slight creosote-like odor; 10YR 2/1 black, strong creosote-like odor, staining visible from 0.4 to 0.8' bgs.	
	MC-1	0-5	0.8	226		10YR 3/3 dark brown LEAN CLAY, Organics, medium plasticity, no to slow dilatancy, very soft, moist to wet; slight creosote-like odor.	2.25" diameter borehole
605							
5						5YR 3/3 dark reddish brown LEAN CLAY, little Silt, medium plasticity, no dilatancy, soft to medium stiff. Minor creosote-like odor/staining from 5 to 5.8' bgs. Organics, strong creosote-like odor/staining at 5.8' bgs. Heavy to moderate black/brown creosote-like staining, creosote-like product leaching out of Clay from 5.8 to 10' bgs.	
	MC-2	5-10	2.8	278			1" Sch. 40 PVC riser (3.74' ags-25' bgs) Bentonite Granules (0' bgs-23' bgs)
600							
10						5YR 3/3 dark reddish brown LEAN to FAT CLAY, trace Silt, medium to high plasticity, no dilatancy, medium stiff to soft, moist; minor black/brown staining and creosote-like odor from 10 to 11.3' bgs.	
				309		Moderate to heavy black/brown staining (creosote-like product leaching from Clay) from 11.3 to 14' bgs.	
	MC-3	10-15	4.9				
595				388			
						Aerated, minor black/brown staining from 14 to 15' bgs.	
15						5YR 3/3 dark reddish brown LEAN CLAY, some fine to medium Sand, trace coarse Sand to granules, round to subangular, trace organics, medium plasticity, no dilatancy, soft to very soft, moist to wet; black/brown staining, creosote-like odor from 15 to 15.2' bgs.	
				124			

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Client: Beazer East, Inc.

Well/Boring ID: **SB-12B/TMW-12B**

Borehole Depth: 30' bgs

Site Location:
Former Koppers Inc. Facility
Superior, WI

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
							Coarse SAND, trace fine to medium Sand and very coarse Sand, subround to subangular, saturated with creosote-like product; heavy creosote-like odor and black/brown staining.	
		MC-4	15-20	3.1	53.9		5YR 3/3 dark reddish brown LEAN CLAY, some fine to medium Sand, trace coarse Sand to granules, round to subangular, trace Organics, medium plasticity, no dilatancy, soft to very soft, moist to wet; organics, wet; creosote-like odor from 16.8 to 17.0' bgs.	Bentonite Granules (0' bgs-23' bgs)
20	590						5YR 3/3 dark reddish brown LEAN CLAY, little Silt to fine Sand, trace medium to coarse Sand and Organics with creosote-like odor, medium plasticity, no dilatancy, aerated, medium stiff, moist. Some medium to very coarse Sand, subangular to angular from 18 to 18.1' bgs.	
					419		Medium SAND to GRANULES, little Clay to very fine Sand, poorly sorted, loose, wet; heavy black/brown staining, saturated with creosote-like product.	1" Sch. 40 PVC riser (3.74' ags-25' bgs)
							LEAN to FAT CLAY, some to little fine to medium Sand, medium to high plasticity, no dilatancy, aerated, soft, moist; minor creosote-like odor; organics, strong creosote-like odor, black staining at 21.7 to 21.8' bgs.	
		MC-5	20-25	3.1			Medium Sand parting, wet; creosote-like odor, minor sheen at 22.3' bgs. Organics, strong creosote-like odor at 22.6 to 22.7' bgs.	Sand Pack - Red Flint #40 (23' bgs-30' bgs)
25	585				111			
					444		5YR 3/3 dark reddish brown LEAN to FAT CLAY, some to little fine to medium Sand, medium to high plasticity, no dilatancy, aerated, soft, moist, creosote-like odor; medium Sand, moist; creosote-like odor, sheen at 26.6' bgs. Organics (wood), wet, creosote-like odor, minimal black staining at 25.1', 25.4' and 25.6 to 25.8' bgs.	
							Medium to coarse SAND, little very coarse Sand, subround to subangular, well sorted, very loose, wet; very heavy black staining, saturated with creosote-like product, strong creosote-like odor.	
		MC-6	25-30	5.0			5YR 3/3 dark reddish brown LEAN to FAT CLAY, little Silt, trace very fine Sand, medium to high plasticity, no dilatancy, medium stiff to soft, moist; very minor creosote-like odor.	1" Sch. 40 PVC Screen Slot Size 0.01" (25' bgs-30' bgs) with pre-pack screen
30	580				277			
							End of Boring at 30' bgs.	
35	575							

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Date Start/Finish: 8/23/13 **Drilling Company:** Matrix Environmental, LLC **Driller's Name:** Cord Anderson **Drilling Method:** Direct Push/Hollow-Stem Auger **Auger Size:** NA/10" OD; 4.25" ID **Rig Type:** Geoprobe/Track-Mounted Rig **Sampling Method:** Macrocore/NA	**Northing:** 547740.30 **Easting:** 1446056.04 **Casing Elevation:** 611.93' AMSL **Borehole Depth:** 40' bgs **Surface Elevation:** 608.42' AMSL **Descriptions By:** Kelly Hoehn	**Well/Boring ID:** **SB-12/TMW-12C** **Client:** Beazer East, Inc. **Location:** Former Koppers Inc. Facility Superior, WI

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
	610							3.51' Stickup Height (ags)
0							5YR 3/3 dark reddish brown LEAN CLAY, Organics, medium plasticity, no dilatancy, medium stiff to stiff, slightly moist; creosote-like odor.	
							Black SILT, little Clay, Organics, soft, moist; creosote-like odor, black staining at 0.8' bgs.	
		MC-1	0-5	1.5	39.3		5YR 3/3 dark reddish brown LEAN to FAT CLAY, little Silt, medium to high plasticity, no dilatancy, very soft to soft, moist; creosote-like odor.	10" diameter borehole
	605							
5							5YR 3/3 dark brown LEAN to FAT CLAY, little Silt, medium to high plasticity, no dilatancy, soft to medium stiff, moist; black/brown staining, strong creosote-like odor, creosote-like product leaching out of Clay.	
					60		Organics with creosote-like product leaching out, strong odor/staining from 5.2 to 5.3', 5.6 to 5.7' and 5.8 to 6.6' bgs.	1" Sch. 40 PVC riser (3.51' ags-35' bgs)
		MC-2	5-10	4.2				
	600				49.4			Bentonite Granules (0' bgs-31.5' bgs)
10							5YR 3/3 dark reddish brown LEAN to FAT CLAY, little Silt, trace Organics, medium to high plasticity, no dilatancy, medium stiff to very soft, moist to very moist; black/brown staining, strong creosote-like odor.	
					70.5		Heavy creosote-like staining at 10.2 to 10.3', 11.3 to 11.5' and 13.4 to 14.6' bgs.	
		MC-3	10-15	5.0				
	595				98.0			
							Aerated, little very fine to fine Sand from 14.2 to 14.5' bgs.	
15							5YR 3/3 dark reddish brown LEAN CLAY, some very fine to medium Sand, little Organics, medium plasticity, no dilatancy, very soft to soft, moist to very moist, minor creosote-like odor.	

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Analytical samples collected from 30-30.5' bgs and 30.5-31' bgs. Well installation completed 9/12/13.

Client: Beazer East, Inc.

Well/Boring ID: **SB-12/TMW-12C**

Borehole Depth: 40' bgs

Site Location:
Former Koppers Inc. Facility
Superior, WI

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
						Medium Sand seam at 16.5 to 16.6' bgs.	
	MC-4	15-20	1.9	6.3			
590							
20						5YR 3/3 dark reddish brown LEAN to FAT CLAY, some Silt to medium Sand, little Organics, medium to high plasticity, no dilatancy, very soft to soft, moist, slight creosote-like odor.	
	MC-5	20-25	1.7	5.8			
585							
25						5YR 3/2 dark reddish brown LEAN to FAT CLAY, some fine to medium Sand, medium to high plasticity, no dilatancy, very soft, moist; interbedded with CLAYEY SAND, fine to medium, little coarse, trace very coarse Sand to large Pebbles, round to subangular, loose to very loose; black/brown staining, strong creosote-like odor; saturated with creosote-like product - heaviest from 26.6 to 26.8' and 27.4 to 27.8' bgs.	
				41.6			
	MC-6	25-30	5.0	70.7			
580						5YR 3/3 dark reddish brown LEAN to FAT CLAY, little Silt, medium to high plasticity, no dilatancy, soft, moist; creosote-like odor and minor creosote-like product leaching out of Clay (black/brown staining).	
30							
				5.2		5YR 3/3 dark reddish brown LEAN to FAT CLAY, little Silt, medium to high plasticity, no dilatancy, soft.	
	MC-7	30-35	5.0				
575				2.2			
35							

Bentonite Granules (0' bgs-31.5' bgs)

1" Sch. 40 PVC riser (3.51' ags-35' bgs)

Sand Pack - Red Flint #40 (31.5' bgs-40' bgs)

1" Sch. 40 PVC Screen Slot Size 0.01" (35' bgs-40' bgs) with pre-

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Analytical samples collected from 30-30.5' bgs and 30.5-31' bgs. Well installation completed 9/12/13.

Client: Beazer East, Inc.

Well/Boring ID: **SB-12/TMW-12C**

Borehole Depth: 40' bgs

Site Location:
Former Koppers Inc. Facility
Superior, WI

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
	MC-8	35-38	3.0	2.5 2.6			pack screen 1" Sch. 40 PVC Screen Slot Size 0.01" (35' bgs-40' bgs) with pre-pack screen
570	NA	38-40	NA	NA		Blind augered to 40' bgs.	Sand Pack - Red Flint #40 (31.5' bgs-40' bgs)
40						End of Boring at 40' bgs.	
565							
45							
560							
50							
555							
55							

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Remarks: ags = above ground surface; bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore; ID = inside diameter; OD = outside diameter.

Analytical samples collected from 30-30.5' bgs and 30.5-31' bgs. Well installation completed 9/12/13.

Date Start/Finish: 9/12/13
Drilling Company: Matrix Environmental, LLC
Driller's Name: Cord Anderson
Drilling Method: Direct Push
Auger Size: NA
Rig Type: Geoprobe
Sampling Method: Macrocore

Northing: 547835.17
Easting: 1446105.82
Casing Elevation: NA

Borehole Depth: 30' bgs
Surface Elevation: 608.14' AMSL

Descriptions By: Kelly Hoehn

Well/Boring ID: **SB-13**

Client: Beazer East, Inc.

Location: Former Koppers Inc. Facility
Superior, WI

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
610							
0							
	MC-1	0-5	2.8	0.0		5YR 4/4 reddish brown LEAN to FAT CLAY, trace Silt, medium to high plasticity, no dilatancy, soft to medium stiff. Black SILT, Organics, little Clay, moist to wet from 0.3 to 0.4' bgs. Black coloration at 1 to 1.1' bgs. Creosote-like odor and black staining at 2.5' bgs.	
605							
5	MC-2	5-10	5.0	0.0 0.0		5YR 4/4 reddish brown LEAN to FAT CLAY, trace Silt to very fine Sand, trace fine Sand, medium to high plasticity, no dilatancy, medium stiff to stiff, moist, aerated.	Borehole backfilled (grout to grade).
600							
10	MC-3	10-15	5.0	0.0 0.0		2.5YR 4/4 reddish brown LEAN to FAT CLAY, trace Silt to very fine Sand, medium to high plasticity, no dilatancy, medium stiff to stiff.	
595							
15							

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Remarks: bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

Client: Beazer East, Inc.

Well/Boring ID: **SB-13**

Borehole Depth: 30' bgs

Site Location:
Former Koppers Inc. Facility
Superior, WI

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
590	MC-4	15-20	5.0	0.0 0.0		10YR 4/2 dark grayish brown LEAN to FAT CLAY, little Silt, medium to high plasticity, no dilatancy, soft; 10YR 4/1 dark gray and 2.5YR 4/4 reddish brown mottling.	
20							
						Soft to medium stiff (dry lenses) from 20 to 22.4' bgs.	
	MC-5	20-25	5.0	0.0 0.0		5YR 4/3 reddish brown LEAN to FAT CLAY, some to little Silt, medium to high plasticity, soft, moist.	Borehole backfilled (grout to grade).
585							
25							
	MC-6	25-30	5.0	0.0 0.0			
580							
30						End of Boring at 30' bgs.	
575							
35							

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Remarks: bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

Date Start/Finish: 9/13/13
Drilling Company: Matrix Environmental, LLC
Driller's Name: Cord Anderson
Drilling Method: Direct Push
Auger Size: NA
Rig Type: Geoprobe
Sampling Method: Macrocore

Northing: 548110.59
Easting: 1446100.96
Casing Elevation: NA

Borehole Depth: 25' bgs
Surface Elevation: 607.49' AMSL

Descriptions By: Kelly Hoehn

Well/Boring ID: **SB-14**

Client: Beazer East, Inc.

Location: Former Koppers Inc. Facility
Superior, WI

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
610							
0							
				1.3		LEAN CLAY, some Roots, medium plasticity, no dilatancy, stiff, slightly moist.	
						5YR 4/4 reddish brown LEAN CLAY, trace Silt, medium plasticity, no dilatancy, stiff to very stiff, moist; 5YR 3/2 dark reddish brown from 0.4 to 0.8' bgs.	
605	MC-1	0-5	2.7	1.2			
5						2.5YR 4/4 reddish brown LEAN to FAT CLAY, little Silt, medium to high plasticity, no dilatancy, stiff to medium stiff, moist; trace Organics from 5 to 5.3' bgs.	
				0.8			
600	MC-2	5-10	5.0	0.4			Borehole backfilled (grout to grade).
10						5YR 4/4 reddish brown LEAN to FAT CLAY, little Silt, medium to high plasticity, no dilatancy, medium stiff, moist (sticky).	
				1.7			
595	MC-3	10-15	5.0	1.2			
15						2.5YR 4/4 reddish brown LEAN to FAT CLAY, little Silt, medium to high plasticity, no dilatancy, soft to medium stiff, moist.	

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Remarks: bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

Client: Beazer East, Inc.

Well/Boring ID: **SB-14**

Borehole Depth: 25' bgs

Site Location:
Former Koppers Inc. Facility
Superior, WI

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
590	MC-4	15-20	4.8	1.8 2.2			
20						5YR 4/4 reddish brown CLAY, little Silt, trace medium to coarse Sand, subangular, medium to high plasticity, no dilatancy, soft to medium stiff.	Borehole backfilled (grout to grade).
585	MC-5	20-25	5.0	2.2 2.5		Mottled 5YR 4/2 dark reddish gray and 5YR 4/4 reddish brown from 22 to 25' bgs. Dark gray seam, dry from 24.7 to 24.8' bgs.	
25						End of Boring at 25' bgs.	
580							
30							
575							
35							

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Remarks: bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

Date Start/Finish: 9/13/13
Drilling Company: Matrix Environmental, LLC
Driller's Name: Cord Anderson
Drilling Method: Direct Push
Auger Size: NA
Rig Type: Geoprobe
Sampling Method: Macrocore

Northing: 548458.45
Easting: 1446018.08
Casing Elevation: NA

Borehole Depth: 25' bgs
Surface Elevation: 607.06' AMSL

Descriptions By: Kelly Hoehn

Well/Boring ID: **SB-15**

Client: Beazer East, Inc.

Location: Former Koppers Inc. Facility
Superior, WI

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
610							
0 / 607						2.5YR 4/3 reddish brown LEAN to FAT CLAY, little Silt, medium to high plasticity, no dilatancy, medium stiff to stiff, moist; aerated, Organics throughout; black colorations from 0 to 0.5' bgs.	
605	MC-1	0-5	2.9	0.0 0.0			
5						5YR 4/3 reddish brown LEAN to FAT CLAY, little Silt, medium to high plasticity, no dilatancy, soft, moist (sticky), aerated.	
600	MC-2	5-10	1.2	0.0			Borehole backfilled (grout to grade).
10							
595	MC-3	10-15	1.4	0.0			
15						5YR 3/3 dark reddish brown LEAN to FAT CLAY, little Silt, trace fine to medium Sand, medium to high plasticity, no dilatancy, soft, moist; Organics throughout.	

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Remarks: bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

Client: Beazer East, Inc.

Well/Boring ID: **SB-15**

Borehole Depth: 25' bgs

Site Location:
Former Koppers Inc. Facility
Superior, WI

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
590	MC-4	15-20	1.9	0.0		Some to little Silt to coarse Sand, subround to angular, wet from 15.5 to 16' bgs.	
20						5YR 3/3 dark reddish brown LEAN to FAT CLAY, little Silt to medium Sand, trace Organics, medium to high plasticity, no dilatancy, soft, very moist to wet.	Borehole backfilled (grout to grade).
585	MC-5	20-25	4.8	0.0		5YR 3/3 dark reddish brown LEAN to FAT CLAY, little Silt, medium to high plasticity, no dilatancy, very soft to soft, very moist to wet.	
				0.0		Organics (wood/roots) from 23 to 23.2' and 23.3 to 23.7' bgs.	
25						Little medium Sand, Organics from 24.2 to 24.5' bgs.	
						End of Boring at 25' bgs.	
580							
30							
575							
35							

Remarks: bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

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Date Start/Finish: 9/13/13
Drilling Company: Matrix Environmental, LLC
Driller's Name: Cord Anderson
Drilling Method: Direct Push
Auger Size: NA
Rig Type: Geoprobe
Sampling Method: Macrocore

Northing: 548464.97
Easting: 1446006.08
Casing Elevation: NA

Borehole Depth: 35' bgs
Surface Elevation: 606.54' AMSL

Descriptions By: Kelly Hoehn

Well/Boring ID: **SB-16**

Client: Beazer East, Inc.

Location: Former Koppers Inc. Facility
Superior, WI

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
0 / 605	MC-1	0-5	1.1	0.0		5YR 3/3 dark reddish brown LEAN to FAT CLAY, medium to high plasticity, no dilatancy, medium stiff, moist; Organics from 0 to 0.3' bgs. Trace Organics, black staining and creosote-like odor from 0.6 to 0.8' bgs. Aerated from 0.8 to 1.1' bgs.	
5 / 600	MC-2	5-10	1.7	0.0		5YR 3/3 dark reddish brown LEAN to FAT CLAY, little Silt, trace Organics and very fine Sand, medium to high plasticity, no dilatancy, soft, moist, aerated; slight creosote-like odor throughout.	Borehole backfilled (grout to grade).
10 / 595	MC-3	10-15	1.9	0.0 0.0		5YR 3/3 dark reddish brown LEAN to FAT CLAY, little Silt, trace very fine Sand and Organics, medium to high plasticity, no dilatancy, very soft, very moist. Creosote-like odor from 10 to 11' bgs. Little medium to coarse Sand and Organics, sheen from 10.5 to 10.8' bgs. Wood chunk from 11.6 to 11.7' bgs. Medium Sand seam at 11.8' bgs.	
15						5YR 3/3 dark reddish brown LEAN to FAT CLAY, some to little Silt to medium Sand, medium to high plasticity, no dilatancy, soft, very moist; aerated, moist from 15.3 to 15.8' bgs.	

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Remarks: bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

Analytical samples collected from 30-30.5' bgs and 30.5-31' bgs.

Client: Beazer East, Inc.

Well/Boring ID: **SB-16**

Borehole Depth: 35' bgs

Site Location:
Former Koppers Inc. Facility
Superior, WI

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
	590						Medium SAND, round to subround, some Organics, well sorted, loose, wet; Black staining, creosote-like product and strong creosote-like odor from 16.2 to 16.5' bgs.	
		MC-4	15-20	2.8	0.0		5YR 3/3 dark reddish brown LEAN to FAT CLAY, little Silt to fine Sand, medium to high plasticity, no dilatancy, soft, moist, creosote-like odor and staining; medium Sand seam at 16.8' bgs.	
					0.0		5YR 3/3 dark reddish brown LEAN to FAT CLAY, little Silt, medium to high plasticity, no dilatancy, slightly aerated, medium stiff to stiff, moist.	
20								
	585				0.0		5YR 3/3 dark reddish brown LEAN to FAT CLAY, trace Silt, medium to high plasticity, no dilatancy, soft to medium stiff, aerated, moist. Minor black/brown staining, slight creosote-like odor from 20.2 to 21.3' bgs.	
		MC-5	20-25	2.8	0.0		Organics at 22' bgs.	
							Organics at 22.7' bgs.	
25								
					16.4		5YR 3/3 dark reddish brown LEAN to FAT CLAY, little Silt to coarse Sand, subround to angular, medium to high plasticity, no dilatancy, soft, moist. Slight sheen, creosote-like odor, wet from 26 to 26.1' bgs; little very coarse Sand from 26.1 to 26.3' bgs.	Borehole backfilled (grout to grade).
	580				9.2		5YR 3/3 dark reddish brown LEAN CLAY, some Silt to coarse Sand, medium plasticity, no dilatancy, medium stiff, moist.	
		MC-6	25-30	3.0			Medium to coarse SAND, round to subangular, well-sorted, dense; minor creosote-like odor and black staining.	
							5YR 3/3 dark reddish brown LEAN to FAT CLAY, little Silt to fine Sand, trace medium Sand to granules, medium to high plasticity, no dilatancy; very large Pebbles (angular) at 27.7 and 27.9' bgs.	
30								
	575				0.0		5YR 4/3 reddish brown LEAN to FAT CLAY, little Silt, medium to high plasticity, no dilatancy, stiff to medium stiff, moist.	
		MC-7	30-35	5.0				
					0.0			
35								
							End of Boring at 35' bgs.	

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Remarks: bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

Analytical samples collected from 30-30.5' bgs and 30.5-31' bgs.

Date Start/Finish: 9/13/13
Drilling Company: Matrix Environmental, LLC
Driller's Name: Cord Anderson
Drilling Method: Direct Push
Auger Size: NA
Rig Type: Geoprobe
Sampling Method: Macrocore

Northing: 548846.27
Easting: 1446642.26
Casing Elevation: NA

Borehole Depth: 25' bgs
Surface Elevation: 610.33' AMSL

Descriptions By: Kelly Hoehn

Well/Boring ID: **SB-17**

Client: Beazer East, Inc.

Location: Former Koppers Inc. Facility
Superior, WI

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
0 / 610						Dark brown LEAN CLAY, little Silt, Organics, medium plasticity, no dilatancy, slightly moist.	
	MC-1	0-5	3.1	0.0 0.0		2.5YR 4/4 reddish brown LEAN to FAT CLAY, little Silt, medium to high plasticity, no dilatancy, stiff to hard, moist.	
5 / 605	MC-2	5-10	5.0	0.0 0.0		Medium stiff to stiff from 5 to 10' bgs. Dark gray seams at 9.4 and 9.5' bgs.	Borehole backfilled (grout to grade).
10 / 600	MC-3	10-15	5.0	0.0 0.0		5YR 4/3 reddish brown LEAN to FAT CLAY, little Silt, medium to high plasticity, no dilatancy, medium stiff, moist; dark gray mottling at 10.2 to 10.3', 10.6 to 11', 12.3 to 12.38', 13.9 to 14.4' and 14.8 to 15' bgs.	
15 / 595							

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Remarks: bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

Client: Beazer East, Inc.

Well/Boring ID: **SB-17**

Borehole Depth: 25' bgs

Site Location:
Former Koppers Inc. Facility
Superior, WI

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
	MC-4	15-20	3.1	0.0		Dark gray mottling at 16 to 16.1', 16.4 to 16.5', 16.8', 16.9' and 17.2 to 18.1' bgs.	
				0.0		Very stiff, drier from 17.3 to 17.6' bgs.	
20 / 590							
	MC-5	20-25	4.8	0.0		7.5YR 3/1 very dark gray LEAN to FAT CLAY, little Silt, medium to high plasticity, no dilatancy, soft, moist.	Borehole backfilled (grout to grade).
						7.5YR 3/1 very dark gray and 5YR 4/3 reddish brown mottling from 22.5 to 22.8' bgs.	
				0.0		5YR 4/3 reddish brown LEAN to FAT CLAY, little Silt, medium to high plasticity, no dilatancy, soft, moist. Very dark gray coloration (7.5YR 3/1) from 23.5 to 23.8' bgs.	
25 / 585						End of Boring at 25' bgs.	
30 / 580							
35 / 575							

Remarks: bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

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Date Start/Finish: 11/19/13
Drilling Company: Matrix Environmental, LLC
Driller's Name: Cord Anderson
Drilling Method: Direct Push
Auger Size: NA
Rig Type: Geoprobe
Sampling Method: Macrocore

Northing: 547751.18
Easting: 1446015.70
Casing Elevation: NA

Borehole Depth: 40' bgs
Surface Elevation: 608.25' AMSL

Descriptions By: Kelly Hoehn

Well/Boring ID: **SB-18**

Client: Beazer East, Inc.

Location: Former Koppers Inc. Facility
Superior, WI

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
610							
0							
	MC-1	0-5	1.2	0.0		5YR 3/3 dark reddish brown LEAN to FAT CLAY, trace Silt to fine Sand, medium to high plasticity, no dilatancy, soft, moist; organic odor. Roots/Wood from 0 to 0.2' bgs. Some to little Silt from 0.4 to 0.6' bgs. Black coloration from 1.0 to 1.2' bgs.	
605							
5							
	MC-2	5-10	4.1	0.0		5YR 3/3 dark reddish brown LEAN to FAT CLAY, trace to little Silt to very fine Sand, medium to high plasticity, no dilatancy, very soft to soft, moist, aerated. Root/Peat parting at 5.2' bgs. Scattered Roots/Organics from 5.0 to 6.8' bgs.	
600						Trace blackened Organics from 8.8 to 9.1' bgs.	Boring backfilled with grout to grade (0-40' bgs).
10							
	MC-3	10-15	1.7	0.0		5YR 3/3 dark reddish brown LEAN to FAT CLAY, trace to little Silt to very fine Sand, medium to high plasticity, no dilatancy, very soft, moist to wet, aerated; Organics throughout.	
595							
15				0.7		5YR 3/3 dark reddish brown LEAN to FAT CLAY, trace to little Silt and very fine Sand, medium to high plasticity, no dilatancy, very soft, moist to wet, aerated; Organics	

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Remarks: bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

Analytical samples collected from 34-34.5' bgs and 34.5-35' bgs.

Client: Beazer East, Inc.

Well/Boring ID: **SB-18**

Borehole Depth: 40' bgs

Site Location:
Former Koppers Inc. Facility
Superior, WI

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
						throughout.	
				0.0		5YR 3/3 dark reddish brown LEAN CLAY, some Silt to medium Sand, medium plasticity, no dilatancy, very soft, wet.	
	MC-4	15-20	5.0			7.5YR 3/4 dark brown well graded SAND, Silt to coarse Sand, some to little very coarse Sand to small Pebbles, poorly sorted, subround to subangular, loose, wet.	
590						5YR 3/3 dark reddish brown LEAN CLAY, some Silt to medium Sand, Roots, medium plasticity, no dilatancy, soft, moist to wet.	
						5YR 3/3 dark reddish brown LEAN to FAT CLAY, little Silt to very fine Sand, trace Roots, medium to high plasticity, no dilatancy, soft to medium stiff, moist, slightly aerated; trace black colorations.	
20							
						Wood piece at 21.2' bgs.	
	MC-5	20-25	3.9	0.0			
585							
25							
						5YR 3/2 dark reddish brown LEAN to FAT CLAY, little Silt to very fine Sand, medium to high plasticity, no dilatancy, soft to medium stiff, slightly aerated.	Boring backfilled with grout to grade (0-40' bgs).
	MC-6	25-30	4.3	0.0		Fine Sand seam (approx. 1/8" thick) at 27.8' bgs; subround to subangular.	
580						Creosote-like odor from 28.3 to 29.3' bgs.	
						Roots, black colorations from 28.5 to 29.3' bgs.	
						Slight creosote-like sheen (wet) at 29.1' bgs; stronger creosote-like odor, fine to medium Sand parting (subround to subangular), moist to wet, Wood pieces.	
30							
						5YR 3/3 dark reddish brown LEAN to FAT CLAY, little Silt, trace very fine Sand, medium to high plasticity, no dilatancy, very soft to soft, moist.	
						Large subangular Pebble at 30' bgs; black/brown creosote-like staining.	
						Fine Sand parting at 30.8' bgs, subround to subangular.	
						Creosote-like odor from 30 to 32.2' bgs; strong creosote-like odor, very minor sheen at 30.9 to 31.1' bgs.	
	MC-7	30-35	3.3	20.4			
575							
35							
						5YR 3/3 dark reddish brown LEAN CLAY, some Silt, medium plasticity, no dilatancy, soft, moist.	

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Remarks: bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

Analytical samples collected from 34-34.5' bgs and 34.5-35' bgs.

Client: Beazer East, Inc.

Well/Boring ID: **SB-18**

Borehole Depth: 40' bgs

Site Location:
Former Koppers Inc. Facility
Superior, WI

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
570	MC-8	35-40	4.6	0.0			Boring backfilled with grout to grade (0-40' bgs).
40						End of Boring at 40' bgs.	
565							
45							
560							
50							
555							
55							

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Remarks: bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

Analytical samples collected from 34-34.5' bgs and 34.5-35' bgs.

Date Start/Finish: 11/19/13 **Drilling Company:** Matrix Environmental, LLC **Driller's Name:** Cord Anderson **Drilling Method:** Direct Push/Hollow-Stem Auger **Auger Size:** NA/10" OD; 4.25" ID **Rig Type:** Geoprobe/Track-Mounted Rig **Sampling Method:** Macrocore/NA	**Northing:** 547777.41 **Easting:** 1445983.59 **Casing Elevation:** 612.26' AMSL **Borehole Depth:** 41' bgs **Surface Elevation:** 608.76' AMSL **Descriptions By:** Kelly Hoehn	**Well/Boring ID:** **SB-19/TMW-19C** **Client:** Beazer East, Inc. **Location:** Former Koppers Inc. Facility Superior, WI

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
	610							3.5' Stickup Height (ags)
0							5YR 4/3 reddish brown LEAN to FAT CLAY, trace Silt to very fine Sand, medium to high plasticity, no dilatancy, soft (N = 1.0-1.25), moist, aerated; Roots from 0 to 0.1 bgs.	10" diameter borehole
		MC-1	0-5	1.8	0.0			
	605							
5							5YR 3/3 dark reddish brown LEAN to FAT CLAY, little Silt to very fine Sand, medium to high plasticity, no dilatancy, very soft, moist, aerated; Roots scattered throughout. Blackened Roots from 6.7 to 7' bgs.	1" Sch. 40 PVC riser (3.5' ags-35' bgs)
		MC-2	5-10	2.9	0.0			Bentonite Slurry (0' bgs-33' bgs)
	600							
10							5YR 3/3 dark reddish brown LEAN to FAT CLAY, little Silt to very fine Sand, medium to high plasticity, no dilatancy, very soft to soft, moist, aerated. Scattered Roots/Organics with black colorations and trace fine Sand from 10.9 to 12.8' bgs.	
		MC-3	10-15	2.8	0.0			
	595							
15								

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Remarks: ags = above ground surface; bgs = below ground surface; NA = not available/not applicable; AMSL = above mean sea level (NAVD 88); ppm = parts per million; PID = photoionization detector; MC = macrocore; ID = inside diameter; OD = outside diameter.

Boring advanced with Geoprobe on 11/19/13; overdrilled/installed well with hollow-stem auger on 12/17/13.

Client: Beazer East, Inc.

Well/Boring ID: **SB-19/TMW-19C**

Borehole Depth: 41' bgs

Site Location:
Former Koppers Inc. Facility
Superior, WI

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
		MC-4	15-20	4.6	0.0		5YR 3/3 dark reddish brown LEAN to FAT CLAY, little Silt to medium Sand, subround to subangular, medium to high plasticity, no dilatancy, very soft, moist. Trace coarse Sand to Granules from 16.3 to 16.8' bgs. Trace coarse Sand to Granules from 17.1 to 17.3' bgs. 5YR 3/3 dark reddish brown well graded fine to very coarse SAND to CLAYEY SAND, little Granules and Clay, subround to subangular, poorly sorted, loose, moist to wet.	Bentonite Slurry (0' bgs-33' bgs)
	590						5YR 4/3 reddish brown LEAN to FAT CLAY, little to trace Silt and fine Sand, medium to high plasticity, soft to medium stiff, moist. Fine Sand seam (1/8 to 1/4" thick) at 18.5' bgs.	
20		MC-5	20-25	3.5	0.0		5YR 3/3 dark reddish brown LEAN to FAT CLAY, little Silt to very fine Sand, trace fine Sand, subround, medium to high plasticity, no dilatancy, medium stiff, moist. Slightly aerated from 20 to 22.3' bgs. Trace black colorations from 20 to 22' bgs. Roots from 21.7 to 22' bgs.	
	585							
25		MC-6	25-30	5.0	0.0		5YR 4/4 reddish brown LEAN to FAT CLAY, little to trace Silt to fine Sand, subround (N = 1-1.75), medium to high plasticity, no dilatancy, soft to very soft, moist. Silt content increases with depth. Wood piece at 28.2' bgs. Some fine Sand from 29.4 to 29.8' bgs; piece of pebble-sized brick (10R 3/4 dusky red) at 29.7' bgs.	1" Sch. 40 PVC riser (3.5' ags-35' bgs)
	580							
30		MC-7	30-35	5.0	0.0		5YR 3/3 dark reddish brown (top 8" 5YR 4/3 reddish brown) LEAN to FAT CLAY, some to little Silt, trace very fine to fine Sand (N = 0.75-1), medium to high plasticity, no dilatancy, very soft, moist.	Bentonite Chips (33' bgs-34' bgs)
	575							Sand Pack - Red Flint #15 (34' bgs-41' bgs)
35								

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Remarks: ags = above ground surface; bgs = below ground surface; NA = not available/not applicable; AMSL = above mean sea level (NAVD 88); ppm = parts per million; PID = photoionization detector; MC = macrocore; ID = inside diameter; OD = outside diameter.

Boring advanced with Geoprobe on 11/19/13; overdrilled/installed well with hollow-stem auger on 12/17/13.

Client: Beazer East, Inc.

Well/Boring ID: **SB-19/TMW-19C**

Borehole Depth: 41' bgs

Site Location:
Former Koppers Inc. Facility
Superior, WI

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
		MC-8	35-40	5.0	0.0			1" Sch. 40 PVC Screen Slot Size 0.01" (35' bgs-40' bgs) with pre-pack screen
	570							Sand Pack - Red Flint #15 (34' bgs-41' bgs)
40		NA	40-41	NA	NA		Blind augered to 41' bgs.	
							End of Boring at 41' bgs.	
	565							
45								
	560							
50								
	555							
55								

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Remarks: ags = above ground surface; bgs = below ground surface; NA = not available/not applicable; AMSL = above mean sea level (NAVD 88); ppm = parts per million; PID = photoionization detector; MC = macrocore; ID = inside diameter; OD = outside diameter.

Boring advanced with Geoprobe on 11/19/13; overdrilled/installed well with hollow-stem auger on 12/17/13.

Date Start/Finish: 11/19/13
Drilling Company: Matrix Environmental, LLC
Driller's Name: Cord Anderson
Drilling Method: Direct Push
Auger Size: NA
Rig Type: Geoprobe
Sampling Method: Macrocore

Northing: 547691.23
Easting: 1446028.01
Casing Elevation: NA

Borehole Depth: 30' bgs
Surface Elevation: 608.66' AMSL

Descriptions By: Kelly Hoehn

Well/Boring ID: **SB-20**

Client: Beazer East, Inc.

Location: Former Koppers Inc. Facility
Superior, WI

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
610							
0							
	MC-1	0-5	1.9	0.0		5YR 4/3 reddish brown LEAN CLAY, little Silt, trace very fine Sand, medium to high plasticity, no dilatancy, very soft to soft, moist, aerated; Roots from 0 to 0.2' bgs.	
605							
5							
	MC-2	5-10	2.9	0.0		5YR 3/3 dark reddish brown LEAN to FAT CLAY, little Silt, trace very fine Sand, medium to high plasticity, no dilatancy, very soft, moist, aerated; Roots scattered throughout.	Boring backfilled with grout to grade (0-30' bgs).
600							
10							
	MC-3	10-15	5.0	0.0		5YR 3/3 dark reddish brown LEAN CLAY, little Silt to very fine Sand, medium plasticity, no dilatancy, soft to medium stiff, moist, slightly aerated. Trace Organics from 10 to 11' bgs.	
595							
15						Little Silt to fine Sand from 15.4 to 15.8' bgs; Wood from 15.6 to 15.7' bgs.	

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Remarks: bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

Client: Beazer East, Inc.

Well/Boring ID: **SB-20**

Borehole Depth: 30' bgs

Site Location:
Former Koppers Inc. Facility
Superior, WI

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
		MC-4	15-20	1.7	0.0		Clayey fine to medium Sand, little coarse to very coarse Sand, trace Granules to large Pebbles, subround to subangular, loose, moist from 15.9 to 16.2' bgs.	
	590							
20								
		MC-5	20-25	1.8	0.0		5YR 3/3 dark reddish brown LEAN CLAY, little Silt to very fine Sand, medium plasticity, no dilatancy, very soft to soft, moist, slightly aerated. Wood/Roots at 20.7, 20.8 and 21.3 to 21.8' bgs. Minor black colorations from 20.3 to 20.8' and 21.3 to 21.7' bgs.	Boring backfilled with grout to grade (0-30' bgs).
	585							
25								
		MC-6	25-30	5.0	0.0		5YR 4/3 reddish brown LEAN CLAY, some to little Silt, trace very fine Sand, medium plasticity, no dilatancy, very soft, moist. Coarse Sand, little fine to medium Sand, trace very coarse Sand, subround to angular, loose moist from 25 to 25.1' bgs.	
	580							
30							End of Boring at 30' bgs.	
	575							
35								

Remarks: bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

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Date Start/Finish: 11/19/13
Drilling Company: Matrix Environmental, LLC
Driller's Name: Cord Anderson
Drilling Method: Direct Push
Auger Size: NA
Rig Type: Geoprobe
Sampling Method: Macrocore

Northing: 547719.77
Easting: 1446105.62
Casing Elevation: NA

Borehole Depth: 10' bgs
Surface Elevation: 608.28' AMSL

Descriptions By: Kelly Hoehn

Well/Boring ID: **SB-21**

Client: Beazer East, Inc.

Location: Former Koppers Inc. Facility
Superior, WI

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
610							
0							
				0.0		5YR 4/3 reddish brown LEAN CLAY, medium plasticity, no dilatancy, very soft, moist, roots throughout; creosote-like odor.	
						5YR 4/2 dark reddish gray and 5YR 2.5/1 black LEAN to FAT CLAY, some Roots/Peat, little Wood, medium to high plasticity, no dilatancy, very soft, moist, heavy creosote-like odor; moderate to heavy black/brown staining. Little Silt to medium Sand, subround to subangular from 0.7 to 1.4' bgs.	
	MC-1	0-5	2.0				
605				34.4			
5						5YR 3/3 dark reddish brown LEAN to FAT CLAY, little Silt to very fine Sand, medium to high plasticity, no dilatancy, very soft to medium stiff, moist, creosote-like odor throughout; Roots/Wood scattered throughout. Creosote-like product leaches out of Clay throughout (black/brown staining with sheen).	Boring backfilled with grout to grade (0-10' bgs).
				8.8		Moderate to heavy black/brown staining at 5 to 5.3', 5.6 to 5.7', 5.8 to 5.9', 6.1 to 6.2', 6.9 to 7.3', and 7.8 to 8.2' bgs.	
	MC-2	5-10	3.3				
600				50.0		Wood at 7.8' bgs.	
10							
						End of Boring at 10' bgs.	
595							
15							

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Remarks: bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

Date Start/Finish: 11/20/13 **Drilling Company:** Matrix Environmental, LLC **Driller's Name:** Cord Anderson **Drilling Method:** Direct Push **Auger Size:** NA **Rig Type:** Geoprobe **Sampling Method:** Macrocore	**Northing:** 547702.67 **Easting:** 1446158.65 **Casing Elevation:** NA **Borehole Depth:** 30' bgs **Surface Elevation:** 608.37' AMSL **Descriptions By:** Kelly Hoehn	**Well/Boring ID:** **SB-22** **Client:** Beazer East, Inc. **Location:** Former Koppers Inc. Facility Superior, WI

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
610							
0				3.2		7.5YR 3/4 dark brown LEAN CLAY, little Silt to very fine Sand, medium plasticity, no dilatancy, very soft, moist to wet.	
						7.5YR 2.5/1 black ORGANICS, Wood, Roots, dry to moist, slight creosote-like odor.	
	MC-1	0-5	2.7	14.0		7.5YR 3/3 dark brown LEAN to FAT CLAY, trace Organics (Roots), medium to high plasticity, no dilatancy, very soft to medium stiff, moist, creosote-like odor; sheen leaches out of clay throughout; minor black/brown staining. Color changes to 5YR 4/4 reddish brown at 1.3' bgs.	
605							
5	MC-2	5-10	5.0	19.4 22.8		5YR 4/4 reddish brown LEAN to FAT CLAY, trace Silt and Roots, medium to high plasticity, no dilatancy, medium stiff, moist; creosote-like odor and moderate black/brown staining throughout (mostly within cracks - aerated); sheen slowly leaches out of cracks.	Boring backfilled with grout to grade (0-30' bgs).
600							
10	MC-3	10-15	2.4	0.0 3.6		5YR 4/4 reddish brown LEAN to FAT CLAY, little Silt to very fine Sand, medium to high plasticity, no dilatancy, soft, moist; very minor creosote-like odor, minor sheen (black/brown staining) leaches out of clay, slightly aerated.	
595							
15						5YR 3/3 dark reddish brown LEAN to FAT CLAY, little Silt to very fine Sand, medium to high plasticity, no dilatancy, very soft, moist; slight creosote-like odor, scattered Roots.	

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Remarks: bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

Analytical samples collected from 21.2-21.7' bgs and 21.7-22.2' bgs.

Client: Beazer East, Inc.

Well/Boring ID: **SB-22**

Borehole Depth: 30' bgs

Site Location:
Former Koppers Inc. Facility
Superior, WI

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
						Trace Roots/Wood, black colorations, creosote-like odor.	
590	MC-4	15-20	1.8	0.3		5YR 3/3 dark reddish brown SANDY LEAN CLAY, fine to medium Sand, subround to subangular, trace coarse to very coarse Sand, medium plasticity, no dilatancy, very soft to soft, moist; black/brown creosote-like staining, creosote-like odor.	
20							
				3.8		5YR 3/3 dark reddish brown LEAN to FAT CLAY, little Silt to very fine Sand, little to trace Roots, trace fine Sand, medium to high plasticity, no dilatancy, very soft to soft, moist; slight creosote-like odor.	
						5YR 4/4 reddish brown LEAN to FAT CLAY, little Silt, trace very fine Sand, medium to high plasticity, no dilatancy, medium stiff, moist.	
	MC-5	20-25	5.0			Large Pebble (broken up) at 21 to 21.2' bgs.	
585				0.2			Boring backfilled with grout to grade (0-30' bgs).
				0.0		Very coarse Sand seam at 45-degree angle; little Granules and medium Sand, wet, loose to medium dense form 24.2 to 24.4' bgs. Medium to large Pebbles, angular to subangular at 24.8 to 25' bgs.	
25						5YR 3/3 dark reddish brown well graded GRAVEL with SAND and CLAY, small to medium Pebbles, little Clay to very fine Sand, little fine to medium Sand, trace coarse Sand to Granules, angular to subround, loose, wet, poorly sorted.	
						5YR 3/3 dark reddish brown LEAN to FAT CLAY, little to trace Silt to very fine Sand, medium to high plasticity, no dilatancy, very soft to soft, moist.	
	MC-6	25-30	1.3	0.0			
580							
30						End of Boring at 30' bgs.	
575							
35							

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Remarks: bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore.

Analytical samples collected from 21.2-21.7' bgs and 21.7-22.2' bgs.

Date Start/Finish: 12/18/13
Drilling Company: Matrix Environmental, LLC
Driller's Name: Eric A./Kevin B.
Drilling Method: Direct Push/Hollow-Stem Auger
Auger Size: NA/10" OD; 4.25" ID
Rig Type: Geoprobe/Track-Mounted Rig
Sampling Method: Macrocore/NA

Northing: 549145.64
Easting: 1446613.57
Casing Elevation: 607.25' AMSL

Borehole Depth: 30' bgs
Surface Elevation: 604.88' AMSL

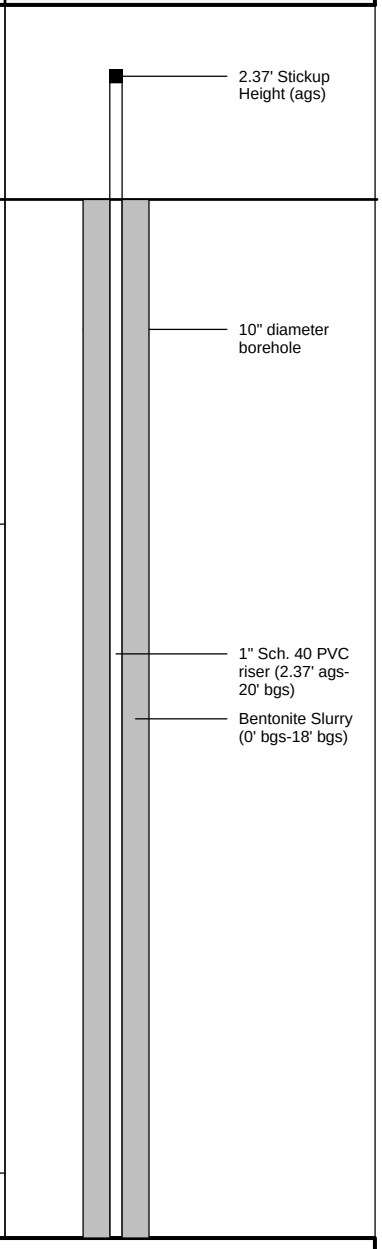
Descriptions By: Kelly Hoehn

Well/Boring ID: **SB-23/TMW-23**

Client: Beazer East, Inc.

Location: Former Koppers Inc. Facility
Superior, WI

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	605						
		MC-1	0-5	2.8	0.1 0.1		5YR 4/4 reddish brown LEAN to FAT CLAY, little Silt, trace Roots (top 6") and very fine Sand, medium to high plasticity, no dilatancy, soft to medium stiff, moist, slightly aerated; Organics throughout. Black colorations from 2.1 to 2.3' bgs.
5	600	MC-2	5-10	5.0	0.1 0.2		5YR 4/4 reddish brown LEAN to FAT CLAY, little to trace Silt to very fine Sand, medium to high plasticity, no dilatancy, medium stiff, moist, very slightly aerated; sporadic Organics and dark gray colorations.
10	595	MC-3	10-15	5.0	0.2 0.1		Color changes to 2.5YR 4/4 reddish brown at 12' bgs.
15	590						Angular medium Pebble at 14.8' bgs. 2.5YR 4/4 reddish brown LEAN to FAT CLAY, little Silt, trace very fine to fine Sand, trace fine Sand clusters, medium to high plasticity, no dilatancy, medium stiff, moist; trace gray colorations throughout.



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Remarks: ags = above ground surface; bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore; ID = inside diameter; OD = outside diameter.

Boring advanced with Geoprobe on 12/18/13; overdrilled/installed well with hollow-stem auger on 12/19/13.

Client: Beazer East, Inc.

Well/Boring ID: **SB-23/TMW-23**

Borehole Depth: 30' bgs

Site Location:
Former Koppers Inc. Facility
Superior, WI

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
		MC-4	15-20	5.0	0.2 0.0		Some very fine to fine Sand (Sandy Lean Clay seam) at 18.4' bgs. GLEY1 5/10Y greenish gray seam at 19.6' bgs.	Bentonite Slurry (0' bgs-18' bgs) 1" Sch. 40 PVC riser (2.37' ags-20' bgs) Bentonite Chips (18' bgs-18.5' bgs)
20	585							
		MC-5	20-25	5.0	0.1 0.1		2.5YR 4/4 reddish brown LEAN to FAT CLAY, little Silt to very fine Sand, medium to high plasticity, no dilatancy, soft to medium stiff, moist; trace gray (GLEY1 5/5GY greenish gray) colorations throughout. GLEY1 4/10Y dark greenish gray at 24.3 to 24.4' bgs.	Sand Pack - Red Flint #15 (18.5' bgs-30' bgs) 1" Sch. 40 PVC Screen Slot Size 0.01" (20' bgs-30' bgs) with pre-pack screen
25	580							
		MC-6	25-30	5.0	0.1 0.1		2.5YR 4/4 reddish brown LEAN to FAT CLAY, little Silt, trace very fine Sand, medium to high plasticity, no dilatancy, soft, moist. Color changes to 2.5Y 4/1 dark gray at 25.3' bgs. Color changes to 2.5YR 4/4 reddish brown at 28.4' bgs. Color changes to 2.5Y 4/1 dark gray at 29.2' bgs.	
30	575						End of Boring at 30' bgs.	
35	570							

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Remarks: ags = above ground surface; bgs = below ground surface; NA = not available/not applicable; ppm = parts per million; PID = photoionization detector; AMSL = above mean sea level (NAVD 88); MC = macrocore; ID = inside diameter; OD = outside diameter.

Boring advanced with Geoprobe on 12/18/13; overdrilled/installed well with hollow-stem auger on 12/19/13.

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Appendix B

Data Validation Reports

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Imagine the result

Beazer East, Inc.

Supplemental Off-Property Investigation

Data Review

SUPERIOR, WISCONSIN

SEMIVOLATILE ANALYSES

SDG# 180-24484

Analyses Performed By:
TestAmerica Laboratories, Inc.
Pittsburgh, Pennsylvania

Report: # 20283R
Review Level: Tier III
Project: B0039278.0000.00003

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # 180-24484 for samples collected in association with the Beazer East, Inc., Supplemental Off-Property Investigation. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis				
					VOC	SVOC	PEST/ PCB	MET	MISC
HA-1 (0-0.5')	180-24484-1	Soil	8/20/2013			X			
HA-1 (0.5-1')	180-24484-2	Soil	8/20/2013			X			
HA-4 (0-0.5')	180-24484-3	Soil	8/20/2013			X			
HA-4 (0.5-1')	180-24484-4	Soil	8/20/2013			X			
HA-7 (0-0.5')	180-24484-5	Soil	8/20/2013			X			
HA-7 (0.5-1')	180-24484-6	Soil	8/20/2013			X			
HA-9 (0-0.5')	180-24484-7	Soil	8/21/2013			X			
HA-9 (0.5-1')	180-24484-8	Soil	8/21/2013			X			
DUP-1	180-24484-9	Soil	8/21/2013	HA-1 (0-0.5')		X			
RB-082013	180-24484-10	Water	8/20/2013			X			
SB-02 (25-25.5')	180-24484-11	Soil	8/21/2013			X			
SB-03 (15.5-16')	180-24484-13	Soil	8/21/2013			X			

Note:

1. Matrix spike/matrix spike duplicate (MS/MSD) analysis was performed on sample location HA-4 (0-0.5').

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 8270C. Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is

that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

SEMI-VOLATILE ORGANIC COMPOUND (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8270C	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cooled to <6°C
	Soil	14 days from collection to extraction and 40 days from extraction to analysis	Cooled to <6°C

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method, trip, and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure contamination of samples during shipment. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits.

Sample locations associated with surrogates exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Surrogate	Recovery
RB-082013	Nitrobenzene-d5	AC
	2-Fluorobiphenyl	AC
	Terphenyl-d14	<LL but >10%

LL Lower control limit
AC Acceptable

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results associated with the deviant fraction are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	No Action
	Detect	J
< LL but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the SVOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations were the compounds concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS/MSD exhibited acceptable recoveries and the RPD between the MS/MSD results were acceptable.

8. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analysis exhibited recoveries within the control limits.

9. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results (in ug/kg) for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
HA-1 (0-0.5')/ DUP-1	Benzo[a]anthracene	88 U	12 J	AC
	Benzo[a]pyrene	88 U	12 J	AC
	Benzo[b]fluoranthene	88 U	17 J	AC
	Benzo[g,h,i]perylene	88 U	15 J	AC
	Chrysene	11 J	16 J	AC
	Fluoranthene	10 J	15 J	AC
	Indeno[1,2,3-cd]pyrene	88 U	11 J	AC
	Phenanthrene	88 U	18 J	AC
	Pyrene	88 U	11 J	AC

AC Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

10. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria.

11. System Performance and Overall Assessment

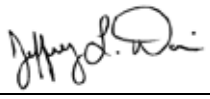
Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCs

SVOCs: SW-846 8270	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks		X		X	
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate(MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Field Duplicate (RPD)		X		X	
Surrogate Spike Recoveries		X	X		
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X		X	
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculations acceptable		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

VALIDATION PERFORMED BY: Jeffrey L. Davin

SIGNATURE: 

DATE: September 25, 2013

PEER REVIEW: Dennis Capria

DATE: October 11, 2013

CHAIN OF CUSTODY/
CORRECTED SAMPLE ANALYSIS DATA SHEETS

Client: ARCADIS U.S. Inc | Job Number: 180-24484-1

Client Sample ID: **HA-1 (0-0.5')**

Lab Sample ID: 180-24484-1 | Date Sampled: 08/20/2013 1147
Client Matrix: Solid | % Moisture: 23.9 | Date Received: 08/24/2013 0925

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	180-81895	Instrument ID:	731
Prep Method:	3541	Prep Batch:	180-81753	Lab File ID:	V0827018.D
Dilution:	1.0			Initial Weight/Volume:	15.0 g
Analysis Date:	08/27/2013 1930			Final Weight/Volume:	5.0 mL
Prep Date:	08/27/2013 0345			Injection Volume:	2 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		ND		8.4	88
Acenaphthylene		ND		10	88
Anthracene		ND		8.6	88
Benzo[a]anthracene		ND		11	88
Benzo[a]pyrene		ND		8.8	88
Benzo[b]fluoranthene		ND		14	88
Benzo[g,h,i]perylene		ND		8.7	88
Benzo[k]fluoranthene		ND		18	88
Chrysene		11	J	10	88
Dibenz(a,h)anthracene		ND		9.8	88
Fluoranthene		10	J	9.4	88
Fluorene		ND		12	88
Indeno[1,2,3-cd]pyrene		ND		9.0	88
Naphthalene		ND		7.6	88
Phenanthrene		ND		14	88
Pyrene		ND		8.9	88

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	64		25 - 104
2-Fluorobiphenyl	57		35 - 105
Terphenyl-d14	65		25 - 127

Client: ARCADIS U.S. Inc | Job Number: 180-24484-1

Client Sample ID: **HA-1 (0.5-1')**

Lab Sample ID: 180-24484-2 | Date Sampled: 08/20/2013 1200
Client Matrix: Solid | % Moisture: 20.8 | Date Received: 08/24/2013 0925

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	180-81895	Instrument ID:	731
Prep Method:	3541	Prep Batch:	180-81753	Lab File ID:	V0827019.D
Dilution:	1.0			Initial Weight/Volume:	15.1 g
Analysis Date:	08/27/2013 1958			Final Weight/Volume:	5.0 mL
Prep Date:	08/27/2013 0345			Injection Volume:	2 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		ND		8.0	84
Acenaphthylene		ND		9.6	84
Anthracene		ND		8.2	84
Benzo[a]anthracene		ND		10	84
Benzo[a]pyrene		ND		8.4	84
Benzo[b]fluoranthene		ND		13	84
Benzo[g,h,i]perylene		ND		8.3	84
Benzo[k]fluoranthene		ND		17	84
Chrysene		ND		10	84
Dibenz(a,h)anthracene		ND		9.3	84
Fluoranthene		ND		8.9	84
Fluorene		ND		11	84
Indeno[1,2,3-cd]pyrene		ND		8.6	84
Naphthalene		ND		7.2	84
Phenanthrene		ND		13	84
Pyrene		ND		8.5	84

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	67		25 - 104
2-Fluorobiphenyl	60		35 - 105
Terphenyl-d14	68		25 - 127

Client: ARCADIS U.S. Inc | Job Number: 180-24484-1

Client Sample ID: **HA-4 (0-0.5')**

Lab Sample ID: 180-24484-3 | Date Sampled: 08/20/2013 1620
Client Matrix: Solid | % Moisture: 21.1 | Date Received: 08/24/2013 0925

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	180-81895	Instrument ID:	731
Prep Method:	3541	Prep Batch:	180-81753	Lab File ID:	V0827003.D
Dilution:	1.0			Initial Weight/Volume:	15.0 g
Analysis Date:	08/27/2013 1517			Final Weight/Volume:	5.0 mL
Prep Date:	08/27/2013 0345			Injection Volume:	2 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		ND		8.1	85
Acenaphthylene		ND		9.7	85
Anthracene		ND		8.3	85
Benzo[a]anthracene		ND		11	85
Benzo[a]pyrene		ND		8.5	85
Benzo[b]fluoranthene		18	J	13	85
Benzo[g,h,i]perylene		12	J	8.4	85
Benzo[k]fluoranthene		ND		17	85
Chrysene		ND		10	85
Dibenz(a,h)anthracene		ND		9.4	85
Fluoranthene		13	J	9.0	85
Fluorene		ND		11	85
Indeno[1,2,3-cd]pyrene		11	J	8.7	85
Naphthalene		ND		7.3	85
Phenanthrene		14	J	13	85
Pyrene		10	J	8.6	85

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	71		25 - 104
2-Fluorobiphenyl	62		35 - 105
Terphenyl-d14	70		25 - 127

Client: ARCADIS U.S. Inc | Job Number: 180-24484-1

Client Sample ID: **HA-4 (0.5-1')**

Lab Sample ID: 180-24484-4 | Date Sampled: 08/20/2013 1625
Client Matrix: Solid | % Moisture: 18.7 | Date Received: 08/24/2013 0925

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	180-81895	Instrument ID:	731
Prep Method:	3541	Prep Batch:	180-81753	Lab File ID:	V0827020.D
Dilution:	1.0			Initial Weight/Volume:	15.0 g
Analysis Date:	08/27/2013 2026			Final Weight/Volume:	5.0 mL
Prep Date:	08/27/2013 0345			Injection Volume:	2 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		ND		7.9	82
Acenaphthylene		ND		9.4	82
Anthracene		ND		8.0	82
Benzo[a]anthracene		ND		10	82
Benzo[a]pyrene		ND		8.2	82
Benzo[b]fluoranthene		ND		13	82
Benzo[g,h,i]perylene		ND		8.2	82
Benzo[k]fluoranthene		ND		17	82
Chrysene		ND		9.8	82
Dibenz(a,h)anthracene		ND		9.1	82
Fluoranthene		ND		8.8	82
Fluorene		ND		11	82
Indeno[1,2,3-cd]pyrene		ND		8.5	82
Naphthalene		ND		7.1	82
Phenanthrene		ND		13	82
Pyrene		ND		8.3	82

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	70		25 - 104
2-Fluorobiphenyl	61		35 - 105
Terphenyl-d14	68		25 - 127

Client: ARCADIS U.S. Inc | Job Number: 180-24484-1

Client Sample ID: **HA-7 (0-0.5')**

Lab Sample ID: 180-24484-5 | Date Sampled: 08/20/2013 1913
Client Matrix: Solid | % Moisture: 21.6 | Date Received: 08/24/2013 0925

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	180-81895	Instrument ID:	731
Prep Method:	3541	Prep Batch:	180-81753	Lab File ID:	V0827021.D
Dilution:	1.0			Initial Weight/Volume:	15.1 g
Analysis Date:	08/27/2013 2054			Final Weight/Volume:	5.0 mL
Prep Date:	08/27/2013 0345			Injection Volume:	2 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		ND		8.1	85
Acenaphthylene		ND		9.7	85
Anthracene		ND		8.3	85
Benzo[a]anthracene		18	J	11	85
Benzo[a]pyrene		11	J	8.5	85
Benzo[b]fluoranthene		25	J	13	85
Benzo[g,h,i]perylene		17	J	8.4	85
Benzo[k]fluoranthene		ND		17	85
Chrysene		31	J	10	85
Dibenz(a,h)anthracene		ND		9.4	85
Fluoranthene		22	J	9.0	85
Fluorene		ND		11	85
Indeno[1,2,3-cd]pyrene		13	J	8.7	85
Naphthalene		ND		7.3	85
Phenanthrene		21	J	13	85
Pyrene		15	J	8.6	85

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	68		25 - 104
2-Fluorobiphenyl	61		35 - 105
Terphenyl-d14	68		25 - 127

Client: ARCADIS U.S. Inc | Job Number: 180-24484-1

Client Sample ID: **HA-7 (0.5-1')**

Lab Sample ID: 180-24484-6 | Date Sampled: 08/20/2013 1918
Client Matrix: Solid | % Moisture: 20.2 | Date Received: 08/24/2013 0925

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	180-81895	Instrument ID:	731
Prep Method:	3541	Prep Batch:	180-81753	Lab File ID:	V0827022.D
Dilution:	1.0			Initial Weight/Volume:	15.1 g
Analysis Date:	08/27/2013 2121			Final Weight/Volume:	5.0 mL
Prep Date:	08/27/2013 0345			Injection Volume:	2 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		ND		8.0	83
Acenaphthylene		ND		9.5	83
Anthracene		ND		8.1	83
Benzo[a]anthracene		ND		10	83
Benzo[a]pyrene		ND		8.3	83
Benzo[b]fluoranthene		ND		13	83
Benzo[g,h,i]perylene		ND		8.3	83
Benzo[k]fluoranthene		ND		17	83
Chrysene		ND		9.9	83
Dibenz(a,h)anthracene		ND		9.2	83
Fluoranthene		ND		8.9	83
Fluorene		ND		11	83
Indeno[1,2,3-cd]pyrene		ND		8.6	83
Naphthalene		ND		7.2	83
Phenanthrene		ND		13	83
Pyrene		ND		8.4	83

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	67		25 - 104
2-Fluorobiphenyl	59		35 - 105
Terphenyl-d14	68		25 - 127

Client: ARCADIS U.S. Inc | Job Number: 180-24484-1

Client Sample ID: **HA-9 (0-0.5')**

Lab Sample ID: 180-24484-7 | Date Sampled: 08/21/2013 0900
Client Matrix: Solid | % Moisture: 22.5 | Date Received: 08/24/2013 0925

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	180-81895	Instrument ID:	731
Prep Method:	3541	Prep Batch:	180-81753	Lab File ID:	V0827023.D
Dilution:	1.0			Initial Weight/Volume:	15.0 g
Analysis Date:	08/27/2013 2149			Final Weight/Volume:	5.0 mL
Prep Date:	08/27/2013 0345			Injection Volume:	2 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		ND		8.3	87
Acenaphthylene		19	J	9.9	87
Anthracene		15	J	8.4	87
Benzo[a]anthracene		130		11	87
Benzo[a]pyrene		98		8.6	87
Benzo[b]fluoranthene		150		14	87
Benzo[g,h,i]perylene		59	J	8.6	87
Benzo[k]fluoranthene		35	J	17	87
Chrysene		130		10	87
Dibenz(a,h)anthracene		23	J	9.6	87
Fluoranthene		260		9.2	87
Fluorene		ND		11	87
Indeno[1,2,3-cd]pyrene		59	J	8.9	87
Naphthalene		ND		7.4	87
Phenanthrene		55	J	14	87
Pyrene		180		8.7	87

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	65		25 - 104
2-Fluorobiphenyl	58		35 - 105
Terphenyl-d14	65		25 - 127

Client: ARCADIS U.S. Inc | Job Number: 180-24484-1

Client Sample ID: **HA-9 (0.5-1')**

Lab Sample ID: 180-24484-8 | Date Sampled: 08/21/2013 0905
Client Matrix: Solid | % Moisture: 18.9 | Date Received: 08/24/2013 0925

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	180-81895	Instrument ID:	731
Prep Method:	3541	Prep Batch:	180-81753	Lab File ID:	V0827024.D
Dilution:	1.0			Initial Weight/Volume:	15.0 g
Analysis Date:	08/27/2013 2217			Final Weight/Volume:	5.0 mL
Prep Date:	08/27/2013 0345			Injection Volume:	2 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		ND		7.9	83
Acenaphthylene		ND		9.4	83
Anthracene		ND		8.0	83
Benzo[a]anthracene		11	J	10	83
Benzo[a]pyrene		ND		8.2	83
Benzo[b]fluoranthene		ND		13	83
Benzo[g,h,i]perylene		ND		8.2	83
Benzo[k]fluoranthene		ND		17	83
Chrysene		ND		9.8	83
Dibenz(a,h)anthracene		ND		9.1	83
Fluoranthene		15	J	8.8	83
Fluorene		ND		11	83
Indeno[1,2,3-cd]pyrene		ND		8.5	83
Naphthalene		ND		7.1	83
Phenanthrene		ND		13	83
Pyrene		12	J	8.3	83

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	64		25 - 104
2-Fluorobiphenyl	57		35 - 105
Terphenyl-d14	66		25 - 127

Client: ARCADIS U.S. Inc | Job Number: 180-24484-1

Client Sample ID: **DUP-1**

Lab Sample ID: 180-24484-9 | Date Sampled: 08/21/2013 0000
Client Matrix: Solid | % Moisture: 19.1 | Date Received: 08/24/2013 0925

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	180-82034	Instrument ID:	731
Prep Method:	3541	Prep Batch:	180-81753	Lab File ID:	V0828023.D
Dilution:	1.0			Initial Weight/Volume:	15.0 g
Analysis Date:	08/28/2013 2312			Final Weight/Volume:	5.0 mL
Prep Date:	08/27/2013 0345			Injection Volume:	2 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		ND		7.9	83
Acenaphthylene		ND		9.4	83
Anthracene		ND		8.1	83
Benzo[a]anthracene		12	J	10	83
Benzo[a]pyrene		12	J	8.3	83
Benzo[b]fluoranthene		17	J	13	83
Benzo[g,h,i]perylene		15	J	8.2	83
Benzo[k]fluoranthene		ND		17	83
Chrysene		16	J	9.8	83
Dibenz(a,h)anthracene		ND		9.2	83
Fluoranthene		15	J	8.8	83
Fluorene		ND		11	83
Indeno[1,2,3-cd]pyrene		11	J	8.5	83
Naphthalene		ND		7.1	83
Phenanthrene		18	J	13	83
Pyrene		11	J	8.3	83

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	61		25 - 104
2-Fluorobiphenyl	60		35 - 105
Terphenyl-d14	61		25 - 127

Client: ARCADIS U.S. Inc | Job Number: 180-24484-1

Client Sample ID: **RB-082013**

Lab Sample ID: 180-24484-10 | Date Sampled: 08/20/2013 1825
Client Matrix: Water | Date Received: 08/24/2013 0925

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	180-82081	Instrument ID:	722
Prep Method:	3520C	Prep Batch:	180-81625	Lab File ID:	F0829024.D
Dilution:	1.0			Initial Weight/Volume:	930 mL
Analysis Date:	08/29/2013 0932			Final Weight/Volume:	10.0 mL
Prep Date:	08/26/2013 0733			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acenaphthene	ND		0.15	2.2
Acenaphthylene	ND		0.16	2.2
Anthracene	ND		0.17	2.2
Benzo[a]anthracene	ND		0.16	2.2
Benzo[a]pyrene	ND		0.14	2.2
Benzo[b]fluoranthene	ND		0.17	2.2
Benzo[g,h,i]perylene	ND		0.16	2.2
Benzo[k]fluoranthene	ND		0.59	2.2
Chrysene	ND		0.15	2.2
Dibenz(a,h)anthracene	ND		0.17	2.2
Fluoranthene	ND		0.17	2.2
Fluorene	ND		0.23	2.2
Indeno[1,2,3-cd]pyrene	ND		0.21	2.2
Naphthalene	ND		0.15	2.2
Phenanthrene	ND		0.46	2.2
Pyrene	ND		0.17	2.2

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	72		37 - 104
2-Fluorobiphenyl	69		35 - 108
Terphenyl-d14	19	X	25 - 130

Client: ARCADIS U.S. Inc | Job Number: 180-24484-2

Client Sample ID: **SB-02 (25-25.5')**

Lab Sample ID: 180-24484-11 | Date Sampled: 08/21/2013 1130
Client Matrix: Solid | % Moisture: 24.6 | Date Received: 08/24/2013 0925

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	180-82034	Instrument ID:	731
Prep Method:	3541	Prep Batch:	180-81753	Lab File ID:	V0828024.D
Dilution:	1.0			Initial Weight/Volume:	15.0 g
Analysis Date:	08/28/2013 2340			Final Weight/Volume:	5.0 mL
Prep Date:	08/27/2013 0345			Injection Volume:	2 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		ND		8.5	89
Acenaphthylene		ND		10	89
Anthracene		ND		8.7	89
Benzo[a]anthracene		ND		11	89
Benzo[a]pyrene		ND		8.8	89
Benzo[b]fluoranthene		ND		14	89
Benzo[g,h,i]perylene		ND		8.8	89
Benzo[k]fluoranthene		ND		18	89
Chrysene		ND		11	89
Dibenz(a,h)anthracene		ND		9.8	89
Fluoranthene		ND		9.5	89
Fluorene		ND		12	89
Indeno[1,2,3-cd]pyrene		ND		9.1	89
Naphthalene		ND		7.6	89
Phenanthrene		ND		14	89
Pyrene		ND		8.9	89

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	67		25 - 104
2-Fluorobiphenyl	65		35 - 105
Terphenyl-d14	66		25 - 127

Client: ARCADIS U.S. Inc | Job Number: 180-24484-2

Client Sample ID: **SB-03 (15.5-16')**

Lab Sample ID: 180-24484-13 | Date Sampled: 08/21/2013 1425
Client Matrix: Solid | % Moisture: 28.0 | Date Received: 08/24/2013 0925

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	180-82083	Instrument ID:	731
Prep Method:	3541	Prep Batch:	180-81753	Lab File ID:	V0829001.D
Dilution:	1.0			Initial Weight/Volume:	15.2 g
Analysis Date:	08/29/2013 1151			Final Weight/Volume:	5.0 mL
Prep Date:	08/27/2013 0345			Injection Volume:	2 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		ND		8.8	92
Acenaphthylene		ND		10	92
Anthracene		ND		8.9	92
Benzo[a]anthracene		ND		11	92
Benzo[a]pyrene		ND		9.1	92
Benzo[b]fluoranthene		ND		14	92
Benzo[g,h,i]perylene		ND		9.1	92
Benzo[k]fluoranthene		ND		18	92
Chrysene		ND		11	92
Dibenz(a,h)anthracene		ND		10	92
Fluoranthene		ND		9.8	92
Fluorene		ND		12	92
Indeno[1,2,3-cd]pyrene		ND		9.4	92
Naphthalene		89	J	7.9	92
Phenanthrene		ND		15	92
Pyrene		ND		9.2	92

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	65		25 - 104
2-Fluorobiphenyl	61		35 - 105
Terphenyl-d14	63		25 - 127

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☒

TestAmerica
THE LEADER IN ENVIRONME

180-24484 Chain of Custody

08/29/2013

TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
Beazer (Jane Patorcity)	David Bessingpas (ARCADIS)	8/23/13	088209
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 1 of 2**
	218-829-4607		
City Pittsburgh	**State** PA	**Zip Code**	**Site Contact**	**Lab Contact** Veronica Bartot
Project Name and Location (State) Beazer - Superior, WI	**Carrier/Waybill Number** FedEx 7965 2930 6586
Contract/Purchase Order/Quote No.	

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	Analysis (Attach list if more space is needed): PAHs (8270)	Special Instructions/ Conditions of Receipt
HA-1 (0-0.5')	8/20	1147				X	1						X	
HA-1 (0.5-1')	8/20	1200					1							
HA-4 (0-0.5')	8/20	1620					3							MS/MSD
HA-4 (0.5-1')	8/20	1625					1							
HA-7 (0-0.5')	8/20	1913					1							
HA-7 (0.5-1')	8/20	1918					1							
HA-9 (0-0.5')	8/21	0900					1							
HA-9 (0.5-1')	8/21	0905					1							
DUP-1	—						1							
RB-082013	8/20	1825		X			2							

Page 626 of 628

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months
(A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☒ 21 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: Bat B	8/23/13	1500	1. Received By: Debbie Watson	8-24-13	9:25
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratory location: Pittsburgh
Regulatory program: ☐ DW ☐ NPDES ☒ RCRA ☐ Other _____

TestAmerica Laboratories, Inc.

08/29/2013

Client Contact				
Company Name: Beazer East, Inc.	Client Project Manager: (ARCADIS) David Bessingpas	Site Contact:	Lab Contact: Veronica Bortot	COC No: 025512
Address:	Telephone: 218-829-4607	Telephone:	Telephone:	2 of 2 COCs
City/State/Zip: Pittsburgh, PA	Email: david.bessingpas@arcadis-us.com	Analysis Turnaround Time (in BUS days)	Analyses	For lab use only
Phone: 412-208-8813		TAT if different from below _____ ☐ 3 weeks ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		Walk-in client ☐ Lab pickup ☐ Lab sampling ☐ Job/SDG No:
Project Name: Beazer - Superior, WI	Method of Shipment/Carrier: FedEx			
Project Number:	Shipping/Tracking No: 7965 2930 6586			
PO#				

Sample Identification	Sample Date	Sample Time	Matrix: Air	Aqueous	Sediment	Solid	Other:	Containers & Preservatives: H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	Other:	Filtered Sample (Y / N)	Composite C / Grab G	PAHs (8270)	Sample Specific Notes / Special Instructions:
SB-02 (25-25.5')	8/21	1130				X							X					*Rush TAT*
SB-02 (25.5-26')	8/21	1132				↓							↓				↓	**Hold**
SB-03 (15.5-16')	8/21	1425				↓							↓				↓	*Rush TAT*
SB-03 (16-16.5')	8/21	1426				↓							↓				↓	**Hold**

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return to Client ☒ Disposal By Lab ☐ Archive For _____ Months

Special Instructions/QC Requirements & Comments:
*Rush TAT → need data in time to make decision on analysis of hold samples before hold times expire.
** Hold → hold pending instructions from ARCADIS.

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Carl Bro	ARCADIS	8/23/13 1500	DeWine Watson	TAT	8-24-13 9:15
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

TAL 0018-1 (04/10)

ARCADIS
Infrastructure · Water · Environment · Buildings

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Beazer East, Inc.

Supplemental Off-Property Investigation

Data Review

SUPERIOR, WISCONSIN

SEMIVOLATILE ANALYSES

SDG# 180-24488

Analyses Performed By:
TestAmerica Laboratories, Inc.
Pittsburgh, Pennsylvania

Report: # 20284R
Review Level: Tier III
Project: B0039278.0000.00003

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # 180-24488 for samples collected in association with the Beazer East, Inc., Supplemental Off-Property Investigation. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis				
					VOC	SVOC	PEST/ PCB	MET	MISC
SB-12_30-30.5	180-24488-1	Soil	8/23/2013			X			
SB-12_30.5-31	180-24488-2	Soil	8/23/2013			X			
DUP- 01 (20130823)	180-24488-3	Soil	8/23/2013	SB-12_30-30.5		X			

Note:

1. Matrix spike/matrix spike duplicate (MS/MSD) analysis was performed on sample location SB-12_30.5-31.

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 8270C. Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is

that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

SEMI-VOLATILE ORGANIC COMPOUND (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8270C	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cooled to <6°C
	Soil	14 days from collection to extraction and 40 days from extraction to analysis	Cooled to <6°C

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method, trip, and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure contamination of samples during shipment. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the SVOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations were the compounds concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS/MSD exhibited acceptable recoveries and the RPD between the MS/MSD results were acceptable.

8. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analysis exhibited recoveries within the control limits.

9. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results (in ug/kg) for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SB-12_30-30.5/ DUP- 01 (20130823)	Acenaphthene	4100	63 J	NC
	Acenaphthylene	81 J	110 U	AC
	Anthracene	1100	23 J	NC
	Benzo[a]anthracene	1200	39 J	NC
	Benzo[a]pyrene	430	15 J	NC
	Benzo[b]fluoranthene	680	25 J	NC
	Benzo[g,h,i]perylene	150	110 U	AC
	Benzo[k]fluoranthene	200	110 U	AC
	Chrysene	910	30 J	NC
	Dibenz(a,h)anthracene	67 J	110 U	AC
	Fluoranthene	5900	170	NC
	Fluorene	3600	18 J	NC
	Indeno[1,2,3-cd]pyrene	150	110 U	AC
	Naphthalene	8700	100 J	NC
	Phenanthrene	9500	230	NC
	Pyrene	3600	110	NC

AC Acceptable
NC Not Compliant
U Not Detected

The compounds Acenaphthene, Anthracene, Benzo[a]anthracene, Benzo[a]pyrene, Benzo[b]fluoranthene, Chrysene, Fluoranthene, Fluorene, Naphthalene, Phenanthrene and Pyrene associated with sample locations SB-12_30-30.5 and DUP- 01 exhibited a field duplicate RPD greater than the control limit. The associated sample results from sample locations for the listed analyte were qualified as estimated.

10. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria.

11. System Performance and Overall Assessment

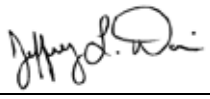
Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCs

SVOCs: SW-846 8270	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks		X		X	
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate(MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Field Duplicate (RPD)		X	X		
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X		X	
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculations acceptable		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

VALIDATION PERFORMED BY: Jeffrey L. Davin

SIGNATURE: 

DATE: September 29, 2013

PEER REVIEW: Dennis Capria

DATE: October 11, 2013

CHAIN OF CUSTODY/
CORRECTED SAMPLE ANALYSIS DATA SHEETS

Client: ARCADIS U.S. Inc | Job Number: 180-24488-1

Client Sample ID: **SB-12_30-30.5 (20130823)**

Lab Sample ID: 180-24488-1 | Date Sampled: 08/23/2013 0857
Client Matrix: Solid | % Moisture: 34.8 | Date Received: 08/24/2013 0925

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	180-82034	Instrument ID:	731
Prep Method:	3541	Prep Batch:	180-81753	Lab File ID:	V0828020.D
Dilution:	1.0			Initial Weight/Volume:	15.0 g
Analysis Date:	08/28/2013 2148			Final Weight/Volume:	5.0 mL
Prep Date:	08/27/2013 0345			Injection Volume:	2 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		4100	J	9.8	100
Acenaphthylene		81	J	12	100
Anthracene		1100	J	10	100
Benzo[a]anthracene		1200	J	13	100
Benzo[a]pyrene		430	J	10	100
Benzo[b]fluoranthene		680	J	16	100
Benzo[g,h,i]perylene		150		10	100
Benzo[k]fluoranthene		200		21	100
Chrysene		910	J	12	100
Dibenz(a,h)anthracene		67	J	11	100
Fluoranthene		5900	J	11	100
Fluorene		3600	J	13	100
Indeno[1,2,3-cd]pyrene		150		11	100
Naphthalene		8700	J	8.8	100
Phenanthrene		9500	J	16	100
Pyrene		3600	J	10	100

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	67		25 - 104
2-Fluorobiphenyl	62		35 - 105
Terphenyl-d14	61		25 - 127

Client: ARCADIS U.S. Inc | Job Number: 180-24488-2

Client Sample ID: **SB-12_30.5-31 (20130823)**

Lab Sample ID: 180-24488-2 | Date Sampled: 08/23/2013 0900
Client Matrix: Solid | % Moisture: 35.2 | Date Received: 08/24/2013 0925

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	180-82429	Instrument ID:	732
Prep Method:	3541	Prep Batch:	180-82141	Lab File ID:	D0903020.D
Dilution:	1.0			Initial Weight/Volume:	15.1 g
Analysis Date:	09/03/2013 1930			Final Weight/Volume:	5.0 mL
Prep Date:	08/30/2013 0410			Injection Volume:	2 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		ND		9.8	100
Acenaphthylene		ND		12	100
Anthracene		ND		10	100
Benzo[a]anthracene		ND		13	100
Benzo[a]pyrene		ND		10	100
Benzo[b]fluoranthene		ND		16	100
Benzo[g,h,i]perylene		ND		10	100
Benzo[k]fluoranthene		ND		21	100
Chrysene		ND		12	100
Dibenz(a,h)anthracene		ND		11	100
Fluoranthene		ND		11	100
Fluorene		ND		13	100
Indeno[1,2,3-cd]pyrene		ND		11	100
Naphthalene		31	J	8.8	100
Phenanthrene		ND		16	100
Pyrene		ND		10	100

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	76		25 - 104
2-Fluorobiphenyl	73		35 - 105
Terphenyl-d14	71		25 - 127

Client: ARCADIS U.S. Inc | Job Number: 180-24488-3

Client Sample ID: **DUP- 01 (20130823)**

Lab Sample ID: 180-24488-3 | Date Sampled: 08/23/2013 0000
Client Matrix: Solid | % Moisture: 35.9 | Date Received: 08/24/2013 0925

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	180-81895	Instrument ID:	731
Prep Method:	3541	Prep Batch:	180-81753	Lab File ID:	V0827017.D
Dilution:	1.0			Initial Weight/Volume:	14.7 g
Analysis Date:	08/27/2013 1902			Final Weight/Volume:	5.0 mL
Prep Date:	08/27/2013 0345			Injection Volume:	2 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		63	J	10	110
Acenaphthylene		ND		12	110
Anthracene		23	J	10	110
Benzo[a]anthracene		39	J	13	110
Benzo[a]pyrene		15	J	11	110
Benzo[b]fluoranthene		25	J	17	110
Benzo[g,h,i]perylene		ND		11	110
Benzo[k]fluoranthene		ND		21	110
Chrysene		30	J	13	110
Dibenz(a,h)anthracene		ND		12	110
Fluoranthene		170	J	11	110
Fluorene		18	J	14	110
Indeno[1,2,3-cd]pyrene		ND		11	110
Naphthalene		100	J	9.2	110
Phenanthrene		230	J	17	110
Pyrene		110	J	11	110

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	64		25 - 104
2-Fluorobiphenyl	56		35 - 105
Terphenyl-d14	64		25 - 127

TestAmerica Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh, PA 15238
Phone: 412.963.7058 Fax:

Chain of Custody


180-24488 Chain of Custody

08/29/2013

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Dave Bessingpas	Site Contact: Dave Bessingpas	Date: 8/23/13	COC No:
Company Name: Beazer	Tel/Fax: 218-829-4607	Lab Contact: Veronica Bortot	Carrier: FedEx	1 of 1 COCs
Address:	Analysis Turnaround Time			Sampler:
City/State/Zip: Pittsburgh, PA	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 412-208-8813	TAT if different from Below (See Notes)			Walk-in Client:
Fax:	☐ 2 weeks			Lab Sampling:
Project Name: Beazer-Superior WI	☐ 1 week			
Site: Superior WI	☐ 2 days			Job / SDG No.:
PO#	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	PAH (Method 8270)	Temperature	Sample Specific Notes:
SB-12_30-30.5 (20130823)	8/23/13	0857	G		1	N	N	1		Rush TAT
SB-12_30.5-31 (20130823)	8/23/13	0900	G		1	N	N	1		Hold for Analysis
DUP-01 (20130823)	8/23/13	—	G		1	N	N	1		Std 3 wks
Temp Blank	—	—	G		1	N	N		1	

Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4=HNO3, 5=NaOH, 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for_____ Months

Special Instructions/QC Requirements & Comments:
Email results to Dave Bessingpas : david.bessingpas@arcadis-us.com

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd:_____ Corr'd:_____ | Therm ID No.:_____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Kelly Clark	ARCADIS	1730	Debbie Watson	TAP	8-24-13 9:25
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

ARCADIS
Infrastructure · Water · Environment · Buildings

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Beazer East Inc.

Supplemental Off-Property Investigation

Data Review

SUPERIOR, WISCONSIN

DIOXIN ANALYSES

SDG # 1300593

Analyses Performed By:
Vista Analytical Laboratories
El Dorado Hills, California

Report # 20285R
Review Level: Tier III
Project: B0039278.0000.00003

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # 1300593 for samples collected in association with the Beazer East, Inc., Supplemental Off-Property Investigation. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets and chain of custody. Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis
					Dioxins/Furans
HA-1 (0-0.5')	1300593-01	Soil	8/20/2013		X
HA-1 (0.5-1')	1300593-02	Soil	8/20/2013		X
HA-4 (0-0.5')	1300593-04	Soil	8/20/2013		X
HA-4 (0.5-1')	1300593-04	Soil	8/20/2013		X
HA-7 (0-0.5')	1300593-05	Soil	8/20/2013		X
HA-7 (0.5-1')	1300593-06	Soil	8/20/2013		X
HA-9 (0-0.5')	1300593-07	Soil	8/21/2013		X
HA-9 (0.5-1')	1300593-08	Soil	8/21/2013		X
DUP-1	1300593-09	Soil	8/21/2013	HA-1 (0-0.5')	X
RB-082013	1300593-10	Water	8/20/2013		X

1. The matrix spike/matrix spike duplicate (MS/MSD) analysis was performed on sample location HA-4 (0-0.5').
2. Sample results were reported on a dry-weight basis.

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Method 8290. Data were reviewed in accordance with USEPA National Functional Guidelines of January 2005.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected as unusable. The analyte may or may not be present in the sample.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

POLYCHLORINATED DIBENZODIOXINS AND POLYCHLORINATED DIBENZOFURANS (PCDD/PCDF) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8290	Water	30 days from collection to extraction and 45 days from extraction to analysis	Cool to <6 °C
	Soil	30 days from collection to extraction and 45 days from extraction to analysis	Cool to <6 °C

The samples were received at the laboratory at acceptable temperatures and all samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e. laboratory method blanks and equipment rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Equipment rinse blanks also measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable; system performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

A maximum relative standard deviation (RSD) of 20% is allowed for all non-labeled compounds (target) and 30% is allowed for all labeled compounds (internal standards and recovery standards)

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibited percent difference (%D) less than the control limit (20%).

All initial and continuing calibration criteria were within the control limits.

5. Internal Standard Performance

All samples to be analyzed for PCDD/PCDF compounds are spiked with internal standards prior to extraction. Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria require the internal standard compounds exhibit recoveries within the control limits of 40% to 135%.

Sample locations associated with internal standards exhibiting responses outside of the control limits are presented in the following table.

Sample Locations	Internal Standard	Response
HA-7 (0-0.5')	^{13}C-OCDD	>UL
HA-9 (0-0.5')	^{13}C-OCDD	>UL
HA-9 (0.5-1')	^{13}C-1,2,3,7,8-PeCDD	>UL

The criteria used to evaluate the internal standard responses are presented in the following table. In the case of an internal standard deviation, the compounds quantitated under the deviant internal standard are qualified as documented in the table below.

Control limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No action
	Detect	J
< the lower control limit (LL) but > 40%	Non-detect	J
	Detect	J
< 25%	Non-detect	R
	Detect	J

6. Recovery Standard Performance

The recovery standard (^{37}Cl-2,3,7,8-TCDD) is added to the sample extract prior to the extract clean-up steps. The concentrations of the labeled standards (internal standards) are determined using the recovery standard.

All recovery standard recoveries were acceptable.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds spiked in the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent differences (RPDs) between the MS and MSD must be within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compounds concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS/MSD exhibited acceptable recoveries and RPD between the MS/MSD recoveries.

8. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit recoveries within the laboratory-established acceptance limits.

All compounds associated with the LCS analyses exhibited recoveries within the control limits.

9. Field Duplicate Sample Analysis

Field duplicate analysis is used to assess the precision of the field sampling procedures and analytical method. A control limit of 100% for soil matrices is applied to the RPD between the parent and the field duplicate samples. In the case where the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of three times the RL is applied for soil matrices.

Results (in ug/kg) for the field duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
HA-1 (0-0.5')/ DUP-1	1,2,3,4,7,8-HxCDD	0.000194 J	0.000172 U	AC
	1,2,3,6,7,8-HxCDD	0.00067 J	0.000433 J	AC
	1,2,3,7,8,9-HxCDD	0.0005 J	0.000321 J	AC
	1,2,3,4,6,7,8-HpCDD	0.0142	0.00806	AC
	OCDD	0.171	0.074	79.1%
	2,3,4,7,8-PeCDF	0.000398 J	0.000227 J	AC
	1,2,3,4,7,8-HxCDF	0.000444 J	0.000247 J	AC
	1,2,3,6,7,8-HxCDF	0.000265 J	0.000135 U	AC
	2,3,4,6,7,8-HxCDF	0.000335 J	0.00022 J	AC
	1,2,3,4,6,7,8-HpCDF	0.00360	0.00207 J	AC
	OCDF	0.0143	0.0076	AC
	Total TCDD	0.0011	0.000273	AC
	Total PeCDD	0.00226	0.000795	AC
	Total HxCDD	0.00639	0.00254	AC
	Total HpCDD	0.0292	0.0162	AC
	Total TCDF	0.0026	0.000736	AC

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
	Total PeCDF	0.00295	0.00126	AC
	Total HxCDF	0.00563	0.00325	AC
	Total HpCDF	0.0137	0.00724	AC

AC Acceptable
U Not detected

The calculated RPDs between the parent sample and field duplicate were acceptable.

10. Compound Identification

PCDD/PCDF compounds are identified by using the compound's ion abundance ratios, signal-to-noise ratios, and retention times relative to the internal standards'.

An estimated maximum possible concentration (EMPC) designation is given to compounds which have signals eluting within the established retention time window which would, if positively identified, be greater than the detection limit. The signals do not, however, meet the ion abundance ratio criteria and therefore cannot be identified as the compound of interest. The EMPC value is the estimated concentration of the interferant quantitated "as the compound of interest". This value should be considered an elevated detection limit based on potential compound identification and quantitation interference. The "UX" qualifier has been added to the following sample results (in ug/kg) to indicate the elevated detection limit as EMPC.

Sample ID	Compound	Laboratory Result	Reported Result
HA-1 (0-0.5')	1,2,3,7,8-PeCDD	0.000144 EMPC	0.000144 UX
	2,3,7,8-TCDF	0.0002 EMPC	0.0002 UX
	1,2,3,7,8-PeCDF	0.000112 EMPC	0.000112 UX
	1,2,3,4,7,8,9-HpCDF	0.00030 EMPC	0.00030 UX
HA-1 (0.5-1')	1,2,3,7,8-PeCDD	0.0000543 EMPC	0.0000543 UX
	1,2,3,7,8-PeCDF	0.0000415 EMPC	0.0000415 UX
HA-4 (0-0.5')	2,3,7,8-TCDD	0.000132 EMPC	0.000132 UX
	1,2,3,6,7,8-HxCDF	0.000338 EMPC	0.000338 UX
HA-4 (0.5-1')	1,2,3,4,7,8,9-HpCDF	0.0000513 EMPC	0.0000513 UX
HA-7 (0-0.5')	1,2,3,7,8-PeCDF	0.000153 EMPC	0.000153 UX
	1,2,3,7,8,9-HxCDF	0.000181 EMPC	0.000181 UX
HA-9 (0-0.5')	1,2,3,7,8-PeCDF	0.0000991 EMPC	0.0000991 UX
	2,3,4,7,8-PeCDF	0.000194 EMPC	0.000194 UX
	1,2,3,6,7,8-HxCDF	0.000179 EMPC	0.000179 UX
DUP-1	1,2,3,7,8-PeCDD	0.000163 EMPC	0.000163 UX
	1,2,3,7,8-PeCDF	0.000112 EMPC	0.000112 UX
	1,2,3,6,7,8-HxCDF	0.000135 EMPC	0.000135 UX
	1,2,3,4,7,8,9-HpCDF	0.000177 EMPC	0.000177 UX

11. System Performance and Overall Assessment

Please note that when individual compounds are qualified as estimated (J) during validation, this qualification is applied to the totals as well.

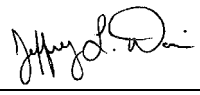
Overall system performance was acceptable. Except for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR PCDD/PCDF

PCDDs/PCDFs; SW-846 8290	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks		X		X	
Laboratory Control Sample (LCS) Accuracy (%R)		X		X	
Laboratory Control Sample Duplicate (LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD RPD		X		X	
Field/Laboratory Duplicate Sample RPD		X		X	
Dilution Factor		X		X	
Moisture Content		X		X	
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration %Ds		X		X	
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Signal-to-noise ratio $\geq$ 10:1		X		X	
Internal standard performance		X	X		
Recovery standard performance		X		X	
Resolution mix $\leq$ 25%		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

RSD – relative standard deviation
%R - percent recovery
RPD - relative percent difference
%D – difference

VALIDATION PERFORMED BY: Jeffrey L. Davin

SIGNATURE: 

DATE: September 30, 2013

PEER REVIEW: Dennis Capria

DATE: October 11, 2013

CHAIN OF CUSTODY /
CORRECTED SAMPLE ANALYSIS DATA SHEETS

Sample ID: HA-1 (0-0.5')

EPA Method 8290

Client Data
Name: ARCADIS
Project: Beazer-Superior, WI
Date Collected: 20-Aug-2013 11:47

Sample Data
Matrix: Soil
Sample Size: 13.2 g
% Solids: 76.7

Laboratory Data
Lab Sample: 1300593-01 Date Received: 24-Aug-2013 9:15
QC Batch: B3I0027 Date Extracted: 30-Aug-2013 11:09
Date Analyzed : 09-Sep-13 20:27 Column: ZB-5MS Analyst: ANP

Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers
2,3,7,8-TCDD	ND	0.0552		
1,2,3,7,8-PeCDD	ND		0.144	UX
1,2,3,4,7,8-HxCDD	0.194			J
1,2,3,6,7,8-HxCDD	0.670			J
1,2,3,7,8,9-HxCDD	0.500			J
1,2,3,4,6,7,8-HpCDD	14.2			
OCDD	171			
2,3,7,8-TCDF	ND		0.200	UX
1,2,3,7,8-PeCDF	ND		0.112	UX
2,3,4,7,8-PeCDF	0.398			J
1,2,3,4,7,8-HxCDF	0.444			J
1,2,3,6,7,8-HxCDF	0.265			J
2,3,4,6,7,8-HxCDF	0.335			J
1,2,3,7,8,9-HxCDF	ND	0.0780		
1,2,3,4,6,7,8-HpCDF	3.60			
1,2,3,4,7,8,9-HpCDF	ND		0.308	UX
OCDF	14.3			

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C-2,3,7,8-TCDD	84.6	40 - 135	
	13C-1,2,3,7,8-PeCDD	120	40 - 135	
	13C-1,2,3,4,7,8-HxCDD	96.4	40 - 135	
	13C-1,2,3,6,7,8-HxCDD	94.2	40 - 135	
	13C-1,2,3,7,8,9-HxCDD	99.0	40 - 135	
	13C-1,2,3,4,6,7,8-HpCDD	109	40 - 135	
	13C-OCDD	128	40 - 135	
	13C-2,3,7,8-TCDF	59.9	40 - 135	
	13C-1,2,3,7,8-PeCDF	107	40 - 135	
	13C-2,3,4,7,8-PeCDF	109	40 - 135	
	13C-1,2,3,4,7,8-HxCDF	100	40 - 135	
	13C-1,2,3,6,7,8-HxCDF	99.7	40 - 135	
	13C-2,3,4,6,7,8-HxCDF	94.0	40 - 135	
	13C-1,2,3,7,8,9-HxCDF	95.5	40 - 135	
	13C-1,2,3,4,6,7,8-HpCDF	105	40 - 135	
	13C-1,2,3,4,7,8,9-HpCDF	99.0	40 - 135	
	13C-OCDF	109	40 - 135	
CRS	37Cl-2,3,7,8-TCDD	86.0	40 - 135	

Toxic Equivalent Quotient (TEQ) Data

TEQMinWHO2005Dioxin	0.594

TOTALS

Total TCDD	1.10	1.23	
Total PeCDD	2.26	2.58	
Total HxCDD	6.39	6.54	
Total HpCDD	29.2		
Total TCDF	2.60	3.29	
Total PeCDF	2.95	3.38	
Total HxCDF	5.63		
Total HpCDF	13.7	14.0	

DL - Sample specifc estimated detection limit

EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit

The results are reported in dry weight. The sample size is reported in wet weight.

Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

Sample ID: HA-1 (0.5-1')

EPA Method 8290

Client Data
Name: ARCADIS
Project: Beazer-Superior, WI
Date Collected: 20-Aug-2013 12:00

Sample Data
Matrix: Soil
Sample Size: 12.8 g
% Solids: 79.0

Laboratory Data
Lab Sample: 1300593-02 Date Received: 24-Aug-2013 9:15
QC Batch: B3I0027 Date Extracted: 30-Aug-2013 11:09
Date Analyzed : 09-Sep-13 21:15 Column: ZB-5MS Analyst: ANP

Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers
2,3,7,8-TCDD	ND	0.0889		
1,2,3,7,8-PeCDD	ND		0.0543	UX
1,2,3,4,7,8-HxCDD	ND	0.156		
1,2,3,6,7,8-HxCDD	ND	0.160		
1,2,3,7,8,9-HxCDD	ND	0.173		
1,2,3,4,6,7,8-HpCDD	1.21			J
OCDD	13.3			
2,3,7,8-TCDF	ND	0.0975		
1,2,3,7,8-PeCDF	ND		0.0415	UX
2,3,4,7,8-PeCDF	0.0598			J
1,2,3,4,7,8-HxCDF	0.0475			J
1,2,3,6,7,8-HxCDF	ND	0.0407		
2,3,4,6,7,8-HxCDF	ND	0.0478		
1,2,3,7,8,9-HxCDF	ND	0.0429		
1,2,3,4,6,7,8-HpCDF	0.292			J
1,2,3,4,7,8,9-HpCDF	ND	0.0378		
OCDF	0.524			J

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C-2,3,7,8-TCDD	72.1	40 - 135	
	13C-1,2,3,7,8-PeCDD	103	40 - 135	
	13C-1,2,3,4,7,8-HxCDD	82.1	40 - 135	
	13C-1,2,3,6,7,8-HxCDD	83.9	40 - 135	
	13C-1,2,3,7,8,9-HxCDD	84.9	40 - 135	
	13C-1,2,3,4,6,7,8-HpCDD	97.5	40 - 135	
	13C-OCDD	115	40 - 135	
	13C-2,3,7,8-TCDF	50.6	40 - 135	
	13C-1,2,3,7,8-PeCDF	89.8	40 - 135	
	13C-2,3,4,7,8-PeCDF	93.2	40 - 135	
	13C-1,2,3,4,7,8-HxCDF	86.8	40 - 135	
	13C-1,2,3,6,7,8-HxCDF	85.1	40 - 135	
	13C-2,3,4,6,7,8-HxCDF	84.7	40 - 135	
	13C-1,2,3,7,8,9-HxCDF	86.6	40 - 135	
	13C-1,2,3,4,6,7,8-HpCDF	92.0	40 - 135	
	13C-1,2,3,4,7,8,9-HpCDF	93.3	40 - 135	
	13C-OCDF	99.0	40 - 135	
CRS	37Cl-2,3,7,8-TCDD	88.0	40 - 135	

Toxic Equivalent Quotient (TEQ) Data

TEQMinWHO2005Dioxin	0.0419

TOTALS

Total TCDD	ND	0.382
Total PeCDD	0.345	0.671
Total HxCDD	0.507	0.771
Total HpCDD	2.37	
Total TCDF	0.174	
Total PeCDF	0.111	0.424
Total HxCDF	0.307	0.364
Total HpCDF	0.292	0.568

DL - Sample specifc estimated detection limit

EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit

The results are reported in dry weight. The sample size is reported in wet weight.

Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

Sample ID: HA-4 (0-0.5')

EPA Method 8290

Client Data
Name: ARCADIS
Project: Beazer-Superior, WI
Date Collected: 20-Aug-2013 16:20

Sample Data
Matrix: Soil
Sample Size: 13.2 g
% Solids: 76.4

Laboratory Data
Lab Sample: 1300593-03 Date Received: 24-Aug-2013 9:15
QC Batch: B3I0027 Date Extracted: 30-Aug-2013 11:09
Date Analyzed : 11-Sep-13 14:03 Column: ZB-5MS Analyst: ANP

Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers
2,3,7,8-TCDD	ND		0.132	UX
1,2,3,7,8-PeCDD	0.639			J
1,2,3,4,7,8-HxCDD	0.613			J
1,2,3,6,7,8-HxCDD	1.80			J
1,2,3,7,8,9-HxCDD	1.23			J
1,2,3,4,6,7,8-HpCDD	40.8			
OCDD	428			
2,3,7,8-TCDF	0.213			J
1,2,3,7,8-PeCDF	0.189			J
2,3,4,7,8-PeCDF	0.403			J
1,2,3,4,7,8-HxCDF	0.951			J
1,2,3,6,7,8-HxCDF	ND		0.338	UX
2,3,4,6,7,8-HxCDF	0.529			J
1,2,3,7,8,9-HxCDF	ND	0.244		
1,2,3,4,6,7,8-HpCDF	8.81			
1,2,3,4,7,8,9-HpCDF	0.843			J
OCDF	40.7			

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C-2,3,7,8-TCDD	89.4	40 - 135	
	13C-1,2,3,7,8-PeCDD	125	40 - 135	
	13C-1,2,3,4,7,8-HxCDD	101	40 - 135	
	13C-1,2,3,6,7,8-HxCDD	96.0	40 - 135	
	13C-1,2,3,7,8,9-HxCDD	97.0	40 - 135	
	13C-1,2,3,4,6,7,8-HpCDD	111	40 - 135	
	13C-OCDD	129	40 - 135	
	13C-2,3,7,8-TCDF	56.8	40 - 135	
	13C-1,2,3,7,8-PeCDF	117	40 - 135	
	13C-2,3,4,7,8-PeCDF	116	40 - 135	
	13C-1,2,3,4,7,8-HxCDF	108	40 - 135	
	13C-1,2,3,6,7,8-HxCDF	99.4	40 - 135	
	13C-2,3,4,6,7,8-HxCDF	100	40 - 135	
	13C-1,2,3,7,8,9-HxCDF	101	40 - 135	
	13C-1,2,3,4,6,7,8-HpCDF	112	40 - 135	
	13C-1,2,3,4,7,8,9-HpCDF	115	40 - 135	
	13C-OCDF	115	40 - 135	
CRS	37Cl-2,3,7,8-TCDD	90.4	40 - 135	

Toxic Equivalent Quotient (TEQ) Data

TEQMinWHO2005Dioxin	1.94

TOTALS		
Total TCDD	0.578	1.84
Total PeCDD	6.67	8.38
Total HxCDD	22.7	
Total HpCDD	94.9	
Total TCDF	0.376	1.73
Total PeCDF	2.78	3.15
Total HxCDF	13.0	13.5
Total HpCDF	36.7	

DL - Sample specifc estimated detection limit

EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit

The results are reported in dry weight. The sample size is reported in wet weight.

Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

Sample ID: HA-4 (0.5-1')

EPA Method 8290

Client Data
Name: ARCADIS
Project: Beazer-Superior, WI
Date Collected: 20-Aug-2013 16:25

Sample Data
Matrix: Soil
Sample Size: 12.1 g
% Solids: 82.9

Laboratory Data
Lab Sample: 1300593-04 Date Received: 24-Aug-2013 9:15
QC Batch: B3I0027 Date Extracted: 30-Aug-2013 11:09
Date Analyzed : 09-Sep-13 22:04 Column: ZB-5MS Analyst: ANP

Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers
2,3,7,8-TCDD	ND	0.0511		
1,2,3,7,8-PeCDD	ND	0.0907		
1,2,3,4,7,8-HxCDD	ND	0.0682		
1,2,3,6,7,8-HxCDD	0.191			J
1,2,3,7,8,9-HxCDD	0.146			J
1,2,3,4,6,7,8-HpCDD	2.62			
OCDD	31.3			
2,3,7,8-TCDF	ND	0.0570		
1,2,3,7,8-PeCDF	ND	0.0644		
2,3,4,7,8-PeCDF	ND	0.0621		
1,2,3,4,7,8-HxCDF	ND	0.0620		
1,2,3,6,7,8-HxCDF	ND	0.0613		
2,3,4,6,7,8-HxCDF	ND	0.0757		
1,2,3,7,8,9-HxCDF	ND	0.0261		
1,2,3,4,6,7,8-HpCDF	0.634			J
1,2,3,4,7,8,9-HpCDF	ND		0.0513	UX
OCDF	2.31			J

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C-2,3,7,8-TCDD	84.4	40 - 135	
	13C-1,2,3,7,8-PeCDD	122	40 - 135	
	13C-1,2,3,4,7,8-HxCDD	94.2	40 - 135	
	13C-1,2,3,6,7,8-HxCDD	92.0	40 - 135	
	13C-1,2,3,7,8,9-HxCDD	92.4	40 - 135	
	13C-1,2,3,4,6,7,8-HpCDD	104	40 - 135	
	13C-OCDD	118	40 - 135	
	13C-2,3,7,8-TCDF	53.7	40 - 135	
	13C-1,2,3,7,8-PeCDF	104	40 - 135	
	13C-2,3,4,7,8-PeCDF	111	40 - 135	
	13C-1,2,3,4,7,8-HxCDF	97.7	40 - 135	
	13C-1,2,3,6,7,8-HxCDF	96.1	40 - 135	
	13C-2,3,4,6,7,8-HxCDF	92.9	40 - 135	
	13C-1,2,3,7,8,9-HxCDF	92.5	40 - 135	
	13C-1,2,3,4,6,7,8-HpCDF	101	40 - 135	
	13C-1,2,3,4,7,8,9-HpCDF	98.0	40 - 135	
	13C-OCDF	104	40 - 135	
CRS	37Cl-2,3,7,8-TCDD	84.5	40 - 135	

Toxic Equivalent Quotient (TEQ) Data

TEQMinWHO2005Dioxin	0.0763

TOTALS

Total TCDD	0.366	0.703
Total PeCDD	0.0624	0.386
Total HxCDD	1.32	1.50
Total HpCDD	5.92	
Total TCDF	0.408	0.525
Total PeCDF	0.0633	
Total HxCDF	0.671	
Total HpCDF	2.15	2.20

DL - Sample specifc estimated detection limit

EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit

The results are reported in dry weight. The sample size is reported in wet weight.

Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

Sample ID: HA-7 (0-0.5')

EPA Method 8290

Client Data
Name: ARCADIS
Project: Beazer-Superior, WI
Date Collected: 20-Aug-2013 19:13

Sample Data
Matrix: Soil
Sample Size: 13.4 g
% Solids: 74.9

Laboratory Data
Lab Sample: 1300593-05 Date Received: 24-Aug-2013 9:15
QC Batch: B3I0027 Date Extracted: 30-Aug-2013 11:09
Date Analyzed : 09-Sep-13 22:52 Column: ZB-5MS Analyst: ANP

Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers
2,3,7,8-TCDD	ND	0.0571		
1,2,3,7,8-PeCDD	0.181			J
1,2,3,4,7,8-HxCDD	0.249			J
1,2,3,6,7,8-HxCDD	1.02			J
1,2,3,7,8,9-HxCDD	0.500			J
1,2,3,4,6,7,8-HpCDD	28.7			
OCDD	349			J
2,3,7,8-TCDF	0.216			J
1,2,3,7,8-PeCDF	ND		0.153	UX
2,3,4,7,8-PeCDF	0.345			J
1,2,3,4,7,8-HxCDF	0.872			J
1,2,3,6,7,8-HxCDF	0.350			J
2,3,4,6,7,8-HxCDF	0.439			J
1,2,3,7,8,9-HxCDF	ND		0.181	UX
1,2,3,4,6,7,8-HpCDF	7.36			
1,2,3,4,7,8,9-HpCDF	0.771			J
OCDF	31.5			

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C-2,3,7,8-TCDD	105	40 - 135	
	13C-1,2,3,7,8-PeCDD	133	40 - 135	
	13C-1,2,3,4,7,8-HxCDD	101	40 - 135	
	13C-1,2,3,6,7,8-HxCDD	95.1	40 - 135	
	13C-1,2,3,7,8,9-HxCDD	100	40 - 135	
	13C-1,2,3,4,6,7,8-HpCDD	115	40 - 135	
	13C-OCDD	137	40 - 135	H
	13C-2,3,7,8-TCDF	94.8	40 - 135	
	13C-1,2,3,7,8-PeCDF	112	40 - 135	
	13C-2,3,4,7,8-PeCDF	114	40 - 135	
	13C-1,2,3,4,7,8-HxCDF	104	40 - 135	
	13C-1,2,3,6,7,8-HxCDF	100	40 - 135	
	13C-2,3,4,6,7,8-HxCDF	100	40 - 135	
	13C-1,2,3,7,8,9-HxCDF	101	40 - 135	
	13C-1,2,3,4,6,7,8-HpCDF	113	40 - 135	
	13C-1,2,3,4,7,8,9-HpCDF	107	40 - 135	
	13C-OCDF	119	40 - 135	
CRS	37Cl-2,3,7,8-TCDD	110	40 - 135	

Toxic Equivalent Quotient (TEQ) Data

TEQMinWHO2005Dioxin	1.13

TOTALS

Total TCDD	2.54	
Total PeCDD	1.23	2.24
Total HxCDD	8.25	
Total HpCDD	58.5	
Total TCDF	3.81	3.87
Total PeCDF	2.83	3.27
Total HxCDF	10.4	10.8
Total HpCDF	30.8	

DL - Sample specifc estimated detection limit

EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit

The results are reported in dry weight. The sample size is reported in wet weight.

Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

Sample ID: HA-7 (0.5-1')

EPA Method 8290

Client Data
Name: ARCADIS
Project: Beazer-Superior, WI
Date Collected: 20-Aug-2013 19:18

Sample Data
Matrix: Soil
Sample Size: 13.2 g
% Solids: 76.6

Laboratory Data
Lab Sample: 1300593-06 Date Received: 24-Aug-2013 9:15
QC Batch: B3I0027 Date Extracted: 30-Aug-2013 11:09
Date Analyzed : 09-Sep-13 23:40 Column: ZB-5MS Analyst: DMS

Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers
2,3,7,8-TCDD	ND	0.105		
1,2,3,7,8-PeCDD	0.109			J
1,2,3,4,7,8-HxCDD	ND	0.221		
1,2,3,6,7,8-HxCDD	0.195			J
1,2,3,7,8,9-HxCDD	ND	0.254		
1,2,3,4,6,7,8-HpCDD	1.71			J
OCDD	17.1			
2,3,7,8-TCDF	ND	0.101		
1,2,3,7,8-PeCDF	ND	0.126		
2,3,4,7,8-PeCDF	ND	0.103		
1,2,3,4,7,8-HxCDF	ND	0.0934		
1,2,3,6,7,8-HxCDF	0.0986			J
2,3,4,6,7,8-HxCDF	ND	0.117		
1,2,3,7,8,9-HxCDF	ND	0.148		
1,2,3,4,6,7,8-HpCDF	0.701			J
1,2,3,4,7,8,9-HpCDF	ND	0.0961		
OCDF	1.36			J

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C-2,3,7,8-TCDD	92.2	40 - 135	
	13C-1,2,3,7,8-PeCDD	126	40 - 135	
	13C-1,2,3,4,7,8-HxCDD	92.3	40 - 135	
	13C-1,2,3,6,7,8-HxCDD	87.6	40 - 135	
	13C-1,2,3,7,8,9-HxCDD	90.2	40 - 135	
	13C-1,2,3,4,6,7,8-HpCDD	107	40 - 135	
	13C-OCDD	128	40 - 135	
	13C-2,3,7,8-TCDF	93.7	40 - 135	
	13C-1,2,3,7,8-PeCDF	99.8	40 - 135	
	13C-2,3,4,7,8-PeCDF	101	40 - 135	
	13C-1,2,3,4,7,8-HxCDF	89.8	40 - 135	
	13C-1,2,3,6,7,8-HxCDF	91.6	40 - 135	
	13C-2,3,4,6,7,8-HxCDF	87.1	40 - 135	
	13C-1,2,3,7,8,9-HxCDF	91.0	40 - 135	
	13C-1,2,3,4,6,7,8-HpCDF	103	40 - 135	
	13C-1,2,3,4,7,8,9-HpCDF	99.9	40 - 135	
	13C-OCDF	113	40 - 135	
CRS	37Cl-2,3,7,8-TCDD	108	40 - 135	

Toxic Equivalent Quotient (TEQ) Data

TEQMinWHO2005Dioxin	0.168

TOTALS			
Total TCDD	0.432	0.540	
Total PeCDD	0.746	1.27	
Total HxCDD	0.645	1.65	
Total HpCDD	3.66		
Total TCDF	0.404	0.476	
Total PeCDF	0.675		
Total HxCDF	0.848	1.03	
Total HpCDF	1.59		

DL - Sample specifc estimated detection limit

EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit

The results are reported in dry weight. The sample size is reported in wet weight.

Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

Sample ID: HA-9 (0-0.5')

EPA Method 8290

Client Data
Name: ARCADIS
Project: Beazer-Superior, WI
Date Collected: 21-Aug-2013 9:00

Sample Data
Matrix: Soil
Sample Size: 13.3 g
% Solids: 76.0

Laboratory Data
Lab Sample: 1300593-07 Date Received: 24-Aug-2013 9:15
QC Batch: B3I0027 Date Extracted: 30-Aug-2013 11:09
Date Analyzed : 10-Sep-13 00:28 Column: ZB-5MS Analyst: DMS

Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers
2,3,7,8-TCDD	ND	0.105		
1,2,3,7,8-PeCDD	0.151			J
1,2,3,4,7,8-HxCDD	ND	0.223		
1,2,3,6,7,8-HxCDD	0.341			J
1,2,3,7,8,9-HxCDD	0.354			J
1,2,3,4,6,7,8-HpCDD	5.03			
OCDD	42.6			J
2,3,7,8-TCDF	ND	0.139		
1,2,3,7,8-PeCDF	ND		0.0991	UX
2,3,4,7,8-PeCDF	ND		0.194	UX
1,2,3,4,7,8-HxCDF	0.205			J
1,2,3,6,7,8-HxCDF	ND		0.179	UX
2,3,4,6,7,8-HxCDF	0.214			J
1,2,3,7,8,9-HxCDF	ND	0.0879		
1,2,3,4,6,7,8-HpCDF	1.21			J
1,2,3,4,7,8,9-HpCDF	ND	0.126		
OCDF	2.25			J

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C-2,3,7,8-TCDD	98.0	40 - 135	
	13C-1,2,3,7,8-PeCDD	122	40 - 135	
	13C-1,2,3,4,7,8-HxCDD	94.4	40 - 135	
	13C-1,2,3,6,7,8-HxCDD	93.7	40 - 135	
	13C-1,2,3,7,8,9-HxCDD	94.1	40 - 135	
	13C-1,2,3,4,6,7,8-HpCDD	117	40 - 135	
	13C-OCDD	137	40 - 135	H
	13C-2,3,7,8-TCDF	93.6	40 - 135	
	13C-1,2,3,7,8-PeCDF	96.2	40 - 135	
	13C-2,3,4,7,8-PeCDF	110	40 - 135	
	13C-1,2,3,4,7,8-HxCDF	92.0	40 - 135	
	13C-1,2,3,6,7,8-HxCDF	94.6	40 - 135	
	13C-2,3,4,6,7,8-HxCDF	91.3	40 - 135	
	13C-1,2,3,7,8,9-HxCDF	96.7	40 - 135	
	13C-1,2,3,4,6,7,8-HpCDF	110	40 - 135	
	13C-1,2,3,4,7,8,9-HpCDF	109	40 - 135	
	13C-OCDF	122	40 - 135	
CRS	37Cl-2,3,7,8-TCDD	99.3	40 - 135	

Toxic Equivalent Quotient (TEQ) Data

TEQMinWHO2005Dioxin	0.338

TOTALS			
Total TCDD	2.76		
Total PeCDD	0.873	1.34	
Total HxCDD	3.73		
Total HpCDD	11.0		
Total TCDF	3.19	3.52	
Total PeCDF	1.23	2.01	
Total HxCDF	2.00	2.18	
Total HpCDF	2.49		

DL - Sample specifc estimated detection limit

EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit

The results are reported in dry weight. The sample size is reported in wet weight.

Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

Sample ID: HA-9 (0.5-1')

EPA Method 8290

Client Data
Name: ARCADIS
Project: Beazer-Superior, WI
Date Collected: 21-Aug-2013 9:05

Sample Data
Matrix: Soil
Sample Size: 12.7 g
% Solids: 79.3

Laboratory Data
Lab Sample: 1300593-08 Date Received: 24-Aug-2013 9:15
QC Batch: B3I0027 Date Extracted: 30-Aug-2013 11:09
Date Analyzed : 10-Sep-13 01:17 Column: ZB-5MS Analyst: DMS

Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers
2,3,7,8-TCDD	ND	0.0975		
1,2,3,7,8-PeCDD	ND	0.0888		
1,2,3,4,7,8-HxCDD	ND	0.218		
1,2,3,6,7,8-HxCDD	ND	0.240		
1,2,3,7,8,9-HxCDD	ND	0.240		
1,2,3,4,6,7,8-HpCDD	0.576			J
OCDD	3.75			J
2,3,7,8-TCDF	ND	0.0530		
1,2,3,7,8-PeCDF	ND	0.0856		
2,3,4,7,8-PeCDF	ND	0.0835		
1,2,3,4,7,8-HxCDF	ND	0.0598		
1,2,3,6,7,8-HxCDF	ND	0.0599		
2,3,4,6,7,8-HxCDF	ND	0.0725		
1,2,3,7,8,9-HxCDF	ND	0.0950		
1,2,3,4,6,7,8-HpCDF	0.294			J
1,2,3,4,7,8,9-HpCDF	ND	0.0451		
OCDF	0.171			J

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C-2,3,7,8-TCDD	104	40 - 135	
	13C-1,2,3,7,8-PeCDD	136	40 - 135	H
	13C-1,2,3,4,7,8-HxCDD	96.4	40 - 135	
	13C-1,2,3,6,7,8-HxCDD	99.0	40 - 135	
	13C-1,2,3,7,8,9-HxCDD	99.1	40 - 135	
	13C-1,2,3,4,6,7,8-HpCDD	115	40 - 135	
	13C-OCDD	132	40 - 135	
	13C-2,3,7,8-TCDF	99.3	40 - 135	
	13C-1,2,3,7,8-PeCDF	105	40 - 135	
	13C-2,3,4,7,8-PeCDF	120	40 - 135	
	13C-1,2,3,4,7,8-HxCDF	103	40 - 135	
	13C-1,2,3,6,7,8-HxCDF	95.5	40 - 135	
	13C-2,3,4,6,7,8-HxCDF	95.7	40 - 135	
	13C-1,2,3,7,8,9-HxCDF	100	40 - 135	
	13C-1,2,3,4,6,7,8-HpCDF	113	40 - 135	
	13C-1,2,3,4,7,8,9-HpCDF	105	40 - 135	
	13C-OCDF	116	40 - 135	
CRS	37Cl-2,3,7,8-TCDD	112	40 - 135	

Toxic Equivalent Quotient (TEQ) Data

TEQMinWHO2005Dioxin	0.00988

TOTALS

Total TCDD	0.583			
Total PeCDD	0.0852		0.163	
Total HxCDD	0.503			
Total HpCDD	1.31			
Total TCDF	ND		0.568	
Total PeCDF	ND	0.168		
Total HxCDF	ND	0.0706		
Total HpCDF	0.294			

DL - Sample specifc estimated detection limit

EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit

The results are reported in dry weight. The sample size is reported in wet weight.

Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

Sample ID: DUP-1

EPA Method 8290

Client Data
Name: ARCADIS
Project: Beazer-Superior, WI
Date Collected: 20-Aug-2013 0:00

Sample Data
Matrix: Soil
Sample Size: 13.1 g
% Solids: 77.3

Laboratory Data
Lab Sample: 1300593-09 Date Received: 24-Aug-2013 9:15
QC Batch: B3I0027 Date Extracted: 30-Aug-2013 11:09
Date Analyzed : 11-Sep-13 13:15 Column: ZB-5MS Analyst: ANP

Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers
2,3,7,8-TCDD	ND	0.0772		
1,2,3,7,8-PeCDD	ND		0.163	UX
1,2,3,4,7,8-HxCDD	ND	0.172		
1,2,3,6,7,8-HxCDD	0.433			J
1,2,3,7,8,9-HxCDD	0.321			J
1,2,3,4,6,7,8-HpCDD	8.06			
OCDD	74.0			
2,3,7,8-TCDF	ND	0.106		
1,2,3,7,8-PeCDF	ND		0.112	UX
2,3,4,7,8-PeCDF	0.227			J
1,2,3,4,7,8-HxCDF	0.247			J
1,2,3,6,7,8-HxCDF	ND		0.135	UX
2,3,4,6,7,8-HxCDF	0.220			J
1,2,3,7,8,9-HxCDF	ND	0.0617		
1,2,3,4,6,7,8-HpCDF	2.07			J
1,2,3,4,7,8,9-HpCDF	ND		0.177	UX
OCDF	7.60			

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C-2,3,7,8-TCDD	108	40 - 135	
	13C-1,2,3,7,8-PeCDD	134	40 - 135	
	13C-1,2,3,4,7,8-HxCDD	98.5	40 - 135	
	13C-1,2,3,6,7,8-HxCDD	93.9	40 - 135	
	13C-1,2,3,7,8,9-HxCDD	95.9	40 - 135	
	13C-1,2,3,4,6,7,8-HpCDD	109	40 - 135	
	13C-OCDD	119	40 - 135	
	13C-2,3,7,8-TCDF	98.9	40 - 135	
	13C-1,2,3,7,8-PeCDF	117	40 - 135	
	13C-2,3,4,7,8-PeCDF	118	40 - 135	
	13C-1,2,3,4,7,8-HxCDF	105	40 - 135	
	13C-1,2,3,6,7,8-HxCDF	98.4	40 - 135	
	13C-2,3,4,6,7,8-HxCDF	99.6	40 - 135	
	13C-1,2,3,7,8,9-HxCDF	102	40 - 135	
	13C-1,2,3,4,6,7,8-HpCDF	111	40 - 135	
	13C-1,2,3,4,7,8,9-HpCDF	108	40 - 135	
	13C-OCDF	111	40 - 135	
CRS	37Cl-2,3,7,8-TCDD	110	40 - 135	

Toxic Equivalent Quotient (TEQ) Data

TEQMinWHO2005Dioxin	0.316

TOTALS			
Total TCDD	0.273	0.724	
Total PeCDD	0.795	1.84	
Total HxCDD	2.54	3.73	
Total HpCDD	16.2		
Total TCDF	0.736	1.38	
Total PeCDF	1.26	1.96	
Total HxCDF	3.25	3.47	
Total HpCDF	7.24	7.42	

DL - Sample specifc estimated detection limit

EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit

The results are reported in dry weight. The sample size is reported in wet weight.

Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

CHAIN OF CUSTODY

Vista

FOR LABORATORY USE ONLY — Storage Secured

Laboratory Project ID: 1300593 — Yes ☒ No ☐

Storage ID WR-2 F7 +B3 — Temp 0.9 °C

TAT: (Check One):
Standard: ● 21 Days
Rush (surcharge may apply):
○ 14 days ○ 7 days Specify:___

Project I.D.: Beazer-Superior, WI — P.O.#_____ — Sampler: CR/SS/DB (Name)

Invoice to: Name Jane Paterecity — Company Beazer East, — Address — City Pittsburgh — State PA — Zip — Ph# 412-208-8813 — Fax#

Relinquished by: (Signature and Printed Name) Cat Bone / David Bessingpas — Date: 8/23/13 — Time: 1500

Received by: (Signature and Printed Name) William Lukszo — Date: 8/24/13 — Time: 09:15

Relinquished by: (Signature and Printed Name) — Date: — Time:

Received by: (Signature and Printed Name) — Date: — Time:

See "Sample Log-in Checklist" for additional sample information

SHIP TO: Vista Analytical Laboratory
1104 Windfield Way
El Dorado Hills, CA 95762
(916) 673-1520 • Fax (916) 673-0106

ATTN: Martha Maier

Method of Shipment: FedEx

Tracking No.: 7965 2891 0133

Add Analysis(es) Requested

Sample ID	Date	Time	Location/Sample Description	Container(s) Quantity	Type	Matrix	EPA1613 2378-TCDD	EPA1613 2378-TCDD/TCDF	EPA1613 PCDD/PCDF	EPA8290 2378-TCDD	EPA8290 2378-TCDD/TCDF	EPA8290 PCDD/PCDF	EPA8280 2378-TCDD	EPA8280 2378-TCDD/TCDF	EPA8280 PCDD/PCDF	EPA1668 TOTALS	EPA1668 COPLANAR PCB's	EPA1668 209 CONGENERS	EPA1614 PBDE	CARB429 PAH	CARB429 WHO-29	
HA-1 (0-0.5')	8/20	1147		1	G	SO						X										
HA-1 (0.5-1')	8/20	1200		1																		
HA-4 (0-0.5')	8/20	1620		3																		MS/MSD
HA-4 (0.5-1')	8/20	1625		1																		
HA-7 (0-0.5')	8/20	1913		1																		
HA-7 (0.5-1')	8/20	1918		1																		
HA-9 (0-0.5')	8/21	0900		1																		
HA-9 (0.5-1')	8/21	0905		1																		
DUP-1	—	—		1	↓	↓																
RB-082013	8/20	1825		2	A	AQ						↓										

Special Instructions/Comments:_____

SEND DOCUMENTATION AND RESULTS TO:

Name: David Bessingpas
Company: ARCADIS
Address: 6002 Excelsior Rd
City: Baxter State: MN Zip: 56425
Phone: 218-829-4607 Fax:_____
Email: david.bessingpas@arcadis-us.com

Container Types: A = 1 Liter Amber, G = Glass Jar
P = PUF, T = MM5 Train, O= Other_____

*Bottle Preservative Type: T = Thiosulfate,
O = Other_____

Matrix Types: DW = Drinking Water, EF = Effluent, PP = Pulp/Paper, SD = Sediment, SL = Sludge, SO = Soil, WW = Wastewater, B = Blood/Serum AQ = Aqueous, O = Other_____

WHITE - ORIGINAL YELLOW - ARCHIVE PINK - COPY

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Beazer East, Inc.

Supplemental Off-Property Investigation

Data Review

SUPERIOR, WISCONSIN

Semivolatile Analyses

SDG #180-27391-1

Analyses Performed By:
TestAmerica Laboratories, Inc.
Pittsburgh, Pennsylvania

Report: # 21032R
Review Level: Tier III
Project: B0039290.0000.00003

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # 180-27391-1 for samples collected in association with the Beazer East, Inc., Supplemental Off-Property Investigation. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis				
					VOC	SVOC	PEST/ PCB	MET	MISC
SB-18-34-34.5 (20131119)	180-27391-1	Soil	11/19/2013			X			
SB-22-21.2-21.7 (20131120)	180-27391-3	Soil	11/20/2013			X			

Note:

1. Samples SB-18-34.5-35 (20131119) and SB-22-21.7-22.2 (20131120) listed on the chain of custody were placed on hold and were not analyzed by the laboratory.
2. Matrix spike/matrix spike duplicate (MS/MSD) analysis was performed on sample locations SB-18-34-34.5 (20131119) and SB-22-21.2-21.7 (20131120).

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 8270C. Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is

that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

SEMI-VOLATILE ORGANIC COMPOUND (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8270C	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to <6°C
	Soil	14 days from collection to extraction and 40 days from extraction to analysis	Cool to <6°C

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method, trip, and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure contamination of samples during shipment. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the SVOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations were the compounds concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS/MSD exhibited acceptable recoveries and the RPD between the MS/MSD results were acceptable.

8. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

9. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Field duplicate analysis was not performed on a sample location within this SDG.

10. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria.

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCs

SVOCs: SW-846 8270	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate(MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Field Duplicate (RPD)					X
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content		X		X	
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X		X	
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculations acceptable		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

VALIDATION PERFORMED BY: Jennifer Singer

SIGNATURE: 

DATE: January 14, 2014

PEER REVIEW: Dennis Capria

DATE: January 16, 2014

CHAIN OF CUSTODY/
CORRECTED SAMPLE ANALYSIS DATA SHEETS

TestAmerica Pittsburgh

301 Alpha Drive

Pittsburgh, PA 15238
Phone: 412.963.7058 Fax: 412.963.2470

Chain of Custody Record

008320

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Dave Bessingpas	Site Contact: Dave Bessingpas	Date:	COC No:
Company Name: Brazer	Tel/Fax: 218-829-4607	Lab Contact: Veronica Bortot	Carrier: FEDEX	1 of 1 COCs
Address:	Analysis Turnaround Time			Sampler:
City/State/Zip: Pittsburgh PA	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 412-208-8813	TAT if different from Below (See notes)			Walk-in Client:
Fax:	☐ 2 weeks			Lab Sampling:
Project Name: Brazer - Superior WI	☐ 1 week			Job / SDG No.:
Site: Superior WI	☐ 2 days			
PO #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	PAH (method 8270)	temperature	Sample Specific Notes:
SB-18-34-34.5 (20131119)	11/19/13	1113	G	SL	1			1		RUSH TAT
SB-18-34.5-35 (20131119)	11/19/13	1115	G	SL	1			1		Hold for analysis
SB-22-21.2-21.7 (20131120)	11/20/13	0845	G	SL	1			1		RUSH TAT
SB-22-21.7-22.2 (20131120)	11/20/13	0850	G	SL	1			1		Hold for analysis
Temperature blank	—	—	—	WT	1				1	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:
Email results to Dave Bessingpas: david.bessingpas@arcadis-us.com

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ | Therm ID No.: _____

	Company	Date/Time		Company	Date/Time
Relinquished by:	ARCADIS	1900 11/20/13	Received by:	TAP	11/20/13 0920
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

DATA REPORTING QUALIFIERS

Client: ARCADIS U.S. Inc Job Number: 180-27391-1

Lab Section	Qualifier	Description
GC/MS Semi VOA		
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Client: ARCADIS U.S. Inc | Job Number: 180-27391-1

Client Sample ID: **SB-18-34-34.5 (20131119)**

Lab Sample ID: 180-27391-1 | Date Sampled: 11/19/2013 1113
Client Matrix: Solid | % Moisture: 31.2 | Date Received: 11/21/2013 0920

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	180-91113	Instrument ID:	732
Prep Method:	3541	Prep Batch:	180-90999	Lab File ID:	D1127012.D
Dilution:	1.0			Initial Weight/Volume:	15.1 g
Analysis Date:	11/27/2013 1613			Final Weight/Volume:	5.0 mL
Prep Date:	11/27/2013 0215			Injection Volume:	2 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		ND		9.2	97
Acenaphthylene		ND		11	97
Anthracene		ND		9.4	97
Benzo[a]anthracene		ND		12	97
Benzo[a]pyrene		ND		9.6	97
Benzo[b]fluoranthene		ND		15	97
Benzo[g,h,i]perylene		ND		9.6	97
Benzo[k]fluoranthene		ND		19	97
Chrysene		ND		11	97
Dibenz(a,h)anthracene		ND		11	97
Fluoranthene		ND		10	97
Fluorene		ND		13	97
Indeno[1,2,3-cd]pyrene		ND		9.9	97
Naphthalene		58	J	8.3	97
Phenanthrene		ND		15	97
Pyrene		ND		9.7	97

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	64		25 - 104
2-Fluorobiphenyl	54		35 - 105
Terphenyl-d14	66		25 - 127

Client: ARCADIS U.S. Inc | Job Number: 180-27391-1

Client Sample ID: **SB-22-21.2-21.7 (20131120)**

Lab Sample ID: 180-27391-3 | Date Sampled: 11/20/2013 0845
Client Matrix: Solid | % Moisture: 27.0 | Date Received: 11/21/2013 0920

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	180-91134	Instrument ID:	732
Prep Method:	3541	Prep Batch:	180-91105	Lab File ID:	D1128009.D
Dilution:	1.0			Initial Weight/Volume:	15.2 g
Analysis Date:	11/28/2013 1150			Final Weight/Volume:	5.0 mL
Prep Date:	11/27/2013 1545			Injection Volume:	2 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		ND		8.7	91
Acenaphthylene		ND		10	91
Anthracene		ND		8.8	91
Benzo[a]anthracene		ND		11	91
Benzo[a]pyrene		ND		9.0	91
Benzo[b]fluoranthene		ND		14	91
Benzo[g,h,i]perylene		ND		9.0	91
Benzo[k]fluoranthene		ND		18	91
Chrysene		ND		11	91
Dibenz(a,h)anthracene		ND		10	91
Fluoranthene		ND		9.6	91
Fluorene		ND		12	91
Indeno[1,2,3-cd]pyrene		ND		9.3	91
Naphthalene		ND		7.8	91
Phenanthrene		ND		14	91
Pyrene		ND		9.1	91

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	77		25 - 104
2-Fluorobiphenyl	62		35 - 105
Terphenyl-d14	68		25 - 127

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Supplemental Off-Property Investigation

Data Review

SUPERIOR, WISCONSIN

Volatile and Semivolatile Analyses

SDGs #1310562 and 1310588

Analyses Performed By:
TriMatrix Laboratories
Grand Rapids, Michigan

Report: # 21033R
Review Level: Tier III
Project: B0039290.0000.00003

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Groups (SDGs) # 1310562 and 1310588 for samples collected in association with the Beazer East, Inc., Supplemental Off-Property Investigation. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis				
					VOC	SVOC	PEST/ PCB	MET	MISC
TMW-05	1310562-01	Water	10/24/2013		X	X			
TMW-05 (Filtered)	1310562-02	Water	10/24/2013		X	X			
Duplicate	1310562-03	Water	10/24/2013	TMW-8A	X	X			
Duplicate (Filtered)	1310562-04	Water	10/24/2013	TMW-8A	X	X			
TMW-12A	1310562-05	Water	10/24/2013		X	X			
TMW-8A	1310562-06	Water	10/24/2013		X	X			
TMW-8A (Filtered)	1310562-07	Water	10/24/2013		X	X			
TMW-2A	1310562-08	Water	10/24/2013		X	X			
TMW-05A	1310562-09	Water	10/24/2013		X	X			
TMW-11 (Filtered)	1310562-10	Water	10/24/2013		X	X			
TMW-05A (Filtered)	1310562-11	Water	10/24/2013		X				
TMW-11A	1310562-12	Water	10/25/2013		X				
TMW-11	1310562-13	Water	10/24/2013		X				
TMW-2A (Filtered)	1310562-14	Water	10/24/2013		X				
TMW-12A (Filtered)	1310562-15	Water	10/24/2013		X	X			
TMW-08 (Filtered)	1310562-16	Water	10/24/2013		X	X			
TMW-08	1310562-17	Water	10/24/2013		X	X			
Trip Blank	1310562-18	Water	10/24/2013		X				
TMW-02A (Filtered)	1310588-01	Water	10/28/2013			X			
TMW-05A (Filtered)	1310588-02	Water	10/24/2013			X			
TMW-11	1310588-03	Water	10/24/2013			X			
TMW-11A (Filtered)	1310588-04	Water	10/25/2013		X	X			

Note:

1. Matrix spike/matrix spike duplicate (MS/MSD) analysis was performed on sample locations TMW-08 (Filtered) and TMW-08.

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 8021B and 8270C. Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is

that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

HALOGENATED AND AROMATIC VOLATILES ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8021	Water	14 days from collection to analysis	Cool to <6 °C; preserved to a pH of less than 2 s.u.

The samples that exceeded the holding times are presented in the following table.

Sample Locations	Holding Time	Criteria
Dilutions: TMW-12A TMW-2A TMW-2A (Filtered) TMW-12A (Filtered)	15 days	<14 days
Dilution: TMW-11A (Filtered)	22 days	

Sample results associated with sample locations analyzed by analytical method SW-846 8021 were qualified, as specified in the table below. All other holding times were met.

Criteria	Qualification	
	Detected Analytes	Non-detect Analytes
Analysis completed less than two times holding time	J	UJ

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were detected in the associated QA blanks; however, the associated sample results were greater than the BAL. Therefore, sample results greater than the BAL resulted in the removal of the laboratory qualifier (B). No other qualification of the sample results was required.

3. System Performance

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Locations	Initial/Continuing	Compound	Criteria
TMW-05 TMW-05 (Filtered) Duplicate Duplicate (Filtered) TMW-12A TMW-8A TMW-8A (Filtered) TMW-2A TMW-05A TMW-11 (Filtered) TMW-08 (Filtered) TMW-08 Trip Blank	CCV %D	Naphthalene	239%
		Chloromethane	64.3%
TMW-2A (Filtered) TMW-12A (Filtered)		Naphthalene	83.9%
		Chloromethane	34.9%
TMW-05A (Filtered) TMW-11A TMW-11 TMW-11A (Filtered)		Chloromethane	-21.4%

Sample Locations	Initial/Continuing	Compound	Criteria
Diluted analysis: TMW-12A TMW-2A TMW-2A (Filtered) TMW-12A (Filtered)		Naphthalene	28.6%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibration	RRF <0.05	Non-detect	R
		Detect	J
	RRF <0.01[1]	Non-detect	R
		Detect	J
	RRF >0.05 or RRF >0.01[1]	Non-detect	No Action
		Detect	
Initial Calibration	%RSD > 15% or a correlation coefficient <0.99	Non-detect	UJ
		Detect	J
	%RSD >90%	Non-detect	R
		Detect	J
Continuing Calibration	%D >20% (increase in sensitivity)	Non-detect	No Action
		Detect	J
	%D >20% (decrease in sensitivity)	Non-detect	UJ
		Detect	J
	%D >90% (increase/decrease in sensitivity)	Non-detect	R
		Detect	J

[1] RRF of 0.01 only applies to compounds which are typically poor responding compounds (i.e., ketones, 1,4-dioxane, etc.)

Note: The naphthalene CCV exhibiting a %D >90% was attributed by the laboratory due to a high concentration of naphthalene in several of the field samples. The high concentrations in the samples caused the instrumentation carryover between the analyses of QA/QC samples and site samples. Any detections in the site samples were reanalyzed. The naphthalene results for samples TMW-05, TMW-05 (Filtered), Duplicate, Duplicate (Filtered), TMW-8A, TMW-8A (Filtered), TMW-05A, TMW-11 (Filtered), TMW-08 (Filtered), TMW-08, and Trip Blank were qualified as estimated “UJ” rather than rejected “R”.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. The analysis requires surrogate compounds exhibit recoveries within the laboratory-established acceptance limits.

Sample locations associated with surrogates exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Surrogate	Recovery
TMW-8A TMW-8A (Filtered) TMW-05A TMW11A (Filtered)	1,2-Dichloroethane-d4	> UL
	a,a,a-Trifluorotoluene	AC

UL Upper control limit
AC Acceptable

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results associated with the deviant fraction are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	No Action
	Detect	J
< LL but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
Surrogates diluted below the calibration curve due to the high concentration of a target compounds	Non-detect	J[1]
	Detect	

Note: [1] A more concentrated analysis was not performed with surrogate compounds within the calibration range therefore no determination of extraction efficiency could be made.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the VOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

Sample locations associated with the MS/MSD exhibiting recoveries outside of the control limits are presented in the following table.

Sample Locations	Compound	MS Recovery	MSD Recovery
TMW-08 (Filtered) TMW-08	Chloromethane	>UL	>UL
	Naphthalene		

AC Acceptable

The criteria used to evaluate the MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
Parent sample concentration > four times the MS/MSD spiking solution concentration (D).	Detect	No Action
	Non-detect	

Sample locations associated with MS/MSD recoveries exhibiting an RPD greater than the control limit are presented in the following table.

Sample Locations	Compound
TMW-08 (Filtered)	Naphthalene

The criteria used to evaluate the RPD between the MS/MSD recoveries are presented in the following table. In the case of an RPD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	UJ
	Detect	J

8. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

9. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent

sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
TMW-8A/ Duplicate	1,2,4-Trimethylbenzene	0.69 J	1.0 U	AC
TMW-8A (Filtered)/ Duplicate (Filtered)	All compounds	U	U	AC

AC Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

10. Compound Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows. All identified compounds met the specified criteria.

Sample results associated with compounds that exhibited a concentration greater than the linear range of the instrument calibration are summarized in the following table.

Sample ID	Compound	Original Analysis	Diluted Analysis	Reported Analysis
TMW-12A	Naphthalene	400 E	9,200 D	9,200 D
TMW-2A	Naphthalene	390 E	12,000 D	12,000 D
TMW-2A (filtered)	Naphthalene	410 E	6,400 D	6,400 D
TMW-12A (filtered)	Naphthalene	390 E	6,700 D	6,700 D
TMW-11A (filtered)	Naphthalene	310 E	410 D	410 D

Note: In the instance where both the original analysis and the diluted analysis sample results exhibited a concentration greater than the calibration linear range of the instrument; the sample result exhibiting the greatest concentration will be reported as the final result.

The final reported sample results are qualified as documented in the table below.

Reported Sample Results	Qualification
Diluted sample result within calibration range	D
Diluted sample result less than the calibration range	DJ
Diluted sample result greater than the calibration range	EDJ
Original sample result greater than the calibration range	EJ

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR HALOGENATED AND AROMATIC VOLATILES

VOCs: SW-846 8021	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY (GC)					
Tier II Validation					
Holding times		X	X		
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X	X		
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X	X		
Matrix Spike Duplicate(MSD) %R		X	X		
MS/MSD Precision (RPD)		X	X		
Field/Lab Duplicate (RPD)		X		X	
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
Initial calibration %RSDs		X		X	
Continuing calibration %Ds		X	X		
System performance and column resolution		X		X	
Compound identification and quantitation					
A. Quantitation Reports		X		X	
B. RT of sample compounds within the established RT windows		X		X	
C. Pattern identification		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD – relative standard deviation, %R - percent recovery, RPD - relative percent difference, %D – difference

SEMI-VOLATILE ORGANIC COMPOUND (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8270C	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to <6°C

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method, trip, and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure contamination of samples during shipment. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All compounds associated with the QA blanks exhibited a concentration less than the MDL, with the exception of the compounds listed in the following table. Sample results associated with QA blank contamination that were greater than the BAL resulted in the removal of the laboratory qualifier (B). Sample results less than the BAL associated with the following sample locations were qualified as listed in the following table.

Sample Locations	Analytes	Sample Result	Qualification
TMW-05 TMW-05 (Filtered) Duplicate Duplicate (Filtered) TMW-8A TMW-8A (Filtered) TMW-05A TMW-11 (Filtered) TMW-08 (Filtered) TMW-08 TMW-05A (Filtered) TMW-11 TMW-11A (Filtered)	Diethyl phthalate	Detected sample results <RL and <BAL	"UB" at the RL

RL Reporting limit

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Locations	Initial/Continuing	Compound	Criteria
TMW-05 TMW-05 (Filtered) Duplicate Duplicate (Filtered) TMW-8A TMW-8A (Filtered) TMW-05A TMW-11 (Filtered) TMW-08 TMW-05A (Filtered) TMW-11 TMW-11A (Filtered)	CCV %D	Benzoic Acid	-34.0%
		4-Nitrophenol	-36.2%
		2,3,5,6-Tetrachlorophenol	21.3%
TMW-12A TMW-2A TMW-12A (Filtered) TMW-08 (Filtered) TMW-02A (Filtered)		4-Nitroaniline	-20.1%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibration	RRF <0.05	Non-detect	R
		Detect	J
	RRF <0.01[1]	Non-detect	R
		Detect	J
	RRF >0.05 or RRF >0.01[1]	Non-detect	No Action
		Detect	
Initial Calibration	%RSD > 15% or a correlation coefficient <0.99	Non-detect	UJ
		Detect	J
	%RSD >90%	Non-detect	R
		Detect	J
Continuing Calibration	%D >20% (increase in sensitivity)	Non-detect	No Action
		Detect	J
	%D >20% (decrease in sensitivity)	Non-detect	UJ
		Detect	J
	%D >90% (increase/decrease in sensitivity)	Non-detect	R
		Detect	J

[1] RRF of 0.01 only applies to compounds which are typically poor responding compounds

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the SVOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations were the compounds concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

Sample locations associated with the MS/MSD exhibiting recoveries outside of the control limits are presented in the following table.

Sample Locations	Compound	MS Recovery	MSD Recovery
TMW-08 (Filtered)	Phenol	<LL but >10%	AC

AC Acceptable

The criteria used to evaluate the MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
Parent sample concentration > four times the MS/MSD spiking solution concentration.	Detect	No Action
	Non-detect	

Sample locations associated with MS/MSD recoveries exhibiting an RPD greater than of the control limit presented in the following table.

Sample Locations	Compound
TMW-08 (Filtered)	Benzyl Alcohol
	2-Chlorophenol
	Phenol

The criteria used to evaluate the RPD between the MS/MSD recoveries are presented in the following table. In the case of an RPD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	UJ
	Detect	J

8. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

Sample locations associated with LCS analysis exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Compound	LCS Recovery
TMW-05 TMW-05 (Filtered) Duplicate Duplicate (Filtered) TMW-12A TMW-8A TMW-8A (Filtered) TMW-2A TMW-05A TMW-11 (Filtered) TMW-05A (Filtered) TMW-11A TMW-11 TMW-2A (Filtered) TMW-12A (Filtered) TMW-08 (Filtered) TMW-08 TMW-02A (Filtered) TMW-05A (Filtered) TMW-11 TMW-11A (Filtered)	Benzoic Acid	<10%

The criteria used to evaluate the LCS recoveries are presented in the following table. In the case of an LCS deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J

9. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
TMW-8A/ Duplicate	Butyl Benzyl Phthalate	1.0 U	0.072 J	AC
	4-Chlorophenyl Phenyl Ether	0.50 U	0.052 J	
	Di-n-butyl Phthalate	1.0 U	0.15 J	
	Bis(2-ethylhexyl) Phthalate	0.18 J	0.24 J	
TMW-8A (Filtered)/ Duplicate (Filtered)	Butyl Benzyl Phthalate	1.0 U	0.063 J	AC
	Di-n-butyl Phthalate	0.16 J	0.18 J	
	Bis(2-ethylhexyl) Phthalate	0.21 J	0.42 J	
	Isophorone	0.13 J	0.50 U	
	4-Methylphenol	0.89 J	0.24 J	
	Naphthalene	0.071 J	0.053 J	
	Phenol	0.14 J	0.50 U	

AC Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

10. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra. All identified compounds met the specified criteria.

Sample results associated with compounds that exhibited a concentration greater than the linear range of the instrument calibration are summarized in the following table.

Sample ID	Compound	Original Analysis	Diluted Analysis	Reported Analysis
TMW-12A	2,4-Dimethylphenol	940 E	880 D	880 D
	2-Methylnaphthalene	370 E	370 D	370 D
	4-Methylphenol	970 E	750 D	750 D
	Naphthalene	2,000 E	6,700 D	6,700 D
TMW-2A	Acenaphthene	280 E	270 D	270 D
	2-Methylnaphthalene	320 E	320 D	320 D
	Naphthalene	1,800 E	5,200 D	5,200 D
TMW-12A (Filtered)	2,4-Dimethylphenol	900 E	990 D	990 D
	4-Methylphenol	730 E	780 D	780 D
	Naphthalene	1,400 E	4,100 D	4,100 D
TMW-02A (Filtered)	Naphthalene	1,500 E	4,100 D	4,100 D

Sample ID	Compound	Original Analysis	Diluted Analysis	Reported Analysis
TMW-11A (Filtered)	Naphthalene	100 E	110 D	110 D

Note: In the instance where both the original analysis and the diluted analysis sample results exhibited a concentration greater than the calibration linear range of the instrument; the sample result exhibiting the greatest concentration will be reported as the final result.

The final reported sample results are qualified as documented in the table below.

Reported Sample Results	Qualification
Diluted sample result within calibration range	D
Diluted sample result less than the calibration range	DJ
Diluted sample result greater than the calibration range	EDJ
Original sample result greater than the calibration range	EJ

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCs

SVOCs: SW-846 8270	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X	X		
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X	X		
Laboratory Control Sample Duplicate(LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X	X		
Matrix Spike Duplicate(MSD) %R		X		X	
MS/MSD Precision (RPD)		X	X		
Field Duplicate (RPD)		X		X	
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X	X		
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculations acceptable		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

VALIDATION PERFORMED BY: Jennifer Singer

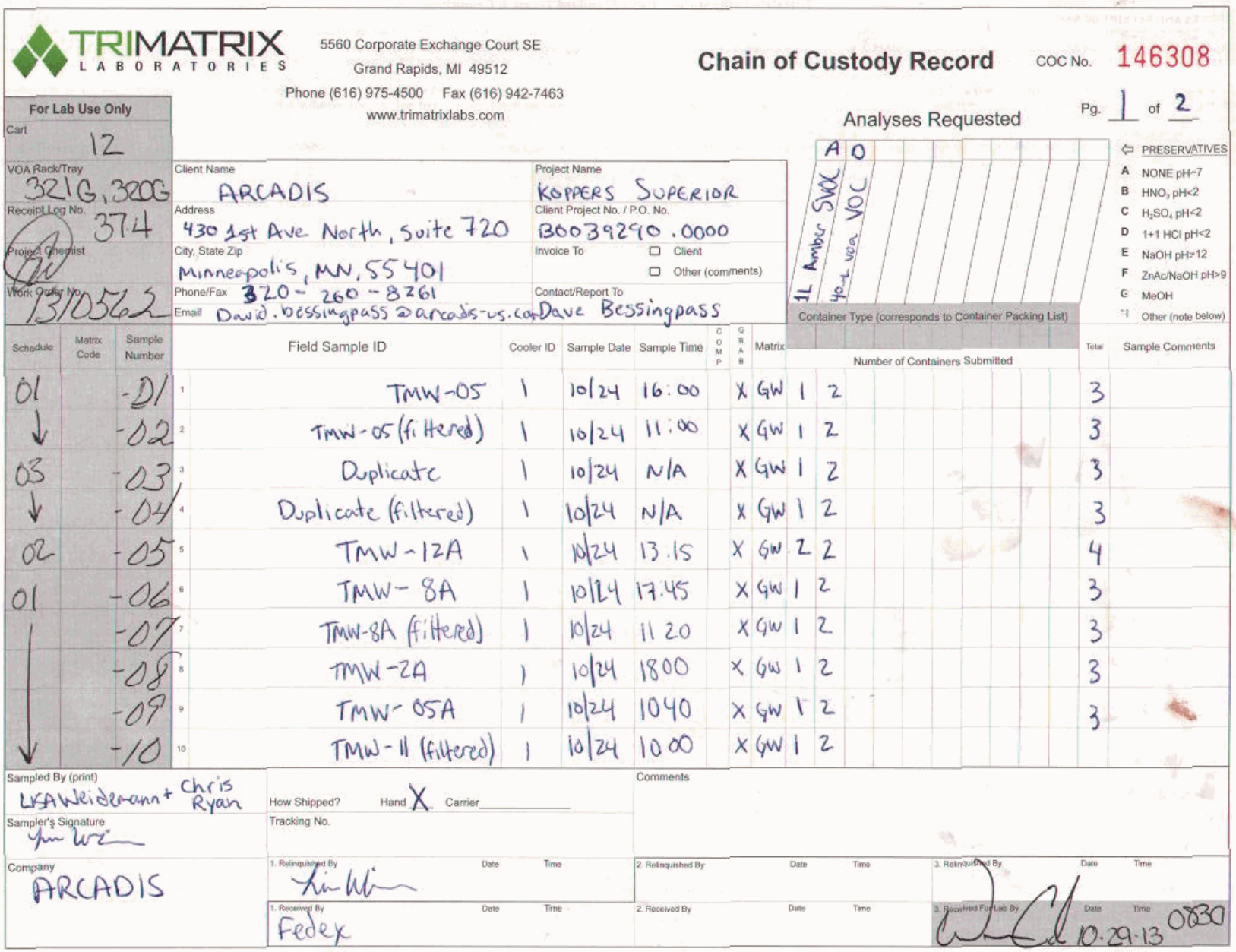
SIGNATURE: 

DATE: January 17, 2014

PEER REVIEW: Dennis Capria

DATE: January 24, 2014

CHAIN OF CUSTODY/
CORRECTED SAMPLE ANALYSIS DATA SHEETS



TRIMATRIX LABORATORIES

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Chain of Custody Record

COC No. 146308

Pg. 1 of 2

For Lab Use Only
Cart: 12
VOA Rack/Tray: 321G, 320G
Receipt Log No.: 374
Project Chemist:
Work Order No.: 13/0562

Client Name: ARCADIS
Address: 430 1st Ave North, Suite 720
City, State Zip: Minneapolis, MN, 55401
Phone/Fax: 320 - 260 - 8261
Email: David.bessingpass@arcadis-us.com

Project Name: KOPPERS SUPERIOR
Client Project No. / P.O. No.: B0039290.0000
Invoice To: ☐ Client ☐ Other (comments)
Contact/Report To: Dave Bessingpass

Analyses Requested

Container Type (corresponds to Container Packing List): 1L Amber SVOC; 40mL vial VOC

PRESERVATIVES
A NONE pH~7
B HNO_3 pH<2
C H_2SO_4 pH<2
D 1+1 HCl pH<2
E NaOH pH>12
F ZnAc/NaOH pH>9
G MeOH
H Other (note below)

Schedule	Matrix Code	Sample Number		Field Sample ID	Cooler ID	Sample Date	Sample Time	COMP	GRAB	Matrix	Number of Containers Submitted		Total	Sample Comments
01		-01	1	TMW-05	1	10/24	16:00		X	GW	1	2	3	
↓		-02	2	TMW-05 (filtered)	1	10/24	11:00		X	GW	1	2	3	
03		-03	3	Duplicate	1	10/24	N/A		X	GW	1	2	3	
↓		-04	4	Duplicate (filtered)	1	10/24	N/A		X	GW	1	2	3	
02		-05	5	TMW-12A	1	10/24	13:15		X	GW	2	2	4	
01		-06	6	TMW-8A	1	10/24	17:45		X	GW	1	2	3	
		-07	7	TMW-8A (filtered)	1	10/24	11:20		X	GW	1	2	3	
		-08	8	TMW-2A	1	10/24	1800		X	GW	1	2	3	
		-09	9	TMW-05A	1	10/24	1040		X	GW	1	2	3	
↓		-10	10	TMW-11 (filtered)	1	10/24	1000		X	GW	1	2		

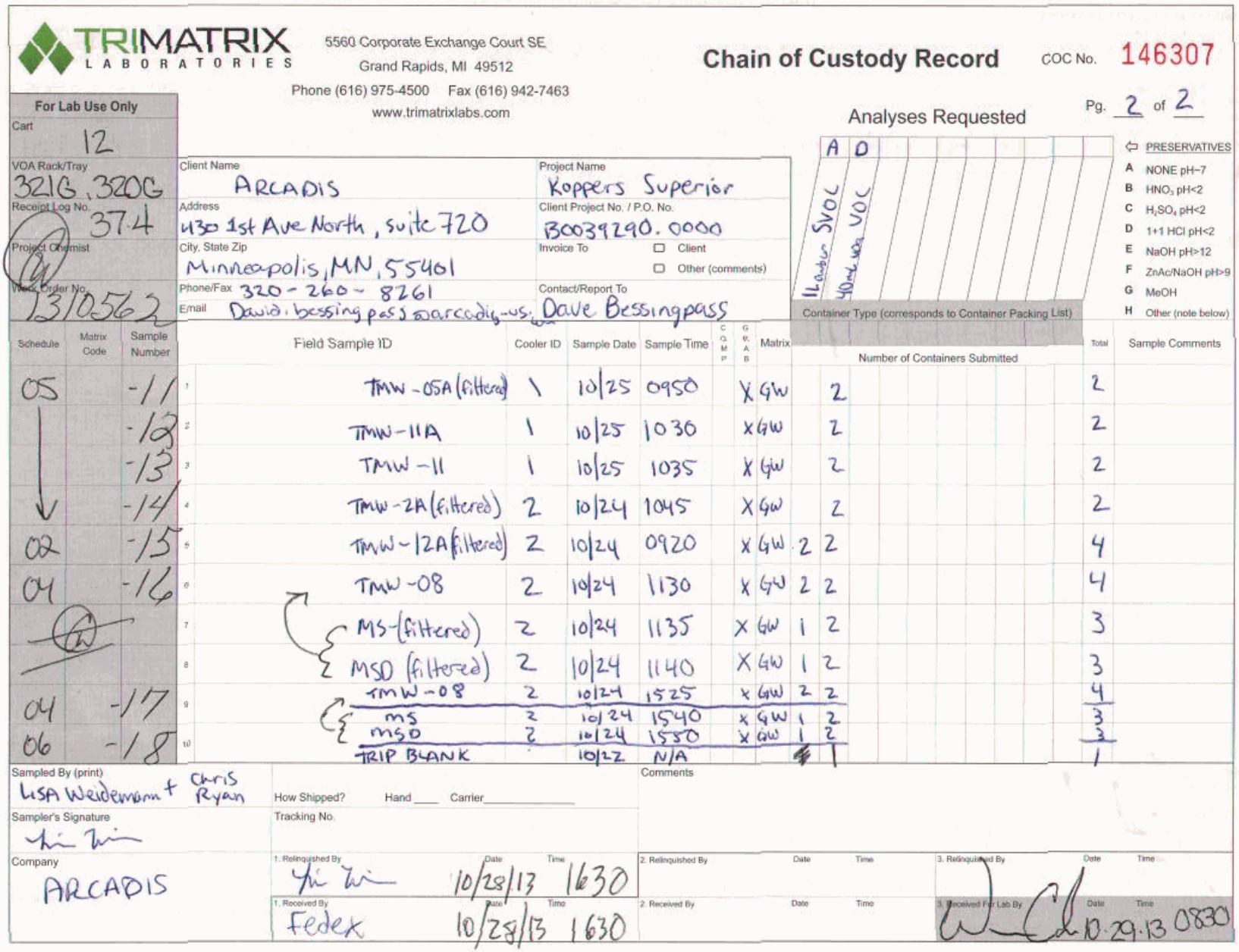
Sampled By (print): LKA Weidemann + Chris Ryan
Sampler's Signature:
Company: ARCADIS

How Shipped? Hand X Carrier
Tracking No.

Comments

1. Relinquished By	Date	Time	2. Relinquished By	Date	Time	3. Relinquished By	Date	Time
1. Received By	**Date**	**Time**	**2. Received By**	**Date**	**Time**	**3. Received For Lab By**	**Date**	**Time**
Fedex							10.29.13	0830

WHITE COPY - REPORT YELLOW COPY - LABORATORY PINK COPY - FIELD



TRIMATRIX LABORATORIES

5560 Corporate Exchange Court SE
Grand Rapids, MI 49512
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Chain of Custody Record

COC No. 146307

Pg. 2 of 2

For Lab Use Only
Cart: 12
VOA Rack/Tray: 321G, 320G
Receipt Log No.: 37.4
Project Chemist:
Work Order No.: 131056

Client Name: ARCADIS
Address: 430 1st Ave North, suite 720
City, State Zip: Minneapolis, MN, 55401
Phone/Fax: 320-260-8261
Email: David.bessingpass@arcadis-us.com

Project Name: Koppers Superior
Client Project No. / P.O. No.: B0039290.0000
Invoice To: ☐ Client ☐ Other (comments)
Contact/Report To: Dave Bessingpass

Analyses Requested

Schedule	Matrix Code	Sample Number	Field Sample ID	Cooler ID	Sample Date	Sample Time	C	G	M	P	A	B	Matrix	A: 1L Amber SVOC	D: 40mL VOC	Total	Sample Comments
05		-11	TMW-05A (filtered)	1	10/25	0950					X		GW	2		2	
		-12	TMW-11A	1	10/25	1030					X		GW	2		2	
		-13	TMW-11	1	10/25	1035					X		GW	2		2	
		-14	TMW-2A (filtered)	2	10/24	1045					X		GW	2		2	
02		-15	TMW-12A (filtered)	2	10/24	0920					X		GW	2	2	4	
04		-16	TMW-08	2	10/24	1130					X		GW	2	2	4	
			MS-(filtered)	2	10/24	1135					X		GW	1	2	3	
			MSD (filtered)	2	10/24	1140					X		GW	1	2	3	
04		-17	TMW-08	2	10/24	1525					X		GW	2	2	4	
			MS	2	10/24	1540					X		GW	1	2	3	
06		-18	MSD	2	10/24	1550					X		GW	1	2	3	
			TRIP BLANK		10/22	N/A									1	1	

Container Type (corresponds to Container Packing List)
Number of Containers Submitted

PRESERVATIVES
A NONE pH=7
B HNO_3 pH<2
C H_2SO_4 pH<2
D 1+1 HCl pH<2
E NaOH pH>12
F ZnAc/NaOH pH>9
G MeOH
H Other (note below)

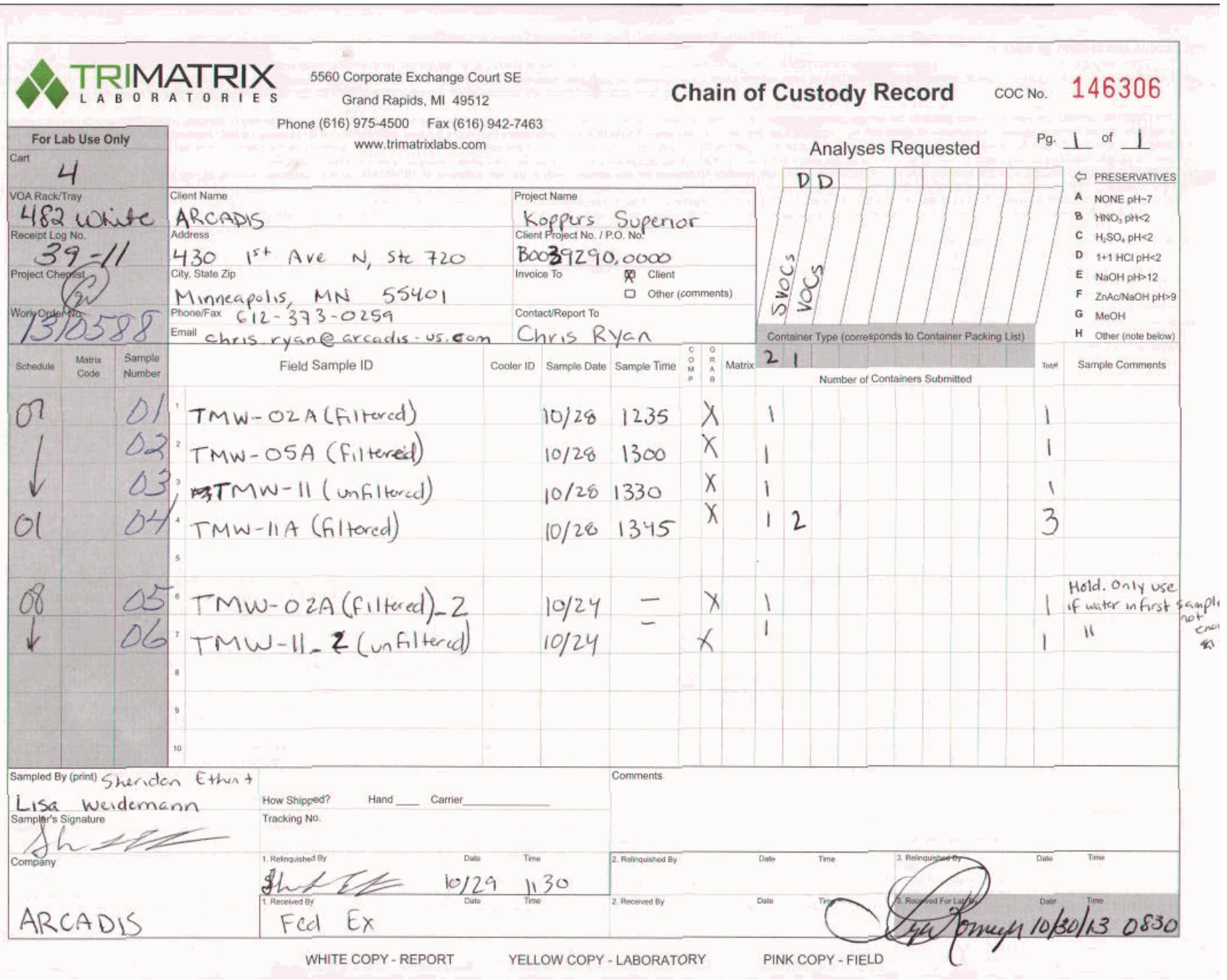
Sampled By (print): Lisa Weidenbach + Chris Ryan
Sampler's Signature:
Company: ARCADIS

How Shipped? Hand ____ Carrier ____
Tracking No.

Comments

	Relinquished By	Date	Time	Received By	Date	Time
1.		10/28/13	1630	Fedex	10/28/13	1630
2.						
3.					10.29.13	0830

WHITE COPY - REPORT YELLOW COPY - LABORATORY PINK COPY - FIELD



TRIMATRIX LABORATORIES

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Chain of Custody Record

COC No. 146306

Pg. 1 of 1

For Lab Use Only
Cart: 4
VOA Rack/Tray: 482 White
Receipt Log No.: 39-11
Project Chemist:
Work Order No.: 1310588

Client Name: ARCADIS
Address: 430 1st Ave N, Ste 720
City, State Zip: Minneapolis, MN 55401
Phone/Fax: 612-373-0259
Email: chris.ryan@arcadis-us.com

Project Name: Koppers Superior
Client Project No. / P.O. No.: B003290.0000
Invoice To: [X] Client [ ] Other (comments)
Contact/Report To: Chris Ryan

Analyses Requested: DD, SVOCs, VOCs

PRESERVATIVES
A NONE pH~7
B HNO_3 pH<2
C H_2SO_4 pH<2
D 1+1 HCl pH<2
E NaOH pH>12
F ZnAc/NaOH pH>9
G MeOH
H Other (note below)

Schedule	Matrix Code	Sample Number	Field Sample ID	Cooler ID	Sample Date	Sample Time	COMP	GRAB	Matrix	Container Type (corresponds to Container Packing List)	Number of Containers Submitted	Total#	Sample Comments
										2	1		
07		01	1 TMW-02A (filtered)		10/28	1235		X		1		1	
↓		02	2 TMW-05A (filtered)		10/28	1300		X		1		1	
↓		03	3 TMW-11 (unfiltered)		10/28	1330		X		1		1	
01		04	4 TMW-11A (filtered)		10/28	1345		X		1	2	3	
			5										
08		05	6 TMW-02A (filtered)_2		10/24	—		X		1		1	Hold. Only use if water in first sample not enough
↓		06	7 TMW-11_2 (unfiltered)		10/24	—		X		1		1	11
			8										
			9										
			10										

Sampled By (print): Sheridan Ethun + Lisa Weidemann
Sampler's Signature:
Company: ARCADIS

How Shipped? Hand ____ Carrier ____
Tracking No.

Comments

1. Relinquished By	Date	Time	2. Relinquished By	Date	Time	3. Relinquished By	Date	Time
	10/29	1130						
1. Received By	Date	Time	2. Received By	Date	Time	3. Received For Lab By	Date	Time
Fed Ex							10/30/13	0830

WHITE COPY - REPORT YELLOW COPY - LABORATORY PINK COPY - FIELD

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-05**	Sampled:	10/24/13 16:00		
Lab Sample ID:	**1310562-01**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	11/6/13 0:00	By:	LEW
Dilution Factor:	1	Analyzed:	11/6/13 7:29	By:	LEW
QC Batch:	1312148	Analytical Batch:	3K14015		

Halogenated and Aromatic Volatiles by EPA Method 8021B

CAS Number	Analyte	Analytical Result	RL	MDL
71-43-2	Benzene	1.0U	1.0	0.20
104-51-8	n-Butylbenzene	1.0U	1.0	0.28
*74-87-3	Chloromethane	1.0U	1.0	0.37
100-41-4	Ethylbenzene	1.0U	1.0	0.20
1634-04-4	Methyl tert-Butyl Ether	5.0U	5.0	0.48
*91-20-3	Naphthalene	1.0U J	1.0	0.44
103-65-1	n-Propylbenzene	1.0U	1.0	0.24
100-42-5	Styrene	1.0U	1.0	0.20
108-88-3	Toluene	1.0U	1.0	0.33
71-55-6	1,1,1-Trichloroethane	1.0U	1.0	0.30
108-67-8	1,3,5-Trimethylbenzene	1.0U	1.0	0.24
95-63-6	1,2,4-Trimethylbenzene	1.0U	1.0	0.22
179601-23-1	Xylene, Meta + Para	2.0U	2.0	0.42
95-47-6	Xylene, Ortho	1.0U	1.0	0.20

Surrogates:	***% Recovery***	***Control Limits***
1,2-Dichloroethane-d4	*117*	*81-126*
aaa-Trifluorotoluene	*96*	*86-118*

*See Statement of Data Qualifications

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-05**	Sampled:	10/24/13 16:00		
Lab Sample ID:	**1310562-01**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	1	Analyzed:	11/6/13 18:48	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K07013		

Semivolatile Organic Compounds by EPA Method 8270C

CAS Number	Analyte	Analytical Result	RL	MDL
83-32-9	Acenaphthene	0.50U	0.50	0.033
208-96-8	Acenaphthylene	0.50U	0.50	0.017
120-12-7	Anthracene	0.50U	0.50	0.062
56-55-3	Benzo(a)anthracene	0.50U	0.50	0.045
50-32-8	Benzo(a)pyrene	0.50U	0.50	0.040
205-99-2	Benzo(b)fluoranthene	0.50U	0.50	0.058
207-08-9	Benzo(k)fluoranthene	0.50U	0.50	0.060
191-24-2	Benzo(g,h,i)perylene	0.50U	0.50	0.061
*65-85-0	Benzoic Acid	5.0U	5.0	0.48 R
100-51-6	Benzyl Alcohol	0.50U	0.50	0.049
101-55-3	4-Bromophenyl Phenyl Ether	0.50U	0.50	0.043
85-68-7	Butyl Benzyl Phthalate	1.0U	1.0	0.056
59-50-7	4-Chloro-3-methylphenol	0.50U	0.50	0.12
106-47-8	4-Chloroaniline	1.0U	1.0	0.10
111-91-1	Bis(2-chloroethoxy)methane	0.50U	0.50	0.018
111-44-4	Bis(2-chloroethyl) Ether	0.50U	0.50	0.024
108-60-1	Bis(2-chloroisopropyl) Ether	0.50U	0.50	0.026
91-58-7	2-Chloronaphthalene	0.50U	0.50	0.017
95-57-8	2-Chlorophenol	0.50U	0.50	0.027
7005-72-3	4-Chlorophenyl Phenyl Ether	0.50U	0.50	0.048
218-01-9	Chrysene	0.50U	0.50	0.045
53-70-3	Dibenz(a,h)anthracene	0.50U	0.50	0.11
132-64-9	Dibenzofuran	0.50U	0.50	0.041
84-74-2	Di-n-butyl Phthalate	**0.24J**	1.0	0.14
95-50-1	1,2-Dichlorobenzene	0.50U	0.50	0.040
541-73-1	1,3-Dichlorobenzene	0.50U	0.50	0.041
106-46-7	1,4-Dichlorobenzene	0.50U	0.50	0.020
91-94-1	3,3´-Dichlorobenzidine	1.0U	1.0	0.12
120-83-2	2,4-Dichlorophenol	0.50U	0.50	0.092

Continued on next page

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-05**	Sampled:	10/24/13 16:00		
Lab Sample ID:	**1310562-01**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	1	Analyzed:	11/6/13 18:48	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K07013		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result		RL	MDL
*84-66-2	Diethyl Phthalate	~~0.27J~~	0.50 UB	0.50	0.065
105-67-9	2,4-Dimethylphenol	1.0U		1.0	0.17
131-11-3	Dimethyl Phthalate	0.50U		0.50	0.046
534-52-1	4,6-Dinitro-2-methylphenol	5.0U		5.0	1.0
51-28-5	2,4-Dinitrophenol	5.0U		5.0	1.2
121-14-2	2,4-Dinitrotoluene	0.50U		0.50	0.048
606-20-2	2,6-Dinitrotoluene	0.50U		0.50	0.080
117-84-0	Di-n-octyl Phthalate	0.50U		0.50	0.077
117-81-7	Bis(2-ethylhexyl) Phthalate	**0.15J**		0.50	0.11
206-44-0	Fluoranthene	0.50U		0.50	0.063
86-73-7	Fluorene	0.50U		0.50	0.041
118-74-1	Hexachlorobenzene	0.50U		0.50	0.063
87-68-3	Hexachlorobutadiene	0.50U		0.50	0.040
77-47-4	Hexachlorocyclopentadiene	0.50U		0.50	0.044
67-72-1	Hexachloroethane	0.50U		0.50	0.042
193-39-5	Indeno(1,2,3-cd)pyrene	0.50U		0.50	0.080
78-59-1	Isophorone	0.50U		0.50	0.045
56-49-5	3-Methylcholanthrene	2.0U		2.0	0.12
91-57-6	2-Methylnaphthalene	0.50U		0.50	0.015
90-12-0	1-Methylnaphthalene	0.50U		0.50	0.020
95-48-7	2-Methylphenol	0.50U		0.50	0.048
106-44-5	4-Methylphenol	0.50U		0.50	0.057
91-20-3	Naphthalene	**0.053J**		0.50	0.031
88-74-4	2-Nitroaniline	0.50U		0.50	0.12
99-09-2	3-Nitroaniline	1.0U		1.0	0.24
100-01-6	4-Nitroaniline	1.0U		1.0	0.33
98-95-3	Nitrobenzene	0.50U		0.50	0.058
100-02-7	4-Nitrophenol	5.0U	J	5.0	1.2
88-75-5	2-Nitrophenol	0.50U		0.50	0.048
86-30-6	N-Nitroso-diphenylamine	0.50U		0.50	0.068
621-64-7	N-Nitroso-di-n-propylamine	0.50U		0.50	0.075

Continued on next page

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ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-05**	Sampled:	10/24/13 16:00		
Lab Sample ID:	**1310562-01**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	1	Analyzed:	11/6/13 18:48	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K07013		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL	MDL
87-86-5	Pentachlorophenol	0.50U	0.50	0.081
85-01-8	Phenanthrene	0.50U	0.50	0.043
108-95-2	Phenol	0.50U	0.50	0.034
129-00-0	Pyrene	0.50U	0.50	0.066
58-90-2	2,3,4,6-Tetrachlorophenol	5.0U	5.0	0.37
935-95-5	2,3,5,6-Tetrachlorophenol	10U	10	0.21
120-82-1	1,2,4-Trichlorobenzene	0.50U	0.50	0.027
88-06-2	2,4,6-Trichlorophenol	0.50U	0.50	0.085
95-95-4	2,4,5-Trichlorophenol	0.50U	0.50	0.099

Surrogates:	***% Recovery***	***Control Limits***
2-Fluorophenol	*21*	*20-70*
Phenol-d6	*23*	*18-45*
Nitrobenzene-d5	*70*	*31-123*
2-Fluorobiphenyl	*70*	*25-113*
2,4,6-Tribromophenol	*41*	*30-121*
o-Terphenyl	*81*	*42-125*

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-05 (Filtered)**	Sampled:	10/24/13 11:00		
Lab Sample ID:	**1310562-02**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	11/6/13 0:00	By:	LEW
Dilution Factor:	1	Analyzed:	11/6/13 8:17	By:	LEW
QC Batch:	1312148	Analytical Batch:	3K14015		

Halogenated and Aromatic Volatiles by EPA Method 8021B

CAS Number	Analyte	Analytical Result		RL	MDL
71-43-2	Benzene	1.0U		1.0	0.20
104-51-8	n-Butylbenzene	1.0U		1.0	0.28
*74-87-3	Chloromethane	1.0U		1.0	0.37
100-41-4	Ethylbenzene	1.0U		1.0	0.20
1634-04-4	Methyl tert-Butyl Ether	5.0U		5.0	0.48
*91-20-3	Naphthalene	1.0U	J	1.0	0.44
103-65-1	n-Propylbenzene	1.0U		1.0	0.24
100-42-5	Styrene	1.0U		1.0	0.20
108-88-3	Toluene	1.0U		1.0	0.33
71-55-6	1,1,1-Trichloroethane	1.0U		1.0	0.30
108-67-8	1,3,5-Trimethylbenzene	1.0U		1.0	0.24
95-63-6	1,2,4-Trimethylbenzene	1.0U		1.0	0.22
179601-23-1	Xylene, Meta + Para	2.0U		2.0	0.42
95-47-6	Xylene, Ortho	1.0U		1.0	0.20

Surrogates:	***% Recovery***	***Control Limits***
1,2-Dichloroethane-d4	*114*	*81-126*
aaa-Trifluorotoluene	*95*	*86-118*

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-05 (Filtered)**	Sampled:	10/24/13 11:00		
Lab Sample ID:	**1310562-02**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	1	Analyzed:	11/6/13 19:22	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K07013		

Semivolatile Organic Compounds by EPA Method 8270C

CAS Number	Analyte	Analytical Result	RL	MDL	
83-32-9	Acenaphthene	0.56U	0.56	0.037	
208-96-8	Acenaphthylene	0.56U	0.56	0.019	
120-12-7	Anthracene	0.56U	0.56	0.068	
56-55-3	Benzo(a)anthracene	0.56U	0.56	0.050	
50-32-8	Benzo(a)pyrene	0.56U	0.56	0.045	
205-99-2	Benzo(b)fluoranthene	0.56U	0.56	0.065	
207-08-9	Benzo(k)fluoranthene	0.56U	0.56	0.066	
191-24-2	Benzo(g,h,i)perylene	0.56U	0.56	0.068	
*65-85-0	Benzoic Acid	5.6U	5.6	0.53	R
100-51-6	Benzyl Alcohol	0.56U	0.56	0.054	
101-55-3	4-Bromophenyl Phenyl Ether	0.56U	0.56	0.048	
85-68-7	Butyl Benzyl Phthalate	1.1U	1.1	0.062	
59-50-7	4-Chloro-3-methylphenol	0.56U	0.56	0.13	
106-47-8	4-Chloroaniline	1.1U	1.1	0.11	
111-91-1	Bis(2-chloroethoxy)methane	0.56U	0.56	0.020	
111-44-4	Bis(2-chloroethyl) Ether	0.56U	0.56	0.026	
108-60-1	Bis(2-chloroisopropyl) Ether	0.56U	0.56	0.029	
91-58-7	2-Chloronaphthalene	0.56U	0.56	0.019	
95-57-8	2-Chlorophenol	0.56U	0.56	0.030	
7005-72-3	4-Chlorophenyl Phenyl Ether	0.56U	0.56	0.053	
218-01-9	Chrysene	0.56U	0.56	0.050	
53-70-3	Dibenz(a,h)anthracene	0.56U	0.56	0.13	
132-64-9	Dibenzofuran	0.56U	0.56	0.045	
84-74-2	Di-n-butyl Phthalate	**0.16J**	1.1	0.15	
95-50-1	1,2-Dichlorobenzene	0.56U	0.56	0.044	
541-73-1	1,3-Dichlorobenzene	0.56U	0.56	0.046	
106-46-7	1,4-Dichlorobenzene	0.56U	0.56	0.022	
91-94-1	3,3´-Dichlorobenzidine	1.1U	1.1	0.14	
120-83-2	2,4-Dichlorophenol	0.56U	0.56	0.10	

Continued on next page

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-05 (Filtered)**	Sampled:	10/24/13 11:00		
Lab Sample ID:	**1310562-02**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	1	Analyzed:	11/6/13 19:22	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K07013		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result		RL	MDL
*84-66-2	Diethyl Phthalate	~~0.29J~~	0.56 UB	0.56	0.072
105-67-9	2,4-Dimethylphenol	1.1U		1.1	0.19
131-11-3	Dimethyl Phthalate	0.56U		0.56	0.051
534-52-1	4,6-Dinitro-2-methylphenol	5.6U		5.6	1.1
51-28-5	2,4-Dinitrophenol	5.6U		5.6	1.3
121-14-2	2,4-Dinitrotoluene	0.56U		0.56	0.053
606-20-2	2,6-Dinitrotoluene	0.56U		0.56	0.089
117-84-0	Di-n-octyl Phthalate	0.56U		0.56	0.085
117-81-7	Bis(2-ethylhexyl) Phthalate	**0.19J**		0.56	0.13
206-44-0	Fluoranthene	0.56U		0.56	0.070
86-73-7	Fluorene	0.56U		0.56	0.046
118-74-1	Hexachlorobenzene	0.56U		0.56	0.070
87-68-3	Hexachlorobutadiene	0.56U		0.56	0.044
77-47-4	Hexachlorocyclopentadiene	0.56U		0.56	0.049
67-72-1	Hexachloroethane	0.56U		0.56	0.046
193-39-5	Indeno(1,2,3-cd)pyrene	0.56U		0.56	0.089
78-59-1	Isophorone	0.56U		0.56	0.050
56-49-5	3-Methylcholanthrene	2.2U		2.2	0.13
91-57-6	2-Methylnaphthalene	0.56U		0.56	0.017
90-12-0	1-Methylnaphthalene	0.56U		0.56	0.022
95-48-7	2-Methylphenol	0.56U		0.56	0.053
106-44-5	4-Methylphenol	0.56U		0.56	0.063
91-20-3	Naphthalene	0.56U		0.56	0.034
88-74-4	2-Nitroaniline	0.56U		0.56	0.13
99-09-2	3-Nitroaniline	1.1U		1.1	0.27
100-01-6	4-Nitroaniline	1.1U		1.1	0.37
98-95-3	Nitrobenzene	0.56U		0.56	0.065
100-02-7	4-Nitrophenol	5.6U	J	5.6	1.4
88-75-5	2-Nitrophenol	0.56U		0.56	0.053
86-30-6	N-Nitroso-diphenylamine	0.56U		0.56	0.075
621-64-7	N-Nitroso-di-n-propylamine	0.56U		0.56	0.084

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ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-05 (Filtered)**	Sampled:	10/24/13 11:00		
Lab Sample ID:	**1310562-02**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	1	Analyzed:	11/6/13 19:22	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K07013		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL	MDL
87-86-5	Pentachlorophenol	0.56U	0.56	0.090
85-01-8	Phenanthrene	0.56U	0.56	0.047
108-95-2	Phenol	**0.18J**	0.56	0.037
129-00-0	Pyrene	0.56U	0.56	0.073
58-90-2	2,3,4,6-Tetrachlorophenol	5.6U	5.6	0.41
935-95-5	2,3,5,6-Tetrachlorophenol	11U	11	0.24
120-82-1	1,2,4-Trichlorobenzene	0.56U	0.56	0.030
88-06-2	2,4,6-Trichlorophenol	0.56U	0.56	0.095
95-95-4	2,4,5-Trichlorophenol	0.56U	0.56	0.11

Surrogates:	***% Recovery***	***Control Limits***
2-Fluorophenol	*35*	*20-70*
Phenol-d6	*29*	*18-45*
Nitrobenzene-d5	*59*	*31-123*
2-Fluorobiphenyl	*63*	*25-113*
2,4,6-Tribromophenol	*60*	*30-121*
o-Terphenyl	*74*	*42-125*

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**Duplicate**	Sampled:	10/24/13 0:00		
Lab Sample ID:	**1310562-03**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	11/6/13 0:00	By:	LEW
Dilution Factor:	1	Analyzed:	11/6/13 9:06	By:	LEW
QC Batch:	1312148	Analytical Batch:	3K14015		

Halogenated and Aromatic Volatiles by EPA Method 8021B

CAS Number	Analyte	Analytical Result	RL	MDL	
71-43-2	Benzene	1.0U	1.0	0.20	
104-51-8	n-Butylbenzene	1.0U	1.0	0.28	
*74-87-3	Chloromethane	1.0U	1.0	0.37	
100-41-4	Ethylbenzene	1.0U	1.0	0.20	
1634-04-4	Methyl tert-Butyl Ether	5.0U	5.0	0.48	
*91-20-3	Naphthalene	1.0U J	1.0	0.44	R
103-65-1	n-Propylbenzene	1.0U	1.0	0.24	
100-42-5	Styrene	1.0U	1.0	0.20	
108-88-3	Toluene	1.0U	1.0	0.33	
71-55-6	1,1,1-Trichloroethane	1.0U	1.0	0.30	
108-67-8	1,3,5-Trimethylbenzene	1.0U	1.0	0.24	
95-63-6	1,2,4-Trimethylbenzene	1.0U	1.0	0.22	
179601-23-1	Xylene, Meta + Para	2.0U	2.0	0.42	
95-47-6	Xylene, Ortho	1.0U	1.0	0.20	

Surrogates:	*% Recovery*	*Control Limits*
1,2-Dichloroethane-d4	*116*	*81-126*
aaa-Trifluorotoluene	*94*	*86-118*

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**Duplicate**	Sampled:	10/24/13 0:00		
Lab Sample ID:	**1310562-03**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	1	Analyzed:	11/6/13 19:57	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K07013		

Semivolatile Organic Compounds by EPA Method 8270C

CAS Number	Analyte	Analytical Result	RL	MDL	
83-32-9	Acenaphthene	0.50U	0.50	0.033	
208-96-8	Acenaphthylene	0.50U	0.50	0.017	
120-12-7	Anthracene	0.50U	0.50	0.062	
56-55-3	Benzo(a)anthracene	0.50U	0.50	0.045	
50-32-8	Benzo(a)pyrene	0.50U	0.50	0.040	
205-99-2	Benzo(b)fluoranthene	0.50U	0.50	0.058	
207-08-9	Benzo(k)fluoranthene	0.50U	0.50	0.060	
191-24-2	Benzo(g,h,i)perylene	0.50U	0.50	0.061	
*65-85-0	Benzoic Acid	5.0U	5.0	0.48	R
100-51-6	Benzyl Alcohol	0.50U	0.50	0.049	
101-55-3	4-Bromophenyl Phenyl Ether	0.50U	0.50	0.043	
85-68-7	Butyl Benzyl Phthalate	**0.072J**	1.0	0.056	
59-50-7	4-Chloro-3-methylphenol	0.50U	0.50	0.12	
106-47-8	4-Chloroaniline	1.0U	1.0	0.10	
111-91-1	Bis(2-chloroethoxy)methane	0.50U	0.50	0.018	
111-44-4	Bis(2-chloroethyl) Ether	0.50U	0.50	0.024	
108-60-1	Bis(2-chloroisopropyl) Ether	0.50U	0.50	0.026	
91-58-7	2-Chloronaphthalene	0.50U	0.50	0.017	
95-57-8	2-Chlorophenol	0.50U	0.50	0.027	
7005-72-3	4-Chlorophenyl Phenyl Ether	**0.052J**	0.50	0.048	
218-01-9	Chrysene	0.50U	0.50	0.045	
53-70-3	Dibenz(a,h)anthracene	0.50U	0.50	0.11	
132-64-9	Dibenzofuran	0.50U	0.50	0.041	
84-74-2	Di-n-butyl Phthalate	**0.15J**	1.0	0.14	
95-50-1	1,2-Dichlorobenzene	0.50U	0.50	0.040	
541-73-1	1,3-Dichlorobenzene	0.50U	0.50	0.041	
106-46-7	1,4-Dichlorobenzene	0.50U	0.50	0.020	
91-94-1	3,3´-Dichlorobenzidine	1.0U	1.0	0.12	
120-83-2	2,4-Dichlorophenol	0.50U	0.50	0.092	

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**Duplicate**	Sampled:	10/24/13 0:00		
Lab Sample ID:	**1310562-03**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	1	Analyzed:	11/6/13 19:57	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K07013		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL	MDL
*84-66-2	Diethyl Phthalate	~~0.23J~~ 0.50 UB	0.50	0.065
105-67-9	2,4-Dimethylphenol	1.0U	1.0	0.17
131-11-3	Dimethyl Phthalate	0.50U	0.50	0.046
534-52-1	4,6-Dinitro-2-methylphenol	5.0U	5.0	1.0
51-28-5	2,4-Dinitrophenol	5.0U	5.0	1.2
121-14-2	2,4-Dinitrotoluene	0.50U	0.50	0.048
606-20-2	2,6-Dinitrotoluene	0.50U	0.50	0.080
117-84-0	Di-n-octyl Phthalate	0.50U	0.50	0.077
117-81-7	Bis(2-ethylhexyl) Phthalate	**0.24J**	0.50	0.11
206-44-0	Fluoranthene	0.50U	0.50	0.063
86-73-7	Fluorene	0.50U	0.50	0.041
118-74-1	Hexachlorobenzene	0.50U	0.50	0.063
87-68-3	Hexachlorobutadiene	0.50U	0.50	0.040
77-47-4	Hexachlorocyclopentadiene	0.50U	0.50	0.044
67-72-1	Hexachloroethane	0.50U	0.50	0.042
193-39-5	Indeno(1,2,3-cd)pyrene	0.50U	0.50	0.080
78-59-1	Isophorone	0.50U	0.50	0.045
56-49-5	3-Methylcholanthrene	2.0U	2.0	0.12
91-57-6	2-Methylnaphthalene	0.50U	0.50	0.015
90-12-0	1-Methylnaphthalene	0.50U	0.50	0.020
95-48-7	2-Methylphenol	0.50U	0.50	0.048
106-44-5	4-Methylphenol	0.50U	0.50	0.057
91-20-3	Naphthalene	0.50U	0.50	0.031
88-74-4	2-Nitroaniline	0.50U	0.50	0.12
99-09-2	3-Nitroaniline	1.0U	1.0	0.24
100-01-6	4-Nitroaniline	1.0U	1.0	0.33
98-95-3	Nitrobenzene	0.50U	0.50	0.058
100-02-7	4-Nitrophenol	5.0U J	5.0	1.2
88-75-5	2-Nitrophenol	0.50U	0.50	0.048
86-30-6	N-Nitroso-diphenylamine	0.50U	0.50	0.068
621-64-7	N-Nitroso-di-n-propylamine	0.50U	0.50	0.075

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ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**Duplicate**	Sampled:	10/24/13 0:00		
Lab Sample ID:	**1310562-03**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	1	Analyzed:	11/6/13 19:57	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K07013		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL	MDL
87-86-5	Pentachlorophenol	0.50U	0.50	0.081
85-01-8	Phenanthrene	0.50U	0.50	0.043
108-95-2	Phenol	0.50U	0.50	0.034
129-00-0	Pyrene	0.50U	0.50	0.066
58-90-2	2,3,4,6-Tetrachlorophenol	5.0U	5.0	0.37
935-95-5	2,3,5,6-Tetrachlorophenol	10U	10	0.21
120-82-1	1,2,4-Trichlorobenzene	0.50U	0.50	0.027
88-06-2	2,4,6-Trichlorophenol	0.50U	0.50	0.085
95-95-4	2,4,5-Trichlorophenol	0.50U	0.50	0.099

Surrogates:	***% Recovery***	***Control Limits***
2-Fluorophenol	*36*	*20-70*
Phenol-d6	*30*	*18-45*
Nitrobenzene-d5	*60*	*31-123*
2-Fluorobiphenyl	*59*	*25-113*
2,4,6-Tribromophenol	*71*	*30-121*
o-Terphenyl	*75*	*42-125*

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**Duplicate (Filtered)**	Sampled:	10/24/13 0:00		
Lab Sample ID:	**1310562-04**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	11/6/13 0:00	By:	LEW
Dilution Factor:	1	Analyzed:	11/6/13 9:54	By:	LEW
QC Batch:	1312148	Analytical Batch:	3K14015		

Halogenated and Aromatic Volatiles by EPA Method 8021B

CAS Number	Analyte	Analytical Result		RL	MDL	
71-43-2	Benzene	1.0U		1.0	0.20	
104-51-8	n-Butylbenzene	1.0U		1.0	0.28	
*74-87-3	Chloromethane	1.0U		1.0	0.37	
100-41-4	Ethylbenzene	1.0U		1.0	0.20	
1634-04-4	Methyl tert-Butyl Ether	5.0U		5.0	0.48	
*91-20-3	Naphthalene	1.0U	J	1.0	0.44	R
103-65-1	n-Propylbenzene	1.0U		1.0	0.24	
100-42-5	Styrene	1.0U		1.0	0.20	
108-88-3	Toluene	1.0U		1.0	0.33	
71-55-6	1,1,1-Trichloroethane	1.0U		1.0	0.30	
108-67-8	1,3,5-Trimethylbenzene	1.0U		1.0	0.24	
95-63-6	1,2,4-Trimethylbenzene	1.0U		1.0	0.22	
179601-23-1	Xylene, Meta + Para	2.0U		2.0	0.42	
95-47-6	Xylene, Ortho	1.0U		1.0	0.20	

Surrogates:	***% Recovery***	***Control Limits***
1,2-Dichloroethane-d4	*117*	*81-126*
aaa-Trifluorotoluene	*97*	*86-118*

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**Duplicate (Filtered)**	Sampled:	10/24/13 0:00		
Lab Sample ID:	**1310562-04**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	1	Analyzed:	11/6/13 20:32	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K07013		

Semivolatile Organic Compounds by EPA Method 8270C

CAS Number	Analyte	Analytical Result	RL	MDL	
83-32-9	Acenaphthene	0.50U	0.50	0.033	
208-96-8	Acenaphthylene	0.50U	0.50	0.017	
120-12-7	Anthracene	0.50U	0.50	0.062	
56-55-3	Benzo(a)anthracene	0.50U	0.50	0.045	
50-32-8	Benzo(a)pyrene	0.50U	0.50	0.040	
205-99-2	Benzo(b)fluoranthene	0.50U	0.50	0.058	
207-08-9	Benzo(k)fluoranthene	0.50U	0.50	0.060	
191-24-2	Benzo(g,h,i)perylene	0.50U	0.50	0.061	
*65-85-0	Benzoic Acid	5.0U	5.0	0.48	R
100-51-6	Benzyl Alcohol	0.50U	0.50	0.049	
101-55-3	4-Bromophenyl Phenyl Ether	0.50U	0.50	0.043	
85-68-7	Butyl Benzyl Phthalate	**0.063J**	1.0	0.056	
59-50-7	4-Chloro-3-methylphenol	0.50U	0.50	0.12	
106-47-8	4-Chloroaniline	1.0U	1.0	0.10	
111-91-1	Bis(2-chloroethoxy)methane	0.50U	0.50	0.018	
111-44-4	Bis(2-chloroethyl) Ether	0.50U	0.50	0.024	
108-60-1	Bis(2-chloroisopropyl) Ether	0.50U	0.50	0.026	
91-58-7	2-Chloronaphthalene	0.50U	0.50	0.017	
95-57-8	2-Chlorophenol	0.50U	0.50	0.027	
7005-72-3	4-Chlorophenyl Phenyl Ether	0.50U	0.50	0.048	
218-01-9	Chrysene	0.50U	0.50	0.045	
53-70-3	Dibenz(a,h)anthracene	0.50U	0.50	0.11	
132-64-9	Dibenzofuran	0.50U	0.50	0.041	
84-74-2	Di-n-butyl Phthalate	**0.18J**	1.0	0.14	
95-50-1	1,2-Dichlorobenzene	0.50U	0.50	0.040	
541-73-1	1,3-Dichlorobenzene	0.50U	0.50	0.041	
106-46-7	1,4-Dichlorobenzene	0.50U	0.50	0.020	
91-94-1	3,3´-Dichlorobenzidine	1.0U	1.0	0.12	
120-83-2	2,4-Dichlorophenol	0.50U	0.50	0.092	

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**Duplicate (Filtered)**	Sampled:	10/24/13 0:00		
Lab Sample ID:	**1310562-04**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	1	Analyzed:	11/6/13 20:32	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K07013		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL	MDL
*84-66-2	Diethyl Phthalate	~~**0.25J**~~ 0.50 UB	0.50	0.065
105-67-9	2,4-Dimethylphenol	1.0U	1.0	0.17
131-11-3	Dimethyl Phthalate	0.50U	0.50	0.046
534-52-1	4,6-Dinitro-2-methylphenol	5.0U	5.0	1.0
51-28-5	2,4-Dinitrophenol	5.0U	5.0	1.2
121-14-2	2,4-Dinitrotoluene	0.50U	0.50	0.048
606-20-2	2,6-Dinitrotoluene	0.50U	0.50	0.080
117-84-0	Di-n-octyl Phthalate	0.50U	0.50	0.077
117-81-7	Bis(2-ethylhexyl) Phthalate	**0.42J**	0.50	0.11
206-44-0	Fluoranthene	0.50U	0.50	0.063
86-73-7	Fluorene	0.50U	0.50	0.041
118-74-1	Hexachlorobenzene	0.50U	0.50	0.063
87-68-3	Hexachlorobutadiene	0.50U	0.50	0.040
77-47-4	Hexachlorocyclopentadiene	0.50U	0.50	0.044
67-72-1	Hexachloroethane	0.50U	0.50	0.042
193-39-5	Indeno(1,2,3-cd)pyrene	0.50U	0.50	0.080
78-59-1	Isophorone	0.50U	0.50	0.045
56-49-5	3-Methylcholanthrene	2.0U	2.0	0.12
91-57-6	2-Methylnaphthalene	0.50U	0.50	0.015
90-12-0	1-Methylnaphthalene	0.50U	0.50	0.020
95-48-7	2-Methylphenol	0.50U	0.50	0.048
106-44-5	4-Methylphenol	**0.24J**	0.50	0.057
91-20-3	Naphthalene	**0.053J**	0.50	0.031
88-74-4	2-Nitroaniline	0.50U	0.50	0.12
99-09-2	3-Nitroaniline	1.0U	1.0	0.24
100-01-6	4-Nitroaniline	1.0U	1.0	0.33
98-95-3	Nitrobenzene	0.50U	0.50	0.058
100-02-7	4-Nitrophenol	5.0U J	5.0	1.2
88-75-5	2-Nitrophenol	0.50U	0.50	0.048
86-30-6	N-Nitroso-diphenylamine	0.50U	0.50	0.068
621-64-7	N-Nitroso-di-n-propylamine	0.50U	0.50	0.075

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ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**Duplicate (Filtered)**	Sampled:	10/24/13 0:00		
Lab Sample ID:	**1310562-04**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	1	Analyzed:	11/6/13 20:32	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K07013		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL	MDL
87-86-5	Pentachlorophenol	0.50U	0.50	0.081
85-01-8	Phenanthrene	0.50U	0.50	0.043
108-95-2	Phenol	0.50U	0.50	0.034
129-00-0	Pyrene	0.50U	0.50	0.066
58-90-2	2,3,4,6-Tetrachlorophenol	5.0U	5.0	0.37
935-95-5	2,3,5,6-Tetrachlorophenol	10U	10	0.21
120-82-1	1,2,4-Trichlorobenzene	0.50U	0.50	0.027
88-06-2	2,4,6-Trichlorophenol	0.50U	0.50	0.085
95-95-4	2,4,5-Trichlorophenol	0.50U	0.50	0.099

Surrogates:	***% Recovery***	***Control Limits***
2-Fluorophenol	*41*	*20-70*
Phenol-d6	*30*	*18-45*
Nitrobenzene-d5	*72*	*31-123*
2-Fluorobiphenyl	*74*	*25-113*
2,4,6-Tribromophenol	*79*	*30-121*
o-Terphenyl	*86*	*42-125*

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-12A**	Sampled:	10/24/13 13:15		
Lab Sample ID:	**1310562-05**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	11/6/13 0:00	By:	LEW
Dilution Factor:	1	Analyzed:	11/6/13 10:43	By:	LEW
QC Batch:	1312148	Analytical Batch:	3K14015		

Halogenated and Aromatic Volatiles by EPA Method 8021B

CAS Number	Analyte	Analytical Result	RL	MDL
71-43-2	Benzene	**22**	1.0	0.20
104-51-8	n-Butylbenzene	1.0U	1.0	0.28
*74-87-3	Chloromethane	1.0U	1.0	0.37
100-41-4	Ethylbenzene	**32**	1.0	0.20
1634-04-4	Methyl tert-Butyl Ether	5.0U	5.0	0.48
*91-20-3	Naphthalene	~~**400E**~~ 9200 DJ	1.0	0.44
103-65-1	n-Propylbenzene	**0.86J**	1.0	0.24
100-42-5	Styrene	1.0U	1.0	0.20
108-88-3	Toluene	**42**	1.0	0.33
71-55-6	1,1,1-Trichloroethane	1.0U	1.0	0.30
108-67-8	1,3,5-Trimethylbenzene	**12**	1.0	0.24
95-63-6	1,2,4-Trimethylbenzene	**32**	1.0	0.22
179601-23-1	Xylene, Meta + Para	**61**	2.0	0.42
95-47-6	Xylene, Ortho	**30**	1.0	0.20

Surrogates:	***% Recovery***	***Control Limits***
1,2-Dichloroethane-d4	*109*	*81-126*
aaa-Trifluorotoluene	*103*	*86-118*

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-12A**	Sampled:	10/24/13 13:15		
Lab Sample ID:	**1310562-05**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	10	Analyzed:	11/9/13 2:34	By:	DWJ
QC Batch:	1311584	Analytical Batch:	3K11041		

Semivolatile Organic Compounds by EPA Method 8270C

CAS Number	Analyte	Analytical Result	RL	MDL	
83-32-9	Acenaphthene	**250**	5.6	0.37	
208-96-8	Acenaphthylene	**6.0**	5.6	0.19	
120-12-7	Anthracene	**11**	5.6	0.68	
56-55-3	Benzo(a)anthracene	**3.4J**	5.6	0.50	
50-32-8	Benzo(a)pyrene	**1.3J**	5.6	0.45	
205-99-2	Benzo(b)fluoranthene	**1.9J**	5.6	0.65	
207-08-9	Benzo(k)fluoranthene	**0.89J**	5.6	0.66	
191-24-2	Benzo(g,h,i)perylene	5.6U	5.6	0.68	
~~*65-85-0~~	~~Benzoic Acid~~	~~56U~~	~~56~~	~~5.3~~	R
100-51-6	Benzyl Alcohol	5.6U	5.6	0.54	
101-55-3	4-Bromophenyl Phenyl Ether	5.6U	5.6	0.48	
85-68-7	Butyl Benzyl Phthalate	11U	11	0.62	
59-50-7	4-Chloro-3-methylphenol	5.6U	5.6	1.3	
106-47-8	4-Chloroaniline	11U	11	1.1	
111-91-1	Bis(2-chloroethoxy)methane	5.6U	5.6	0.20	
111-44-4	Bis(2-chloroethyl) Ether	5.6U	5.6	0.26	
108-60-1	Bis(2-chloroisopropyl) Ether	5.6U	5.6	0.29	
91-58-7	2-Chloronaphthalene	**1.1J**	5.6	0.19	
95-57-8	2-Chlorophenol	5.6U	5.6	0.30	
7005-72-3	4-Chlorophenyl Phenyl Ether	5.6U	5.6	0.53	
218-01-9	Chrysene	**2.4J**	5.6	0.50	
53-70-3	Dibenz(a,h)anthracene	5.6U	5.6	1.3	
132-64-9	Dibenzofuran	**140**	5.6	0.45	
84-74-2	Di-n-butyl Phthalate	11U	11	1.5	
95-50-1	1,2-Dichlorobenzene	5.6U	5.6	0.44	
541-73-1	1,3-Dichlorobenzene	5.6U	5.6	0.46	
106-46-7	1,4-Dichlorobenzene	5.6U	5.6	0.22	
91-94-1	3,3´-Dichlorobenzidine	11U	11	1.4	
120-83-2	2,4-Dichlorophenol	5.6U	5.6	1.0	

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-12A**	Sampled:	10/24/13 13:15		
Lab Sample ID:	**1310562-05**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	10	Analyzed:	11/9/13 2:34	By:	DWJ
QC Batch:	1311584	Analytical Batch:	3K11041		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL	MDL
84-66-2	Diethyl Phthalate	**1.1J**	5.6	0.72
*105-67-9	2,4-Dimethylphenol	~~**940E**~~ 880 D	11	1.9
131-11-3	Dimethyl Phthalate	5.6U	5.6	0.51
534-52-1	4,6-Dinitro-2-methylphenol	56U	56	11
51-28-5	2,4-Dinitrophenol	56U	56	13
121-14-2	2,4-Dinitrotoluene	5.6U	5.6	0.53
606-20-2	2,6-Dinitrotoluene	5.6U	5.6	0.89
117-84-0	Di-n-octyl Phthalate	5.6U	5.6	0.85
117-81-7	Bis(2-ethylhexyl) Phthalate	5.6U	5.6	1.3
206-44-0	Fluoranthene	**24**	5.6	0.70
86-73-7	Fluorene	**120**	5.6	0.46
118-74-1	Hexachlorobenzene	5.6U	5.6	0.70
87-68-3	Hexachlorobutadiene	5.6U	5.6	0.44
77-47-4	Hexachlorocyclopentadiene	5.6U	5.6	0.49
67-72-1	Hexachloroethane	5.6U	5.6	0.46
193-39-5	Indeno(1,2,3-cd)pyrene	5.6U	5.6	0.89
78-59-1	Isophorone	5.6U	5.6	0.50
56-49-5	3-Methylcholanthrene	22U	22	1.3
*91-57-6	2-Methylnaphthalene	~~**370E**~~ 370 D	5.6	0.17
90-12-0	1-Methylnaphthalene	**210**	5.6	0.22
95-48-7	2-Methylphenol	**230**	5.6	0.53
*106-44-5	4-Methylphenol	~~**970E**~~ 750 D	5.6	0.63
*91-20-3	Naphthalene	~~**2000E**~~ 6700 D	5.6	0.34
88-74-4	2-Nitroaniline	5.6U	5.6	1.3
99-09-2	3-Nitroaniline	11U	11	2.7
100-01-6	4-Nitroaniline	11U J	11	3.7
98-95-3	Nitrobenzene	5.6U	5.6	0.65
100-02-7	4-Nitrophenol	56U	56	14
88-75-5	2-Nitrophenol	5.6U	5.6	0.53
86-30-6	N-Nitroso-diphenylamine	5.6U	5.6	0.75
621-64-7	N-Nitroso-di-n-propylamine	5.6U	5.6	0.84

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-12A**	Sampled:	10/24/13 13:15		
Lab Sample ID:	**1310562-05**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	10	Analyzed:	11/9/13 2:34	By:	DWJ
QC Batch:	1311584	Analytical Batch:	3K11041		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL	MDL
87-86-5	Pentachlorophenol	5.6U	5.6	0.90
85-01-8	Phenanthrene	**130**	5.6	0.47
108-95-2	Phenol	**42**	5.6	0.37
129-00-0	Pyrene	**15**	5.6	0.73
58-90-2	2,3,4,6-Tetrachlorophenol	56U	56	4.1
935-95-5	2,3,5,6-Tetrachlorophenol	110U	110	2.4
120-82-1	1,2,4-Trichlorobenzene	5.6U	5.6	0.30
88-06-2	2,4,6-Trichlorophenol	5.6U	5.6	0.95
95-95-4	2,4,5-Trichlorophenol	5.6U	5.6	1.1

Surrogates:	***% Recovery***	***Control Limits***
2-Fluorophenol	*46*	*20-70*
Phenol-d6	*38*	*18-45*
Nitrobenzene-d5	*79*	*31-123*
2-Fluorobiphenyl	*75*	*25-113*
2,4,6-Tribromophenol	*96*	*30-121*
o-Terphenyl	*90*	*42-125*

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-12A**	Sampled:	10/24/13 13:15		
Lab Sample ID:	**1310562-05RE1**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	11/8/13 7:00	By:	LEW
Dilution Factor:	250	Analyzed:	11/8/13 17:25	By:	LEW
QC Batch:	1312152	Analytical Batch:	3K14017		

*Halogenated and Aromatic Volatiles by EPA Method 8021B

CAS Number	Analyte	Analytical Result	RL	MDL
*91-20-3	Naphthalene	**9200B**	250	110

Surrogates:	*% Recovery*	*Control Limits*
1,2-Dichloroethane-d4	*120*	*81-126*
aaa-Trifluorotoluene	*95*	*86-118*

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-12A**	Sampled:	10/24/13 13:15		
Lab Sample ID:	**1310562-05RE1**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	500	Analyzed:	11/12/13 18:39	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K12078		

Semivolatile Organic Compounds by EPA Method 8270C

CAS Number	Analyte	Analytical Result	RL	MDL
83-32-9	Acenaphthene	**240J**	280	18
208-96-8	Acenaphthylene	280U	280	9.5
120-12-7	Anthracene	280U	280	34
56-55-3	Benzo(a)anthracene	280U	280	25
50-32-8	Benzo(a)pyrene	280U	280	22
205-99-2	Benzo(b)fluoranthene	280U	280	32
207-08-9	Benzo(k)fluoranthene	280U	280	33
191-24-2	Benzo(g,h,i)perylene	280U	280	34
*65-85-0	Benzoic Acid	2800U	2800	270
100-51-6	Benzyl Alcohol	280U	280	27
101-55-3	4-Bromophenyl Phenyl Ether	280U	280	24
85-68-7	Butyl Benzyl Phthalate	560U	560	31
59-50-7	4-Chloro-3-methylphenol	280U	280	64
106-47-8	4-Chloroaniline	560U	560	57
111-91-1	Bis(2-chloroethoxy)methane	280U	280	10
111-44-4	Bis(2-chloroethyl) Ether	280U	280	13
108-60-1	Bis(2-chloroisopropyl) Ether	280U	280	14
91-58-7	2-Chloronaphthalene	280U	280	9.5
95-57-8	2-Chlorophenol	280U	280	15
7005-72-3	4-Chlorophenyl Phenyl Ether	280U	280	27
218-01-9	Chrysene	280U	280	25
53-70-3	Dibenz(a,h)anthracene	280U	280	63
132-64-9	Dibenzofuran	**130J**	280	23
84-74-2	Di-n-butyl Phthalate	560U	560	75
95-50-1	1,2-Dichlorobenzene	280U	280	22
541-73-1	1,3-Dichlorobenzene	280U	280	23
106-46-7	1,4-Dichlorobenzene	280U	280	11
91-94-1	3,3´-Dichlorobenzidine	560U	560	69
120-83-2	2,4-Dichlorophenol	280U	280	51

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ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-12A**	Sampled:	10/24/13 13:15		
Lab Sample ID:	**1310562-05RE1**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	500	Analyzed:	11/12/13 18:39	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K12078		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL	MDL
84-66-2	Diethyl Phthalate	**44J**	280	36
105-67-9	2,4-Dimethylphenol	**880**	560	93
131-11-3	Dimethyl Phthalate	280U	280	25
534-52-1	4,6-Dinitro-2-methylphenol	2800U	2800	570
51-28-5	2,4-Dinitrophenol	2800U	2800	640
121-14-2	2,4-Dinitrotoluene	280U	280	26
606-20-2	2,6-Dinitrotoluene	280U	280	44
117-84-0	Di-n-octyl Phthalate	280U	280	43
117-81-7	Bis(2-ethylhexyl) Phthalate	280U	280	63
206-44-0	Fluoranthene	280U	280	35
86-73-7	Fluorene	**110J**	280	23
118-74-1	Hexachlorobenzene	280U	280	35
87-68-3	Hexachlorobutadiene	280U	280	22
77-47-4	Hexachlorocyclopentadiene	280U	280	25
67-72-1	Hexachloroethane	280U	280	23
193-39-5	Indeno(1,2,3-cd)pyrene	280U	280	44
78-59-1	Isophorone	280U	280	25
56-49-5	3-Methylcholanthrene	1100U	1100	67
91-57-6	2-Methylnaphthalene	**370**	280	8.3
90-12-0	1-Methylnaphthalene	**210J**	280	11
95-48-7	2-Methylphenol	**140J**	280	26
106-44-5	4-Methylphenol	**750**	280	31
91-20-3	Naphthalene	**6700**	280	17
88-74-4	2-Nitroaniline	280U	280	64
99-09-2	3-Nitroaniline	560U	560	140
100-01-6	4-Nitroaniline	560U	560	180
98-95-3	Nitrobenzene	280U	280	32
100-02-7	4-Nitrophenol	2800U	2800	690
88-75-5	2-Nitrophenol	280U	280	26
86-30-6	N-Nitroso-diphenylamine	280U	280	38
621-64-7	N-Nitroso-di-n-propylamine	280U	280	42

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ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-12A**	Sampled:	10/24/13 13:15		
Lab Sample ID:	**1310562-05RE1**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	500	Analyzed:	11/12/13 18:39	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K12078		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL	MDL
87-86-5	Pentachlorophenol	280U	280	45
85-01-8	Phenanthrene	**120J**	280	24
108-95-2	Phenol	280U	280	19
129-00-0	Pyrene	280U	280	36
58-90-2	2,3,4,6-Tetrachlorophenol	2800U	2800	210
935-95-5	2,3,5,6-Tetrachlorophenol	5600U	5600	120
120-82-1	1,2,4-Trichlorobenzene	280U	280	15
88-06-2	2,4,6-Trichlorophenol	280U	280	47
95-95-4	2,4,5-Trichlorophenol	280U	280	55

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-8A**	Sampled:	10/24/13 17:45		
Lab Sample ID:	**1310562-06**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	11/6/13 0:00	By:	LEW
Dilution Factor:	1	Analyzed:	11/6/13 11:31	By:	LEW
QC Batch:	1312148	Analytical Batch:	3K14015		

*Halogenated and Aromatic Volatiles by EPA Method 8021B

CAS Number	Analyte	Analytical Result	RL	MDL
71-43-2	Benzene	1.0U	1.0	0.20
104-51-8	n-Butylbenzene	1.0U	1.0	0.28
*74-87-3	Chloromethane	1.0U	1.0	0.37
100-41-4	Ethylbenzene	1.0U	1.0	0.20
1634-04-4	Methyl tert-Butyl Ether	5.0U	5.0	0.48
*91-20-3	Naphthalene	1.0U J	1.0	0.44
103-65-1	n-Propylbenzene	1.0U	1.0	0.24
100-42-5	Styrene	1.0U	1.0	0.20
108-88-3	Toluene	1.0U	1.0	0.33
71-55-6	1,1,1-Trichloroethane	1.0U	1.0	0.30
108-67-8	1,3,5-Trimethylbenzene	1.0U	1.0	0.24
95-63-6	1,2,4-Trimethylbenzene	**0.69J**	1.0	0.22
179601-23-1	Xylene, Meta + Para	2.0U	2.0	0.42
95-47-6	Xylene, Ortho	1.0U	1.0	0.20

Surrogates:	***% Recovery***	***Control Limits***
1,2-Dichloroethane-d4	***128***	*81-126*
aaa-Trifluorotoluene	*96*	*86-118*

*See Statement of Data Qualifications

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-8A**	Sampled:	10/24/13 17:45		
Lab Sample ID:	**1310562-06**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	1	Analyzed:	11/6/13 21:08	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K07013		

Semivolatile Organic Compounds by EPA Method 8270C

CAS Number	Analyte	Analytical Result	RL	MDL	
83-32-9	Acenaphthene	0.50U	0.50	0.033	
208-96-8	Acenaphthylene	0.50U	0.50	0.017	
120-12-7	Anthracene	0.50U	0.50	0.062	
56-55-3	Benzo(a)anthracene	0.50U	0.50	0.045	
50-32-8	Benzo(a)pyrene	0.50U	0.50	0.040	
205-99-2	Benzo(b)fluoranthene	0.50U	0.50	0.058	
207-08-9	Benzo(k)fluoranthene	0.50U	0.50	0.060	
191-24-2	Benzo(g,h,i)perylene	0.50U	0.50	0.061	
*65-85-0	Benzoic Acid	5.0U	5.0	0.48	R
100-51-6	Benzyl Alcohol	0.50U	0.50	0.049	
101-55-3	4-Bromophenyl Phenyl Ether	0.50U	0.50	0.043	
85-68-7	Butyl Benzyl Phthalate	1.0U	1.0	0.056	
59-50-7	4-Chloro-3-methylphenol	0.50U	0.50	0.12	
106-47-8	4-Chloroaniline	1.0U	1.0	0.10	
111-91-1	Bis(2-chloroethoxy)methane	0.50U	0.50	0.018	
111-44-4	Bis(2-chloroethyl) Ether	0.50U	0.50	0.024	
108-60-1	Bis(2-chloroisopropyl) Ether	0.50U	0.50	0.026	
91-58-7	2-Chloronaphthalene	0.50U	0.50	0.017	
95-57-8	2-Chlorophenol	0.50U	0.50	0.027	
7005-72-3	4-Chlorophenyl Phenyl Ether	0.50U	0.50	0.048	
218-01-9	Chrysene	0.50U	0.50	0.045	
53-70-3	Dibenz(a,h)anthracene	0.50U	0.50	0.11	
132-64-9	Dibenzofuran	0.50U	0.50	0.041	
84-74-2	Di-n-butyl Phthalate	1.0U	1.0	0.14	
95-50-1	1,2-Dichlorobenzene	0.50U	0.50	0.040	
541-73-1	1,3-Dichlorobenzene	0.50U	0.50	0.041	
106-46-7	1,4-Dichlorobenzene	0.50U	0.50	0.020	
91-94-1	3,3´-Dichlorobenzidine	1.0U	1.0	0.12	
120-83-2	2,4-Dichlorophenol	0.50U	0.50	0.092	

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-8A**	Sampled:	10/24/13 17:45		
Lab Sample ID:	**1310562-06**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	1	Analyzed:	11/6/13 21:08	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K07013		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL	MDL
*84-66-2	Diethyl Phthalate	~~0.18J~~ 0.50 UB	0.50	0.065
105-67-9	2,4-Dimethylphenol	1.0U	1.0	0.17
131-11-3	Dimethyl Phthalate	0.50U	0.50	0.046
534-52-1	4,6-Dinitro-2-methylphenol	5.0U	5.0	1.0
51-28-5	2,4-Dinitrophenol	5.0U	5.0	1.2
121-14-2	2,4-Dinitrotoluene	0.50U	0.50	0.048
606-20-2	2,6-Dinitrotoluene	0.50U	0.50	0.080
117-84-0	Di-n-octyl Phthalate	0.50U	0.50	0.077
117-81-7	Bis(2-ethylhexyl) Phthalate	**0.18J**	0.50	0.11
206-44-0	Fluoranthene	0.50U	0.50	0.063
86-73-7	Fluorene	0.50U	0.50	0.041
118-74-1	Hexachlorobenzene	0.50U	0.50	0.063
87-68-3	Hexachlorobutadiene	0.50U	0.50	0.040
77-47-4	Hexachlorocyclopentadiene	0.50U	0.50	0.044
67-72-1	Hexachloroethane	0.50U	0.50	0.042
193-39-5	Indeno(1,2,3-cd)pyrene	0.50U	0.50	0.080
78-59-1	Isophorone	0.50U	0.50	0.045
56-49-5	3-Methylcholanthrene	2.0U	2.0	0.12
91-57-6	2-Methylnaphthalene	0.50U	0.50	0.015
90-12-0	1-Methylnaphthalene	0.50U	0.50	0.020
95-48-7	2-Methylphenol	0.50U	0.50	0.048
106-44-5	4-Methylphenol	0.50U	0.50	0.057
91-20-3	Naphthalene	0.50U	0.50	0.031
88-74-4	2-Nitroaniline	0.50U	0.50	0.12
99-09-2	3-Nitroaniline	1.0U	1.0	0.24
100-01-6	4-Nitroaniline	1.0U	1.0	0.33
98-95-3	Nitrobenzene	0.50U	0.50	0.058
100-02-7	4-Nitrophenol	5.0U J	5.0	1.2
88-75-5	2-Nitrophenol	0.50U	0.50	0.048
86-30-6	N-Nitroso-diphenylamine	0.50U	0.50	0.068
621-64-7	N-Nitroso-di-n-propylamine	0.50U	0.50	0.075

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ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-8A**	Sampled:	10/24/13 17:45		
Lab Sample ID:	**1310562-06**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	1	Analyzed:	11/6/13 21:08	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K07013		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL	MDL
87-86-5	Pentachlorophenol	0.50U	0.50	0.081
85-01-8	Phenanthrene	0.50U	0.50	0.043
108-95-2	Phenol	0.50U	0.50	0.034
129-00-0	Pyrene	0.50U	0.50	0.066
58-90-2	2,3,4,6-Tetrachlorophenol	5.0U	5.0	0.37
935-95-5	2,3,5,6-Tetrachlorophenol	10U	10	0.21
120-82-1	1,2,4-Trichlorobenzene	0.50U	0.50	0.027
88-06-2	2,4,6-Trichlorophenol	0.50U	0.50	0.085
95-95-4	2,4,5-Trichlorophenol	0.50U	0.50	0.099

Surrogates:	***% Recovery***	***Control Limits***
2-Fluorophenol	*34*	*20-70*
Phenol-d6	*29*	*18-45*
Nitrobenzene-d5	*66*	*31-123*
2-Fluorobiphenyl	*68*	*25-113*
2,4,6-Tribromophenol	*78*	*30-121*
o-Terphenyl	*88*	*42-125*

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-8A (Filtered)**	Sampled:	10/24/13 11:20		
Lab Sample ID:	**1310562-07**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	11/6/13 0:00	By:	LEW
Dilution Factor:	1	Analyzed:	11/6/13 18:00	By:	LEW
QC Batch:	1312148	Analytical Batch:	3K14015		

*Halogenated and Aromatic Volatiles by EPA Method 8021B

CAS Number	Analyte	Analytical Result		RL	MDL
71-43-2	Benzene	1.0U		1.0	0.20
104-51-8	n-Butylbenzene	1.0U		1.0	0.28
*74-87-3	Chloromethane	1.0U		1.0	0.37
100-41-4	Ethylbenzene	1.0U		1.0	0.20
1634-04-4	Methyl tert-Butyl Ether	5.0U		5.0	0.48
*91-20-3	Naphthalene	1.0U	J	1.0	0.44
103-65-1	n-Propylbenzene	1.0U		1.0	0.24
100-42-5	Styrene	1.0U		1.0	0.20
108-88-3	Toluene	1.0U		1.0	0.33
71-55-6	1,1,1-Trichloroethane	1.0U		1.0	0.30
108-67-8	1,3,5-Trimethylbenzene	1.0U		1.0	0.24
95-63-6	1,2,4-Trimethylbenzene	1.0U		1.0	0.22
179601-23-1	Xylene, Meta + Para	2.0U		2.0	0.42
95-47-6	Xylene, Ortho	1.0U		1.0	0.20

Surrogates:	***% Recovery***	***Control Limits***
1,2-Dichloroethane-d4	***128***	*81-126*
aaa-Trifluorotoluene	*95*	*86-118*

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-8A (Filtered)**	Sampled:	10/24/13 11:20		
Lab Sample ID:	**1310562-07**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	1	Analyzed:	11/6/13 21:43	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K07013		

Semivolatile Organic Compounds by EPA Method 8270C

CAS Number	Analyte	Analytical Result	RL	MDL	
83-32-9	Acenaphthene	0.50U	0.50	0.033	
208-96-8	Acenaphthylene	0.50U	0.50	0.017	
120-12-7	Anthracene	0.50U	0.50	0.062	
56-55-3	Benzo(a)anthracene	0.50U	0.50	0.045	
50-32-8	Benzo(a)pyrene	0.50U	0.50	0.040	
205-99-2	Benzo(b)fluoranthene	0.50U	0.50	0.058	
207-08-9	Benzo(k)fluoranthene	0.50U	0.50	0.060	
191-24-2	Benzo(g,h,i)perylene	0.50U	0.50	0.061	
*65-85-0	Benzoic Acid	5.0U	5.0	0.48	R
100-51-6	Benzyl Alcohol	0.50U	0.50	0.049	
101-55-3	4-Bromophenyl Phenyl Ether	0.50U	0.50	0.043	
85-68-7	Butyl Benzyl Phthalate	1.0U	1.0	0.056	
59-50-7	4-Chloro-3-methylphenol	0.50U	0.50	0.12	
106-47-8	4-Chloroaniline	1.0U	1.0	0.10	
111-91-1	Bis(2-chloroethoxy)methane	0.50U	0.50	0.018	
111-44-4	Bis(2-chloroethyl) Ether	0.50U	0.50	0.024	
108-60-1	Bis(2-chloroisopropyl) Ether	0.50U	0.50	0.026	
91-58-7	2-Chloronaphthalene	0.50U	0.50	0.017	
95-57-8	2-Chlorophenol	0.50U	0.50	0.027	
7005-72-3	4-Chlorophenyl Phenyl Ether	0.50U	0.50	0.048	
218-01-9	Chrysene	0.50U	0.50	0.045	
53-70-3	Dibenz(a,h)anthracene	0.50U	0.50	0.11	
132-64-9	Dibenzofuran	0.50U	0.50	0.041	
84-74-2	Di-n-butyl Phthalate	**0.16J**	1.0	0.14	
95-50-1	1,2-Dichlorobenzene	0.50U	0.50	0.040	
541-73-1	1,3-Dichlorobenzene	0.50U	0.50	0.041	
106-46-7	1,4-Dichlorobenzene	0.50U	0.50	0.020	
91-94-1	3,3´-Dichlorobenzidine	1.0U	1.0	0.12	
120-83-2	2,4-Dichlorophenol	0.50U	0.50	0.092	

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-8A (Filtered)**	Sampled:	10/24/13 11:20		
Lab Sample ID:	**1310562-07**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	1	Analyzed:	11/6/13 21:43	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K07013		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL	MDL
*84-66-2	Diethyl Phthalate	~~**0.26J**~~ 0.50 UB	0.50	0.065
105-67-9	2,4-Dimethylphenol	1.0U	1.0	0.17
131-11-3	Dimethyl Phthalate	0.50U	0.50	0.046
534-52-1	4,6-Dinitro-2-methylphenol	5.0U	5.0	1.0
51-28-5	2,4-Dinitrophenol	5.0U	5.0	1.2
121-14-2	2,4-Dinitrotoluene	0.50U	0.50	0.048
606-20-2	2,6-Dinitrotoluene	0.50U	0.50	0.080
117-84-0	Di-n-octyl Phthalate	0.50U	0.50	0.077
117-81-7	Bis(2-ethylhexyl) Phthalate	**0.21J**	0.50	0.11
206-44-0	Fluoranthene	0.50U	0.50	0.063
86-73-7	Fluorene	0.50U	0.50	0.041
118-74-1	Hexachlorobenzene	0.50U	0.50	0.063
87-68-3	Hexachlorobutadiene	0.50U	0.50	0.040
77-47-4	Hexachlorocyclopentadiene	0.50U	0.50	0.044
67-72-1	Hexachloroethane	0.50U	0.50	0.042
193-39-5	Indeno(1,2,3-cd)pyrene	0.50U	0.50	0.080
78-59-1	Isophorone	**0.13J**	0.50	0.045
56-49-5	3-Methylcholanthrene	2.0U	2.0	0.12
91-57-6	2-Methylnaphthalene	0.50U	0.50	0.015
90-12-0	1-Methylnaphthalene	0.50U	0.50	0.020
95-48-7	2-Methylphenol	0.50U	0.50	0.048
106-44-5	4-Methylphenol	**0.89**	0.50	0.057
91-20-3	Naphthalene	**0.071J**	0.50	0.031
88-74-4	2-Nitroaniline	0.50U	0.50	0.12
99-09-2	3-Nitroaniline	1.0U	1.0	0.24
100-01-6	4-Nitroaniline	1.0U	1.0	0.33
98-95-3	Nitrobenzene	0.50U	0.50	0.058
100-02-7	4-Nitrophenol	5.0U J	5.0	1.2
88-75-5	2-Nitrophenol	0.50U	0.50	0.048
86-30-6	N-Nitroso-diphenylamine	0.50U	0.50	0.068
621-64-7	N-Nitroso-di-n-propylamine	0.50U	0.50	0.075

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ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-8A (Filtered)**	Sampled:	10/24/13 11:20		
Lab Sample ID:	**1310562-07**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	1	Analyzed:	11/6/13 21:43	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K07013		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL	MDL
87-86-5	Pentachlorophenol	0.50U	0.50	0.081
85-01-8	Phenanthrene	0.50U	0.50	0.043
108-95-2	Phenol	**0.14J**	0.50	0.034
129-00-0	Pyrene	0.50U	0.50	0.066
58-90-2	2,3,4,6-Tetrachlorophenol	5.0U	5.0	0.37
935-95-5	2,3,5,6-Tetrachlorophenol	10U	10	0.21
120-82-1	1,2,4-Trichlorobenzene	0.50U	0.50	0.027
88-06-2	2,4,6-Trichlorophenol	0.50U	0.50	0.085
95-95-4	2,4,5-Trichlorophenol	0.50U	0.50	0.099

Surrogates:	***% Recovery***	***Control Limits***
2-Fluorophenol	*45*	*20-70*
Phenol-d6	*34*	*18-45*
Nitrobenzene-d5	*84*	*31-123*
2-Fluorobiphenyl	*77*	*25-113*
2,4,6-Tribromophenol	*83*	*30-121*
o-Terphenyl	*90*	*42-125*

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-2A**	Sampled:	10/24/13 18:00		
Lab Sample ID:	**1310562-08**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	11/6/13 0:00	By:	LEW
Dilution Factor:	1	Analyzed:	11/6/13 18:49	By:	LEW
QC Batch:	1312148	Analytical Batch:	3K14015		

Halogenated and Aromatic Volatiles by EPA Method 8021B

CAS Number	Analyte	Analytical Result	RL	MDL
71-43-2	Benzene	**7.0**	1.0	0.20
104-51-8	n-Butylbenzene	1.0U	1.0	0.28
*74-87-3	Chloromethane	1.0U	1.0	0.37
100-41-4	Ethylbenzene	**40**	1.0	0.20
1634-04-4	Methyl tert-Butyl Ether	5.0U	5.0	0.48
*91-20-3	Naphthalene	~~**390E**~~ 12000 DJ	1.0	0.44
103-65-1	n-Propylbenzene	**0.93J**	1.0	0.24
100-42-5	Styrene	1.0U	1.0	0.20
108-88-3	Toluene	**25**	1.0	0.33
71-55-6	1,1,1-Trichloroethane	1.0U	1.0	0.30
108-67-8	1,3,5-Trimethylbenzene	**15**	1.0	0.24
95-63-6	1,2,4-Trimethylbenzene	**37**	1.0	0.22
179601-23-1	Xylene, Meta + Para	**70**	2.0	0.42
95-47-6	Xylene, Ortho	**32**	1.0	0.20

Surrogates:	***% Recovery***	***Control Limits***
1,2-Dichloroethane-d4	*124*	*81-126*
aaa-Trifluorotoluene	*102*	*86-118*

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-2A**	Sampled:	10/24/13 18:00		
Lab Sample ID:	**1310562-08**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	10	Analyzed:	11/9/13 3:09	By:	DWJ
QC Batch:	1311584	Analytical Batch:	3K11041		

Semivolatile Organic Compounds by EPA Method 8270C

CAS Number	Analyte	Analytical Result	RL	MDL
*83-32-9	Acenaphthene	~~280E~~ 270 D	5.3	0.35
208-96-8	Acenaphthylene	**0.85J**	5.3	0.18
120-12-7	Anthracene	**9.5**	5.3	0.65
56-55-3	Benzo(a)anthracene	**6.6**	5.3	0.48
50-32-8	Benzo(a)pyrene	**2.4J**	5.3	0.43
205-99-2	Benzo(b)fluoranthene	**3.8J**	5.3	0.62
207-08-9	Benzo(k)fluoranthene	**1.6J**	5.3	0.63
191-24-2	Benzo(g,h,i)perylene	**0.74J**	5.3	0.65
*65-85-0	Benzoic Acid	**36J**	53	5.1
100-51-6	Benzyl Alcohol	5.3U	5.3	0.52
101-55-3	4-Bromophenyl Phenyl Ether	5.3U	5.3	0.46
85-68-7	Butyl Benzyl Phthalate	11U	11	0.59
59-50-7	4-Chloro-3-methylphenol	5.3U	5.3	1.2
106-47-8	4-Chloroaniline	11U	11	1.1
111-91-1	Bis(2-chloroethoxy)methane	5.3U	5.3	0.20
111-44-4	Bis(2-chloroethyl) Ether	5.3U	5.3	0.25
108-60-1	Bis(2-chloroisopropyl) Ether	5.3U	5.3	0.27
91-58-7	2-Chloronaphthalene	5.3U	5.3	0.18
95-57-8	2-Chlorophenol	5.3U	5.3	0.28
7005-72-3	4-Chlorophenyl Phenyl Ether	5.3U	5.3	0.51
218-01-9	Chrysene	**4.8J**	5.3	0.48
53-70-3	Dibenz(a,h)anthracene	5.3U	5.3	1.2
132-64-9	Dibenzofuran	**120**	5.3	0.43
84-74-2	Di-n-butyl Phthalate	11U	11	1.4
95-50-1	1,2-Dichlorobenzene	5.3U	5.3	0.42
541-73-1	1,3-Dichlorobenzene	5.3U	5.3	0.44
106-46-7	1,4-Dichlorobenzene	5.3U	5.3	0.21
91-94-1	3,3´-Dichlorobenzidine	11U	11	1.3
120-83-2	2,4-Dichlorophenol	5.3U	5.3	0.97

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-2A**	Sampled:	10/24/13 18:00		
Lab Sample ID:	**1310562-08**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	10	Analyzed:	11/9/13 3:09	By:	DWJ
QC Batch:	1311584	Analytical Batch:	3K11041		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL	MDL
*84-66-2	Diethyl Phthalate	**1.2J**	5.3	0.69
105-67-9	2,4-Dimethylphenol	**170**	11	1.8
131-11-3	Dimethyl Phthalate	5.3U	5.3	0.48
534-52-1	4,6-Dinitro-2-methylphenol	53U	53	11
51-28-5	2,4-Dinitrophenol	53U	53	12
121-14-2	2,4-Dinitrotoluene	5.3U	5.3	0.51
606-20-2	2,6-Dinitrotoluene	5.3U	5.3	0.85
117-84-0	Di-n-octyl Phthalate	5.3U	5.3	0.81
117-81-7	Bis(2-ethylhexyl) Phthalate	5.3U	5.3	1.2
206-44-0	Fluoranthene	**34**	5.3	0.67
86-73-7	Fluorene	**110**	5.3	0.44
118-74-1	Hexachlorobenzene	5.3U	5.3	0.67
87-68-3	Hexachlorobutadiene	5.3U	5.3	0.42
77-47-4	Hexachlorocyclopentadiene	5.3U	5.3	0.47
67-72-1	Hexachloroethane	5.3U	5.3	0.44
193-39-5	Indeno(1,2,3-cd)pyrene	5.3U	5.3	0.85
78-59-1	Isophorone	5.3U	5.3	0.48
56-49-5	3-Methylcholanthrene	21U	21	1.3
*91-57-6	2-Methylnaphthalene	~~**320E**~~ 320 D	5.3	0.16
90-12-0	1-Methylnaphthalene	**170**	5.3	0.21
95-48-7	2-Methylphenol	**40**	5.3	0.51
106-44-5	4-Methylphenol	**100**	5.3	0.60
*91-20-3	Naphthalene	~~**1800E**~~ 5200 D	5.3	0.33
88-74-4	2-Nitroaniline	5.3U	5.3	1.2
99-09-2	3-Nitroaniline	11U	11	2.6
100-01-6	4-Nitroaniline	11U J	11	3.5
98-95-3	Nitrobenzene	5.3U	5.3	0.62
100-02-7	4-Nitrophenol	53U	53	13
88-75-5	2-Nitrophenol	5.3U	5.3	0.51
86-30-6	N-Nitroso-diphenylamine	5.3U	5.3	0.72
621-64-7	N-Nitroso-di-n-propylamine	5.3U	5.3	0.80

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ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-2A**	Sampled:	10/24/13 18:00		
Lab Sample ID:	**1310562-08**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	10	Analyzed:	11/9/13 3:09	By:	DWJ
QC Batch:	1311584	Analytical Batch:	3K11041		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL	MDL
87-86-5	Pentachlorophenol	5.3U	5.3	0.86
85-01-8	Phenanthrene	**130**	5.3	0.45
108-95-2	Phenol	**11**	5.3	0.36
129-00-0	Pyrene	**26**	5.3	0.70
58-90-2	2,3,4,6-Tetrachlorophenol	53U	53	3.9
935-95-5	2,3,5,6-Tetrachlorophenol	110U	110	2.3
120-82-1	1,2,4-Trichlorobenzene	5.3U	5.3	0.28
88-06-2	2,4,6-Trichlorophenol	5.3U	5.3	0.91
95-95-4	2,4,5-Trichlorophenol	5.3U	5.3	1.1

Surrogates:	***% Recovery***	***Control Limits***
2-Fluorophenol	*41*	*20-70*
Phenol-d6	*34*	*18-45*
Nitrobenzene-d5	*79*	*31-123*
2-Fluorobiphenyl	*73*	*25-113*
2,4,6-Tribromophenol	*95*	*30-121*
o-Terphenyl	*83*	*42-125*

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**
Project:	Koppers Superior	Description:	Laboratory Services
Client Sample ID:	**TMW-2A**	Sampled:	10/24/13 18:00
Lab Sample ID:	**1310562-08RE1**	Sampled By:	Client
Matrix:	Water	Received:	10/29/13 8:30
Unit:	ug/L	Prepared:	11/8/13 7:00 By: LEW
Dilution Factor:	250	Analyzed:	11/8/13 18:13 By: LEW
QC Batch:	1312152	Analytical Batch:	3K14017

*Halogenated and Aromatic Volatiles by EPA Method 8021B

CAS Number	Analyte	Analytical Result	RL	MDL
*91-20-3	Naphthalene	**12000B**	250	110

Surrogates:	***% Recovery***	***Control Limits***
1,2-Dichloroethane-d4	*115*	*81-126*
aaa-Trifluorotoluene	*97*	*86-118*

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-2A**	Sampled:	10/24/13 18:00		
Lab Sample ID:	**1310562-08RE1**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	200	Analyzed:	11/12/13 19:13	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K12078		

Semivolatile Organic Compounds by EPA Method 8270C

CAS Number	Analyte	Analytical Result	RL	MDL
83-32-9	Acenaphthene	**270**	110	7.0
208-96-8	Acenaphthylene	110U	110	3.6
120-12-7	Anthracene	110U	110	13
56-55-3	Benzo(a)anthracene	110U	110	9.7
50-32-8	Benzo(a)pyrene	110U	110	8.6
205-99-2	Benzo(b)fluoranthene	110U	110	12
207-08-9	Benzo(k)fluoranthene	110U	110	13
191-24-2	Benzo(g,h,i)perylene	110U	110	13
*65-85-0	Benzoic Acid	1100U	1100	100
100-51-6	Benzyl Alcohol	110U	110	10
101-55-3	4-Bromophenyl Phenyl Ether	110U	110	9.1
85-68-7	Butyl Benzyl Phthalate	210U	210	12
59-50-7	4-Chloro-3-methylphenol	110U	110	24
106-47-8	4-Chloroaniline	210U	210	22
111-91-1	Bis(2-chloroethoxy)methane	110U	110	3.9
111-44-4	Bis(2-chloroethyl) Ether	110U	110	5.0
108-60-1	Bis(2-chloroisopropyl) Ether	110U	110	5.5
91-58-7	2-Chloronaphthalene	110U	110	3.6
95-57-8	2-Chlorophenol	110U	110	5.7
7005-72-3	4-Chlorophenyl Phenyl Ether	110U	110	10
218-01-9	Chrysene	110U	110	9.6
53-70-3	Dibenz(a,h)anthracene	110U	110	24
132-64-9	Dibenzofuran	**110**	110	8.7
84-74-2	Di-n-butyl Phthalate	210U	210	29
95-50-1	1,2-Dichlorobenzene	110U	110	8.4
541-73-1	1,3-Dichlorobenzene	110U	110	8.7
106-46-7	1,4-Dichlorobenzene	110U	110	4.2
91-94-1	3,3´-Dichlorobenzidine	210U	210	26
120-83-2	2,4-Dichlorophenol	110U	110	19

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ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**	
Project:	Koppers Superior	Description:	Laboratory Services	
Client Sample ID:	**TMW-2A**	Sampled:	10/24/13 18:00	
Lab Sample ID:	**1310562-08RE1**	Sampled By:	Client	
Matrix:	Water	Received:	10/29/13 8:30	
Unit:	ug/L	Prepared:	10/31/13 7:55	By: ALK
Dilution Factor:	200	Analyzed:	11/12/13 19:13	By: JLB
QC Batch:	1311584	Analytical Batch:	3K12078	

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL	MDL
84-66-2	Diethyl Phthalate	110U	110	14
105-67-9	2,4-Dimethylphenol	**140J**	210	36
131-11-3	Dimethyl Phthalate	110U	110	9.7
534-52-1	4,6-Dinitro-2-methylphenol	1100U	1100	220
51-28-5	2,4-Dinitrophenol	1100U	1100	250
121-14-2	2,4-Dinitrotoluene	110U	110	10
606-20-2	2,6-Dinitrotoluene	110U	110	17
117-84-0	Di-n-octyl Phthalate	110U	110	16
117-81-7	Bis(2-ethylhexyl) Phthalate	110U	110	24
206-44-0	Fluoranthene	**34J**	110	13
86-73-7	Fluorene	**100J**	110	8.8
118-74-1	Hexachlorobenzene	110U	110	13
87-68-3	Hexachlorobutadiene	110U	110	8.4
77-47-4	Hexachlorocyclopentadiene	110U	110	9.4
67-72-1	Hexachloroethane	110U	110	8.9
193-39-5	Indeno(1,2,3-cd)pyrene	110U	110	17
78-59-1	Isophorone	110U	110	9.6
56-49-5	3-Methylcholanthrene	430U	430	26
91-57-6	2-Methylnaphthalene	**320**	110	3.2
90-12-0	1-Methylnaphthalene	**170**	110	4.1
95-48-7	2-Methylphenol	**21J**	110	10
106-44-5	4-Methylphenol	**55J**	110	12
91-20-3	Naphthalene	**5200**	110	6.5
88-74-4	2-Nitroaniline	110U	110	25
99-09-2	3-Nitroaniline	210U	210	52
100-01-6	4-Nitroaniline	210U	210	70
98-95-3	Nitrobenzene	110U	110	12
100-02-7	4-Nitrophenol	1100U	1100	270
88-75-5	2-Nitrophenol	110U	110	10
86-30-6	N-Nitroso-diphenylamine	110U	110	14
621-64-7	N-Nitroso-di-n-propylamine	110U	110	16

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-2A**	Sampled:	10/24/13 18:00		
Lab Sample ID:	**1310562-08RE1**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	200	Analyzed:	11/12/13 19:13	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K12078		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL	MDL
87-86-5	Pentachlorophenol	110U	110	17
85-01-8	Phenanthrene	**130**	110	9.1
108-95-2	Phenol	110U	110	7.2
129-00-0	Pyrene	**19J**	110	14
58-90-2	2,3,4,6-Tetrachlorophenol	1100U	1100	79
935-95-5	2,3,5,6-Tetrachlorophenol	2100U	2100	45
120-82-1	1,2,4-Trichlorobenzene	110U	110	5.7
88-06-2	2,4,6-Trichlorophenol	110U	110	18
95-95-4	2,4,5-Trichlorophenol	110U	110	21

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-05A**	Sampled:	10/24/13 10:40		
Lab Sample ID:	**1310562-09**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	11/6/13 0:00	By:	LEW
Dilution Factor:	1	Analyzed:	11/6/13 19:37	By:	LEW
QC Batch:	1312148	Analytical Batch:	3K14015		

*Halogenated and Aromatic Volatiles by EPA Method 8021B

CAS Number	Analyte	Analytical Result	RL	MDL
71-43-2	Benzene	1.0U	1.0	0.20
104-51-8	n-Butylbenzene	1.0U	1.0	0.28
*74-87-3	Chloromethane	1.0U	1.0	0.37
100-41-4	Ethylbenzene	1.0U	1.0	0.20
1634-04-4	Methyl tert-Butyl Ether	5.0U	5.0	0.48
*91-20-3	Naphthalene	1.0U J	1.0	0.44
103-65-1	n-Propylbenzene	1.0U	1.0	0.24
100-42-5	Styrene	1.0U	1.0	0.20
108-88-3	Toluene	1.0U	1.0	0.33
71-55-6	1,1,1-Trichloroethane	1.0U	1.0	0.30
108-67-8	1,3,5-Trimethylbenzene	1.0U	1.0	0.24
95-63-6	1,2,4-Trimethylbenzene	1.0U	1.0	0.22
179601-23-1	Xylene, Meta + Para	2.0U	2.0	0.42
95-47-6	Xylene, Ortho	1.0U	1.0	0.20

Surrogates:	***% Recovery***	***Control Limits***
1,2-Dichloroethane-d4	***128***	*81-126*
aaa-Trifluorotoluene	*95*	*86-118*

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-05A**	Sampled:	10/24/13 10:40		
Lab Sample ID:	**1310562-09**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	1	Analyzed:	11/6/13 22:17	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K07013		

Semivolatile Organic Compounds by EPA Method 8270C

CAS Number	Analyte	Analytical Result	RL	MDL	
83-32-9	Acenaphthene	0.56U	0.56	0.037	
208-96-8	Acenaphthylene	0.56U	0.56	0.019	
120-12-7	Anthracene	0.56U	0.56	0.068	
56-55-3	Benzo(a)anthracene	0.56U	0.56	0.050	
50-32-8	Benzo(a)pyrene	0.56U	0.56	0.045	
205-99-2	Benzo(b)fluoranthene	0.56U	0.56	0.065	
207-08-9	Benzo(k)fluoranthene	0.56U	0.56	0.066	
191-24-2	Benzo(g,h,i)perylene	0.56U	0.56	0.068	
*65-85-0	Benzoic Acid	5.6U	5.6	0.53	R
100-51-6	Benzyl Alcohol	0.56U	0.56	0.054	
101-55-3	4-Bromophenyl Phenyl Ether	0.56U	0.56	0.048	
85-68-7	Butyl Benzyl Phthalate	**0.11J**	1.1	0.062	
59-50-7	4-Chloro-3-methylphenol	0.56U	0.56	0.13	
106-47-8	4-Chloroaniline	1.1U	1.1	0.11	
111-91-1	Bis(2-chloroethoxy)methane	0.56U	0.56	0.020	
111-44-4	Bis(2-chloroethyl) Ether	0.56U	0.56	0.026	
108-60-1	Bis(2-chloroisopropyl) Ether	0.56U	0.56	0.029	
91-58-7	2-Chloronaphthalene	0.56U	0.56	0.019	
95-57-8	2-Chlorophenol	0.56U	0.56	0.030	
7005-72-3	4-Chlorophenyl Phenyl Ether	0.56U	0.56	0.053	
218-01-9	Chrysene	0.56U	0.56	0.050	
53-70-3	Dibenz(a,h)anthracene	0.56U	0.56	0.13	
132-64-9	Dibenzofuran	0.56U	0.56	0.045	
84-74-2	Di-n-butyl Phthalate	**0.57J**	1.1	0.15	
95-50-1	1,2-Dichlorobenzene	0.56U	0.56	0.044	
541-73-1	1,3-Dichlorobenzene	0.56U	0.56	0.046	
106-46-7	1,4-Dichlorobenzene	0.56U	0.56	0.022	
91-94-1	3,3´-Dichlorobenzidine	1.1U	1.1	0.14	
120-83-2	2,4-Dichlorophenol	0.56U	0.56	0.10	

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-05A**	Sampled:	10/24/13 10:40		
Lab Sample ID:	**1310562-09**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	1	Analyzed:	11/6/13 22:17	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K07013		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL	MDL
*84-66-2	Diethyl Phthalate	~~0.34J~~ 0.56 UB	0.56	0.072
105-67-9	2,4-Dimethylphenol	1.1U	1.1	0.19
131-11-3	Dimethyl Phthalate	0.56U	0.56	0.051
534-52-1	4,6-Dinitro-2-methylphenol	5.6U	5.6	1.1
51-28-5	2,4-Dinitrophenol	5.6U	5.6	1.3
121-14-2	2,4-Dinitrotoluene	0.56U	0.56	0.053
606-20-2	2,6-Dinitrotoluene	0.56U	0.56	0.089
117-84-0	Di-n-octyl Phthalate	0.56U	0.56	0.085
117-81-7	Bis(2-ethylhexyl) Phthalate	**0.29J**	0.56	0.13
206-44-0	Fluoranthene	0.56U	0.56	0.070
86-73-7	Fluorene	0.56U	0.56	0.046
118-74-1	Hexachlorobenzene	0.56U	0.56	0.070
87-68-3	Hexachlorobutadiene	0.56U	0.56	0.044
77-47-4	Hexachlorocyclopentadiene	0.56U	0.56	0.049
67-72-1	Hexachloroethane	0.56U	0.56	0.046
193-39-5	Indeno(1,2,3-cd)pyrene	0.56U	0.56	0.089
78-59-1	Isophorone	0.56U	0.56	0.050
56-49-5	3-Methylcholanthrene	2.2U	2.2	0.13
91-57-6	2-Methylnaphthalene	0.56U	0.56	0.017
90-12-0	1-Methylnaphthalene	0.56U	0.56	0.022
95-48-7	2-Methylphenol	0.56U	0.56	0.053
106-44-5	4-Methylphenol	0.56U	0.56	0.063
91-20-3	Naphthalene	0.56U	0.56	0.034
88-74-4	2-Nitroaniline	0.56U	0.56	0.13
99-09-2	3-Nitroaniline	1.1U	1.1	0.27
100-01-6	4-Nitroaniline	1.1U	1.1	0.37
98-95-3	Nitrobenzene	0.56U	0.56	0.065
100-02-7	4-Nitrophenol	5.6U J	5.6	1.4
88-75-5	2-Nitrophenol	0.56U	0.56	0.053
86-30-6	N-Nitroso-diphenylamine	0.56U	0.56	0.075
621-64-7	N-Nitroso-di-n-propylamine	0.56U	0.56	0.084

Continued on next page

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ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-05A**	Sampled:	10/24/13 10:40		
Lab Sample ID:	**1310562-09**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	1	Analyzed:	11/6/13 22:17	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K07013		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL	MDL
87-86-5	Pentachlorophenol	0.56U	0.56	0.090
85-01-8	Phenanthrene	**0.067J**	0.56	0.047
108-95-2	Phenol	0.56U	0.56	0.037
129-00-0	Pyrene	**0.11J**	0.56	0.073
58-90-2	2,3,4,6-Tetrachlorophenol	5.6U	5.6	0.41
935-95-5	2,3,5,6-Tetrachlorophenol	11U	11	0.24
120-82-1	1,2,4-Trichlorobenzene	0.56U	0.56	0.030
88-06-2	2,4,6-Trichlorophenol	0.56U	0.56	0.095
95-95-4	2,4,5-Trichlorophenol	0.56U	0.56	0.11

Surrogates:	***% Recovery***	***Control Limits***
2-Fluorophenol	*26*	*20-70*
Phenol-d6	*26*	*18-45*
Nitrobenzene-d5	*54*	*31-123*
2-Fluorobiphenyl	*47*	*25-113*
2,4,6-Tribromophenol	*46*	*30-121*
o-Terphenyl	*64*	*42-125*

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-11 (Filtered)**	Sampled:	10/24/13 10:00		
Lab Sample ID:	**1310562-10**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	11/6/13 0:00	By:	LEW
Dilution Factor:	1	Analyzed:	11/6/13 20:26	By:	LEW
QC Batch:	1312148	Analytical Batch:	3K14015		

Halogenated and Aromatic Volatiles by EPA Method 8021B

CAS Number	Analyte	Analytical Result	RL	MDL	
71-43-2	Benzene	1.0U	1.0	0.20	
104-51-8	n-Butylbenzene	1.0U	1.0	0.28	
*74-87-3	Chloromethane	1.0U	1.0	0.37	
100-41-4	Ethylbenzene	1.0U	1.0	0.20	
1634-04-4	Methyl tert-Butyl Ether	5.0U	5.0	0.48	
*91-20-3	Naphthalene	1.0U J	1.0	0.44	~~R~~
103-65-1	n-Propylbenzene	1.0U	1.0	0.24	
100-42-5	Styrene	1.0U	1.0	0.20	
108-88-3	Toluene	1.0U	1.0	0.33	
71-55-6	1,1,1-Trichloroethane	1.0U	1.0	0.30	
108-67-8	1,3,5-Trimethylbenzene	1.0U	1.0	0.24	
95-63-6	1,2,4-Trimethylbenzene	1.0U	1.0	0.22	
179601-23-1	Xylene, Meta + Para	2.0U	2.0	0.42	
95-47-6	Xylene, Ortho	1.0U	1.0	0.20	

Surrogates:	***% Recovery***	***Control Limits***
1,2-Dichloroethane-d4	*126*	*81-126*
aaa-Trifluorotoluene	*96*	*86-118*

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-11 (Filtered)**	Sampled:	10/24/13 10:00		
Lab Sample ID:	**1310562-10**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	1	Analyzed:	11/6/13 22:52	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K07013		

Semivolatile Organic Compounds by EPA Method 8270C

CAS Number	Analyte	Analytical Result	RL	MDL	
83-32-9	Acenaphthene	0.50U	0.50	0.033	
208-96-8	Acenaphthylene	0.50U	0.50	0.017	
120-12-7	Anthracene	0.50U	0.50	0.062	
56-55-3	Benzo(a)anthracene	0.50U	0.50	0.045	
50-32-8	Benzo(a)pyrene	0.50U	0.50	0.040	
205-99-2	Benzo(b)fluoranthene	0.50U	0.50	0.058	
207-08-9	Benzo(k)fluoranthene	0.50U	0.50	0.060	
191-24-2	Benzo(g,h,i)perylene	0.50U	0.50	0.061	
*65-85-0	Benzoic Acid	5.0U	5.0	0.48	R
100-51-6	Benzyl Alcohol	0.50U	0.50	0.049	
101-55-3	4-Bromophenyl Phenyl Ether	0.50U	0.50	0.043	
85-68-7	Butyl Benzyl Phthalate	**0.061J**	1.0	0.056	
59-50-7	4-Chloro-3-methylphenol	0.50U	0.50	0.12	
106-47-8	4-Chloroaniline	1.0U	1.0	0.10	
111-91-1	Bis(2-chloroethoxy)methane	0.50U	0.50	0.018	
111-44-4	Bis(2-chloroethyl) Ether	0.50U	0.50	0.024	
108-60-1	Bis(2-chloroisopropyl) Ether	0.50U	0.50	0.026	
91-58-7	2-Chloronaphthalene	0.50U	0.50	0.017	
95-57-8	2-Chlorophenol	0.50U	0.50	0.027	
7005-72-3	4-Chlorophenyl Phenyl Ether	0.50U	0.50	0.048	
218-01-9	Chrysene	0.50U	0.50	0.045	
53-70-3	Dibenz(a,h)anthracene	0.50U	0.50	0.11	
132-64-9	Dibenzofuran	0.50U	0.50	0.041	
84-74-2	Di-n-butyl Phthalate	**0.14J**	1.0	0.14	
95-50-1	1,2-Dichlorobenzene	0.50U	0.50	0.040	
541-73-1	1,3-Dichlorobenzene	0.50U	0.50	0.041	
106-46-7	1,4-Dichlorobenzene	0.50U	0.50	0.020	
91-94-1	3,3´-Dichlorobenzidine	1.0U	1.0	0.12	
120-83-2	2,4-Dichlorophenol	0.50U	0.50	0.092	

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-11 (Filtered)**	Sampled:	10/24/13 10:00		
Lab Sample ID:	**1310562-10**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	1	Analyzed:	11/6/13 22:52	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K07013		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result		RL	MDL
*84-66-2	Diethyl Phthalate	~~0.28J~~	0.50 UB	0.50	0.065
105-67-9	2,4-Dimethylphenol	1.0U		1.0	0.17
131-11-3	Dimethyl Phthalate	0.50U		0.50	0.046
534-52-1	4,6-Dinitro-2-methylphenol	5.0U		5.0	1.0
51-28-5	2,4-Dinitrophenol	5.0U		5.0	1.2
121-14-2	2,4-Dinitrotoluene	0.50U		0.50	0.048
606-20-2	2,6-Dinitrotoluene	0.50U		0.50	0.080
117-84-0	Di-n-octyl Phthalate	0.50U		0.50	0.077
117-81-7	Bis(2-ethylhexyl) Phthalate	**0.12J**		0.50	0.11
206-44-0	Fluoranthene	0.50U		0.50	0.063
86-73-7	Fluorene	0.50U		0.50	0.041
118-74-1	Hexachlorobenzene	0.50U		0.50	0.063
87-68-3	Hexachlorobutadiene	0.50U		0.50	0.040
77-47-4	Hexachlorocyclopentadiene	0.50U		0.50	0.044
67-72-1	Hexachloroethane	0.50U		0.50	0.042
193-39-5	Indeno(1,2,3-cd)pyrene	0.50U		0.50	0.080
78-59-1	Isophorone	0.50U		0.50	0.045
56-49-5	3-Methylcholanthrene	2.0U		2.0	0.12
91-57-6	2-Methylnaphthalene	0.50U		0.50	0.015
90-12-0	1-Methylnaphthalene	0.50U		0.50	0.020
95-48-7	2-Methylphenol	0.50U		0.50	0.048
106-44-5	4-Methylphenol	0.50U		0.50	0.057
91-20-3	Naphthalene	0.50U		0.50	0.031
88-74-4	2-Nitroaniline	0.50U		0.50	0.12
99-09-2	3-Nitroaniline	1.0U		1.0	0.24
100-01-6	4-Nitroaniline	1.0U		1.0	0.33
98-95-3	Nitrobenzene	0.50U		0.50	0.058
100-02-7	4-Nitrophenol	5.0U	J	5.0	1.2
88-75-5	2-Nitrophenol	0.50U		0.50	0.048
86-30-6	N-Nitroso-diphenylamine	0.50U		0.50	0.068
621-64-7	N-Nitroso-di-n-propylamine	0.50U		0.50	0.075

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ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-11 (Filtered)**	Sampled:	10/24/13 10:00		
Lab Sample ID:	**1310562-10**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	1	Analyzed:	11/6/13 22:52	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K07013		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL	MDL
87-86-5	Pentachlorophenol	0.50U	0.50	0.081
85-01-8	Phenanthrene	0.50U	0.50	0.043
108-95-2	Phenol	0.50U	0.50	0.034
129-00-0	Pyrene	0.50U	0.50	0.066
58-90-2	2,3,4,6-Tetrachlorophenol	5.0U	5.0	0.37
935-95-5	2,3,5,6-Tetrachlorophenol	10U	10	0.21
120-82-1	1,2,4-Trichlorobenzene	0.50U	0.50	0.027
88-06-2	2,4,6-Trichlorophenol	0.50U	0.50	0.085
95-95-4	2,4,5-Trichlorophenol	0.50U	0.50	0.099

Surrogates:	***% Recovery***	***Control Limits***
2-Fluorophenol	*30*	*20-70*
Phenol-d6	*25*	*18-45*
Nitrobenzene-d5	*70*	*31-123*
2-Fluorobiphenyl	*60*	*25-113*
2,4,6-Tribromophenol	*69*	*30-121*
o-Terphenyl	*80*	*42-125*

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-05A (Filtered)**	Sampled:	10/25/13 9:50		
Lab Sample ID:	**1310562-11**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	11/8/13 7:00	By:	LEW
Dilution Factor:	1	Analyzed:	11/8/13 11:44	By:	LEW
QC Batch:	1312152	Analytical Batch:	3K14017		

Halogenated and Aromatic Volatiles by EPA Method 8021B

CAS Number	Analyte	Analytical Result	RL	MDL
71-43-2	Benzene	1.0U	1.0	0.20
104-51-8	n-Butylbenzene	1.0U	1.0	0.28
*74-87-3	Chloromethane	1.0U J	1.0	0.37
100-41-4	Ethylbenzene	1.0U	1.0	0.20
1634-04-4	Methyl tert-Butyl Ether	5.0U	5.0	0.48
*91-20-3	Naphthalene	1.0U	1.0	0.44
103-65-1	n-Propylbenzene	1.0U	1.0	0.24
100-42-5	Styrene	1.0U	1.0	0.20
108-88-3	Toluene	1.0U	1.0	0.33
71-55-6	1,1,1-Trichloroethane	1.0U	1.0	0.30
108-67-8	1,3,5-Trimethylbenzene	1.0U	1.0	0.24
95-63-6	1,2,4-Trimethylbenzene	1.0U	1.0	0.22
179601-23-1	Xylene, Meta + Para	2.0U	2.0	0.42
95-47-6	Xylene, Ortho	1.0U	1.0	0.20

Surrogates:	***% Recovery***	***Control Limits***
1,2-Dichloroethane-d4	*106*	*81-126*
aaa-Trifluorotoluene	*99*	*86-118*

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-11A**	Sampled:	10/25/13 10:30		
Lab Sample ID:	**1310562-12**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	11/8/13 7:00	By:	LEW
Dilution Factor:	1	Analyzed:	11/8/13 12:32	By:	LEW
QC Batch:	1312152	Analytical Batch:	3K14017		

Halogenated and Aromatic Volatiles by EPA Method 8021B

CAS Number	Analyte	Analytical Result	RL	MDL
71-43-2	Benzene	1.0U	1.0	0.20
104-51-8	n-Butylbenzene	1.0U	1.0	0.28
*74-87-3	Chloromethane	1.0U J	1.0	0.37
100-41-4	Ethylbenzene	1.0U	1.0	0.20
1634-04-4	Methyl tert-Butyl Ether	5.0U	5.0	0.48
*91-20-3	Naphthalene	1.0U	1.0	0.44
103-65-1	n-Propylbenzene	1.0U	1.0	0.24
100-42-5	Styrene	1.0U	1.0	0.20
108-88-3	Toluene	1.0U	1.0	0.33
71-55-6	1,1,1-Trichloroethane	1.0U	1.0	0.30
108-67-8	1,3,5-Trimethylbenzene	1.0U	1.0	0.24
95-63-6	1,2,4-Trimethylbenzene	1.0U	1.0	0.22
179601-23-1	Xylene, Meta + Para	2.0U	2.0	0.42
95-47-6	Xylene, Ortho	1.0U	1.0	0.20

Surrogates:	***% Recovery***	***Control Limits***
1,2-Dichloroethane-d4	*114*	*81-126*
aaa-Trifluorotoluene	*98*	*86-118*

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-11**	Sampled:	10/25/13 10:35		
Lab Sample ID:	**1310562-13**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	11/8/13 7:00	By:	LEW
Dilution Factor:	1	Analyzed:	11/8/13 13:22	By:	LEW
QC Batch:	1312152	Analytical Batch:	3K14017		

Halogenated and Aromatic Volatiles by EPA Method 8021B

CAS Number	Analyte	Analytical Result		RL	MDL
71-43-2	Benzene	1.0U		1.0	0.20
104-51-8	n-Butylbenzene	1.0U		1.0	0.28
*74-87-3	Chloromethane	1.0U	J	1.0	0.37
100-41-4	Ethylbenzene	1.0U		1.0	0.20
1634-04-4	Methyl tert-Butyl Ether	5.0U		5.0	0.48
*91-20-3	Naphthalene	1.0U		1.0	0.44
103-65-1	n-Propylbenzene	1.0U		1.0	0.24
100-42-5	Styrene	1.0U		1.0	0.20
108-88-3	Toluene	1.0U		1.0	0.33
71-55-6	1,1,1-Trichloroethane	1.0U		1.0	0.30
108-67-8	1,3,5-Trimethylbenzene	1.0U		1.0	0.24
95-63-6	1,2,4-Trimethylbenzene	1.0U		1.0	0.22
179601-23-1	Xylene, Meta + Para	2.0U		2.0	0.42
95-47-6	Xylene, Ortho	1.0U		1.0	0.20

Surrogates:	***% Recovery***	***Control Limits***
1,2-Dichloroethane-d4	*123*	*81-126*
aaa-Trifluorotoluene	*98*	*86-118*

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-2A (Filtered)**	Sampled:	10/24/13 10:45		
Lab Sample ID:	**1310562-14**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	11/7/13 0:00	By:	LEW
Dilution Factor:	1	Analyzed:	11/7/13 7:44	By:	LEW
QC Batch:	1312149	Analytical Batch:	3K14016		

Halogenated and Aromatic Volatiles by EPA Method 8021B

CAS Number	Analyte	Analytical Result	RL	MDL
71-43-2	Benzene	**4.0**	1.0	0.20
104-51-8	n-Butylbenzene	1.0U	1.0	0.28
*74-87-3	Chloromethane	1.0U	1.0	0.37
100-41-4	Ethylbenzene	**12**	1.0	0.20
1634-04-4	Methyl tert-Butyl Ether	5.0U	5.0	0.48
*91-20-3	Naphthalene	~~410BE~~ 6400 DJ	1.0	0.44
103-65-1	n-Propylbenzene	1.0U	1.0	0.24
100-42-5	Styrene	1.0U	1.0	0.20
108-88-3	Toluene	**11**	1.0	0.33
71-55-6	1,1,1-Trichloroethane	1.0U	1.0	0.30
108-67-8	1,3,5-Trimethylbenzene	**3.5**	1.0	0.24
95-63-6	1,2,4-Trimethylbenzene	**8.7**	1.0	0.22
179601-23-1	Xylene, Meta + Para	**20**	2.0	0.42
95-47-6	Xylene, Ortho	**11**	1.0	0.20

Surrogates:	***% Recovery***	***Control Limits***
1,2-Dichloroethane-d4	*118*	*81-126*
aaa-Trifluorotoluene	*103*	*86-118*

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-2A (Filtered)**	Sampled:	10/24/13 10:45		
Lab Sample ID:	**1310562-14RE1**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	11/8/13 7:00	By:	LEW
Dilution Factor:	250	Analyzed:	11/8/13 19:02	By:	LEW
QC Batch:	1312152	Analytical Batch:	3K14017		

*Halogenated and Aromatic Volatiles by EPA Method 8021B

CAS Number	Analyte	Analytical Result	RL	MDL
*91-20-3	Naphthalene	**6400B**	250	110

Surrogates:	*% Recovery*	*Control Limits*
1,2-Dichloroethane-d4	*116*	*81-126*
aaa-Trifluorotoluene	*98*	*86-118*

*See Statement of Data Qualifications

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-12A (Filtered)**	Sampled:	10/24/13 9:20		
Lab Sample ID:	**1310562-15**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	11/7/13 0:00	By:	LEW
Dilution Factor:	1	Analyzed:	11/7/13 8:32	By:	LEW
QC Batch:	1312149	Analytical Batch:	3K14016		

Halogenated and Aromatic Volatiles by EPA Method 8021B

CAS Number	Analyte	Analytical Result	RL	MDL
71-43-2	Benzene	**30**	1.0	0.20
104-51-8	n-Butylbenzene	1.0U	1.0	0.28
*74-87-3	Chloromethane	1.0U	1.0	0.37
100-41-4	Ethylbenzene	**34**	1.0	0.20
1634-04-4	Methyl tert-Butyl Ether	5.0U	5.0	0.48
*91-20-3	Naphthalene	~~**390BE**~~ 6700 DJ	1.0	0.44
103-65-1	n-Propylbenzene	**0.95J**	1.0	0.24
100-42-5	Styrene	**1.4**	1.0	0.20
108-88-3	Toluene	**45**	1.0	0.33
71-55-6	1,1,1-Trichloroethane	1.0U	1.0	0.30
108-67-8	1,3,5-Trimethylbenzene	**16**	1.0	0.24
95-63-6	1,2,4-Trimethylbenzene	**41**	1.0	0.22
179601-23-1	Xylene, Meta + Para	**69**	2.0	0.42
95-47-6	Xylene, Ortho	**36**	1.0	0.20

Surrogates:	***% Recovery***	***Control Limits***
1,2-Dichloroethane-d4	*126*	*81-126*
aaa-Trifluorotoluene	*102*	*86-118*

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-12A (Filtered)**	Sampled:	10/24/13 9:20		
Lab Sample ID:	**1310562-15**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	10	Analyzed:	11/9/13 3:44	By:	DWJ
QC Batch:	1311584	Analytical Batch:	3K11041		

Semivolatile Organic Compounds by EPA Method 8270C

CAS Number	Analyte	Analytical Result	RL	MDL	
83-32-9	Acenaphthene	**84**	5.0	0.33	
208-96-8	Acenaphthylene	**2.1J**	5.0	0.17	
120-12-7	Anthracene	**1.4J**	5.0	0.62	
56-55-3	Benzo(a)anthracene	5.0U	5.0	0.45	
50-32-8	Benzo(a)pyrene	5.0U	5.0	0.40	
205-99-2	Benzo(b)fluoranthene	5.0U	5.0	0.58	
207-08-9	Benzo(k)fluoranthene	5.0U	5.0	0.60	
191-24-2	Benzo(g,h,i)perylene	5.0U	5.0	0.61	
*65-85-0	Benzoic Acid	50U	50	4.8	R
100-51-6	Benzyl Alcohol	5.0U	5.0	0.49	
101-55-3	4-Bromophenyl Phenyl Ether	5.0U	5.0	0.43	
85-68-7	Butyl Benzyl Phthalate	10U	10	0.56	
59-50-7	4-Chloro-3-methylphenol	5.0U	5.0	1.2	
106-47-8	4-Chloroaniline	10U	10	1.0	
111-91-1	Bis(2-chloroethoxy)methane	**1.2J**	5.0	0.18	
111-44-4	Bis(2-chloroethyl) Ether	5.0U	5.0	0.24	
108-60-1	Bis(2-chloroisopropyl) Ether	5.0U	5.0	0.26	
91-58-7	2-Chloronaphthalene	**0.82J**	5.0	0.17	
95-57-8	2-Chlorophenol	5.0U	5.0	0.27	
7005-72-3	4-Chlorophenyl Phenyl Ether	5.0U	5.0	0.48	
218-01-9	Chrysene	5.0U	5.0	0.45	
53-70-3	Dibenz(a,h)anthracene	5.0U	5.0	1.1	
132-64-9	Dibenzofuran	**12**	5.0	0.41	
84-74-2	Di-n-butyl Phthalate	10U	10	1.4	
95-50-1	1,2-Dichlorobenzene	5.0U	5.0	0.40	
541-73-1	1,3-Dichlorobenzene	5.0U	5.0	0.41	
106-46-7	1,4-Dichlorobenzene	5.0U	5.0	0.20	
91-94-1	3,3´-Dichlorobenzidine	10U	10	1.2	
120-83-2	2,4-Dichlorophenol	5.0U	5.0	0.92	

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-12A (Filtered)**	Sampled:	10/24/13 9:20		
Lab Sample ID:	**1310562-15**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	10	Analyzed:	11/9/13 3:44	By:	DWJ
QC Batch:	1311584	Analytical Batch:	3K11041		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL	MDL
*84-66-2	Diethyl Phthalate	**2.0J**	5.0	0.65
*105-67-9	2,4-Dimethylphenol	~~**900E**~~ 990 D	10	1.7
131-11-3	Dimethyl Phthalate	5.0U	5.0	0.46
534-52-1	4,6-Dinitro-2-methylphenol	50U	50	10
51-28-5	2,4-Dinitrophenol	50U	50	12
121-14-2	2,4-Dinitrotoluene	5.0U	5.0	0.48
606-20-2	2,6-Dinitrotoluene	5.0U	5.0	0.80
117-84-0	Di-n-octyl Phthalate	5.0U	5.0	0.77
117-81-7	Bis(2-ethylhexyl) Phthalate	5.0U	5.0	1.1
206-44-0	Fluoranthene	5.0U	5.0	0.63
86-73-7	Fluorene	**10**	5.0	0.41
118-74-1	Hexachlorobenzene	5.0U	5.0	0.63
87-68-3	Hexachlorobutadiene	5.0U	5.0	0.40
77-47-4	Hexachlorocyclopentadiene	5.0U	5.0	0.44
67-72-1	Hexachloroethane	5.0U	5.0	0.42
193-39-5	Indeno(1,2,3-cd)pyrene	5.0U	5.0	0.80
78-59-1	Isophorone	5.0U	5.0	0.45
56-49-5	3-Methylcholanthrene	20U	20	1.2
91-57-6	2-Methylnaphthalene	**150**	5.0	0.15
90-12-0	1-Methylnaphthalene	**98**	5.0	0.20
95-48-7	2-Methylphenol	**170**	5.0	0.48
*106-44-5	4-Methylphenol	~~**730E**~~ 780 D	5.0	0.57
*91-20-3	Naphthalene	~~**1400E**~~ 4100 D	5.0	0.31
88-74-4	2-Nitroaniline	5.0U	5.0	1.2
99-09-2	3-Nitroaniline	10U	10	2.4
100-01-6	4-Nitroaniline	10U J	10	3.3
98-95-3	Nitrobenzene	5.0U	5.0	0.58
100-02-7	4-Nitrophenol	50U	50	12
88-75-5	2-Nitrophenol	5.0U	5.0	0.48
86-30-6	N-Nitroso-diphenylamine	5.0U	5.0	0.68
621-64-7	N-Nitroso-di-n-propylamine	5.0U	5.0	0.75

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ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-12A (Filtered)**	Sampled:	10/24/13 9:20		
Lab Sample ID:	**1310562-15**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	10	Analyzed:	11/9/13 3:44	By:	DWJ
QC Batch:	1311584	Analytical Batch:	3K11041		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL	MDL
87-86-5	Pentachlorophenol	5.0U	5.0	0.81
85-01-8	Phenanthrene	**0.71J**	5.0	0.43
108-95-2	Phenol	**23**	5.0	0.34
129-00-0	Pyrene	5.0U	5.0	0.66
58-90-2	2,3,4,6-Tetrachlorophenol	50U	50	3.7
935-95-5	2,3,5,6-Tetrachlorophenol	100U	100	2.1
120-82-1	1,2,4-Trichlorobenzene	5.0U	5.0	0.27
88-06-2	2,4,6-Trichlorophenol	5.0U	5.0	0.85
95-95-4	2,4,5-Trichlorophenol	5.0U	5.0	0.99

Surrogates:	***% Recovery***	***Control Limits***
2-Fluorophenol	*48*	*20-70*
Phenol-d6	*31*	*18-45*
Nitrobenzene-d5	*75*	*31-123*
2-Fluorobiphenyl	*70*	*25-113*
2,4,6-Tribromophenol	*88*	*30-121*
o-Terphenyl	*84*	*42-125*

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-12A (Filtered)**	Sampled:	10/24/13 9:20		
Lab Sample ID:	**1310562-15RE1**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	11/8/13 7:00	By:	LEW
Dilution Factor:	200	Analyzed:	11/8/13 19:50	By:	LEW
QC Batch:	1312152	Analytical Batch:	3K14017		

*Halogenated and Aromatic Volatiles by EPA Method 8021B

CAS Number	Analyte	Analytical Result	RL	MDL
*91-20-3	Naphthalene	**6700B**	200	88

Surrogates:	***% Recovery***	***Control Limits***
1,2-Dichloroethane-d4	*109*	*81-126*
aaa-Trifluorotoluene	*98*	*86-118*

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-12A (Filtered)**	Sampled:	10/24/13 9:20		
Lab Sample ID:	**1310562-15RE1**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	200	Analyzed:	11/12/13 19:48	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K12078		

Semivolatile Organic Compounds by EPA Method 8270C

CAS Number	Analyte	Analytical Result	RL	MDL
83-32-9	Acenaphthene	**86J**	100	6.6
208-96-8	Acenaphthylene	100U	100	3.4
120-12-7	Anthracene	100U	100	12
56-55-3	Benzo(a)anthracene	100U	100	9.1
50-32-8	Benzo(a)pyrene	100U	100	8.1
205-99-2	Benzo(b)fluoranthene	100U	100	12
207-08-9	Benzo(k)fluoranthene	100U	100	12
191-24-2	Benzo(g,h,i)perylene	100U	100	12
*65-85-0	Benzoic Acid	1000U	1000	96
100-51-6	Benzyl Alcohol	100U	100	9.7
101-55-3	4-Bromophenyl Phenyl Ether	100U	100	8.6
85-68-7	Butyl Benzyl Phthalate	200U	200	11
59-50-7	4-Chloro-3-methylphenol	100U	100	23
106-47-8	4-Chloroaniline	200U	200	20
111-91-1	Bis(2-chloroethoxy)methane	100U	100	3.7
111-44-4	Bis(2-chloroethyl) Ether	100U	100	4.7
108-60-1	Bis(2-chloroisopropyl) Ether	100U	100	5.2
91-58-7	2-Chloronaphthalene	100U	100	3.4
95-57-8	2-Chlorophenol	100U	100	5.3
7005-72-3	4-Chlorophenyl Phenyl Ether	100U	100	9.6
218-01-9	Chrysene	100U	100	9.1
53-70-3	Dibenz(a,h)anthracene	100U	100	23
132-64-9	Dibenzofuran	**12J**	100	8.2
84-74-2	Di-n-butyl Phthalate	200U	200	27
95-50-1	1,2-Dichlorobenzene	100U	100	7.9
541-73-1	1,3-Dichlorobenzene	100U	100	8.2
106-46-7	1,4-Dichlorobenzene	100U	100	3.9
91-94-1	3,3´-Dichlorobenzidine	200U	200	25
120-83-2	2,4-Dichlorophenol	100U	100	18

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ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**	
Project:	Koppers Superior	Description:	Laboratory Services	
Client Sample ID:	**TMW-12A (Filtered)**	Sampled:	10/24/13 9:20	
Lab Sample ID:	**1310562-15RE1**	Sampled By:	Client	
Matrix:	Water	Received:	10/29/13 8:30	
Unit:	ug/L	Prepared:	10/31/13 7:55	By: ALK
Dilution Factor:	200	Analyzed:	11/12/13 19:48	By: JLB
QC Batch:	1311584	Analytical Batch:	3K12078	

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL	MDL
84-66-2	Diethyl Phthalate	100U	100	13
105-67-9	2,4-Dimethylphenol	**990**	200	34
131-11-3	Dimethyl Phthalate	100U	100	9.1
534-52-1	4,6-Dinitro-2-methylphenol	1000U	1000	200
51-28-5	2,4-Dinitrophenol	1000U	1000	230
121-14-2	2,4-Dinitrotoluene	100U	100	9.5
606-20-2	2,6-Dinitrotoluene	100U	100	16
117-84-0	Di-n-octyl Phthalate	100U	100	15
117-81-7	Bis(2-ethylhexyl) Phthalate	100U	100	23
206-44-0	Fluoranthene	100U	100	13
86-73-7	Fluorene	**10J**	100	8.3
118-74-1	Hexachlorobenzene	100U	100	13
87-68-3	Hexachlorobutadiene	100U	100	7.9
77-47-4	Hexachlorocyclopentadiene	100U	100	8.9
67-72-1	Hexachloroethane	100U	100	8.4
193-39-5	Indeno(1,2,3-cd)pyrene	100U	100	16
78-59-1	Isophorone	100U	100	9.0
56-49-5	3-Methylcholanthrene	400U	400	24
91-57-6	2-Methylnaphthalene	**160**	100	3.0
90-12-0	1-Methylnaphthalene	**110**	100	3.9
95-48-7	2-Methylphenol	**150**	100	9.5
106-44-5	4-Methylphenol	**780**	100	11
91-20-3	Naphthalene	**4100**	100	6.1
88-74-4	2-Nitroaniline	100U	100	23
99-09-2	3-Nitroaniline	200U	200	49
100-01-6	4-Nitroaniline	200U	200	66
98-95-3	Nitrobenzene	100U	100	12
100-02-7	4-Nitrophenol	1000U	1000	250
88-75-5	2-Nitrophenol	100U	100	9.5
86-30-6	N-Nitroso-diphenylamine	100U	100	14
621-64-7	N-Nitroso-di-n-propylamine	100U	100	15

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**
Project:	Koppers Superior	Description:	Laboratory Services
Client Sample ID:	**TMW-12A (Filtered)**	Sampled:	10/24/13 9:20
Lab Sample ID:	**1310562-15RE1**	Sampled By:	Client
Matrix:	Water	Received:	10/29/13 8:30
Unit:	ug/L	Prepared:	10/31/13 7:55 By: ALK
Dilution Factor:	200	Analyzed:	11/12/13 19:48 By: JLB
QC Batch:	1311584	Analytical Batch:	3K12078

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL	MDL
87-86-5	Pentachlorophenol	100U	100	16
85-01-8	Phenanthrene	100U	100	8.5
108-95-2	Phenol	100U	100	6.7
129-00-0	Pyrene	100U	100	13
58-90-2	2,3,4,6-Tetrachlorophenol	1000U	1000	74
935-95-5	2,3,5,6-Tetrachlorophenol	2000U	2000	43
120-82-1	1,2,4-Trichlorobenzene	100U	100	5.3
88-06-2	2,4,6-Trichlorophenol	100U	100	17
95-95-4	2,4,5-Trichlorophenol	100U	100	20

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-08 (Filtered)**	Sampled:	10/24/13 11:30		
Lab Sample ID:	**1310562-16**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	11/6/13 0:00	By:	LEW
Dilution Factor:	1	Analyzed:	11/6/13 5:52	By:	LEW
QC Batch:	1312148	Analytical Batch:	3K14015		

Halogenated and Aromatic Volatiles by EPA Method 8021B

CAS Number	Analyte	Analytical Result	RL	MDL	
71-43-2	Benzene	1.0U	1.0	0.20	
104-51-8	n-Butylbenzene	1.0U	1.0	0.28	
*74-87-3	Chloromethane	1.0U	1.0	0.37	
100-41-4	Ethylbenzene	1.0U	1.0	0.20	
1634-04-4	Methyl tert-Butyl Ether	5.0U	5.0	0.48	
*91-20-3	Naphthalene	1.0U J	1.0	0.44	R
103-65-1	n-Propylbenzene	1.0U	1.0	0.24	
100-42-5	Styrene	1.0U	1.0	0.20	
108-88-3	Toluene	1.0U	1.0	0.33	
71-55-6	1,1,1-Trichloroethane	1.0U	1.0	0.30	
108-67-8	1,3,5-Trimethylbenzene	1.0U	1.0	0.24	
95-63-6	1,2,4-Trimethylbenzene	1.0U	1.0	0.22	
179601-23-1	Xylene, Meta + Para	2.0U	2.0	0.42	
95-47-6	Xylene, Ortho	1.0U	1.0	0.20	

Surrogates:	***% Recovery***	***Control Limits***
1,2-Dichloroethane-d4	*114*	*81-126*
aaa-Trifluorotoluene	*92*	*86-118*

*See Statement of Data Qualifications

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-08 (Filtered)**	Sampled:	10/24/13 11:30		
Lab Sample ID:	**1310562-16**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	1	Analyzed:	11/8/13 23:05	By:	DWJ
QC Batch:	1311584	Analytical Batch:	3K11041		

*Semivolatile Organic Compounds by EPA Method 8270C

CAS Number	Analyte	Analytical Result	RL	MDL
83-32-9	Acenaphthene	0.56U	0.56	0.037
208-96-8	Acenaphthylene	0.56U	0.56	0.019
120-12-7	Anthracene	0.56U	0.56	0.068
56-55-3	Benzo(a)anthracene	0.56U	0.56	0.050
50-32-8	Benzo(a)pyrene	0.56U	0.56	0.045
205-99-2	Benzo(b)fluoranthene	0.56U	0.56	0.065
207-08-9	Benzo(k)fluoranthene	0.56U	0.56	0.066
191-24-2	Benzo(g,h,i)perylene	0.56U	0.56	0.068
*65-85-0	Benzoic Acid	**1.4J**	5.6	0.53
*100-51-6	Benzyl Alcohol	0.56U J	0.56	0.054
101-55-3	4-Bromophenyl Phenyl Ether	0.56U	0.56	0.048
85-68-7	Butyl Benzyl Phthalate	1.1U	1.1	0.062
59-50-7	4-Chloro-3-methylphenol	0.56U	0.56	0.13
106-47-8	4-Chloroaniline	1.1U	1.1	0.11
111-91-1	Bis(2-chloroethoxy)methane	0.56U	0.56	0.020
111-44-4	Bis(2-chloroethyl) Ether	0.56U	0.56	0.026
108-60-1	Bis(2-chloroisopropyl) Ether	0.56U	0.56	0.029
91-58-7	2-Chloronaphthalene	0.56U	0.56	0.019
*95-57-8	2-Chlorophenol	0.56U J	0.56	0.030
7005-72-3	4-Chlorophenyl Phenyl Ether	0.56U	0.56	0.053
218-01-9	Chrysene	0.56U	0.56	0.050
53-70-3	Dibenz(a,h)anthracene	0.56U	0.56	0.13
132-64-9	Dibenzofuran	0.56U	0.56	0.045
84-74-2	Di-n-butyl Phthalate	**0.18J**	1.1	0.15
95-50-1	1,2-Dichlorobenzene	0.56U	0.56	0.044
541-73-1	1,3-Dichlorobenzene	0.56U	0.56	0.046
106-46-7	1,4-Dichlorobenzene	0.56U	0.56	0.022
91-94-1	3,3´-Dichlorobenzidine	1.1U	1.1	0.14
120-83-2	2,4-Dichlorophenol	0.56U	0.56	0.10

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-08 (Filtered)**	Sampled:	10/24/13 11:30		
Lab Sample ID:	**1310562-16**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	1	Analyzed:	11/8/13 23:05	By:	DWJ
QC Batch:	1311584	Analytical Batch:	3K11041		

*Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL	MDL
*84-66-2	Diethyl Phthalate	~~0.33J~~ 0.56 UB	0.56	0.072
105-67-9	2,4-Dimethylphenol	1.1U	1.1	0.19
131-11-3	Dimethyl Phthalate	0.56U	0.56	0.051
534-52-1	4,6-Dinitro-2-methylphenol	5.6U	5.6	1.1
51-28-5	2,4-Dinitrophenol	5.6U	5.6	1.3
121-14-2	2,4-Dinitrotoluene	0.56U	0.56	0.053
606-20-2	2,6-Dinitrotoluene	0.56U	0.56	0.089
117-84-0	Di-n-octyl Phthalate	0.56U	0.56	0.085
117-81-7	Bis(2-ethylhexyl) Phthalate	0.56U	0.56	0.13
206-44-0	Fluoranthene	0.56U	0.56	0.070
86-73-7	Fluorene	0.56U	0.56	0.046
118-74-1	Hexachlorobenzene	0.56U	0.56	0.070
87-68-3	Hexachlorobutadiene	0.56U	0.56	0.044
77-47-4	Hexachlorocyclopentadiene	0.56U	0.56	0.049
67-72-1	Hexachloroethane	0.56U	0.56	0.046
193-39-5	Indeno(1,2,3-cd)pyrene	0.56U	0.56	0.089
78-59-1	Isophorone	0.56U	0.56	0.050
56-49-5	3-Methylcholanthrene	2.2U	2.2	0.13
91-57-6	2-Methylnaphthalene	**0.033J**	0.56	0.017
90-12-0	1-Methylnaphthalene	0.56U	0.56	0.022
95-48-7	2-Methylphenol	0.56U	0.56	0.053
106-44-5	4-Methylphenol	0.56U	0.56	0.063
91-20-3	Naphthalene	**0.12J**	0.56	0.034
88-74-4	2-Nitroaniline	0.56U	0.56	0.13
99-09-2	3-Nitroaniline	1.1U	1.1	0.27
100-01-6	4-Nitroaniline	1.1U J	1.1	0.37
98-95-3	Nitrobenzene	0.56U	0.56	0.065
100-02-7	4-Nitrophenol	5.6U	5.6	1.4
88-75-5	2-Nitrophenol	0.56U	0.56	0.053
86-30-6	N-Nitroso-diphenylamine	0.56U	0.56	0.075
621-64-7	N-Nitroso-di-n-propylamine	0.56U	0.56	0.084

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-08 (Filtered)**	Sampled:	10/24/13 11:30		
Lab Sample ID:	**1310562-16**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	1	Analyzed:	11/8/13 23:05	By:	DWJ
QC Batch:	1311584	Analytical Batch:	3K11041		

*Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL	MDL
87-86-5	Pentachlorophenol	0.56U	0.56	0.090
85-01-8	Phenanthrene	0.56U	0.56	0.047
*108-95-2	Phenol	0.56U J	0.56	0.037
129-00-0	Pyrene	0.56U	0.56	0.073
58-90-2	2,3,4,6-Tetrachlorophenol	5.6U	5.6	0.41
935-95-5	2,3,5,6-Tetrachlorophenol	11U	11	0.24
120-82-1	1,2,4-Trichlorobenzene	0.56U	0.56	0.030
88-06-2	2,4,6-Trichlorophenol	0.56U	0.56	0.095
95-95-4	2,4,5-Trichlorophenol	0.56U	0.56	0.11

Surrogates:	***% Recovery***	***Control Limits***
2-Fluorophenol	*26*	*20-70*
Phenol-d6	***4***	*18-45*
Nitrobenzene-d5	*74*	*31-123*
2-Fluorobiphenyl	*73*	*25-113*
2,4,6-Tribromophenol	*82*	*30-121*
o-Terphenyl	*87*	*42-125*

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-08**	Sampled:	10/24/13 15:25		
Lab Sample ID:	**1310562-17**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	11/6/13 0:00	By:	LEW
Dilution Factor:	1	Analyzed:	11/6/13 6:40	By:	LEW
QC Batch:	1312148	Analytical Batch:	3K14015		

Halogenated and Aromatic Volatiles by EPA Method 8021B

CAS Number	Analyte	Analytical Result	RL	MDL
71-43-2	Benzene	1.0U	1.0	0.20
104-51-8	n-Butylbenzene	1.0U	1.0	0.28
*74-87-3	Chloromethane	1.0U	1.0	0.37
100-41-4	Ethylbenzene	1.0U	1.0	0.20
1634-04-4	Methyl tert-Butyl Ether	5.0U	5.0	0.48
*91-20-3	Naphthalene	1.0U J	1.0	0.44
103-65-1	n-Propylbenzene	1.0U	1.0	0.24
100-42-5	Styrene	1.0U	1.0	0.20
108-88-3	Toluene	1.0U	1.0	0.33
71-55-6	1,1,1-Trichloroethane	1.0U	1.0	0.30
108-67-8	1,3,5-Trimethylbenzene	1.0U	1.0	0.24
95-63-6	1,2,4-Trimethylbenzene	1.0U	1.0	0.22
179601-23-1	Xylene, Meta + Para	2.0U	2.0	0.42
95-47-6	Xylene, Ortho	1.0U	1.0	0.20

Surrogates:	***% Recovery***	***Control Limits***
1,2-Dichloroethane-d4	*108*	*81-126*
aaa-Trifluorotoluene	*94*	*86-118*

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-08**	Sampled:	10/24/13 15:25		
Lab Sample ID:	**1310562-17**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	1	Analyzed:	11/7/13 0:02	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K07013		

Semivolatile Organic Compounds by EPA Method 8270C

CAS Number	Analyte	Analytical Result	RL	MDL	
83-32-9	Acenaphthene	0.55U	0.55	0.036	
208-96-8	Acenaphthylene	0.55U	0.55	0.019	
120-12-7	Anthracene	0.55U	0.55	0.068	
56-55-3	Benzo(a)anthracene	0.55U	0.55	0.050	
50-32-8	Benzo(a)pyrene	0.55U	0.55	0.044	
205-99-2	Benzo(b)fluoranthene	0.55U	0.55	0.064	
207-08-9	Benzo(k)fluoranthene	0.55U	0.55	0.065	
191-24-2	Benzo(g,h,i)perylene	0.55U	0.55	0.067	
*65-85-0	Benzoic Acid	5.5U	5.5	0.53	R
100-51-6	Benzyl Alcohol	0.55U	0.55	0.053	
101-55-3	4-Bromophenyl Phenyl Ether	0.55U	0.55	0.047	
85-68-7	Butyl Benzyl Phthalate	1.1U	1.1	0.061	
59-50-7	4-Chloro-3-methylphenol	0.55U	0.55	0.13	
106-47-8	4-Chloroaniline	1.1U	1.1	0.11	
111-91-1	Bis(2-chloroethoxy)methane	0.55U	0.55	0.020	
111-44-4	Bis(2-chloroethyl) Ether	0.55U	0.55	0.026	
108-60-1	Bis(2-chloroisopropyl) Ether	0.55U	0.55	0.028	
91-58-7	2-Chloronaphthalene	0.55U	0.55	0.019	
95-57-8	2-Chlorophenol	0.55U	0.55	0.029	
7005-72-3	4-Chlorophenyl Phenyl Ether	0.55U	0.55	0.053	
218-01-9	Chrysene	0.55U	0.55	0.050	
53-70-3	Dibenz(a,h)anthracene	0.55U	0.55	0.12	
132-64-9	Dibenzofuran	0.55U	0.55	0.045	
84-74-2	Di-n-butyl Phthalate	**0.16J**	1.1	0.15	
95-50-1	1,2-Dichlorobenzene	0.55U	0.55	0.044	
541-73-1	1,3-Dichlorobenzene	0.55U	0.55	0.045	
106-46-7	1,4-Dichlorobenzene	0.55U	0.55	0.022	
91-94-1	3,3´-Dichlorobenzidine	1.1U	1.1	0.14	
120-83-2	2,4-Dichlorophenol	0.55U	0.55	0.10	

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-08**	Sampled:	10/24/13 15:25		
Lab Sample ID:	**1310562-17**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	1	Analyzed:	11/7/13 0:02	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K07013		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL	MDL
*84-66-2	Diethyl Phthalate	~~0.24J~~ 0.55 UB	0.55	0.072
105-67-9	2,4-Dimethylphenol	1.1U	1.1	0.18
131-11-3	Dimethyl Phthalate	0.55U	0.55	0.050
534-52-1	4,6-Dinitro-2-methylphenol	5.5U	5.5	1.1
51-28-5	2,4-Dinitrophenol	5.5U	5.5	1.3
121-14-2	2,4-Dinitrotoluene	0.55U	0.55	0.052
606-20-2	2,6-Dinitrotoluene	0.55U	0.55	0.088
117-84-0	Di-n-octyl Phthalate	0.55U	0.55	0.084
117-81-7	Bis(2-ethylhexyl) Phthalate	**0.15J**	0.55	0.12
206-44-0	Fluoranthene	0.55U	0.55	0.069
86-73-7	Fluorene	0.55U	0.55	0.045
118-74-1	Hexachlorobenzene	0.55U	0.55	0.069
87-68-3	Hexachlorobutadiene	0.55U	0.55	0.043
77-47-4	Hexachlorocyclopentadiene	0.55U	0.55	0.049
67-72-1	Hexachloroethane	0.55U	0.55	0.046
193-39-5	Indeno(1,2,3-cd)pyrene	0.55U	0.55	0.088
78-59-1	Isophorone	0.55U	0.55	0.049
56-49-5	3-Methylcholanthrene	2.2U	2.2	0.13
91-57-6	2-Methylnaphthalene	0.55U	0.55	0.016
90-12-0	1-Methylnaphthalene	0.55U	0.55	0.021
95-48-7	2-Methylphenol	0.55U	0.55	0.052
106-44-5	4-Methylphenol	0.55U	0.55	0.062
91-20-3	Naphthalene	**0.077J**	0.55	0.034
88-74-4	2-Nitroaniline	0.55U	0.55	0.13
99-09-2	3-Nitroaniline	1.1U	1.1	0.27
100-01-6	4-Nitroaniline	1.1U	1.1	0.36
98-95-3	Nitrobenzene	0.55U	0.55	0.064
100-02-7	4-Nitrophenol	5.5U J	5.5	1.4
88-75-5	2-Nitrophenol	0.55U	0.55	0.052
86-30-6	N-Nitroso-diphenylamine	0.55U	0.55	0.074
621-64-7	N-Nitroso-di-n-propylamine	0.55U	0.55	0.083

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ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-08**	Sampled:	10/24/13 15:25		
Lab Sample ID:	**1310562-17**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	1	Analyzed:	11/7/13 0:02	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K07013		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL	MDL
87-86-5	Pentachlorophenol	0.55U	0.55	0.089
85-01-8	Phenanthrene	0.55U	0.55	0.047
108-95-2	Phenol	0.55U	0.55	0.037
129-00-0	Pyrene	0.55U	0.55	0.072
58-90-2	2,3,4,6-Tetrachlorophenol	5.5U	5.5	0.41
935-95-5	2,3,5,6-Tetrachlorophenol	11U	11	0.23
120-82-1	1,2,4-Trichlorobenzene	0.55U	0.55	0.029
88-06-2	2,4,6-Trichlorophenol	0.55U	0.55	0.094
95-95-4	2,4,5-Trichlorophenol	0.55U	0.55	0.11

Surrogates:	***% Recovery***	***Control Limits***
2-Fluorophenol	*27*	*20-70*
Phenol-d6	*26*	*18-45*
Nitrobenzene-d5	*74*	*31-123*
2-Fluorobiphenyl	*69*	*25-113*
2,4,6-Tribromophenol	*60*	*30-121*
o-Terphenyl	*89*	*42-125*

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310562**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**Trip Blank**	Sampled:	10/24/13 0:00		
Lab Sample ID:	**1310562-18**	Sampled By:	Client		
Matrix:	Water	Received:	10/29/13 8:30		
Unit:	ug/L	Prepared:	11/6/13 0:00	By:	LEW
Dilution Factor:	1	Analyzed:	11/6/13 5:03	By:	LEW
QC Batch:	1312148	Analytical Batch:	3K14015		

Halogenated and Aromatic Volatiles by EPA Method 8021B

CAS Number	Analyte	Analytical Result	RL	MDL
71-43-2	Benzene	1.0U	1.0	0.20
104-51-8	n-Butylbenzene	1.0U	1.0	0.28
*74-87-3	Chloromethane	1.0U	1.0	0.37
100-41-4	Ethylbenzene	1.0U	1.0	0.20
1634-04-4	Methyl tert-Butyl Ether	5.0U	5.0	0.48
*91-20-3	Naphthalene	1.0U J	1.0	0.44 ~~R~~
103-65-1	n-Propylbenzene	1.0U	1.0	0.24
100-42-5	Styrene	1.0U	1.0	0.20
108-88-3	Toluene	1.0U	1.0	0.33
71-55-6	1,1,1-Trichloroethane	1.0U	1.0	0.30
108-67-8	1,3,5-Trimethylbenzene	1.0U	1.0	0.24
95-63-6	1,2,4-Trimethylbenzene	1.0U	1.0	0.22
179601-23-1	Xylene, Meta + Para	2.0U	2.0	0.42
95-47-6	Xylene, Ortho	1.0U	1.0	0.20

Surrogates:	***% Recovery***	***Control Limits***
1,2-Dichloroethane-d4	*98*	*81-126*
aaa-Trifluorotoluene	*99*	*86-118*

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310588**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-02A (Filtered)**	Sampled:	10/28/13 12:35		
Lab Sample ID:	**1310588-01**	Sampled By:	Client		
Matrix:	Water	Received:	10/30/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	10	Analyzed:	11/9/13 1:59	By:	DWJ
QC Batch:	1311584	Analytical Batch:	3K11041		

Semivolatile Organic Compounds by EPA Method 8270C

CAS Number	Analyte	Analytical Result	RL	MDL
83-32-9	Acenaphthene	**110**	5.3	0.35
208-96-8	Acenaphthylene	**0.43J**	5.3	0.18
120-12-7	Anthracene	5.3U	5.3	0.65
56-55-3	Benzo(a)anthracene	5.3U	5.3	0.48
50-32-8	Benzo(a)pyrene	5.3U	5.3	0.43
205-99-2	Benzo(b)fluoranthene	5.3U	5.3	0.62
207-08-9	Benzo(k)fluoranthene	5.3U	5.3	0.63
191-24-2	Benzo(g,h,i)perylene	5.3U	5.3	0.65
*65-85-0	Benzoic Acid	**37J**	53	5.1
100-51-6	Benzyl Alcohol	5.3U	5.3	0.52
101-55-3	4-Bromophenyl Phenyl Ether	5.3U	5.3	0.46
85-68-7	Butyl Benzyl Phthalate	11U	11	0.59
59-50-7	4-Chloro-3-methylphenol	5.3U	5.3	1.2
106-47-8	4-Chloroaniline	11U	11	1.1
111-91-1	Bis(2-chloroethoxy)methane	5.3U	5.3	0.20
111-44-4	Bis(2-chloroethyl) Ether	5.3U	5.3	0.25
108-60-1	Bis(2-chloroisopropyl) Ether	5.3U	5.3	0.27
91-58-7	2-Chloronaphthalene	5.3U	5.3	0.18
95-57-8	2-Chlorophenol	5.3U	5.3	0.28
7005-72-3	4-Chlorophenyl Phenyl Ether	5.3U	5.3	0.51
218-01-9	Chrysene	5.3U	5.3	0.48
53-70-3	Dibenz(a,h)anthracene	5.3U	5.3	1.2
132-64-9	Dibenzofuran	**15**	5.3	0.43
84-74-2	Di-n-butyl Phthalate	11U	11	1.4
95-50-1	1,2-Dichlorobenzene	5.3U	5.3	0.42
541-73-1	1,3-Dichlorobenzene	5.3U	5.3	0.44
106-46-7	1,4-Dichlorobenzene	5.3U	5.3	0.21
91-94-1	3,3´-Dichlorobenzidine	11U	11	1.3
120-83-2	2,4-Dichlorophenol	5.3U	5.3	0.97
*84-66-2	Diethyl Phthalate	**1.5J**	5.3	0.69
105-67-9	2,4-Dimethylphenol	**170**	11	1.8

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310588**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-02A (Filtered)**	Sampled:	10/28/13 12:35		
Lab Sample ID:	**1310588-01**	Sampled By:	Client		
Matrix:	Water	Received:	10/30/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	10	Analyzed:	11/9/13 1:59	By:	DWJ
QC Batch:	1311584	Analytical Batch:	3K11041		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL	MDL
131-11-3	Dimethyl Phthalate	5.3U	5.3	0.48
534-52-1	4,6-Dinitro-2-methylphenol	53U	53	11
51-28-5	2,4-Dinitrophenol	53U	53	12
121-14-2	2,4-Dinitrotoluene	5.3U	5.3	0.51
606-20-2	2,6-Dinitrotoluene	5.3U	5.3	0.85
117-84-0	Di-n-octyl Phthalate	5.3U	5.3	0.81
117-81-7	Bis(2-ethylhexyl) Phthalate	5.3U	5.3	1.2
206-44-0	Fluoranthene	5.3U	5.3	0.67
86-73-7	Fluorene	**16**	5.3	0.44
118-74-1	Hexachlorobenzene	5.3U	5.3	0.67
87-68-3	Hexachlorobutadiene	5.3U	5.3	0.42
77-47-4	Hexachlorocyclopentadiene	5.3U	5.3	0.47
67-72-1	Hexachloroethane	5.3U	5.3	0.44
193-39-5	Indeno(1,2,3-cd)pyrene	5.3U	5.3	0.85
78-59-1	Isophorone	5.3U	5.3	0.48
56-49-5	3-Methylcholanthrene	21U	21	1.3
91-57-6	2-Methylnaphthalene	**150**	5.3	0.16
90-12-0	1-Methylnaphthalene	**94**	5.3	0.21
95-48-7	2-Methylphenol	**44**	5.3	0.51
106-44-5	4-Methylphenol	**88**	5.3	0.60
*91-20-3	Naphthalene	~~**1500E**~~ 4100 D	5.3	0.33
88-74-4	2-Nitroaniline	5.3U	5.3	1.2
99-09-2	3-Nitroaniline	11U	11	2.6
100-01-6	4-Nitroaniline	11U J	11	3.5
98-95-3	Nitrobenzene	5.3U	5.3	0.62
100-02-7	4-Nitrophenol	53U	53	13
88-75-5	2-Nitrophenol	5.3U	5.3	0.51
86-30-6	N-Nitroso-diphenylamine	5.3U	5.3	0.72
621-64-7	N-Nitroso-di-n-propylamine	5.3U	5.3	0.80
87-86-5	Pentachlorophenol	**2.9J**	5.3	0.86
85-01-8	Phenanthrene	**0.53J**	5.3	0.45

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310588**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-02A (Filtered)**	Sampled:	10/28/13 12:35		
Lab Sample ID:	**1310588-01**	Sampled By:	Client		
Matrix:	Water	Received:	10/30/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	10	Analyzed:	11/9/13 1:59	By:	DWJ
QC Batch:	1311584	Analytical Batch:	3K11041		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL	MDL
108-95-2	Phenol	**11**	5.3	0.36
129-00-0	Pyrene	5.3U	5.3	0.70
58-90-2	2,3,4,6-Tetrachlorophenol	53U	53	3.9
935-95-5	2,3,5,6-Tetrachlorophenol	110U	110	2.3
120-82-1	1,2,4-Trichlorobenzene	5.3U	5.3	0.28
88-06-2	2,4,6-Trichlorophenol	5.3U	5.3	0.91
95-95-4	2,4,5-Trichlorophenol	5.3U	5.3	1.1

Surrogates:	***% Recovery***	***Control Limits***
2-Fluorophenol	*50*	*20-70*
Phenol-d6	*31*	*18-45*
Nitrobenzene-d5	*78*	*31-123*
2-Fluorobiphenyl	*81*	*25-113*
2,4,6-Tribromophenol	*97*	*30-121*
o-Terphenyl	*95*	*42-125*

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310588**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-02A (Filtered)**	Sampled:	10/28/13 12:35		
Lab Sample ID:	**1310588-01RE1**	Sampled By:	Client		
Matrix:	Water	Received:	10/30/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	200	Analyzed:	11/12/13 20:23	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K12078		

Semivolatile Organic Compounds by EPA Method 8270C

CAS Number	Analyte	Analytical Result	RL	MDL
83-32-9	Acenaphthene	**100J**	110	7.0
208-96-8	Acenaphthylene	110U	110	3.6
120-12-7	Anthracene	110U	110	13
56-55-3	Benzo(a)anthracene	110U	110	9.7
50-32-8	Benzo(a)pyrene	110U	110	8.6
205-99-2	Benzo(b)fluoranthene	110U	110	12
207-08-9	Benzo(k)fluoranthene	110U	110	13
191-24-2	Benzo(g,h,i)perylene	110U	110	13
*65-85-0	Benzoic Acid	1100U	1100	100
100-51-6	Benzyl Alcohol	110U	110	10
101-55-3	4-Bromophenyl Phenyl Ether	110U	110	9.1
85-68-7	Butyl Benzyl Phthalate	210U	210	12
59-50-7	4-Chloro-3-methylphenol	110U	110	24
106-47-8	4-Chloroaniline	210U	210	22
111-91-1	Bis(2-chloroethoxy)methane	110U	110	3.9
111-44-4	Bis(2-chloroethyl) Ether	110U	110	5.0
108-60-1	Bis(2-chloroisopropyl) Ether	110U	110	5.5
91-58-7	2-Chloronaphthalene	110U	110	3.6
95-57-8	2-Chlorophenol	110U	110	5.7
7005-72-3	4-Chlorophenyl Phenyl Ether	110U	110	10
218-01-9	Chrysene	110U	110	9.6
53-70-3	Dibenz(a,h)anthracene	110U	110	24
132-64-9	Dibenzofuran	**13J**	110	8.7
84-74-2	Di-n-butyl Phthalate	210U	210	29
95-50-1	1,2-Dichlorobenzene	110U	110	8.4
541-73-1	1,3-Dichlorobenzene	110U	110	8.7
106-46-7	1,4-Dichlorobenzene	110U	110	4.2
91-94-1	3,3´-Dichlorobenzidine	210U	210	26
120-83-2	2,4-Dichlorophenol	110U	110	19
84-66-2	Diethyl Phthalate	110U	110	14
105-67-9	2,4-Dimethylphenol	**150J**	210	36

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ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310588**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-02A (Filtered)**	Sampled:	10/28/13 12:35		
Lab Sample ID:	**1310588-01RE1**	Sampled By:	Client		
Matrix:	Water	Received:	10/30/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	200	Analyzed:	11/12/13 20:23	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K12078		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL	MDL
131-11-3	Dimethyl Phthalate	110U	110	9.7
534-52-1	4,6-Dinitro-2-methylphenol	1100U	1100	220
51-28-5	2,4-Dinitrophenol	1100U	1100	250
121-14-2	2,4-Dinitrotoluene	110U	110	10
606-20-2	2,6-Dinitrotoluene	110U	110	17
117-84-0	Di-n-octyl Phthalate	110U	110	16
117-81-7	Bis(2-ethylhexyl) Phthalate	110U	110	24
206-44-0	Fluoranthene	110U	110	13
86-73-7	Fluorene	**13J**	110	8.8
118-74-1	Hexachlorobenzene	110U	110	13
87-68-3	Hexachlorobutadiene	110U	110	8.4
77-47-4	Hexachlorocyclopentadiene	110U	110	9.4
67-72-1	Hexachloroethane	110U	110	8.9
193-39-5	Indeno(1,2,3-cd)pyrene	110U	110	17
78-59-1	Isophorone	110U	110	9.6
56-49-5	3-Methylcholanthrene	430U	430	26
91-57-6	2-Methylnaphthalene	**140**	110	3.2
90-12-0	1-Methylnaphthalene	**87J**	110	4.1
95-48-7	2-Methylphenol	**23J**	110	10
106-44-5	4-Methylphenol	**49J**	110	12
91-20-3	Naphthalene	**4100**	110	6.5
88-74-4	2-Nitroaniline	110U	110	25
99-09-2	3-Nitroaniline	210U	210	52
100-01-6	4-Nitroaniline	210U	210	70
98-95-3	Nitrobenzene	110U	110	12
100-02-7	4-Nitrophenol	1100U	1100	270
88-75-5	2-Nitrophenol	110U	110	10
86-30-6	N-Nitroso-diphenylamine	110U	110	14
621-64-7	N-Nitroso-di-n-propylamine	110U	110	16
87-86-5	Pentachlorophenol	110U	110	17
85-01-8	Phenanthrene	110U	110	9.1

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310588**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-02A (Filtered)**	Sampled:	10/28/13 12:35		
Lab Sample ID:	**1310588-01RE1**	Sampled By:	Client		
Matrix:	Water	Received:	10/30/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	200	Analyzed:	11/12/13 20:23	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K12078		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL	MDL
108-95-2	Phenol	110U	110	7.2
129-00-0	Pyrene	110U	110	14
58-90-2	2,3,4,6-Tetrachlorophenol	1100U	1100	79
935-95-5	2,3,5,6-Tetrachlorophenol	2100U	2100	45
120-82-1	1,2,4-Trichlorobenzene	110U	110	5.7
88-06-2	2,4,6-Trichlorophenol	110U	110	18
95-95-4	2,4,5-Trichlorophenol	110U	110	21

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310588**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-05A (Filtered)**	Sampled:	10/28/13 13:00		
Lab Sample ID:	**1310588-02**	Sampled By:	Client		
Matrix:	Water	Received:	10/30/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	1	Analyzed:	11/7/13 0:37	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K07013		

*Semivolatile Organic Compounds by EPA Method 8270C

CAS Number	Analyte	Analytical Result	RL	MDL	
83-32-9	Acenaphthene	1.4U	1.4	0.094	
208-96-8	Acenaphthylene	1.4U	1.4	0.049	
120-12-7	Anthracene	1.4U	1.4	0.18	
56-55-3	Benzo(a)anthracene	1.4U	1.4	0.13	
50-32-8	Benzo(a)pyrene	1.4U	1.4	0.12	
205-99-2	Benzo(b)fluoranthene	1.4U	1.4	0.17	
207-08-9	Benzo(k)fluoranthene	1.4U	1.4	0.17	
191-24-2	Benzo(g,h,i)perylene	1.4U	1.4	0.17	
~~*65-85-0~~	~~Benzoic Acid~~	~~14U~~	~~14~~	~~1.4~~	R
100-51-6	Benzyl Alcohol	1.4U	1.4	0.14	
101-55-3	4-Bromophenyl Phenyl Ether	1.4U	1.4	0.12	
85-68-7	Butyl Benzyl Phthalate	**0.17J**	2.9	0.16	
59-50-7	4-Chloro-3-methylphenol	1.4U	1.4	0.33	
106-47-8	4-Chloroaniline	2.9U	2.9	0.29	
111-91-1	Bis(2-chloroethoxy)methane	1.4U	1.4	0.053	
111-44-4	Bis(2-chloroethyl) Ether	1.4U	1.4	0.068	
108-60-1	Bis(2-chloroisopropyl) Ether	1.4U	1.4	0.074	
91-58-7	2-Chloronaphthalene	1.4U	1.4	0.049	
95-57-8	2-Chlorophenol	1.4U	1.4	0.076	
7005-72-3	4-Chlorophenyl Phenyl Ether	1.4U	1.4	0.14	
218-01-9	Chrysene	1.4U	1.4	0.13	
53-70-3	Dibenz(a,h)anthracene	1.4U	1.4	0.32	
132-64-9	Dibenzofuran	1.4U	1.4	0.12	
84-74-2	Di-n-butyl Phthalate	**0.77J**	2.9	0.39	
95-50-1	1,2-Dichlorobenzene	1.4U	1.4	0.11	
541-73-1	1,3-Dichlorobenzene	1.4U	1.4	0.12	
106-46-7	1,4-Dichlorobenzene	1.4U	1.4	0.056	
91-94-1	3,3´-Dichlorobenzidine	2.9U	2.9	0.35	
120-83-2	2,4-Dichlorophenol	1.4U	1.4	0.26	
*84-66-2	Diethyl Phthalate	~~**0.83J**~~ 1.4 UB	1.4	0.19	
105-67-9	2,4-Dimethylphenol	2.9U	2.9	0.48	

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310588**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-05A (Filtered)**	Sampled:	10/28/13 13:00		
Lab Sample ID:	**1310588-02**	Sampled By:	Client		
Matrix:	Water	Received:	10/30/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	1	Analyzed:	11/7/13 0:37	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K07013		

*Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result		RL	MDL
131-11-3	Dimethyl Phthalate	1.4U		1.4	0.13
534-52-1	4,6-Dinitro-2-methylphenol	14U		14	2.9
51-28-5	2,4-Dinitrophenol	14U		14	3.3
121-14-2	2,4-Dinitrotoluene	1.4U		1.4	0.14
606-20-2	2,6-Dinitrotoluene	1.4U		1.4	0.23
117-84-0	Di-n-octyl Phthalate	1.4U		1.4	0.22
117-81-7	Bis(2-ethylhexyl) Phthalate	**0.49J**		1.4	0.32
206-44-0	Fluoranthene	1.4U		1.4	0.18
86-73-7	Fluorene	1.4U		1.4	0.12
118-74-1	Hexachlorobenzene	1.4U		1.4	0.18
87-68-3	Hexachlorobutadiene	1.4U		1.4	0.11
77-47-4	Hexachlorocyclopentadiene	1.4U		1.4	0.13
67-72-1	Hexachloroethane	1.4U		1.4	0.12
193-39-5	Indeno(1,2,3-cd)pyrene	1.4U		1.4	0.23
78-59-1	Isophorone	1.4U		1.4	0.13
56-49-5	3-Methylcholanthrene	5.7U		5.7	0.34
91-57-6	2-Methylnaphthalene	1.4U		1.4	0.043
90-12-0	1-Methylnaphthalene	1.4U		1.4	0.056
95-48-7	2-Methylphenol	1.4U		1.4	0.14
106-44-5	4-Methylphenol	1.4U		1.4	0.16
91-20-3	Naphthalene	1.4U		1.4	0.088
88-74-4	2-Nitroaniline	1.4U		1.4	0.33
99-09-2	3-Nitroaniline	2.9U		2.9	0.70
100-01-6	4-Nitroaniline	2.9U		2.9	0.94
98-95-3	Nitrobenzene	1.4U		1.4	0.17
100-02-7	4-Nitrophenol	14U	J	14	3.6
88-75-5	2-Nitrophenol	1.4U		1.4	0.14
86-30-6	N-Nitroso-diphenylamine	1.4U		1.4	0.19
621-64-7	N-Nitroso-di-n-propylamine	1.4U		1.4	0.22
87-86-5	Pentachlorophenol	1.4U		1.4	0.23
85-01-8	Phenanthrene	**0.14J**		1.4	0.12

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310588**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-05A (Filtered)**	Sampled:	10/28/13 13:00		
Lab Sample ID:	**1310588-02**	Sampled By:	Client		
Matrix:	Water	Received:	10/30/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	1	Analyzed:	11/7/13 0:37	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K07013		

*Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL	MDL
108-95-2	Phenol	**2.8**	1.4	0.096
129-00-0	Pyrene	1.4U	1.4	0.19
58-90-2	2,3,4,6-Tetrachlorophenol	14U	14	1.1
935-95-5	2,3,5,6-Tetrachlorophenol	29U	29	0.61
120-82-1	1,2,4-Trichlorobenzene	1.4U	1.4	0.076
88-06-2	2,4,6-Trichlorophenol	1.4U	1.4	0.24
95-95-4	2,4,5-Trichlorophenol	1.4U	1.4	0.28

Surrogates:	***% Recovery***	***Control Limits***
2-Fluorophenol	*48*	*20-70*
Phenol-d6	***51***	*18-45*
Nitrobenzene-d5	*77*	*31-123*
2-Fluorobiphenyl	*74*	*25-113*
2,4,6-Tribromophenol	*74*	*30-121*
o-Terphenyl	*90*	*42-125*

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310588**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-11 (Unfiltered)**	Sampled:	10/28/13 13:30		
Lab Sample ID:	**1310588-03**	Sampled By:	Client		
Matrix:	Water	Received:	10/30/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	1	Analyzed:	11/7/13 1:12	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K07013		

Semivolatile Organic Compounds by EPA Method 8270C

CAS Number	Analyte	Analytical Result	RL	MDL
83-32-9	Acenaphthene	0.50U	0.50	0.033
208-96-8	Acenaphthylene	0.50U	0.50	0.017
120-12-7	Anthracene	0.50U	0.50	0.062
56-55-3	Benzo(a)anthracene	0.50U	0.50	0.045
50-32-8	Benzo(a)pyrene	0.50U	0.50	0.040
205-99-2	Benzo(b)fluoranthene	0.50U	0.50	0.058
207-08-9	Benzo(k)fluoranthene	0.50U	0.50	0.060
191-24-2	Benzo(g,h,i)perylene	0.50U	0.50	0.061
~~*65-85-0~~	~~Benzoic Acid~~	~~5.0U~~	~~5.0~~	~~0.48~~ R
100-51-6	Benzyl Alcohol	0.50U	0.50	0.049
101-55-3	4-Bromophenyl Phenyl Ether	0.50U	0.50	0.043
85-68-7	Butyl Benzyl Phthalate	1.0U	1.0	0.056
59-50-7	4-Chloro-3-methylphenol	0.50U	0.50	0.12
106-47-8	4-Chloroaniline	1.0U	1.0	0.10
111-91-1	Bis(2-chloroethoxy)methane	0.50U	0.50	0.018
111-44-4	Bis(2-chloroethyl) Ether	0.50U	0.50	0.024
108-60-1	Bis(2-chloroisopropyl) Ether	0.50U	0.50	0.026
91-58-7	2-Chloronaphthalene	0.50U	0.50	0.017
95-57-8	2-Chlorophenol	0.50U	0.50	0.027
7005-72-3	4-Chlorophenyl Phenyl Ether	0.50U	0.50	0.048
218-01-9	Chrysene	0.50U	0.50	0.045
53-70-3	Dibenz(a,h)anthracene	0.50U	0.50	0.11
132-64-9	Dibenzofuran	0.50U	0.50	0.041
84-74-2	Di-n-butyl Phthalate	**0.14J**	1.0	0.14
95-50-1	1,2-Dichlorobenzene	0.50U	0.50	0.040
541-73-1	1,3-Dichlorobenzene	0.50U	0.50	0.041
106-46-7	1,4-Dichlorobenzene	0.50U	0.50	0.020
91-94-1	3,3´-Dichlorobenzidine	1.0U	1.0	0.12
120-83-2	2,4-Dichlorophenol	0.50U	0.50	0.092
*84-66-2	Diethyl Phthalate	~~**0.28J**~~ 0.50 UB	0.50	0.065
105-67-9	2,4-Dimethylphenol	1.0U	1.0	0.17

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ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310588**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-11 (Unfiltered)**	Sampled:	10/28/13 13:30		
Lab Sample ID:	**1310588-03**	Sampled By:	Client		
Matrix:	Water	Received:	10/30/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	1	Analyzed:	11/7/13 1:12	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K07013		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result		RL	MDL
131-11-3	Dimethyl Phthalate	0.50U		0.50	0.046
534-52-1	4,6-Dinitro-2-methylphenol	5.0U		5.0	1.0
51-28-5	2,4-Dinitrophenol	5.0U		5.0	1.2
121-14-2	2,4-Dinitrotoluene	0.50U		0.50	0.048
606-20-2	2,6-Dinitrotoluene	0.50U		0.50	0.080
117-84-0	Di-n-octyl Phthalate	0.50U		0.50	0.077
117-81-7	Bis(2-ethylhexyl) Phthalate	**0.20J**		0.50	0.11
206-44-0	Fluoranthene	0.50U		0.50	0.063
86-73-7	Fluorene	0.50U		0.50	0.041
118-74-1	Hexachlorobenzene	0.50U		0.50	0.063
87-68-3	Hexachlorobutadiene	0.50U		0.50	0.040
77-47-4	Hexachlorocyclopentadiene	0.50U		0.50	0.044
67-72-1	Hexachloroethane	0.50U		0.50	0.042
193-39-5	Indeno(1,2,3-cd)pyrene	0.50U		0.50	0.080
78-59-1	Isophorone	0.50U		0.50	0.045
56-49-5	3-Methylcholanthrene	2.0U		2.0	0.12
91-57-6	2-Methylnaphthalene	0.50U		0.50	0.015
90-12-0	1-Methylnaphthalene	0.50U		0.50	0.020
95-48-7	2-Methylphenol	0.50U		0.50	0.048
106-44-5	4-Methylphenol	0.50U		0.50	0.057
91-20-3	Naphthalene	0.50U		0.50	0.031
88-74-4	2-Nitroaniline	0.50U		0.50	0.12
99-09-2	3-Nitroaniline	1.0U		1.0	0.24
100-01-6	4-Nitroaniline	1.0U		1.0	0.33
98-95-3	Nitrobenzene	0.50U		0.50	0.058
100-02-7	4-Nitrophenol	5.0U	J	5.0	1.2
88-75-5	2-Nitrophenol	0.50U		0.50	0.048
86-30-6	N-Nitroso-diphenylamine	0.50U		0.50	0.068
621-64-7	N-Nitroso-di-n-propylamine	0.50U		0.50	0.075
87-86-5	Pentachlorophenol	0.50U		0.50	0.081
85-01-8	Phenanthrene	0.50U		0.50	0.043

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310588**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-11 (Unfiltered)**	Sampled:	10/28/13 13:30		
Lab Sample ID:	**1310588-03**	Sampled By:	Client		
Matrix:	Water	Received:	10/30/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	1	Analyzed:	11/7/13 1:12	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K07013		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL	MDL
108-95-2	Phenol	0.50U	0.50	0.034
129-00-0	Pyrene	0.50U	0.50	0.066
58-90-2	2,3,4,6-Tetrachlorophenol	5.0U	5.0	0.37
935-95-5	2,3,5,6-Tetrachlorophenol	10U	10	0.21
120-82-1	1,2,4-Trichlorobenzene	0.50U	0.50	0.027
88-06-2	2,4,6-Trichlorophenol	0.50U	0.50	0.085
95-95-4	2,4,5-Trichlorophenol	0.50U	0.50	0.099

Surrogates:	*% Recovery*	*Control Limits*
2-Fluorophenol	*26*	*20-70*
Phenol-d6	*23*	*18-45*
Nitrobenzene-d5	*75*	*31-123*
2-Fluorobiphenyl	*76*	*25-113*
2,4,6-Tribromophenol	*63*	*30-121*
o-Terphenyl	*90*	*42-125*

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310588**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-11A (Filtered)**	Sampled:	10/28/13 13:45		
Lab Sample ID:	**1310588-04**	Sampled By:	Client		
Matrix:	Water	Received:	10/30/13 8:30		
Unit:	ug/L	Prepared:	11/8/13 7:00	By:	LEW
Dilution Factor:	1	Analyzed:	11/8/13 14:10	By:	LEW
QC Batch:	1312152	Analytical Batch:	3K14017		

*Halogenated and Aromatic Volatiles by EPA Method 8021B

CAS Number	Analyte	Analytical Result	RL	MDL
71-43-2	Benzene	1.0U	1.0	0.20
104-51-8	n-Butylbenzene	1.0U	1.0	0.28
*74-87-3	Chloromethane	1.0U J	1.0	0.37
100-41-4	Ethylbenzene	**0.45J**	1.0	0.20
1634-04-4	Methyl tert-Butyl Ether	5.0U	5.0	0.48
*91-20-3	Naphthalene	~~310BE~~ 410 D J	1.0	0.44
103-65-1	n-Propylbenzene	1.0U	1.0	0.24
100-42-5	Styrene	1.0U	1.0	0.20
108-88-3	Toluene	1.0U	1.0	0.33
71-55-6	1,1,1-Trichloroethane	1.0U	1.0	0.30
108-67-8	1,3,5-Trimethylbenzene	**0.49J**	1.0	0.24
95-63-6	1,2,4-Trimethylbenzene	**0.90J**	1.0	0.22
179601-23-1	Xylene, Meta + Para	**0.90J**	2.0	0.42
95-47-6	Xylene, Ortho	**0.54J**	1.0	0.20

Surrogates:	***% Recovery***	***Control Limits***
1,2-Dichloroethane-d4	***137***	*81-126*
aaa-Trifluorotoluene	*100*	*86-118*

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310588**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-11A (Filtered)**	Sampled:	10/28/13 13:45		
Lab Sample ID:	**1310588-04**	Sampled By:	Client		
Matrix:	Water	Received:	10/30/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	1	Analyzed:	11/7/13 1:47	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K07013		

Semivolatile Organic Compounds by EPA Method 8270C

CAS Number	Analyte	Analytical Result	RL	MDL	
83-32-9	Acenaphthene	**19**	0.67	0.044	
208-96-8	Acenaphthylene	0.67U	0.67	0.023	
120-12-7	Anthracene	0.67U	0.67	0.082	
56-55-3	Benzo(a)anthracene	0.67U	0.67	0.061	
50-32-8	Benzo(a)pyrene	0.67U	0.67	0.054	
205-99-2	Benzo(b)fluoranthene	0.67U	0.67	0.077	
207-08-9	Benzo(k)fluoranthene	0.67U	0.67	0.079	
191-24-2	Benzo(g,h,i)perylene	0.67U	0.67	0.081	
*65-85-0	Benzoic Acid	6.7U	6.7	0.64	R
100-51-6	Benzyl Alcohol	0.67U	0.67	0.065	
101-55-3	4-Bromophenyl Phenyl Ether	0.67U	0.67	0.057	
85-68-7	Butyl Benzyl Phthalate	1.3U	1.3	0.074	
59-50-7	4-Chloro-3-methylphenol	0.67U	0.67	0.15	
106-47-8	4-Chloroaniline	1.3U	1.3	0.14	
111-91-1	Bis(2-chloroethoxy)methane	0.67U	0.67	0.025	
111-44-4	Bis(2-chloroethyl) Ether	0.67U	0.67	0.032	
108-60-1	Bis(2-chloroisopropyl) Ether	0.67U	0.67	0.034	
91-58-7	2-Chloronaphthalene	0.67U	0.67	0.023	
95-57-8	2-Chlorophenol	0.67U	0.67	0.036	
7005-72-3	4-Chlorophenyl Phenyl Ether	0.67U	0.67	0.064	
218-01-9	Chrysene	0.67U	0.67	0.060	
53-70-3	Dibenz(a,h)anthracene	0.67U	0.67	0.15	
132-64-9	Dibenzofuran	**3.8**	0.67	0.054	
84-74-2	Di-n-butyl Phthalate	**0.21J**	1.3	0.18	
95-50-1	1,2-Dichlorobenzene	0.67U	0.67	0.053	
541-73-1	1,3-Dichlorobenzene	0.67U	0.67	0.055	
106-46-7	1,4-Dichlorobenzene	0.67U	0.67	0.026	
91-94-1	3,3´-Dichlorobenzidine	1.3U	1.3	0.17	
120-83-2	2,4-Dichlorophenol	0.67U	0.67	0.12	

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310588**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-11A (Filtered)**	Sampled:	10/28/13 13:45		
Lab Sample ID:	**1310588-04**	Sampled By:	Client		
Matrix:	Water	Received:	10/30/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	1	Analyzed:	11/7/13 1:47	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K07013		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL	MDL
*84-66-2	Diethyl Phthalate	~~0.40J~~ 0.67 UB	0.67	0.087
105-67-9	2,4-Dimethylphenol	**1.2J**	1.3	0.22
131-11-3	Dimethyl Phthalate	0.67U	0.67	0.061
534-52-1	4,6-Dinitro-2-methylphenol	6.7U	6.7	1.4
51-28-5	2,4-Dinitrophenol	6.7U	6.7	1.5
121-14-2	2,4-Dinitrotoluene	0.67U	0.67	0.063
606-20-2	2,6-Dinitrotoluene	0.67U	0.67	0.11
117-84-0	Di-n-octyl Phthalate	0.67U	0.67	0.10
117-81-7	Bis(2-ethylhexyl) Phthalate	**0.20J**	0.67	0.15
206-44-0	Fluoranthene	0.67U	0.67	0.084
86-73-7	Fluorene	**5.9**	0.67	0.055
118-74-1	Hexachlorobenzene	0.67U	0.67	0.084
87-68-3	Hexachlorobutadiene	0.67U	0.67	0.053
77-47-4	Hexachlorocyclopentadiene	0.67U	0.67	0.059
67-72-1	Hexachloroethane	0.67U	0.67	0.056
193-39-5	Indeno(1,2,3-cd)pyrene	0.67U	0.67	0.11
78-59-1	Isophorone	0.67U	0.67	0.060
56-49-5	3-Methylcholanthrene	2.7U	2.7	0.16
91-57-6	2-Methylnaphthalene	**9.3**	0.67	0.020
90-12-0	1-Methylnaphthalene	**8.5**	0.67	0.026
95-48-7	2-Methylphenol	0.67U	0.67	0.063
106-44-5	4-Methylphenol	0.67U	0.67	0.075
*91-20-3	Naphthalene	~~100E~~ 110 D	0.67	0.041
88-74-4	2-Nitroaniline	0.67U	0.67	0.15
99-09-2	3-Nitroaniline	1.3U	1.3	0.33
100-01-6	4-Nitroaniline	1.3U	1.3	0.44
98-95-3	Nitrobenzene	0.67U	0.67	0.078
100-02-7	4-Nitrophenol	6.7U J	6.7	1.7
88-75-5	2-Nitrophenol	0.67U	0.67	0.063
86-30-6	N-Nitroso-diphenylamine	0.67U	0.67	0.090
621-64-7	N-Nitroso-di-n-propylamine	0.67U	0.67	0.10

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ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310588**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-11A (Filtered)**	Sampled:	10/28/13 13:45		
Lab Sample ID:	**1310588-04**	Sampled By:	Client		
Matrix:	Water	Received:	10/30/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	1	Analyzed:	11/7/13 1:47	By:	JLB
QC Batch:	1311584	Analytical Batch:	3K07013		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL	MDL
87-86-5	Pentachlorophenol	0.67U	0.67	0.11
85-01-8	Phenanthrene	**0.76**	0.67	0.057
108-95-2	Phenol	0.67U	0.67	0.045
129-00-0	Pyrene	0.67U	0.67	0.087
58-90-2	2,3,4,6-Tetrachlorophenol	6.7U	6.7	0.49
935-95-5	2,3,5,6-Tetrachlorophenol	13U	13	0.28
120-82-1	1,2,4-Trichlorobenzene	0.67U	0.67	0.035
88-06-2	2,4,6-Trichlorophenol	0.67U	0.67	0.11
95-95-4	2,4,5-Trichlorophenol	0.67U	0.67	0.13

Surrogates:	***% Recovery***	***Control Limits***
2-Fluorophenol	*28*	*20-70*
Phenol-d6	*33*	*18-45*
Nitrobenzene-d5	*69*	*31-123*
2-Fluorobiphenyl	*79*	*25-113*
2,4,6-Tribromophenol	*54*	*30-121*
o-Terphenyl	*91*	*42-125*

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310588**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-11A (Filtered)**	Sampled:	10/28/13 13:45		
Lab Sample ID:	**1310588-04RE1**	Sampled By:	Client		
Matrix:	Water	Received:	10/30/13 8:30		
Unit:	ug/L	Prepared:	11/19/13 9:00	By:	LEW
Dilution Factor:	10	Analyzed:	11/19/13 17:02	By:	LEW
QC Batch:	1312588	Analytical Batch:	3K21014		

*Halogenated and Aromatic Volatiles by EPA Method 8021B

CAS Number	Analyte	Analytical Result	RL	MDL
91-20-3	Naphthalene	**410**	10	4.4

Surrogates:	*% Recovery*	*Control Limits*
1,2-Dichloroethane-d4	*108*	*81-126*
aaa-Trifluorotoluene	*102*	*86-118*

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310588**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-11A (Filtered)**	Sampled:	10/28/13 13:45		
Lab Sample ID:	**1310588-04RE1**	Sampled By:	Client		
Matrix:	Water	Received:	10/30/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	5	Analyzed:	11/8/13 22:30	By:	DWJ
QC Batch:	1311584	Analytical Batch:	3K11041		

Semivolatile Organic Compounds by EPA Method 8270C

CAS Number	Analyte	Analytical Result	RL	MDL
83-32-9	Acenaphthene	**18**	3.3	0.22
208-96-8	Acenaphthylene	3.3U	3.3	0.11
120-12-7	Anthracene	3.3U	3.3	0.41
56-55-3	Benzo(a)anthracene	3.3U	3.3	0.30
50-32-8	Benzo(a)pyrene	3.3U	3.3	0.27
205-99-2	Benzo(b)fluoranthene	3.3U	3.3	0.39
207-08-9	Benzo(k)fluoranthene	3.3U	3.3	0.40
191-24-2	Benzo(g,h,i)perylene	3.3U	3.3	0.41
*65-85-0	Benzoic Acid	33U	33	3.2
100-51-6	Benzyl Alcohol	3.3U	3.3	0.32
101-55-3	4-Bromophenyl Phenyl Ether	3.3U	3.3	0.29
85-68-7	Butyl Benzyl Phthalate	6.7U	6.7	0.37
59-50-7	4-Chloro-3-methylphenol	3.3U	3.3	0.77
106-47-8	4-Chloroaniline	6.7U	6.7	0.68
111-91-1	Bis(2-chloroethoxy)methane	3.3U	3.3	0.12
111-44-4	Bis(2-chloroethyl) Ether	3.3U	3.3	0.16
108-60-1	Bis(2-chloroisopropyl) Ether	3.3U	3.3	0.17
91-58-7	2-Chloronaphthalene	3.3U	3.3	0.11
95-57-8	2-Chlorophenol	3.3U	3.3	0.18
7005-72-3	4-Chlorophenyl Phenyl Ether	3.3U	3.3	0.32
218-01-9	Chrysene	3.3U	3.3	0.30
53-70-3	Dibenz(a,h)anthracene	3.3U	3.3	0.75
132-64-9	Dibenzofuran	**4.1**	3.3	0.27
84-74-2	Di-n-butyl Phthalate	6.7U	6.7	0.90
95-50-1	1,2-Dichlorobenzene	3.3U	3.3	0.26
541-73-1	1,3-Dichlorobenzene	3.3U	3.3	0.27
106-46-7	1,4-Dichlorobenzene	3.3U	3.3	0.13
91-94-1	3,3´-Dichlorobenzidine	6.7U	6.7	0.83
120-83-2	2,4-Dichlorophenol	3.3U	3.3	0.61

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TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310588**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-11A (Filtered)**	Sampled:	10/28/13 13:45		
Lab Sample ID:	**1310588-04RE1**	Sampled By:	Client		
Matrix:	Water	Received:	10/30/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	5	Analyzed:	11/8/13 22:30	By:	DWJ
QC Batch:	1311584	Analytical Batch:	3K11041		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL	MDL
*84-66-2	Diethyl Phthalate	**0.93J**	3.3	0.43
105-67-9	2,4-Dimethylphenol	**1.7J**	6.7	1.1
131-11-3	Dimethyl Phthalate	3.3U	3.3	0.30
534-52-1	4,6-Dinitro-2-methylphenol	33U	33	6.8
51-28-5	2,4-Dinitrophenol	33U	33	7.7
121-14-2	2,4-Dinitrotoluene	3.3U	3.3	0.32
606-20-2	2,6-Dinitrotoluene	3.3U	3.3	0.53
117-84-0	Di-n-octyl Phthalate	3.3U	3.3	0.51
117-81-7	Bis(2-ethylhexyl) Phthalate	3.3U	3.3	0.75
206-44-0	Fluoranthene	3.3U	3.3	0.42
86-73-7	Fluorene	**5.5**	3.3	0.28
118-74-1	Hexachlorobenzene	3.3U	3.3	0.42
87-68-3	Hexachlorobutadiene	3.3U	3.3	0.26
77-47-4	Hexachlorocyclopentadiene	3.3U	3.3	0.30
67-72-1	Hexachloroethane	3.3U	3.3	0.28
193-39-5	Indeno(1,2,3-cd)pyrene	3.3U	3.3	0.53
78-59-1	Isophorone	3.3U	3.3	0.30
56-49-5	3-Methylcholanthrene	13U	13	0.80
91-57-6	2-Methylnaphthalene	**10**	3.3	0.099
90-12-0	1-Methylnaphthalene	**7.9**	3.3	0.13
95-48-7	2-Methylphenol	3.3U	3.3	0.32
106-44-5	4-Methylphenol	3.3U	3.3	0.38
91-20-3	Naphthalene	**110**	3.3	0.20
88-74-4	2-Nitroaniline	3.3U	3.3	0.77
99-09-2	3-Nitroaniline	6.7U	6.7	1.6
100-01-6	4-Nitroaniline	6.7U	6.7	2.2
98-95-3	Nitrobenzene	3.3U	3.3	0.39
100-02-7	4-Nitrophenol	33U	33	8.3
88-75-5	2-Nitrophenol	3.3U	3.3	0.32
86-30-6	N-Nitroso-diphenylamine	3.3U	3.3	0.45
621-64-7	N-Nitroso-di-n-propylamine	3.3U	3.3	0.50

Continued on next page

*See Statement of Data Qualifications

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Beazer East, Inc.**	Work Order:	**1310588**		
Project:	Koppers Superior	Description:	Laboratory Services		
Client Sample ID:	**TMW-11A (Filtered)**	Sampled:	10/28/13 13:45		
Lab Sample ID:	**1310588-04RE1**	Sampled By:	Client		
Matrix:	Water	Received:	10/30/13 8:30		
Unit:	ug/L	Prepared:	10/31/13 7:55	By:	ALK
Dilution Factor:	5	Analyzed:	11/8/13 22:30	By:	DWJ
QC Batch:	1311584	Analytical Batch:	3K11041		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL	MDL
87-86-5	Pentachlorophenol	3.3U	3.3	0.54
85-01-8	Phenanthrene	**0.80J**	3.3	0.28
108-95-2	Phenol	3.3U	3.3	0.22
129-00-0	Pyrene	3.3U	3.3	0.44
58-90-2	2,3,4,6-Tetrachlorophenol	33U	33	2.5
935-95-5	2,3,5,6-Tetrachlorophenol	67U	67	1.4
120-82-1	1,2,4-Trichlorobenzene	3.3U	3.3	0.18
88-06-2	2,4,6-Trichlorophenol	3.3U	3.3	0.57
95-95-4	2,4,5-Trichlorophenol	3.3U	3.3	0.66

Surrogates:	***% Recovery***	***Control Limits***
2-Fluorophenol	*44*	*20-70*
Phenol-d6	*33*	*18-45*
Nitrobenzene-d5	*57*	*31-123*
2-Fluorobiphenyl	*84*	*25-113*
2,4,6-Tribromophenol	*61*	*30-121*
o-Terphenyl	*93*	*42-125*

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Supplemental Off-Property Investigation

Data Review

SUPERIOR, WISCONSIN

Semivolatile Analyses

SDG #180-25192-1

Analyses Performed By:
TestAmerica Laboratories, Inc.
Pittsburgh, Pennsylvania

Report: #21175R
Review Level: Tier III
Project: B0039290.0000.00003

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) #180-25192-1 for samples collected in association with the Beazer East, Inc., Supplemental Off-Property Investigation. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis				
					VOC	SVOC	PEST/ PCB	MET	MISC
SB-16_30-30.5 (20130913)	180-25192-1	Soil	9/13/2013			X			

Note:

1. Matrix spike/matrix spike duplicate (MS/MSD) analysis was performed on sample location SB-16_30-30.5 (20130913).

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Method 8270C. Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is

that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

SEMI-VOLATILE ORGANIC COMPOUND (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8270C	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to <6°C
	Soil	14 days from collection to extraction and 40 days from extraction to analysis	Cool to <6°C

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method, trip, and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure contamination of samples during shipment. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the SVOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations were the compounds concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS/MSD exhibited acceptable recoveries and the RPD between the MS/MSD results were acceptable.

8. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

9. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Field duplicate analysis was not performed on a sample location within this SDG.

10. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria.

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCs

SVOCs: SW-846 8270	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate(MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Field Duplicate (RPD)					X
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content		X		X	
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X		X	
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculations acceptable		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

VALIDATION PERFORMED BY: Jennifer Singer

SIGNATURE: 

DATE: January 31, 2014

PEER REVIEW: Todd Church

DATE: January 31, 2014

CHAIN OF CUSTODY/
CORRECTED SAMPLE ANALYSIS DATA SHEETS

Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratory location: Pittsburgh PA

Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica Laboratories, Inc.

09/24/2013

Client Contact				
Company Name: Beazer	Client Project Manager: Dave Bessingpas	Site Contact: Dave Bessingpas	Lab Contact: Veronica Bortot	COC No: 040645
Address:	Telephone: 218-829-4607	Telephone: 218-829-4607	Telephone: 412-963-7058	1 of 1 COCs
City/State/Zip: Pittsburgh, PA	Email: david.bessingpas@arcadis-us.com	Analysis Turnaround Time (in BUS days)	Analyses	For lab use only
Phone: 412-208-8813		TAT if different from below (See notes)		Walk-in client ☐
Project Name: Beazer - Superior WI	Method of Shipment/Carrier: FedEx	☐ 3 weeks ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		Lab pickup ☐
Project Number:	Shipping/Tracking No: 802946 178 972			Lab sampling ☐
PO #				Job/SDG No:

Sample Identification	Sample Date	Sample Time	Matrix: Air	Aqueous	Sediment	Solid	Other:	Containers & Preservatives: H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	Unpres	Other:	Filtered Sample (Y/N)	Composite=C / Grab=G	PAHs (Method 8270)	Temperature	Sample Specific Notes / Special Instructions:
SB-16_30-30.5 (20130913)	9/13/13	1054				X							1		N	G	1		Rush TAT
SB-16_30.5-31 (20130913)	9/13/13	1055				X							1		N	G	1		Hold for Analysis
Temp Blank	—	—		X									1					1	

180-25192 Chain of Custody

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return to Client ☒ Disposal By Lab ☐ Archive For _____ Months

Special Instructions/QC Requirements & Comments:

*Email results to Dave Bessingpas @ david.bessingpas@arcadis-us.com

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Kelly Cull	ARCADIS	9/16/13 2000	[signature]	TA PitH	9/17/13 0850
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

TAL 0018-1 (04/10)

DATA REPORTING QUALIFIERS

Client: ARCADIS U.S. Inc Job Number: 180-25192-1

Lab Section	Qualifier	Description
GC/MS Semi VOA		
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Client: ARCADIS U.S. Inc | Job Number: 180-25192-1

Client Sample ID: **SB-16_30-30.5 (20130913)**

Lab Sample ID: 180-25192-1 | Date Sampled: 09/13/2013 1054
Client Matrix: Solid | % Moisture: 23.8 | Date Received: 09/17/2013 0850

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	180-84181	Instrument ID:	733
Prep Method:	3541	Prep Batch:	180-84028	Lab File ID:	N0919003.D
Dilution:	1.0			Initial Weight/Volume:	15.1 g
Analysis Date:	09/19/2013 1508			Final Weight/Volume:	5.0 mL
Prep Date:	09/19/2013 0420			Injection Volume:	2 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		9.8	J	8.3	87
Acenaphthylene		ND		10	87
Anthracene		ND		8.5	87
Benzo[a]anthracene		ND		11	87
Benzo[a]pyrene		ND		8.7	87
Benzo[b]fluoranthene		ND		14	87
Benzo[g,h,i]perylene		ND		8.6	87
Benzo[k]fluoranthene		ND		18	87
Chrysene		ND		10	87
Dibenz(a,h)anthracene		ND		9.7	87
Fluoranthene		32	J	9.3	87
Fluorene		ND		11	87
Indeno[1,2,3-cd]pyrene		ND		9.0	87
Naphthalene		ND		7.5	87
Phenanthrene		45	J	14	87
Pyrene		22	J	8.8	87

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	57		25 - 104
2-Fluorobiphenyl	61		35 - 105
Terphenyl-d14	65		25 - 127

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Supplemental Off-Property Investigation

Data Review

SUPERIOR, WISCONSIN

Volatile and Semivolatile Analyses

SDG #1401173

Analyses Performed By:
TriMatrix Laboratories
Grand Rapids, Michigan

Report: #21243R
Review Level: Tier III
Project: B0039290.0000.00003

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) #1401173 for samples collected in association with the Beazer East, Inc., Supplemental Off-Property Investigation. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis				
					VOC	SVOC	PEST/ PCB	MET	MISC
TMW-02A Filtered	1401173-01	Water	1/13/2014		X	X			
TMW-02A	1401173-02	Water	1/13/2014		X	X			
TMW-05 Filtered	1401173-03	Water	1/13/2014		X	X			
TMW-05A Filtered	1401173-04	Water	1/13/2014		X	X			
TMW-05	1401173-05	Water	1/14/2014		X	X			
TMW-08	1401173-06	Water	1/13/2014		X	X			
TMW-08 Filtered	1401173-07	Water	1/13/2014		X	X			
TMW-08A	1401173-08	Water	1/13/2014		X	X			
TMW-08A Filtered	1401173-09	Water	1/13/2014		X	X			
TMW-11 Filtered	1401173-10	Water	1/13/2014		X	X			
TMW-11A Filtered	1401173-11	Water	1/13/2014		X	X			
TMW-11	1401173-12	Water	1/14/2014		X	X			
TMW-11A	1401173-13	Water	1/14/2014		X	X			
TMW-12A Filtered	1401173-14	Water	1/13/2014		X	X			
TMW-12A	1401173-15	Water	1/14/2014		X	X			
TMW-19C Filtered	1401173-16	Water	1/13/2014		X	X			
TMW-19C	1401173-17	Water	1/14/2014		X	X			
TMW-23	1401173-18	Water	1/13/2014		X	X			
TMW-23 Filtered	1401173-19	Water	1/13/2014		X	X			
MW-800	1401173-20	Water	1/13/2014	TMW-08 Filtered	X	X			
MW-801	1401173-21	Water	1/13/2014	TMW-08	X	X			
Trip Blank	1401173-22	Water	1/13/2014		X				

Note:

1. The matrix spike/matrix spike duplicate (MS/MSD) analysis was performed on sample locations TMW-23 and TMW-23 Filtered.

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 8260 and 8270C. Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8260	Water	14 days from collection to analysis	Cool to <6 °C; preserved to a pH of less than 2 s.u.

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. System Performance

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Locations	Initial/Continuing	Compound	Criteria
TMW-12A MW-800 MW-801	CCV %D	n-Butylbenzene	20.4%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibration	RRF <0.05	Non-detect	R
		Detect	J
	RRF <0.01[1]	Non-detect	R
		Detect	J
	RRF >0.05 or RRF >0.01[1]	Non-detect	No Action
		Detect	
Initial Calibration	%RSD > 15% or a correlation coefficient <0.99	Non-detect	UJ
		Detect	J
	%RSD >90%	Non-detect	R
		Detect	J
Continuing Calibration	%D >20% (increase in sensitivity)	Non-detect	No Action
		Detect	J
	%D >20% (decrease in sensitivity)	Non-detect	UJ
		Detect	J
	%D >90% (increase/decrease in sensitivity)	Non-detect	R
		Detect	J

[1] RRF of 0.01 only applies to compounds which are typically poor responding compounds (i.e., ketones, 1,4-dioxane, etc.)

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. The analysis requires surrogate compounds exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the VOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS/MSD exhibited acceptable recoveries and RPD between the MS/MSD recoveries.

8. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

9. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
TMW-08/ MW-801	All analytes	U	U	AC
TMW-08 Filtered/ MW-800	All analytes	U	U	AC

AC Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

10. Compound Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows. All identified compounds met the specified criteria.

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: SW-846 8260	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
C. Trip blanks		X		X	
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate (LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate(MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)		X		X	
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X	X		
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

VOCs: SW-846 8260	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					

%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

SEMI-VOLATILE ORGANIC COMPOUND (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8270C	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to <6°C

The analyses that exceeded the holding are presented in the following table.

Sample Locations	Holding Time	Criteria
TMW-08 Filtered (RE) TMW-23 Filtered (RE) MW-800 (RE)	Extraction: 14 days	<7 Days

RE Re-extraction

Sample results associated with sample locations analyzed by analytical method SW-846 8270 were qualified, as specified in the table below. All other holding times were met.

Criteria	Qualification	
	Detected Analytes	Non-detect Analytes
Analysis completed less than two times holding time	J	UJ
Analysis completed greater than two times holding time	J	R

Note: Samples TMW-08 Filtered, TMW-23 Filtered, and MW-800 were re-extracted outside of the required holding time. The samples were re-extracted due to the low acid extractable surrogate recoveries in the original analysis (see Section 5). The results from the re-extracted analysis will be used for the acid-extractable analytes only associated with samples TMW-08 Filtered and TMW-23 Filtered. The results from the original analysis of sample MW-800 will be used for all analytes since the acid extractable surrogate recoveries were >10%.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method, trip, and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure contamination of samples during shipment. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All compounds associated with the QA blanks exhibited a concentration less than the MDL, with the exception of the compounds listed in the following table. Sample results associated with QA blank contamination that were greater than the BAL resulted in the removal of the laboratory qualifier (B).

Sample results less than the BAL associated with the following sample locations were qualified as listed in the following table.

Sample Locations	Analytes	Sample Result	Qualification
TMW-05 Filtered TMW-08 TMW-08A TMW-08A Filtered TMW-11 MW-800 MW-801	Butyl benzyl phthalate	Detected sample results <RL and <BAL	"UB" at the RL
TMW-08 Filtered TMW-11 Filtered TMW-11A Filtered TMW-11 TMW-19C Filtered TMW-23 Filtered	Di-n-butyl phthalate		
TMW-05 Filtered TMW-05 TMW-08 TMW-08A TMW-08A Filtered TMW-11 Filtered TMW-11A Filtered TMW-11 TMW-23 MW-800 MW-801	Diethyl phthalate		
TMW-05 Filtered TMW-05A Filtered TMW-05 TMW-08 TMW-08 Filtered TMW-08A TMW-08A Filtered TMW-11 Filtered TMW-11A Filtered TMW-19C Filtered TMW-19C TMW-23 TMW-23 Filtered MW-800 MW-801	bis(2-Ethylhexyl)phthalate		
TMW-05 Filtered TMW-05A Filtered TMW-05 TMW-08 TMW-11A TMW-19C TMW-23 MW-800 MW-801	Di-n-butyl phthalate	Detected sample results >RL and <BAL	"UB" at detected sample concentration
TMW-05A Filtered TMW-08 Filtered TMW-19C Filtered TMW-19C TMW-23 Filtered	Diethyl phthalate		

Sample Locations	Analytes	Sample Result	Qualification
TMW-11	bis(2-Ethylhexyl)phthalate		

RL Reporting limit

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Locations	Initial/Continuing	Compound	Criteria
TMW-05 Filtered TMW-05A Filtered TMW-05 TMW-08 TMW-08 Filtered TMW-11 Filtered TMW-11A Filtered TMW-19C Filtered TMW-19C	CCV %D	Benzoic Acid	-22.9%
		Hexachlorocyclopentadiene	-28.5%
		4-Nitrophenol	-27.1%
TMW-02A TMW-08A TMW-08A Filtered TMW-11 TMW-11A TMW-12A TMW-23		Benzoic Acid	-20.7%
		2,4-Dinitrophenol	-21.8%
		Hexachlorocyclopentadiene	-30.6%

Sample Locations	Initial/Continuing	Compound	Criteria
TMW-23 Filtered MW-800 MW-801		4-Nitrophenol	-22.8%
TMW-02A Filtered		Hexachlorocyclopentadiene	-29.8%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibration	RRF <0.05	Non-detect	R
		Detect	J
	RRF <0.01[1]	Non-detect	R
		Detect	J
	RRF >0.05 or RRF >0.01[1]	Non-detect	No Action
		Detect	
Initial Calibration	%RSD > 15% or a correlation coefficient <0.99	Non-detect	UJ
		Detect	J
	%RSD >90%	Non-detect	R
		Detect	J
Continuing Calibration	%D >20% (increase in sensitivity)	Non-detect	No Action
		Detect	J
	%D >20% (decrease in sensitivity)	Non-detect	UJ
		Detect	J
	%D >90% (increase/decrease in sensitivity)	Non-detect	R
		Detect	J

[1] RRF of 0.01 only applies to compounds which are typically poor responding compounds

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits.

Sample locations associated with surrogates exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Surrogate	Recovery
TMW-02A Filtered TMW-02A TMW-12A Filtered TMW-12A	2-Fluorophenol	D
	Phenol-d6	
	Nitrobenzene-d5	
	2-Fluorobiphenyl	

Sample Locations	Surrogate	Recovery
	2,4,6-Tribromophenol	
	o-Terphenyl	
TMW-05A Filtered TMW-08 Filtered TMW-11A Filtered TMW-23 Filtered	2-Fluorophenol	AC
	Phenol-d6	<10%
	Nitrobenzene-d5	AC
	2-Fluorobiphenyl	
	2,4,6-Tribromophenol	
	o-Terphenyl	
TMW-11A	2-Fluorophenol	AC
	Phenol-d6	>UL
	Nitrobenzene-d5	AC
	2-Fluorobiphenyl	
	2,4,6-Tribromophenol	
	o-Terphenyl	
TMW-11 Filtered MW-800	2-Fluorophenol	AC
	Phenol-d6	<LL but >10%
	Nitrobenzene-d5	AC
	2-Fluorobiphenyl	
	2,4,6-Tribromophenol	
	o-Terphenyl	

UL Upper control limit
LL Lower control limit
D Diluted
AC Acceptable

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results associated with the deviant fraction are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	No Action
	Detect	J
< LL but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
Surrogates diluted below the calibration curve due to the high concentration of a target compounds	Non-detect	J[1]
	Detect	

[1] A more concentrated analysis was not performed with surrogate compounds within the calibration range; therefore, no determination of extraction efficiency could be made.

Note: Re-extraction of samples TMW-05A Filtered and TMW-11A Filtered was not possible due to insufficient sample volume. The results from the original analysis should be for the acid-extractable analytes, with qualification.

Note: Samples TMW-08 Filtered and TMW-23 Filtered were re-extracted due to the low acid extractable surrogate recovery in the original analysis. As discussed in Section 1, the re-extractions were performed outside of the required holding times. The surrogate recoveries for the re-extracted samples were within the control limits. The results from the re-extracted analysis should be used for the acid-extractable analytes associated with these samples.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the SVOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations were the compounds concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

Sample locations associated with the MS/MSD exhibiting recoveries outside of the control limits are presented in the following table.

Sample Locations	Compound	MS Recovery	MSD Recovery
TMW-23	Benzoic Acid	<10%	<10%
	2,3,5,6-Tetrachlorophenol	<LL but >10%	AC
TMW-23 Filtered	Benzoic Acid	<10%	<10%
	4-Nitrophenol	<LL but >10%	<LL but >10%
	Pentachlorophenol		
	2,3,4,6-Tetrachlorophenol		
	2,3,5,6-Tetrachlorophenol		
	2,4,6-Trichlorophenol		
	2,4,5-Trichlorophenol		
	3,3'-Dichlorobenzidine	AC	

AC Acceptable

The criteria used to evaluate the MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
Parent sample concentration > four times the MS/MSD spiking solution concentration.	Detect	No Action
	Non-detect	

Sample locations associated with MS/MSD recoveries exhibiting an RPD greater than of the control limit presented in the following table.

Sample Locations	Compound
TMW-23	Acenaphthene
	Acenaphthylene
	Anthracene
	Benzo(a)anthracene
	Benzo(a)pyrene
	Benzo(b)fluoranthene
	Benzo(k)fluoranthene
	Benzo(g,h,i)perylene
	Benzyl Alcohol
	4-Bromophenyl Phenyl Ether
	Butyl Benzyl Phthalate
	4-Chloro-3-methylphenol
	4-Chloroaniline
	Bis(2-chloroethoxy)methane
	Bis(2-chloroethyl) Ether
	Bis(2-chloroisopropyl) Ether
	2-Chloronaphthalene
	2-Chlorophenol
	4-Chlorophenyl Phenyl Ether
	Chrysene
	Dibenz(a,h)anthracene
	Dibenzofuran
	1,2-Dichlorobenzene
	1,3-Dichlorobenzene
	1,4-Dichlorobenzene
	3,3'-Dichlorobenzidine

Sample Locations	Compound
	Diethyl Phthalate
	Dimethyl Phthalate
	2,4-Dinitrotoluene
	2,6-Dinitrotoluene
	Di-n-octyl Phthalate
	Bis(2-ethylhexyl) Phthalate
	Fluorene
	Hexachlorobenzene
	Hexachlorobutadiene
	Hexachloroethane
	Indeno(1,2,3-cd)pyrene
	2-Methylnaphthalene
	2-Methylphenol
	4-Methylphenol
	Naphthalene
	Nitrobenzene
	N-Nitroso-diphenylamine
	N-Nitroso-di-n-propylamine
	Phenanthrene
	Phenol
	Pyrene
	1,2,4-Trichlorobenzene
TMW-23 Filtered	Acenaphthene
	Acenaphthylene
	Anthracene
	Benzo(a)anthracene
	Benzo(g,h,i)perylene
	Benzoic Acid
	4-Bromophenyl Phenyl Ether
	Butyl Benzyl Phthalate
	4-Chloro-3-methylphenol
	Bis(2-chloroisopropyl) Ether
	2-Chloronaphthalene
	2-Chlorophenol
	4-Chlorophenyl Phenyl Ether
	Dibenz(a,h)anthracene
	Dibenzofuran
	2,4-Dichlorophenol
	Dimethyl Phthalate
	2,6-Dinitrotoluene

Sample Locations	Compound
	Di-n-octyl Phthalate
	Bis(2-ethylhexyl) Phthalate
	Fluorene
	Hexachlorobenzene
	Hexachlorobutadiene
	Indeno(1,2,3-cd)pyrene
	2-Methylnaphthalene
	2-Methylphenol
	4-Methylphenol
	Naphthalene
	2-Nitrophenol
	N-Nitroso-diphenylamine
	Phenanthrene
	2,4,5-Trichlorophenol

The criteria used to evaluate the RPD between the MS/MSD recoveries are presented in the following table. In the case of an RPD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	UJ
	Detect	J

8. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

Sample locations associated with LCS analysis exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Compound	LCS Recovery
TMW-02A Filtered TMW-02A TMW-05 Filtered TMW-05A Filtered TMW-05 TMW-08 TMW-08 Filtered TMW-08A TMW-08A Filtered TMW-11 Filtered TMW-11A Filtered TMW-11 TMW-11A	Benzoic Acid	<10%

Sample Locations	Compound	LCS Recovery
TMW-12A Filtered TMW-12A TMW-19C Filtered TMW-19C TMW-23 TMW-23 Filtered MW-800 MW-801		

The criteria used to evaluate the LCS recoveries are presented in the following table. In the case of an LCS deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J

9. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
TMW-08/ MW-801	Benzyl Alcohol	0.31 J	0.64 U	AC
	Phenanthrene	0.078 J	0.064 J	AC
TMW-08 Filtered/ MW-800	All analytes	U	U	AC

AC Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

10. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra. All identified compounds met the specified criteria.

Sample results associated with compounds that exhibited a concentration greater than the linear range of the instrument calibration are summarized in the following table.

Sample ID	Compound	Original Analysis	Diluted Analysis	Reported Analysis
TMW-02A	Naphthalene	--	5,000 D	5,000 D
TMW-11A	bis(2-Ethylhexyl)phthalate	--	220 D	220 D
TMW-12A	Acenaphthene	--	18,000 D	18,000 D
	Dibenzofuran	--	12,000 D	12,000 D
	Fluoranthene	--	22,000 D	22,000 D
	Fluorene	--	15,000 D	15,000 D
	2-Methylnaphthalene	--	18,000 D	18,000 D
	1-Methylnaphthalene	--	8,600 D	8,600 D
	Naphthalene	--	78,000 D	78,000 D
	Phenanthrene	--	41,000 D	41,000 D
	Pyrene	--	16,000 D	16,000 D

Note: In the instance where both the original analysis and the diluted analysis sample results exhibited a concentration greater than the calibration linear range of the instrument; the sample result exhibiting the greatest concentration will be reported as the final result.

The final reported sample results are qualified as documented in the table below.

Reported Sample Results	Qualification
Diluted sample result within calibration range	D
Diluted sample result less than the calibration range	DJ
Diluted sample result greater than the calibration range	EDJ
Original sample result greater than the calibration range	EJ

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

Note: The reporting limits associated with sample TMW-02A Filtered, TMW-05 Filtered, TMW-05A Filtered, TMW-05, TMW-08, TMW-08A, TMW-08A Filtered, TMW-11 Filtered, TMW-11, TMW-11A (original and re-extraction), TMW-12A (original and re-extraction), TMW-19C Filtered, TMW-19C, TMW-23, TMW-23 Filtered (re-extraction), MW-800 (original and re-extraction), and MW-801 were elevated due to insufficient sample volume received.

DATA VALIDATION CHECKLIST FOR SVOCs

SVOCs: SW-846 8270	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X	X		
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X	X		
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X	X		
Laboratory Control Sample Duplicate(LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X	X		
Matrix Spike Duplicate(MSD) %R		X	X		
MS/MSD Precision (RPD)		X	X		
Field Duplicate (RPD)		X		X	
Surrogate Spike Recoveries		X	X		
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X	X		
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculations acceptable		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

VALIDATION PERFORMED BY: Jennifer Singer

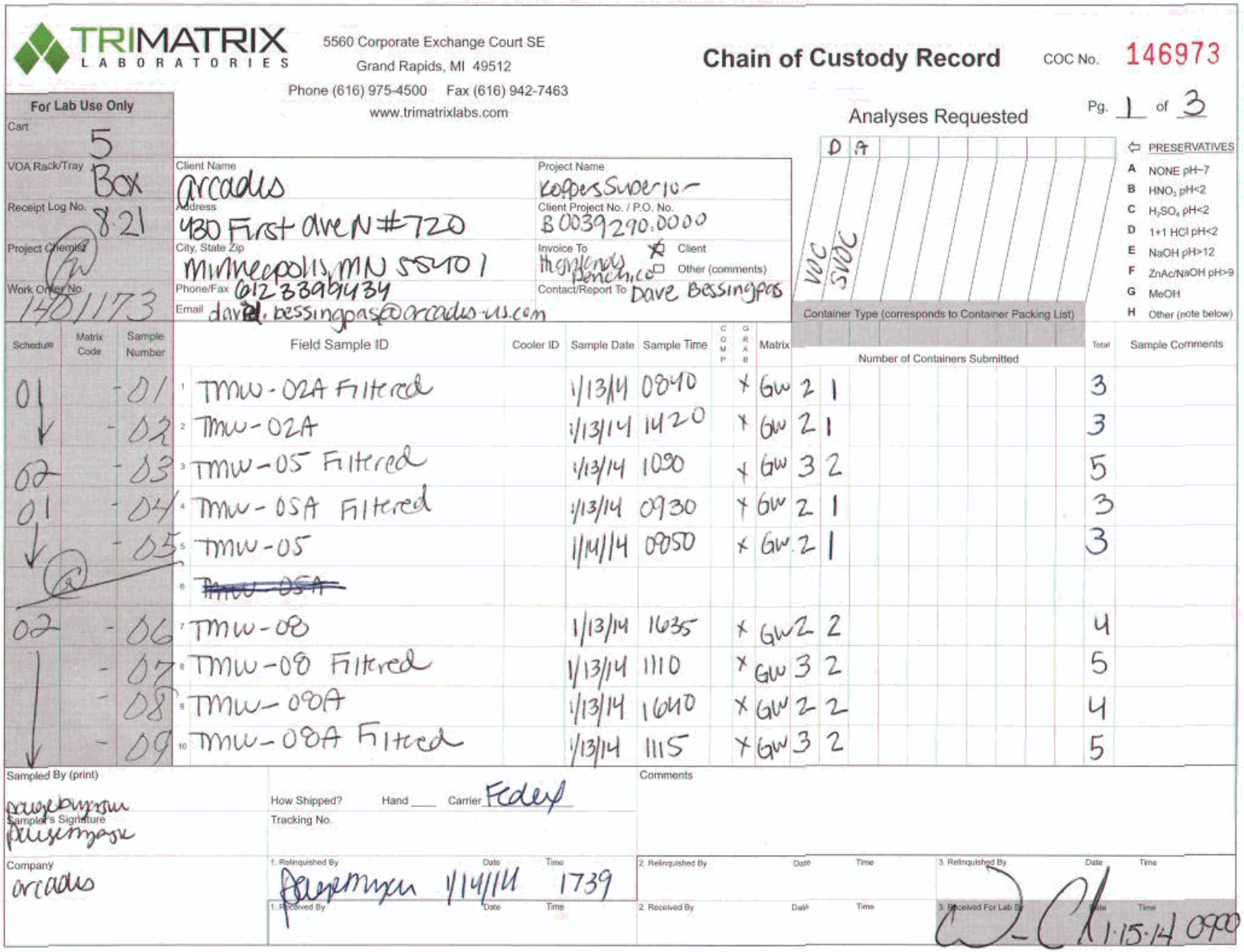
SIGNATURE: 

DATE: February 14, 2014

PEER REVIEW: Todd Church

DATE: February 18, 2014

CHAIN OF CUSTODY/
CORRECTED SAMPLE ANALYSIS DATA SHEETS



TRIMATRIX LABORATORIES

5560 Corporate Exchange Court SE
Grand Rapids, MI 49512
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Chain of Custody Record

COC No. 146973

Pg. 1 of 3

For Lab Use Only
Cart: 5
VOA Rack/Tray: Box
Receipt Log No.: 821
Project Chemist:
Work Order No.: 1401173

Client Name: Arcadis
Address: 430 First Ave N #720
City, State Zip: Minneapolis, MN 55401
Phone/Fax: 6123396434
Email: david.bessingpas@arcadis-us.com

Project Name: Koppers Superior
Client Project No. / P.O. No.: B0039290.0000
Invoice To: ☒ Client ☐ Other (comments) Highlands Ranch, CO
Contact/Report To: Dave Bessingpas

Analyses Requested

D A

VOC
SVOC

Container Type (corresponds to Container Packing List)

Number of Containers Submitted

PRESERVATIVES
A NONE pH~7
B HNO_3 pH<2
C H_2SO_4 pH<2
D 1+1 HCl pH<2
E NaOH pH>12
F ZnAc/NaOH pH>9
G MeOH
H Other (note below)

	Schedule	Matrix Code	Sample Number	Field Sample ID	Cooler ID	Sample Date	Sample Time	COMP	GRAB	Matrix			Total	Sample Comments
1	01		-01	TMW-02A Filtered		1/13/14	0840		X	GW	2	1	3	
2	↓		-02	TMW-02A		1/13/14	1420		X	GW	2	1	3	
3	02		-03	TMW-05 Filtered		1/13/14	1090		X	GW	3	2	5	
4	01		-04	TMW-05A Filtered		1/13/14	0930		X	GW	2	1	3	
5	↓		-05	TMW-05		1/14/14	0850		X	GW	2	1	3	
6				~~TMW-05A~~										
7	02		-06	TMW-08		1/13/14	1635		X	GW	2	2	4	
8	↓		-07	TMW-08 Filtered		1/13/14	1110		X	GW	3	2	5	
9			-08	TMW-08A		1/13/14	1640		X	GW	2	2	4	
10			-09	TMW-08A Filtered		1/13/14	1115		X	GW	3	2	5	

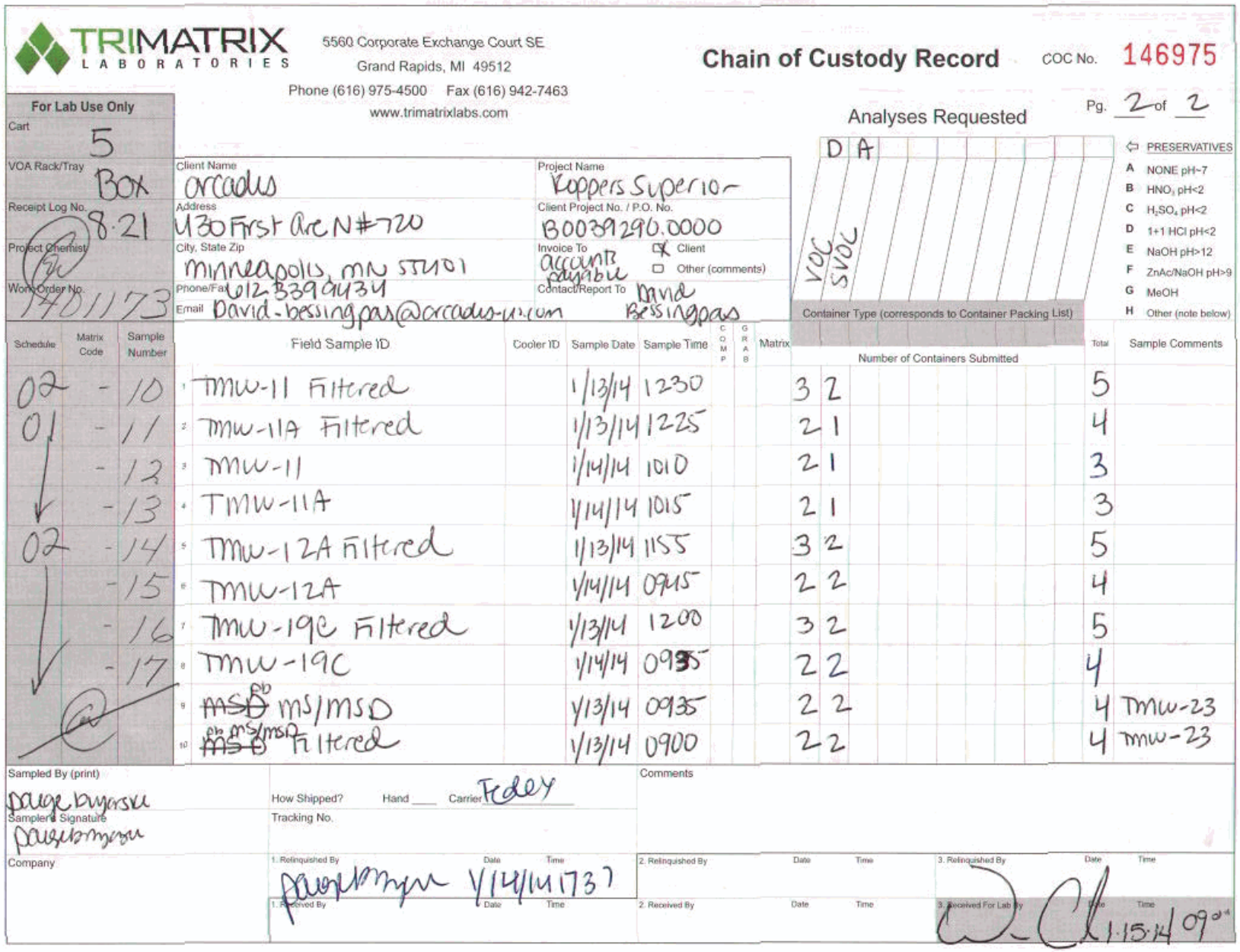
Sampled By (print): Paige Bryson
Sampler's Signature: Paige Bryson
Company: Arcadis

How Shipped? Hand ___ Carrier Fedex
Tracking No.

Comments

1. Relinquished By	Date	Time	2. Relinquished By	Date	Time	3. Relinquished By	Date	Time
Paige Bryson	1/14/14	1739						
1. Received By	Date	Time	2. Received By	Date	Time	3. Received For Lab By	Date	Time
							1.15.14	0900

WHITE COPY - REPORT YELLOW COPY - LABORATORY PINK COPY - FIELD



TRIMATRIX LABORATORIES

5560 Corporate Exchange Court SE
Grand Rapids, MI 49512
Phone (616) 975-4500 Fax (616) 942-7463
www.trimatrixlabs.com

Chain of Custody Record

COC No. 146975

Pg. 2 of 2

For Lab Use Only

Cart: 5
VOA Rack/Tray: Box
Receipt Log No.: 8.21
Project Chemist:
Work Order No.: 140173

Client Name: Arcadis
Address: 430 First Ave N #720
City, State Zip: Minneapolis, MN 55401
Phone/Fax: 612 339 4434
Email: David-bessingpas@arcadis-us.com

Project Name: Koppers Superior
Client Project No. / P.O. No.: B0039290.0000
Invoice To: Account payable ☒ Client ☐ Other (comments)
Contact/Report To: David Bessingpas

Analyses Requested

Container Type (corresponds to Container Packing List)

Number of Containers Submitted

PRESERVATIVES
A NONE pH~7
B HNO_3 pH<2
C H_2SO_4 pH<2
D 1+1 HCl pH<2
E NaOH pH>12
F ZnAc/NaOH pH>9
G MeOH
H Other (note below)

Schedule	Matrix Code	Sample Number	Field Sample ID	Cooler ID	Sample Date	Sample Time	COMP	GRAB	Matrix	D	A	Total	Sample Comments
02	-	10	1 TMW-11 Filtered		1/13/14	1230				3	2	5	
01	-	11	2 TMW-11A Filtered		1/13/14	1225				2	1	4	
	-	12	3 TMW-11		1/14/14	1010				2	1	3	
	-	13	4 TMW-11A		1/14/14	1015				2	1	3	
02	-	14	5 TMW-12A Filtered		1/13/14	1155				3	2	5	
	-	15	6 TMW-12A		1/14/14	0915				2	2	4	
	-	16	7 TMW-19C Filtered		1/13/14	1200				3	2	5	
	-	17	8 TMW-19C		1/14/14	0935				2	2	4	
			9 ~~MSD~~ DUP MS/MSD		1/13/14	0935				2	2	4	TMW-23
			10 ~~MS/MSD~~ DUP MS/MSD Filtered		1/13/14	0900				2	2	4	TMW-23

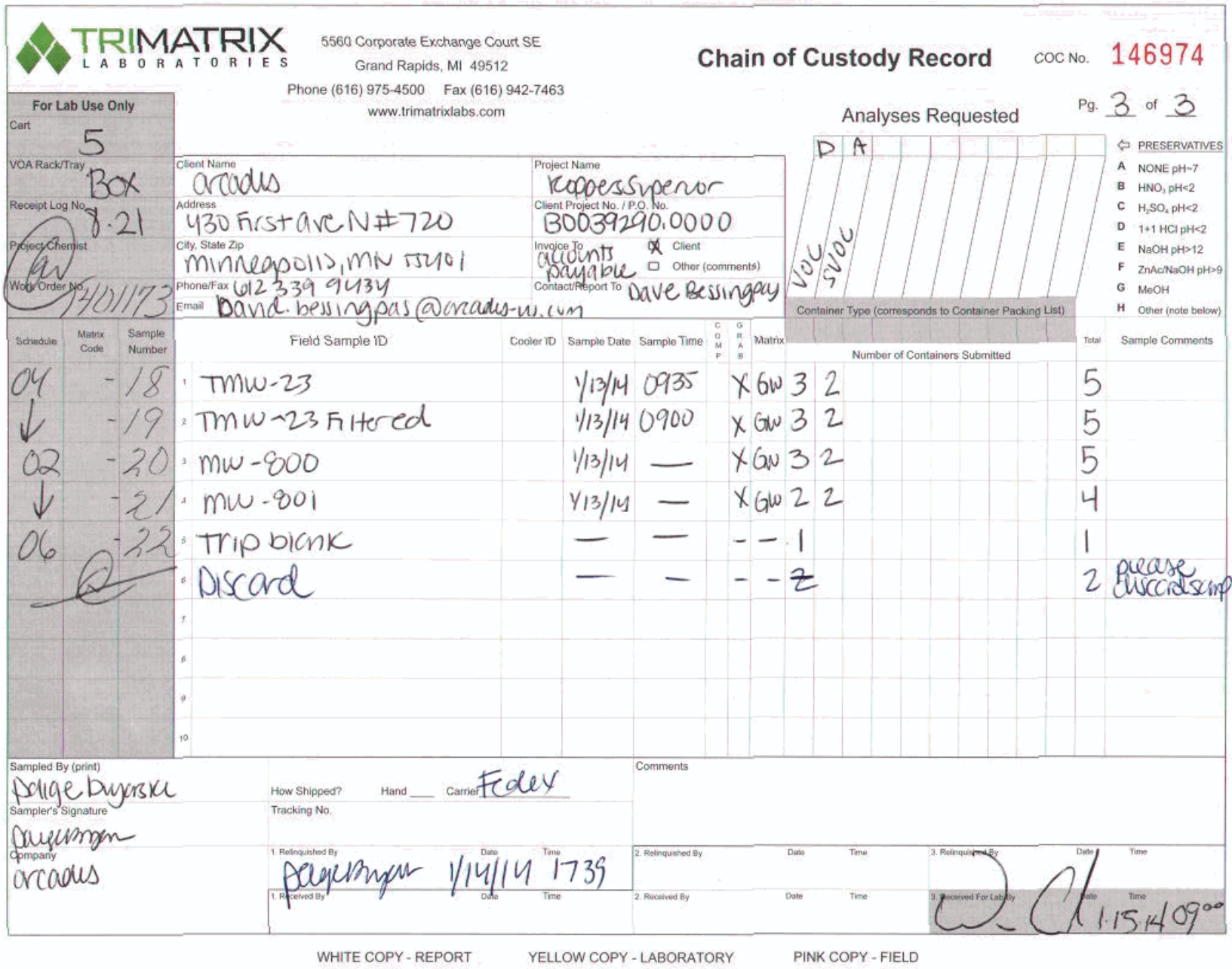
Sampled By (print): Paige Dyarsh
Sampler's Signature: Paige Dyarsh
Company:

How Shipped? Hand ___ Carrier Fedex
Tracking No.

Comments

1. Relinquished By	Date	Time	2. Relinquished By	Date	Time	3. Relinquished By	Date	Time
Paige Dyarsh	1/14/14	1737						
1. Received By	Date	Time	2. Received By	Date	Time	3. Received For Lab By	Date	Time
							1.15.14	0900

WHITE COPY - REPORT YELLOW COPY - LABORATORY PINK COPY - FIELD



TRIMATRIX LABORATORIES

5560 Corporate Exchange Court SE
Grand Rapids, MI 49512
Phone (616) 975-4500 Fax (616) 942-7463
www.trimatrixlabs.com

Chain of Custody Record

COC No. 146974

Pg. 3 of 3

For Lab Use Only
Cart: 5
VOA Rack/Tray: Box
Receipt Log No.: 8.21
Project Chemist:
Work Order No.: 1401173

Client Name: Arcadis
Address: 430 First Ave N #720
City, State Zip: Minneapolis, MN 55401
Phone/Fax: 612 339 9434
Email: David.bessingpas@arcadis-us.com

Project Name: Koppers Superior
Client Project No. / P.O. No.: B0039290.0000
Invoice To: Accounts payable ☒ Client ☐ Other (comments)
Contact/Report To: Dave Bessingpas

Analyses Requested

Schedule	Matrix Code	Sample Number	Field Sample ID	Cooler ID	Sample Date	Sample Time	COMP	GRAB	Matrix	Number of Containers Submitted						Total	Sample Comments
										D	A	VOC	SVOC				
04	-	18	1 TMW-23		1/13/14	0935		X	GW	3	2					5	
↓	-	19	2 TMW-23 Filtered		1/13/14	0900		X	GW	3	2					5	
02	-	20	3 MW-800		1/13/14	—		X	GW	3	2					5	
↓	-	21	4 MW-801		1/13/14	—		X	GW	2	2					4	
06	-	22	5 Trip blank		—	—		-	-	1						1	
			6 Discard		—	—		-	-	2						2	please discard samples
			7														
			8														
			9														
			10														

PRESERVATIVES
A NONE pH~7
B HNO_3 pH<2
C H_2SO_4 pH<2
D 1+1 HCl pH<2
E NaOH pH>12
F ZnAc/NaOH pH>9
G MeOH
H Other (note below)

Container Type (corresponds to Container Packing List)

Sampled By (print): Paige Bujarski
Sampler's Signature:
Company: Arcadis

How Shipped? Hand ___ Carrier Fedex
Tracking No.

Comments

1. Relinquished By	Date	Time	2. Relinquished By	Date	Time	3. Relinquished By	Date	Time
	1/14/14	1739						
1. Received By	Date	Time	2. Received By	Date	Time	3. Received For Lab By	Date	Time
							1.15.14	0900

WHITE COPY - REPORT YELLOW COPY - LABORATORY PINK COPY - FIELD

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

TMW-02A Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-01 File ID: 1401173-01A.D

Sampled: 01/13/14 08:40 Prepared: 01/27/14 09:00 Analyzed: 01/27/14 13:03

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1400738 Sequence: 4A31015 Calibration: 4A31006 Instrument: 350

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
71-43-2	Benzene	20	20	6.4	20	U
104-51-8	n-Butylbenzene	20	20	4.1	20	U
108-90-7	Chlorobenzene	20	20	4.3	20	U
100-41-4	Ethylbenzene	20	16	5.5	20	J
1634-04-4	Methyl tert-Butyl Ether	20	100	2.1	100	U
91-20-3	Naphthalene	20	2800	11	20	
103-65-1	n-Propylbenzene	20	20	2.9	20	U
100-42-5	Styrene	20	20	2.5	20	U
108-88-3	Toluene	20	16	5.7	20	J
71-55-6	1,1,1-Trichloroethane	20	20	5.9	20	U
95-63-6	1,2,4-Trimethylbenzene	20	10	3.8	20	J
108-67-8	1,3,5-Trimethylbenzene	20	5.0	4.0	20	J
179601-23-1	Xylene, Meta + Para	20	28	4.3	40	J
95-47-6	Xylene, Ortho	20	15	4.6	20	J

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
Dibromofluoromethane	40.0	39.9	100	85 - 118	
1,2-Dichloroethane-d4	40.0	37.4	94	87 - 122	
Toluene-d8	40.0	38.5	96	85 - 113	
4-Bromofluorobenzene	40.0	38.8	97	82 - 110	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
Fluorobenzene	669001	6.266	89	6.266	
Chlorobenzene-d5	494980	10.56	89	10.56	
1,4-Dichlorobenzene-d4	243046	13.524	86	13.525	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

TMW-02A

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-02 File ID: 1401173-02A.D

Sampled: 01/13/14 14:20 Prepared: 01/27/14 09:00 Analyzed: 01/27/14 13:31

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1400738 Sequence: 4A31015 Calibration: 4A31006 Instrument: 350

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
71-43-2	Benzene	50	50	16	50	U
104-51-8	n-Butylbenzene	50	50	10	50	U
108-90-7	Chlorobenzene	50	50	11	50	U
100-41-4	Ethylbenzene	50	30	14	50	J
1634-04-4	Methyl tert-Butyl Ether	50	250	5.2	250	U
91-20-3	Naphthalene	50	7900	28	50	
103-65-1	n-Propylbenzene	50	50	7.2	50	U
100-42-5	Styrene	50	50	6.2	50	U
108-88-3	Toluene	50	26	14	50	J
71-55-6	1,1,1-Trichloroethane	50	50	15	50	U
95-63-6	1,2,4-Trimethylbenzene	50	24	9.4	50	J
108-67-8	1,3,5-Trimethylbenzene	50	11	10	50	J
179601-23-1	Xylene, Meta + Para	50	50	11	100	J
95-47-6	Xylene, Ortho	50	26	11	50	J

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
Dibromofluoromethane	40.0	38.8	97	85 - 118	
1,2-Dichloroethane-d4	40.0	37.8	95	87 - 122	
Toluene-d8	40.0	38.9	97	85 - 113	
4-Bromofluorobenzene	40.0	39.8	100	82 - 110	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
Fluorobenzene	673235	6.266	90	6.266	
Chlorobenzene-d5	489830	10.56	88	10.56	
1,4-Dichlorobenzene-d4	248427	13.524	88	13.525	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

TMW-05 Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-03 File ID: 1401173-03.D

Sampled: 01/13/14 10:30 Prepared: 01/23/14 07:00 Analyzed: 01/23/14 14:13

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1400575 Sequence: 4A24008 Calibration: 4A31006 Instrument: 350

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
71-43-2	Benzene	1	1.0	0.32	1.0	U
104-51-8	n-Butylbenzene	1	1.0	0.20	1.0	U
108-90-7	Chlorobenzene	1	1.0	0.21	1.0	U
100-41-4	Ethylbenzene	1	1.0	0.27	1.0	U
1634-04-4	Methyl tert-Butyl Ether	1	5.0	0.10	5.0	U
91-20-3	Naphthalene	1	1.0	0.56	1.0	U
103-65-1	n-Propylbenzene	1	1.0	0.14	1.0	U
100-42-5	Styrene	1	1.0	0.12	1.0	U
108-88-3	Toluene	1	2.3	0.28	1.0	
71-55-6	1,1,1-Trichloroethane	1	1.0	0.30	1.0	U
95-63-6	1,2,4-Trimethylbenzene	1	1.0	0.19	1.0	U
108-67-8	1,3,5-Trimethylbenzene	1	1.0	0.20	1.0	U
179601-23-1	Xylene, Meta + Para	1	0.38	0.21	2.0	J
95-47-6	Xylene, Ortho	1	0.24	0.23	1.0	J

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
Dibromofluoromethane	40.0	39.4	99	85 - 118	
1,2-Dichloroethane-d4	40.0	40.5	101	87 - 122	
Toluene-d8	40.0	38.4	96	85 - 113	
4-Bromofluorobenzene	40.0	38.7	97	82 - 110	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
Fluorobenzene	581330	6.266	95	6.266	
Chlorobenzene-d5	420763	10.56	96	10.56	
1,4-Dichlorobenzene-d4	202474	13.524	96	13.525	

* Values outside of QC limits

00103

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

TMW-05A Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-04 File ID: 1401173-04.D

Sampled: 01/13/14 09:30 Prepared: 01/23/14 07:00 Analyzed: 01/23/14 14:41

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1400575 Sequence: 4A24008 Calibration: 4A31006 Instrument: 350

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
71-43-2	Benzene	1	1.0	0.32	1.0	U
104-51-8	n-Butylbenzene	1	1.0	0.20	1.0	U
108-90-7	Chlorobenzene	1	1.0	0.21	1.0	U
100-41-4	Ethylbenzene	1	1.0	0.27	1.0	U
1634-04-4	Methyl tert-Butyl Ether	1	5.0	0.10	5.0	U
91-20-3	Naphthalene	1	1.0	0.56	1.0	U
103-65-1	n-Propylbenzene	1	1.0	0.14	1.0	U
100-42-5	Styrene	1	1.0	0.12	1.0	U
108-88-3	Toluene	1	0.35	0.28	1.0	J
71-55-6	1,1,1-Trichloroethane	1	1.0	0.30	1.0	U
95-63-6	1,2,4-Trimethylbenzene	1	1.0	0.19	1.0	U
108-67-8	1,3,5-Trimethylbenzene	1	1.0	0.20	1.0	U
179601-23-1	Xylene, Meta + Para	1	2.0	0.21	2.0	U
95-47-6	Xylene, Ortho	1	1.0	0.23	1.0	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
Dibromofluoromethane	40.0	39.3	98	85 - 118	
1,2-Dichloroethane-d4	40.0	40.8	102	87 - 122	
Toluene-d8	40.0	38.5	96	85 - 113	
4-Bromofluorobenzene	40.0	37.8	95	82 - 110	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
Fluorobenzene	581343	6.266	95	6.266	
Chlorobenzene-d5	421895	10.56	97	10.56	
1,4-Dichlorobenzene-d4	196424	13.524	94	13.525	

* Values outside of QC limits

00110

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

TMW-05

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-05 File ID: 1401173-05.D

Sampled: 01/14/14 08:50 Prepared: 01/23/14 07:00 Analyzed: 01/23/14 15:08

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1400575 Sequence: 4A24008 Calibration: 4A31006 Instrument: 350

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
71-43-2	Benzene	1	1.0	0.32	1.0	U
104-51-8	n-Butylbenzene	1	1.0	0.20	1.0	U
108-90-7	Chlorobenzene	1	1.0	0.21	1.0	U
100-41-4	Ethylbenzene	1	1.0	0.27	1.0	U
1634-04-4	Methyl tert-Butyl Ether	1	5.0	0.10	5.0	U
91-20-3	Naphthalene	1	1.0	0.56	1.0	U
103-65-1	n-Propylbenzene	1	1.0	0.14	1.0	U
100-42-5	Styrene	1	1.0	0.12	1.0	U
108-88-3	Toluene	1	1.0	0.28	1.0	U
71-55-6	1,1,1-Trichloroethane	1	1.0	0.30	1.0	U
95-63-6	1,2,4-Trimethylbenzene	1	1.0	0.19	1.0	U
108-67-8	1,3,5-Trimethylbenzene	1	1.0	0.20	1.0	U
179601-23-1	Xylene, Meta + Para	1	2.0	0.21	2.0	U
95-47-6	Xylene, Ortho	1	1.0	0.23	1.0	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
Dibromofluoromethane	40.0	39.8	99	85 - 118	
1,2-Dichloroethane-d4	40.0	41.0	103	87 - 122	
Toluene-d8	40.0	38.9	97	85 - 113	
4-Bromofluorobenzene	40.0	38.9	97	82 - 110	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
Fluorobenzene	571471	6.266	94	6.266	
Chlorobenzene-d5	414491	10.56	95	10.56	
1,4-Dichlorobenzene-d4	195416	13.524	93	13.525	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

TMW-08

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-06 File ID: 1401173-06.D

Sampled: 01/13/14 16:35 Prepared: 01/23/14 07:00 Analyzed: 01/23/14 15:35

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1400575 Sequence: 4A24008 Calibration: 4A31006 Instrument: 350

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
71-43-2	Benzene	1	1.0	0.32	1.0	U
104-51-8	n-Butylbenzene	1	1.0	0.20	1.0	U
108-90-7	Chlorobenzene	1	1.0	0.21	1.0	U
100-41-4	Ethylbenzene	1	1.0	0.27	1.0	U
1634-04-4	Methyl tert-Butyl Ether	1	5.0	0.10	5.0	U
91-20-3	Naphthalene	1	1.0	0.56	1.0	U
103-65-1	n-Propylbenzene	1	1.0	0.14	1.0	U
100-42-5	Styrene	1	1.0	0.12	1.0	U
108-88-3	Toluene	1	1.0	0.28	1.0	U
71-55-6	1,1,1-Trichloroethane	1	1.0	0.30	1.0	U
95-63-6	1,2,4-Trimethylbenzene	1	1.0	0.19	1.0	U
108-67-8	1,3,5-Trimethylbenzene	1	1.0	0.20	1.0	U
179601-23-1	Xylene, Meta + Para	1	2.0	0.21	2.0	U
95-47-6	Xylene, Ortho	1	1.0	0.23	1.0	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
Dibromofluoromethane	40.0	40.0	100	85 - 118	
1,2-Dichloroethane-d4	40.0	41.6	104	87 - 122	
Toluene-d8	40.0	38.5	96	85 - 113	
4-Bromofluorobenzene	40.0	39.4	99	82 - 110	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
Fluorobenzene	567231	6.266	93	6.266	
Chlorobenzene-d5	403724	10.56	92	10.56	
1,4-Dichlorobenzene-d4	190679	13.524	91	13.525	

* Values outside of QC limits

00119

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

TMW-08 Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-07 File ID: 1401173-07.D

Sampled: 01/13/14 11:10 Prepared: 01/23/14 07:00 Analyzed: 01/23/14 16:03

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1400575 Sequence: 4A24008 Calibration: 4A31006 Instrument: 350

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
71-43-2	Benzene	1	1.0	0.32	1.0	U
104-51-8	n-Butylbenzene	1	1.0	0.20	1.0	U
108-90-7	Chlorobenzene	1	1.0	0.21	1.0	U
100-41-4	Ethylbenzene	1	1.0	0.27	1.0	U
1634-04-4	Methyl tert-Butyl Ether	1	5.0	0.10	5.0	U
91-20-3	Naphthalene	1	1.0	0.56	1.0	U
103-65-1	n-Propylbenzene	1	1.0	0.14	1.0	U
100-42-5	Styrene	1	1.0	0.12	1.0	U
108-88-3	Toluene	1	1.0	0.28	1.0	U
71-55-6	1,1,1-Trichloroethane	1	1.0	0.30	1.0	U
95-63-6	1,2,4-Trimethylbenzene	1	1.0	0.19	1.0	U
108-67-8	1,3,5-Trimethylbenzene	1	1.0	0.20	1.0	U
179601-23-1	Xylene, Meta + Para	1	2.0	0.21	2.0	U
95-47-6	Xylene, Ortho	1	1.0	0.23	1.0	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
Dibromofluoromethane	40.0	40.1	100	85 - 118	
1,2-Dichloroethane-d4	40.0	40.8	102	87 - 122	
Toluene-d8	40.0	38.6	97	85 - 113	
4-Bromofluorobenzene	40.0	38.0	95	82 - 110	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
Fluorobenzene	578584	6.266	95	6.266	
Chlorobenzene-d5	411557	10.56	94	10.56	
1,4-Dichlorobenzene-d4	197584	13.525	94	13.525	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

TMW-08A

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-08 File ID: 1401173-08.D

Sampled: 01/13/14 16:40 Prepared: 01/23/14 07:00 Analyzed: 01/23/14 16:30

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1400575 Sequence: 4A24008 Calibration: 4A31006 Instrument: 350

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
71-43-2	Benzene	1	1.0	0.32	1.0	U
104-51-8	n-Butylbenzene	1	1.0	0.20	1.0	U
108-90-7	Chlorobenzene	1	1.0	0.21	1.0	U
100-41-4	Ethylbenzene	1	1.0	0.27	1.0	U
1634-04-4	Methyl tert-Butyl Ether	1	5.0	0.10	5.0	U
91-20-3	Naphthalene	1	1.0	0.56	1.0	U
103-65-1	n-Propylbenzene	1	1.0	0.14	1.0	U
100-42-5	Styrene	1	1.0	0.12	1.0	U
108-88-3	Toluene	1	1.0	0.28	1.0	U
71-55-6	1,1,1-Trichloroethane	1	1.0	0.30	1.0	U
95-63-6	1,2,4-Trimethylbenzene	1	1.0	0.19	1.0	U
108-67-8	1,3,5-Trimethylbenzene	1	1.0	0.20	1.0	U
179601-23-1	Xylene, Meta + Para	1	2.0	0.21	2.0	U
95-47-6	Xylene, Ortho	1	1.0	0.23	1.0	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
Dibromofluoromethane	40.0	40.1	100	85 - 118	
1,2-Dichloroethane-d4	40.0	40.9	102	87 - 122	
Toluene-d8	40.0	39.3	98	85 - 113	
4-Bromofluorobenzene	40.0	39.0	98	82 - 110	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
Fluorobenzene	583624	6.266	96	6.266	
Chlorobenzene-d5	425334	10.56	97	10.56	
1,4-Dichlorobenzene-d4	204631	13.524	98	13.525	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

TMW-08A Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-09 File ID: 1401173-09.D

Sampled: 01/13/14 11:15 Prepared: 01/23/14 07:00 Analyzed: 01/23/14 16:58

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1400575 Sequence: 4A24008 Calibration: 4A31006 Instrument: 350

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
71-43-2	Benzene	1	1.0	0.32	1.0	U
104-51-8	n-Butylbenzene	1	1.0	0.20	1.0	U
108-90-7	Chlorobenzene	1	1.0	0.21	1.0	U
100-41-4	Ethylbenzene	1	1.0	0.27	1.0	U
1634-04-4	Methyl tert-Butyl Ether	1	5.0	0.10	5.0	U
91-20-3	Naphthalene	1	1.0	0.56	1.0	U
103-65-1	n-Propylbenzene	1	1.0	0.14	1.0	U
100-42-5	Styrene	1	1.0	0.12	1.0	U
108-88-3	Toluene	1	1.0	0.28	1.0	U
71-55-6	1,1,1-Trichloroethane	1	1.0	0.30	1.0	U
95-63-6	1,2,4-Trimethylbenzene	1	1.0	0.19	1.0	U
108-67-8	1,3,5-Trimethylbenzene	1	1.0	0.20	1.0	U
179601-23-1	Xylene, Meta + Para	1	2.0	0.21	2.0	U
95-47-6	Xylene, Ortho	1	1.0	0.23	1.0	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
Dibromofluoromethane	40.0	40.0	100	85 - 118	
1,2-Dichloroethane-d4	40.0	42.1	105	87 - 122	
Toluene-d8	40.0	39.0	97	85 - 113	
4-Bromofluorobenzene	40.0	37.6	94	82 - 110	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
Fluorobenzene	571719	6.266	94	6.266	
Chlorobenzene-d5	419316	10.56	96	10.56	
1,4-Dichlorobenzene-d4	197887	13.524	94	13.525	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

TMW-11 Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-10 File ID: 1401173-10.D

Sampled: 01/13/14 12:30 Prepared: 01/23/14 07:00 Analyzed: 01/23/14 17:25

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1400575 Sequence: 4A24008 Calibration: 4A31006 Instrument: 350

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
71-43-2	Benzene	1	1.0	0.32	1.0	U
104-51-8	n-Butylbenzene	1	1.0	0.20	1.0	U
108-90-7	Chlorobenzene	1	1.0	0.21	1.0	U
100-41-4	Ethylbenzene	1	1.0	0.27	1.0	U
1634-04-4	Methyl tert-Butyl Ether	1	5.0	0.10	5.0	U
91-20-3	Naphthalene	1	0.56	0.56	1.0	J
103-65-1	n-Propylbenzene	1	1.0	0.14	1.0	U
100-42-5	Styrene	1	1.0	0.12	1.0	U
108-88-3	Toluene	1	1.0	0.28	1.0	U
71-55-6	1,1,1-Trichloroethane	1	1.0	0.30	1.0	U
95-63-6	1,2,4-Trimethylbenzene	1	1.0	0.19	1.0	U
108-67-8	1,3,5-Trimethylbenzene	1	1.0	0.20	1.0	U
179601-23-1	Xylene, Meta + Para	1	2.0	0.21	2.0	U
95-47-6	Xylene, Ortho	1	1.0	0.23	1.0	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
Dibromofluoromethane	40.0	39.6	99	85 - 118	
1,2-Dichloroethane-d4	40.0	39.8	100	87 - 122	
Toluene-d8	40.0	37.5	94	85 - 113	
4-Bromofluorobenzene	40.0	38.8	97	82 - 110	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
Fluorobenzene	570498	6.266	94	6.266	
Chlorobenzene-d5	396134	10.56	91	10.56	
1,4-Dichlorobenzene-d4	195063	13.524	93	13.525	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

TMW-11A Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-11 File ID: 1401173-11.D

Sampled: 01/13/14 12:25 Prepared: 01/23/14 07:00 Analyzed: 01/23/14 17:52

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1400575 Sequence: 4A24008 Calibration: 4A31006 Instrument: 350

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
71-43-2	Benzene	1	1.0	0.32	1.0	U
104-51-8	n-Butylbenzene	1	1.0	0.20	1.0	U
108-90-7	Chlorobenzene	1	1.0	0.21	1.0	U
100-41-4	Ethylbenzene	1	1.0	0.27	1.0	U
1634-04-4	Methyl tert-Butyl Ether	1	5.0	0.10	5.0	U
91-20-3	Naphthalene	1	1.0	0.56	1.0	U
103-65-1	n-Propylbenzene	1	1.0	0.14	1.0	U
100-42-5	Styrene	1	1.0	0.12	1.0	U
108-88-3	Toluene	1	1.0	0.28	1.0	U
71-55-6	1,1,1-Trichloroethane	1	1.0	0.30	1.0	U
95-63-6	1,2,4-Trimethylbenzene	1	1.0	0.19	1.0	U
108-67-8	1,3,5-Trimethylbenzene	1	1.0	0.20	1.0	U
179601-23-1	Xylene, Meta + Para	1	2.0	0.21	2.0	U
95-47-6	Xylene, Ortho	1	1.0	0.23	1.0	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
Dibromofluoromethane	40.0	39.7	99	85 - 118	
1,2-Dichloroethane-d4	40.0	40.0	100	87 - 122	
Toluene-d8	40.0	38.7	97	85 - 113	
4-Bromofluorobenzene	40.0	39.1	98	82 - 110	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
Fluorobenzene	563327	6.266	92	6.266	
Chlorobenzene-d5	395856	10.56	91	10.56	
1,4-Dichlorobenzene-d4	189910	13.524	90	13.525	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

TMW-11

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-12 File ID: 1401173-12.D

Sampled: 01/14/14 10:10 Prepared: 01/23/14 07:00 Analyzed: 01/23/14 18:20

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1400575 Sequence: 4A24008 Calibration: 4A31006 Instrument: 350

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
71-43-2	Benzene	1	1.0	0.32	1.0	U
104-51-8	n-Butylbenzene	1	1.0	0.20	1.0	U
108-90-7	Chlorobenzene	1	1.0	0.21	1.0	U
100-41-4	Ethylbenzene	1	1.0	0.27	1.0	U
1634-04-4	Methyl tert-Butyl Ether	1	5.0	0.10	5.0	U
91-20-3	Naphthalene	1	1.0	0.56	1.0	U
103-65-1	n-Propylbenzene	1	1.0	0.14	1.0	U
100-42-5	Styrene	1	1.0	0.12	1.0	U
108-88-3	Toluene	1	1.0	0.28	1.0	U
71-55-6	1,1,1-Trichloroethane	1	1.0	0.30	1.0	U
95-63-6	1,2,4-Trimethylbenzene	1	1.0	0.19	1.0	U
108-67-8	1,3,5-Trimethylbenzene	1	1.0	0.20	1.0	U
179601-23-1	Xylene, Meta + Para	1	2.0	0.21	2.0	U
95-47-6	Xylene, Ortho	1	1.0	0.23	1.0	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
Dibromofluoromethane	40.0	40.8	102	85 - 118	
1,2-Dichloroethane-d4	40.0	41.7	104	87 - 122	
Toluene-d8	40.0	38.8	97	85 - 113	
4-Bromofluorobenzene	40.0	39.1	98	82 - 110	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
Fluorobenzene	554187	6.266	91	6.266	
Chlorobenzene-d5	397636	10.56	91	10.56	
1,4-Dichlorobenzene-d4	192491	13.524	92	13.525	

* Values outside of QC limits

00144

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

TMW-11A

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-13 File ID: 1401173-13.D

Sampled: 01/14/14 10:15 Prepared: 01/27/14 09:00 Analyzed: 01/27/14 16:40

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1400738 Sequence: 4A31015 Calibration: 4A31006 Instrument: 350

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
71-43-2	Benzene	1	1.0	0.32	1.0	U
104-51-8	n-Butylbenzene	1	1.0	0.20	1.0	U
108-90-7	Chlorobenzene	1	1.0	0.21	1.0	U
100-41-4	Ethylbenzene	1	1.0	0.27	1.0	U
1634-04-4	Methyl tert-Butyl Ether	1	5.0	0.10	5.0	U
91-20-3	Naphthalene	1	1.0	0.56	1.0	U
103-65-1	n-Propylbenzene	1	1.0	0.14	1.0	U
100-42-5	Styrene	1	1.0	0.12	1.0	U
108-88-3	Toluene	1	0.39	0.28	1.0	J
71-55-6	1,1,1-Trichloroethane	1	1.0	0.30	1.0	U
95-63-6	1,2,4-Trimethylbenzene	1	1.0	0.19	1.0	U
108-67-8	1,3,5-Trimethylbenzene	1	1.0	0.20	1.0	U
179601-23-1	Xylene, Meta + Para	1	0.36	0.21	2.0	J
95-47-6	Xylene, Ortho	1	1.0	0.23	1.0	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
Dibromofluoromethane	40.0	39.4	99	85 - 118	
1,2-Dichloroethane-d4	40.0	38.7	97	87 - 122	
Toluene-d8	40.0	38.5	96	85 - 113	
4-Bromofluorobenzene	40.0	38.7	97	82 - 110	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
Fluorobenzene	665428	6.266	89	6.266	
Chlorobenzene-d5	488270	10.56	88	10.56	
1,4-Dichlorobenzene-d4	240529	13.524	85	13.525	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

TMW-12A Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-14 File ID: 1401241-01A.D

Sampled: 01/13/14 11:55 Prepared: 01/27/14 09:00 Analyzed: 01/27/14 13:58

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1400738 Sequence: 4A31015 Calibration: 4A31006 Instrument: 350

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
71-43-2	Benzene	20	25	6.4	20	
104-51-8	n-Butylbenzene	20	20	4.1	20	U
108-90-7	Chlorobenzene	20	20	4.3	20	U
100-41-4	Ethylbenzene	20	14	5.5	20	J
1634-04-4	Methyl tert-Butyl Ether	20	100	2.1	100	U
91-20-3	Naphthalene	20	3800	11	20	
103-65-1	n-Propylbenzene	20	20	2.9	20	U
100-42-5	Styrene	20	20	2.5	20	U
108-88-3	Toluene	20	31	5.7	20	
71-55-6	1,1,1-Trichloroethane	20	20	5.9	20	U
95-63-6	1,2,4-Trimethylbenzene	20	12	3.8	20	J
108-67-8	1,3,5-Trimethylbenzene	20	5.6	4.0	20	J
179601-23-1	Xylene, Meta + Para	20	33	4.3	40	J
95-47-6	Xylene, Ortho	20	15	4.6	20	J

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
Dibromofluoromethane	40.0	40.0	100	85 - 118	
1,2-Dichloroethane-d4	40.0	39.1	98	87 - 122	
Toluene-d8	40.0	38.8	97	85 - 113	
4-Bromofluorobenzene	40.0	39.6	99	82 - 110	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
Fluorobenzene	661038	6.266	88	6.266	
Chlorobenzene-d5	490632	10.56	88	10.56	
1,4-Dichlorobenzene-d4	248743	13.525	88	13.525	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

TMW-12A

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-15 File ID: 1401173-15.D

Sampled: 01/14/14 09:45 Prepared: 01/24/14 07:00 Analyzed: 01/24/14 15:22

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1400630 Sequence: 4A29026 Calibration: 4A31006 Instrument: 350

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
71-43-2	Benzene	100	39	32	100	J
104-51-8	n-Butylbenzene	100	100	20	100	U
108-90-7	Chlorobenzene	100	100	21	100	U
100-41-4	Ethylbenzene	100	47	27	100	J
1634-04-4	Methyl tert-Butyl Ether	100	500	10	500	U
91-20-3	Naphthalene	100	13000	56	100	
103-65-1	n-Propylbenzene	100	100	14	100	U
100-42-5	Styrene	100	100	12	100	U
108-88-3	Toluene	100	66	28	100	J
71-55-6	1,1,1-Trichloroethane	100	100	30	100	U
95-63-6	1,2,4-Trimethylbenzene	100	61	19	100	J
108-67-8	1,3,5-Trimethylbenzene	100	25	20	100	J
179601-23-1	Xylene, Meta + Para	100	110	21	200	J
95-47-6	Xylene, Ortho	100	54	23	100	J

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
Dibromofluoromethane	40.0	38.9	97	85 - 118	
1,2-Dichloroethane-d4	40.0	39.4	98	87 - 122	
Toluene-d8	40.0	39.2	98	85 - 113	
4-Bromofluorobenzene	40.0	39.2	98	82 - 110	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
Fluorobenzene	657771	6.266	108	6.266	
Chlorobenzene-d5	486064	10.56	112	10.56	
1,4-Dichlorobenzene-d4	243151	13.524	114	13.525	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

TMW-19C Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-16 File ID: 1401173-16.D

Sampled: 01/13/14 12:00 Prepared: 01/27/14 09:00 Analyzed: 01/27/14 17:08

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1400738 Sequence: 4A31015 Calibration: 4A31006 Instrument: 350

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
71-43-2	Benzene	1	1.0	0.32	1.0	U
104-51-8	n-Butylbenzene	1	1.0	0.20	1.0	U
108-90-7	Chlorobenzene	1	1.0	0.21	1.0	U
100-41-4	Ethylbenzene	1	1.0	0.27	1.0	U
1634-04-4	Methyl tert-Butyl Ether	1	5.0	0.10	5.0	U
91-20-3	Naphthalene	1	1.0	0.56	1.0	U
103-65-1	n-Propylbenzene	1	1.0	0.14	1.0	U
100-42-5	Styrene	1	1.0	0.12	1.0	U
108-88-3	Toluene	1	1.0	0.28	1.0	U
71-55-6	1,1,1-Trichloroethane	1	1.0	0.30	1.0	U
95-63-6	1,2,4-Trimethylbenzene	1	1.0	0.19	1.0	U
108-67-8	1,3,5-Trimethylbenzene	1	1.0	0.20	1.0	U
179601-23-1	Xylene, Meta + Para	1	2.0	0.21	2.0	U
95-47-6	Xylene, Ortho	1	1.0	0.23	1.0	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
Dibromofluoromethane	40.0	40.2	101	85 - 118	
1,2-Dichloroethane-d4	40.0	38.5	96	87 - 122	
Toluene-d8	40.0	38.6	96	85 - 113	
4-Bromofluorobenzene	40.0	39.2	98	82 - 110	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
Fluorobenzene	666170	6.266	89	6.266	
Chlorobenzene-d5	481106	10.56	87	10.56	
1,4-Dichlorobenzene-d4	238377	13.524	85	13.525	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

TMW-19C

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-17 File ID: 1401173-17.D

Sampled: 01/14/14 09:35 Prepared: 01/27/14 09:00 Analyzed: 01/27/14 17:35

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1400738 Sequence: 4A31015 Calibration: 4A31006 Instrument: 350

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
71-43-2	Benzene	1	1.0	0.32	1.0	U
104-51-8	n-Butylbenzene	1	1.0	0.20	1.0	U
108-90-7	Chlorobenzene	1	1.0	0.21	1.0	U
100-41-4	Ethylbenzene	1	1.0	0.27	1.0	U
1634-04-4	Methyl tert-Butyl Ether	1	5.0	0.10	5.0	U
91-20-3	Naphthalene	1	1.0	0.56	1.0	U
103-65-1	n-Propylbenzene	1	1.0	0.14	1.0	U
100-42-5	Styrene	1	1.0	0.12	1.0	U
108-88-3	Toluene	1	1.0	0.28	1.0	U
71-55-6	1,1,1-Trichloroethane	1	1.0	0.30	1.0	U
95-63-6	1,2,4-Trimethylbenzene	1	1.0	0.19	1.0	U
108-67-8	1,3,5-Trimethylbenzene	1	1.0	0.20	1.0	U
179601-23-1	Xylene, Meta + Para	1	2.0	0.21	2.0	U
95-47-6	Xylene, Ortho	1	1.0	0.23	1.0	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
Dibromofluoromethane	40.0	39.8	99	85 - 118	
1,2-Dichloroethane-d4	40.0	38.8	97	87 - 122	
Toluene-d8	40.0	38.8	97	85 - 113	
4-Bromofluorobenzene	40.0	39.2	98	82 - 110	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
Fluorobenzene	657496	6.266	88	6.266	
Chlorobenzene-d5	481194	10.56	87	10.56	
1,4-Dichlorobenzene-d4	244514	13.525	87	13.525	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

TMW-23

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-18 File ID: 1401173-18.D

Sampled: 01/13/14 09:35 Prepared: 01/24/14 15:00 Analyzed: 01/24/14 21:14

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1400737 Sequence: 4A31014 Calibration: 4A31006 Instrument: 350

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
71-43-2	Benzene	1	1.0	0.32	1.0	U
104-51-8	n-Butylbenzene	1	1.0	0.20	1.0	U
108-90-7	Chlorobenzene	1	1.0	0.21	1.0	U
100-41-4	Ethylbenzene	1	1.0	0.27	1.0	U
1634-04-4	Methyl tert-Butyl Ether	1	5.0	0.10	5.0	U
91-20-3	Naphthalene	1	1.0	0.56	1.0	U
103-65-1	n-Propylbenzene	1	1.0	0.14	1.0	U
100-42-5	Styrene	1	1.0	0.12	1.0	U
108-88-3	Toluene	1	1.0	0.28	1.0	U
71-55-6	1,1,1-Trichloroethane	1	1.0	0.30	1.0	U
95-63-6	1,2,4-Trimethylbenzene	1	1.0	0.19	1.0	U
108-67-8	1,3,5-Trimethylbenzene	1	1.0	0.20	1.0	U
179601-23-1	Xylene, Meta + Para	1	2.0	0.21	2.0	U
95-47-6	Xylene, Ortho	1	1.0	0.23	1.0	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
Dibromofluoromethane	40.0	39.5	99	85 - 118	
1,2-Dichloroethane-d4	40.0	38.6	97	87 - 122	
Toluene-d8	40.0	39.2	98	85 - 113	
4-Bromofluorobenzene	40.0	39.1	98	82 - 110	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
Fluorobenzene	700299	6.266	99	6.266	
Chlorobenzene-d5	523186	10.56	101	10.56	
1,4-Dichlorobenzene-d4	256884	13.524	97	13.525	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

TMW-23 Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-19 File ID: 1401173-19.D

Sampled: 01/13/14 09:00 Prepared: 01/24/14 15:00 Analyzed: 01/24/14 21:42

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1400737 Sequence: 4A31014 Calibration: 4A31006 Instrument: 350

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
71-43-2	Benzene	1	1.0	0.32	1.0	U
104-51-8	n-Butylbenzene	1	1.0	0.20	1.0	U
108-90-7	Chlorobenzene	1	1.0	0.21	1.0	U
100-41-4	Ethylbenzene	1	1.0	0.27	1.0	U
1634-04-4	Methyl tert-Butyl Ether	1	5.0	0.10	5.0	U
91-20-3	Naphthalene	1	1.0	0.56	1.0	U
103-65-1	n-Propylbenzene	1	1.0	0.14	1.0	U
100-42-5	Styrene	1	1.0	0.12	1.0	U
108-88-3	Toluene	1	1.0	0.28	1.0	U
71-55-6	1,1,1-Trichloroethane	1	1.0	0.30	1.0	U
95-63-6	1,2,4-Trimethylbenzene	1	1.0	0.19	1.0	U
108-67-8	1,3,5-Trimethylbenzene	1	1.0	0.20	1.0	U
179601-23-1	Xylene, Meta + Para	1	0.21	0.21	2.0	J
95-47-6	Xylene, Ortho	1	1.0	0.23	1.0	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
Dibromofluoromethane	40.0	38.9	97	85 - 118	
1,2-Dichloroethane-d4	40.0	37.4	94	87 - 122	
Toluene-d8	40.0	38.5	96	85 - 113	
4-Bromofluorobenzene	40.0	39.8	99	82 - 110	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
Fluorobenzene	707243	6.266	100	6.266	
Chlorobenzene-d5	516062	10.56	100	10.56	
1,4-Dichlorobenzene-d4	254757	13.524	96	13.525	

* Values outside of QC limits

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ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

MW-800

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-20 File ID: 1401173-20.D

Sampled: 01/13/14 00:00 Prepared: 01/24/14 07:00 Analyzed: 01/24/14 13:06

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1400630 Sequence: 4A29026 Calibration: 4A31006 Instrument: 350

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
71-43-2	Benzene	1	1.0	0.32	1.0	U
104-51-8	n-Butylbenzene	1	1.0	0.20	1.0	U
108-90-7	Chlorobenzene	1	1.0	0.21	1.0	U
100-41-4	Ethylbenzene	1	1.0	0.27	1.0	U
1634-04-4	Methyl tert-Butyl Ether	1	5.0	0.10	5.0	U
91-20-3	Naphthalene	1	1.0	0.56	1.0	U
103-65-1	n-Propylbenzene	1	1.0	0.14	1.0	U
100-42-5	Styrene	1	1.0	0.12	1.0	U
108-88-3	Toluene	1	1.0	0.28	1.0	U
71-55-6	1,1,1-Trichloroethane	1	1.0	0.30	1.0	U
95-63-6	1,2,4-Trimethylbenzene	1	1.0	0.19	1.0	U
108-67-8	1,3,5-Trimethylbenzene	1	1.0	0.20	1.0	U
179601-23-1	Xylene, Meta + Para	1	2.0	0.21	2.0	U
95-47-6	Xylene, Ortho	1	1.0	0.23	1.0	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
Dibromofluoromethane	40.0	39.6	99	85 - 118	
1,2-Dichloroethane-d4	40.0	37.5	94	87 - 122	
Toluene-d8	40.0	38.7	97	85 - 113	
4-Bromofluorobenzene	40.0	38.8	97	82 - 110	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
Fluorobenzene	697634	6.266	115	6.266	
Chlorobenzene-d5	512111	10.56	118	10.56	
1,4-Dichlorobenzene-d4	254494	13.524	120	13.525	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

MW-801

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-21 File ID: 1401173-21.D

Sampled: 01/13/14 00:00 Prepared: 01/24/14 07:00 Analyzed: 01/24/14 13:33

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1400630 Sequence: 4A29026 Calibration: 4A31006 Instrument: 350

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
71-43-2	Benzene	1	1.0	0.32	1.0	U
104-51-8	n-Butylbenzene	1	1.0	0.20	1.0	U
108-90-7	Chlorobenzene	1	1.0	0.21	1.0	U
100-41-4	Ethylbenzene	1	1.0	0.27	1.0	U
1634-04-4	Methyl tert-Butyl Ether	1	5.0	0.10	5.0	U
91-20-3	Naphthalene	1	1.0	0.56	1.0	U
103-65-1	n-Propylbenzene	1	1.0	0.14	1.0	U
100-42-5	Styrene	1	1.0	0.12	1.0	U
108-88-3	Toluene	1	1.0	0.28	1.0	U
71-55-6	1,1,1-Trichloroethane	1	1.0	0.30	1.0	U
95-63-6	1,2,4-Trimethylbenzene	1	1.0	0.19	1.0	U
108-67-8	1,3,5-Trimethylbenzene	1	1.0	0.20	1.0	U
179601-23-1	Xylene, Meta + Para	1	2.0	0.21	2.0	U
95-47-6	Xylene, Ortho	1	1.0	0.23	1.0	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
Dibromofluoromethane	40.0	39.1	98	85 - 118	
1,2-Dichloroethane-d4	40.0	36.8	92	87 - 122	
Toluene-d8	40.0	38.3	96	85 - 113	
4-Bromofluorobenzene	40.0	39.4	98	82 - 110	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
Fluorobenzene	713276	6.266	117	6.266	
Chlorobenzene-d5	516586	10.56	119	10.56	
1,4-Dichlorobenzene-d4	250850	13.525	118	13.525	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8260B

Trip Blank

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-22 File ID: 1401172-22.D

Sampled: 01/13/14 00:00 Prepared: 01/23/14 07:00 Analyzed: 01/23/14 13:46

Solids: Preparation: 5030B Aqueous Purge & Initial/Final: 5 mL / 5 mL

QC Batch: 1400575 Sequence: 4A24008 Calibration: 4A31006 Instrument: 350

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
71-43-2	Benzene	1	1.0	0.32	1.0	U
104-51-8	n-Butylbenzene	1	1.0	0.20	1.0	U
108-90-7	Chlorobenzene	1	1.0	0.21	1.0	U
100-41-4	Ethylbenzene	1	1.0	0.27	1.0	U
1634-04-4	Methyl tert-Butyl Ether	1	5.0	0.10	5.0	U
91-20-3	Naphthalene	1	1.0	0.56	1.0	U
103-65-1	n-Propylbenzene	1	1.0	0.14	1.0	U
100-42-5	Styrene	1	1.0	0.12	1.0	U
108-88-3	Toluene	1	1.0	0.28	1.0	U
71-55-6	1,1,1-Trichloroethane	1	1.0	0.30	1.0	U
95-63-6	1,2,4-Trimethylbenzene	1	1.0	0.19	1.0	U
108-67-8	1,3,5-Trimethylbenzene	1	1.0	0.20	1.0	U
179601-23-1	Xylene, Meta + Para	1	2.0	0.21	2.0	U
95-47-6	Xylene, Ortho	1	1.0	0.23	1.0	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
Dibromofluoromethane	40.0	39.8	100	85 - 118	
1,2-Dichloroethane-d4	40.0	40.5	101	87 - 122	
Toluene-d8	40.0	39.0	98	85 - 113	
4-Bromofluorobenzene	40.0	38.2	96	82 - 110	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
Fluorobenzene	567244	6.266	93	6.266	
Chlorobenzene-d5	409435	10.56	94	10.56	
1,4-Dichlorobenzene-d4	192810	13.524	92	13.525	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-02A Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-01 File ID: 1401173-01 x200.D

Sampled: 01/13/14 08:40 Prepared: 01/16/14 07:48 Analyzed: 01/25/14 01:15

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 640 mL / 1 mL

QC Batch: 1400299 Sequence: 4A27042 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
83-32-9	Acenaphthene	100	98	5.2	78	J
208-96-8	Acenaphthylene	100	78	2.7	78	U UJ
120-12-7	Anthracene	100	78	9.6	78	U
56-55-3	Benzo(a)anthracene	100	78	7.1	78	U
50-32-8	Benzo(a)pyrene	100	78	6.3	78	U
205-99-2	Benzo(b)fluoranthene	100	78	9.1	78	U
207-08-9	Benzo(k)fluoranthene	100	78	9.3	78	U
191-24-2	Benzo(g,h,i)perylene	100	78	9.5	78	U
65-85-0	Benzoic Acid	100	780	75	780	U R
100-51-6	Benzyl Alcohol	100	78	7.6	78	U UJ
101-55-3	4-Bromophenyl Phenyl Ether	100	78	6.7	78	U
85-68-7	Butyl Benzyl Phthalate	100	160	8.7	160	U
59-50-7	4-Chloro-3-methylphenol	100	78	18	78	U
106-47-8	4-Chloroaniline	100	160	16	160	U
111-91-1	Bis(2-chloroethoxy)methane	100	78	2.9	78	U
111-44-4	Bis(2-chloroethyl) Ether	100	78	3.7	78	U
108-60-1	Bis(2-chloroisopropyl) Ether	100	78	4.0	78	U
91-58-7	2-Chloronaphthalene	100	78	2.7	78	U
95-57-8	2-Chlorophenol	100	78	4.2	78	U
7005-72-3	4-Chlorophenyl Phenyl Ether	100	78	7.5	78	U
218-01-9	Chrysene	100	78	7.1	78	U
53-70-3	Dibenz(a,h)anthracene	100	78	18	78	U
132-64-9	Dibenzofuran	100	30	6.4	78	J
84-74-2	Di-n-butyl Phthalate	100	160	21	160	U UJ
106-46-7	1,4-Dichlorobenzene	100	78	3.1	78	U
95-50-1	1,2-Dichlorobenzene	100	78	6.2	78	U
541-73-1	1,3-Dichlorobenzene	100	78	6.4	78	U
91-94-1	3,3'-Dichlorobenzidine	100	160	19	160	U
120-83-2	2,4-Dichlorophenol	100	78	14	78	U
84-66-2	Diethyl Phthalate	100	78	10	78	U
105-67-9	2,4-Dimethylphenol	100	180	26	160	J
131-11-3	Dimethyl Phthalate	100	78	7.1	78	U UJ
534-52-1	4,6-Dinitro-2-methylphenol	100	780	160	780	U UJ
51-28-5	2,4-Dinitrophenol	100	780	180	780	U UJ

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ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-02A Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-01 File ID: 1401173-01 x200.D

Sampled: 01/13/14 08:40 Prepared: 01/16/14 07:48 Analyzed: 01/25/14 01:15

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 640 mL / 1 mL

QC Batch: 1400299 Sequence: 4A27042 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
606-20-2	2,6-Dinitrotoluene	100	78	13	78	U UJ
121-14-2	2,4-Dinitrotoluene	100	78	7.4	78	U
117-84-0	Di-n-octyl Phthalate	100	78	12	78	U
117-81-7	Bis(2-ethylhexyl) Phthalate	100	78	18	78	U
206-44-0	Fluoranthene	100	78	9.8	78	U
86-73-7	Fluorene	100	27	6.5	78	J
118-74-1	Hexachlorobenzene	100	78	9.8	78	U UJ
87-68-3	Hexachlorobutadiene	100	78	6.2	78	U
77-47-4	Hexachlorocyclopentadiene	100	78	6.9	78	U
67-72-1	Hexachloroethane	100	78	6.5	78	U
193-39-5	Indeno(1,2,3-cd)pyrene	100	78	12	78	U
78-59-1	Isophorone	100	78	7.0	78	U
91-57-6	2-Methylnaphthalene	100	110	2.3	78	J
90-12-0	1-Methylnaphthalene	100	69	3.0	78	J
106-44-5	4-Methylphenol	100	130	8.8	78	J
95-48-7	2-Methylphenol	100	39	7.4	78	J
91-20-3	Naphthalene	100	2900	4.8	78	J
100-01-6	4-Nitroaniline	100	160	52	160	U UJ
88-74-4	2-Nitroaniline	100	78	18	78	U
99-09-2	3-Nitroaniline	100	160	38	160	U
98-95-3	Nitrobenzene	100	78	9.1	78	U
88-75-5	2-Nitrophenol	100	78	7.4	78	U
100-02-7	4-Nitrophenol	100	780	200	780	U
86-30-6	N-Nitroso-diphenylamine	100	78	11	78	U
621-64-7	N-Nitroso-di-n-propylamine	100	78	12	78	U
87-86-5	Pentachlorophenol	100	78	13	78	U
85-01-8	Phenanthrene	100	19	6.7	78	J
108-95-2	Phenol	100	78	5.3	78	U UJ
129-00-0	Pyrene	100	78	10	78	U
58-90-2	2,3,4,6-Tetrachlorophenol	100	780	58	780	U
120-82-1	1,2,4-Trichlorobenzene	100	78	4.2	78	U
95-95-4	2,4,5-Trichlorophenol	100	78	16	78	U
88-06-2	2,4,6-Trichlorophenol	100	78	13	78	U
56-49-5	3-Methylcholanthrene	100	310	19	310	U

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-02A Filtered

Laboratory: TriMatrix Laboratories, Inc.
SDG: 1401173
Client: Beazer East, Inc.
Project: Koppers Superior
Matrix: Water
Laboratory ID: 1401173-01
File ID: 1401173-01 x200.D
Sampled: 01/13/14 08:40
Prepared: 01/16/14 07:48
Analyzed: 01/25/14 01:15
Solids:
Preparation: 3510C Liquid-Liquid Ext
Initial/Final: 640 mL / 1 mL
QC Batch: 1400299
Sequence: 4A27042
Calibration: 4A22014
Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
935-95-5	2,3,5,6-Tetrachlorophenol	100	1600	33	1600	U UJ

Internal Standard	Area	RT	% REC.	Ref. RT	Q
1,4-Dichlorobenzene-d4	176523	7.66	97	7.84	
Naphthalene-d8	749051	10.39	106	10.58	
Acenaphthene-d10	472259	14.5	113	14.7	
Phenanthrene-d10	746287	17.92	111	18.08	
Chrysene-d12	841482	21.53	110	21.65	
Perylene-d12	729144	23.23	114	23.4	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-02A

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-02 File ID: 1401173-02 x100.D

Sampled: 01/13/14 14:20 Prepared: 01/16/14 07:48 Analyzed: 01/24/14 05:55

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 950 mL / 1 mL

QC Batch: 1400299 Sequence: 4A24001 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
83-32-9	Acenaphthene	100	240	3.3	50	J
208-96-8	Acenaphthylene	100	50	1.7	50	U UJ
120-12-7	Anthracene	100	21	6.2	50	J
56-55-3	Benzo(a)anthracene	100	12	4.5	50	J
50-32-8	Benzo(a)pyrene	100	50	4.0	50	U UJ
205-99-2	Benzo(b)fluoranthene	100	6.3	5.8	50	J
207-08-9	Benzo(k)fluoranthene	100	50	6.0	50	U UJ
191-24-2	Benzo(g,h,i)perylene	100	50	6.1	50	U UJ
65-85-0	Benzoic Acid	100	500	48	500	U R
100-51-6	Benzyl Alcohol	100	50	4.9	50	U UJ
101-55-3	4-Bromophenyl Phenyl Ether	100	50	4.3	50	U
85-68-7	Butyl Benzyl Phthalate	100	100	5.6	100	U
59-50-7	4-Chloro-3-methylphenol	100	50	12	50	U
106-47-8	4-Chloroaniline	100	100	10	100	U
111-91-1	Bis(2-chloroethoxy)methane	100	50	1.8	50	U
111-44-4	Bis(2-chloroethyl) Ether	100	50	2.4	50	U
108-60-1	Bis(2-chloroisopropyl) Ether	100	50	2.6	50	U
91-58-7	2-Chloronaphthalene	100	50	1.7	50	U
95-57-8	2-Chlorophenol	100	50	2.7	50	U
7005-72-3	4-Chlorophenyl Phenyl Ether	100	50	4.8	50	U
218-01-9	Chrysene	100	8.4	4.5	50	J
53-70-3	Dibenz(a,h)anthracene	100	50	11	50	U UJ
132-64-9	Dibenzofuran	100	100	4.1	50	J
84-74-2	Di-n-butyl Phthalate	100	100	14	100	U UJ
106-46-7	1,4-Dichlorobenzene	100	50	2.0	50	U
95-50-1	1,2-Dichlorobenzene	100	50	4.0	50	U
541-73-1	1,3-Dichlorobenzene	100	50	4.1	50	U
91-94-1	3,3'-Dichlorobenzidine	100	100	12	100	U
120-83-2	2,4-Dichlorophenol	100	50	9.2	50	U
84-66-2	Diethyl Phthalate	100	7.4	6.5	50	J
105-67-9	2,4-Dimethylphenol	100	120	17	100	J
131-11-3	Dimethyl Phthalate	100	50	4.6	50	U UJ
534-52-1	4,6-Dinitro-2-methylphenol	100	500	100	500	U UJ
51-28-5	2,4-Dinitrophenol	100	500	120	500	U UJ

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-02A

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-02 File ID: 1401173-02 x100.D

Sampled: 01/13/14 14:20 Prepared: 01/16/14 07:48 Analyzed: 01/24/14 05:55

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 950 mL / 1 mL

QC Batch: 1400299 Sequence: 4A24001 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
606-20-2	2,6-Dinitrotoluene	100	50	8.0	50	U UJ
121-14-2	2,4-Dinitrotoluene	100	50	4.8	50	U
117-84-0	Di-n-octyl Phthalate	100	50	7.7	50	U
117-81-7	Bis(2-ethylhexyl) Phthalate	100	50	11	50	U
206-44-0	Fluoranthene	100	46	6.3	50	J
86-73-7	Fluorene	100	100	4.1	50	J
118-74-1	Hexachlorobenzene	100	50	6.3	50	U UJ
87-68-3	Hexachlorobutadiene	100	50	4.0	50	U
77-47-4	Hexachlorocyclopentadiene	100	50	4.4	50	U
67-72-1	Hexachloroethane	100	50	4.2	50	U
193-39-5	Indeno(1,2,3-cd)pyrene	100	50	8.0	50	U
78-59-1	Isophorone	100	50	4.5	50	U
91-57-6	2-Methylnaphthalene	100	260	1.5	50	J
90-12-0	1-Methylnaphthalene	100	150	2.0	50	J
106-44-5	4-Methylphenol	100	56	5.7	50	J
95-48-7	2-Methylphenol	100	19	4.8	50	J
100-01-6	4-Nitroaniline	100	100	33	100	U UJ
88-74-4	2-Nitroaniline	100	50	12	50	U
99-09-2	3-Nitroaniline	100	100	24	100	U
98-95-3	Nitrobenzene	100	50	5.8	50	U
88-75-5	2-Nitrophenol	100	50	4.8	50	U
100-02-7	4-Nitrophenol	100	500	120	500	U
86-30-6	N-Nitroso-diphenylamine	100	50	6.8	50	U
621-64-7	N-Nitroso-di-n-propylamine	100	50	7.5	50	U
87-86-5	Pentachlorophenol	100	50	8.1	50	U
85-01-8	Phenanthrene	100	140	4.3	50	J
108-95-2	Phenol	100	50	3.4	50	U UJ
129-00-0	Pyrene	100	36	6.6	50	J
58-90-2	2,3,4,6-Tetrachlorophenol	100	500	37	500	U UJ
120-82-1	1,2,4-Trichlorobenzene	100	50	2.7	50	U
95-95-4	2,4,5-Trichlorophenol	100	50	9.9	50	U
88-06-2	2,4,6-Trichlorophenol	100	50	8.5	50	U
56-49-5	3-Methylcholanthrene	100	200	12	200	U
935-95-5	2,3,5,6-Tetrachlorophenol	100	1000	21	1000	U

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-02A

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-02 File ID: 1401173-02 x100.D

Sampled: 01/13/14 14:20 Prepared: 01/16/14 07:48 Analyzed: 01/24/14 05:55

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 950 mL / 1 mL

QC Batch: 1400299 Sequence: 4A24001 Calibration: 4A22014 Instrument: 195

Internal Standard	Area	RT	% REC.	Ref. RT	Q
1,4-Dichlorobenzene-d4	180858	7.75	124	7.84	
Naphthalene-d8	736075	10.48	127	10.58	
Acenaphthene-d10	457164	14.59	129	14.7	
Phenanthrene-d10	720222	18	125	18.08	
Chrysene-d12	798574	21.59	127	21.65	
Perylene-d12	671727	23.31	125	23.4	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-02A

Laboratory: TriMatrix Laboratories, Inc.
SDG: 1401173
Client: Beazer East, Inc.
Project: Koppers Superior
Matrix: Water
Laboratory ID: 1401173-02RE1
File ID: 1401173-02 x200.D
Sampled: 01/13/14 14:20
Prepared: 01/16/14 07:48
Analyzed: 01/25/14 02:25
Solids:
Preparation: 3510C Liquid-Liquid Ext
Initial/Final: 950 mL / 1 mL
QC Batch: 1400299
Sequence: 4A27042
Calibration: 4A22014
Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
91-20-3	Naphthalene	200	5000	6.1	100	DJ

Internal Standard	Area	RT	% REC.	Ref. RT	Q
1,4-Dichlorobenzene-d4	167770	7.66	92	7.84	
Naphthalene-d8	695447	10.39	98	10.58	
Acenaphthene-d10	433803	14.5	104	14.7	
Phenanthrene-d10	678300	17.92	101	18.08	
Chrysene-d12	758444	21.53	100	21.65	
Perylene-d12	630890	23.23	99	23.4	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-05 Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-03 File ID: 1401173-03.D

Sampled: 01/13/14 10:30 Prepared: 01/16/14 07:48 Analyzed: 01/22/14 21:33

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 880 mL / 1 mL

QC Batch: 1400299 Sequence: 4A22031 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
83-32-9	Acenaphthene	1	0.57	0.038	0.57	U
208-96-8	Acenaphthylene	1	0.57	0.019	0.57	U
120-12-7	Anthracene	1	0.57	0.070	0.57	U
56-55-3	Benzo(a)anthracene	1	0.57	0.052	0.57	U
50-32-8	Benzo(a)pyrene	1	0.57	0.046	0.57	U
205-99-2	Benzo(b)fluoranthene	1	0.57	0.066	0.57	U
207-08-9	Benzo(k)fluoranthene	1	0.57	0.068	0.57	U
191-24-2	Benzo(g,h,i)perylene	1	0.57	0.069	0.57	U
~~65-85-0~~	~~Benzoic Acid~~	~~1~~	~~5.7~~	~~0.54~~	~~5.7~~	~~U~~ R
100-51-6	Benzyl Alcohol	1	0.57	0.055	0.57	U
101-55-3	4-Bromophenyl Phenyl Ether	1	0.57	0.049	0.57	U
85-68-7	Butyl Benzyl Phthalate	1	~~0.080~~ 1.1	0.063	1.1	~~J~~ UB
59-50-7	4-Chloro-3-methylphenol	1	0.57	0.13	0.57	U
106-47-8	4-Chloroaniline	1	1.1	0.12	1.1	U
111-91-1	Bis(2-chloroethoxy)methane	1	0.57	0.021	0.57	U
111-44-4	Bis(2-chloroethyl) Ether	1	0.57	0.027	0.57	U
108-60-1	Bis(2-chloroisopropyl) Ether	1	0.57	0.029	0.57	U
91-58-7	2-Chloronaphthalene	1	0.57	0.019	0.57	U
95-57-8	2-Chlorophenol	1	0.57	0.030	0.57	U
7005-72-3	4-Chlorophenyl Phenyl Ether	1	0.57	0.055	0.57	U
218-01-9	Chrysene	1	0.57	0.051	0.57	U
53-70-3	Dibenz(a,h)anthracene	1	0.57	0.13	0.57	U
132-64-9	Dibenzofuran	1	0.57	0.046	0.57	U
84-74-2	Di-n-butyl Phthalate	1	2.5	0.15	1.1	~~B~~ UB
106-46-7	1,4-Dichlorobenzene	1	0.57	0.022	0.57	U
95-50-1	1,2-Dichlorobenzene	1	0.57	0.045	0.57	U
541-73-1	1,3-Dichlorobenzene	1	0.57	0.047	0.57	U
91-94-1	3,3'-Dichlorobenzidine	1	1.1	0.14	1.1	U
120-83-2	2,4-Dichlorophenol	1	0.57	0.10	0.57	U
84-66-2	Diethyl Phthalate	1	~~0.49~~ 0.57	0.074	0.57	~~J~~ UB
105-67-9	2,4-Dimethylphenol	1	1.1	0.19	1.1	U
131-11-3	Dimethyl Phthalate	1	0.57	0.052	0.57	U
534-52-1	4,6-Dinitro-2-methylphenol	1	5.7	1.2	5.7	U
51-28-5	2,4-Dinitrophenol	1	5.7	1.3	5.7	U

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-05 Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-03 File ID: 1401173-03.D

Sampled: 01/13/14 10:30 Prepared: 01/16/14 07:48 Analyzed: 01/22/14 21:33

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 880 mL / 1 mL

QC Batch: 1400299 Sequence: 4A22031 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
606-20-2	2,6-Dinitrotoluene	1	0.57	0.091	0.57	U
121-14-2	2,4-Dinitrotoluene	1	0.57	0.054	0.57	U
117-84-0	Di-n-octyl Phthalate	1	0.57	0.087	0.57	U
117-81-7	Bis(2-ethylhexyl) Phthalate	1	~~0.18~~ 0.57	0.13	0.57	~~JB~~ UB
206-44-0	Fluoranthene	1	0.57	0.071	0.57	U
86-73-7	Fluorene	1	0.57	0.047	0.57	U
118-74-1	Hexachlorobenzene	1	0.57	0.071	0.57	U
87-68-3	Hexachlorobutadiene	1	0.57	0.045	0.57	U
77-47-4	Hexachlorocyclopentadiene	1	0.57	0.050	0.57	U UJ
67-72-1	Hexachloroethane	1	0.57	0.048	0.57	U
193-39-5	Indeno(1,2,3-cd)pyrene	1	0.57	0.091	0.57	U
78-59-1	Isophorone	1	0.57	0.051	0.57	U
91-57-6	2-Methylnaphthalene	1	0.57	0.017	0.57	U
90-12-0	1-Methylnaphthalene	1	0.57	0.022	0.57	U
106-44-5	4-Methylphenol	1	0.57	0.064	0.57	U
95-48-7	2-Methylphenol	1	0.57	0.054	0.57	U
91-20-3	Naphthalene	1	0.57	0.035	0.57	U
100-01-6	4-Nitroaniline	1	1.1	0.38	1.1	U
88-74-4	2-Nitroaniline	1	0.57	0.13	0.57	U
99-09-2	3-Nitroaniline	1	1.1	0.28	1.1	U
98-95-3	Nitrobenzene	1	0.57	0.066	0.57	U
88-75-5	2-Nitrophenol	1	0.57	0.054	0.57	U
100-02-7	4-Nitrophenol	1	5.7	1.4	5.7	U UJ
86-30-6	N-Nitroso-diphenylamine	1	0.57	0.077	0.57	U
621-64-7	N-Nitroso-di-n-propylamine	1	0.57	0.086	0.57	U
87-86-5	Pentachlorophenol	1	0.57	0.092	0.57	U
85-01-8	Phenanthrene	1	0.57	0.048	0.57	U
108-95-2	Phenol	1	0.57	0.038	0.57	U
129-00-0	Pyrene	1	0.57	0.075	0.57	U
58-90-2	2,3,4,6-Tetrachlorophenol	1	5.7	0.42	5.7	U
120-82-1	1,2,4-Trichlorobenzene	1	0.57	0.030	0.57	U
95-95-4	2,4,5-Trichlorophenol	1	0.57	0.11	0.57	U
88-06-2	2,4,6-Trichlorophenol	1	0.57	0.097	0.57	U
56-49-5	3-Methylcholanthrene	1	2.3	0.14	2.3	U

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-05 Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-03 File ID: 1401173-03.D

Sampled: 01/13/14 10:30 Prepared: 01/16/14 07:48 Analyzed: 01/22/14 21:33

Solids: Preparation: 3510C Liquid-Liquid Extr Initial/Final: 880 mL / 1 mL

QC Batch: 1400299 Sequence: 4A22031 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
935-95-5	2,3,5,6-Tetrachlorophenol	1	11	0.24	11	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
2-Fluorophenol	22.7	9.09	40	20 - 70	
Phenol-d6	22.8	6.34	28	18 - 45	
Nitrobenzene-d5	11.4	8.42	74	31 - 123	
2-Fluorobiphenyl	11.4	7.17	63	25 - 113	
2,4,6-Tribromophenol	23.0	10.9	47	30 - 121	
o-Terphenyl	11.4	8.64	76	42 - 125	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
1,4-Dichlorobenzene-d4	145960	7.76	98	7.84	
Naphthalene-d8	570692	10.49	97	10.58	
Acenaphthene-d10	355243	14.61	100	14.7	
Phenanthrene-d10	576815	18.01	99	18.08	
Chrysene-d12	656802	21.6	99	21.65	
Perylene-d12	599373	23.33	106	23.4	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-05A Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-04 File ID: 1401173-04.D

Sampled: 01/13/14 09:30 Prepared: 01/16/14 07:48 Analyzed: 01/22/14 22:08

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 620 mL / 1 mL

QC Batch: 1400299 Sequence: 4A22031 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
83-32-9	Acenaphthene	1	0.11	0.053	0.81	J
208-96-8	Acenaphthylene	1	0.81	0.028	0.81	U
120-12-7	Anthracene	1	0.81	0.099	0.81	U
56-55-3	Benzo(a)anthracene	1	0.81	0.073	0.81	U
50-32-8	Benzo(a)pyrene	1	0.81	0.065	0.81	U
205-99-2	Benzo(b)fluoranthene	1	0.81	0.094	0.81	U
207-08-9	Benzo(k)fluoranthene	1	0.81	0.096	0.81	U
191-24-2	Benzo(g,h,i)perylene	1	0.81	0.098	0.81	U
~~65-85-0~~	~~Benzoic Acid~~	~~1~~	~~8.1~~	~~0.77~~	~~8.1~~	~~U~~ R
100-51-6	Benzyl Alcohol	1	0.81	0.078	0.81	U
101-55-3	4-Bromophenyl Phenyl Ether	1	0.81	0.069	0.81	U
85-68-7	Butyl Benzyl Phthalate	1	1.6	0.090	1.6	U
~~59-50-7~~	~~4-Chloro-3-methylphenol~~	~~1~~	~~0.81~~	~~0.19~~	~~0.81~~	~~U~~ R
106-47-8	4-Chloroaniline	1	1.6	0.16	1.6	U
111-91-1	Bis(2-chloroethoxy)methane	1	0.81	0.030	0.81	U
111-44-4	Bis(2-chloroethyl) Ether	1	0.81	0.038	0.81	U
108-60-1	Bis(2-chloroisopropyl) Ether	1	0.81	0.042	0.81	U
91-58-7	2-Chloronaphthalene	1	0.81	0.028	0.81	U
~~95-57-8~~	~~2-Chlorophenol~~	~~1~~	~~0.81~~	~~0.043~~	~~0.81~~	~~U~~ R
7005-72-3	4-Chlorophenyl Phenyl Ether	1	0.81	0.077	0.81	U
218-01-9	Chrysene	1	0.81	0.073	0.81	U
53-70-3	Dibenz(a,h)anthracene	1	0.81	0.18	0.81	U
132-64-9	Dibenzofuran	1	0.81	0.066	0.81	U
84-74-2	Di-n-butyl Phthalate	1	3.7	0.22	1.6	~~B~~ UB
106-46-7	1,4-Dichlorobenzene	1	0.81	0.032	0.81	U
95-50-1	1,2-Dichlorobenzene	1	0.81	0.064	0.81	U
541-73-1	1,3-Dichlorobenzene	1	0.81	0.066	0.81	U
91-94-1	3,3´-Dichlorobenzidine	1	1.6	0.20	1.6	U
~~120-83-2~~	~~2,4-Dichlorophenol~~	~~1~~	~~0.81~~	~~0.15~~	~~0.81~~	~~U~~ R
84-66-2	Diethyl Phthalate	1	0.95	0.10	0.81	UB
~~105-67-9~~	~~2,4-Dimethylphenol~~	~~1~~	~~1.6~~	~~0.27~~	~~1.6~~	~~U~~ R
131-11-3	Dimethyl Phthalate	1	0.81	0.073	0.81	U
~~534-52-1~~	~~4,6-Dinitro-2-methylphenol~~	~~1~~	~~8.1~~	~~1.6~~	~~8.1~~	~~U~~ R
~~51-28-5~~	~~2,4-Dinitrophenol~~	~~1~~	~~8.1~~	~~1.9~~	~~8.1~~	~~U~~ R

00541

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-05A Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-04 File ID: 1401173-04.D

Sampled: 01/13/14 09:30 Prepared: 01/16/14 07:48 Analyzed: 01/22/14 22:08

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 620 mL / 1 mL

QC Batch: 1400299 Sequence: 4A22031 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
606-20-2	2,6-Dinitrotoluene	1	0.81	0.13	0.81	U
121-14-2	2,4-Dinitrotoluene	1	0.81	0.077	0.81	U
117-84-0	Di-n-octyl Phthalate	1	0.81	0.12	0.81	U
117-81-7	Bis(2-ethylhexyl) Phthalate	1	~~0.48~~ 0.81	0.18	0.81	~~JB~~ UB
206-44-0	Fluoranthene	1	0.81	0.10	0.81	U
86-73-7	Fluorene	1	0.81	0.067	0.81	U
118-74-1	Hexachlorobenzene	1	0.81	0.10	0.81	U
87-68-3	Hexachlorobutadiene	1	0.81	0.064	0.81	U
~~77-47-4~~	~~Hexachlorocyclopentadiene~~	~~1~~	~~0.81~~	~~0.072~~	~~0.81~~	~~U~~ R
67-72-1	Hexachloroethane	1	0.81	0.067	0.81	U
193-39-5	Indeno(1,2,3-cd)pyrene	1	0.81	0.13	0.81	U
78-59-1	Isophorone	1	0.81	0.073	0.81	U
91-57-6	2-Methylnaphthalene	1	0.032	0.024	0.81	J
90-12-0	1-Methylnaphthalene	1	0.81	0.031	0.81	U
106-44-5	4-Methylphenol	1	0.81	0.091	0.81	U
95-48-7	2-Methylphenol	1	0.81	0.077	0.81	U
91-20-3	Naphthalene	1	0.34	0.050	0.81	J
100-01-6	4-Nitroaniline	1	1.6	0.53	1.6	U
88-74-4	2-Nitroaniline	1	0.81	0.19	0.81	U
99-09-2	3-Nitroaniline	1	1.6	0.39	1.6	U
98-95-3	Nitrobenzene	1	0.81	0.094	0.81	U
~~88-75-5~~	~~2-Nitrophenol~~	~~1~~	~~0.81~~	~~0.077~~	~~0.81~~	~~U~~ R
~~100-02-7~~	~~4-Nitrophenol~~	~~1~~	~~8.1~~	~~2.0~~	~~8.1~~	~~U~~ R
~~86-30-6~~	~~N-Nitroso-diphenylamine~~	~~1~~	~~0.81~~	~~0.11~~	~~0.81~~	~~U~~ R
621-64-7	N-Nitroso-di-n-propylamine	1	0.81	0.12	0.81	U
~~87-86-5~~	~~Pentachlorophenol~~	~~1~~	~~0.81~~	~~0.13~~	~~0.81~~	~~U~~ R
85-01-8	Phenanthrene	1	0.097	0.069	0.81	J
~~108-95-2~~	~~Phenol~~	~~1~~	~~0.81~~	~~0.054~~	~~0.81~~	~~U~~ R
129-00-0	Pyrene	1	0.81	0.11	0.81	U
~~58-90-2~~	~~2,3,4,6-Tetrachlorophenol~~	~~1~~	~~8.1~~	~~0.60~~	~~8.1~~	~~U~~ R
120-82-1	1,2,4-Trichlorobenzene	1	0.81	0.043	0.81	U
~~95-95-4~~	~~2,4,5-Trichlorophenol~~	~~1~~	~~0.81~~	~~0.16~~	~~0.81~~	~~U~~ R
~~88-06-2~~	~~2,4,6-Trichlorophenol~~	~~1~~	~~0.81~~	~~0.14~~	~~0.81~~	~~U~~ R
56-49-5	3-Methylcholanthrene	1	3.2	0.19	3.2	U

00542

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-05A Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-04 File ID: 1401173-04.D

Sampled: 01/13/14 09:30 Prepared: 01/16/14 07:48 Analyzed: 01/22/14 22:08

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 620 mL / 1 mL

QC Batch: 1400299 Sequence: 4A22031 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
~~935-95-5~~	~~2,3,5,6-Tetrachlorophenol~~	~~1~~	~~16~~	~~0.34~~	~~16~~	~~U~~ R

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
2-Fluorophenol	32.3	7.40	23	20 - 70	
Phenol-d6	32.4	0.887	3	18 - 45	*
Nitrobenzene-d5	16.1	13.1	81	31 - 123	
2-Fluorobiphenyl	16.1	10.1	63	25 - 113	
2,4,6-Tribromophenol	32.6	16.1	49	30 - 121	
o-Terphenyl	16.1	12.3	76	42 - 125	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
1,4-Dichlorobenzene-d4	160257	7.76	108	7.84	
Naphthalene-d8	610210	10.5	104	10.58	
Acenaphthene-d10	381357	14.61	108	14.7	
Phenanthrene-d10	602967	18.02	104	18.08	
Chrysene-d12	655417	21.6	99	21.65	
Perylene-d12	587303	23.32	104	23.4	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-05

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-05 File ID: 1401173-05.D

Sampled: 01/14/14 08:50 Prepared: 01/16/14 07:48 Analyzed: 01/23/14 01:03

Solids: Preparation: 3510C Liquid-Liquid Extr Initial/Final: 850 mL / 1 mL

QC Batch: 1400299 Sequence: 4A22031 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
83-32-9	Acenaphthene	1	0.59	0.039	0.59	U
208-96-8	Acenaphthylene	1	0.59	0.020	0.59	U
120-12-7	Anthracene	1	0.59	0.072	0.59	U
56-55-3	Benzo(a)anthracene	1	0.59	0.053	0.59	U
50-32-8	Benzo(a)pyrene	1	0.59	0.047	0.59	U
205-99-2	Benzo(b)fluoranthene	1	0.59	0.068	0.59	U
207-08-9	Benzo(k)fluoranthene	1	0.59	0.070	0.59	U
191-24-2	Benzo(g,h,i)perylene	1	0.59	0.072	0.59	U
~~65-85-0~~	~~Benzoic Acid~~	~~1~~	~~5.9~~	~~0.56~~	~~5.9~~	~~U~~ R
100-51-6	Benzyl Alcohol	1	0.59	0.057	0.59	U
101-55-3	4-Bromophenyl Phenyl Ether	1	0.59	0.050	0.59	U
85-68-7	Butyl Benzyl Phthalate	1	1.2	0.066	1.2	U
59-50-7	4-Chloro-3-methylphenol	1	0.59	0.14	0.59	U
106-47-8	4-Chloroaniline	1	1.2	0.12	1.2	U
111-91-1	Bis(2-chloroethoxy)methane	1	0.59	0.022	0.59	U
111-44-4	Bis(2-chloroethyl) Ether	1	0.59	0.028	0.59	U
108-60-1	Bis(2-chloroisopropyl) Ether	1	0.59	0.030	0.59	U
91-58-7	2-Chloronaphthalene	1	0.59	0.020	0.59	U
95-57-8	2-Chlorophenol	1	0.59	0.031	0.59	U
7005-72-3	4-Chlorophenyl Phenyl Ether	1	0.59	0.056	0.59	U
218-01-9	Chrysene	1	0.59	0.053	0.59	U
53-70-3	Dibenz(a,h)anthracene	1	0.59	0.13	0.59	U
132-64-9	Dibenzofuran	1	0.59	0.048	0.59	U
84-74-2	Di-n-butyl Phthalate	1	1.7	0.16	1.2	~~B~~ UB
106-46-7	1,4-Dichlorobenzene	1	0.59	0.023	0.59	U
95-50-1	1,2-Dichlorobenzene	1	0.59	0.047	0.59	U
541-73-1	1,3-Dichlorobenzene	1	0.59	0.048	0.59	U
91-94-1	3,3'-Dichlorobenzidine	1	1.2	0.15	1.2	U
120-83-2	2,4-Dichlorophenol	1	0.59	0.11	0.59	U
84-66-2	Diethyl Phthalate	1	~~0.53~~ 0.59	0.077	0.59	~~J~~ UB
105-67-9	2,4-Dimethylphenol	1	1.2	0.20	1.2	U
131-11-3	Dimethyl Phthalate	1	0.59	0.054	0.59	U
534-52-1	4,6-Dinitro-2-methylphenol	1	5.9	1.2	5.9	U
51-28-5	2,4-Dinitrophenol	1	5.9	1.4	5.9	U

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-05

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-05 File ID: 1401173-05.D

Sampled: 01/14/14 08:50 Prepared: 01/16/14 07:48 Analyzed: 01/23/14 01:03

Solids: Preparation: 3510C Liquid-Liquid Extr Initial/Final: 850 mL / 1 mL

QC Batch: 1400299 Sequence: 4A22031 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
606-20-2	2,6-Dinitrotoluene	1	0.59	0.094	0.59	U
121-14-2	2,4-Dinitrotoluene	1	0.59	0.056	0.59	U
117-84-0	Di-n-octyl Phthalate	1	0.59	0.090	0.59	U
117-81-7	Bis(2-ethylhexyl) Phthalate	1	~~0.21~~ 0.59	0.13	0.59	~~JB~~ UB
206-44-0	Fluoranthene	1	0.59	0.074	0.59	U
86-73-7	Fluorene	1	0.59	0.049	0.59	U
118-74-1	Hexachlorobenzene	1	0.59	0.074	0.59	U
87-68-3	Hexachlorobutadiene	1	0.59	0.046	0.59	U
77-47-4	Hexachlorocyclopentadiene	1	0.59	0.052	0.59	U UJ
67-72-1	Hexachloroethane	1	0.59	0.049	0.59	U
193-39-5	Indeno(1,2,3-cd)pyrene	1	0.59	0.094	0.59	U
78-59-1	Isophorone	1	0.59	0.053	0.59	U
91-57-6	2-Methylnaphthalene	1	0.59	0.018	0.59	U
90-12-0	1-Methylnaphthalene	1	0.59	0.023	0.59	U
106-44-5	4-Methylphenol	1	0.59	0.067	0.59	U
95-48-7	2-Methylphenol	1	0.59	0.056	0.59	U
91-20-3	Naphthalene	1	0.59	0.036	0.59	U
100-01-6	4-Nitroaniline	1	1.2	0.39	1.2	U
88-74-4	2-Nitroaniline	1	0.59	0.14	0.59	U
99-09-2	3-Nitroaniline	1	1.2	0.29	1.2	U
98-95-3	Nitrobenzene	1	0.59	0.069	0.59	U
88-75-5	2-Nitrophenol	1	0.59	0.056	0.59	U
100-02-7	4-Nitrophenol	1	5.9	1.5	5.9	U UJ
86-30-6	N-Nitroso-diphenylamine	1	0.59	0.080	0.59	U
621-64-7	N-Nitroso-di-n-propylamine	1	0.59	0.089	0.59	U
87-86-5	Pentachlorophenol	1	0.59	0.095	0.59	U
85-01-8	Phenanthrene	1	0.59	0.050	0.59	U
108-95-2	Phenol	1	0.59	0.040	0.59	U
129-00-0	Pyrene	1	0.59	0.077	0.59	U
58-90-2	2,3,4,6-Tetrachlorophenol	1	5.9	0.44	5.9	U
120-82-1	1,2,4-Trichlorobenzene	1	0.59	0.031	0.59	U
95-95-4	2,4,5-Trichlorophenol	1	0.59	0.12	0.59	U
88-06-2	2,4,6-Trichlorophenol	1	0.59	0.10	0.59	U
56-49-5	3-Methylcholanthrene	1	2.4	0.14	2.4	U

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-05

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-05 File ID: 1401173-05.D

Sampled: 01/14/14 08:50 Prepared: 01/16/14 07:48 Analyzed: 01/23/14 01:03

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 850 mL / 1 mL

QC Batch: 1400299 Sequence: 4A22031 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
935-95-5	2,3,5,6-Tetrachlorophenol	1	12	0.25	12	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
2-Fluorophenol	23.5	12.5	53	20 - 70	
Phenol-d6	23.6	8.18	35	18 - 45	
Nitrobenzene-d5	11.8	9.09	77	31 - 123	
2-Fluorobiphenyl	11.8	7.19	61	25 - 113	
2,4,6-Tribromophenol	23.8	14.0	59	30 - 121	
o-Terphenyl	11.8	8.54	73	42 - 125	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
1,4-Dichlorobenzene-d4	162736	7.76	110	7.84	
Naphthalene-d8	631705	10.5	108	10.58	
Acenaphthene-d10	393776	14.61	111	14.7	
Phenanthrene-d10	626047	18.01	108	18.08	
Chrysene-d12	697141	21.6	105	21.65	
Perylene-d12	627523	23.33	111	23.4	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-08

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-06 File ID: 1401173-06.D

Sampled: 01/13/14 16:35 Prepared: 01/16/14 07:48 Analyzed: 01/23/14 01:38

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 770 mL / 1 mL

QC Batch: 1400299 Sequence: 4A22031 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
83-32-9	Acenaphthene	1	0.65	0.043	0.65	U
208-96-8	Acenaphthylene	1	0.65	0.022	0.65	U
120-12-7	Anthracene	1	0.65	0.080	0.65	U
56-55-3	Benzo(a)anthracene	1	0.65	0.059	0.65	U
50-32-8	Benzo(a)pyrene	1	0.65	0.052	0.65	U
205-99-2	Benzo(b)fluoranthene	1	0.65	0.075	0.65	U
207-08-9	Benzo(k)fluoranthene	1	0.65	0.077	0.65	U
191-24-2	Benzo(g,h,i)perylene	1	0.65	0.079	0.65	U
~~65-85-0~~	~~Benzoic Acid~~	~~1~~	~~6.5~~	~~0.62~~	~~6.5~~	~~U~~ R
100-51-6	Benzyl Alcohol	1	0.31	0.063	0.65	J
101-55-3	4-Bromophenyl Phenyl Ether	1	0.65	0.056	0.65	U
85-68-7	Butyl Benzyl Phthalate	1	~~0.12~~ 1.3	0.072	1.3	~~J~~ UB
59-50-7	4-Chloro-3-methylphenol	1	0.65	0.15	0.65	U
106-47-8	4-Chloroaniline	1	1.3	0.13	1.3	U
111-91-1	Bis(2-chloroethoxy)methane	1	0.65	0.024	0.65	U
111-44-4	Bis(2-chloroethyl) Ether	1	0.65	0.031	0.65	U
108-60-1	Bis(2-chloroisopropyl) Ether	1	0.65	0.034	0.65	U
91-58-7	2-Chloronaphthalene	1	0.65	0.022	0.65	U
95-57-8	2-Chlorophenol	1	0.65	0.035	0.65	U
7005-72-3	4-Chlorophenyl Phenyl Ether	1	0.65	0.062	0.65	U
218-01-9	Chrysene	1	0.65	0.059	0.65	U
53-70-3	Dibenz(a,h)anthracene	1	0.65	0.15	0.65	U
132-64-9	Dibenzofuran	1	0.65	0.053	0.65	U
84-74-2	Di-n-butyl Phthalate	1	1.4	0.18	1.3	~~B~~ UB
106-46-7	1,4-Dichlorobenzene	1	0.65	0.026	0.65	U
95-50-1	1,2-Dichlorobenzene	1	0.65	0.051	0.65	U
541-73-1	1,3-Dichlorobenzene	1	0.65	0.053	0.65	U
91-94-1	3,3'-Dichlorobenzidine	1	1.3	0.16	1.3	U
120-83-2	2,4-Dichlorophenol	1	0.65	0.12	0.65	U
84-66-2	Diethyl Phthalate	1	~~0.57~~ 0.65	0.085	0.65	~~J~~ UB
105-67-9	2,4-Dimethylphenol	1	1.3	0.22	1.3	U
131-11-3	Dimethyl Phthalate	1	0.65	0.059	0.65	U
534-52-1	4,6-Dinitro-2-methylphenol	1	6.5	1.3	6.5	U
51-28-5	2,4-Dinitrophenol	1	6.5	1.5	6.5	U

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-08

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-06 File ID: 1401173-06.D

Sampled: 01/13/14 16:35 Prepared: 01/16/14 07:48 Analyzed: 01/23/14 01:38

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 770 mL / 1 mL

QC Batch: 1400299 Sequence: 4A22031 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
606-20-2	2,6-Dinitrotoluene	1	0.65	0.10	0.65	U
121-14-2	2,4-Dinitrotoluene	1	0.65	0.062	0.65	U
117-84-0	Di-n-octyl Phthalate	1	0.65	0.099	0.65	U
117-81-7	Bis(2-ethylhexyl) Phthalate	1	~~0.27~~ 0.65	0.15	0.65	~~JB~~ UB
206-44-0	Fluoranthene	1	0.65	0.081	0.65	U
86-73-7	Fluorene	1	0.65	0.054	0.65	U
118-74-1	Hexachlorobenzene	1	0.65	0.081	0.65	U
87-68-3	Hexachlorobutadiene	1	0.65	0.051	0.65	U
77-47-4	Hexachlorocyclopentadiene	1	0.65	0.058	0.65	U UJ
67-72-1	Hexachloroethane	1	0.65	0.054	0.65	U
193-39-5	Indeno(1,2,3-cd)pyrene	1	0.65	0.10	0.65	U
78-59-1	Isophorone	1	0.65	0.058	0.65	U
91-57-6	2-Methylnaphthalene	1	0.65	0.019	0.65	U
90-12-0	1-Methylnaphthalene	1	0.65	0.025	0.65	U
106-44-5	4-Methylphenol	1	0.65	0.074	0.65	U
95-48-7	2-Methylphenol	1	0.65	0.062	0.65	U
91-20-3	Naphthalene	1	0.65	0.040	0.65	U
100-01-6	4-Nitroaniline	1	1.3	0.43	1.3	U
88-74-4	2-Nitroaniline	1	0.65	0.15	0.65	U
99-09-2	3-Nitroaniline	1	1.3	0.32	1.3	U
98-95-3	Nitrobenzene	1	0.65	0.076	0.65	U
88-75-5	2-Nitrophenol	1	0.65	0.062	0.65	U
100-02-7	4-Nitrophenol	1	6.5	1.6	6.5	U UJ
86-30-6	N-Nitroso-diphenylamine	1	0.65	0.088	0.65	U
621-64-7	N-Nitroso-di-n-propylamine	1	0.65	0.098	0.65	U
87-86-5	Pentachlorophenol	1	0.65	0.11	0.65	U
85-01-8	Phenanthrene	1	0.078	0.055	0.65	J
108-95-2	Phenol	1	0.65	0.044	0.65	U
129-00-0	Pyrene	1	0.65	0.085	0.65	U
58-90-2	2,3,4,6-Tetrachlorophenol	1	6.5	0.48	6.5	U
120-82-1	1,2,4-Trichlorobenzene	1	0.65	0.035	0.65	U
95-95-4	2,4,5-Trichlorophenol	1	0.65	0.13	0.65	U
88-06-2	2,4,6-Trichlorophenol	1	0.65	0.11	0.65	U
56-49-5	3-Methylcholanthrene	1	2.6	0.16	2.6	U

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-08

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-06 File ID: 1401173-06.D

Sampled: 01/13/14 16:35 Prepared: 01/16/14 07:48 Analyzed: 01/23/14 01:38

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 770 mL / 1 mL

QC Batch: 1400299 Sequence: 4A22031 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
935-95-5	2,3,5,6-Tetrachlorophenol	1	13	0.28	13	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
2-Fluorophenol	26.0	14.3	55	20 - 70	
Phenol-d6	26.1	9.45	36	18 - 45	
Nitrobenzene-d5	13.0	9.18	71	31 - 123	
2-Fluorobiphenyl	13.0	7.77	60	25 - 113	
2,4,6-Tribromophenol	26.2	15.4	59	30 - 121	
o-Terphenyl	13.0	8.91	69	42 - 125	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
1,4-Dichlorobenzene-d4	166795	7.77	113	7.84	
Naphthalene-d8	653948	10.5	111	10.58	
Acenaphthene-d10	402071	14.61	114	14.7	
Phenanthrene-d10	620863	18.01	107	18.08	
Chrysene-d12	672131	21.6	102	21.65	
Perylene-d12	598748	23.33	106	23.4	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-08 Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-07 File ID: 1401173-07.D

Sampled: 01/13/14 11:10 Prepared: 01/16/14 07:48 Analyzed: 01/22/14 22:43

Solids: Preparation: 3510C Liquid-Liquid Extn Initial/Final: 980 mL / 1 mL

QC Batch: 1400299 Sequence: 4A22031 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
83-32-9	Acenaphthene	1	0.50	0.033	0.50	U
208-96-8	Acenaphthylene	1	0.50	0.017	0.50	U
120-12-7	Anthracene	1	0.50	0.062	0.50	U
56-55-3	Benzo(a)anthracene	1	0.50	0.045	0.50	U
50-32-8	Benzo(a)pyrene	1	0.50	0.040	0.50	U
205-99-2	Benzo(b)fluoranthene	1	0.50	0.058	0.50	U
207-08-9	Benzo(k)fluoranthene	1	0.50	0.060	0.50	U
191-24-2	Benzo(g,h,i)perylene	1	0.50	0.061	0.50	U
65-85-0	Benzoic Acid	1	5.0	0.48	5.0	U R
100-51-6	Benzyl Alcohol	1	0.50	0.049	0.50	U
101-55-3	4-Bromophenyl Phenyl Ether	1	0.50	0.043	0.50	U
85-68-7	Butyl Benzyl Phthalate	1	1.0	0.056	1.0	U
59-50-7	4-Chloro-3-methylphenol	1	0.50	0.12	0.50	U
106-47-8	4-Chloroaniline	1	1.0	0.10	1.0	U
111-91-1	Bis(2-chloroethoxy)methane	1	0.50	0.018	0.50	U
111-44-4	Bis(2-chloroethyl) Ether	1	0.50	0.024	0.50	U
108-60-1	Bis(2-chloroisopropyl) Ether	1	0.50	0.026	0.50	U
91-58-7	2-Chloronaphthalene	1	0.50	0.017	0.50	U
95-57-8	2-Chlorophenol	1	0.50	0.027	0.50	U
7005-72-3	4-Chlorophenyl Phenyl Ether	1	0.50	0.048	0.50	U
218-01-9	Chrysene	1	0.50	0.045	0.50	U
53-70-3	Dibenz(a,h)anthracene	1	0.50	0.11	0.50	U
132-64-9	Dibenzofuran	1	0.50	0.041	0.50	U
84-74-2	Di-n-butyl Phthalate	1	0.68 1.0	0.14	1.0	JB UB
106-46-7	1,4-Dichlorobenzene	1	0.50	0.020	0.50	U
95-50-1	1,2-Dichlorobenzene	1	0.50	0.040	0.50	U
541-73-1	1,3-Dichlorobenzene	1	0.50	0.041	0.50	U
91-94-1	3,3´-Dichlorobenzidine	1	1.0	0.12	1.0	U
120-83-2	2,4-Dichlorophenol	1	0.50	0.092	0.50	U
84-66-2	Diethyl Phthalate	1	0.57	0.065	0.50	UB
105-67-9	2,4-Dimethylphenol	1	1.0	0.17	1.0	U
131-11-3	Dimethyl Phthalate	1	0.50	0.046	0.50	U
534-52-1	4,6-Dinitro-2-methylphenol	1	5.0	1.0	5.0	U
51-28-5	2,4-Dinitrophenol	1	5.0	1.2	5.0	U

00599

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-08 Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-07 File ID: 1401173-07.D

Sampled: 01/13/14 11:10 Prepared: 01/16/14 07:48 Analyzed: 01/22/14 22:43

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 980 mL / 1 mL

QC Batch: 1400299 Sequence: 4A22031 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
606-20-2	2,6-Dinitrotoluene	1	0.50	0.080	0.50	U
121-14-2	2,4-Dinitrotoluene	1	0.50	0.048	0.50	U
117-84-0	Di-n-octyl Phthalate	1	0.50	0.077	0.50	U
117-81-7	Bis(2-ethylhexyl) Phthalate	1	~~0.15~~ 0.50	0.11	0.50	~~JB~~ UB
206-44-0	Fluoranthene	1	0.50	0.063	0.50	U
86-73-7	Fluorene	1	0.50	0.041	0.50	U
118-74-1	Hexachlorobenzene	1	0.50	0.063	0.50	U
87-68-3	Hexachlorobutadiene	1	0.50	0.040	0.50	U
~~77-47-4~~	~~Hexachlorocyclopentadiene~~	~~1~~	~~0.50~~	~~0.044~~	~~0.50~~	~~U~~
67-72-1	Hexachloroethane	1	0.50	0.042	0.50	U
193-39-5	Indeno(1,2,3-cd)pyrene	1	0.50	0.080	0.50	U
78-59-1	Isophorone	1	0.50	0.045	0.50	U
91-57-6	2-Methylnaphthalene	1	0.50	0.015	0.50	U
90-12-0	1-Methylnaphthalene	1	0.50	0.020	0.50	U
~~106-44-5~~	~~4-Methylphenol~~	~~1~~	~~0.50~~	~~0.057~~	~~0.50~~	~~U~~
~~95-48-7~~	~~2-Methylphenol~~	~~1~~	~~0.50~~	~~0.048~~	~~0.50~~	~~U~~
91-20-3	Naphthalene	1	0.50	0.031	0.50	U
100-01-6	4-Nitroaniline	1	1.0	0.33	1.0	U
88-74-4	2-Nitroaniline	1	0.50	0.12	0.50	U
99-09-2	3-Nitroaniline	1	1.0	0.24	1.0	U
98-95-3	Nitrobenzene	1	0.50	0.058	0.50	U
~~88-75-5~~	~~2-Nitrophenol~~	~~1~~	~~0.50~~	~~0.048~~	~~0.50~~	~~U~~
~~100-02-7~~	~~4-Nitrophenol~~	~~1~~	~~5.0~~	~~1.2~~	~~5.0~~	~~U~~
~~86-30-6~~	~~N-Nitroso-diphenylamine~~	~~1~~	~~0.50~~	~~0.068~~	~~0.50~~	~~U~~
621-64-7	N-Nitroso-di-n-propylamine	1	0.50	0.075	0.50	U
~~87-86-5~~	~~Pentachlorophenol~~	~~1~~	~~0.50~~	~~0.081~~	~~0.50~~	~~U~~
85-01-8	Phenanthrene	1	0.50	0.043	0.50	U
~~108-95-2~~	~~Phenol~~	~~1~~	~~0.50~~	~~0.034~~	~~0.50~~	~~U~~
129-00-0	Pyrene	1	0.50	0.066	0.50	U
~~58-90-2~~	~~2,3,4,6-Tetrachlorophenol~~	~~1~~	~~5.0~~	~~0.37~~	~~5.0~~	~~U~~
120-82-1	1,2,4-Trichlorobenzene	1	0.50	0.027	0.50	U
~~95-95-4~~	~~2,4,5-Trichlorophenol~~	~~1~~	~~0.50~~	~~0.099~~	~~0.50~~	~~U~~
~~88-06-2~~	~~2,4,6-Trichlorophenol~~	~~1~~	~~0.50~~	~~0.085~~	~~0.50~~	~~U~~
56-49-5	3-Methylcholanthrene	1	2.0	0.12	2.0	U

00600

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-08 Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-07 File ID: 1401173-07.D

Sampled: 01/13/14 11:10 Prepared: 01/16/14 07:48 Analyzed: 01/22/14 22:43

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 980 mL / 1 mL

QC Batch: 1400299 Sequence: 4A22031 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
935-95-5	2,3,5,6-Tetrachlorophenol	1	10	0.21	10	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
2-Fluorophenol	20.4	9.51	47	20 - 70	
Phenol-d6	20.5	1.81	9	18 - 45	*
Nitrobenzene-d5	10.2	7.83	77	31 - 123	
2-Fluorobiphenyl	10.2	6.21	61	25 - 113	
2,4,6-Tribromophenol	20.6	11.6	56	30 - 121	
o-Terphenyl	10.2	7.30	72	42 - 125	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
1,4-Dichlorobenzene-d4	158209	7.77	107	7.84	
Naphthalene-d8	616789	10.5	105	10.58	
Acenaphthene-d10	381974	14.61	108	14.7	
Phenanthrene-d10	605982	18.02	104	18.08	
Chrysene-d12	681255	21.6	103	21.65	
Perylene-d12	615931	23.32	109	23.4	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-08 Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-07RE1 File ID: 1401173-07RE1.D

Sampled: 01/13/14 11:10 Prepared: 01/27/14 07:48 Analyzed: 01/31/14 18:05

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 950 mL / 1 mL

QC Batch: 1400299 Sequence: 4A31045 Calibration: 4A31011 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
83-32-9	Acenaphthene	1	0.50	0.033	0.50	U
208-96-8	Acenaphthylene	1	0.50	0.017	0.50	U
120-12-7	Anthracene	1	0.50	0.062	0.50	U
56-55-3	Benzo(a)anthracene	1	0.50	0.045	0.50	U
50-32-8	Benzo(a)pyrene	1	0.50	0.040	0.50	U
205-99-2	Benzo(b)fluoranthene	1	0.50	0.058	0.50	U
207-08-9	Benzo(k)fluoranthene	1	0.50	0.060	0.50	U
191-24-2	Benzo(g,h,i)perylene	1	0.50	0.061	0.50	U
65-85-0	Benzoic Acid	1	5.0	0.48	5.0	U
100-51-6	Benzyl Alcohol	1	0.22	0.049	0.50	J
101-55-3	4-Bromophenyl Phenyl Ether	1	0.50	0.043	0.50	U
85-68-7	Butyl Benzyl Phthalate	1	0.063	0.056	1.0	J
59-50-7	4-Chloro-3-methylphenol	1	0.50	0.12	0.50	U UJ
106-47-8	4-Chloroaniline	1	1.0	0.10	1.0	U
111-91-1	Bis(2-chloroethoxy)methane	1	0.50	0.018	0.50	U
111-44-4	Bis(2-chloroethyl) Ether	1	0.50	0.024	0.50	U
108-60-1	Bis(2-chloroisopropyl) Ether	1	0.50	0.026	0.50	U
91-58-7	2-Chloronaphthalene	1	0.50	0.017	0.50	U
95-57-8	2-Chlorophenol	1	0.50	0.027	0.50	U UJ
7005-72-3	4-Chlorophenyl Phenyl Ether	1	0.50	0.048	0.50	U
218-01-9	Chrysene	1	0.50	0.045	0.50	U
53-70-3	Dibenz(a,h)anthracene	1	0.50	0.11	0.50	U
132-64-9	Dibenzofuran	1	0.50	0.041	0.50	U
84-74-2	Di-n-butyl Phthalate	1	0.32	0.14	1.0	JB
106-46-7	1,4-Dichlorobenzene	1	0.50	0.020	0.50	U
95-50-1	1,2-Dichlorobenzene	1	0.50	0.040	0.50	U
541-73-1	1,3-Dichlorobenzene	1	0.50	0.041	0.50	U
91-94-1	3,3'-Dichlorobenzidine	1	1.0	0.12	1.0	U
120-83-2	2,4-Dichlorophenol	1	0.50	0.092	0.50	U UJ
84-66-2	Diethyl Phthalate	1	0.42	0.065	0.50	J
105-67-9	2,4-Dimethylphenol	1	1.0	0.17	1.0	U UJ
131-11-3	Dimethyl Phthalate	1	0.50	0.046	0.50	U
534-52-1	4,6-Dinitro-2-methylphenol	1	5.0	1.0	5.0	U UJ
51-28-5	2,4-Dinitrophenol	1	5.0	1.2	5.0	U UJ

00618

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-08 Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-07RE1 File ID: 1401173-07RE1.D

Sampled: 01/13/14 11:10 Prepared: 01/27/14 07:48 Analyzed: 01/31/14 18:05

Solids: Preparation: 3510C Liquid-Liquid Extr Initial/Final: 950 mL / 1 mL

QC Batch: 1400299 Sequence: 4A31045 Calibration: 4A31011 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
606-20-2	2,6-Dinitrotoluene	1	0.50	0.080	0.50	U
121-14-2	2,4-Dinitrotoluene	1	0.50	0.048	0.50	U
117-84-0	Di-n-octyl Phthalate	1	0.50	0.077	0.50	U
117-81-7	Bis(2-ethylhexyl) Phthalate	1	0.56	0.11	0.50	B
206-44-0	Fluoranthene	1	0.50	0.063	0.50	U
86-73-7	Fluorene	1	0.50	0.041	0.50	U
118-74-1	Hexachlorobenzene	1	0.50	0.063	0.50	U
87-68-3	Hexachlorobutadiene	1	0.50	0.040	0.50	U
77-47-4	Hexachlorocyclopentadiene	1	0.50	0.044	0.50	U UJ
67-72-1	Hexachloroethane	1	0.50	0.042	0.50	U
193-39-5	Indeno(1,2,3-cd)pyrene	1	0.50	0.080	0.50	U
78-59-1	Isophorone	1	0.50	0.045	0.50	U
91-57-6	2-Methylnaphthalene	1	0.50	0.015	0.50	U
90-12-0	1-Methylnaphthalene	1	0.50	0.020	0.50	U
106-44-5	4-Methylphenol	1	0.50	0.057	0.50	U UJ
95-48-7	2-Methylphenol	1	0.50	0.048	0.50	U UJ
91-20-3	Naphthalene	1	0.032	0.031	0.50	J
100-01-6	4-Nitroaniline	1	1.0	0.33	1.0	U
88-74-4	2-Nitroaniline	1	0.50	0.12	0.50	U
99-09-2	3-Nitroaniline	1	1.0	0.24	1.0	U
98-95-3	Nitrobenzene	1	0.50	0.058	0.50	U
88-75-5	2-Nitrophenol	1	0.50	0.048	0.50	U UJ
100-02-7	4-Nitrophenol	1	5.0	1.2	5.0	U UJ
86-30-6	N-Nitroso-diphenylamine	1	0.50	0.068	0.50	U UJ
621-64-7	N-Nitroso-di-n-propylamine	1	0.50	0.075	0.50	U
87-86-5	Pentachlorophenol	1	0.50	0.081	0.50	U UJ
85-01-8	Phenanthrene	1	0.50	0.043	0.50	U
108-95-2	Phenol	1	0.50	0.034	0.50	U UJ
129-00-0	Pyrene	1	0.50	0.066	0.50	U
58-90-2	2,3,4,6-Tetrachlorophenol	1	5.0	0.37	5.0	U UJ
120-82-1	1,2,4-Trichlorobenzene	1	0.50	0.027	0.50	U
95-95-4	2,4,5-Trichlorophenol	1	0.50	0.099	0.50	U UJ
88-06-2	2,4,6-Trichlorophenol	1	0.50	0.085	0.50	U UJ
56-49-5	3-Methylcholanthrene	1	2.0	0.12	2.0	U

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-08 Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-07RE1 File ID: 1401173-07RE1.D

Sampled: 01/13/14 11:10 Prepared: 01/27/14 07:48 Analyzed: 01/31/14 18:05

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 950 mL / 1 mL

QC Batch: 1400299 Sequence: 4A31045 Calibration: 4A31011 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
935-95-5	2,3,5,6-Tetrachlorophenol	1	10	0.21	10	UUJ

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
2-Fluorophenol	21.1	11.4	54	20 - 70	
Phenol-d6	21.2	4.65	22	18 - 45	
Nitrobenzene-d5	10.5	10.5	99	31 - 123	
2-Fluorobiphenyl	10.5	9.60	91	25 - 113	
2,4,6-Tribromophenol	21.3	19.0	89	30 - 121	
o-Terphenyl	10.5	11.2	106	42 - 125	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
1,4-Dichlorobenzene-d4	266220	7.67	93	7.67	
Naphthalene-d8	997412	10.4	92	10.4	
Acenaphthene-d10	603061	14.51	89	14.51	
Phenanthrene-d10	978650	17.92	88	17.93	
Chrysene-d12	1045926	21.53	87	21.54	
Perylene-d12	964792	23.23	94	23.23	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-08A

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-08 File ID: 1401173-08.D

Sampled: 01/13/14 16:40 Prepared: 01/16/14 07:48 Analyzed: 01/24/14 03:37

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 850 mL / 1 mL

QC Batch: 1400299 Sequence: 4A24001 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
83-32-9	Acenaphthene	1	0.59	0.039	0.59	U
208-96-8	Acenaphthylene	1	0.59	0.020	0.59	U
120-12-7	Anthracene	1	0.59	0.072	0.59	U
56-55-3	Benzo(a)anthracene	1	0.59	0.053	0.59	U
50-32-8	Benzo(a)pyrene	1	0.59	0.047	0.59	U
205-99-2	Benzo(b)fluoranthene	1	0.59	0.068	0.59	U
207-08-9	Benzo(k)fluoranthene	1	0.59	0.070	0.59	U
191-24-2	Benzo(g,h,i)perylene	1	0.59	0.072	0.59	U
~~65-85-0~~	~~Benzoic Acid~~	~~1~~	~~5.9~~	~~0.56~~	~~5.9~~	~~U~~ R
100-51-6	Benzyl Alcohol	1	0.59	0.057	0.59	U
101-55-3	4-Bromophenyl Phenyl Ether	1	0.59	0.050	0.59	U
85-68-7	Butyl Benzyl Phthalate	1	~~0.071~~ 1.2	0.066	1.2	~~J~~ UB
59-50-7	4-Chloro-3-methylphenol	1	0.59	0.14	0.59	U
106-47-8	4-Chloroaniline	1	1.2	0.12	1.2	U
111-91-1	Bis(2-chloroethoxy)methane	1	0.59	0.022	0.59	U
111-44-4	Bis(2-chloroethyl) Ether	1	0.59	0.028	0.59	U
108-60-1	Bis(2-chloroisopropyl) Ether	1	0.59	0.030	0.59	U
91-58-7	2-Chloronaphthalene	1	0.59	0.020	0.59	U
95-57-8	2-Chlorophenol	1	0.59	0.031	0.59	U
7005-72-3	4-Chlorophenyl Phenyl Ether	1	0.59	0.056	0.59	U
218-01-9	Chrysene	1	0.59	0.053	0.59	U
53-70-3	Dibenz(a,h)anthracene	1	0.59	0.13	0.59	U
132-64-9	Dibenzofuran	1	0.59	0.048	0.59	U
84-74-2	Di-n-butyl Phthalate	1	1.2	0.16	1.2	U
106-46-7	1,4-Dichlorobenzene	1	0.59	0.023	0.59	U
95-50-1	1,2-Dichlorobenzene	1	0.59	0.047	0.59	U
541-73-1	1,3-Dichlorobenzene	1	0.59	0.048	0.59	U
91-94-1	3,3'-Dichlorobenzidine	1	1.2	0.15	1.2	U
120-83-2	2,4-Dichlorophenol	1	0.59	0.11	0.59	U
84-66-2	Diethyl Phthalate	1	~~0.19~~ 0.59	0.077	0.59	~~J~~ UB
105-67-9	2,4-Dimethylphenol	1	1.2	0.20	1.2	U
131-11-3	Dimethyl Phthalate	1	0.59	0.054	0.59	U
534-52-1	4,6-Dinitro-2-methylphenol	1	5.9	1.2	5.9	U
51-28-5	2,4-Dinitrophenol	1	5.9	1.4	5.9	U UJ

00638

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-08A

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-08 File ID: 1401173-08.D

Sampled: 01/13/14 16:40 Prepared: 01/16/14 07:48 Analyzed: 01/24/14 03:37

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 850 mL / 1 mL

QC Batch: 1400299 Sequence: 4A24001 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
606-20-2	2,6-Dinitrotoluene	1	0.59	0.094	0.59	U
121-14-2	2,4-Dinitrotoluene	1	0.59	0.056	0.59	U
117-84-0	Di-n-octyl Phthalate	1	0.59	0.090	0.59	U
117-81-7	Bis(2-ethylhexyl) Phthalate	1	~~0.28~~ 0.59	0.13	0.59	~~JB~~ UB
206-44-0	Fluoranthene	1	0.59	0.074	0.59	U
86-73-7	Fluorene	1	0.59	0.049	0.59	U
118-74-1	Hexachlorobenzene	1	0.59	0.074	0.59	U
87-68-3	Hexachlorobutadiene	1	0.59	0.046	0.59	U
77-47-4	Hexachlorocyclopentadiene	1	0.59	0.052	0.59	U UJ
67-72-1	Hexachloroethane	1	0.59	0.049	0.59	U
193-39-5	Indeno(1,2,3-cd)pyrene	1	0.59	0.094	0.59	U
78-59-1	Isophorone	1	0.094	0.053	0.59	J
91-57-6	2-Methylnaphthalene	1	0.59	0.018	0.59	U
90-12-0	1-Methylnaphthalene	1	0.59	0.023	0.59	U
106-44-5	4-Methylphenol	1	0.59	0.067	0.59	U
95-48-7	2-Methylphenol	1	0.59	0.056	0.59	U
91-20-3	Naphthalene	1	0.59	0.036	0.59	U
100-01-6	4-Nitroaniline	1	1.2	0.39	1.2	U
88-74-4	2-Nitroaniline	1	0.59	0.14	0.59	U
99-09-2	3-Nitroaniline	1	1.2	0.29	1.2	U
98-95-3	Nitrobenzene	1	0.59	0.069	0.59	U
88-75-5	2-Nitrophenol	1	0.59	0.056	0.59	U
100-02-7	4-Nitrophenol	1	5.9	1.5	5.9	U UJ
86-30-6	N-Nitroso-diphenylamine	1	0.59	0.080	0.59	U
621-64-7	N-Nitroso-di-n-propylamine	1	0.59	0.089	0.59	U
87-86-5	Pentachlorophenol	1	0.59	0.095	0.59	U
85-01-8	Phenanthrene	1	0.59	0.050	0.59	U
108-95-2	Phenol	1	0.59	0.040	0.59	U
129-00-0	Pyrene	1	0.59	0.077	0.59	U
58-90-2	2,3,4,6-Tetrachlorophenol	1	5.9	0.44	5.9	U
120-82-1	1,2,4-Trichlorobenzene	1	0.59	0.031	0.59	U
95-95-4	2,4,5-Trichlorophenol	1	0.59	0.12	0.59	U
88-06-2	2,4,6-Trichlorophenol	1	0.59	0.10	0.59	U
56-49-5	3-Methylcholanthrene	1	2.4	0.14	2.4	U

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-08A

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-08 File ID: 1401173-08.D

Sampled: 01/13/14 16:40 Prepared: 01/16/14 07:48 Analyzed: 01/24/14 03:37

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 850 mL / 1 mL

QC Batch: 1400299 Sequence: 4A24001 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
935-95-5	2,3,5,6-Tetrachlorophenol	1	12	0.25	12	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
2-Fluorophenol	23.5	11.4	49	20 - 70	
Phenol-d6	23.6	7.69	33	18 - 45	
Nitrobenzene-d5	11.8	8.73	74	31 - 123	
2-Fluorobiphenyl	11.8	6.42	55	25 - 113	
2,4,6-Tribromophenol	23.8	15.0	63	30 - 121	
o-Terphenyl	11.8	8.36	71	42 - 125	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
1,4-Dichlorobenzene-d4	168890	7.74	116	7.84	
Naphthalene-d8	681454	10.47	117	10.58	
Acenaphthene-d10	421707	14.59	119	14.7	
Phenanthrene-d10	650019	18	113	18.08	
Chrysene-d12	644344	21.59	102	21.65	
Perylene-d12	572823	23.31	107	23.4	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-08A Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-09 File ID: 1401173-09.D

Sampled: 01/13/14 11:15 Prepared: 01/16/14 07:48 Analyzed: 01/24/14 01:18

Solids: Preparation: 3510C Liquid-Liquid Extr Initial/Final: 810 mL / 1 mL

QC Batch: 1400299 Sequence: 4A24001 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
83-32-9	Acenaphthene	1	0.62	0.041	0.62	U
208-96-8	Acenaphthylene	1	0.62	0.021	0.62	U
120-12-7	Anthracene	1	0.62	0.076	0.62	U
56-55-3	Benzo(a)anthracene	1	0.62	0.056	0.62	U
50-32-8	Benzo(a)pyrene	1	0.62	0.050	0.62	U
205-99-2	Benzo(b)fluoranthene	1	0.62	0.072	0.62	U
207-08-9	Benzo(k)fluoranthene	1	0.62	0.074	0.62	U
191-24-2	Benzo(g,h,i)perylene	1	0.62	0.075	0.62	U
~~65-85-0~~	~~Benzoic Acid~~	~~1~~	~~6.2~~	~~0.59~~	~~6.2~~	~~U~~ R
100-51-6	Benzyl Alcohol	1	0.62	0.060	0.62	U
101-55-3	4-Bromophenyl Phenyl Ether	1	0.62	0.053	0.62	U
85-68-7	Butyl Benzyl Phthalate	1	~~0.15~~ 1.2	0.069	1.2	~~J~~ UB
59-50-7	4-Chloro-3-methylphenol	1	0.62	0.14	0.62	U
106-47-8	4-Chloroaniline	1	1.2	0.13	1.2	U
111-91-1	Bis(2-chloroethoxy)methane	1	0.62	0.023	0.62	U
111-44-4	Bis(2-chloroethyl) Ether	1	0.62	0.029	0.62	U
108-60-1	Bis(2-chloroisopropyl) Ether	1	0.62	0.032	0.62	U
91-58-7	2-Chloronaphthalene	1	0.62	0.021	0.62	U
95-57-8	2-Chlorophenol	1	0.62	0.033	0.62	U
7005-72-3	4-Chlorophenyl Phenyl Ether	1	0.62	0.059	0.62	U
218-01-9	Chrysene	1	0.62	0.056	0.62	U
53-70-3	Dibenz(a,h)anthracene	1	0.62	0.14	0.62	U
132-64-9	Dibenzofuran	1	0.62	0.050	0.62	U
84-74-2	Di-n-butyl Phthalate	1	1.2	0.17	1.2	U
106-46-7	1,4-Dichlorobenzene	1	0.62	0.024	0.62	U
95-50-1	1,2-Dichlorobenzene	1	0.62	0.049	0.62	U
541-73-1	1,3-Dichlorobenzene	1	0.62	0.051	0.62	U
91-94-1	3,3'-Dichlorobenzidine	1	1.2	0.15	1.2	U
120-83-2	2,4-Dichlorophenol	1	0.62	0.11	0.62	U
84-66-2	Diethyl Phthalate	1	~~0.28~~ 0.62	0.080	0.62	~~J~~ UB
105-67-9	2,4-Dimethylphenol	1	1.2	0.21	1.2	U
131-11-3	Dimethyl Phthalate	1	0.62	0.056	0.62	U
534-52-1	4,6-Dinitro-2-methylphenol	1	6.2	1.3	6.2	U
51-28-5	2,4-Dinitrophenol	1	6.2	1.4	6.2	U UJ

00658

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-08A Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-09 File ID: 1401173-09.D

Sampled: 01/13/14 11:15 Prepared: 01/16/14 07:48 Analyzed: 01/24/14 01:18

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 810 mL / 1 mL

QC Batch: 1400299 Sequence: 4A24001 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
606-20-2	2,6-Dinitrotoluene	1	0.62	0.099	0.62	U
121-14-2	2,4-Dinitrotoluene	1	0.62	0.059	0.62	U
117-84-0	Di-n-octyl Phthalate	1	0.62	0.095	0.62	U
117-81-7	Bis(2-ethylhexyl) Phthalate	1	~~0.23~~ 0.62	0.14	0.62	~~JB~~ UB
206-44-0	Fluoranthene	1	0.62	0.077	0.62	U
86-73-7	Fluorene	1	0.62	0.051	0.62	U
118-74-1	Hexachlorobenzene	1	0.62	0.077	0.62	U
87-68-3	Hexachlorobutadiene	1	0.62	0.049	0.62	U
77-47-4	Hexachlorocyclopentadiene	1	0.62	0.055	0.62	U UJ
67-72-1	Hexachloroethane	1	0.62	0.052	0.62	U
193-39-5	Indeno(1,2,3-cd)pyrene	1	0.62	0.099	0.62	U
78-59-1	Isophorone	1	0.099	0.056	0.62	J
91-57-6	2-Methylnaphthalene	1	0.62	0.018	0.62	U
90-12-0	1-Methylnaphthalene	1	0.62	0.024	0.62	U
106-44-5	4-Methylphenol	1	0.62	0.070	0.62	U
95-48-7	2-Methylphenol	1	0.62	0.059	0.62	U
91-20-3	Naphthalene	1	0.049	0.038	0.62	J
100-01-6	4-Nitroaniline	1	1.2	0.41	1.2	U
88-74-4	2-Nitroaniline	1	0.62	0.14	0.62	U
99-09-2	3-Nitroaniline	1	1.2	0.30	1.2	U
98-95-3	Nitrobenzene	1	0.62	0.072	0.62	U
88-75-5	2-Nitrophenol	1	0.62	0.059	0.62	U
100-02-7	4-Nitrophenol	1	6.2	1.5	6.2	U UJ
86-30-6	N-Nitroso-diphenylamine	1	0.62	0.083	0.62	U
621-64-7	N-Nitroso-di-n-propylamine	1	0.62	0.093	0.62	U
87-86-5	Pentachlorophenol	1	0.62	0.10	0.62	U
85-01-8	Phenanthrene	1	0.62	0.053	0.62	U
108-95-2	Phenol	1	0.62	0.042	0.62	U
129-00-0	Pyrene	1	0.62	0.081	0.62	U
58-90-2	2,3,4,6-Tetrachlorophenol	1	6.2	0.46	6.2	U
120-82-1	1,2,4-Trichlorobenzene	1	0.62	0.033	0.62	U
95-95-4	2,4,5-Trichlorophenol	1	0.62	0.12	0.62	U
88-06-2	2,4,6-Trichlorophenol	1	0.62	0.11	0.62	U
56-49-5	3-Methylcholanthrene	1	2.5	0.15	2.5	U

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-08A Filtered

Laboratory: TriMatrix Laboratories, Inc.
SDG: 1401173
Client: Beazer East, Inc.
Project: Koppers Superior
Matrix: Water
Laboratory ID: 1401173-09
File ID: 1401173-09.D
Sampled: 01/13/14 11:15
Prepared: 01/16/14 07:48
Analyzed: 01/24/14 01:18
Solids:
Preparation: 3510C Liquid-Liquid Ext
Initial/Final: 810 mL / 1 mL
QC Batch: 1400299
Sequence: 4A24001
Calibration: 4A22014
Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
935-95-5	2,3,5,6-Tetrachlorophenol	1	12	0.26	12	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
2-Fluorophenol	24.7	14.0	57	20 - 70	
Phenol-d6	24.8	9.02	36	18 - 45	
Nitrobenzene-d5	12.3	9.22	75	31 - 123	
2-Fluorobiphenyl	12.3	6.86	56	25 - 113	
2,4,6-Tribromophenol	24.9	16.1	65	30 - 121	
o-Terphenyl	12.3	8.90	72	42 - 125	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
1,4-Dichlorobenzene-d4	157419	7.75	108	7.84	
Naphthalene-d8	639097	10.48	110	10.58	
Acenaphthene-d10	392554	14.59	110	14.7	
Phenanthrene-d10	605948	18	105	18.08	
Chrysene-d12	621202	21.58	99	21.65	
Perylene-d12	549449	23.31	102	23.4	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-11 Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-10 File ID: 1401173-10.D

Sampled: 01/13/14 12:30 Prepared: 01/16/14 07:48 Analyzed: 01/22/14 23:18

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 860 mL / 1 mL

QC Batch: 1400299 Sequence: 4A22031 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
83-32-9	Acenaphthene	1	0.58	0.038	0.58	U
208-96-8	Acenaphthylene	1	0.58	0.020	0.58	U
120-12-7	Anthracene	1	0.58	0.072	0.58	U
56-55-3	Benzo(a)anthracene	1	0.58	0.053	0.58	U
50-32-8	Benzo(a)pyrene	1	0.58	0.047	0.58	U
205-99-2	Benzo(b)fluoranthene	1	0.58	0.068	0.58	U
207-08-9	Benzo(k)fluoranthene	1	0.58	0.069	0.58	U
191-24-2	Benzo(g,h,i)perylene	1	0.58	0.071	0.58	U
~~65-85-0~~	~~Benzoic Acid~~	~~1~~	~~5.8~~	~~0.56~~	~~5.8~~	~~U~~ R
100-51-6	Benzyl Alcohol	1	0.58	0.057	0.58	U
101-55-3	4-Bromophenyl Phenyl Ether	1	0.58	0.050	0.58	U
85-68-7	Butyl Benzyl Phthalate	1	1.2	0.065	1.2	U
59-50-7	4-Chloro-3-methylphenol	1	0.58	0.13	0.58	U
106-47-8	4-Chloroaniline	1	1.2	0.12	1.2	U
111-91-1	Bis(2-chloroethoxy)methane	1	0.58	0.021	0.58	U
111-44-4	Bis(2-chloroethyl) Ether	1	0.58	0.028	0.58	U
108-60-1	Bis(2-chloroisopropyl) Ether	1	0.58	0.030	0.58	U
91-58-7	2-Chloronaphthalene	1	0.58	0.020	0.58	U
95-57-8	2-Chlorophenol	1	0.58	0.031	0.58	U
7005-72-3	4-Chlorophenyl Phenyl Ether	1	0.58	0.056	0.58	U
218-01-9	Chrysene	1	0.58	0.053	0.58	U
53-70-3	Dibenz(a,h)anthracene	1	0.58	0.13	0.58	U
132-64-9	Dibenzofuran	1	0.58	0.047	0.58	U
84-74-2	Di-n-butyl Phthalate	1	~~0.16~~ 1.2	0.16	1.2	~~JB~~ UB
106-46-7	1,4-Dichlorobenzene	1	0.58	0.023	0.58	U
95-50-1	1,2-Dichlorobenzene	1	0.58	0.046	0.58	U
541-73-1	1,3-Dichlorobenzene	1	0.58	0.048	0.58	U
91-94-1	3,3´-Dichlorobenzidine	1	1.2	0.14	1.2	U
120-83-2	2,4-Dichlorophenol	1	0.58	0.11	0.58	U
84-66-2	Diethyl Phthalate	1	~~0.31~~ 0.58	0.076	0.58	~~J~~ UB
105-67-9	2,4-Dimethylphenol	1	1.2	0.20	1.2	U
131-11-3	Dimethyl Phthalate	1	0.58	0.053	0.58	U
534-52-1	4,6-Dinitro-2-methylphenol	1	5.8	1.2	5.8	U
51-28-5	2,4-Dinitrophenol	1	5.8	1.3	5.8	U

00678

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-11 Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-10 File ID: 1401173-10.D

Sampled: 01/13/14 12:30 Prepared: 01/16/14 07:48 Analyzed: 01/22/14 23:18

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 860 mL / 1 mL

QC Batch: 1400299 Sequence: 4A22031 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
606-20-2	2,6-Dinitrotoluene	1	0.58	0.093	0.58	U
121-14-2	2,4-Dinitrotoluene	1	0.58	0.055	0.58	U
117-84-0	Di-n-octyl Phthalate	1	0.58	0.089	0.58	U
117-81-7	Bis(2-ethylhexyl) Phthalate	1	~~0.16~~ 0.58	0.13	0.58	~~JB~~ UB
206-44-0	Fluoranthene	1	0.58	0.073	0.58	U
86-73-7	Fluorene	1	0.58	0.048	0.58	U
118-74-1	Hexachlorobenzene	1	0.58	0.073	0.58	U
87-68-3	Hexachlorobutadiene	1	0.58	0.046	0.58	U
77-47-4	Hexachlorocyclopentadiene	1	0.58	0.052	0.58	U UJ
67-72-1	Hexachloroethane	1	0.58	0.049	0.58	U
193-39-5	Indeno(1,2,3-cd)pyrene	1	0.58	0.093	0.58	U
78-59-1	Isophorone	1	0.58	0.052	0.58	U
91-57-6	2-Methylnaphthalene	1	0.023	0.017	0.58	J
90-12-0	1-Methylnaphthalene	1	0.58	0.023	0.58	U
106-44-5	4-Methylphenol	1	0.58	0.066	0.58	U
95-48-7	2-Methylphenol	1	0.58	0.055	0.58	U
91-20-3	Naphthalene	1	0.45	0.036	0.58	J
100-01-6	4-Nitroaniline	1	1.2	0.38	1.2	U
88-74-4	2-Nitroaniline	1	0.58	0.13	0.58	U
99-09-2	3-Nitroaniline	1	1.2	0.28	1.2	U
98-95-3	Nitrobenzene	1	0.58	0.068	0.58	U
88-75-5	2-Nitrophenol	1	0.58	0.055	0.58	U
100-02-7	4-Nitrophenol	1	5.8	1.5	5.8	U UJ
86-30-6	N-Nitroso-diphenylamine	1	0.58	0.079	0.58	U
621-64-7	N-Nitroso-di-n-propylamine	1	0.58	0.088	0.58	U
87-86-5	Pentachlorophenol	1	0.58	0.094	0.58	U
85-01-8	Phenanthrene	1	0.58	0.050	0.58	U
108-95-2	Phenol	1	0.58	0.039	0.58	U
129-00-0	Pyrene	1	0.58	0.076	0.58	U
58-90-2	2,3,4,6-Tetrachlorophenol	1	5.8	0.43	5.8	U
120-82-1	1,2,4-Trichlorobenzene	1	0.58	0.031	0.58	U
95-95-4	2,4,5-Trichlorophenol	1	0.58	0.12	0.58	U
88-06-2	2,4,6-Trichlorophenol	1	0.58	0.099	0.58	U
56-49-5	3-Methylcholanthrene	1	2.3	0.14	2.3	U

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-11 Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-10 File ID: 1401173-10.D

Sampled: 01/13/14 12:30 Prepared: 01/16/14 07:48 Analyzed: 01/22/14 23:18

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 860 mL / 1 mL

QC Batch: 1400299 Sequence: 4A22031 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
935-95-5	2,3,5,6-Tetrachlorophenol	1	12	0.25	12	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
2-Fluorophenol	23.3	10.7	46	20 - 70	
Phenol-d6	23.4	2.23	10	18 - 45	*
Nitrobenzene-d5	11.6	8.92	77	31 - 123	
2-Fluorobiphenyl	11.6	6.84	59	25 - 113	
2,4,6-Tribromophenol	23.5	12.9	55	30 - 121	
o-Terphenyl	11.6	8.07	69	42 - 125	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
1,4-Dichlorobenzene-d4	154303	7.77	104	7.84	
Naphthalene-d8	602969	10.5	103	10.58	
Acenaphthene-d10	369830	14.61	104	14.7	
Phenanthrene-d10	577156	18.01	99	18.08	
Chrysene-d12	657812	21.6	99	21.65	
Perylene-d12	588178	23.33	104	23.4	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-11A Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-11 File ID: 1401173-11.D

Sampled: 01/13/14 12:25 Prepared: 01/16/14 07:48 Analyzed: 01/22/14 23:53

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 1000 mL / 1 mL

QC Batch: 1400299 Sequence: 4A22031 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
83-32-9	Acenaphthene	1	0.50	0.033	0.50	U
208-96-8	Acenaphthylene	1	0.50	0.017	0.50	U
120-12-7	Anthracene	1	0.50	0.062	0.50	U
56-55-3	Benzo(a)anthracene	1	0.50	0.045	0.50	U
50-32-8	Benzo(a)pyrene	1	0.50	0.040	0.50	U
205-99-2	Benzo(b)fluoranthene	1	0.50	0.058	0.50	U
207-08-9	Benzo(k)fluoranthene	1	0.50	0.060	0.50	U
191-24-2	Benzo(g,h,i)perylene	1	0.50	0.061	0.50	U
~~65-85-0~~	~~Benzoic Acid~~	~~1~~	~~5.0~~	~~0.48~~	~~5.0~~	~~U~~ R
100-51-6	Benzyl Alcohol	1	0.50	0.049	0.50	U
101-55-3	4-Bromophenyl Phenyl Ether	1	0.50	0.043	0.50	U
85-68-7	Butyl Benzyl Phthalate	1	1.0	0.056	1.0	U
~~59-50-7~~	~~4-Chloro-3-methylphenol~~	~~1~~	~~0.50~~	~~0.12~~	~~0.50~~	~~U~~ R
106-47-8	4-Chloroaniline	1	1.0	0.10	1.0	U
111-91-1	Bis(2-chloroethoxy)methane	1	0.50	0.018	0.50	U
111-44-4	Bis(2-chloroethyl) Ether	1	0.50	0.024	0.50	U
108-60-1	Bis(2-chloroisopropyl) Ether	1	0.50	0.026	0.50	U
91-58-7	2-Chloronaphthalene	1	0.50	0.017	0.50	U
~~95-57-8~~	~~2-Chlorophenol~~	~~1~~	~~0.50~~	~~0.027~~	~~0.50~~	~~U~~ R
7005-72-3	4-Chlorophenyl Phenyl Ether	1	0.50	0.048	0.50	U
218-01-9	Chrysene	1	0.50	0.045	0.50	U
53-70-3	Dibenz(a,h)anthracene	1	0.50	0.11	0.50	U
132-64-9	Dibenzofuran	1	0.50	0.041	0.50	U
84-74-2	Di-n-butyl Phthalate	1	~~0.16~~ 1.0	0.14	1.0	~~JB~~ UB
106-46-7	1,4-Dichlorobenzene	1	0.50	0.020	0.50	U
95-50-1	1,2-Dichlorobenzene	1	0.50	0.040	0.50	U
541-73-1	1,3-Dichlorobenzene	1	0.50	0.041	0.50	U
91-94-1	3,3'-Dichlorobenzidine	1	1.0	0.12	1.0	U
~~120-83-2~~	~~2,4-Dichlorophenol~~	~~1~~	~~0.50~~	~~0.092~~	~~0.50~~	~~U~~ R
84-66-2	Diethyl Phthalate	1	~~0.25~~ 0.50	0.065	0.50	~~J~~ UB
~~105-67-9~~	~~2,4-Dimethylphenol~~	~~1~~	~~1.0~~	~~0.17~~	~~1.0~~	~~U~~
131-11-3	Dimethyl Phthalate	1	0.50	0.046	0.50	U
~~534-52-1~~	~~4,6-Dinitro-2-methylphenol~~	~~1~~	~~5.0~~	~~1.0~~	~~5.0~~	~~U~~ R
~~51-28-5~~	~~2,4-Dinitrophenol~~	~~1~~	~~5.0~~	~~1.2~~	~~5.0~~	~~U~~ R

00716

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-11A Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-11 File ID: 1401173-11.D

Sampled: 01/13/14 12:25 Prepared: 01/16/14 07:48 Analyzed: 01/22/14 23:53

Solids: Preparation: 3510C Liquid-Liquid Extı Initial/Final: 1000 mL / 1 mL

QC Batch: 1400299 Sequence: 4A22031 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
606-20-2	2,6-Dinitrotoluene	1	0.50	0.080	0.50	U
121-14-2	2,4-Dinitrotoluene	1	0.50	0.048	0.50	U
117-84-0	Di-n-octyl Phthalate	1	0.50	0.077	0.50	U
117-81-7	Bis(2-ethylhexyl) Phthalate	1	~~0.14~~ 0.50	0.11	0.50	~~JB~~ UB
206-44-0	Fluoranthene	1	0.50	0.063	0.50	U
86-73-7	Fluorene	1	0.50	0.041	0.50	U
118-74-1	Hexachlorobenzene	1	0.50	0.063	0.50	U
87-68-3	Hexachlorobutadiene	1	0.50	0.040	0.50	U
~~77-47-4~~	~~Hexachlorocyclopentadiene~~	~~1~~	~~0.50~~	~~0.044~~	~~0.50~~	~~U~~ R
67-72-1	Hexachloroethane	1	0.50	0.042	0.50	U
193-39-5	Indeno(1,2,3-cd)pyrene	1	0.50	0.080	0.50	U
78-59-1	Isophorone	1	0.50	0.045	0.50	U
91-57-6	2-Methylnaphthalene	1	0.50	0.015	0.50	U
90-12-0	1-Methylnaphthalene	1	0.50	0.020	0.50	U
~~106-44-5~~	~~4-Methylphenol~~	~~1~~	~~0.50~~	~~0.057~~	~~0.50~~	~~U~~ R
~~95-48-7~~	~~2-Methylphenol~~	~~1~~	~~0.50~~	~~0.048~~	~~0.50~~	~~U~~ R
91-20-3	Naphthalene	1	0.12	0.031	0.50	J
100-01-6	4-Nitroaniline	1	1.0	0.33	1.0	U
88-74-4	2-Nitroaniline	1	0.50	0.12	0.50	U
99-09-2	3-Nitroaniline	1	1.0	0.24	1.0	U
98-95-3	Nitrobenzene	1	0.50	0.058	0.50	U
~~88-75-5~~	~~2-Nitrophenol~~	~~1~~	~~0.50~~	~~0.048~~	~~0.50~~	~~U~~ R
~~100-02-7~~	~~4-Nitrophenol~~	~~1~~	~~5.0~~	~~1.2~~	~~5.0~~	~~U~~ R
~~86-30-6~~	~~N-Nitroso-diphenylamine~~	~~1~~	~~0.50~~	~~0.068~~	~~0.50~~	~~U~~ R
621-64-7	N-Nitroso-di-n-propylamine	1	0.50	0.075	0.50	U
~~87-86-5~~	~~Pentachlorophenol~~	~~1~~	~~0.50~~	~~0.081~~	~~0.50~~	~~U~~ R
85-01-8	Phenanthrene	1	0.50	0.043	0.50	U
~~108-95-2~~	~~Phenol~~	~~1~~	~~0.50~~	~~0.034~~	~~0.50~~	~~U~~ R
129-00-0	Pyrene	1	0.50	0.066	0.50	U
~~58-90-2~~	~~2,3,4,6-Tetrachlorophenol~~	~~1~~	~~5.0~~	~~0.37~~	~~5.0~~	~~U~~ R
120-82-1	1,2,4-Trichlorobenzene	1	0.50	0.027	0.50	U
~~95-95-4~~	~~2,4,5-Trichlorophenol~~	~~1~~	~~0.50~~	~~0.099~~	~~0.50~~	~~U~~ R
~~88-06-2~~	~~2,4,6-Trichlorophenol~~	~~1~~	~~0.50~~	~~0.085~~	~~0.50~~	~~U~~ R
56-49-5	3-Methylcholanthrene	1	2.0	0.12	2.0	U

00717

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-11A Filtered

Laboratory: TriMatrix Laboratories, Inc.
SDG: 1401173
Client: Beazer East, Inc.
Project: Koppers Superior
Matrix: Water
Laboratory ID: 1401173-11
File ID: 1401173-11.D
Sampled: 01/13/14 12:25
Prepared: 01/16/14 07:48
Analyzed: 01/22/14 23:53
Solids:
Preparation: 3510C Liquid-Liquid Ext
Initial/Final: 1000 mL / 1 mL
QC Batch: 1400299
Sequence: 4A22031
Calibration: 4A22014
Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
~~935-95-5~~	~~2,3,5,6-Tetrachlorophenol~~	~~1~~	~~10~~	~~0.21~~	~~10~~	~~U~~ R

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
2-Fluorophenol	20.0	6.85	34	20 - 70	
Phenol-d6	20.1	1.09	5	18 - 45	*
Nitrobenzene-d5	10.0	8.04	80	31 - 123	
2-Fluorobiphenyl	10.0	6.09	61	25 - 113	
2,4,6-Tribromophenol	20.2	12.2	60	30 - 121	
o-Terphenyl	10.0	7.29	73	42 - 125	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
1,4-Dichlorobenzene-d4	156136	7.77	105	7.84	
Naphthalene-d8	603178	10.5	103	10.58	
Acenaphthene-d10	376309	14.61	106	14.7	
Phenanthrene-d10	611945	18.01	105	18.08	
Chrysene-d12	690756	21.6	104	21.65	
Perylene-d12	623352	23.33	111	23.4	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-11

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-12 File ID: 1401173-12.D

Sampled: 01/14/14 10:10 Prepared: 01/16/14 07:48 Analyzed: 01/24/14 04:11

Solids: Preparation: 3510C Liquid-Liquid Extr Initial/Final: 620 mL / 1 mL

QC Batch: 1400299 Sequence: 4A24001 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
83-32-9	Acenaphthene	1	0.81	0.053	0.81	U
208-96-8	Acenaphthylene	1	0.81	0.028	0.81	U
120-12-7	Anthracene	1	0.81	0.099	0.81	U
56-55-3	Benzo(a)anthracene	1	0.81	0.073	0.81	U
50-32-8	Benzo(a)pyrene	1	0.81	0.065	0.81	U
205-99-2	Benzo(b)fluoranthene	1	0.81	0.094	0.81	U
207-08-9	Benzo(k)fluoranthene	1	0.81	0.096	0.81	U
191-24-2	Benzo(g,h,i)perylene	1	0.81	0.098	0.81	U
~~65-85-0~~	~~Benzoic Acid~~	~~1~~	~~8.1~~	~~0.77~~	~~8.1~~	~~U~~ R
100-51-6	Benzyl Alcohol	1	0.21	0.078	0.81	J
101-55-3	4-Bromophenyl Phenyl Ether	1	0.81	0.069	0.81	U
85-68-7	Butyl Benzyl Phthalate	1	~~0.19~~ 1.6	0.090	1.6	~~J~~ UB
59-50-7	4-Chloro-3-methylphenol	1	0.81	0.19	0.81	U
106-47-8	4-Chloroaniline	1	1.6	0.16	1.6	U
111-91-1	Bis(2-chloroethoxy)methane	1	0.81	0.030	0.81	U
111-44-4	Bis(2-chloroethyl) Ether	1	0.81	0.038	0.81	U
108-60-1	Bis(2-chloroisopropyl) Ether	1	0.81	0.042	0.81	U
91-58-7	2-Chloronaphthalene	1	0.81	0.028	0.81	U
95-57-8	2-Chlorophenol	1	0.81	0.043	0.81	U
7005-72-3	4-Chlorophenyl Phenyl Ether	1	0.81	0.077	0.81	U
218-01-9	Chrysene	1	0.81	0.073	0.81	U
53-70-3	Dibenz(a,h)anthracene	1	0.81	0.18	0.81	U
132-64-9	Dibenzofuran	1	0.81	0.066	0.81	U
84-74-2	Di-n-butyl Phthalate	1	~~0.87~~ 1.6	0.22	1.6	~~JB~~ UB
106-46-7	1,4-Dichlorobenzene	1	0.81	0.032	0.81	U
95-50-1	1,2-Dichlorobenzene	1	0.81	0.064	0.81	U
541-73-1	1,3-Dichlorobenzene	1	0.81	0.066	0.81	U
91-94-1	3,3'-Dichlorobenzidine	1	1.6	0.20	1.6	U
120-83-2	2,4-Dichlorophenol	1	0.81	0.15	0.81	U
84-66-2	Diethyl Phthalate	1	~~0.34~~ 0.81	0.10	0.81	~~J~~ UB
105-67-9	2,4-Dimethylphenol	1	1.6	0.27	1.6	U
131-11-3	Dimethyl Phthalate	1	0.81	0.073	0.81	U
534-52-1	4,6-Dinitro-2-methylphenol	1	8.1	1.6	8.1	U
51-28-5	2,4-Dinitrophenol	1	8.1	1.9	8.1	U UJ

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ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-11

Laboratory: TriMatrix Laboratories, Inc.
SDG: 1401173
Client: Beazer East, Inc.
Project: Koppers Superior
Matrix: Water
Laboratory ID: 1401173-12
File ID: 1401173-12.D
Sampled: 01/14/14 10:10
Prepared: 01/16/14 07:48
Analyzed: 01/24/14 04:11
Solids:
Preparation: 3510C Liquid-Liquid Extı
Initial/Final: 620 mL / 1 mL
QC Batch: 1400299
Sequence: 4A24001
Calibration: 4A22014
Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
606-20-2	2,6-Dinitrotoluene	1	0.81	0.13	0.81	U
121-14-2	2,4-Dinitrotoluene	1	0.81	0.077	0.81	U
117-84-0	Di-n-octyl Phthalate	1	0.81	0.12	0.81	U
117-81-7	Bis(2-ethylhexyl) Phthalate	1	1.5	0.18	0.81	~~B~~ UB
206-44-0	Fluoranthene	1	0.15	0.10	0.81	J
86-73-7	Fluorene	1	0.81	0.067	0.81	U
118-74-1	Hexachlorobenzene	1	0.81	0.10	0.81	U
87-68-3	Hexachlorobutadiene	1	0.81	0.064	0.81	U
77-47-4	Hexachlorocyclopentadiene	1	0.81	0.072	0.81	U UJ
67-72-1	Hexachloroethane	1	0.81	0.067	0.81	U
193-39-5	Indeno(1,2,3-cd)pyrene	1	0.81	0.13	0.81	U
78-59-1	Isophorone	1	0.081	0.073	0.81	J
91-57-6	2-Methylnaphthalene	1	0.048	0.024	0.81	J
90-12-0	1-Methylnaphthalene	1	0.81	0.031	0.81	U
106-44-5	4-Methylphenol	1	0.81	0.091	0.81	U
95-48-7	2-Methylphenol	1	0.81	0.077	0.81	U
91-20-3	Naphthalene	1	0.13	0.050	0.81	J
100-01-6	4-Nitroaniline	1	1.6	0.53	1.6	U
88-74-4	2-Nitroaniline	1	0.81	0.19	0.81	U
99-09-2	3-Nitroaniline	1	1.6	0.39	1.6	U
98-95-3	Nitrobenzene	1	0.81	0.094	0.81	U
88-75-5	2-Nitrophenol	1	0.81	0.077	0.81	U
100-02-7	4-Nitrophenol	1	8.1	2.0	8.1	U UJ
86-30-6	N-Nitroso-diphenylamine	1	0.81	0.11	0.81	U
621-64-7	N-Nitroso-di-n-propylamine	1	0.81	0.12	0.81	U
87-86-5	Pentachlorophenol	1	0.81	0.13	0.81	U
85-01-8	Phenanthrene	1	0.19	0.069	0.81	J
108-95-2	Phenol	1	0.81	0.054	0.81	U
129-00-0	Pyrene	1	0.15	0.11	0.81	J
58-90-2	2,3,4,6-Tetrachlorophenol	1	8.1	0.60	8.1	U
120-82-1	1,2,4-Trichlorobenzene	1	0.81	0.043	0.81	U
95-95-4	2,4,5-Trichlorophenol	1	0.81	0.16	0.81	U
88-06-2	2,4,6-Trichlorophenol	1	0.81	0.14	0.81	U
56-49-5	3-Methylcholanthrene	1	3.2	0.19	3.2	U

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-11

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-12 File ID: 1401173-12.D

Sampled: 01/14/14 10:10 Prepared: 01/16/14 07:48 Analyzed: 01/24/14 04:11

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 620 mL / 1 mL

QC Batch: 1400299 Sequence: 4A24001 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
935-95-5	2,3,5,6-Tetrachlorophenol	1	16	0.34	16	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
2-Fluorophenol	32.3	16.0	49	20 - 70	
Phenol-d6	32.4	11.2	34	18 - 45	
Nitrobenzene-d5	16.1	9.71	60	31 - 123	
2-Fluorobiphenyl	16.1	8.32	52	25 - 113	
2,4,6-Tribromophenol	32.6	17.6	54	30 - 121	
o-Terphenyl	16.1	9.63	60	42 - 125	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
1,4-Dichlorobenzene-d4	172042	7.75	118	7.84	
Naphthalene-d8	674419	10.48	116	10.58	
Acenaphthene-d10	420024	14.59	118	14.7	
Phenanthrene-d10	629431	18	109	18.08	
Chrysene-d12	594540	21.58	94	21.65	
Perylene-d12	519293	23.31	97	23.4	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-11A

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-13 File ID: 1401173-13.D

Sampled: 01/14/14 10:15 Prepared: 01/16/14 07:48 Analyzed: 01/24/14 03:02

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 130 mL / 1 mL

QC Batch: 1400299 Sequence: 4A24001 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
83-32-9	Acenaphthene	1	3.8	0.25	3.8	U
208-96-8	Acenaphthylene	1	3.8	0.13	3.8	U
120-12-7	Anthracene	1	3.8	0.47	3.8	U
56-55-3	Benzo(a)anthracene	1	3.8	0.35	3.8	U
50-32-8	Benzo(a)pyrene	1	3.8	0.31	3.8	U
205-99-2	Benzo(b)fluoranthene	1	3.8	0.45	3.8	U
207-08-9	Benzo(k)fluoranthene	1	3.8	0.46	3.8	U
191-24-2	Benzo(g,h,i)perylene	1	3.8	0.47	3.8	U
~~65-85-0~~	~~Benzoic Acid~~	~~1~~	~~38~~	~~3.7~~	~~38~~	~~U~~ R
100-51-6	Benzyl Alcohol	1	3.8	0.37	3.8	U
101-55-3	4-Bromophenyl Phenyl Ether	1	3.8	0.33	3.8	U
85-68-7	Butyl Benzyl Phthalate	1	3.9	0.43	7.7	J
59-50-7	4-Chloro-3-methylphenol	1	3.8	0.88	3.8	U
106-47-8	4-Chloroaniline	1	7.7	0.78	7.7	U
111-91-1	Bis(2-chloroethoxy)methane	1	3.8	0.14	3.8	U
111-44-4	Bis(2-chloroethyl) Ether	1	3.8	0.18	3.8	U
108-60-1	Bis(2-chloroisopropyl) Ether	1	3.8	0.20	3.8	U
91-58-7	2-Chloronaphthalene	1	3.8	0.13	3.8	U
95-57-8	2-Chlorophenol	1	3.8	0.21	3.8	U
7005-72-3	4-Chlorophenyl Phenyl Ether	1	3.8	0.37	3.8	U
218-01-9	Chrysene	1	3.8	0.35	3.8	U
53-70-3	Dibenz(a,h)anthracene	1	3.8	0.87	3.8	U
132-64-9	Dibenzofuran	1	3.8	0.31	3.8	U
84-74-2	Di-n-butyl Phthalate	1	17	1.0	7.7	~~B~~ UB
106-46-7	1,4-Dichlorobenzene	1	3.8	0.15	3.8	U
95-50-1	1,2-Dichlorobenzene	1	3.8	0.30	3.8	U
541-73-1	1,3-Dichlorobenzene	1	3.8	0.32	3.8	U
91-94-1	3,3'-Dichlorobenzidine	1	7.7	0.95	7.7	U
120-83-2	2,4-Dichlorophenol	1	3.8	0.70	3.8	U
84-66-2	Diethyl Phthalate	1	1.6	0.50	3.8	J
105-67-9	2,4-Dimethylphenol	1	7.7	1.3	7.7	U
131-11-3	Dimethyl Phthalate	1	3.8	0.35	3.8	U
534-52-1	4,6-Dinitro-2-methylphenol	1	38	7.8	38	U
51-28-5	2,4-Dinitrophenol	1	38	8.9	38	U UJ

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ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-11A

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-13 File ID: 1401173-13.D

Sampled: 01/14/14 10:15 Prepared: 01/16/14 07:48 Analyzed: 01/24/14 03:02

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 130 mL / 1 mL

QC Batch: 1400299 Sequence: 4A24001 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
606-20-2	2,6-Dinitrotoluene	1	3.8	0.62	3.8	U
121-14-2	2,4-Dinitrotoluene	1	3.8	0.37	3.8	U
117-84-0	Di-n-octyl Phthalate	1	3.8	0.59	3.8	U
206-44-0	Fluoranthene	1	3.8	0.48	3.8	U
86-73-7	Fluorene	1	3.8	0.32	3.8	U
118-74-1	Hexachlorobenzene	1	3.8	0.48	3.8	U
87-68-3	Hexachlorobutadiene	1	3.8	0.30	3.8	U
77-47-4	Hexachlorocyclopentadiene	1	3.8	0.34	3.8	U UJ
67-72-1	Hexachloroethane	1	3.8	0.32	3.8	U
193-39-5	Indeno(1,2,3-cd)pyrene	1	3.8	0.61	3.8	U
78-59-1	Isophorone	1	3.8	0.35	3.8	U
91-57-6	2-Methylnaphthalene	1	3.8	0.11	3.8	U
90-12-0	1-Methylnaphthalene	1	3.8	0.15	3.8	U
106-44-5	4-Methylphenol	1	3.8	0.44	3.8	U
95-48-7	2-Methylphenol	1	3.8	0.37	3.8	U
91-20-3	Naphthalene	1	3.8	0.24	3.8	U
100-01-6	4-Nitroaniline	1	7.7	2.5	7.7	U
88-74-4	2-Nitroaniline	1	3.8	0.89	3.8	U
99-09-2	3-Nitroaniline	1	7.7	1.9	7.7	U
98-95-3	Nitrobenzene	1	3.8	0.45	3.8	U
88-75-5	2-Nitrophenol	1	3.8	0.37	3.8	U
100-02-7	4-Nitrophenol	1	38	9.6	38	U UJ
86-30-6	N-Nitroso-diphenylamine	1	3.8	0.52	3.8	U
621-64-7	N-Nitroso-di-n-propylamine	1	3.8	0.58	3.8	U
87-86-5	Pentachlorophenol	1	3.8	0.62	3.8	U
85-01-8	Phenanthrene	1	3.8	0.33	3.8	U
108-95-2	Phenol	1	3.8	0.26	3.8	U
129-00-0	Pyrene	1	3.8	0.50	3.8	U
58-90-2	2,3,4,6-Tetrachlorophenol	1	38	2.9	38	U
120-82-1	1,2,4-Trichlorobenzene	1	3.8	0.20	3.8	U
95-95-4	2,4,5-Trichlorophenol	1	3.8	0.76	3.8	U
88-06-2	2,4,6-Trichlorophenol	1	3.8	0.65	3.8	U
56-49-5	3-Methylcholanthrene	1	15	0.92	15	U
935-95-5	2,3,5,6-Tetrachlorophenol	1	77	1.6	77	U

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-11A

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-13 File ID: 1401173-13.D

Sampled: 01/14/14 10:15 Prepared: 01/16/14 07:48 Analyzed: 01/24/14 03:02

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 130 mL / 1 mL

QC Batch: 1400299 Sequence: 4A24001 Calibration: 4A22014 Instrument: 195

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
2-Fluorophenol	154	81.8	53	20 - 70	
Phenol-d6	155	84.7	55	18 - 45	*
Nitrobenzene-d5	76.9	54.0	70	31 - 123	
2-Fluorobiphenyl	76.9	47.5	62	25 - 113	
2,4,6-Tribromophenol	155	66.2	43	30 - 121	
o-Terphenyl	76.9	52.7	68	42 - 125	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
1,4-Dichlorobenzene-d4	165294	7.75	113	7.84	
Naphthalene-d8	641604	10.48	110	10.58	
Acenaphthene-d10	394294	14.59	111	14.7	
Phenanthrene-d10	624368	18	108	18.08	
Chrysene-d12	672420	21.59	107	21.65	
Perylene-d12	597829	23.31	111	23.4	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-11A

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-13RE1 File ID: 1401173-13 x2.D

Sampled: 01/14/14 10:15 Prepared: 01/16/14 07:48 Analyzed: 01/25/14 03:00

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 130 mL / 1 mL

QC Batch: 1400299 Sequence: 4A27042 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
117-81-7	Bis(2-ethylhexyl) Phthalate	2	220	1.7	7.7	~~B~~ D

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
Nitrobenzene-d5	76.9	45.4	59	31 - 123	
2-Fluorobiphenyl	76.9	43.2	56	25 - 113	
o-Terphenyl	76.9	54.3	71	42 - 125	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
1,4-Dichlorobenzene-d4	159887	7.66	88	7.84	
Naphthalene-d8	639606	10.39	90	10.58	
Acenaphthene-d10	399912	14.5	96	14.7	
Phenanthrene-d10	597040	17.92	89	18.08	
Chrysene-d12	702043	21.53	92	21.65	
Perylene-d12	630772	23.23	99	23.4	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-12A Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-14 File ID: 1401173-14 200X.D

Sampled: 01/13/14 11:55 Prepared: 01/16/14 07:48 Analyzed: 01/31/14 16:55

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 1000 mL / 1 mL

QC Batch: 1400299 Sequence: 4A31045 Calibration: 4A31011 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
83-32-9	Acenaphthene	200	140	6.6	100	J
208-96-8	Acenaphthylene	200	100	3.4	100	U UJ
120-12-7	Anthracene	200	100	12	100	U
56-55-3	Benzo(a)anthracene	200	100	9.1	100	U
50-32-8	Benzo(a)pyrene	200	100	8.1	100	U
205-99-2	Benzo(b)fluoranthene	200	100	12	100	U
207-08-9	Benzo(k)fluoranthene	200	100	12	100	U
191-24-2	Benzo(g,h,i)perylene	200	100	12	100	U
~~65-85-0~~	~~Benzoic Acid~~	~~200~~	~~1000~~	~~96~~	~~1000~~	~~U~~ R
100-51-6	Benzyl Alcohol	200	100	9.7	100	U UJ
101-55-3	4-Bromophenyl Phenyl Ether	200	100	8.6	100	U
85-68-7	Butyl Benzyl Phthalate	200	200	11	200	U
59-50-7	4-Chloro-3-methylphenol	200	100	23	100	U
106-47-8	4-Chloroaniline	200	200	20	200	U
111-91-1	Bis(2-chloroethoxy)methane	200	100	3.7	100	U
111-44-4	Bis(2-chloroethyl) Ether	200	100	4.7	100	U
108-60-1	Bis(2-chloroisopropyl) Ether	200	100	5.2	100	U
91-58-7	2-Chloronaphthalene	200	100	3.4	100	U
95-57-8	2-Chlorophenol	200	100	5.3	100	U
7005-72-3	4-Chlorophenyl Phenyl Ether	200	100	9.6	100	U
218-01-9	Chrysene	200	100	9.1	100	U
53-70-3	Dibenz(a,h)anthracene	200	100	23	100	U
132-64-9	Dibenzofuran	200	68	8.2	100	J
84-74-2	Di-n-butyl Phthalate	200	200	27	200	U UJ
106-46-7	1,4-Dichlorobenzene	200	100	3.9	100	U
95-50-1	1,2-Dichlorobenzene	200	100	7.9	100	U
541-73-1	1,3-Dichlorobenzene	200	100	8.2	100	U
91-94-1	3,3'-Dichlorobenzidine	200	200	25	200	U
120-83-2	2,4-Dichlorophenol	200	100	18	100	U
84-66-2	Diethyl Phthalate	200	100	13	100	U
105-67-9	2,4-Dimethylphenol	200	2500	34	200	J
131-11-3	Dimethyl Phthalate	200	100	9.1	100	U UJ
534-52-1	4,6-Dinitro-2-methylphenol	200	1000	200	1000	U UJ
51-28-5	2,4-Dinitrophenol	200	1000	230	1000	U UJ

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-12A Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-14 File ID: 1401173-14 200X.D

Sampled: 01/13/14 11:55 Prepared: 01/16/14 07:48 Analyzed: 01/31/14 16:55

Solids: Preparation: 3510C Liquid-Liquid Extr Initial/Final: 1000 mL / 1 mL

QC Batch: 1400299 Sequence: 4A31045 Calibration: 4A31011 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
606-20-2	2,6-Dinitrotoluene	200	100	16	100	U UJ
121-14-2	2,4-Dinitrotoluene	200	100	9.5	100	U
117-84-0	Di-n-octyl Phthalate	200	100	15	100	U
117-81-7	Bis(2-ethylhexyl) Phthalate	200	100	23	100	U
206-44-0	Fluoranthene	200	100	13	100	U
86-73-7	Fluorene	200	54	8.3	100	J
118-74-1	Hexachlorobenzene	200	100	13	100	U UJ
87-68-3	Hexachlorobutadiene	200	100	7.9	100	U
77-47-4	Hexachlorocyclopentadiene	200	100	8.9	100	U
67-72-1	Hexachloroethane	200	100	8.4	100	U
193-39-5	Indeno(1,2,3-cd)pyrene	200	100	16	100	U
78-59-1	Isophorone	200	100	9.0	100	U
91-57-6	2-Methylnaphthalene	200	210	3.0	100	J
90-12-0	1-Methylnaphthalene	200	110	3.9	100	
106-44-5	4-Methylphenol	200	2500	11	100	
95-48-7	2-Methylphenol	200	460	9.5	100	
91-20-3	Naphthalene	200	3800	6.1	100	
100-01-6	4-Nitroaniline	200	200	66	200	U UJ
88-74-4	2-Nitroaniline	200	100	23	100	U
99-09-2	3-Nitroaniline	200	200	49	200	U
98-95-3	Nitrobenzene	200	100	12	100	U
88-75-5	2-Nitrophenol	200	100	9.5	100	U
100-02-7	4-Nitrophenol	200	1000	250	1000	U
86-30-6	N-Nitroso-diphenylamine	200	100	14	100	U
621-64-7	N-Nitroso-di-n-propylamine	200	100	15	100	U
87-86-5	Pentachlorophenol	200	100	16	100	U
85-01-8	Phenanthrene	200	36	8.5	100	J
108-95-2	Phenol	200	62	6.7	100	J
129-00-0	Pyrene	200	100	13	100	U UJ
58-90-2	2,3,4,6-Tetrachlorophenol	200	1000	74	1000	U
120-82-1	1,2,4-Trichlorobenzene	200	100	5.3	100	U
95-95-4	2,4,5-Trichlorophenol	200	100	20	100	U
88-06-2	2,4,6-Trichlorophenol	200	100	17	100	U
56-49-5	3-Methylcholanthrene	200	400	24	400	U

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ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-12A Filtered

Laboratory: TriMatrix Laboratories, Inc.
SDG: 1401173
Client: Beazer East, Inc.
Project: Koppers Superior
Matrix: Water
Laboratory ID: 1401173-14
File ID: 1401173-14 200X.D
Sampled: 01/13/14 11:55
Prepared: 01/16/14 07:48
Analyzed: 01/31/14 16:55
Solids:
Preparation: 3510C Liquid-Liquid Ext
Initial/Final: 1000 mL / 1 mL
QC Batch: 1400299
Sequence: 4A31045
Calibration: 4A31011
Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
935-95-5	2,3,5,6-Tetrachlorophenol	200	2000	43	2000	U UJ

Internal Standard	Area	RT	% REC.	Ref. RT	Q
1,4-Dichlorobenzene-d4	315632	7.67	110	7.67	
Naphthalene-d8	1222567	10.4	112	10.4	
Acenaphthene-d10	762279	14.5	112	14.51	
Phenanthrene-d10	1307498	17.93	117	17.93	
Chrysene-d12	1400754	21.54	116	21.54	
Perylene-d12	1263638	23.23	122	23.23	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-12A

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-15 File ID: 1401173-15 x100.D

Sampled: 01/14/14 09:45 Prepared: 01/16/14 07:48 Analyzed: 01/24/14 06:29

Solids: Preparation: 3510C Liquid-Liquid Extı Initial/Final: 940 mL / 2 mL

QC Batch: 1400299 Sequence: 4A24001 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
208-96-8	Acenaphthylene	100	220	3.6	110	J
120-12-7	Anthracene	100	3100	13	110	
56-55-3	Benzo(a)anthracene	100	3900	9.7	110	
50-32-8	Benzo(a)pyrene	100	1600	8.6	110	
205-99-2	Benzo(b)fluoranthene	100	2400	12	110	
207-08-9	Benzo(k)fluoranthene	100	1300	13	110	
191-24-2	Benzo(g,h,i)perylene	100	490	13	110	
~~65-85-0~~	~~Benzoic Acid~~	~~100~~	~~1100~~	~~100~~	~~1100~~	~~U~~ R
100-51-6	Benzyl Alcohol	100	110	10	110	U UJ
101-55-3	4-Bromophenyl Phenyl Ether	100	110	9.1	110	U
85-68-7	Butyl Benzyl Phthalate	100	210	12	210	U
59-50-7	4-Chloro-3-methylphenol	100	110	24	110	U
106-47-8	4-Chloroaniline	100	210	22	210	U
111-91-1	Bis(2-chloroethoxy)methane	100	110	3.9	110	U
111-44-4	Bis(2-chloroethyl) Ether	100	110	5.0	110	U
108-60-1	Bis(2-chloroisopropyl) Ether	100	110	5.5	110	U
91-58-7	2-Chloronaphthalene	100	110	3.6	110	U
95-57-8	2-Chlorophenol	100	110	5.7	110	U
7005-72-3	4-Chlorophenyl Phenyl Ether	100	110	10	110	U
218-01-9	Chrysene	100	2400	9.6	110	J
53-70-3	Dibenz(a,h)anthracene	100	180	24	110	J
84-74-2	Di-n-butyl Phthalate	100	210	29	210	U UJ
106-46-7	1,4-Dichlorobenzene	100	110	4.2	110	U
95-50-1	1,2-Dichlorobenzene	100	110	8.4	110	U
541-73-1	1,3-Dichlorobenzene	100	110	8.7	110	U
91-94-1	3,3´-Dichlorobenzidine	100	210	26	210	U
120-83-2	2,4-Dichlorophenol	100	110	19	110	U
84-66-2	Diethyl Phthalate	100	110	14	110	U
105-67-9	2,4-Dimethylphenol	100	2100	36	210	J
131-11-3	Dimethyl Phthalate	100	110	9.7	110	U UJ
534-52-1	4,6-Dinitro-2-methylphenol	100	1100	220	1100	U
51-28-5	2,4-Dinitrophenol	100	1100	250	1100	U
606-20-2	2,6-Dinitrotoluene	100	110	17	110	U
121-14-2	2,4-Dinitrotoluene	100	110	10	110	U

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ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-12A

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-15 File ID: 1401173-15 x100.D

Sampled: 01/14/14 09:45 Prepared: 01/16/14 07:48 Analyzed: 01/24/14 06:29

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 940 mL / 2 mL

QC Batch: 1400299 Sequence: 4A24001 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
117-84-0	Di-n-octyl Phthalate	100	110	16	110	U UJ
117-81-7	Bis(2-ethylhexyl) Phthalate	100	110	24	110	U
118-74-1	Hexachlorobenzene	100	110	13	110	U
87-68-3	Hexachlorobutadiene	100	110	8.4	110	U
77-47-4	Hexachlorocyclopentadiene	100	110	9.4	110	U
67-72-1	Hexachloroethane	100	110	8.9	110	U
193-39-5	Indeno(1,2,3-cd)pyrene	100	490	17	110	J
78-59-1	Isophorone	100	110	9.6	110	U UJ
106-44-5	4-Methylphenol	100	2300	12	110	J
95-48-7	2-Methylphenol	100	510	10	110	J
100-01-6	4-Nitroaniline	100	210	70	210	U UJ
88-74-4	2-Nitroaniline	100	110	25	110	U
99-09-2	3-Nitroaniline	100	210	52	210	U
98-95-3	Nitrobenzene	100	110	12	110	U
88-75-5	2-Nitrophenol	100	110	10	110	U
100-02-7	4-Nitrophenol	100	1100	270	1100	U
86-30-6	N-Nitroso-diphenylamine	100	110	14	110	U
621-64-7	N-Nitroso-di-n-propylamine	100	110	16	110	U
87-86-5	Pentachlorophenol	100	110	17	110	U
108-95-2	Phenol	100	62	7.2	110	J
58-90-2	2,3,4,6-Tetrachlorophenol	100	1100	79	1100	U UJ
120-82-1	1,2,4-Trichlorobenzene	100	110	5.7	110	U
95-95-4	2,4,5-Trichlorophenol	100	110	21	110	U
88-06-2	2,4,6-Trichlorophenol	100	110	18	110	U
56-49-5	3-Methylcholanthrene	100	430	26	430	U
935-95-5	2,3,5,6-Tetrachlorophenol	100	2100	45	2100	U

Internal Standard	Area	RT	% REC.	Ref. RT	Q
1,4-Dichlorobenzene-d4	173713	7.75	119	7.84	
Naphthalene-d8	758379	10.52	131	10.58	
Acenaphthene-d10	461643	14.61	130	14.7	
Phenanthrene-d10	772513	18.02	134	18.08	
Chrysene-d12	733577	21.6	117	21.65	
Perylene-d12	651184	23.32	121	23.4	

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-12A

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-15RE1 File ID: 1401173-15 2000X.D

Sampled: 01/14/14 09:45 Prepared: 01/16/14 07:48 Analyzed: 01/31/14 17:30

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 940 mL / 2 mL

QC Batch: 1400299 Sequence: 4A31045 Calibration: 4A31011 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
83-32-9	Acenaphthene	2000	18000	140	2100	DJ
132-64-9	Dibenzofuran	2000	12000	170	2100	
206-44-0	Fluoranthene	2000	22000	270	2100	
86-73-7	Fluorene	2000	15000	180	2100	
91-57-6	2-Methylnaphthalene	2000	18000	63	2100	
90-12-0	1-Methylnaphthalene	2000	8600	83	2100	
91-20-3	Naphthalene	2000	78000	130	2100	
85-01-8	Phenanthrene	2000	41000	180	2100	
129-00-0	Pyrene	2000	16000	280	2100	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
1,4-Dichlorobenzene-d4	306676	7.67	107	7.67	
Naphthalene-d8	1192920	10.39	110	10.4	
Acenaphthene-d10	749538	14.5	110	14.51	
Phenanthrene-d10	1226068	17.93	110	17.93	
Chrysene-d12	1297232	21.54	108	21.54	
Perylene-d12	1144607	23.23	111	23.23	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-19C Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-16 File ID: 1401173-16.D

Sampled: 01/13/14 12:00 Prepared: 01/16/14 07:48 Analyzed: 01/23/14 00:28

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 790 mL / 1 mL

QC Batch: 1400299 Sequence: 4A22031 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
83-32-9	Acenaphthene	1	0.076	0.042	0.63	J
208-96-8	Acenaphthylene	1	0.63	0.022	0.63	U
120-12-7	Anthracene	1	0.089	0.078	0.63	J
56-55-3	Benzo(a)anthracene	1	0.63	0.057	0.63	U
50-32-8	Benzo(a)pyrene	1	0.63	0.051	0.63	U
205-99-2	Benzo(b)fluoranthene	1	0.63	0.074	0.63	U
207-08-9	Benzo(k)fluoranthene	1	0.63	0.075	0.63	U
191-24-2	Benzo(g,h,i)perylene	1	0.63	0.077	0.63	U
~~65-85-0~~	~~Benzoic Acid~~	~~1~~	~~6.3~~	~~0.61~~	~~6.3~~	~~U~~ R
100-51-6	Benzyl Alcohol	1	0.38	0.062	0.63	J
101-55-3	4-Bromophenyl Phenyl Ether	1	0.63	0.054	0.63	U
85-68-7	Butyl Benzyl Phthalate	1	1.3	0.071	1.3	U
59-50-7	4-Chloro-3-methylphenol	1	0.63	0.15	0.63	U
106-47-8	4-Chloroaniline	1	1.3	0.13	1.3	U
111-91-1	Bis(2-chloroethoxy)methane	1	0.63	0.023	0.63	U
111-44-4	Bis(2-chloroethyl) Ether	1	0.63	0.030	0.63	U
108-60-1	Bis(2-chloroisopropyl) Ether	1	0.63	0.033	0.63	U
91-58-7	2-Chloronaphthalene	1	0.63	0.022	0.63	U
95-57-8	2-Chlorophenol	1	0.63	0.034	0.63	U
7005-72-3	4-Chlorophenyl Phenyl Ether	1	0.63	0.061	0.63	U
218-01-9	Chrysene	1	0.63	0.057	0.63	U
53-70-3	Dibenz(a,h)anthracene	1	0.63	0.14	0.63	U
132-64-9	Dibenzofuran	1	0.63	0.052	0.63	U
84-74-2	Di-n-butyl Phthalate	1	~~0.72~~ 1.3	0.17	1.3	~~JB~~ UB
106-46-7	1,4-Dichlorobenzene	1	0.63	0.025	0.63	U
95-50-1	1,2-Dichlorobenzene	1	0.63	0.050	0.63	U
541-73-1	1,3-Dichlorobenzene	1	0.63	0.052	0.63	U
91-94-1	3,3'-Dichlorobenzidine	1	1.3	0.16	1.3	U
120-83-2	2,4-Dichlorophenol	1	0.63	0.12	0.63	U
84-66-2	Diethyl Phthalate	1	0.84	0.082	0.63	UB
105-67-9	2,4-Dimethylphenol	1	1.3	0.21	1.3	U
131-11-3	Dimethyl Phthalate	1	0.089	0.058	0.63	J
534-52-1	4,6-Dinitro-2-methylphenol	1	6.3	1.3	6.3	U
51-28-5	2,4-Dinitrophenol	1	6.3	1.5	6.3	U

00910

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-19C Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-16 File ID: 1401173-16.D

Sampled: 01/13/14 12:00 Prepared: 01/16/14 07:48 Analyzed: 01/23/14 00:28

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 790 mL / 1 mL

QC Batch: 1400299 Sequence: 4A22031 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
606-20-2	2,6-Dinitrotoluene	1	0.63	0.10	0.63	U
121-14-2	2,4-Dinitrotoluene	1	0.63	0.060	0.63	U
117-84-0	Di-n-octyl Phthalate	1	0.63	0.097	0.63	U
117-81-7	Bis(2-ethylhexyl) Phthalate	1	~~0.32~~ 0.63	0.14	0.63	~~JB~~ UB
206-44-0	Fluoranthene	1	0.089	0.079	0.63	J
86-73-7	Fluorene	1	0.13	0.052	0.63	J
118-74-1	Hexachlorobenzene	1	0.63	0.079	0.63	U
87-68-3	Hexachlorobutadiene	1	0.63	0.050	0.63	U
77-47-4	Hexachlorocyclopentadiene	1	0.63	0.056	0.63	U UJ
67-72-1	Hexachloroethane	1	0.63	0.053	0.63	U
193-39-5	Indeno(1,2,3-cd)pyrene	1	0.63	0.10	0.63	U
78-59-1	Isophorone	1	2.3	0.057	0.63	
91-57-6	2-Methylnaphthalene	1	0.14	0.019	0.63	J
90-12-0	1-Methylnaphthalene	1	0.11	0.025	0.63	J
106-44-5	4-Methylphenol	1	0.63	0.072	0.63	U
95-48-7	2-Methylphenol	1	0.63	0.060	0.63	U
91-20-3	Naphthalene	1	0.27	0.039	0.63	J
100-01-6	4-Nitroaniline	1	1.3	0.42	1.3	U
88-74-4	2-Nitroaniline	1	0.63	0.15	0.63	U
99-09-2	3-Nitroaniline	1	1.3	0.31	1.3	U
98-95-3	Nitrobenzene	1	0.63	0.074	0.63	U
88-75-5	2-Nitrophenol	1	0.63	0.060	0.63	U
100-02-7	4-Nitrophenol	1	6.3	1.6	6.3	U UJ
86-30-6	N-Nitroso-diphenylamine	1	0.63	0.086	0.63	U
621-64-7	N-Nitroso-di-n-propylamine	1	0.63	0.095	0.63	U
87-86-5	Pentachlorophenol	1	0.63	0.10	0.63	U
85-01-8	Phenanthrene	1	1.3	0.054	0.63	
108-95-2	Phenol	1	0.63	0.043	0.63	U
129-00-0	Pyrene	1	0.63	0.083	0.63	U
58-90-2	2,3,4,6-Tetrachlorophenol	1	6.3	0.47	6.3	U
120-82-1	1,2,4-Trichlorobenzene	1	0.63	0.034	0.63	U
95-95-4	2,4,5-Trichlorophenol	1	0.63	0.13	0.63	U
88-06-2	2,4,6-Trichlorophenol	1	0.63	0.11	0.63	U
56-49-5	3-Methylcholanthrene	1	2.5	0.15	2.5	U

00911

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-19C Filtered

Laboratory: TriMatrix Laboratories, Inc.
SDG: 1401173
Client: Beazer East, Inc.
Project: Koppers Superior
Matrix: Water
Laboratory ID: 1401173-16
File ID: 1401173-16.D
Sampled: 01/13/14 12:00
Prepared: 01/16/14 07:48
Analyzed: 01/23/14 00:28
Solids:
Preparation: 3510C Liquid-Liquid Ext
Initial/Final: 790 mL / 1 mL
QC Batch: 1400299
Sequence: 4A22031
Calibration: 4A22014
Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
935-95-5	2,3,5,6-Tetrachlorophenol	1	13	0.27	13	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
2-Fluorophenol	25.3	13.8	55	20 - 70	
Phenol-d6	25.4	9.59	38	18 - 45	
Nitrobenzene-d5	12.7	9.57	76	31 - 123	
2-Fluorobiphenyl	12.7	7.20	57	25 - 113	
2,4,6-Tribromophenol	25.6	16.4	64	30 - 121	
o-Terphenyl	12.7	8.78	69	42 - 125	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
1,4-Dichlorobenzene-d4	161196	7.76	109	7.84	
Naphthalene-d8	629773	10.5	107	10.58	
Acenaphthene-d10	385437	14.61	109	14.7	
Phenanthrene-d10	608755	18.01	105	18.08	
Chrysene-d12	645865	21.6	98	21.65	
Perylene-d12	586993	23.33	104	23.4	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-19C

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-17 File ID: 1401173-17.D

Sampled: 01/14/14 09:35 Prepared: 01/16/14 07:48 Analyzed: 01/23/14 02:13

Solids: Preparation: 3510C Liquid-Liquid Extr Initial/Final: 860 mL / 1 mL

QC Batch: 1400299 Sequence: 4A22031 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
83-32-9	Acenaphthene	1	0.058	0.038	0.58	J
208-96-8	Acenaphthylene	1	0.58	0.020	0.58	U
120-12-7	Anthracene	1	0.12	0.072	0.58	J
56-55-3	Benzo(a)anthracene	1	0.070	0.053	0.58	J
50-32-8	Benzo(a)pyrene	1	0.58	0.047	0.58	U
205-99-2	Benzo(b)fluoranthene	1	0.58	0.068	0.58	U
207-08-9	Benzo(k)fluoranthene	1	0.58	0.069	0.58	U
191-24-2	Benzo(g,h,i)perylene	1	0.58	0.071	0.58	U
~~65-85-0~~	~~Benzoic Acid~~	~~1~~	~~5.8~~	~~0.56~~	~~5.8~~	~~U~~ R
100-51-6	Benzyl Alcohol	1	0.53	0.057	0.58	J
101-55-3	4-Bromophenyl Phenyl Ether	1	0.58	0.050	0.58	U
85-68-7	Butyl Benzyl Phthalate	1	1.2	0.065	1.2	U
59-50-7	4-Chloro-3-methylphenol	1	0.58	0.13	0.58	U
106-47-8	4-Chloroaniline	1	1.2	0.12	1.2	U
111-91-1	Bis(2-chloroethoxy)methane	1	0.58	0.021	0.58	U
111-44-4	Bis(2-chloroethyl) Ether	1	0.58	0.028	0.58	U
108-60-1	Bis(2-chloroisopropyl) Ether	1	0.58	0.030	0.58	U
91-58-7	2-Chloronaphthalene	1	0.58	0.020	0.58	U
95-57-8	2-Chlorophenol	1	0.58	0.031	0.58	U
7005-72-3	4-Chlorophenyl Phenyl Ether	1	0.58	0.056	0.58	U
218-01-9	Chrysene	1	0.58	0.053	0.58	U
53-70-3	Dibenz(a,h)anthracene	1	0.58	0.13	0.58	U
132-64-9	Dibenzofuran	1	0.047	0.047	0.58	J
84-74-2	Di-n-butyl Phthalate	1	1.4	0.16	1.2	~~B~~ UB
106-46-7	1,4-Dichlorobenzene	1	0.58	0.023	0.58	U
95-50-1	1,2-Dichlorobenzene	1	0.58	0.046	0.58	U
541-73-1	1,3-Dichlorobenzene	1	0.58	0.048	0.58	U
91-94-1	3,3'-Dichlorobenzidine	1	1.2	0.14	1.2	U
120-83-2	2,4-Dichlorophenol	1	0.58	0.11	0.58	U
84-66-2	Diethyl Phthalate	1	0.72	0.076	0.58	UB
105-67-9	2,4-Dimethylphenol	1	1.2	0.20	1.2	U
131-11-3	Dimethyl Phthalate	1	0.081	0.053	0.58	J
534-52-1	4,6-Dinitro-2-methylphenol	1	5.8	1.2	5.8	U
51-28-5	2,4-Dinitrophenol	1	5.8	1.3	5.8	U

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-19C

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-17 File ID: 1401173-17.D

Sampled: 01/14/14 09:35 Prepared: 01/16/14 07:48 Analyzed: 01/23/14 02:13

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 860 mL / 1 mL

QC Batch: 1400299 Sequence: 4A22031 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
606-20-2	2,6-Dinitrotoluene	1	0.58	0.093	0.58	U
121-14-2	2,4-Dinitrotoluene	1	0.58	0.055	0.58	U
117-84-0	Di-n-octyl Phthalate	1	0.58	0.089	0.58	U
117-81-7	Bis(2-ethylhexyl) Phthalate	1	~~0.20~~ 0.58	0.13	0.58	~~JB~~ UB
206-44-0	Fluoranthene	1	0.43	0.073	0.58	J
86-73-7	Fluorene	1	0.14	0.048	0.58	J
118-74-1	Hexachlorobenzene	1	0.58	0.073	0.58	U
87-68-3	Hexachlorobutadiene	1	0.58	0.046	0.58	U
77-47-4	Hexachlorocyclopentadiene	1	0.58	0.052	0.58	U UJ
67-72-1	Hexachloroethane	1	0.58	0.049	0.58	U
193-39-5	Indeno(1,2,3-cd)pyrene	1	0.58	0.093	0.58	U
78-59-1	Isophorone	1	2.4	0.052	0.58	
91-57-6	2-Methylnaphthalene	1	0.14	0.017	0.58	J
90-12-0	1-Methylnaphthalene	1	0.12	0.023	0.58	J
106-44-5	4-Methylphenol	1	0.58	0.066	0.58	U
95-48-7	2-Methylphenol	1	0.58	0.055	0.58	U
91-20-3	Naphthalene	1	0.19	0.036	0.58	J
100-01-6	4-Nitroaniline	1	1.2	0.38	1.2	U
88-74-4	2-Nitroaniline	1	0.58	0.13	0.58	U
99-09-2	3-Nitroaniline	1	1.2	0.28	1.2	U
98-95-3	Nitrobenzene	1	0.58	0.068	0.58	U
88-75-5	2-Nitrophenol	1	0.58	0.055	0.58	U
100-02-7	4-Nitrophenol	1	5.8	1.5	5.8	U UJ
86-30-6	N-Nitroso-diphenylamine	1	0.58	0.079	0.58	U
621-64-7	N-Nitroso-di-n-propylamine	1	0.58	0.088	0.58	U
87-86-5	Pentachlorophenol	1	0.58	0.094	0.58	U
85-01-8	Phenanthrene	1	2.0	0.050	0.58	
108-95-2	Phenol	1	0.58	0.039	0.58	U
129-00-0	Pyrene	1	0.35	0.076	0.58	J
58-90-2	2,3,4,6-Tetrachlorophenol	1	5.8	0.43	5.8	U
120-82-1	1,2,4-Trichlorobenzene	1	0.58	0.031	0.58	U
95-95-4	2,4,5-Trichlorophenol	1	0.58	0.12	0.58	U
88-06-2	2,4,6-Trichlorophenol	1	0.58	0.099	0.58	U
56-49-5	3-Methylcholanthrene	1	2.3	0.14	2.3	U

00945

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-19C

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-17 File ID: 1401173-17.D

Sampled: 01/14/14 09:35 Prepared: 01/16/14 07:48 Analyzed: 01/23/14 02:13

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 860 mL / 1 mL

QC Batch: 1400299 Sequence: 4A22031 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
935-95-5	2,3,5,6-Tetrachlorophenol	1	12	0.25	12	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
2-Fluorophenol	23.3	10.6	45	20 - 70	
Phenol-d6	23.4	7.38	32	18 - 45	
Nitrobenzene-d5	11.6	9.37	81	31 - 123	
2-Fluorobiphenyl	11.6	6.65	57	25 - 113	
2,4,6-Tribromophenol	23.5	14.2	61	30 - 121	
o-Terphenyl	11.6	8.51	73	42 - 125	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
1,4-Dichlorobenzene-d4	161677	7.77	109	7.84	
Naphthalene-d8	626837	10.5	107	10.58	
Acenaphthene-d10	392898	14.61	111	14.7	
Phenanthrene-d10	620782	18.01	107	18.08	
Chrysene-d12	657298	21.6	99	21.65	
Perylene-d12	594742	23.33	105	23.4	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-23

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-18 File ID: 1401173-18.D

Sampled: 01/13/14 09:35 Prepared: 01/16/14 07:48 Analyzed: 01/23/14 23:35

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 860 mL / 1 mL

QC Batch: 1400299 Sequence: 4A24001 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
83-32-9	Acenaphthene	1	0.58	0.038	0.58	U UJ
208-96-8	Acenaphthylene	1	0.58	0.020	0.58	U
120-12-7	Anthracene	1	0.58	0.072	0.58	U
56-55-3	Benzo(a)anthracene	1	0.58	0.053	0.58	U
50-32-8	Benzo(a)pyrene	1	0.58	0.047	0.58	U
205-99-2	Benzo(b)fluoranthene	1	0.58	0.068	0.58	U
207-08-9	Benzo(k)fluoranthene	1	0.58	0.069	0.58	U
191-24-2	Benzo(g,h,i)perylene	1	0.58	0.071	0.58	U
~~65-85-0~~	~~Benzoic Acid~~	~~1~~	~~5.8~~	~~0.56~~	~~5.8~~	~~U~~ R
100-51-6	Benzyl Alcohol	1	0.58	0.057	0.58	U UJ
101-55-3	4-Bromophenyl Phenyl Ether	1	0.58	0.050	0.58	U
85-68-7	Butyl Benzyl Phthalate	1	1.2	0.065	1.2	U
59-50-7	4-Chloro-3-methylphenol	1	0.58	0.13	0.58	U
106-47-8	4-Chloroaniline	1	1.2	0.12	1.2	U
111-91-1	Bis(2-chloroethoxy)methane	1	0.58	0.021	0.58	U
111-44-4	Bis(2-chloroethyl) Ether	1	0.58	0.028	0.58	U
108-60-1	Bis(2-chloroisopropyl) Ether	1	0.58	0.030	0.58	U
91-58-7	2-Chloronaphthalene	1	0.58	0.020	0.58	U
95-57-8	2-Chlorophenol	1	0.58	0.031	0.58	U
7005-72-3	4-Chlorophenyl Phenyl Ether	1	0.58	0.056	0.58	U
218-01-9	Chrysene	1	0.58	0.053	0.58	U
53-70-3	Dibenz(a,h)anthracene	1	0.58	0.13	0.58	U
132-64-9	Dibenzofuran	1	0.58	0.047	0.58	U
84-74-2	Di-n-butyl Phthalate	1	2.3	0.16	1.2	~~B~~ UB
106-46-7	1,4-Dichlorobenzene	1	0.58	0.023	0.58	U UJ
95-50-1	1,2-Dichlorobenzene	1	0.58	0.046	0.58	U
541-73-1	1,3-Dichlorobenzene	1	0.58	0.048	0.58	U
91-94-1	3,3'-Dichlorobenzidine	1	1.2	0.14	1.2	U
120-83-2	2,4-Dichlorophenol	1	0.58	0.11	0.58	U
84-66-2	Diethyl Phthalate	1	~~0.38~~ 0.58	0.076	0.58	~~J~~ UBJ
105-67-9	2,4-Dimethylphenol	1	1.2	0.20	1.2	U
131-11-3	Dimethyl Phthalate	1	0.10	0.053	0.58	J
534-52-1	4,6-Dinitro-2-methylphenol	1	5.8	1.2	5.8	U
51-28-5	2,4-Dinitrophenol	1	5.8	1.3	5.8	U UJ

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-23

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-18 File ID: 1401173-18.D

Sampled: 01/13/14 09:35 Prepared: 01/16/14 07:48 Analyzed: 01/23/14 23:35

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 860 mL / 1 mL

QC Batch: 1400299 Sequence: 4A24001 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
606-20-2	2,6-Dinitrotoluene	1	0.58	0.093	0.58	U UJ
121-14-2	2,4-Dinitrotoluene	1	0.58	0.055	0.58	U
117-84-0	Di-n-octyl Phthalate	1	0.58	0.089	0.58	U
117-81-7	Bis(2-ethylhexyl) Phthalate	1	~~0.30~~ 0.58	0.13	0.58	~~JB~~ UBJ
206-44-0	Fluoranthene	1	0.58	0.073	0.58	U
86-73-7	Fluorene	1	0.58	0.048	0.58	U UJ
118-74-1	Hexachlorobenzene	1	0.58	0.073	0.58	U
87-68-3	Hexachlorobutadiene	1	0.58	0.046	0.58	U
77-47-4	Hexachlorocyclopentadiene	1	0.58	0.052	0.58	U
67-72-1	Hexachloroethane	1	0.58	0.049	0.58	U
193-39-5	Indeno(1,2,3-cd)pyrene	1	0.58	0.093	0.58	U
78-59-1	Isophorone	1	1.7	0.052	0.58	
91-57-6	2-Methylnaphthalene	1	0.58	0.017	0.58	U UJ
90-12-0	1-Methylnaphthalene	1	0.58	0.023	0.58	U
106-44-5	4-Methylphenol	1	0.58	0.066	0.58	U UJ
95-48-7	2-Methylphenol	1	0.58	0.055	0.58	U
91-20-3	Naphthalene	1	0.58	0.036	0.58	U
100-01-6	4-Nitroaniline	1	1.2	0.38	1.2	U
88-74-4	2-Nitroaniline	1	0.58	0.13	0.58	U
99-09-2	3-Nitroaniline	1	1.2	0.28	1.2	U
98-95-3	Nitrobenzene	1	0.58	0.068	0.58	U UJ
88-75-5	2-Nitrophenol	1	0.58	0.055	0.58	U
100-02-7	4-Nitrophenol	1	5.8	1.5	5.8	U UJ
86-30-6	N-Nitroso-diphenylamine	1	0.58	0.079	0.58	U UJ
621-64-7	N-Nitroso-di-n-propylamine	1	0.58	0.088	0.58	U UJ
87-86-5	Pentachlorophenol	1	0.58	0.094	0.58	U
85-01-8	Phenanthrene	1	0.58	0.050	0.58	U UJ
108-95-2	Phenol	1	0.58	0.039	0.58	U
129-00-0	Pyrene	1	0.58	0.076	0.58	U
58-90-2	2,3,4,6-Tetrachlorophenol	1	5.8	0.43	5.8	U
120-82-1	1,2,4-Trichlorobenzene	1	0.58	0.031	0.58	U
95-95-4	2,4,5-Trichlorophenol	1	0.58	0.12	0.58	U
88-06-2	2,4,6-Trichlorophenol	1	0.58	0.099	0.58	U
56-49-5	3-Methylcholanthrene	1	2.3	0.14	2.3	U

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-23

Laboratory: TriMatrix Laboratories, Inc.
SDG: 1401173
Client: Beazer East, Inc.
Project: Koppers Superior
Matrix: Water
Laboratory ID: 1401173-18
File ID: 1401173-18.D
Sampled: 01/13/14 09:35
Prepared: 01/16/14 07:48
Analyzed: 01/23/14 23:35
Solids:
Preparation: 3510C Liquid-Liquid Ext
Initial/Final: 860 mL / 1 mL
QC Batch: 1400299
Sequence: 4A24001
Calibration: 4A22014
Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
935-95-5	2,3,5,6-Tetrachlorophenol	1	12	0.25	12	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
2-Fluorophenol	23.3	9.30	40	20 - 70	
Phenol-d6	23.4	6.79	29	18 - 45	
Nitrobenzene-d5	11.6	8.67	75	31 - 123	
2-Fluorobiphenyl	11.6	6.97	60	25 - 113	
2,4,6-Tribromophenol	23.5	11.2	48	30 - 121	
o-Terphenyl	11.6	8.16	70	42 - 125	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
1,4-Dichlorobenzene-d4	165031	7.74	113	7.84	
Naphthalene-d8	664212	10.48	114	10.58	
Acenaphthene-d10	403434	14.59	113	14.7	
Phenanthrene-d10	645120	18	112	18.08	
Chrysene-d12	700779	21.58	111	21.65	
Perylene-d12	629774	23.31	117	23.4	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-23 Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-19 File ID: 1401173-19.D

Sampled: 01/13/14 09:00 Prepared: 01/17/14 07:49 Analyzed: 01/23/14 21:50

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 1000 mL / 1 mL

QC Batch: 1400300 Sequence: 4A24001 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
83-32-9	Acenaphthene	1	0.50	0.033	0.50	U UJ
208-96-8	Acenaphthylene	1	0.50	0.017	0.50	U
120-12-7	Anthracene	1	0.50	0.062	0.50	U
56-55-3	Benzo(a)anthracene	1	0.50	0.045	0.50	U
50-32-8	Benzo(a)pyrene	1	0.50	0.040	0.50	U
205-99-2	Benzo(b)fluoranthene	1	0.50	0.058	0.50	U
207-08-9	Benzo(k)fluoranthene	1	0.50	0.060	0.50	U
191-24-2	Benzo(g,h,i)perylene	1	0.50	0.061	0.50	U UJ
~~65-85-0~~	~~Benzoic Acid~~	~~1~~	~~5.0~~	~~0.48~~	~~5.0~~	~~U~~ R
100-51-6	Benzyl Alcohol	1	0.50	0.049	0.50	U
101-55-3	4-Bromophenyl Phenyl Ether	1	0.50	0.043	0.50	U UJ
85-68-7	Butyl Benzyl Phthalate	1	1.0	0.056	1.0	U UJ
~~59-50-7~~	~~4-Chloro-3-methylphenol~~	~~1~~	~~0.50~~	~~0.12~~	~~0.50~~	~~U~~
106-47-8	4-Chloroaniline	1	1.0	0.10	1.0	U
111-91-1	Bis(2-chloroethoxy)methane	1	0.50	0.018	0.50	U
111-44-4	Bis(2-chloroethyl) Ether	1	0.50	0.024	0.50	U
108-60-1	Bis(2-chloroisopropyl) Ether	1	0.50	0.026	0.50	U UJ
91-58-7	2-Chloronaphthalene	1	0.50	0.017	0.50	U UJ
~~95-57-8~~	~~2-Chlorophenol~~	~~1~~	~~0.50~~	~~0.027~~	~~0.50~~	~~U~~
7005-72-3	4-Chlorophenyl Phenyl Ether	1	0.50	0.048	0.50	U UJ
218-01-9	Chrysene	1	0.50	0.045	0.50	U
53-70-3	Dibenz(a,h)anthracene	1	0.50	0.11	0.50	U UJ
132-64-9	Dibenzofuran	1	0.50	0.041	0.50	U UJ
84-74-2	Di-n-butyl Phthalate	1	~~0.34~~ 1.0	0.14	1.0	~~J~~ UB
106-46-7	1,4-Dichlorobenzene	1	0.50	0.020	0.50	U
95-50-1	1,2-Dichlorobenzene	1	0.50	0.040	0.50	U
541-73-1	1,3-Dichlorobenzene	1	0.50	0.041	0.50	U
91-94-1	3,3´-Dichlorobenzidine	1	1.0	0.12	1.0	U UJ
~~120-83-2~~	~~2,4-Dichlorophenol~~	~~1~~	~~0.50~~	~~0.092~~	~~0.50~~	~~U~~
84-66-2	Diethyl Phthalate	1	0.58	0.065	0.50	UB
~~105-67-9~~	~~2,4-Dimethylphenol~~	~~1~~	~~1.0~~	~~0.17~~	~~1.0~~	~~U~~
131-11-3	Dimethyl Phthalate	1	0.12	0.046	0.50	J
~~534-52-1~~	~~4,6-Dinitro-2-methylphenol~~	~~1~~	~~5.0~~	~~1.0~~	~~5.0~~	~~U~~
~~51-28-5~~	~~2,4-Dinitrophenol~~	~~1~~	~~5.0~~	~~1.2~~	~~5.0~~	~~U~~

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-23 Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-19 File ID: 1401173-19.D

Sampled: 01/13/14 09:00 Prepared: 01/17/14 07:49 Analyzed: 01/23/14 21:50

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 1000 mL / 1 mL

QC Batch: 1400300 Sequence: 4A24001 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
606-20-2	2,6-Dinitrotoluene	1	0.11	0.080	0.50	J
121-14-2	2,4-Dinitrotoluene	1	0.50	0.048	0.50	U
117-84-0	Di-n-octyl Phthalate	1	0.50	0.077	0.50	U UJ
117-81-7	Bis(2-ethylhexyl) Phthalate	1	~~0.15~~ 0.50	0.11	0.50	~~J~~ UBJ
206-44-0	Fluoranthene	1	0.50	0.063	0.50	U
86-73-7	Fluorene	1	0.50	0.041	0.50	U UJ
118-74-1	Hexachlorobenzene	1	0.50	0.063	0.50	U UJ
87-68-3	Hexachlorobutadiene	1	0.50	0.040	0.50	U UJ
~~77-47-4~~	~~Hexachlorocyclopentadiene~~	~~1~~	~~0.50~~	~~0.044~~	~~0.50~~	~~U~~
67-72-1	Hexachloroethane	1	0.50	0.042	0.50	U
193-39-5	Indeno(1,2,3-cd)pyrene	1	0.50	0.080	0.50	U UJ
78-59-1	Isophorone	1	1.6	0.045	0.50	
91-57-6	2-Methylnaphthalene	1	0.50	0.015	0.50	U UJ
90-12-0	1-Methylnaphthalene	1	0.50	0.020	0.50	U
~~106-44-5~~	~~4-Methylphenol~~	~~1~~	~~0.50~~	~~0.057~~	~~0.50~~	~~U~~
~~95-48-7~~	~~2-Methylphenol~~	~~1~~	~~0.50~~	~~0.048~~	~~0.50~~	~~U~~
91-20-3	Naphthalene	1	0.040	0.031	0.50	J
100-01-6	4-Nitroaniline	1	1.0	0.33	1.0	U
88-74-4	2-Nitroaniline	1	0.50	0.12	0.50	U
99-09-2	3-Nitroaniline	1	1.0	0.24	1.0	U
98-95-3	Nitrobenzene	1	0.50	0.058	0.50	U
~~88-75-5~~	~~2-Nitrophenol~~	~~1~~	~~0.50~~	~~0.048~~	~~0.50~~	~~U~~
~~100-02-7~~	~~4-Nitrophenol~~	~~1~~	~~5.0~~	~~1.2~~	~~5.0~~	~~U~~
~~86-30-6~~	~~N-Nitroso-diphenylamine~~	~~1~~	~~0.50~~	~~0.068~~	~~0.50~~	~~U~~
621-64-7	N-Nitroso-di-n-propylamine	1	0.50	0.075	0.50	U
~~87-86-5~~	~~Pentachlorophenol~~	~~1~~	~~0.50~~	~~0.081~~	~~0.50~~	~~U~~
85-01-8	Phenanthrene	1	0.50	0.043	0.50	U UJ
~~108-95-2~~	~~Phenol~~	~~1~~	~~0.50~~	~~0.034~~	~~0.50~~	~~U~~
129-00-0	Pyrene	1	0.50	0.066	0.50	U
~~58-90-2~~	~~2,3,4,6-Tetrachlorophenol~~	~~1~~	~~5.0~~	~~0.37~~	~~5.0~~	~~U~~
120-82-1	1,2,4-Trichlorobenzene	1	0.50	0.027	0.50	U
~~95-95-4~~	~~2,4,5-Trichlorophenol~~	~~1~~	~~0.50~~	~~0.099~~	~~0.50~~	~~U~~
~~88-06-2~~	~~2,4,6-Trichlorophenol~~	~~1~~	~~0.50~~	~~0.085~~	~~0.50~~	~~U~~
56-49-5	3-Methylcholanthrene	1	2.0	0.12	2.0	U

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-23 Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-19 File ID: 1401173-19.D

Sampled: 01/13/14 09:00 Prepared: 01/17/14 07:49 Analyzed: 01/23/14 21:50

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 1000 mL / 1 mL

QC Batch: 1400300 Sequence: 4A24001 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
935-95-5	2,3,5,6-Tetrachlorophenol	1	10	0.21	10	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
2-Fluorophenol	20.0	5.36	27	20 - 70	
Phenol-d6	20.1	1.82	9	18 - 45	*
Nitrobenzene-d5	10.0	7.42	74	31 - 123	
2-Fluorobiphenyl	10.0	5.23	52	25 - 113	
2,4,6-Tribromophenol	20.2	7.05	35	30 - 121	
o-Terphenyl	10.0	6.61	66	42 - 125	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
1,4-Dichlorobenzene-d4	177284	7.75	121	7.84	
Naphthalene-d8	701526	10.47	121	10.58	
Acenaphthene-d10	433155	14.59	122	14.7	
Phenanthrene-d10	692174	18	120	18.08	
Chrysene-d12	758290	21.58	121	21.65	
Perylene-d12	672245	23.31	125	23.4	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-23 Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-19RE1 File ID: 1401173-19RE1.D

Sampled: 01/13/14 09:00 Prepared: 01/27/14 07:49 Analyzed: 01/31/14 19:15

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 900 mL / 1 mL

QC Batch: 1400300 Sequence: 4A31045 Calibration: 4A31011 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
83-32-9	Acenaphthene	1	0.56	0.037	0.56	U
208-96-8	Acenaphthylene	1	0.56	0.019	0.56	U
120-12-7	Anthracene	1	0.56	0.068	0.56	U
56-55-3	Benzo(a)anthracene	1	0.56	0.050	0.56	U
50-32-8	Benzo(a)pyrene	1	0.56	0.045	0.56	U
205-99-2	Benzo(b)fluoranthene	1	0.56	0.065	0.56	U
207-08-9	Benzo(k)fluoranthene	1	0.56	0.066	0.56	U
191-24-2	Benzo(g,h,i)perylene	1	0.56	0.068	0.56	U
65-85-0	Benzoic Acid	1	2.3	0.53	5.6	J
100-51-6	Benzyl Alcohol	1	0.70	0.054	0.56	
101-55-3	4-Bromophenyl Phenyl Ether	1	0.56	0.048	0.56	U
85-68-7	Butyl Benzyl Phthalate	1	0.14	0.062	1.1	J
59-50-7	4-Chloro-3-methylphenol	1	0.56	0.13	0.56	U UJ
106-47-8	4-Chloroaniline	1	1.1	0.11	1.1	U
111-91-1	Bis(2-chloroethoxy)methane	1	0.56	0.020	0.56	U
111-44-4	Bis(2-chloroethyl) Ether	1	0.56	0.026	0.56	U
108-60-1	Bis(2-chloroisopropyl) Ether	1	0.56	0.029	0.56	U
91-58-7	2-Chloronaphthalene	1	0.56	0.019	0.56	U
95-57-8	2-Chlorophenol	1	0.56	0.030	0.56	U UJ
7005-72-3	4-Chlorophenyl Phenyl Ether	1	0.56	0.053	0.56	U
218-01-9	Chrysene	1	0.56	0.050	0.56	U
53-70-3	Dibenz(a,h)anthracene	1	0.56	0.13	0.56	U
132-64-9	Dibenzofuran	1	0.56	0.045	0.56	U
84-74-2	Di-n-butyl Phthalate	1	0.96	0.15	1.1	J
106-46-7	1,4-Dichlorobenzene	1	0.56	0.022	0.56	U
95-50-1	1,2-Dichlorobenzene	1	0.56	0.044	0.56	U
541-73-1	1,3-Dichlorobenzene	1	0.56	0.046	0.56	U
91-94-1	3,3'-Dichlorobenzidine	1	1.1	0.14	1.1	U
120-83-2	2,4-Dichlorophenol	1	0.56	0.10	0.56	U UJ
84-66-2	Diethyl Phthalate	1	0.69	0.072	0.56	
105-67-9	2,4-Dimethylphenol	1	1.1	0.19	1.1	U UJ
131-11-3	Dimethyl Phthalate	1	0.17	0.051	0.56	J
534-52-1	4,6-Dinitro-2-methylphenol	1	5.6	1.1	5.6	U UJ
51-28-5	2,4-Dinitrophenol	1	5.6	1.3	5.6	U UJ

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-23 Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-19RE1 File ID: 1401173-19RE1.D

Sampled: 01/13/14 09:00 Prepared: 01/27/14 07:49 Analyzed: 01/31/14 19:15

Solids: Preparation: 3510C Liquid-Liquid Extr Initial/Final: 900 mL / 1 mL

QC Batch: 1400300 Sequence: 4A31045 Calibration: 4A31011 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
606-20-2	2,6-Dinitrotoluene	1	0.56	0.089	0.56	U
121-14-2	2,4-Dinitrotoluene	1	0.56	0.053	0.56	U
117-84-0	Di-n-octyl Phthalate	1	0.56	0.085	0.56	U
117-81-7	Bis(2-ethylhexyl) Phthalate	1	0.59	0.13	0.56	
206-44-0	Fluoranthene	1	0.56	0.070	0.56	U
86-73-7	Fluorene	1	0.56	0.046	0.56	U
118-74-1	Hexachlorobenzene	1	0.56	0.070	0.56	U
87-68-3	Hexachlorobutadiene	1	0.56	0.044	0.56	U
77-47-4	Hexachlorocyclopentadiene	1	0.56	0.049	0.56	U UJ
67-72-1	Hexachloroethane	1	0.56	0.046	0.56	U
193-39-5	Indeno(1,2,3-cd)pyrene	1	0.56	0.089	0.56	U
78-59-1	Isophorone	1	2.0	0.050	0.56	
91-57-6	2-Methylnaphthalene	1	0.022	0.017	0.56	J
90-12-0	1-Methylnaphthalene	1	0.56	0.022	0.56	U
106-44-5	4-Methylphenol	1	0.56	0.063	0.56	U UJ
95-48-7	2-Methylphenol	1	0.56	0.053	0.56	U UJ
91-20-3	Naphthalene	1	0.56	0.034	0.56	U
100-01-6	4-Nitroaniline	1	1.1	0.37	1.1	U
88-74-4	2-Nitroaniline	1	0.56	0.13	0.56	U
99-09-2	3-Nitroaniline	1	1.1	0.27	1.1	U
98-95-3	Nitrobenzene	1	0.56	0.065	0.56	U
88-75-5	2-Nitrophenol	1	0.56	0.053	0.56	U UJ
100-02-7	4-Nitrophenol	1	5.6	1.4	5.6	U UJ
86-30-6	N-Nitroso-diphenylamine	1	0.56	0.075	0.56	U UJ
621-64-7	N-Nitroso-di-n-propylamine	1	0.56	0.084	0.56	U
87-86-5	Pentachlorophenol	1	0.56	0.090	0.56	U UJ
85-01-8	Phenanthrene	1	0.056	0.047	0.56	J
108-95-2	Phenol	1	0.56	0.037	0.56	U UJ
129-00-0	Pyrene	1	0.56	0.073	0.56	U
58-90-2	2,3,4,6-Tetrachlorophenol	1	5.6	0.41	5.6	U UJ
120-82-1	1,2,4-Trichlorobenzene	1	0.56	0.030	0.56	U
95-95-4	2,4,5-Trichlorophenol	1	0.56	0.11	0.56	U UJ
88-06-2	2,4,6-Trichlorophenol	1	0.56	0.095	0.56	U UJ
56-49-5	3-Methylcholanthrene	1	2.2	0.13	2.2	U

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

TMW-23 Filtered

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-19RE1 File ID: 1401173-19RE1.D

Sampled: 01/13/14 09:00 Prepared: 01/27/14 07:49 Analyzed: 01/31/14 19:15

Solids: Preparation: 3510C Liquid-Liquid Extı Initial/Final: 900 mL / 1 mL

QC Batch: 1400300 Sequence: 4A31045 Calibration: 4A31011 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
935-95-5	2,3,5,6-Tetrachlorophenol	1	11	0.24	11	U UJ

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
2-Fluorophenol	22.2	14.8	67	20 - 70	
Phenol-d6	22.3	5.97	27	18 - 45	
Nitrobenzene-d5	11.1	11.6	104	31 - 123	
2-Fluorobiphenyl	11.1	10.1	91	25 - 113	
2,4,6-Tribromophenol	22.4	23.7	106	30 - 121	
o-Terphenyl	11.1	11.9	107	42 - 125	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
1,4-Dichlorobenzene-d4	278470	7.67	97	7.67	
Naphthalene-d8	1042714	10.39	96	10.4	
Acenaphthene-d10	629573	14.5	93	14.51	
Phenanthrene-d10	1017307	17.92	91	17.93	
Chrysene-d12	1129229	21.54	94	21.54	
Perylene-d12	1042732	23.22	101	23.23	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

MW-800

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-20 File ID: 1401173-20.D

Sampled: 01/13/14 00:00 Prepared: 01/16/14 07:48 Analyzed: 01/24/14 01:53

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 890 mL / 1 mL

QC Batch: 1400299 Sequence: 4A24001 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
83-32-9	Acenaphthene	1	0.56	0.037	0.56	U
208-96-8	Acenaphthylene	1	0.56	0.019	0.56	U
120-12-7	Anthracene	1	0.56	0.069	0.56	U
56-55-3	Benzo(a)anthracene	1	0.56	0.051	0.56	U
50-32-8	Benzo(a)pyrene	1	0.56	0.045	0.56	U
205-99-2	Benzo(b)fluoranthene	1	0.56	0.065	0.56	U
207-08-9	Benzo(k)fluoranthene	1	0.56	0.067	0.56	U
191-24-2	Benzo(g,h,i)perylene	1	0.56	0.068	0.56	U
~~65-85-0~~	~~Benzoic Acid~~	~~1~~	~~5.6~~	~~0.54~~	~~5.6~~	~~U~~ R
100-51-6	Benzyl Alcohol	1	0.56	0.055	0.56	U
101-55-3	4-Bromophenyl Phenyl Ether	1	0.56	0.048	0.56	U
85-68-7	Butyl Benzyl Phthalate	1	~~0.090~~ 1.1	0.063	1.1	~~J~~ UB
59-50-7	4-Chloro-3-methylphenol	1	0.56	0.13	0.56	U
106-47-8	4-Chloroaniline	1	1.1	0.11	1.1	U
111-91-1	Bis(2-chloroethoxy)methane	1	0.56	0.021	0.56	U
111-44-4	Bis(2-chloroethyl) Ether	1	0.56	0.027	0.56	U
108-60-1	Bis(2-chloroisopropyl) Ether	1	0.56	0.029	0.56	U
91-58-7	2-Chloronaphthalene	1	0.56	0.019	0.56	U
95-57-8	2-Chlorophenol	1	0.56	0.030	0.56	U
7005-72-3	4-Chlorophenyl Phenyl Ether	1	0.56	0.054	0.56	U
218-01-9	Chrysene	1	0.56	0.051	0.56	U
53-70-3	Dibenz(a,h)anthracene	1	0.56	0.13	0.56	U
132-64-9	Dibenzofuran	1	0.56	0.046	0.56	U
84-74-2	Di-n-butyl Phthalate	1	3.7	0.15	1.1	~~B~~ UB
106-46-7	1,4-Dichlorobenzene	1	0.56	0.022	0.56	U
95-50-1	1,2-Dichlorobenzene	1	0.56	0.044	0.56	U
541-73-1	1,3-Dichlorobenzene	1	0.56	0.046	0.56	U
91-94-1	3,3'-Dichlorobenzidine	1	1.1	0.14	1.1	U
120-83-2	2,4-Dichlorophenol	1	0.56	0.10	0.56	U
84-66-2	Diethyl Phthalate	1	~~0.24~~ 0.56	0.073	0.56	~~J~~ UB
105-67-9	2,4-Dimethylphenol	1	1.1	0.19	1.1	U
131-11-3	Dimethyl Phthalate	1	0.56	0.051	0.56	U
534-52-1	4,6-Dinitro-2-methylphenol	1	5.6	1.1	5.6	U
51-28-5	2,4-Dinitrophenol	1	5.6	1.3	5.6	U UJ

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

MW-800

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-20 File ID: 1401173-20.D

Sampled: 01/13/14 00:00 Prepared: 01/16/14 07:48 Analyzed: 01/24/14 01:53

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 890 mL / 1 mL

QC Batch: 1400299 Sequence: 4A24001 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
606-20-2	2,6-Dinitrotoluene	1	0.56	0.090	0.56	U
121-14-2	2,4-Dinitrotoluene	1	0.56	0.053	0.56	U
117-84-0	Di-n-octyl Phthalate	1	0.56	0.086	0.56	U
117-81-7	Bis(2-ethylhexyl) Phthalate	1	~~0.22~~ 0.56	0.13	0.56	~~JB~~ UB
206-44-0	Fluoranthene	1	0.56	0.070	0.56	U
86-73-7	Fluorene	1	0.56	0.046	0.56	U
118-74-1	Hexachlorobenzene	1	0.56	0.070	0.56	U
87-68-3	Hexachlorobutadiene	1	0.56	0.044	0.56	U
77-47-4	Hexachlorocyclopentadiene	1	0.56	0.050	0.56	U UJ
67-72-1	Hexachloroethane	1	0.56	0.047	0.56	U
193-39-5	Indeno(1,2,3-cd)pyrene	1	0.56	0.090	0.56	U
78-59-1	Isophorone	1	0.56	0.051	0.56	U
91-57-6	2-Methylnaphthalene	1	0.56	0.017	0.56	U
90-12-0	1-Methylnaphthalene	1	0.56	0.022	0.56	U
106-44-5	4-Methylphenol	1	0.56	0.064	0.56	U
95-48-7	2-Methylphenol	1	0.56	0.053	0.56	U
91-20-3	Naphthalene	1	0.56	0.034	0.56	U
100-01-6	4-Nitroaniline	1	1.1	0.37	1.1	U
88-74-4	2-Nitroaniline	1	0.56	0.13	0.56	U
99-09-2	3-Nitroaniline	1	1.1	0.27	1.1	U
98-95-3	Nitrobenzene	1	0.56	0.066	0.56	U
88-75-5	2-Nitrophenol	1	0.56	0.053	0.56	U
100-02-7	4-Nitrophenol	1	5.6	1.4	5.6	U UJ
86-30-6	N-Nitroso-diphenylamine	1	0.56	0.076	0.56	U
621-64-7	N-Nitroso-di-n-propylamine	1	0.56	0.085	0.56	U
87-86-5	Pentachlorophenol	1	0.56	0.091	0.56	U
85-01-8	Phenanthrene	1	0.56	0.048	0.56	U
108-95-2	Phenol	1	0.56	0.038	0.56	U
129-00-0	Pyrene	1	0.56	0.074	0.56	U
58-90-2	2,3,4,6-Tetrachlorophenol	1	5.6	0.42	5.6	U
120-82-1	1,2,4-Trichlorobenzene	1	0.56	0.030	0.56	U
95-95-4	2,4,5-Trichlorophenol	1	0.56	0.11	0.56	U
88-06-2	2,4,6-Trichlorophenol	1	0.56	0.096	0.56	U
56-49-5	3-Methylcholanthrene	1	2.2	0.13	2.2	U

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

MW-800

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-20 File ID: 1401173-20.D

Sampled: 01/13/14 00:00 Prepared: 01/16/14 07:48 Analyzed: 01/24/14 01:53

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 890 mL / 1 mL

QC Batch: 1400299 Sequence: 4A24001 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
935-95-5	2,3,5,6-Tetrachlorophenol	1	11	0.24	11	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
2-Fluorophenol	22.5	10.1	45	20 - 70	
Phenol-d6	22.6	3.57	16	18 - 45	*
Nitrobenzene-d5	11.2	7.88	70	31 - 123	
2-Fluorobiphenyl	11.2	6.69	59	25 - 113	
2,4,6-Tribromophenol	22.7	12.3	54	30 - 121	
o-Terphenyl	11.2	7.70	68	42 - 125	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
1,4-Dichlorobenzene-d4	167769	7.75	115	7.84	
Naphthalene-d8	653724	10.48	113	10.58	
Acenaphthene-d10	404743	14.59	114	14.7	
Phenanthrene-d10	635777	18	110	18.08	
Chrysene-d12	714616	21.58	114	21.65	
Perylene-d12	639959	23.31	119	23.4	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

MW-800

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-20RE1 File ID: 1401173-20RE1.D

Sampled: 01/13/14 00:00 Prepared: 01/27/14 07:48 Analyzed: 01/31/14 19:50

Solids: Preparation: 3510C Liquid-Liquid Extn Initial/Final: 900 mL / 1 mL

QC Batch: 1400299 Sequence: 4A31045 Calibration: 4A31011 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
83-32-9	Acenaphthene	1	0.56	0.037	0.56	U
208-96-8	Acenaphthylene	1	0.56	0.019	0.56	U
120-12-7	Anthracene	1	0.56	0.068	0.56	U
56-55-3	Benzo(a)anthracene	1	0.56	0.050	0.56	U
50-32-8	Benzo(a)pyrene	1	0.56	0.045	0.56	U
205-99-2	Benzo(b)fluoranthene	1	0.56	0.065	0.56	U
207-08-9	Benzo(k)fluoranthene	1	0.56	0.066	0.56	U
191-24-2	Benzo(g,h,i)perylene	1	0.56	0.068	0.56	U
65-85-0	Benzoic Acid	1	2.3	0.53	5.6	J
100-51-6	Benzyl Alcohol	1	0.20	0.054	0.56	J
101-55-3	4-Bromophenyl Phenyl Ether	1	0.56	0.048	0.56	U
85-68-7	Butyl Benzyl Phthalate	1	0.067	0.062	1.1	J
59-50-7	4-Chloro-3-methylphenol	1	0.56	0.13	0.56	U
106-47-8	4-Chloroaniline	1	1.1	0.11	1.1	U
111-91-1	Bis(2-chloroethoxy)methane	1	0.56	0.020	0.56	U
111-44-4	Bis(2-chloroethyl) Ether	1	0.56	0.026	0.56	U
108-60-1	Bis(2-chloroisopropyl) Ether	1	0.56	0.029	0.56	U
91-58-7	2-Chloronaphthalene	1	0.56	0.019	0.56	U
95-57-8	2-Chlorophenol	1	0.56	0.030	0.56	U
7005-72-3	4-Chlorophenyl Phenyl Ether	1	0.56	0.053	0.56	U
218-01-9	Chrysene	1	0.56	0.050	0.56	U
53-70-3	Dibenz(a,h)anthracene	1	0.56	0.13	0.56	U
132-64-9	Dibenzofuran	1	0.56	0.045	0.56	U
84-74-2	Di-n-butyl Phthalate	1	0.33	0.15	1.1	JB
106-46-7	1,4-Dichlorobenzene	1	0.56	0.022	0.56	U
95-50-1	1,2-Dichlorobenzene	1	0.56	0.044	0.56	U
541-73-1	1,3-Dichlorobenzene	1	0.56	0.046	0.56	U
91-94-1	3,3'-Dichlorobenzidine	1	1.1	0.14	1.1	U
120-83-2	2,4-Dichlorophenol	1	0.56	0.10	0.56	U
84-66-2	Diethyl Phthalate	1	0.38	0.072	0.56	J
105-67-9	2,4-Dimethylphenol	1	1.1	0.19	1.1	U
131-11-3	Dimethyl Phthalate	1	0.56	0.051	0.56	U
534-52-1	4,6-Dinitro-2-methylphenol	1	5.6	1.1	5.6	U
51-28-5	2,4-Dinitrophenol	1	5.6	1.3	5.6	U

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

MW-800

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-20RE1 File ID: 1401173-20RE1.D

Sampled: 01/13/14 00:00 Prepared: 01/27/14 07:48 Analyzed: 01/31/14 19:50

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 900 mL / 1 mL

QC Batch: 1400299 Sequence: 4A31045 Calibration: 4A31011 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
606-20-2	2,6-Dinitrotoluene	1	0.56	0.089	0.56	U
121-14-2	2,4-Dinitrotoluene	1	0.56	0.053	0.56	U
117-84-0	Di-n-octyl Phthalate	1	0.56	0.085	0.56	U
117-81-7	Bis(2-ethylhexyl) Phthalate	1	0.54	0.13	0.56	JB
206-44-0	Fluoranthene	1	0.56	0.070	0.56	U
86-73-7	Fluorene	1	0.56	0.046	0.56	U
118-74-1	Hexachlorobenzene	1	0.56	0.070	0.56	U
87-68-3	Hexachlorobutadiene	1	0.56	0.044	0.56	U
77-47-4	Hexachlorocyclopentadiene	1	0.56	0.049	0.56	U
67-72-1	Hexachloroethane	1	0.56	0.046	0.56	U
193-39-5	Indeno(1,2,3-cd)pyrene	1	0.56	0.089	0.56	U
78-59-1	Isophorone	1	0.56	0.050	0.56	U
91-57-6	2-Methylnaphthalene	1	0.56	0.017	0.56	U
90-12-0	1-Methylnaphthalene	1	0.56	0.022	0.56	U
106-44-5	4-Methylphenol	1	0.56	0.063	0.56	U
95-48-7	2-Methylphenol	1	0.56	0.053	0.56	U
91-20-3	Naphthalene	1	0.56	0.034	0.56	U
100-01-6	4-Nitroaniline	1	1.1	0.37	1.1	U
88-74-4	2-Nitroaniline	1	0.56	0.13	0.56	U
99-09-2	3-Nitroaniline	1	1.1	0.27	1.1	U
98-95-3	Nitrobenzene	1	0.56	0.065	0.56	U
88-75-5	2-Nitrophenol	1	0.56	0.053	0.56	U
100-02-7	4-Nitrophenol	1	5.6	1.4	5.6	U
86-30-6	N-Nitroso-diphenylamine	1	0.56	0.075	0.56	U
621-64-7	N-Nitroso-di-n-propylamine	1	0.56	0.084	0.56	U
87-86-5	Pentachlorophenol	1	0.56	0.090	0.56	U
85-01-8	Phenanthrene	1	0.56	0.047	0.56	U
108-95-2	Phenol	1	0.56	0.037	0.56	U
129-00-0	Pyrene	1	0.56	0.073	0.56	U
58-90-2	2,3,4,6-Tetrachlorophenol	1	5.6	0.41	5.6	U
120-82-1	1,2,4-Trichlorobenzene	1	0.56	0.030	0.56	U
95-95-4	2,4,5-Trichlorophenol	1	0.56	0.11	0.56	U
88-06-2	2,4,6-Trichlorophenol	1	0.56	0.095	0.56	U
56-49-5	3-Methylcholanthrene	1	2.2	0.13	2.2	U

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

MW-800

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-20RE1 File ID: 1401173-20RE1.D

Sampled: 01/13/14 00:00 Prepared: 01/27/14 07:48 Analyzed: 01/31/14 19:50

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 900 mL / 1 mL

QC Batch: 1400299 Sequence: 4A31045 Calibration: 4A31011 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
935-95-5	2,3,5,6-Tetrachlorophenol	1	11	0.24	11	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
2-Fluorophenol	22.2	14.8	66	20 - 70	
Phenol-d6	22.3	6.89	31	18 - 45	
Nitrobenzene-d5	11.1	11.1	100	31 - 123	
2-Fluorobiphenyl	11.1	9.91	89	25 - 113	
2,4,6-Tribromophenol	22.4	22.6	101	30 - 121	
o-Terphenyl	11.1	11.5	104	42 - 125	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
1,4-Dichlorobenzene-d4	263886	7.67	92	7.67	
Naphthalene-d8	1007762	10.39	93	10.4	
Acenaphthene-d10	609602	14.5	90	14.51	
Phenanthrene-d10	991283	17.92	89	17.93	
Chrysene-d12	1045665	21.53	87	21.54	
Perylene-d12	953405	23.23	92	23.23	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

MW-801

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-21 File ID: 1401173-21.D

Sampled: 01/13/14 00:00 Prepared: 01/16/14 07:48 Analyzed: 01/24/14 02:27

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 780 mL / 1 mL

QC Batch: 1400299 Sequence: 4A24001 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
83-32-9	Acenaphthene	1	0.64	0.042	0.64	U
208-96-8	Acenaphthylene	1	0.64	0.022	0.64	U
120-12-7	Anthracene	1	0.64	0.079	0.64	U
56-55-3	Benzo(a)anthracene	1	0.64	0.058	0.64	U
50-32-8	Benzo(a)pyrene	1	0.64	0.052	0.64	U
205-99-2	Benzo(b)fluoranthene	1	0.64	0.074	0.64	U
207-08-9	Benzo(k)fluoranthene	1	0.64	0.076	0.64	U
191-24-2	Benzo(g,h,i)perylene	1	0.64	0.078	0.64	U
~~65-85-0~~	~~Benzoic Acid~~	~~1~~	~~6.4~~	~~0.61~~	~~6.4~~	~~U~~ R
100-51-6	Benzyl Alcohol	1	0.64	0.062	0.64	U
101-55-3	4-Bromophenyl Phenyl Ether	1	0.64	0.055	0.64	U
85-68-7	Butyl Benzyl Phthalate	1	~~0.15~~ 1.3	0.071	1.3	~~J~~ UB
59-50-7	4-Chloro-3-methylphenol	1	0.64	0.15	0.64	U
106-47-8	4-Chloroaniline	1	1.3	0.13	1.3	U
111-91-1	Bis(2-chloroethoxy)methane	1	0.64	0.024	0.64	U
111-44-4	Bis(2-chloroethyl) Ether	1	0.64	0.030	0.64	U
108-60-1	Bis(2-chloroisopropyl) Ether	1	0.64	0.033	0.64	U
91-58-7	2-Chloronaphthalene	1	0.64	0.022	0.64	U
95-57-8	2-Chlorophenol	1	0.64	0.034	0.64	U
7005-72-3	4-Chlorophenyl Phenyl Ether	1	0.64	0.062	0.64	U
218-01-9	Chrysene	1	0.64	0.058	0.64	U
53-70-3	Dibenz(a,h)anthracene	1	0.64	0.14	0.64	U
132-64-9	Dibenzofuran	1	0.64	0.052	0.64	U
84-74-2	Di-n-butyl Phthalate	1	4.8	0.17	1.3	~~B~~ UB
106-46-7	1,4-Dichlorobenzene	1	0.64	0.025	0.64	U
95-50-1	1,2-Dichlorobenzene	1	0.64	0.051	0.64	U
541-73-1	1,3-Dichlorobenzene	1	0.64	0.053	0.64	U
91-94-1	3,3′-Dichlorobenzidine	1	1.3	0.16	1.3	U
120-83-2	2,4-Dichlorophenol	1	0.64	0.12	0.64	U
84-66-2	Diethyl Phthalate	1	~~0.24~~ 0.64	0.083	0.64	~~J~~ UB
105-67-9	2,4-Dimethylphenol	1	1.3	0.22	1.3	U
131-11-3	Dimethyl Phthalate	1	0.64	0.058	0.64	U
534-52-1	4,6-Dinitro-2-methylphenol	1	6.4	1.3	6.4	U
51-28-5	2,4-Dinitrophenol	1	6.4	1.5	6.4	U UJ

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

MW-801

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-21 File ID: 1401173-21.D

Sampled: 01/13/14 00:00 Prepared: 01/16/14 07:48 Analyzed: 01/24/14 02:27

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 780 mL / 1 mL

QC Batch: 1400299 Sequence: 4A24001 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
606-20-2	2,6-Dinitrotoluene	1	0.64	0.10	0.64	U
121-14-2	2,4-Dinitrotoluene	1	0.64	0.061	0.64	U
117-84-0	Di-n-octyl Phthalate	1	0.64	0.098	0.64	U
117-81-7	Bis(2-ethylhexyl) Phthalate	1	~~0.47~~ 0.64	0.14	0.64	~~JB~~ UB
206-44-0	Fluoranthene	1	0.64	0.080	0.64	U
86-73-7	Fluorene	1	0.64	0.053	0.64	U
118-74-1	Hexachlorobenzene	1	0.64	0.080	0.64	U
87-68-3	Hexachlorobutadiene	1	0.64	0.051	0.64	U
77-47-4	Hexachlorocyclopentadiene	1	0.64	0.057	0.64	U UJ
67-72-1	Hexachloroethane	1	0.64	0.054	0.64	U
193-39-5	Indeno(1,2,3-cd)pyrene	1	0.64	0.10	0.64	U
78-59-1	Isophorone	1	0.64	0.058	0.64	U
91-57-6	2-Methylnaphthalene	1	0.64	0.019	0.64	U
90-12-0	1-Methylnaphthalene	1	0.64	0.025	0.64	U
106-44-5	4-Methylphenol	1	0.64	0.073	0.64	U
95-48-7	2-Methylphenol	1	0.64	0.061	0.64	U
91-20-3	Naphthalene	1	0.64	0.039	0.64	U
100-01-6	4-Nitroaniline	1	1.3	0.42	1.3	U
88-74-4	2-Nitroaniline	1	0.64	0.15	0.64	U
99-09-2	3-Nitroaniline	1	1.3	0.31	1.3	U
98-95-3	Nitrobenzene	1	0.64	0.075	0.64	U
88-75-5	2-Nitrophenol	1	0.64	0.061	0.64	U
100-02-7	4-Nitrophenol	1	6.4	1.6	6.4	U UJ
86-30-6	N-Nitroso-diphenylamine	1	0.64	0.087	0.64	U
621-64-7	N-Nitroso-di-n-propylamine	1	0.64	0.097	0.64	U
87-86-5	Pentachlorophenol	1	0.64	0.10	0.64	U
85-01-8	Phenanthrene	1	0.064	0.055	0.64	J
108-95-2	Phenol	1	0.64	0.043	0.64	U
129-00-0	Pyrene	1	0.64	0.084	0.64	U
58-90-2	2,3,4,6-Tetrachlorophenol	1	6.4	0.48	6.4	U
120-82-1	1,2,4-Trichlorobenzene	1	0.64	0.034	0.64	U
95-95-4	2,4,5-Trichlorophenol	1	0.64	0.13	0.64	U
88-06-2	2,4,6-Trichlorophenol	1	0.64	0.11	0.64	U
56-49-5	3-Methylcholanthrene	1	2.6	0.15	2.6	U

ORGANIC ANALYSIS DATA SHEET
USEPA-8270C

MW-801

Laboratory: TriMatrix Laboratories, Inc. SDG: 1401173

Client: Beazer East, Inc. Project: Koppers Superior

Matrix: Water Laboratory ID: 1401173-21 File ID: 1401173-21.D

Sampled: 01/13/14 00:00 Prepared: 01/16/14 07:48 Analyzed: 01/24/14 02:27

Solids: Preparation: 3510C Liquid-Liquid Ext Initial/Final: 780 mL / 1 mL

QC Batch: 1400299 Sequence: 4A24001 Calibration: 4A22014 Instrument: 195

CAS No.	Analyte	Dilution	CONC. (ug/L)	MDL	MRL	Q
935-95-5	2,3,5,6-Tetrachlorophenol	1	13	0.27	13	U

System Monitoring Compound	ADDED (ug/L)	CONC (ug/L)	% REC.	QC Limits	Q
2-Fluorophenol	25.6	13.1	51	20 - 70	
Phenol-d6	25.8	8.56	33	18 - 45	
Nitrobenzene-d5	12.8	9.10	71	31 - 123	
2-Fluorobiphenyl	12.8	7.76	61	25 - 113	
2,4,6-Tribromophenol	25.9	14.2	55	30 - 121	
o-Terphenyl	12.8	8.27	65	42 - 125	

Internal Standard	Area	RT	% REC.	Ref. RT	Q
1,4-Dichlorobenzene-d4	172483	7.75	118	7.84	
Naphthalene-d8	675380	10.48	116	10.58	
Acenaphthene-d10	415596	14.59	117	14.7	
Phenanthrene-d10	656146	18	114	18.08	
Chrysene-d12	682120	21.58	108	21.65	
Perylene-d12	614350	23.31	115	23.4	

* Values outside of QC limits