APPENDIX 7-D

SWMU 49 CORRECTIVE ACTION PLAN (UPDATED)

SWMU 49
CORRECTIVE ACTION PLAN
REVISION 1

BONNELL ALUMINUM, INC.
NEWNAN, GEORGIA

Prepared for:

BONNELL ALUMINUM, INC.
25 BONNELL STREET
NEWNAN, GEORGIA 30263

MAY 16, 2025

PREPARED BY:

WSP USA INC.
1075 BIG SHANTY ROAD NW, SUITE 100
KENNESAW, GEORGIA 30144

RECORD OF PLAN REVISIONS

Revision No.	Revision Date	Revision Description/Reason
0	10/20/2017	Original version. Incorporated into 2019 modified PCC Permit HW-087(D).
1	11/15/2024	Revised language to remove descriptions of previous corrective actions discontinued when the SWMU 49 CAP was incorporated into the 2019 modified PCC Permit HW-087(D). Revised Zone 2 ISBR injection well locations, parameter monitoring locations and analytes in Section 3. Revised Section 6, Cost Estimate and the associated cost table, Table 6-1.

TABLE OF CONTENTS

CORRECTIVE ACTION PLAN

LIST OF FIGURES

CORRECTIVE ACTION PLAN

LIST OF TABLES

CORRECTIVE ACTION PLAN

ACRONYMS AND ABBREVIATIONS

ACRONYM	DEFINITION
Bonnell	Bonnell Aluminum, Inc.
CAP	Corrective Action Plan
CAO	Corrective Action Objective
Compliance Strategy Report	January 17, 2017 RCRA/NPDES Compliance Strategy Report
EPD	Georgia Environmental Protection Division
GWTS	Groundwater Treatment System
HSS	Hillside Spring
ISBR	In-Situ Bioremediation
ISCO	In-Situ Chemical Oxidation
MW	Monitoring Well
NPDES	National Pollutant Discharge Elimination System
Permit	Post Closure Care Permit – April 19, 2019
PCE	Tetrachloroethene
PZM	Piezometer
RCRA	Resource Conservation and Recovery Act
RGO	Remedial Goal Option
RW	Recovery Well
Site	Bonnell Newnan, Georgia Facility
S.U.	Standard Units
SWMU	Solid Waste Management Unit
UIC	Underground Injection Permit
USEPA	United States Environmental Protection Agency
VOC	Volatile organic compounds
WSP	WSP USA Environment & Infrastructure, Inc.

SECTION 1 INTRODUCTION

Bonnell Aluminum, Inc. (Bonnell) has revised this Solid Waste Management Unit (SWMU) 49 Correction Action Plan (CAP) for incorporation into Post Closure Care (PCC) Permit (Permit) HW-087(D). SWMU 49 is the former tetrachloroethene (PCE) degreasing unit at the Newnan, Georgia facility (Site) (Figure 1-1). This SWMU 49 CAP was prepared to implement an in-situ remediation strategy to improve corrective action effectiveness and meet corrective action objectives (CAOs). The rationale for this in-situ strategy was outlined in the January 17, 2017 *RCRA/NPDES Compliance Strategy Report* (Compliance Strategy Report) (Amec Foster Wheeler, 2017a).

This CAP provides procedures for an in-situ corrective action strategy that will meet the following CAOs at the Site:

1. Reduce on-site VOC concentrations below the on-site Groundwater Protection Standards (GWPS) included in the April 19, 2019 Permit.

2. Maintain perimeter VOC concentrations below the GWPS included in the April 19, 2019 Permit to prevent off-site migration of VOC concentrations above the perimeter GWPS.

The continuing elements of the corrective action include:

1. In-Situ Chemical Oxidation (ISCO) of volatile organic compounds (VOCs) in the packing/loading area (Zone 1) on an as-needed basis.

2. Enhanced In-Situ Bioremediation (ISBR) of VOCs in the downgradient plume area near Washington Road (Zone 2) on an as-needed basis.

3. A corrective action monitoring program to demonstrate the effectiveness of the in-situ strategy.

SECTION 2 ZONE 1 TREATMENT

Zone 1 will continue to be treated with ISCO to continue reducing concentrations to meet GWPS. Currently, there are 48 ISCO injection wells installed in the packing/loading area. Figure 2-1 shows the injection and monitoring well locations in the packing/loading area. The October 2024 Zone 1 PCE concentrations and estimated plume footprint are also shown on Figure 2-1.

Eleven injection events have been performed in this area using sodium permanganate or sodium persulfate in accordance with Underground Injection Control (UIC) Permit R-548 and renewed UIC Permit No. GAW000548. The first injection was completed in April 2012, and the most recent injection was completed in January 2020. Figure 2-2 shows the average PCE concentration time trend in the packing/loading area since March 2011 as well as the ISCO injection dates and injection volumes.

The average PCE concentration in the packing/loading area has decreased 62% since ISCO injections began in April 2012. The average PCE concentration in November 2011 (just prior to the first injection in April 2012) was 3,535 ug/L while the average PCE concentration in October 2024 was 1,320 ug/L. Additional ISCO Injections are being evaluated. These wells are sampled semi-annually to monitor the corrective action program.

The following wells will be monitored on a semi-annual basis for PCE, trichloroethene (TCE), cis-1,2-dichloroethene (cisDCE), and vinyl chloride (VC) to evaluate ISCO effectiveness in accordance with the Permit required groundwater monitoring program:

- MW26D
- MW73S
- MW76S
- MW78S
- MW81S
- MW83D
- MW86D
- MW89D
- MW27D
- MW75S
- MW77D
- MW79S
- MW82D
- MW83S
- MW87D
- RW14
- MW41D
- MW76D
- MW77S
- MW80S
- MW82S
- MW85D
- MW88D
- RW15

The specific injection locations, oxidant type, and oxidant amounts will be selected based on monitoring results and will target areas that remain above the on-site GWPS. Bonnell anticipates the following injection parameters for the future ISCO injections:

- 10-20 injection wells – current UIC wells
- 20-30% sodium persulfate solution or 10% sodium permanganate
- 100-500 gallons injected per well
- 10 gallons per minute (gpm) maximum injection rate
- 10 pounds per square inch gauge (psig) maximum injection pressure – soil overburden pressure is estimated to be approximately 15-18 psig

The need for additional injections to meet GWPS in Zone 1 are evaluated on a periodic basis.

SECTION 3 ZONE 2 TREATMENT

Enhanced ISBR is being used to address PCE and daughter products (TCE, cisDCE, and VC) concentrations in Zone 2 to meet GWPS. Evidence of reductive dechlorination has been observed at the Site which suggests that Dehalococcoides (DHC) microbes and appropriate subsurface conditions are present at the Site. The addition of biostimulating amendments to the Zone 2 area promotes reductive dechlorination and has been shown to reduce PCE concentrations in the Zone 2 area. Currently, the Zone 2 PCE plume concentrations (when PCE is detected) range from approximately 3 to 35 µg/L. Figure 2-1 shows the Site-wide PCE plume based on the October 2024 monitoring event.

Bonnell installed eleven (11) ISBR injection wells in April 2025. These 11 injection wells will be used to introduce the required amendments into the subsurface. Additional existing RWs, MWs, and piezometers (PZMs) may also be used as injection points if needed. The injection fluid with amendments will be injected into the following wells:

- IW201
- IW204
- IW207
- IW210
- RW5
- RW6
- RW7
- RW8
- RW9
- RW10
- RW11
- RW13
- IW202
- IW205
- IW208
- IW211
- PZM5A
- PZM6A
- PZM8A
- PZM9A
- PZM10A
- PZM11A
- PZM13A
- PZM5B
- IW203
- IW206
- IW209
- PZM6B
- PZM8B
- PZM9B
- PZM10B
- PZM11B
- PZM13B

Groundwater from RW4 and/or RW6 is used as a water source for the injection fluid that will contain the amendments. The water from these wells is treated with activated carbon, if necessary, prior to being re-injected. The addition of amendments in these wells creates a zone of treatment within and downgradient of this area. PCE concentrations in groundwater migrating through the area will be reduced as the groundwater passes through the injection area and continues downgradient. Figure 3-1 shows the wells to be used as injection wells and PCE concentrations in the ISBR area.

Bonnell injects the following amendments to promote reductive dechlorination in the Zone 2 PCE area.

- **Carbon Substrate** – a commercially available carbon substrate (lecithin, lactate, etc.) is introduced into the subsurface. The carbon substrate provides a food source for microbes to consume competing electronic acceptors (oxygen, nitrate, iron, sulfate, etc.) and creates an anaerobic environment favorable for reductive dechlorination of PCE. The degradation

of the carbon substrate also generates hydrogen to act as an electron donor to the reductive dechlorination process.

- **pH Buffer** – a pH buffer is also introduced to the subsurface to promote optimal pH conditions (6.5 S.U.) for microbial growth. Data obtained in March and September 2023 show pH values in this area in the 4.74 – 6.01 S.U. range. Sodium or potassium bicarbonate is used for the pH buffer.

- **DHC Inoculum** – A DHC inoculum may be introduced into the subsurface to increase DHC counts in groundwater if low numbers of naturally occurring DHC are observed during monitoring.

The UIC permit has been modified to include these injection wells and amendments. The specific amendment products and amounts used will be selected with consideration of baseline and recent monitoring results and amendment manufacturer recommendations.

The reductive dechlorination effectiveness is evaluated by monitoring the following ISBR parameters in and around the injection area:

- Total Organic Carbon
- Ammonia
- Magnesium
- Potassium
- Sulfate
- Chloride
- Ethane
- Dissolved Oxygen
- pH
- Calcium
- Sodium
- Ferrous Iron
- Alkalinity
- Methane
- Ethene
- Oxidation Reduction Potential
- Temperature
-

These parameters will be monitored in the following wells annually for up to three (3) years after an ISBR injection event:

- MW18D
- MW18S
- MW19S
- MW19D
- MW17D
- MW4SR

A baseline monitoring event was performed at these wells prior to beginning the injections. Two ISBR injection events (April 2018 and September 2020) have been conducted to date. The amendments are estimated to remain active for approximately 2 years following the injection.

The following wells will be monitored for PCE, trichloroethene (TCE), cis-1,2-dichloroethene (cisDCE), vinyl chloride (VC), and 1,1-dichlorethene (1,1-DCE) to evaluate ISBR effectiveness in accordance with the Permit required groundwater monitoring program:

- MWOS1S – semi-annual
- MWOS3D – semi-annual
- MW20D - annual
- MW17D – semi-annual

- MW31D – semi-annual
- MWOS8D –annual
- MWOS6D – semi-annual
- MW19D – semi-annual
- MW4SR – semi-annual

The need for additional amendments will be evaluated based on the ISBR parameter and constituent monitoring data described above.

SECTION 4 CORRECTIVE ACTION MONITORING PROGRAM

The corrective action monitoring program will be performed as outlined in the previous sections and summarized on Table 4-1. The table shows the wells that will be used for monitoring as well as the appropriate GWPS, monitoring frequency, parameters, sampling method, and purpose for each well location. Corrective action activities and monitoring results will be reported in the semi-annual reports required by PCC Permit HW-087(D). Other site activities and monitoring not pertaining to SWMU 49 will continue to be performed in accordance with PCC Permit HW-087(D).

SECTION 5 SCHEDULE

Bonnell anticipates that the corrective action (ISCO and ISBR injections) will be conducted according to the following general schedule:

Frequency	Duration	Event
As Needed	2-3 days	ISCO Injection in Zone 1
As Needed	30 days	ISBR Injection in Zone 2

Monitoring will continue after these scheduled events as outlined in the Permit and in Section 4 until site conditions warrant a revision or termination of the corrective action program.

SECTION 6 COST ESTIMATE

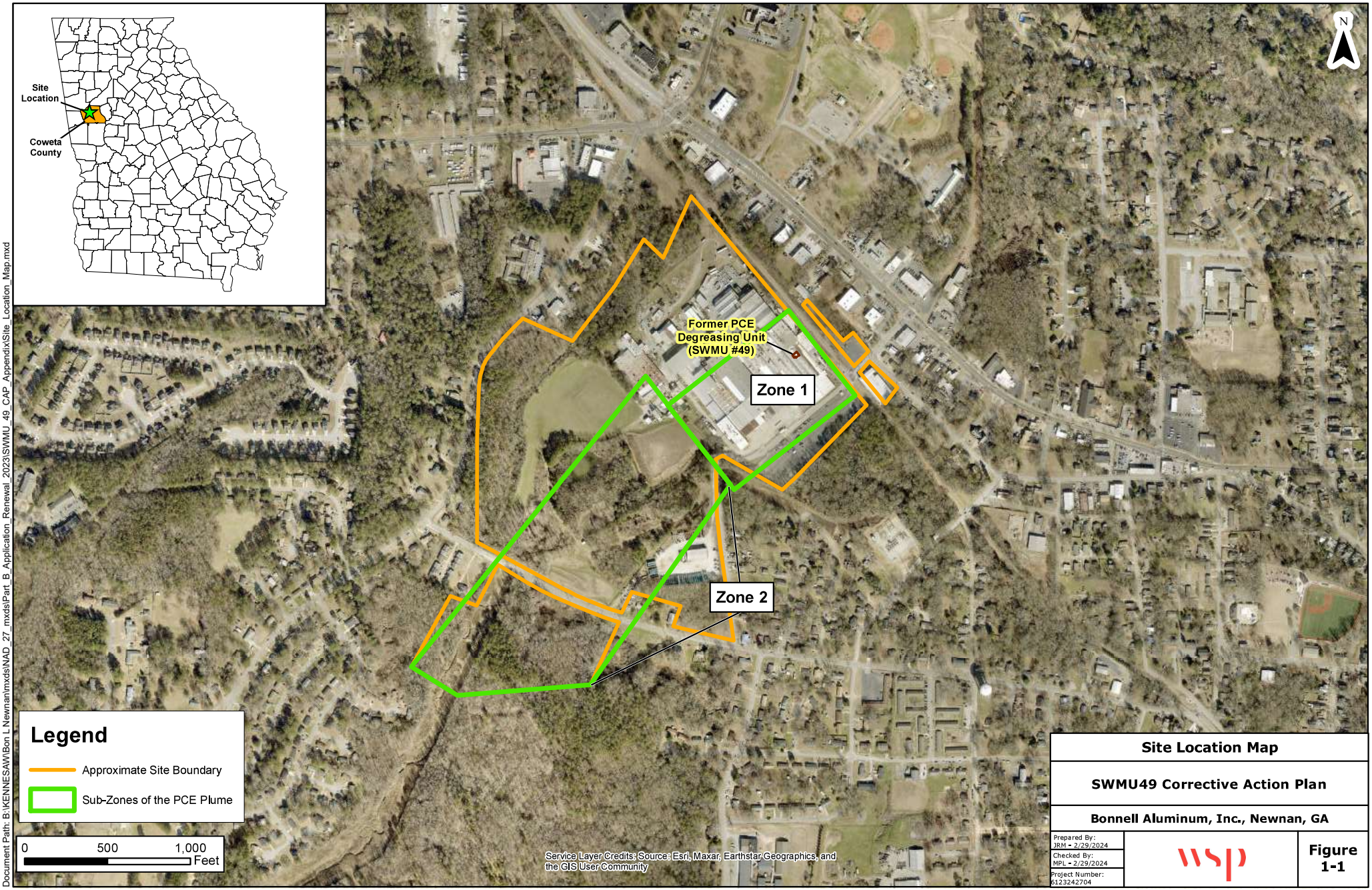
Estimated costs for completing the corrective action program are presented in Table 6-1. The cost estimate assumes the following:

1. ISCO injections will be performed as needed. One injection is assumed for cost estimate purposes.
2. ISBR injections will be performed as needed. One injection is assumed for cost estimate purposes.
3. No additional ISCO injection wells will be installed. Up to 10 new ISBR injection wells may be installed.
4. ISCO monitoring is performed in accordance with the Permit required groundwater monitoring program and costs are not included in the CAP cost estimate.
5. ISBR monitoring wells will be monitored annually as shown on Table 4-1 for up to three (3) years after an ISBR injection event.
6. Compliance monitoring will continue thereafter under PCC Permit HW-087(D) and those costs are not included in this cost estimate since it is already accounted for in the PCC Permit financial assurance.
7. Monitoring data will be reported in the PCC Permit required semi-annual reports. Reporting costs are not included in this estimate.
8. Future, permanent decommissioning and removal of GWTS equipment is not included in this cost estimate.

SECTION 7 REFERENCES

Amec Foster Wheeler, 2017a, RCRA/NPDES Compliance Strategy Report – Bon L Manufacturing Co. – Newnan, Georgia. Amec Foster Wheeler, January 17, 2017.

FIGURES



Document Path: B:\KENNESAW\Bon L Newnan\mxds\NAD_27_mxds\Part_B_Application_Renewal_2023\SWMU_49_CAP_Appendix\Site_Location_Map.mxd

Site Location Map

SWMU49 Corrective Action Plan

Bonnell Aluminum, Inc., Newnan, GA

Prepared By:	JRM - 2/29/2024
Checked By:	MPL - 2/29/2024
Project Number:	6123242704

wsp

Figure 1-1

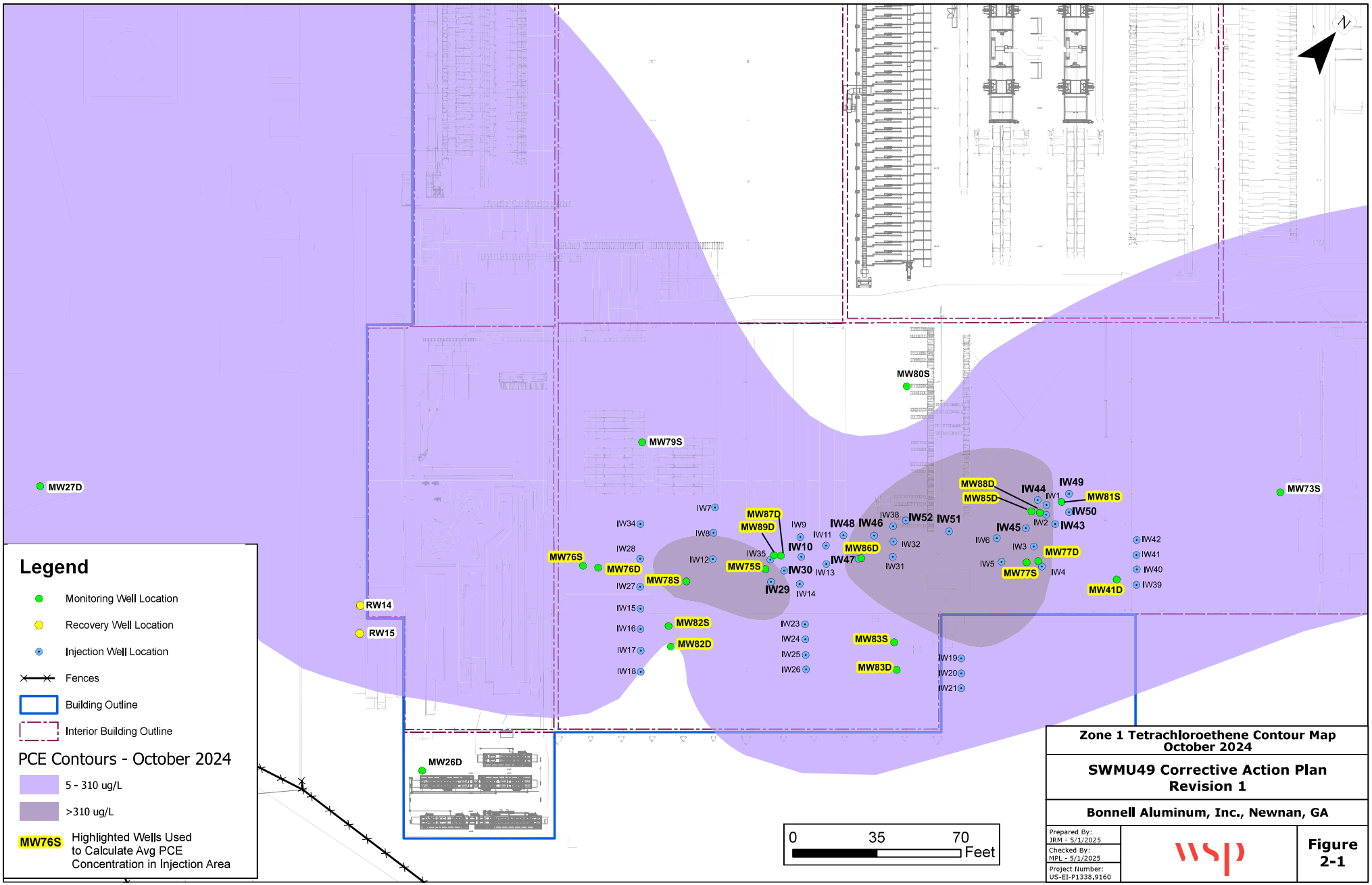
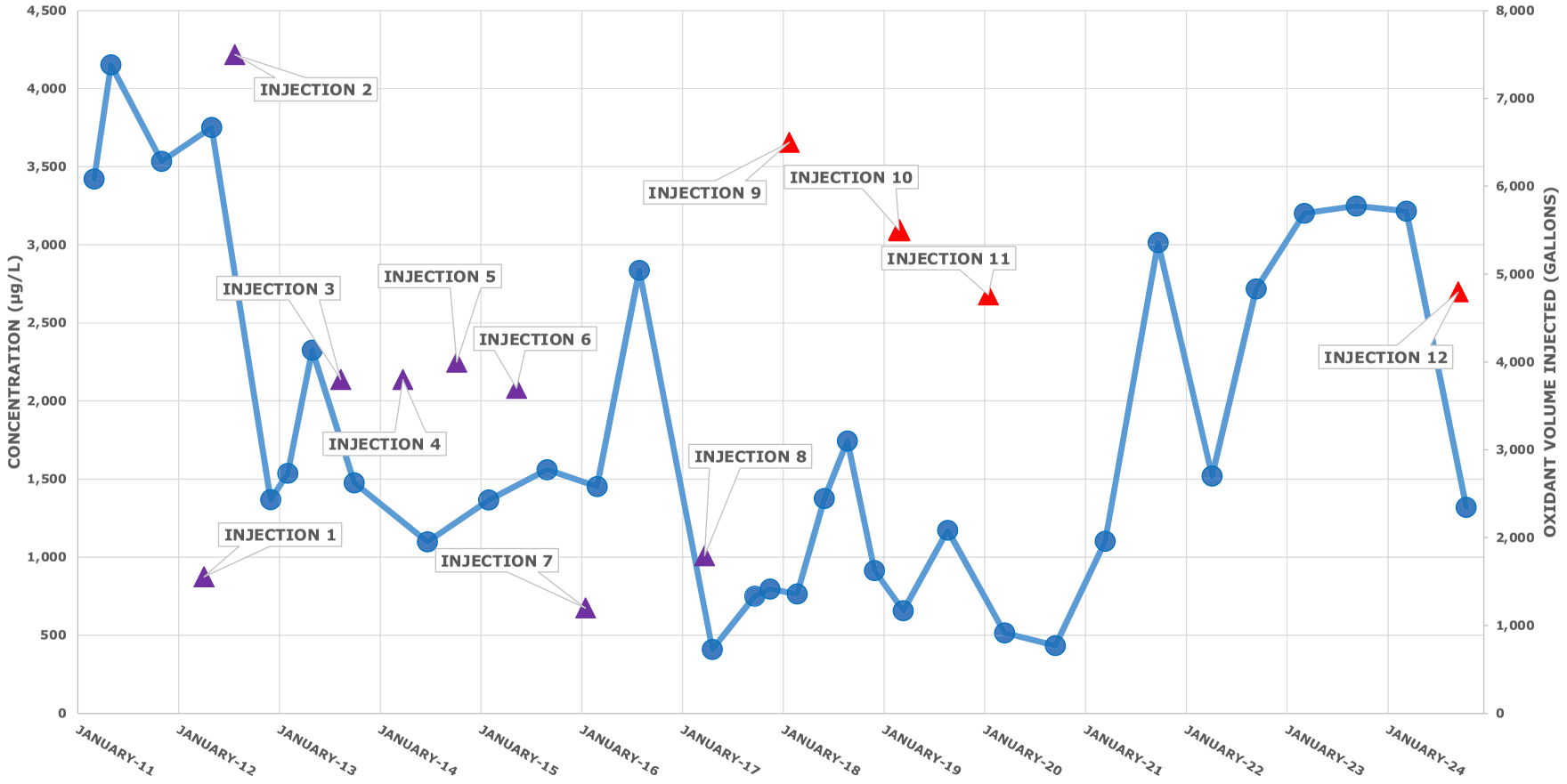
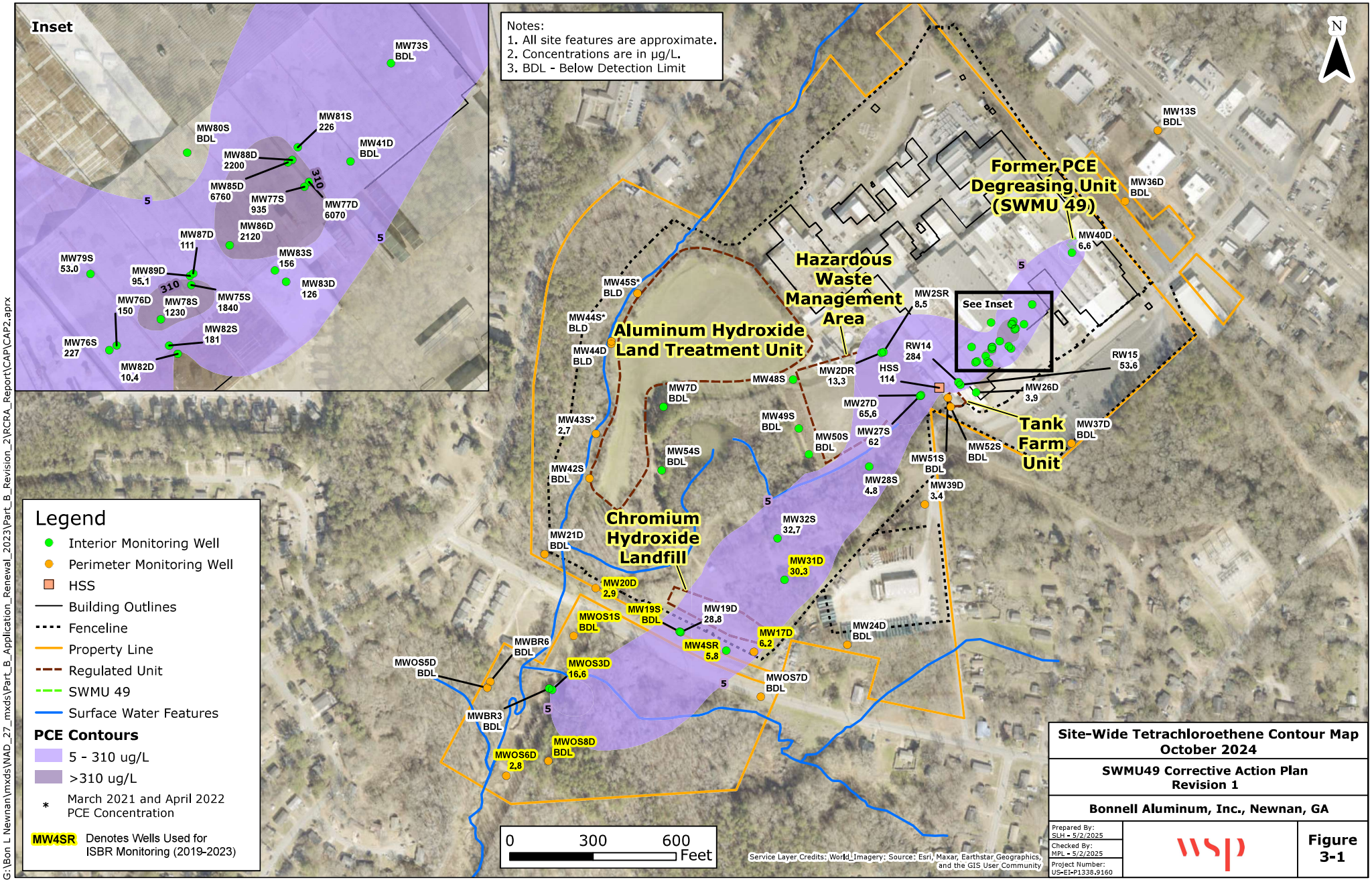

Legend
Monitoring Well Location
Recovery Well Location
Injection Well Location
Fences
Building Outline
Interior Building Outline
PCE Contours - October 2024
5 - 310 ug/L
>310 ug/L
MW76S Highlighted Wells Used to Calculate Avg PCE Concentration in Injection Area
MW27D
MW79S
MW80S
MW73S
MW26D
RW14
RW15
MW87D
MW89D
MW76S
MW76D
MW78S
MW75S
MW82S
MW82D
MW86D
MW88D
MW85D
MW81S
MW77D
MW77S
MW41D
MW83S
MW83D
IW10
IW29
IW30
IW47
IW48
IW46
IW52
IW51
IW44
IW49
IW50
IW43
IW45
0
35
70
Feet
Zone 1 Tetrachloroethene Contour Map
October 2024
SWMU49 Corrective Action Plan
Revision 1
Bonnell Aluminum, Inc., Newnan, GA
Prepared By: JRM - 5/1/2025
Checked By: MPL - 5/1/2025
Project Number: US-EI-P1338.9160
Figure 2-1
Document Path: G:\Bon L Newnan\mxds\NAD_27_mxds\Part_B_Application_Renewal_2023\Part_B_Revision_2\RCRA_Report\CAP\CAP2.aprx

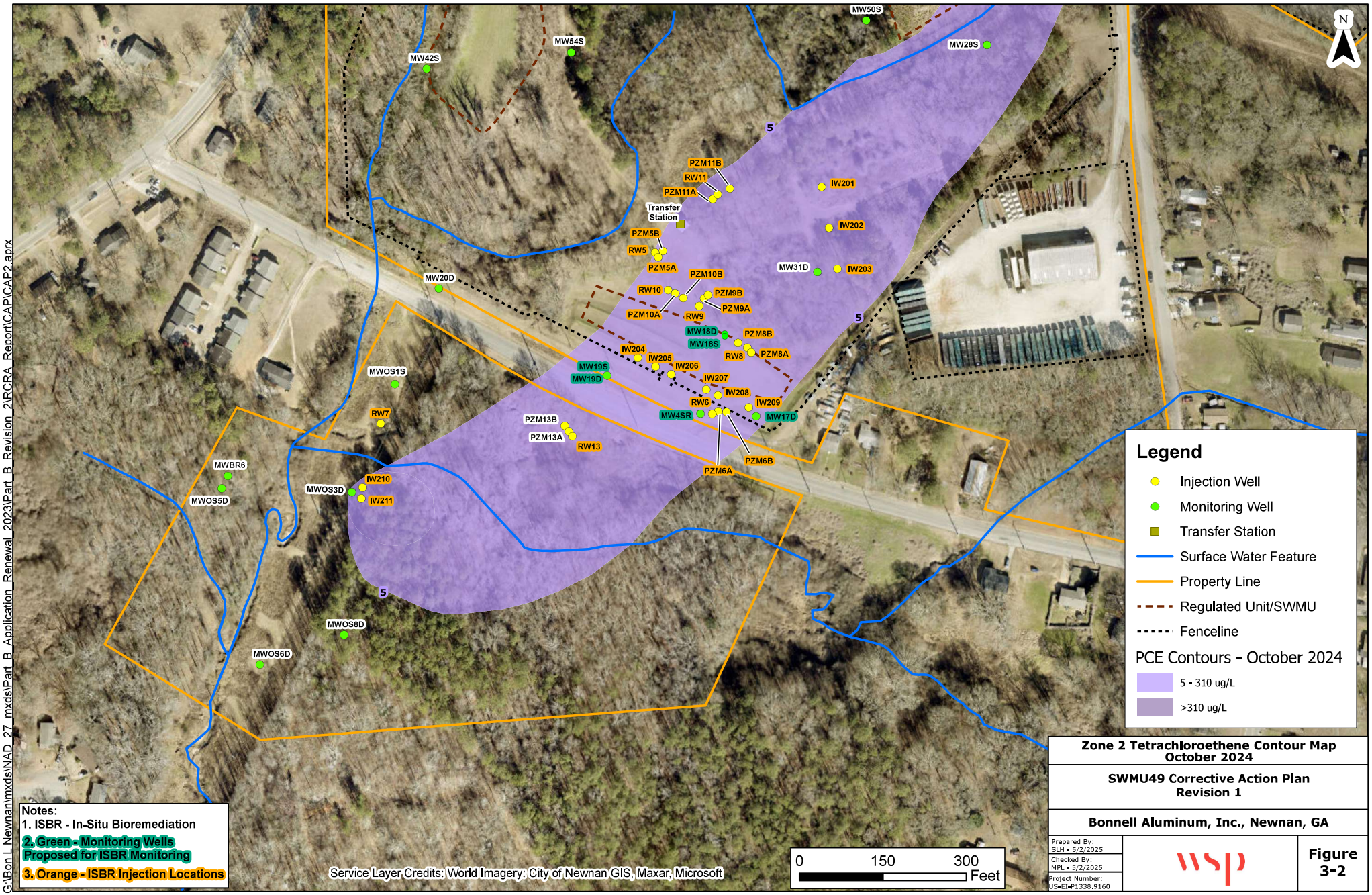
FIGURE 2-2: ZONE 1 AREA AVERAGE PCE TIME TREND



Notes:
Sodium permanganate (NaMnO4) was oxidant used during Injections 1 through 8.
Sodium persulfate (Na2S2O8) was oxidant used for Injections 9 through 12.

PREPARED BY: MPL 12/17/2024
CHECKED BY: AWE 12/18/2024


Inset
MW73S BDL
MW80S BDL
MW81S 226
MW41D BDL
MW88D 2200
MW85D 6760
MW77S 935
MW77D 6070
MW86D 2120
MW87D 111
MW79S 53.0
MW89D 95.1
MW83S 156
MW83D 126
MW76D 150
MW78S 1230
MW75S 1840
MW82S 181
MW76S 227
MW82D 10.4
310
5
Notes:
1. All site features are approximate.
2. Concentrations are in µg/L.
3. BDL - Below Detection Limit
N
Former PCE Degreasing Unit (SWMU 49)
Hazardous Waste Management Area
Aluminum Hydroxide Land Treatment Unit
Chromium Hydroxide Landfill
Tank Farm Unit
See Inset
MW13S BDL
MW36D BDL
MW40D 6.6
MW45S* BLD
MW44S* BLD
MW44D BLD
MW2SR 8.5
MW2DR 13.3
RW14 284
RW15 53.6
HSS 114
MW26D 3.9
MW48S
MW7D BDL
MW43S* 2.7
MW49S BDL
MW50S BDL
MW27D 65.6
MW27S 62
MW37D BDL
MW52S BDL
MW51S BDL
MW54S BDL
MW42S BDL
MW28S 4.8
MW39D 3.4
MW32S 32.7
MW21D BDL
MW31D 30.3
MW20D 2.9
MW19S BDL
MW19D 28.8
MWOS1S BDL
MW17D 6.2
MW4SR 5.8
MW24D BDL
MWBR6 BDL
MWOS5D BDL
MWOS3D 16.6
MWOS7D BDL
MWBR3 BDL
MWOS8D BDL
MWOS6D 2.8
Legend
Interior Monitoring Well
Perimeter Monitoring Well
HSS
Building Outlines
Fenceline
Property Line
Regulated Unit
SWMU 49
Surface Water Features
PCE Contours
5 - 310 ug/L
>310 ug/L
* March 2021 and April 2022 PCE Concentration
MW4SR Denotes Wells Used for ISBR Monitoring (2019-2023)
0 300 600 Feet
Service Layer Credits: World_Imagery: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community
Site-Wide Tetrachloroethene Contour Map October 2024
SWMU49 Corrective Action Plan Revision 1
Bonnell Aluminum, Inc., Newnan, GA
Prepared By: SLH - 5/2/2025
Checked By: MPL - 5/2/2025
Project Number: US-EI-P1338.9160
wsp
Figure 3-1
G:\Bon L Newnan\mxds\NAD_27_mxds\Part_B_Application_Renewal_2023\Part_B_Revision_2\RCRA_Report\CAP\CAP2.aprx


MW50S
MW28S
MW54S
MW42S
PZM11B
RW11
PZM11A
IW201
Transfer Station
IW202
PZM5B
RW5
PZM5A
MW31D
IW203
MW20D
PZM10B
RW10
PZM9B
PZM9A
PZM10A
RW9
MW18D
MW18S
PZM8B
RW8
PZM8A
IW204
IW205
IW206
MW19S
MW19D
IW207
IW208
IW209
RW6
MW4SR
MW17D
MWOS1S
RW7
PZM13B
PZM13A
RW13
PZM6B
PZM6A
MWBR6
MWOS5D
IW210
MWOS3D
IW211
MWOS8D
MWOS6D
5
N
Legend
Injection Well
Monitoring Well
Transfer Station
Surface Water Feature
Property Line
Regulated Unit/SWMU
Fenceline
PCE Contours - October 2024
5 - 310 ug/L
>310 ug/L
Notes:
1. ISBR - In-Situ Bioremediation
2. Green - Monitoring Wells Proposed for ISBR Monitoring
3. Orange - ISBR Injection Locations
Service Layer Credits: World Imagery: City of Newnan GIS, Maxar, Microsoft
0
150
300
Feet
Zone 2 Tetrachloroethene Contour Map
October 2024
SWMU49 Corrective Action Plan
Revision 1
Bonnell Aluminum, Inc., Newnan, GA
Prepared By: SLH - 5/2/2025
Checked By: MPL - 5/2/2025
Project Number: US-EI-P1338.9160
wsp
Figure 3-2
G:\Bon L Newnan\mxds\NAD_27_mxds\Part_B_Application_Renewal_2023\Part_B_Revision_2\RCRA_Report\CAP\CAP2.aprx

TABLES

TABLE 4-1: CORRECTIVE ACTION MONITORING PROGRAM
BONNELL ALUMINUM, INC., NEWNAN, GEORGIA

WELL ID	WELL/GWPS TYPE	FREQUENCY	PARAMETERS	SAMPLING METHOD	PURPOSE
MW26D	INTERIOR	SEMI-ANNUAL	PCE, TCE, cis-DCE, VC	PDB	ISCO MONITORING
MW27D	INTERIOR	SEMI-ANNUAL	PCE, TCE, cis-DCE, VC	PDB	ISCO MONITORING
MW41D	INTERIOR	SEMI-ANNUAL	PCE, TCE, cis-DCE, VC	PDB	ISCO MONITORING
MW73S	INTERIOR	SEMI-ANNUAL	PCE, TCE, cis-DCE, VC	PDB	ISCO MONITORING
MW75S	INTERIOR	SEMI-ANNUAL	PCE, TCE, cis-DCE, VC	PDB	ISCO MONITORING
MW76D	INTERIOR	SEMI-ANNUAL	PCE, TCE, cis-DCE, VC	PDB	ISCO MONITORING
MW76S	INTERIOR	SEMI-ANNUAL	PCE, TCE, cis-DCE, VC	PDB	ISCO MONITORING
MW77D	INTERIOR	SEMI-ANNUAL	PCE, TCE, cis-DCE, VC	PDB	ISCO MONITORING
MW77S	INTERIOR	SEMI-ANNUAL	PCE, TCE, cis-DCE, VC	PDB	ISCO MONITORING
MW78S	INTERIOR	SEMI-ANNUAL	PCE, TCE, cis-DCE, VC	PDB	ISCO MONITORING
MW79S	INTERIOR	SEMI-ANNUAL	PCE, TCE, cis-DCE, VC	PDB	ISCO MONITORING
MW80S	INTERIOR	SEMI-ANNUAL	PCE, TCE, cis-DCE, VC	PDB	ISCO MONITORING
MW81S	INTERIOR	SEMI-ANNUAL	PCE, TCE, cis-DCE, VC	PDB	ISCO MONITORING
MW82D	INTERIOR	SEMI-ANNUAL	PCE, TCE, cis-DCE, VC	PDB	ISCO MONITORING
MW82S	INTERIOR	SEMI-ANNUAL	PCE, TCE, cis-DCE, VC	PDB	ISCO MONITORING
MW83D	INTERIOR	SEMI-ANNUAL	PCE, TCE, cis-DCE, VC	PDB	ISCO MONITORING
MW83S	INTERIOR	SEMI-ANNUAL	PCE, TCE, cis-DCE, VC	PDB	ISCO MONITORING
MW85D	INTERIOR	SEMI-ANNUAL	PCE, TCE, cis-DCE, VC	PDB	ISCO MONITORING
MW86D	INTERIOR	SEMI-ANNUAL	PCE, TCE, cis-DCE, VC	PDB	ISCO MONITORING
MW87D	INTERIOR	SEMI-ANNUAL	PCE, TCE, cis-DCE, VC	PDB	ISCO MONITORING
MW88D	INTERIOR	SEMI-ANNUAL	PCE, TCE, cis-DCE, VC	PDB	ISCO MONITORING
MW89D	INTERIOR	SEMI-ANNUAL	PCE, TCE, cis-DCE, VC	PDB	ISCO MONITORING
RW14	INTERIOR	SEMI-ANNUAL	PCE, TCE, cis-DCE, VC	PDB	ISCO MONITORING
RW15	INTERIOR	SEMI-ANNUAL	PCE, TCE, cis-DCE, VC	PDB	ISCO MONITORING
MWOS1S	PERIMETER	SEMI-ANNUAL	PCE, TCE, cis-DCE, VC, 1,1-DCE	PDB	SWMU 49 PCE MONITORING
MWOS3D	INTERIOR	SEMI-ANNUAL	PCE, TCE, cis-DCE, VC	PDB	SWMU 49 PCE MONITORING
MWOS6D	PERIMETER	SEMI-ANNUAL	PCE, TCE, cis-DCE, VC, 1,1-DCE	PDB	SWMU 49 PCE MONITORING
MW31D	INTERIOR	SEMI-ANNUAL	PCE, TCE, cis-DCE, VC	PDB	SWMU 49 PCE MONITORING
MWOS8D	PERIMETER	ANNUAL	PCE, TCE, cis-DCE, VC, 1,1-DCE	PDB	SWMU 49 PCE MONITORING
MW20D	PERIMETER	ANNUAL	PCE, TCE, cis-DCE, VC, 1,1-DCE	PDB	SWMU 49 PCE MONITORING
MW17D	PERIMETER	SEMI-ANNUAL	PCE, TCE, cis-DCE, VC, 1,1-DCE	PDB	SWMU 49 PCE MONITORING
		ANNUAL	ISBR	LOW FLOW	ISBR MONITORING
MW19D	INTERIOR	SEMI-ANNUAL	PCE, TCE, cis-DCE, VC	PDB	SWMU 49 PCE MONITORING
		ANNUAL	ISBR	LOW FLOW	ISBR MONITORING
MW4SR	INTERIOR	SEMI-ANNUAL	PCE, TCE, cis-DCE, VC	PDB	SWMU 49 PCE MONITORING
		ANNUAL	ISBR	LOW FLOW	ISBR MONITORING
MW-18S	ISBR ONLY	ANNUAL	ISBR	LOW FLOW	ISBR MONITORING
MW-18D	ISBR ONLY	ANNUAL	ISBR	LOW FLOW	ISBR MONITORING
MW-19S	ISBR ONLY	ANNUAL	ISBR	LOW FLOW	ISBR MONITORING

Notes:
cis-DCE = cis-1,2-DICHLOROETHENE
ISBR = IN-SITU BIOREMEDIATION - SEE SECTION 4 FOR PARAMETER LIST
ISCO = IN-SITU CHEMICAL OXIDATION
PCE = TETRACHLOROETHENE
PDB = PASSIVE DIFFUSION BAG
GWPS = GROUNDWATER PROTECTION STANDARDREMEDIAL GOAL OPTION
TCE = TRICHLOROETHENE
VC = VINYL CHLORIDE

Prepared by: AWE 04/29/25
Checked by: MPL 04/29/25

TABLE 6-1: CORRECTIVE ACTION COST ESTIMATE
BONNELL ALUMINUM, INC., NEWNAN, GEORGIA

CORRECTIVE ACTION TASK	QUANTITY	UNIT COST	TOTAL
ISBR INJECTIONS			**$ 36,900.00**
ENGINEERING/CONSULTING	1	$ 6,850.00	$ 6,850.00
ISBR CHEMICALS	1	$ 12,500.00	$ 12,500.00
INJECTION CONTRACTOR	1	$ 17,550.00	$ 17,550.00
ISCO INJECTIONS			**$ 52,500.00**
ENGINEERING/CONSULTING	1	$ 13,000.00	$ 13,000.00
ISCO CHEMICALS	1	$ 20,000.00	$ 20,000.00
INJECTION CONTRACTOR	1	$ 19,500.00	$ 19,500.00
ANNUAL ISBR MONITORING			**$ 21,600.00**
ENGINEERING/CONSULTING			
SAMPLING LABOR/EXPENSE	3	$ 2,700.00	$ 8,100.00
DATA MANAGEMENT	3	$ 1,050.00	$ 3,150.00
SAMPLING EQUIPMENT	3	$ 1,650.00	$ 4,950.00
ANALYTICAL	3	$ 1,800.00	$ 5,400.00
INJECTION WELL (10) INSTALLATION			**$ 64,680.00**
DRILLING CONTRACTOR			
UTILITY LOCATE	1	$ 1,375.00	$ 1,375.00
WELL INSTALLATION	1	$ 45,300.00	$ 45,300.00
SURVEYOR	1	$ 1,430.00	$ 1,430.00
IDW DISPOSAL	35	$ 110.00	$ 3,850.00
INJECTION WELL HARDWARE	1	$ 275.00	$ 275.00
ENGINEERING/CONSULTING	1	$ 12,450.00	$ 12,450.00
CORRECTIVE ACTION TOTAL			**$ 175,680.00**

NOTES:
1. SEE ASSUMPTIONS OUTLINED IN SWMU 49 CAP SECTION 6 TEXT.

Prepared by: MPL 11/15/24
Checked by: AWE 11/15/24