FI Field Program Summary: No additional sampling was performed as part of the FI program because the chemical concentrations detected during the CCI program were less than the remediation criteria.

Summary of Soil Sampling and Analysis

- Soil samples were collected and analyzed at multiple depths of less than 15 feet bgs for one or more of the following compounds: lead, CAM-17 metals, VOCs, SVOCs, and TPH. A summary of sampling and analysis for the AOI is shown in Table 4.
- Lead was not detected in the four samples analyzed at concentrations above the remediation criterion of 800 mg/kg. The maximum concentration of lead detected was 88 mg/kg in DP0187 at 0 foot. Results of lead analyses are summarized in Table 9 and shown on Figure 8-4.
- CAM-17 metals were not detected at concentrations above remediation criteria or background concentrations in the four samples analyzed. Results of metals analyses are summarized in Table 10, except lead, and shown on Figure 8-4.
- VOCs were not detected at concentrations above the remediation criterion in the five samples analyzed. Results of VOC analyses are summarized in Table 10 and shown on Figure 9-1. The four reported VOCs and their maximum concentrations are listed below.

VOC Compounds	Boring Number	Sample Depth (feet bgs)	Maximum Concentration (mg/kg)
1,1,1-TCA	DP0060/DP0187	15/5	0.0081J
1,1-DCA	DP0060	15	0.005J
1,l-DCE	DP0060	15	0.0079J
PCE	DP0060	5	0.0088J

- SVOCs and TPH were not reported above MDLs in the two soil samples collected and analyzed. Results of SVOC and TPH analyses are summarized in Table 10 and SVOCs are shown on Figure 8-4.

Summary of Soil Gas Sampling and Analysis

- Soil gas samples were collected at 5 and 15 in the two boring locations. A summary of soil gas sampling and analysis for the AOI is shown in Table 5.
- VOCs in soil gas were not detected at concentrations above the remediation criteria. Results of VOC analyses are summarized in Table 12 and shown on Figure 10-1. The maximum concentrations of VOCs detected are listed below for the depths of less than 15 feet bgs for which remediation criteria were developed, and depths of 15 feet bgs and deeper.

VOC Soil Gas Compounds Less than 15 feet bgs	Boring Number	Sample Depth (feet bgs)	Maximum Concentration ($\mu g/m^3$)
1,1,1-TCA	DP0187	5	23,600
1,1-DCA	DP0187	5	5,380
1,1-DCE	DP0187	5	88,600
Chloroform	DP0187	5	380
PCE	DP0187	5	160
Toluene	DP0060	5	46
TCE	DP0187	5	32

* Exceeded the remediation criterion indicated in parentheses.

VOC Soil Gas Compounds 15 feet bgs and Deeper	Boring Number	Sample Depth (feet bgs)	Maximum Concentration ($\mu g/m^3$)
1,1,1-TCA	DP0060	15	140,000
1,1-DCA	DP0187	15	36,500
1,1-DCE	DP0187	15	350,000
Chloroform	DP0187	15	2,430
PCE	DP0187	15	5,040
Toluene	DP0060	15	36
TCE	DP0187	22	500

AOI 37 Summary: The reported concentrations of COPCs in soil and soil gas samples analyzed are less than the remediation criteria. Therefore, no further soil sampling is recommended.

6.5.12 Storm Water Oil/Water Separator – AOI 38

AOI Description: The Storm Water Oil/Water Separator was located in the northwest corner of the perimeter area adjacent and west of AOI 32. The AOI is shown on Figure 2.

Previous Investigation History: Previous investigations in this area did not indicate lead impacts to concrete. Concrete samples collected and analyzed during these investigations are shown in Figure 7-1. During the Haley & Aldrich (September 2005) Site walk through, staining was observed on adjacent paved areas. Based on these observations and the historical operational use at this AOI, the following field investigation was initiated.

CCR Investigation Summary: To assess potential impacts from historical uses, one boring (DP0013) was advanced to 5 feet bgs. Soil samples were collected at the boring location and analyzed for lead, CAM-17 metals, VOCs, and TPH. Soil gas samples were not collected because VOCs were not considered to be likely chemicals of concern at this location.

FI Field Program Summary: To further delineate arsenic impacts and to assess the potential impacts of PCBs in proximity to DP0013, four step-out and step-down soil borings (DP0013A, DP0013B, DP0013D, and DP0013D2) were advanced up to 4 feet bgs. Boring locations are shown on Figure 4.

Summary of Soil Sampling and Analysis

- Soil samples were collected and analyzed at multiple near-surface depths of less than 4 feet bgs for one or more of the following compounds: lead, arsenic, CAM-17 metals, VOCs, PCBs, and TPH. A summary of sampling and analysis for the AOI is shown in Table 4.

- Lead was detected in both samples collected and analyzed at 0 foot and at 1 foot bgs. The maximum concentration of lead detected was 140 mg/kg. Results of lead analyses are summarized in Table 9 and shown on Figure 8-5.

- CAM-17 metals were analyzed in two samples and additional analysis for arsenic was performed on 8 samples. Results of metals analyses are summarized in Table 10, except lead, and shown on Figure 8-5. The remediation criterion was exceeded for arsenic in 3 of 10 samples analyzed. The maximum concentrations of metals of concern are listed below.

Metal Compounds	Boring Number	Sample Depth (feet bgs)	Maximum Concentration (mg/kg)
Antimony	DP0013	0	4.75J
Arsenic	DP0013	0	**25.6*** (9.05)
Chromium	DP0013	1	13.6
Zinc	DP0013	1	48.8

* Exceeded the remediation criterion indicated in parentheses.

- PCBs were not detected at concentrations above the MDLs in the four samples analyzed. Results of PCB analyses are summarized in Table 10 and shown on Figure 8-5.

- TPH was below the MDL in the one sample analyzed from 1 foot bgs. Results of TPH analyses are summarized in Table 10.

- VOCs were below the MDLs in the one sample analyzed at 1 foot bgs. Results of VOC analyses are summarized in Table 10 and shown on Figure 9-1.

AOI 38 Summary: The COPCs in soil samples analyzed are delineated immediately north of the AOI and to the west and south by AOI 30 data points. However, concentrations of PCBs, lead and arsenic are not delineated to the east based on data from borings GS0061 and DP0278 advanced for step-outs of AOI 30. Therefore, additional sampling is recommended prior to or during remediation to confirm removal of soil with concentrations of COPCs above the remediation criteria.

6.5.13 Storm Water Retention Basin & Treatment Area – AOI 39

AOI Description: The Storm Water Retention Basin was located in the northwestern portion of the site adjacent and north of AOI 38. The basin is a large concrete basin approximately 20 feet wide, 40 feet long and 12 feet deep. Storm water was collected in the basin prior to it being discharged in to the storm drain leaving the site. The AOI is shown on Figure 2.

Previous Investigation History: Previous investigations of lead in the perimeter areas of the facility did not focus on this AOI. However, the area east of it was previously investigated and lead impacted soil removed (ENV America, 1999).

Two soil borings (SB-19 and SB-20) were advanced by CRA in 2004 adjacent to the Storm Water Retention Basin. Three samples were collected from each boring at 0, 1 and 2 feet bgs and analyzed for lead. Lead was not reported above the remediation criterion of 800 mg/kg with a reported maximum concentration of 487 mg/kg.

CCR Investigation Summary: To assess potential impacts from historical uses, two borings (DP0004 and DP0008) were advanced to 20 feet bgs on opposite ends of the basin. Soil and soil gas samples were collected at both locations. Soil was analyzed for lead, CAM-17 metals, VOCs, and SVOCs. Soil gas samples were analyzed for VOCs.

FI Field Program Summary: DP0008A was advanced to 10 feet bgs and sampled because the QA/QC of the analytical results for the initial boring, DP0008, was unacceptable. Boring locations are shown on Figure 4.

Summary of Soil Sampling and Analysis

- A total of eight soil samples were collected and analyzed at multiple depths to 15 feet bgs for lead, CAM-17 metals, VOCs, and SVOCs in the two borings. A summary of sampling and analysis for the AOI is shown in Table 4.
- Lead was not detected at concentrations above the remediation criterion of 800 mg/kg in the three samples analyzed from 0 foot to 15 feet bgs. The maximum concentration of lead reported was 101 mg/kg in DP0004 at 0 foot bgs. Results of lead analyses are summarized in Table 9 and shown on Figure 8-5.
- CAM-17 metals were not detected at concentrations above remediation criteria in the three samples analyzed. Results of metals analyses are summarized in Table 10, except lead, and shown on Figure 8-5.
- VOCs were not detected at concentrations above MDLs in the five samples analyzed. Results of VOC analyses are summarized in Table 10 and shown on Figure 9-1.
- SVOCs were not detected at concentrations above MDLs in the three samples analyzed. Results of SVOC analyses are summarized in Table 10 and shown on Figure 8-5.

Summary of Soil Gas Sampling and Analysis

- Soil gas was collected from boring DP0004 at depths of 10 and 20 feet bgs and from DP0008 and DP0008A at 10 feet bgs. A summary of soil gas sampling and analysis for the AOI is shown in Table 5.
- The QA/QC of the analytical results of DP0008 was unacceptable and therefore, the location was resampled and analyzed as DP0008A.

- VOCs in soil gas were not detected at concentrations above remediation criteria. Results of VOC analyses are summarized in Table 12 and shown on Figure 10-1. The maximum concentrations of VOCs detected are listed below for the depths of less than 15 feet bgs for which remediation criteria were developed, and depths of 15 feet bgs and deeper.

VOC Soil Gas Compounds Less than 15 feet bgs	Boring Number	Sample Depth (feet bgs)	Maximum Concentration ($\mu g/m^3$)
Benzene	DP0004	10	250
Ethylbenzene	DP0004	10	270
m,p-Xylenes	DP0004	10	1,600
Toluene	DP0004	10	1,400
CFC-11	DP0004	10	150

VOC Soil Gas Compounds 15 feet bgs and Deeper	Boring Number	Sample Depth (feet bgs)	Maximum Concentration ($\mu g/m^3$)
Benzene	DP0004	20	250
Ethylbenzene	DP0004	20	220
m,p-Xylenes	DP0004	20	1,100
Toluene	DP0004	20	1,200
CFC-11	DP0004	20	150

AOI 39 Summary: The reported concentrations of COPCs in soil and soil gas samples analyzed are less than the remediation criteria. Although low concentrations of VOCs were detected at depth they are believed to be associated with migration at depth from releases identified at AOI 26 to the south. Based on the existing data set, additional sampling is not recommended for this AOI.

6.5.14 Red Lead Delivery and Haz Waste Storage Shed – AOI 40

AOI Description: The Red Lead Delivery and Haz Waste Storage Shed was located in the perimeter area west of the Main Production Building and adjacent to the railroad tracks. This area was used for the storage of red lead. The building consisted of a thick concrete slab on grade with a metals building structure. The Phase I report by CRA showed UST Pit No.2 south of this AOI, however the location of the former USTs was later found to have been farther south of the AOI as shown on Figure 2.

Previous Investigation History: Previous investigations in this area indicated lead concentrations up to 8,620 mg/kg in concrete chip samples in this area. Concrete samples collected and analyzed during these investigations are shown on Figure 7-1.

CCR Investigation Summary: To assess potential impacts from historical uses, four borings were advanced in this location: three to a total depth of 5 feet bgs (DP0106, DP0107, and DP0108) and one to 15 feet bgs (DP0105). Soil samples were collected from each boring and analyzed for CAM-17 metals and VOCs. Soil gas was sampled in two locations and analyzed for VOCs. Additionally, one grab sample (GS0002) was collected at multiple depths beneath the sump located in the northwest corner of the building following the removal of the concrete floor during demolition. The grab

sample was analyzed for CAM-17 metals, PCBs, VOCs, SVOCs, PAHs, and TPH. Boring and grab sample locations are shown on Figure 4.

FI Field Program Summary: No additional sampling was performed as part of the FI program because the chemical concentrations detected during the CCI and demolition oversight programs were less than the remediation criteria.

Summary of Soil Sampling and Analysis

- Soil samples were collected and analyzed at multiple depths up to 10 feet bgs for one or more of the following compounds: lead, CAM-17 metals, TPH, PCBs, VOCs, SVOCs, and PAHs. A summary of sampling and analysis for the AOI is shown in Table 4.
- Lead was not detected in the nine samples analyzed at concentrations above the remediation criterion of 800 mg/kg. The maximum concentration reported was 74 mg/kg in GS0002 at 2 feet bgs. Results of lead analyses are summarized in Table 9 and shown on Figure 8-4.
- CAM-17 metals were not detected at concentrations above remediation criteria. Results of metals analyses are summarized in Table 10, except lead, and shown on Figure 8-4.
- TPH carbon chain analysis (C4-C40) did not detect concentrations above the MDL in the one grab analyzed. Results of TPH analyses are summarized in Table 10.
- PCBs were not detected at concentrations above the remediation criterion in the one sample analyzed. Total PCBs were detected at a concentration of 0.040J mg/kg in GS0002 at 2 feet bgs. Results of PCB analyses are summarized in Table 10 and shown on Figure 8-4.
- VOCs were not detected at concentrations above the MDLs in the five samples analyzed. Results of VOC analyses are summarized in Table 10 and shown on Figure 9-1.
- SVOCs and PAHs were not detected at concentrations above the MDLs in the one grab sample analyzed. Results of SVOC and PAH analyses are summarized in Table 10 and shown on Figure 8-4

Summary of Soil Gas Sampling and Analysis

- Soil gas samples were collected at two locations including DP0105 at 15 feet bgs and DP0106 at 5 feet bgs. A summary of soil gas sampling and analysis for the AOI is shown in Table 5.
- VOCs were not detected at concentrations above the remediation criteria. Results of VOC analyses are summarized in Table 12 and shown on Figure 10-1. The maximum concentrations of VOCs detected are listed below for the depths of less than 15 feet bgs for which remediation criteria were developed, and depths of 15 feet bgs and deeper.

VOC Soil Gas Compounds Less than 15 feet bgs	Boring Number	Sample Depth (feet bgs)	Maximum Concentration ($\mu g/m^3$)
1,1,1-TCA	DP0106	5	1,500
1,1-DCA	DP0106	5	370
1,1-DCE	DP0106	5	11,000
Chloroform	DP0106	5	350
Toluene	DP0106	5	120

VOC Soil Gas Compounds 15 feet bgs and Deeper	Boring Number	Sample Depth (feet bgs)	Maximum Concentration ($\mu g/m^3$)
1,1,1-TCA	DP0105	15	210
1,1-DCE	DP0105	15	1,200
Toluene	DP0105	15	130

AOI 40 Summary: The reported concentrations of COPCs in soil and soil gas samples analyzed are less than the remediation criteria. Therefore, no additional sampling is recommended.

6.5.15 Oil Pump House – AOI 41

AOI Description: The Oil Pump House was located in the perimeter area west of the Main Production Building between the railroad spur and Warehouse No. 3. The oil pump house/equipment wash down building was identified as SWMU No. 10 (PRC, 1992). It was an enclosed corrugated steel building used to wash down equipment and transfer used oil to the 6,000-gallon aboveground used oil storage tank located adjacent to it. The oil house consisted of an approximately 300-square-foot sealed concrete area with a grated collection trench around the perimeter and sump in the northwest corner which was covered by a corrugated aluminum grate. The unit was divided in half by a grated trench and a corrugated aluminum dividing wall (Delco-Remy, 1992). The AOI is shown on Figure 2.

Previous Investigation History: Previous investigations in this area collected concrete chip samples of the floor which did not indicate lead impacts to concrete; however, toluene was detected in a soil sample from boring SB-24 during a previous site investigation (CRA 2005). Concrete samples collected and analyzed during these investigations are shown on Figure 7-1.

One soil boring (SB-24) was advanced by CRA in 2004 in the location of the Used Oil Processing Area (Oil Pump House) and one soil sample collected at 4 feet bgs. The sample was analyzed for BTEX and TPH. Toluene was the only COPC reported at concentrations above RLs at 520 mg/kg.

CCR Investigation Summary: To assess potential impacts from historical uses, six borings (DP0002, DP0003, DP0101, DP0102, DP0143, and DP0144) were advanced to multiple depths up to 15 feet bgs in this location. Soil and soil gas samples were collected at the six boring locations. Soil samples were analyzed for lead, CAM-17 metals, VOCs, SVOCs, and TPH. Soil gas samples were analyzed for VOCs.

To assess Site-wide groundwater quality and potential impacts from this AOI, monitoring well MW-2 was installed near the southwest corner of the oil pump house. During installation of the well, three soil samples were collected and analyzed for VOCs.

FI Field Program Summary: To laterally delineate and assess potential impacts in soil and soil gas, 15 borings (DP002A, DP0002E, DP0002F, DP0002G, DP0003A, and DP0143A through DP0143J) were advanced to multiple depths up to a maximum depth of 15 feet bgs. Borings were placed in proximity to DP0002 and DP0143 to laterally delineate lead and arsenic in soil and to assess potential impacts of PCBs. Soil gas samples were taken in proximity to DP0143 to delineate VOCs to the south. The QA/QC of the analytical results of DP0002 and DP0003 in soil gas were unacceptable, therefore, the locations were resampled and analyzed as DP0002A and DP0003A. Boring locations are shown on Figure 4.

Summary of Soil Sampling and Analysis

- Soil samples were collected and analyzed at multiple near-surface depths of less than 5 feet bgs for one or more of the following compounds: lead, arsenic, CAM-17 metals, PCBs, VOCs, SVOCs, and TPH. A summary of sampling and analysis for the AOI is shown in Table 4.

- Lead was detected in 28 out of 29 samples analyzed with reported concentrations up to 2,080 mg/kg in DP0143H at 0 foot bgs. Four samples were above the remediation criterion of 800 mg/kg. Lead concentrations in step-out samples were below the remediation criterion except for samples to the west in DP0143H at 0 foot bgs. Results of lead analyses are summarized in Table 9 and shown on Figure 8-7.

- CAM-17 metals were analyzed in four samples, and analyses for arsenic were performed on an additional 16 samples. Results of metals analyses are summarized in Table 10, except lead, and shown on Figure 8-7. Arsenic exceeded the remediation criterion in five samples; however subsequent step-down and step-out samples were below remediation criteria except for to the west. The maximum concentrations of metals of concern are listed below.

Metal Compounds	Boring Number	Sample Depth (feet bgs)	Maximum Concentration (mg/kg)
Arsenic	DP0143H	0	**71.6*** (9.05)
Chromium	DP0143	1.5	14.8
Zinc	DP0143	1.5	49.4

* Exceeded the remediation criterion indicated in parentheses.

- PCBs were detected in four of six samples analyzed with concentrations reported up to 8.270 mg/kg in P0143H at 0 foot bgs. Total PCBs were over the remediation criterion of 3.82 mg/kg in one sample. Results of PCB analyses are summarized in Table 10 and shown on Figure 8-7.

- TPH carbon chain analysis (C4-C40) was performed on one sample (DP0002 at 1 foot bgs) with a concentration of 24,100 mg/kg. A majority of the

hydrocarbons were in the heavy hydrocarbons range (C23-C40). Results of TPH analyses are summarized in Table 10.

- VOCs were not detected at concentrations above the remediation criterion in the eight samples analyzed from 0 foot to 10 feet bgs. Benzene and naphthalene were detected below laboratory reporting limits (J-flagged) at concentrations of 0.0022J mg/kg and 0.008J mg/kg, respectively. Results of VOC analyses are summarized in Table 10 and shown on Figure 9-2.

- SVOCs were not detected at concentrations above MDLs in the 10 samples collected and analyzed. Results of SVOC analyses are summarized in Table 10 and shown on Figure 8-7.

Summary of Soil Gas Sampling and Analysis

- Soil gas samples were collected at nine locations at 5, 10, and/or 15 feet bgs. A summary of soil gas sampling and analysis for the AOI is shown in Table 5.

- VOCs in soil gas were not detected at concentrations above remediation criteria in the samples analyzed. Results of VOC analyses are summarized in Table 12 and shown on Figure 10-1. The maximum concentrations of VOCs detected are listed below for the depths of less than 15 feet bgs for which remediation criteria were developed, and depths of 15 feet bgs and deeper.

VOC Soil Gas Compounds Less than 15 feet bgs	Boring Number	Sample Depth (feet bgs)	Maximum Concentration ($\mu g/m^3$)
1,1,1-TCA	DP0102	5	180
1,1-DCA	DP0101	5	9.4
1,1-DCE	DP0143	5	23
1,2,4-Trimethylbenzene	DP0101	5	65.3
1,3,5-Trimethylbenzene	DP0101	5	17.3
2-Butanone	DP0101	5	28.6
4-Ethyltoluene	DP0101	5	24.5
4-Methyl-2-pentanone	DP0101	5	9.9
Acetone	DP0101	5	334
Benzene	DP0003	10	410
Bromodichloromethane	DP0143	5	110
Carbon disulfide	DP0101	5	79.3
Chloroform	DP0101	5	24.4
Dibromochloromethane	DP0101	5	5
CFC-12	DP0143	5	310
Ethylbenzene	DP0143D	5	1,070
m,p-Xylenes	DP0003	10	3,200
o-Xylene	DP0003	10	850
Styrene	DP0101	5	59.9
PCE	DP0143	5	63
Toluene	DP0143D	5	20,800
TCE	DP0143	5	38
CFC-11	DP0003	10	140
Xylenes (total)	DP0143D	5	1,630

VOC Soil Gas Compounds 15 feet bgs and Deeper	Boring Number	Sample Depth (feet bgs)	Maximum Concentration ($\mu g/m^3$)
1,1,1-TCA	DP0143D	15	47.6
1,1-DCE	DP0143	15	35
Acetone	DP0143D	15	501
Benzene	DP0143D	15	31.1
Carbon disulfide	DP0143D	15	5.7
Chloroform	DP0143D	15	8.9
CFC-12	DP0143	15	290
Ethylbenzene	DP0143D	15	364
m,p-Xylenes	DP0143D	15	355
o-Xylene	DP0143D	15	28.8
PCE	DP0143D	15	36.8
Toluene	DP0143D	15	3,640
Freon 113	DP0143D	15	8.7
Xylenes (total)	DP0144	15	250

AOI 41 Summary: Lead, arsenic, and PCBs are reported in soil at concentrations above the remediation criteria. Other COPCs in soil and soil gas samples analyzed are less than the remediation criteria. The analytical data indicates that concentrations of PCBs, arsenic and lead are not delineated to the west. Therefore, additional soil sampling prior to or during remediation is recommended to further assess lead, arsenic and PCBs in soil west of this AOI.

6.5.16 Used Oil AST (5,000 gallon) – AOI 42

AOI Description: The 5,000 gallon Used Oil AST was located in the perimeter area between the Oil Pump House (AOI 41) and the Main Production Building. The AOI is shown on Figure 2.

Previous Investigation History: Previous investigations of the perimeter did not focus on this area; however, toluene was detected in a previous soil sample collected nearby.

CCR Investigation Summary: To assess potential impacts from historical uses, six borings (DP0109, DP0110, DP0145, DP0146, DP0147, and DP0148) were advanced to a total depth of 15 feet bgs in this location. Soil and soil gas samples were collected at the six locations. Soil samples collected were analyzed for lead, CAM-17 metals, and VOCs. Soil gas samples were analyzed for VOCs.

FI Field Program Summary: To assess the potential impacts of PCBs in this area, four borings (DP0109A, DP0110A, DP0145A, and DP0146A) were advanced to 4 feet bgs and soil samples collected. Boring locations are shown on Figure 4.

Summary of Soil Sampling and Analysis

- Soil samples were collected and analyzed at multiple near-surface depths of less than 10 feet bgs for lead, CAM-17 metals, PCBs, and VOCs. A summary of sampling and analysis for the AOI is shown in Table 4.
- Lead was not detected in the 20 samples analyzed at concentrations above the remediation criterion of 800 mg/kg. The maximum concentration reported was 48 mg/kg in DP0147 at 5 feet bgs. Results of lead analyses are summarized in Table 9 and shown on Figure 8-7.
- CAM-17 metals were analyzed for in 16 samples. Arsenic exceeded the remediation criterion in one sample and subsequent step-down and step-out samples are below the remediation criterion. Results of metals analyses are summarized in Table 10, and shown on Figure 8-7. The maximum concentrations of metals of concern are listed below.

Metal Compounds	Boring Number	Sample Depth (feet bgs)	Maximum Concentration (mg/kg)
Antimony	DP0146	5	2.60J
Arsenic	DP0110	0	**20.8*** (9.05)
Chromium	DP0147	5	75.5
Zinc	DP0147	0	60.5

* Exceeded the remediation criterion indicated in parentheses.

- PCBs were not detected at concentrations above the remediation criterion of 3.82 mg/kg in the eight samples analyzed. Total PCBs were reported at concentrations above the MDLs in three samples with concentrations up to 0.106 mg/kg. Results of PCB analyses are summarized in Table 10 and shown on Figure 8-7.
- VOCs were not detected at concentrations above remediation criteria in the seven samples analyzed from 1 foot and 10 feet bgs. Benzene was detected below from the RL (J-flagged) at a concentration of 0.002J mg/kg. Results of VOC analyses are summarized in Table 10 and shown on Figure 9-2.

Summary of Soil Gas Sampling and Analysis

- Soil gas samples were collected from six locations at 5 feet and 15 feet bgs. A summary of soil gas sampling and analysis for the AOI is shown in Table 5.
- VOCs in soil gas were not detected at concentrations above remediation criteria in the samples analyzed. Results of VOC analyses are summarized in Table 12 and shown on Figure 10-1. The maximum concentrations of VOCs detected are listed below for the depths of less than 15 feet bgs for which remediation criteria were developed, and depths of 15 feet bgs and deeper.

VOC Soil Gas Compounds Less than 15 feet bgs	Boring Number	Sample Depth (feet bgs)	Maximum Concentration ($\mu g/m^3$)
1,1,1-TCA	DP0110	5	276
1,1-DCA	DP0110	5	58.4
1,1-DCE	DP0110	5	132
1,2,4-Trimethylbenzene	DP0147	5	237
1,3,5-Trimethylbenzene	DP0147	5	115
2-Butanone	DP0110	5	36.8
4-Ethyltoluene	DP0147	5	53.6
4-Methyl-2-pentanone	DP0110	5	9.7
Acetone	DP0110	5	385
Benzene	DP0109	5	210
Carbon disulfide	DP0147	5	40.8
Chloroform	DP0110	5	3.4
Ethylbenzene	DP0109	5	660
m,p-Xylenes	DP0109	5	2,000
o-Xylene	DP0109	5	530
Styrene	DP0147	5	79
PCE	DP0110	5	56.7
Toluene	DP0109	5	17,000
Vinyl chloride	DP0109	5	140
Xylenes (total)	DP0145&DP0148	5	270

VOC Soil Gas Compounds 15 feet bgs and Deeper	Boring Number	Sample Depth (feet bgs)	Maximum Concentration ($\mu g/m^3$)
1,1-DCA	DP0145	15	180
1,1-DCE	DP0148	15	28
Toluene	DP0148	15	210
Xylenes (total)	DP0146	15	270

AOI 42 Summary: Arsenic was detected in one soil sample at concentrations greater than the remediation criterion. However, it is considered that arsenic is sufficiently delineated laterally and vertically to the remediation criterion. The reported concentrations of other COPCs in soil and soil gas samples analyzed are less than the remediation criteria. Therefore, no further soil sampling is recommended.

6.5.17 Cooling Tower & Basin for Plastic Molding Former Process Pit – AOI 43

AOI Description: The Cooling Tower & Basin for the plastic molding machines was located on the west of the Main Production Building between the railroad spur and Warehouse No. 3. The AOI is shown on Figure 2.

Previous Investigation History: Previous investigations of the perimeter did not indicate lead impacts to concrete. Concrete samples collected and analyzed during these investigations are shown on Figure 7-1. This AOI is adjacent to the former Defective Battery Storage Area (SWMU No. 11).

CCR Investigation Summary: To assess potential impacts from historical uses, two borings (DP0001 and DP0100) were advanced to a total depth of 15 feet bgs. Soil samples were collected from both borings and analyzed for CAM-17 metals and VOCs. Soil gas samples were collected from one location (DP0100) and analyzed for VOCs. Additionally, one grab sample (GS0025) was collected following the removal of the concrete floor during demolition and analyzed for CAM-17 metals, PCBs, PAHs, SVOCs, TPH, and VOCs to assess a visibly stained area.

FI Field Program Summary: To laterally and vertically delineate and assess potential impacts in soil and soil gas, seven borings (DP0001A through DP0001G, and DP0100A) were advanced and 12 grab sample locations (GS0025A through GS0025L) were sampled to various depths down to a maximum depth of 15 feet and 4 feet bgs, respectively. Borings were placed around DP0001 to laterally delineate lead and arsenic in soil and to assess potential impacts of PCBs. Grab samples were collected around GS0025 to vertically and laterally delineate lead, arsenic, antimony, SVOCs, and PCBs. In addition, the QA/QC of the analytical results of soil gas samples from DP0100 was unacceptable and therefore the location was resampled and analyzed for VOCs as DP0100A. Boring and grab sample locations are shown on Figure 4.

Summary of Soil Sampling and Analysis

- Soil samples were collected and analyzed at various near-surface depths down to 5 feet bgs for one or more of the following compounds: lead, arsenic, antimony, CAM-17 metals, Cr+6, TPH, PCBs, VOCs, SVOCs, and PAHs. A summary of sampling and analysis for the AOI is shown in Table 4.

- Lead was not detected in the 10 samples analyzed at concentrations above the remediation criterion of 800 mg/kg. Detected concentrations up to 670 mg/kg in GS0025 at 1 foot bgs. Results of lead analyses are summarized in Table 9 and shown on Figure 8-7.

- CAM-17 metals were analyses were performed on six samples and additional analyses for arsenic on 31 samples and for antimony on 9 samples. The remediation criterion for arsenic was exceeded in six samples. Results of metals analyses are summarized in Table 10, except lead, and shown on Figure 8-7. The maximum concentrations of metals of concern are listed below.

Metal Compounds	Boring Number	Sample Depth (feet bgs)	Maximum Concentration (mg/kg)
Antimony	GS0025	1	12.1
Arsenic	GS0025G	0	**71.7*** (9.05)
Chromium	DP0001	5	25
Zinc	GS0025	1	68

* Exceeded the remediation criterion indicated in parentheses.

- Cr+6 was not detected at a concentration above the MDL in the one sample (DP0100 at 5 feet bgs) analyzed at this location. The result of the Cr+6 analysis is summarized in Table 10.

- TPH carbon chain analysis (C4-C40) was performed on one grab sample and the reported concentration was 34.4 mg/kg in sample GS0025 at 1 foot bgs. The majority of hydrocarbons in the sample were in the range of diesel (C13-C22). Results of TPH analyses are summarized in Table 10.

- PCBs were reported above the MDLs in 25 of 40 samples. Total PCB concentrations ranged up to 186 mg/kg (GS0025 at 1 foot bgs) and were above the remediation criterion in nine samples. Results of PCB analyses are summarized in Table 10 and shown on Figure 8-7.

- VOCs were not detected at concentrations above MDLs in the one sample analyzed (GS0025 at 1 foot bgs). Results of the VOC analysis is summarized in Table 10 and shown on Figure 9-2.

- SVOCs were detected in the six samples analyzed at concentrations above MDLs and remediation criteria. Results of SVOC analyses are summarized in Table 10 and shown on Figure 8-7. Benzo(a)pyrene and benzo(b)fluoranthene were above the remediation criterion in one sample and below criteria in subsequent step-down and step-out samples. The three detected SVOCs and their maximum detected concentrations are listed below.

SVOC Compounds	Boring Number	Sample Depth (feet bgs)	Maximum Concentration (mg/kg)
Benzo(a)pyrene	GS0025	1	**0.25 J*** (0.125)
Benzo(b)fluoranthene	GS0025	1	**0.318 J*** (0.125)
Phenanthrene	GS0025	1	0.318 J

* Exceeded the remediation criterion indicated in parentheses.

- Five PAHs were detected in the one sample analyzed. However, concentrations were not above the remediation criteria. Results of PAH analyses are summarized in Table 10 and shown on Figure 8-7. The PAHs and their maximum detected concentrations are listed below.

PAH Compounds	Boring Number	Sample Depth (feet bgs)	Maximum Concentration (mg/kg)
Benzo(a)pyrene	GS0025	1	0.019J
Benzo(b)fluoranthene	GS0025	1	0.023
Fluoranthene	GS0025	1	0.027
Phenanthrene	GS0025	1	0.026
Pyrene	GS0025	1	0.043

Summary of Soil Gas Sampling and Analysis

- Soil gas was collected at DP0100 and DP0100A at 5 feet and 15 feet bgs. A summary of soil gas sampling and analysis for the AOI is shown in Table 5.

- The QA/QC of the analytical results of DP0100 in soil gas was unacceptable and therefore the location was resampled and analyzed as DP0100A.

- VOCs in soil gas were not detected at concentrations above the remediation criteria. Results of VOC analyses are summarized in Table 12 and shown on

Figure 10-1. The maximum concentrations of VOCs detected are listed below for the depths of less than 15 feet bgs for which remediation criteria were developed, and depths of 15 feet bgs and deeper.

VOC Soil Gas Compounds Less than 15 feet bgs	Boring Number	Sample Depth (feet bgs)	Maximum Concentration ($\mu g/m^3$)
Ethylbenzene	DP0100A	5	36
Toluene	DP0100A	5	835

VOC Soil Gas Compounds 15 feet bgs and Deeper	Boring Number	Sample Depth (feet bgs)	Maximum Concentration ($\mu g/m^3$)
Toluene	DP0100A	15	286

AOI 43 Summary: The analytical data indicates that delineation is not complete for metals, PCBs and SVOCs in soil in proximity to GS0025, to the north, south and east. However, these impacts are more likely related to the former adjacent defective battery storage area in this area than the cooling tower. For soil gas, the reported concentrations in soil gas samples analyzed are less than the remediation criteria. Therefore, additional soil gas sampling is not recommended. Additional soil sampling for PCBs and arsenic can be performed either prior to or during remediation activities.

6.5.18 Acid and Caustic Storage NE Corner of South Building – AOI 44

AOI Description: The Acid and Caustic Storage Area is located in the perimeter area just outside the northeast corner of the South Building. The area was secondarily contained in a pit lined with bricks for storage of acids and caustic chemicals. The AOI is shown on Figure 2.

Previous Investigation History: Previous investigations of the perimeter did not indicate lead impacts to concrete in this area.

CCR Investigation Summary: To assess potential impacts from historical uses, seven borings were advanced in this location, six borings to 2 feet bgs (DP0088, DP0089, DP0090, DP0091, DP0093, and DP0094) and one boring to 3 feet bgs (DP0095). An eighth boring was attempted, but was not completed due to refusal. Soil samples were collected from each boring and analyzed for lead, CAM-17 metals, and pH. Soil gas samples were not collected because VOCs were not considered to be likely chemicals of concern at this location based on historical use. Boring locations are shown on Figure 4.

FI Field Program Summary: No additional sampling was performed as part of the FI program because the chemical concentrations detected during the CCI program were less than the remediation criteria with the exception of arsenic.

Summary of Soil Sampling and Analysis

- Soil samples were collected and analyzed at multiple near-surface depths of less than 3 feet bgs and analyzed for lead, CAM-17 metals, and pH. A summary of sampling and analysis for the AOI is shown in Table 4.

- Lead was not detected in the 14 samples analyzed at concentrations above the remediation criterion of 800 mg/kg. The maximum concentration of lead reported was 457 mg/kg in DP0095 at 3 feet bgs. Results of lead analyses are summarized in Table 9 and shown on Figure 8-11.

- pH analyses were performed on eight samples and the results ranged from 4.54 in DP0095 at 3 feet bgs to 8.99 in DP0094 at 1 foot bgs. Results of pH analyses are summarized in Table 11.

- CAM -17 metals were analyzed in one sample (DP0095 at 3 feet bgs). Arsenic was detected at a concentration above the remediation criterion at 10.6 mg/kg in DP0095 at 3 feet bgs. Results of metals analyses are summarized in Table 10, except lead, Figure 8-11. The maximum concentrations of metals of concern are listed below.

Metal Compounds	Boring Number	Sample Depth (feet bgs)	Maximum Concentration (mg/kg)
Antimony	DP0095	3	5.65
Arsenic	DP0095	3	**10.8*** (9.05)
Chromium	DP0095	3	4.95J
Zinc	DP0095	3	9.1

AOI 44 Summary: Arsenic was detected in soil at concentrations greater than the remediation criterion in one sample at the wash down area collection trench. The data indicated that arsenic is not sufficiently delineated laterally and vertically to the remediation criterion. The reported concentrations of other COPCs in soil samples analyzed are less than the remediation criteria. Therefore, additional soil sampling is recommended prior to or during remediation activities to confirm removal of arsenic impacts above remediation criteria around the collection trenches.

6.5.19 Air Washers – AOI 45

AOI Description: The Air Washers and associated runoff collection trenches were located outside of the south side of the Main Production Building and outside of the north side of the south New Charge Building. The AOI is shown on Figure 2.

Previous Investigation History: Previous investigations of lead in concrete in this area reported lead at a maximum concentration of 497 mg/kg in chip samples. Concrete samples collected and analyzed during these investigations are shown on Figure 7-1.

CCR Investigation Summary: To assess potential impacts from historical uses, four borings were advanced at this location including three borings (DP0084, DP0085, and DP0086) to 2 feet bgs and one boring (DP0083) to 5 feet bgs. Soil samples collected were analyzed for lead, CAM-17 metals, and pH. A soil gas sample was collected for analysis of VOCs from one boring (DP0083) at 5 feet bgs. Additionally, one grab sample (GS0038) was collected during demolition of the floor slab to assess potential lead impacts. Boring and grab sample locations are shown on Figure 4.

FI Field Program Summary: No additional sampling was performed as part of the FI program because the chemical concentrations detected during the CCI program

were less than the remediation criteria with the exception of lead in one sample near a crack in the drainage collection trench on the south side of the Main Production Building. No additional sampling was performed for this area because the concentration of lead in boring samples and conditions indicate the impact will be localized to the crack area.

Summary of Soil Sampling and Analysis

- Soil samples were collected and analyzed at multiple near-surface depths of less than 2 feet bgs for lead, CAM-17 metals, and pH. A summary of sampling and analysis for the AOI is shown in Table 4.
- Lead was detected in the nine samples analyzed with concentrations up to 12,680 mg/kg in DP0085 at 1 foot bgs. Two samples had lead reported at concentrations above the remediation criterion of 800 mg/kg in DP0085. A subsequent step-down sample collected at the location at 2 feet was below the remediation criterion for lead. Results of lead analyses are summarized in Table 9 and shown on Figure 8-3.
- CAM-17 metals were not detected at concentrations above remediation criteria or background concentrations in the one sample (DP0086 at 0 foot bgs) analyzed. Results of metals analyses are summarized in Table 10, except lead, and shown on Figure 8-3.
- pH analyses were performed on five samples and the results ranged from 4.12 in GS0038 at 0 foot bgs to 8.37 in DP0083 at 1 foot bgs. Results of pH analyses are summarized in Table 11.

Summary of Soil Gas Sampling and Analysis

- Soil gas samples were collected in the upper 15 feet bgs at 5 feet in boring DP0083. A summary of soil gas sampling and analysis for the AOI is shown in Table 5.
- VOCs in soil gas were not detected at concentrations above remediation criteria in the sample analyzed. Results of VOC analyses are summarized in Table 12 and shown on Figure 10-3. The seventeen VOCs detected and their maximum concentrations are listed below.

VOC Soil Gas Compounds Less than 15 feet bgs	Boring Number	Sample Depth (feet bgs)	Maximum Concentration ($\mu g/m^3$)
1,1,1-TCA	DP0083	5	3,330
1,1-DCA	DP0083	5	1,100
1,1-DCE	DP0083	5	11,900
1,2,4-Trimethylbenzene	DP0083	5	40.2
4-Methyl-2-pentanone (MIBK)	DP0083	5	52.8
Acetone	DP0083	5	325
Benzene	DP0083	5	42.9
Carbon disulfide	DP0083	5	62.2
Chloroethane	DP0083	5	48.6
Chloroform	DP0083	5	173

Ethylbenzene	DP0083	5	27.5
m,p-Xylenes	DP0083	5	102
o-Xylene	DP0083	5	29.4
Styrene	DP0083	5	23.2
PCE	DP0083	5	36.3
Toluene	DP0083	5	1,290
TCE	DP0083	5	19.9

AOI 45 Summary: Analytical data indicate that concentrations of COPCs are below the remediation criteria except for lead in one boring and that soil with lead concentrations greater than the remediation criteria are generally confined within the upper 2 feet of soil near a crack in a collection trench. Based on the former operations at this AOI and the attenuation of the lead by 2 feet bgs, it is anticipated that elevated lead impacts in area of the AOI are limited. Therefore, it is recommended that confirmation soil sampling be conducted during remediation activities to confirm removal of lead impacts above remediation criteria.

6.5.20 End of Trench on SE Corner Main Production Building – AOI 46/ South End of East Grass Area – AOI 51

AOI Description: AOI 46 is located at the end of the trench on the southeast corner of the Main Production Building. AOI 51, a lawn area, is located directly adjacent to AOI 46, east of the southeast part of the Main Production Building. The AOIs are shown on Figure 2.

Previous Investigation History: Previous investigations of the perimeter included collection of a few soil samples from the lawn area and analysis for lead but not near the end of the trench. One soil boring (SB-8) was advanced by CRA in 2004 in the lawn area east of the Main Production Building. Three samples were collected from the boring at 0, 1, and 2 feet bgs and analyzed for lead. Lead was not detected above the remediation criterion of 800 mg/kg with reported maximum concentration of 286 mg/kg.

CCR Investigation Summary: A total of 25 soil samples were collected from 12 locations for AOIs 46 and 51 and analyzed for lead by XRF and EPA Method 6010B. Boring locations are shown on Figure 4.

FI Field Program Summary: No additional sampling was performed as part of the FI program because the samples collected and analyzed for lead during the CCI program are sufficient to delineate the lead impacts to the remediation criterion.

Summary of Soil Sampling and Analysis

- Analytical results (XRF and 6010B) of the 25 samples reported lead concentrations from 97.8 mg/kg to 2,459 mg/kg. Lead exceeded remediation criterion of 800 mg/kg in five samples. Results of lead analyses are summarized in Table 9 and shown on Figure 8-11 and cross-section Figure 11-16. Information regarding the range of lead concentrations detected at each sample depth is presented below.
  - Twelve soil samples were collected at the ground surface (0 foot bgs) and analyzed. Lead concentrations at the ground

surface ranged from 234 mg/kg in XR0055 to 2,459.2 mg/kg in XR0052. Two samples were over the remediation criterion for lead.

- Two samples were collected at 0.5 feet bgs and analyzed for lead had reported concentrations above the remediation criterion of 800 mg/kg including 1,120 mg/kg in XR0049 and 1,300 mg/kg in XR0052.
- Eight samples were collected at 1 foot bgs and analyzed. Only one sample (XR0052) had a reported lead concentration above the remediation criterion with 954.4 mg/kg.

AOI 46 & 51 Summary: The analytical data indicates that lead concentrations are sufficiently delineated to the remediation criterion with decreasing concentrations both vertically and laterally. Data also indicate that concentrations above the remediation criterion are confined primarily to the upper one foot of soil. The southern edge of the area is bounded by concrete pavement within approximately 10 to 25 feet from the southern most sample locations. Therefore, only confirmation sampling during removals is recommended.

6.5.21 Waste Water Treatment Basin – AOI 47

AOI Description: The Waste Water Treatment Basin in the southeast area of the site was located in the perimeter area directly east of the South Building. This area was identified as SWMU No. 1 and former SWMU No. 3. The waste water treatment facility treated acid- and lead-contaminated water generated during battery production. The AOI is shown on Figure 2.

Previous Investigation History: Previous investigations of the perimeter did not identify significant lead-contaminated concrete on pavement around the basin. Samples of the basin itself were not collected. Concrete samples collected and analyzed during these investigations are shown on Figure 7-1.

CCR Investigation Summary: To assess potential impacts from historical uses, two borings (DP0096 and DP0097) were advanced in this location to 25 feet bgs. Soil and soil gas samples were collected from both locations. Soil samples were analyzed for lead. Soil gas samples were analyzed for VOCs. In addition, to assess potential impacts to groundwater from use of the basin monitoring well MW-4 was installed on the down gradient or south side of the basin. Two soil samples were collected during installation of the well and analyzed for VOCs. Boring locations are shown on Figure 4. The well location is shown on Figure 5.

FI Field Program Summary: No additional sampling was performed as part of the FI program because the chemical concentrations detected in samples analyzed during the CCI program were less than the remediation criteria.

Summary of Soil Sampling and Analysis

- Soil samples were collected and analyzed at depths of 0 and 25 feet bgs for lead. A summary of sampling and analysis for the AOI is shown in Table 4.