

# **Addendum to the Site Specific Sampling Plan Surface Soil Delineation**

## **Remedial Investigation at Acid Areas 2 & 3**

### **Introduction**

This addendum has been prepared to address the sampling strategy for additional surface soil sampling at Acid Areas 2 & 3 (AA2 and AA3). Data collected during the 1998 Site Investigation and the October 2004 Remedial Investigation indicates contamination exceeding the draft clean-up goals. Table 1 and Figures 1 and 2 show elevated levels of PCB contamination in surface soil at both AA2 and AA3. The extent of contamination has not been adequately defined at both sites, therefore additional surface soil samples are proposed to provide more accurate volume estimates needed for the feasibility study.

### **Scope and Objectives**

Additional rounds of surface soil sampling are proposed, which may include up to three or four rounds, depending on whether the contaminated areas have been adequately defined. The initial phase of sampling includes 28 step-out samples at AA2 and 19 step-out samples at AA3, which are shown in Figures 1 & 2. The proposed step-out locations are placed 50 ft north, south, east, and west of locations that exceed the clean-up goals.

Soil boring SB-01 at AA3 is considered an exceedance because it is believed the total PCBs exceed 4000 ug/kg. The relationship between concentrations of aroclor-1254 and aroclor-1260 from the 2004 data (soil borings SB-16 through SB-29), suggest that a minimum of 800 ug/kg of aroclor-1254 is likely present at SB-01, which would exceed the clean up goals for total PCBs (Table 1).

Additional rounds of sampling will be based on the following criteria:

- Additional step-out samples will be placed 50 ft north, south, east, and /or west of any step-out samples that exceed the clean-up criteria for PCBs, in areas that have not already been characterized. If a proposed step-out location is within 50 feet of a location that has already been characterized as a non-exceedance, the new step-out will be placed equidistant between the exceedance and the non-exceedance, provided the two locations are more than 30 feet apart.
- Additional delineation samples (step-in samples) will be placed equidistant (approximately 25 feet), between a step-out location and an

exceedance, when the step-out sample does not exceed the clean-up goals for PCBs.

- No step-out samples will be placed any closer than 15 feet from a prior sampling location, however the optimum minimum spacing is 25 feet.
- Additional rounds will be conducted until all contamination areas exceeding the clean-up goals have been bounded by samples that do not exceed the clean-up goals, not to exceed 4 rounds of sampling. The bounding locations should also be within 25 feet of the contaminated area.

Surface soil samples will be submitted to an off-site laboratory and analyzed for PCBs (SW8082//3540C). Surface soil sampling is scheduled for summer 2008.

### **Sampling Methods**

Surface soil samples will be collected using a hand auger equipped with dedicated disposable stainless steel liners in accordance with the approved Site-Wide SAP. Surface soil samples will be collected from the 0.5 ft. to 1.5 ft. interval consistent with prior sampling at the site. Each sample will be homogenized in a clean dedicated disposable glass bowl using a stainless steel spoon.

Decontamination of the hand auger will be performed between sample locations as specified in the Site-Wide SAP. Dedicated bowls and spoons will be used for each sample.

QA/QC samples will be collected in accordance with the Site-specific QAPP, to include field duplicates, matrix spike/matrix spike duplicates, and a QA sample to be submitted to a separate laboratory.

Sample handling, preservation, packing, and shipping will be in accordance with the Site-Specific QAPP.

Land surveying will be performed for each of the new locations in accordance with the Site-Wide SAP using conventional surveying methods.

### **Data Reporting**

Analytical results will be provided as an appendix in the Feasibility Study Report and will be used to support soil volume estimates.

Area of Detail



Legend

- Exceedances
- Non-exceedances
- Step-out Locations (50 ft)

Note: Below ground surface  
Bg = Background Sample values  
are provided in units consistent with  
the applicable regulatory standard  
(values are provided in units consistent  
with the report sample values)

- Storage Tank Areas  
from Engineering Drawings
- Creek, Ditch, Conveyance
- Buildings
- Railway



Sources  
Data supplied to Ohio State Plane  
North NAD83, map grid units in feet.

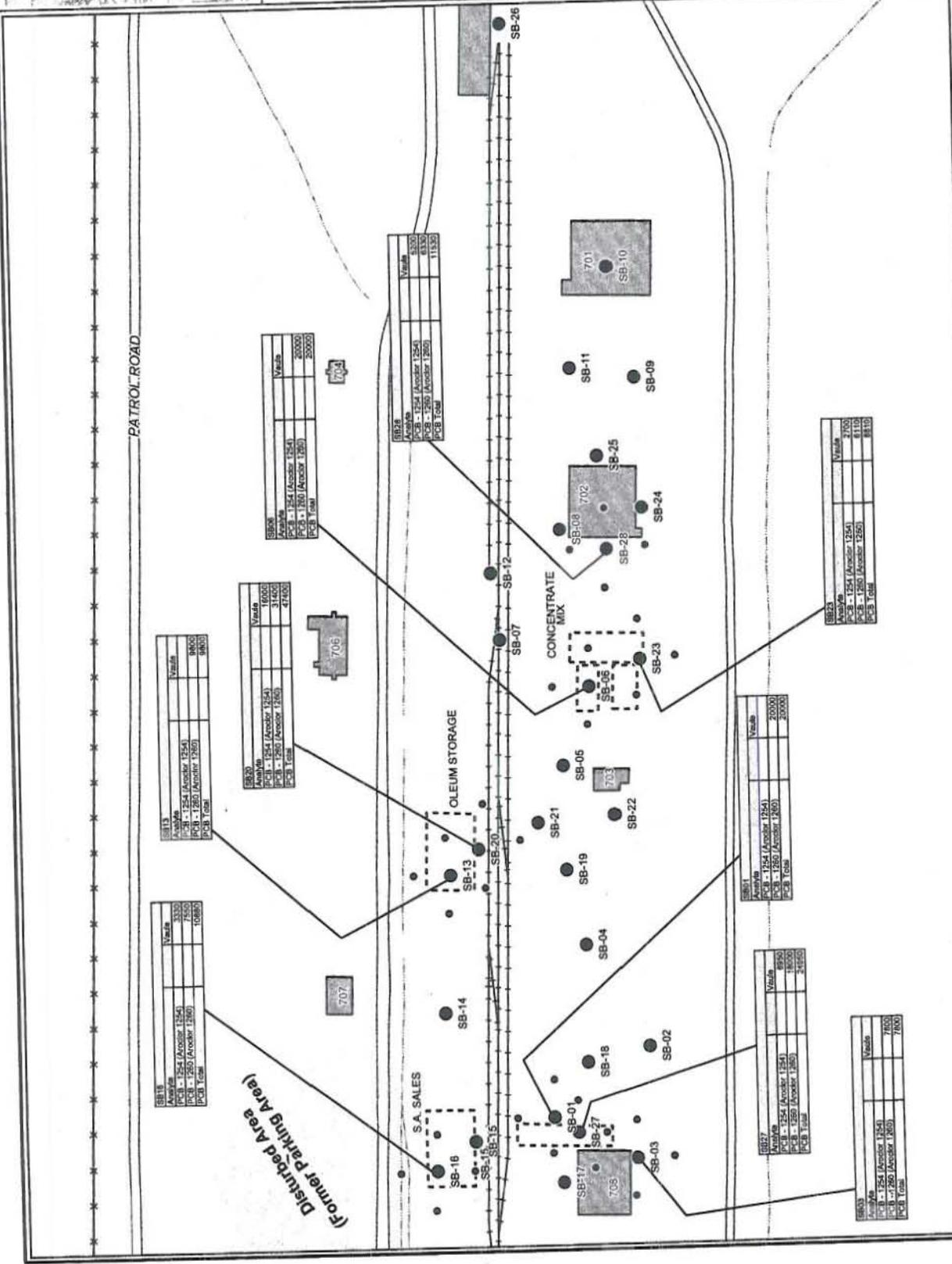


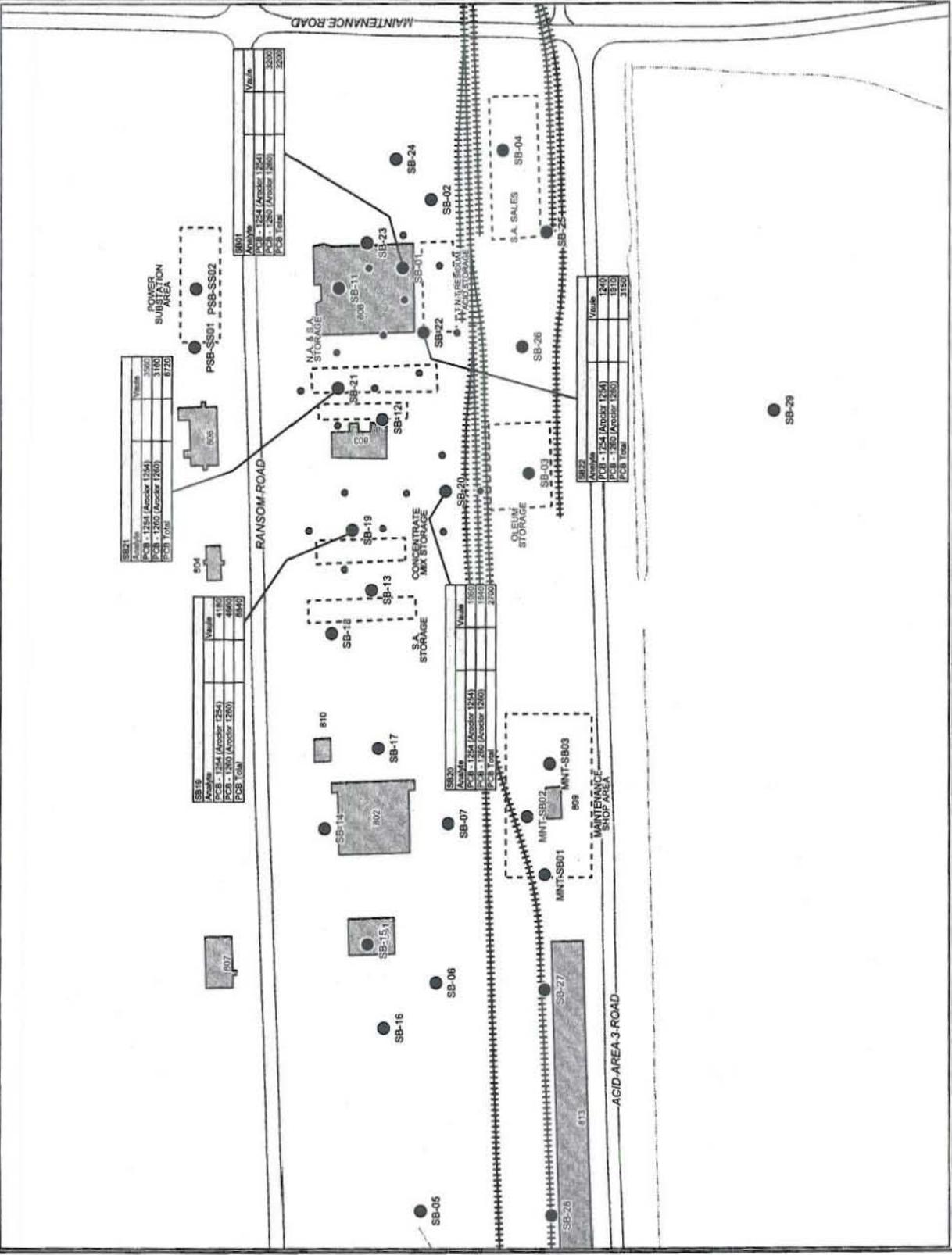
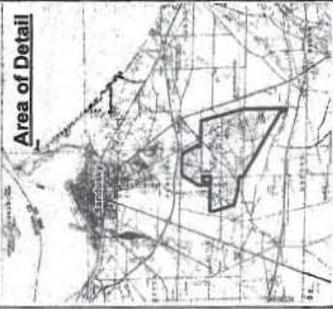
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Total PCBs — Acid Area 2

Plum Brook Ordinance Works  
Cincinnati, Ohio

Figure 1





Area/Code	Value
SB-19	3500
PCB - 1254 (Area 1254)	3180
PCB - 1265 (Area 1265)	8720
PCB Total	

Area/Code	Value
SB-19	4180
PCB - 1254 (Area 1254)	3800
PCB - 1265 (Area 1265)	8400
PCB Total	

Area/Code	Value
SB-01	3000
PCB - 1254 (Area 1254)	3000
PCB - 1265 (Area 1265)	3000
PCB Total	

Area/Code	Value
SB-20	1900
PCB - 1254 (Area 1254)	1800
PCB - 1265 (Area 1265)	2100
PCB Total	

Area/Code	Value
SB-22	1240
PCB - 1254 (Area 1254)	1240
PCB - 1265 (Area 1265)	3150
PCB Total	

Table 1. PCB concentrations in surface soil at Acid Areas 2 & 3

Acid Area 2

	aroclor 1254 (ug/kg)	aroclor 1260 (ug/kg)	total PCB (ug/kg)
SB01		<b>20000</b>	<b>20000</b>
SB02		260	260
SB03		<b>7800</b>	<b>7800</b>
SB04		40	40
SB05		40	40
SB06		<b>20000</b>	<b>20000</b>
SB07		39	39
SB08		38	38
SB09		41	41
SB10		1500	1500
SB11		240	240
SB12		40	40
SB13		<b>9800</b>	<b>9800</b>
SB14		45	45
SB15		47	47
SB16	<b>3330</b>	7550	<b>10880</b>
SB17	764	2210	2974
SB18	16.7	48.1	64.8
SB19	34.7	37	71.7
SB20	<b>16000</b>	<b>31400</b>	<b>47400</b>
SB21	32.7	65.6	98.3
SB22	220	477	697
SB23	<b>2700</b>	<b>6110</b>	<b>8810</b>
SB24	511	1030	1541
SB26	18.1	5.07	23.17
SB27	<b>6950</b>	<b>18000</b>	<b>24950</b>
SB28	<b>5200</b>	<b>6330</b>	<b>11530</b>

Acid Area 3

	aroclor 1254 (ug/kg)	aroclor 1260 (ug/kg)	total PCB (ug/kg)
SB01		3200	<b>3200</b>
SB02		1100	1100
SB03		38	38
SB04		84	84
SB05		40	40
SB06		40	40
SB07		39	39
SB08		160	160
SB09		39	39
SB10		38	38
SB11		40	40
SB12		41	41
SB13		39	39
SB14		390	390
SB15		40	40
SB16	17.9	18.5	36.4
SB17	268	765	1033
SB18	558	782	1340
SB19	<b>4180</b>	<b>4660</b>	<b>8840</b>
SB20	<b>1060</b>	1640	<b>2700</b>
SB21	<b>3560</b>	3160	<b>6720</b>
SB22	<b>1240</b>	1910	<b>3150</b>
SB23	581	626	<b>1207</b>
SB24	83.4	148	231.4
SB26	88.5	140	228.5
SB27	17.5	28.3	45.8
SB28	17.7	21.1	38.8
SB29	18.6	5.18	23.78
MNT-SB01		40	40
MNT-SB02		63	63
MNT-SB03		40	40
PSB-SS01		400	400
PSB-SS02		330	330

values in bold reflect exceedances of the draft clean up goals of 1000 ug/kg for aroclor-1254 and 4000 ug/kg for aroclor-1260