BLASLAND, BOUCK & LEE, INC.
engineers & scientists

Transmitted Via U.S. Mail

October 2, 2003

Mr. James Hosch
Wisconsin Department of Natural Resources
1401 Tower Avenue
Superior, WI 54880

Re: Koppers Inc. Superior, Wisconsin Facility –
Summary of May 2003 Outfall 001Drainage Ditch Investigation
BBL Project #: 388.42.007 #2

Dear Mr. Hosch:

On behalf of Beazer East, Inc. (Beazer), Blasland, Bouck & Lee, Inc. (BBL) performed additional investigations of the Outfall 001 drainage ditch area at the above-referenced Site between May 19 and 22, 2003. As further described below, the additional investigations included visual characterization of manually recovered soils collected from within and adjacent to the drainage ditch. The purpose of the investigations was to supplement existing data regarding the nature and extent of Site-related impacts along the ditch. The scope and findings of the additional investigations are summarized below.

Sixty-five soil borings were manually advanced (i.e., using a hand auger) along 15 transects spaced at intervals of approximately 100 to 700 feet. These transects extended from the "headwaters" area on the Koppers Inc. property downstream to the confluence of the ditch with the Crawford Creek floodplain. The approximate locations of the borings were recorded in the field relative to existing site features and are shown on Figures 1a through 1c. At each transect, borings were advanced in the center of the channel and along the bank on each side of the channel. The maximum depth attainable using the hand auger was generally 4.75 feet or less below grade, although penetration depths of only 2 feet or less were possible at some locations (particularly in the center of the channel).

Descriptions of the recovered soils (i.e., color; soil classification; and presence of organics, odors, sheens, and/or product) were recorded in a field notebook. Consistent with evaluations performed as part of the 1999 Supplemental Surface Water and Streambed Sediment Investigation, recovered soils were classified as follows:

- Type A – Discrete occurrences of oily product were observed in isolated clay fractures;
- Type B – Odor, staining, and/or oil sheens (but not oily product) were observed; and
- Type C – No odor, staining, oil sheens, or oily product were observed.

With respect to the "Type A" materials, please note that the "seams" of oily product were not continuous throughout a given depth range. Rather, seams occurred in discrete, isolated locations at one or more points within a specified depth interval. Such seams are attributed to locations where creosote-like product has come to be present in discrete fractures within the clay matrix.

For each of the 65 Outfall 001 drainage ditch borings, Table 1 summarizes the depth intervals in which each material type (i.e., Type A, B, and C) was observed. To provide a spatial representation of the horizontal distribution of observed impacts along the ditch, Figures 1a through 1c include color-coding to depict the most heavily impacted material classification observed at each boring. In addition, the horizontal and vertical

distributions of visual material classifications for each boring transect are depicted in profile view on Figures 2a and 2b. The following observations can be made in consideration of the information presented in the above-referenced table and figures:

- Visibly impacted (i.e., Type A and B) materials were observed along the Outfall 001 drainage ditch at depths up to 4.75 feet below grade and extending up to 26 feet laterally from the channel.
- There is only one location where Type A material was observed at the surface (within the channel at Transect 9); otherwise, Type A materials were observed only at depth. Within the channel, depths at which Type A material was initially observed (where present) ranged from 0.5 to 3.25 feet below the channel bottom. Within bank soils, depths at which Type A material was initially observed (where present) ranged from 1.5 to 4 feet below grade.
- Type B materials were typically observed within the channel of the Outfall 001 drainage ditch. When present in bank soils, Type B materials were generally observed beneath at least 4 inches (and typically greater than 1.5 feet) of Type C material. The one instance where Type B material was observed in surficial bank soil was in Transect 11.
- Bank soils, particularly at and near the ground surface, typically consisted of Type C materials.
- At certain of the boring locations along the bank, the Type A and B materials were present below up to 4 feet of Type C material, and impacted materials continued to be observed at the full depth of hand auger recovery.

In addition to the findings of the May 2003 investigations, Figures 1a through 1c summarize total PAH concentrations and visual classifications (where available) for samples previously collected along the Outfall 001 drainage ditch. These data are included as a supplement to the visual-based classifications to provide some perspective on the concentrations of PAHs that have been detected along the ditch. As indicated on Figures 1a through 1c, total PAH concentrations ranged from non-detect to 2,013 milligrams per kilograms (mg/kg) for samples within the channel and from 0.031 to 14,000 mg/kg for bank/floodplain soil samples.

The findings of the May 2003 investigations differ from the previous Site Conceptual Model, which suggested that impacts within and adjacent to the Outfall 001 drainage ditch were surficial in nature and likely did not extend beyond surficial soils in the immediate proximity of the channel. Accordingly, we would like to further discuss these recent findings as part of a project meeting currently being scheduled with the Wisconsin Department of Natural Resources (WDNR) for mid-October 2003. That meeting will also address the status of other project elements and recent submittals. In the interim, please contact me (860-653-9101) or Ms. Jane Patarcity of Beazer (412-208-8813) with any questions or comments.

Sincerely,

BLASLAND, BOUCK & LEE, INC.

David Bassingpas
For
Jeffrey S. Holden, P.E.
Manager

DGB/csc
Enclosures
U:\CSC03\68032196Ltr.doc

cc: Mark Gordon, WDNR
John Robinson, WDNR
Steve LaValley, WDNR
Michael Kolanczyk
Jane Patarcity, Beazer
Patrick Stark, Koppers
Tim Ries, Koppers
Brian Magee, AMEC
Robert Anderson, BBL

Table 1

Beazer East, Inc.
Koppers Inc. Superior, Wisconsin Facility

Summary of May 2003 Outfall 001 Drainage Ditch Investigation Findings[1]

Location ID	Location Description [2]	Total Depth (ft)	Type A Intervals (ft) [3]	Type B Intervals (ft) [3]	Type C Intervals (ft) [3]
T1-1	RB; 20' from COC	4			0-4
T1-2	RB; 10' from COC	4.5		1.5-4.5	0-1.5
T1-3	COC	3		1-2.5	0-1, 2.5-3
T1-4	LB; 10' from COC	3			0-3
T2-1	RB; 10' from COC	3.5			0-3.5
T2-2	COC	3.5		1.0-2.5	0-1, 2.5-3.5
T2-3	LB; 10' from COC	3.5			0-3.5
T3-1	RB; 10' from COC	3.5			0-3.5
T3-2	COC	3		1.5-3	0-1.5
T3-3	LB; 10' from COC	3.5			0-3.5
T4-1	RB; 10' from COC	3			0-3
T4-2	COC	2.5	1.0-2.5	0.33-1.0	0-0.33
T4-3	LB; 10' from COC	3.5			0-3.5
T5-1	RB; 20' from COC	3.5			0-3.5
T5-2	RB; 10' from COC	4	3-4		0-3
T5-3	COC	3	0.5-3	0.25-0.5	0-0.25
T5-4	LB; 10' from COC	3.5			0-3.5
T6-1	RB; 40' from COC	4.5			0-4.5
T6-2	RB; 25' from COC	4.5	4-4.5	3-4	0-3
T6-3	RB; 15' from COC	4.5	4-4.5	2.5-4	0-2.5
T6-4	RB; 5' from COC	4.5	2.5-4.5	1.5-2.5	0-1.5
T6-5	COC	2.5	2-2.5	0-2	
T6-6	LB; 3' from COC	4.5	4-4.5	1-4	0-1
T6-7	LB; 13' from COC	4			0-4
T7-1	RB; 16' from COC	4.5			0-4.5
T7-2	RB; 6' from COC	4.5	4-4.5	3-4	0-3
T7-3	COC	1.5		0-1.5	
T7-4	LB; 10' from COC	3.5		0.5-3.5	0-0.5
T7-5	LB; 18' from COC	4			0-4
T8-1	RB; 16' from COC	4.5			0-4.5
T8-2	RB; 10' from COC	4.5		1.75-4.5	0-1.75
T8-3	COC	1		0-1	
T8-4	LB; 11' from COC	4.5		2-4.5	0-2
T8-5	LB; 26' from COC	4.5	4-4.5		0-4
T8-6	LB; 36' from COC	4.5			0-4.5
T9-1	RB; 7' from COC	4.5			0-4.5
T9-2	COC	4	0-2	2-4	
T9-3	LB; 10' from COC	4.5			0-4.5
T10-1	RB; 15' from COC	4.5			0-4.5
T10-2	RB; 5' from COC	4.5	3-3.5, 4-4.5	2-3, 3.5-4	0-2
T10-3	COC	1.5		0-1.5	
T10-4	LB; 5' from COC	4	1.5-3	1-1.5, 3-4	0-1
T11-1	RB; 19' from COC	4.5			0-4.5
T11-2	RB; 9' from COC	4.5		3.33-4.5	0-3.33
T11-3	COC	1.5			0-1.5
T11-4	LB; 10' from COC	4.5	2.5-4.5	0-0.5, 2-2.5	0.5-2
T11-5	LB; 25' from COC	4.5			0-4.5
T12-1	RB; 10' from COC	4.5			0-4.5
T12-2	COC	2.5		0-2.5	
T12-3	LB; 13' from COC	4.5	4-4.5	3.5-4	0-3.5
T12-4	LB; 24' from COC	4			0-4

See notes on page 2

Table 1

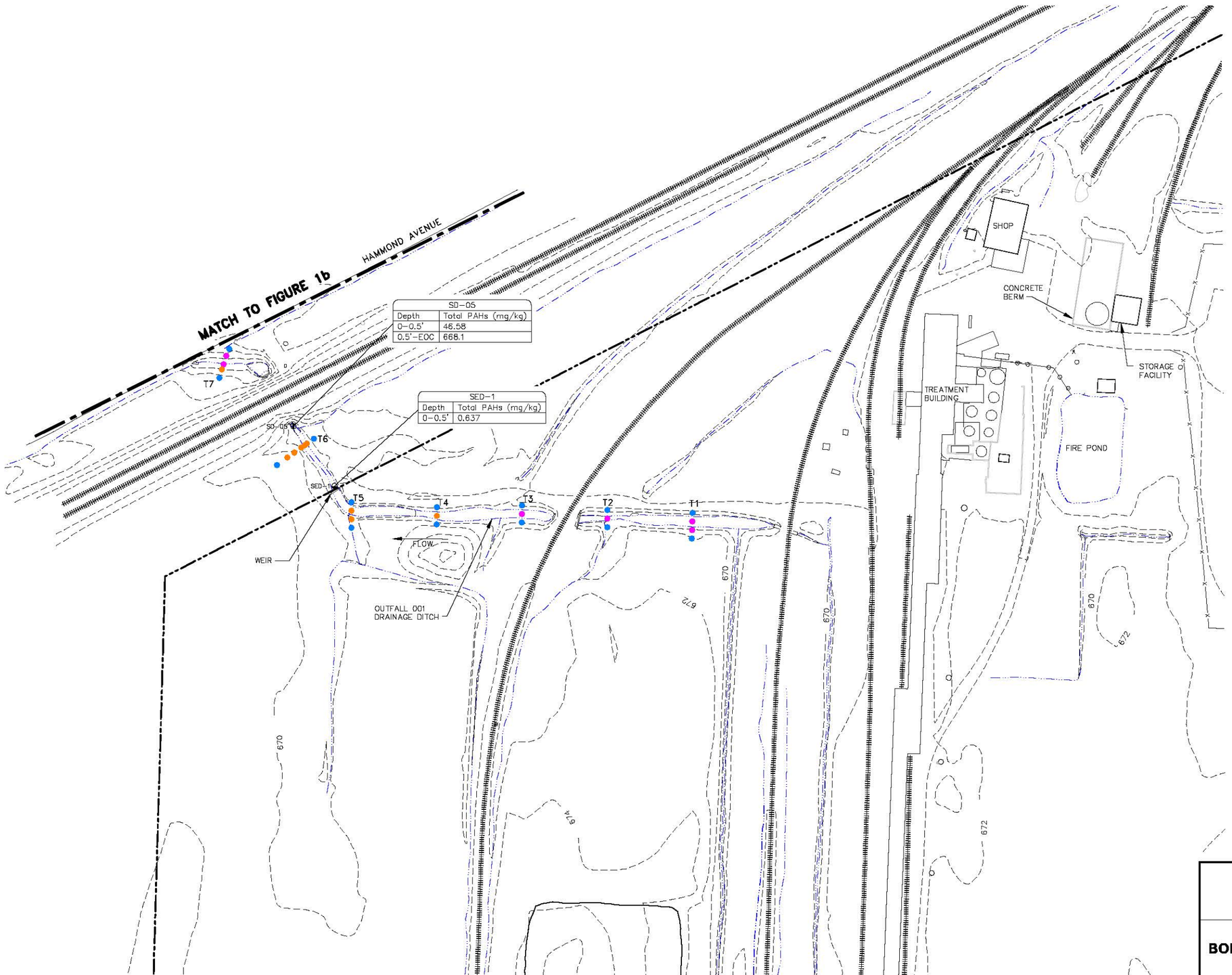
Beazer East, Inc.
Koppers Inc. Superior, Wisconsin Facility

Summary of May 2003 Outfall 001 Drainage Ditch Investigation Findings[1]

Location ID	Location Description [2]	Total Depth (ft)	Type A Intervals (ft) [3]	Type B Intervals (ft) [3]	Type C Intervals (ft) [3]
T13-1	RB; 30' from COC	4.5			0-4.5
T13-2	RB; 15' from COC	4.5	2.5-4.5	0.33-2.5	0-0.33
T13-3	COC	2.5		0-2.5	
T13-4	LB; 9' from COC	4	3.25-4	2.75-3.25	0-2.75
T13-5	LB; 13' from COC	4.5			0-4.5
T14-1	RB; 21' from COC	4.5	4-4.5	2.5-4	0-2.5
T14-2	RB; 6' from COC	4.5	4-4.5	3.5-4	0-3.5
T14-3	COC	2		0-1	1-2
T14-4	LB; 8' from COC	5			0-5
T15-1	RB; 38' from COC	4.5			0-4.5
T15-2	RB; 17' from COC	4.5		2-3.25	0-2, 3.25-4.5
T15-3	RB; 5' from COC	4.75	4-4.75	1.75-4	0-1.75
T15-4	COC	3.5	3.25-3.5	0-3.25	
T15-5	LB; 10' from COC	5			0-5

Notes:

1. Outfall 001 drainage ditch borings advanced by Blasland, Bouck & Lee, Inc. from May 19 to May 22, 2003 using a hand auger.
2. Abbreviations used for location descriptions include the following (all based on looking upstream):
   COC = center of channel
   RB = right bank
   LB = left bank
3. The following classifications were used to describe each sample interval:
   Type A = discrete occurrences of oily product were observed in isolated clay fractures
   Type B = odor, staining, and/or oil sheens (but not oily product) were observed
   Type C = no odor, staining, oil sheens, or oil product were observed



LEGEND:

- KOPPERS PROPERTY BOUNDARY
- SED — 1990 SEDIMENT SAMPLE
- DB — 1996 BANK SOIL SAMPLE
- SD — 1996 SEDIMENT SAMPLE
- FP — 1999 FLOODPLAIN SOIL SAMPLE
- D — 1999 BANK SOIL SAMPLE
- C — 1999 SEDIMENT SAMPLE
- T1 — 2003 SOIL/SEDIMENT BORING TRANSECT
- LOCATION/INTERVAL WHERE DISCRETE OCCURRENCES OF OILY PRODUCT WERE OBSERVED IN ISOLATED CLAY FRACTURES
- LOCATION/INTERVAL WHERE ODOR, STAINING, AND/OR OIL SHEENS (BUT NOT OILY PRODUCT) WERE OBSERVED
- LOCATION/INTERVAL WHERE NO ODOR, STAINING, OIL SHEENS, OR OILY PRODUCT WERE OBSERVED

DATABOX KEY:

- PAHs – POLYCYCLIC AROMATIC HYDROCARBONS
- mg/kg – MILLIGRAMS PER KILOGRAM
- ( ) – DETECTION LIMITS
- [ ] – DUPLICATE RESULTS
- ND – NOT DETECTED
- J – ESTIMATED VALUE

NOTES:

1. BASE MAP AND TOPOGRAPHY OBTAINED FROM PHOTOGRAMMETRY PERFORMED BY LOCKWOOD MAPPING COMPANY OF ROCHESTER, NY (12/28/01 AND 04/04/03).
2. ALL LOCATIONS ARE APPROXIMATE.

0 60' 120'
GRAPHIC SCALE

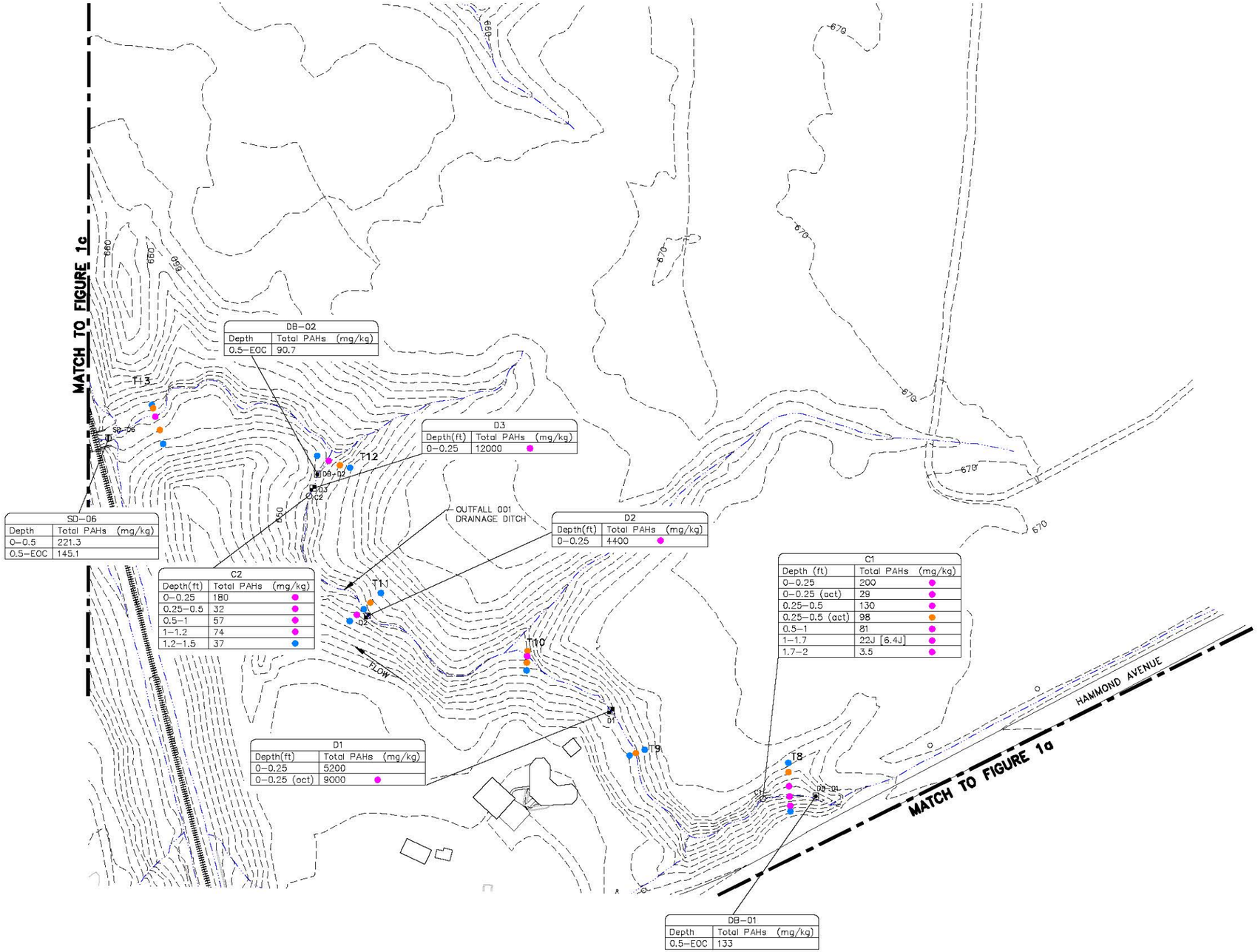
BEAZER EAST, INC
PITTSBURGH, PENNSYLVANIA
KOPPERS INC. FACILITY
SUPERIOR, WISCONSIN

OUTFALL 001 DRAINAGE DITCH BORING/SAMPLE LOCATIONS AND FINDINGS (HEADWATERS - HAMMOND AVENUE)

BLASLAND, BOUCK & LEE, INC.
engineers & scientists

FIGURE
1a

X: 38832X03.DWG
L: ON=*, OFF=REF
P: PAGESET/PLT-DL
10/2/03 SYR-BS-LAF GNS LAF
38832001/BORINGS/38832C01.DWG



SD-06	
Depth	Total PAHs (mg/kg)
0-0.5	221.3
0.5-EOC	145.1

DB-02	
Depth	Total PAHs (mg/kg)
0.5-EOC	90.7

D3	
Depth(ft)	Total PAHs (mg/kg)
0-0.25	12000

D2	
Depth(ft)	Total PAHs (mg/kg)
0-0.25	4400

C2	
Depth(ft)	Total PAHs (mg/kg)
0-0.25	180
0.25-0.5	32
0.5-1	57
1-1.2	74
1.2-1.5	37

C1	
Depth (ft)	Total PAHs (mg/kg)
0-0.25	200
0-0.25 (act)	29
0.25-0.5	130
0.25-0.5 (act)	98
0.5-1	81
1-1.7	22J [6.4J]
1.7-2	3.5

D1	
Depth(ft)	Total PAHs (mg/kg)
0-0.25	5200
0-0.25 (act)	9000

DB-01	
Depth	Total PAHs (mg/kg)
0.5-EOC	133

LEGEND:

- KOPPERS PROPERTY BOUNDARY
- SED 1990 SEDIMENT SAMPLE
- DB 1996 BANK SOIL SAMPLE
- SD 1996 SEDIMENT SAMPLE
- FP 1999 FLOODPLAIN SOIL SAMPLE
- D 1999 BANK SOIL SAMPLE
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- T1 2003 SOIL/SEDIMENT BORING TRANSECT
- LOCATION/INTERVAL WHERE DISCRETE OCCURRENCES OF OILY PRODUCT WERE OBSERVED IN ISOLATED CLAY FRACTURES
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- LOCATION/INTERVAL WHERE NO ODOR, STAINING, OIL SHEENS, OR OILY PRODUCT WERE OBSERVED

DATABOX KEY:

PAHs – POLYCYCLIC AROMATIC HYDROCARBONS
mg/kg – MILLIGRAMS PER KILOGRAM
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2. ALL LOCATIONS ARE APPROXIMATE.

0 60' 120'
GRAPHIC SCALE

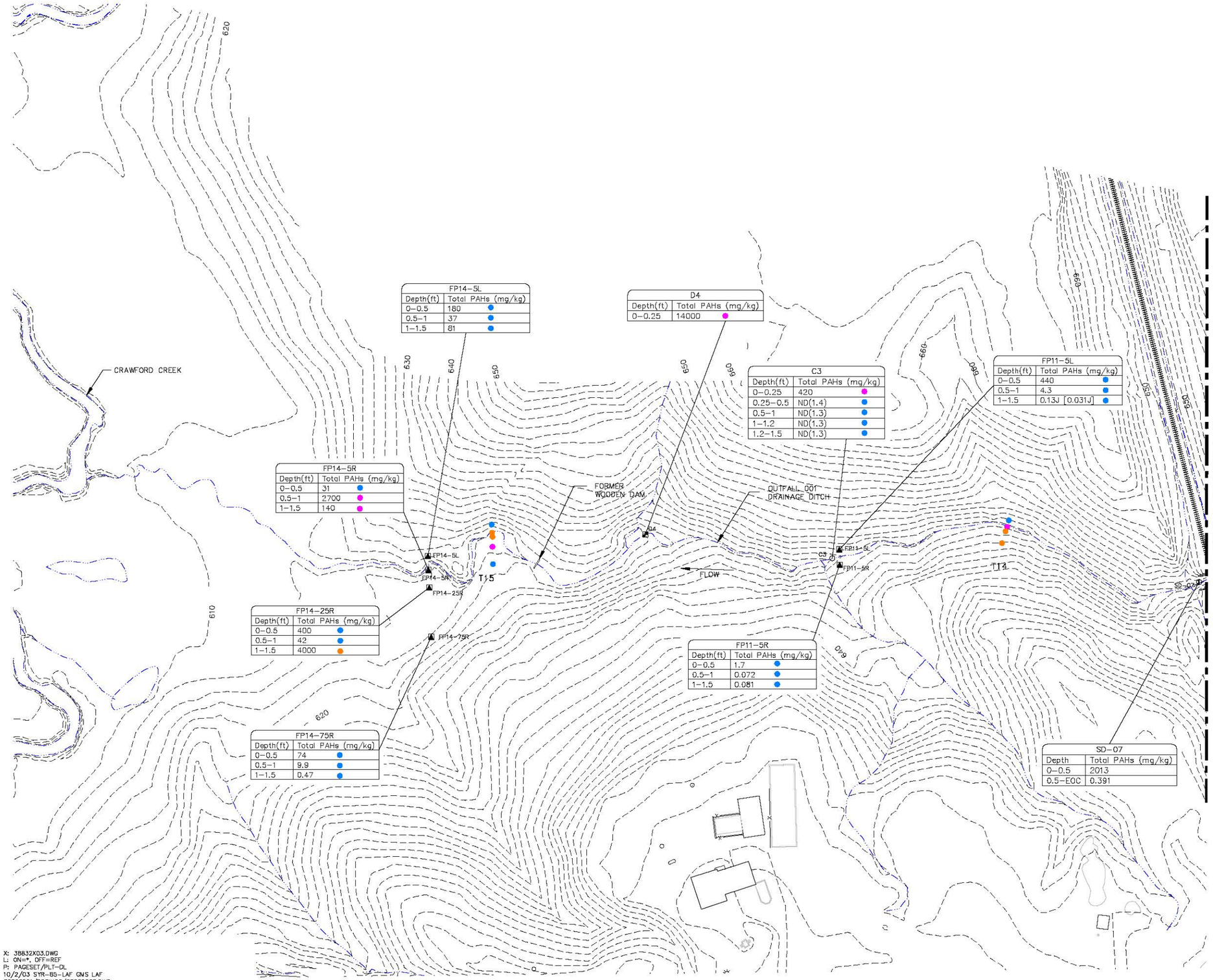
BEAZER EAST, INC
PITTSBURGH, PENNSYLVANIA
KOPPERS INC. FACILITY
SUPERIOR, WISCONSIN

OUTFALL 001 DRAINAGE DITCH BORING/SAMPLE LOCATIONS AND FINDINGS (HAMMOND AVENUE - RR TRACKS)

BLASLAND, BOUCK & LEE, INC. engineers & scientists

FIGURE 1b

X: 38832X03.DWG
L: ON=*, OFF=REF*
P: PAGESET/PLT-DL
10/2/03 SYR-BS-LAF GNS LAF
38832001/BORINGS/38832C02.DWG



FP14–5L	
Depth(ft)	Total PAHs (mg/kg)
0–0.5	180
0.5–1	37
1–1.5	81

FP14–5R	
Depth(ft)	Total PAHs (mg/kg)
0–0.5	31
0.5–1	2700
1–1.5	140

FP14–25R	
Depth(ft)	Total PAHs (mg/kg)
0–0.5	400
0.5–1	42
1–1.5	4000

FP14–75R	
Depth(ft)	Total PAHs (mg/kg)
0–0.5	74
0.5–1	9.9
1–1.5	0.47

D4	
Depth(ft)	Total PAHs (mg/kg)
0–0.25	14000

C3	
Depth(ft)	Total PAHs (mg/kg)
0–0.25	420
0.25–0.5	ND(1.4)
0.5–1	ND(1.3)
1–1.2	ND(1.3)
1.2–1.5	ND(1.3)

FP11–5L	
Depth(ft)	Total PAHs (mg/kg)
0–0.5	440
0.5–1	4.3
1–1.5	0.13J [0.031J]

FP11–5R	
Depth(ft)	Total PAHs (mg/kg)
0–0.5	1.7
0.5–1	0.072
1–1.5	0.081

SD–07	
Depth	Total PAHs (mg/kg)
0–0.5	2013
0.5–EOC	0.391

LEGEND:

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- SD 1996 SEDIMENT SAMPLE
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BORING/SAMPLE LOCATIONS AND FINDINGS
(RR TRACKS - CRAWFORD CREEK FLOODPLAIN)

BLASLAND, BOUCK & LEE, INC.
engineers & scientists

FIGURE
1c

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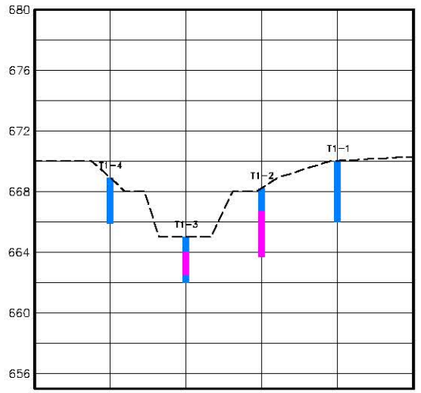
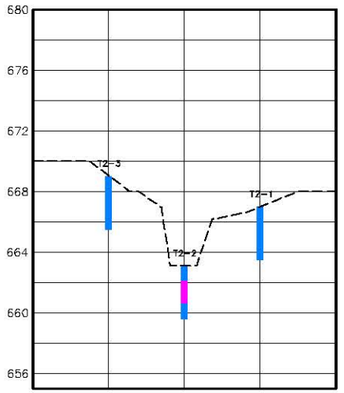
L: ON=*, OFF=REF
P: PAGESET/PLT-DL
10/2/03 SYR-BS-LAF GNS LAF
38832001/BORINGS/38832C03.DWG



TRANSECT T1



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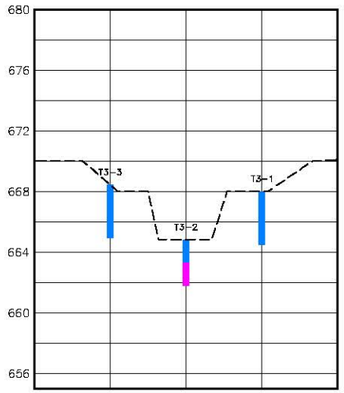

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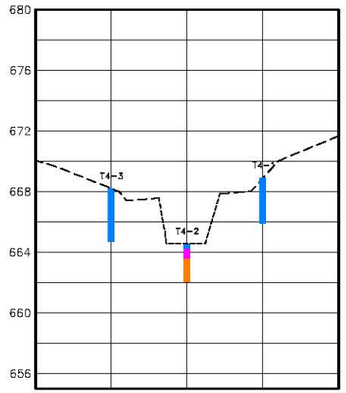

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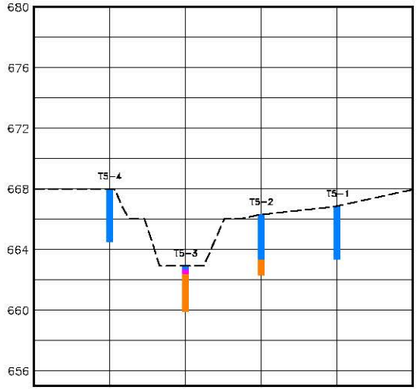

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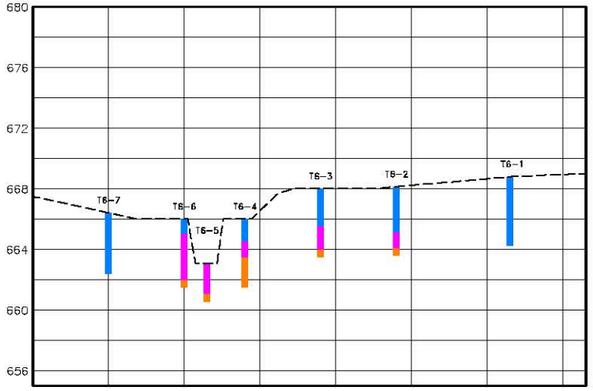

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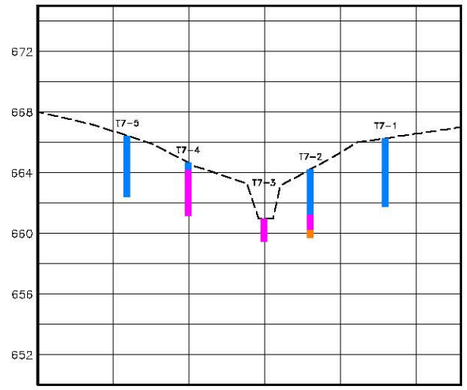
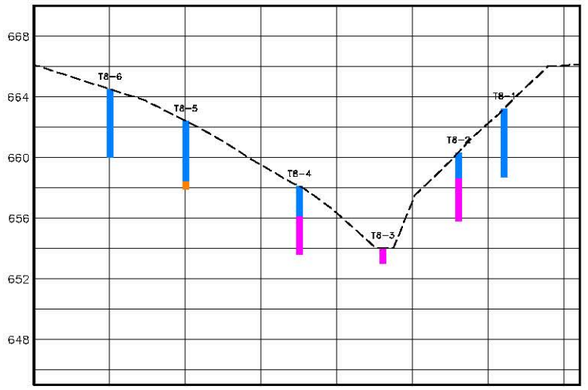


TRANSECT T7



TRANSECT T8

LEGEND:

- DISCRETE OCCURRENCES OF OILY PRODUCT WERE OBSERVED IN ISOLATED CLAY FRACTURES
- ODOR, STAINING, AND/OR OIL SHEENS (BUT NOT OILY PRODUCT) WERE OBSERVED
- NO ODOR, STAINING, OIL SHEENS, OR OILY PRODUCT WERE OBSERVED.

NOTES:

1. VISUAL OBSERVATIONS DEPICTED ABOVE FROM MAY 2003 BORINGS.
2. ALL VIEWS ARE LOOKING UPSTREAM.

0 10' 20'
HORIZONTAL GRAPHIC SCALE

0 5 10'
VERTICAL GRAPHIC SCALE

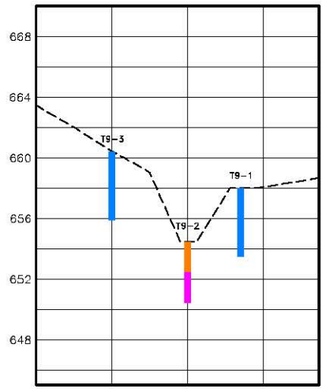
L: ON=* OFF=*REF*
P: PAGESET/PLT-DL
10/2/03 SYR-65-NES LAF
38832001/TRANS/38832G02.DWG

BEAZER EAST, INC.
PITTSBURGH, PENNSYLVANIA
KOPPERS INC. FACILITY
SUPERIOR, WISCONSIN

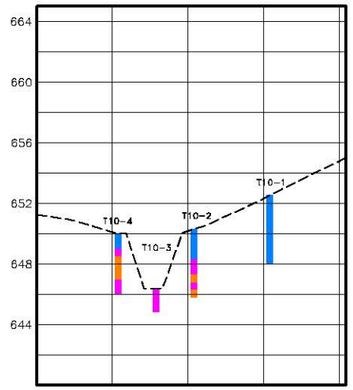
OUTFALL 001 DRAINAGE DITCH BORING TRANSECT PROFILES (TRANSECTS T1 THROUGH T8)

BBL BLASLAND, BOUCK & LEE, INC. engineers & scientists

FIGURE
2a



TRANSECT T9



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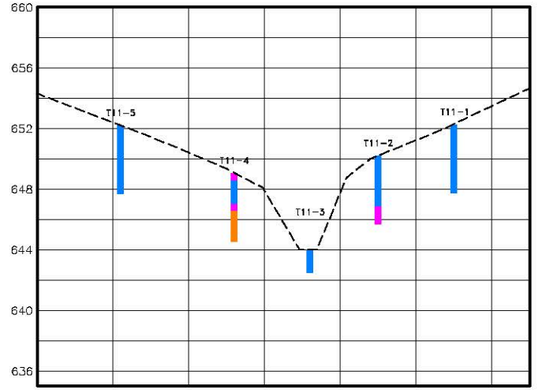

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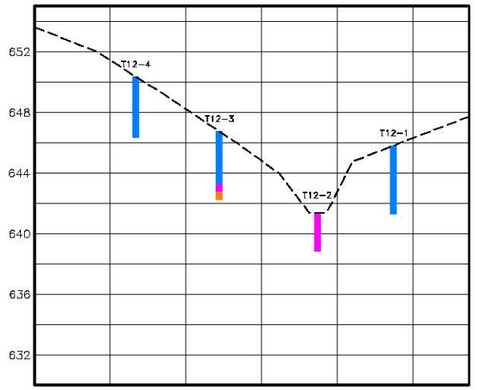

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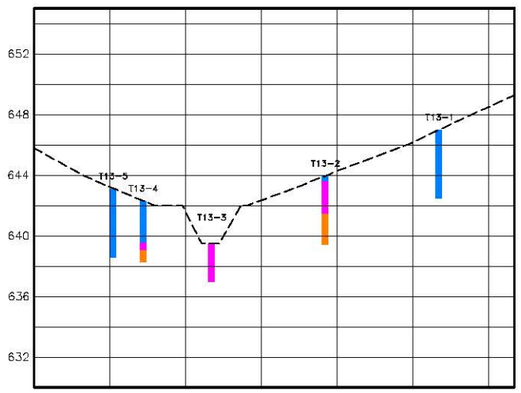

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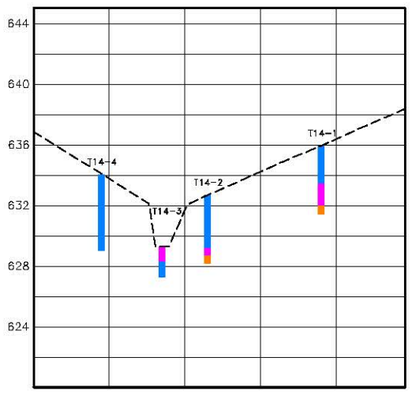
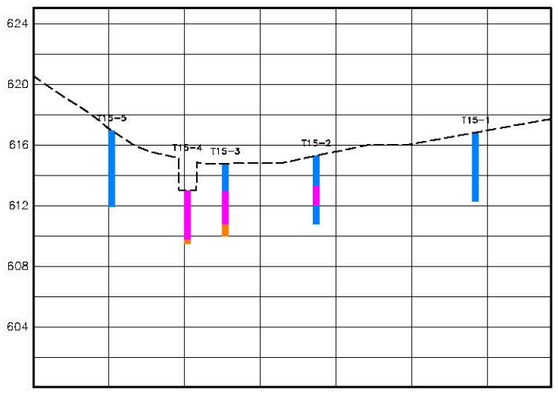


TRANSECT T14



TRANSECT T15

LEGEND:

- DISCRETE OCCURRENCES OF OILY PRODUCT WERE OBSERVED IN ISOLATED CLAY FRACTURES
- ODOR, STAINING, AND/OR OIL SHEENS (BUT NOT OILY PRODUCT) WERE OBSERVED
- NO ODOR, STAINING, OIL SHEENS, OR OILY PRODUCT WERE OBSERVED.

NOTES:

1. VISUAL OBSERVATIONS DEPICTED ABOVE FROM MAY 2003 BORINGS.
2. ALL VIEWS ARE LOOKING UPSTREAM.

0 10' 20'
HORIZONTAL GRAPHIC SCALE

0 5 10'
VERTICAL GRAPHIC SCALE

L: ON=* OFF=*REF*
P: PAGESET/PLT-DL
10/2/03 SYR-BS-NES LAF
38832001/TRANS/38832G03.DWG

BEAZER EAST, INC.
PITTSBURGH, PENNSYLVANIA
KOPPERS INC. FACILITY
SUPERIOR, WISCONSIN

OUTFALL 001 DRAINAGE DITCH BORING TRANSECT PROFILES (TRANSECTS T9 THROUGH T15)

BBL BLASLAND, BOUCK & LEE, INC. engineers & scientists

FIGURE 2b