



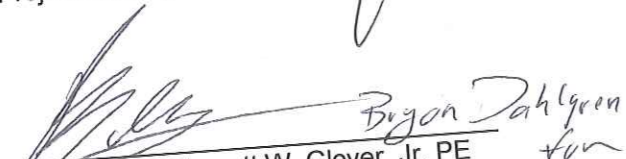
Environment

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Auriga Spartanburg Groundwater and Surface Water Monitoring Report October 2012


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SITE ASSESSMENT,
REMEDICATION &
REVITALIZATION

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1.0 Introduction

This report presents the June 2012 results of the groundwater and surface water sampling event for the monitoring program at the Auriga (FKA INVISTA, FKA KoSa) Spartanburg, SC site. The June 2012 sampling event was completed as detailed in Table 1. The groundwater and surface water sample locations are presented in Figure 1. Groundwater elevations measured during the June 2012 event are presented in Table 2.

The June 2012 event was conducted as defined by the 2010 Sampling and Analysis Plan (SAP) with some modifications to the well sampling list presented in Table 1. These modifications added several sampling locations to the 2012 sampling list at the request of South Carolina Department of Health and Environment (SCDHEC). Surface water location SW-12 was not sampled in June 2012 because of access limitations. Access arrangements have since been resolved and SW-12 will be included in off-site activities planned for later in 2012, as well as future sampling events.

Table 1 also presents a matrix defining the analyses types completed at each well location. Groundwater and surface water data collected during the June 2012 event are summarized in Tables 3 and Table 4, respectively. Tables 3 and 4 present only parameters or constituents detected in at least one sample from the comprehensive analytical data presented in the complete laboratory reports included as an appendix to this report.

2.0 Groundwater Elevations

The groundwater elevation data are presented in Table 2. A potentiometric map was developed for wells screened in saprolite, and a potentiometric map was developed for wells screened in bedrock. Some of the wells at the site were placed at the transition from saprolite into bedrock and data from these wells were included in both maps. The potentiometric map for saprolite is presented in Figure 2. The potentiometric map for bedrock is presented in Figure 3.

Groundwater in saprolite flows away from the site in two general directions, with a divide running near the approximate center of the plant area. Groundwater north of this divide flows toward the Cherokee Creek. Groundwater south of the divide flows toward the Pacolet. A significant transitional area is present in the region of the former sludge holding area and former DMT equalization basin. Groundwater in this region flows either toward the Cherokee Creek or the Pacolet River depending on how far north or south the location. The majority of groundwater wells screened in bedrock are located along the site perimeter and in the central plant area. Therefore, the resolution of potentiometric contours is not as precise as it is for the saprolite data. In general, the flow follows a similar pattern to the saprolite, though the divide is not as significant and flow is biased toward the Pacolet River more than is seen for saprolite. The observation of bedrock groundwater flow being biased toward the Pacolet is consistent with expectations because the river is a deeply incised feature immediately adjacent to the site.

3.0 1,4-Dioxane

1,4-Dioxane analytical results for monitoring wells and surface water sampling locations for the June 2012 event are presented on Figures 4 and 5.

Detections of 1,4-dioxane in saprolite are noted in the central plant area and downgradient of the former Fiber 1 EQ Basin. Detections are also noted in these same areas in bedrock, as well as the former sludge drying lagoon area and downgradient of the former DMT equalization basin. Lower concentrations are noted along the northeast portion of the property between the central plant area and Cherokee Creek.

SCDHEC requested that the 2010 monitoring program be continued in 2011 and also in 2012. Some expansions were made to the groundwater portion of the program for 2012. The bank/bottom surface water sampling method was also continued in 2012 instead of returning to the mid/mid surface water method. Analytical data included in Appendix A indicated that 1,4-dioxane was <0.01 milligrams per liter (mg/L) in all surface water samples of the monitoring program.

These data are consistent with historical data and continue to indicate that detectable concentrations of 1,4-dioxane do not persist in Cherokee Creek or the Pacolet River. Because the data supports the conclusions of the Operating Strategy Report, continued monitoring as recommended in that report is appropriate for 1,4-dioxane.

4.0 DowTherm A™

DowTherm A™ is comprised of diphenyl ether and 1,1-biphenyl. Diphenyl ether represents the larger fraction and also degrades less rapidly than 1,1-biphenyl. Therefore, concentrations of diphenyl ether are both more frequent and higher than the concentrations of 1,1-biphenyl.

The diphenyl ether results in saprolite and bedrock are presented in Figures 6 and 7.

As described in the Operating Strategy Report, phase DowTherm A™ is extracted from well MW-7, which is located downgradient from the central plant area. In the past year approximately 3.5 gallons of phase DowTherm A™ has been removed. Approximately 81 gallons of phase material has been extracted from this well since the operation was initiated in August 2001.

The data presented in Figures 6 and 7 indicate that DowTherm A™ remains present in the central plant area and at lower concentrations downgradient of the Fiber 1 EQ Basin.

Monitoring of DowTherm A™ will be continued and extraction from well MW-7 will also be continued.

Although a detection of biphenyl ether was noted at surface water location SW-05 in the August 2011 event, no biphenyl ether detections were observed in surface water samples from the June 2012 sampling event.

5.0 Chloroform and other Volatile Organics

Chloroform is the primary volatile organic compound identified at the site. Enhanced reductive dechlorination (ERD) through the injection of sodium lactate has been employed in the former DMT area to address the chloroform plume which was identified in this area. Previous reports have detailed the ERD activities. Concentrations of chloroform up to a maximum of 15 mg/L existed prior to ERD injections. The extent and magnitude of detections have been significantly decreased since the injection activities were completed with the majority of locations now reported non-detect (<0.005 mg/L) levels.

June 2012 chloroform concentrations are presented in Figures 8 and 9.

The highest chloroform concentration reported was 0.631 mg/L at saprolite well MW-109. Saprolite wells are mostly non-detect (<0.005 mg/L), with the exception of a small region between the southern edge of the treatment area and the MW-109 location. Bedrock wells are almost entirely non-detect for chloroform, with the exception of the 0.13 mg/L detection in one well, EW-41.

The detection at well MW-109 is associated with the off-site area. Additional investigation has been completed in this area over the past year. A plan for further investigation in the area has recently been approved by SCDHEC and is scheduled to proceed in the fourth quarter of 2012. The contours presented on Figure 8 are limited to the on-site data collected during this sampling event.

Other volatile organic parameters were generally not detected above reporting limits. The detections for volatile compounds other than chloroform are presented in Figures 10 and 11. The detections of other volatile organics are consistent with the June 2010 and August 2011 results.

Plans to investigate both chloroform and other chlorinated solvents noted in the southern portion of the property have recently been approved by SCDHEC. These activities will proceed before the end of 2012. Recommendations for additional action, including further sodium lactate injection, if warranted, will be presented to SCDHEC after these investigations are completed.

6.0 Attenuation Parameters

Dissolved oxygen data are presented on Figures 12 and 13. The contours on these figures present areas of depressed oxygen concentrations. A large area of depressed oxygen concentration is noted in and around the former DMT area. This condition is expected as part of the ERD treatment process.

Areas of depressed oxygen are also noted in the central plant area, downgradient of the Fiber 1 EQ basin, and beneath the former sludge drying lagoon area.

ORP readings are presented on Figures 14 and 15 with areas of reduced ORP designated by the contours. The areas of reduced ORP are generally consistent with the areas of suppressed dissolved oxygen presented on the prior two figures

7.0 Summary and Plan Forward

This report provides the data collected in the June 2012 sampling event and a summary of the current site conditions. The data are consistent with previous findings reported in 2010 and 2011.

The primary parameters of interest at the site are 1,4-dioxane, DowTherm A™ (1,1-diphenyl and biphenyl ether), chloroform and localized detections of other chlorinated volatile organics.

Plumes of 1,4-dioxane and DowTherm A™ are comparable to the assessment as presented in the Operating Strategy Report and Preliminary Risk Evaluation.

Chloroform has been significantly reduced in concentrations and extent as a result of the ERD treatment program. Investigations are currently underway to determine where additional ERD injections might be required to further remediate Chloroform to achieve the MCL.

The December 2012 sampling event will be completed as described in the approved sampling plan. A report summarizing the results of this event will be submitted by March 31, 2013. The next site wide sampling event will occur in June of 2013 and a report summarizing the results of that event will be submitted by September 30, 2013.

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Environment

Tables

October 2012

Table 1
June 2012 Monitoring Program

Sample Location	Duplicate and MS/MSD	VOCs (8260)	1,4-Dioxane	DowTherm A™	Natural Attenuation Parameters
Groundwater					
EW-01			X	X	
EW-02		X	X	X	
EW-03			X	X	
EW-07			X	X	
EW-14		X	X	X	
EW-15			X	X	
EW-16			X	X	
EW-17			X	X	
EW-20		X	X	X	
EW-22			X	X	
EW-26			X	X	
EW-27	X	X	X	X	
EW-28			X	X	
EW-30		X			X
EW-31		X	X	X	X
EW-32		X	X	X	
EW-36		X			X
EW-37		X	X	X	X
EW-38		X	X	X	
EW-39		X			X
EW-40		X			X
EW-41	X	X	X	X	X
EW-43			X	X	
EW-44		X			X
EW-47		X	X	X	
EW-49		X	X	X	X
EW-50		X			X
EW-52		X	X	X	X
EW-53		X	X	X	
MW-03		X	X		
MW-04			X	X	
MW-05			X	X	
MW-06			X	X	
MW-07			X	X	
MW-09A			X	X	
MW-26			X	X	
MW-27		X	X	X	
MW-39			X	X	
MW-40			X	X	
MW-41			X	X	
MW-42			X	X	
MW-45		X			X
MW-46		X			X
MW-53			X	X	
MW-54			X	X	
MW-57			X	X	
MW-81			X	X	

Table 1
June 2012 Monitoring Program

Sample Location	Duplicate and MS/MSD	VOCs (8260)	1,4-Dioxane	DowTherm A™	Natural Attenuation Parameters
MW-96			X	X	
MW-97			X	X	
MW-98		X	X		
MW-99		X	X	X	X
MW-102			X	X	
MW-103		X	X	X	X
MW-105		X	X	X	X
MW-106		X	X	X	X
MW-107		X	X	X	X
MW-109		X	X	X	X
RW-08			X	X	
RW-24			X	X	
RW-29	X	X	X	X	X
RW-43			X	X	
RW-47		X			X
RW-48		X	X	X	X
RW-56			X	X	
RW-65		X	X	X	X
RW-79			X	X	
RW-80			X	X	
RW-82			X	X	
RW-83A			X	X	
RW-83B			X	X	
RW-84			X	X	
RW-85			X	X	
RW-86			X	X	
RW-87			X	X	
RW-91			X	X	
RW-92			X	X	
RW-108		X	X	X	X
Surface Water *					
SW-01		X	X	X	
SW-02		X	X	X	
SW-03		X	X	X	
SW-04	X	X	X	X	
SW-05		X	X	X	
SW-06		X	X	X	
SW-07		X	X	X	
SW-08		X	X	X	
SW-09		X	X	X	
SW-10		X	X	X	
SW-11	X	X	X	X	
SW-12		X	X	X	
Boundary		X	X		

NA Parameters - Temperature, pH, dissolved oxygen (DO), oxidation-reduction potential (ORP), ortho phosphate, sulfate, sulfide, alkalinity, chloride, nitrate, nitrite, dissolved ferrous iron, dissolved manganese, and total organic carbon (TOC).

**Table 2
Groundwater Elevations
June 2012
Auriga Spartanburg Facility
AECOM Project No. 60242428**

Location	Groundwater Elevation	Location	Groundwater Elevation
EW-01	674.83	MW-26	680.29
EW-02	665.59	MW-27	635.41
EW-03	652.85	MW-39	739.52
EW-07	638.86	MW-41	745.78
EW-14	678.82	MW-42	737.98
EW-15	644.55	MW-53	757.85
EW-16	644.19	MW-54	756.5
EW-17	679.13	MW-57	731.11
EW-20	684.33	MW-81	759.62
EW-22	645.76	MW-96	672.15
EW-26	641.33	MW-97	684.7
EW-27	664.05	MW-99	723.88
EW-28	665.23	RW-08	743.57
EW-30	675.09	RW-108	NA
EW-31	669.99	RW-24	655.21
EW-32	649.64	RW-29	771.77
EW-36	724.44	RW-43	641.22
EW-37	718.17	RW-48	704.84
EW-38	661.85	RW-56	731.65
EW-39	705.09	RW-65	683.63
EW-40	669.63	RW-79	754.44
EW-41	669.8	RW-80	759.55
EW-43	670.28	RW-82	753.99
EW-44	685.0575	RW-83A	762.79
EW-47	661.88	RW-83B	762.68
EW-49	725.7025	RW-84	759.77
EW-50	722.53	RW-85	756.28
EW-52	722.34	RW-86	754.87
EW-53	694.6	RW-87	762.32
MW-03	748.81	RW-91	753.02
MW-05	747.22	RW-92	754.01
MW-06	734.7	RW-92	754.01
MW-07	737.68		
MW-09A	748.17		
MW-102	745.72		
MW-103	689.6		
MW-105	716.28		
MW-106	716.43		
MW-107	685.68		
MW-109	674.18		

3
 Summary of Groundwater Analytical Results
 June 2012
 Auriga Spartanburg Facility
 AECOM Project No. 60242428

Parameter	Unit	EW-01 6/13/2012	EW-02 6/14/2012	EW-03 6/14/2012	EW-07 6/14/2012	EW-14 6/14/2012	EW-15 6/13/2012	EW-16 6/13/2012	EW-17 6/13/2012	EW-17 6/25/2012	EW-20 6/13/2012
Volatiles Organics and 1,4-Dioxane											
acetone	mg/L	NA	<0.01	NA	NA	<0.02	NA	NA	NA	NA	<0.01
1,4-dioxane	mg/L	0.0317	0.0764	<0.01	0.113	0.163	0.0489	2.4	NA	0.0221	<0.01
chloroform	mg/L	NA	<0.005	NA	NA	<0.01	NA	NA	NA	NA	<0.005
1,1-dichloroethane	mg/L	NA	<0.005	NA	NA	0.133	NA	NA	NA	NA	<0.005
1,1-dichloroethene	mg/L	NA	<0.005	NA	NA	0.0244	NA	NA	NA	NA	<0.005
cis-1,2-dichloroethene	mg/L	NA	<0.005	NA	NA	0.165	NA	NA	NA	NA	<0.005
trans-1,2-dichloroethene	mg/L	NA	<0.005	NA	NA	0.027	NA	NA	NA	NA	<0.005
1,1,1,2-tetrachloroethane	mg/L	NA	<0.005	NA	NA	0.34	NA	NA	NA	NA	<0.005
2-butanone	mg/L	NA	<0.01	NA	NA	<0.02	NA	NA	NA	NA	<0.01
tetrachloroethene	mg/L	NA	<0.005	NA	NA	<0.01	NA	NA	NA	NA	<0.005
trichloroethene	mg/L	NA	<0.005	NA	NA	0.19	NA	NA	NA	NA	<0.005
vinyl chloride	mg/L	NA	<0.01	NA	NA	0.038	NA	NA	NA	NA	<0.01
DowTherm A™											
1,1-diphenyl	mg/L	<0.01	0.0135	<0.01	<0.01	0.0255	<0.01	<0.01	<0.01	NA	<0.01
biphenyl ether	mg/L	<0.01	0.699	<0.01	<0.01	0.792	<0.01	0.1	<0.01	NA	<0.01
Field and Natural Attenuation Parameters											
alkalinity	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
chloride	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
dissolved oxygen	mg/L	0.13	0.46	0.53	0.38	0.18	0.06	0.08	1.52	0.92	0.16
groundwater elevation	feet MSL	674.83	665.59	652.85	638.86	678.82	644.55	644.19	679.13	678.94	664.33
manganese	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
nitrate nitrogen	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
nitrite nitrogen	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ORP	mV	-55.7	-11.7	2.1	4.9	-28.7	-93.5	-56.9	-2.1	-3.2	-45.6
orthophosphate phosphorus	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH	su	6.28	6.1	6.16	6.2	6	6.78	6.7	6.35	6.52	7.8
specific conductance	umhos/cm	179	0.152	0.414	0.136	181	279	905	0.151	153	73
sulfate	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sulfide	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
temperature	degrees C	16.7	16.45	19.07	18.31	16.7	18.03	18.61	24.31	24.16	16.67
total organic carbon	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
turbidity	NTU	45.1	5.25	51.2	17	111	257	47.6	54.1	30.7	104

NA - Not Analyzed
 degrees C - degrees Celsius
 feet MSL - feet above mean sea level
 mg/L - milligrams per liter
 mV - millivolts
 NTU = nephelometric turbidity units
 su - standard units
 umhos/cm - micromhos/cm

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 Summary of Groundwater Analytical Results
 June 2012
 Auriga Spartanburg Facility
 AECOM Project No. 60242428

Parameter	Unit	EW-22 6/14/2012	EW-26 6/13/2012	EW-27 6/14/2012	EW-27 Dup 6/14/2012	EW-28 6/14/2012	EW-30 6/13/2012	EW-31 6/12/2012	EW-32 6/13/2012	EW-36 6/12/2012	EW-37 6/13/2012
Volatiles Organics and 1,4-Dioxane											
acetone	mg/L	NA	NA	<0.01	<0.01	NA	<0.01	<0.01	NA	<0.01	<0.01
1,4-dioxane	mg/L	0.722	0.0487	0.0206	0.0199	0.15	NA	0.0141	0.86	NA	<0.01
chloroform	mg/L	NA	NA	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	<0.005
1,1-dichloroethane	mg/L	NA	NA	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	<0.005
1,1-dichloroethene	mg/L	NA	NA	<0.005	<0.005	NA	<0.005	<0.005	NA	0.0285	<0.005
cis-1,2-dichloroethene	mg/L	NA	NA	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	<0.005
trans-1,2-dichloroethene	mg/L	NA	NA	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	<0.005
1,1,1,2-tetrachloroethane	mg/L	NA	NA	<0.01	<0.01	NA	<0.01	<0.01	NA	<0.01	<0.01
2-butanone	mg/L	NA	NA	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	<0.005
tetrachloroethene	mg/L	NA	NA	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	<0.005
trichloroethene	mg/L	NA	NA	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	<0.005
vinyl chloride	mg/L	NA	NA	<0.01	<0.01	NA	<0.01	<0.01	NA	<0.01	<0.01
DowTherm A™											
1,1-diphenyl	mg/L	<0.01	<0.01	<0.01	<0.01	0.0479	NA	<0.01	<0.01	NA	<0.01
biphenyl ether	mg/L	0.0119	<0.01	<0.01	<0.01	0.268	NA	<0.01	0.0618	NA	<0.01
Field and Natural Attenuation Parameters											
alkalinity	mg/L	NA	NA	NA	NA	NA	74.6	120	NA	NA	41.8
chloride	mg/L	NA	NA	NA	NA	NA	6.78	7.87	NA	NA	3.4
dissolved oxygen	mg/L	0.1	0.1	0.14	NA	0.51	0.48	0.12	0.04	0.26	0.24
groundwater elevation	feet MSL	645.76	641.33	664.05	NA	665.23	675.09	669.99	649.64	724.44	718.17
manganese	mg/L	NA	NA	NA	NA	NA	2.13	1.55	NA	0.175	0.977
nitrate nitrogen	mg/L	NA	NA	NA	NA	NA	<0.1	<0.1	NA	<0.1	3.19
nitrite nitrogen	mg/L	NA	NA	NA	NA	NA	<0.1	<0.1	NA	0.104	0.122
ORP	mV	-56.3	-120.5	-84.7	NA	24.1	-73.4	-179.5	-24.4	-33.5	49.5
orthophosphate phosphorus	mg/L	NA	NA	NA	NA	NA	NA	<0.1	NA	<0.1	NA
pH	su	6.32	7.15	6.35	NA	5.79	6.38	7.99	6.19	6.14	5.76
specific conductance	umhos/cm	788	427	81	NA	0.108	2.12	260	257	149	132
sulfate	mg/L	NA	NA	NA	NA	NA	<1	<1	NA	1	1.5
sulfide	mg/L	NA	NA	NA	NA	NA	<0.05	<0.05	NA	<0.05	<0.05
temperature	degrees C	16.49	18.15	15.83	NA	18.76	19.39	20.01	18.99	22.56	20.73
total organic carbon	mg/L	NA	NA	NA	NA	NA	<1	<1	NA	<1	<1
turbidity	NTU	20.8	25	576	NA	7.09	4.91	7	2.31	226	14.8

NA - Not Analyzed
 degrees C - degrees Celsius
 feet MSL - feet above mean sea level
 mg/L - milligrams per liter
 mV - millivolts
 NTU = nephelometric turbidity units
 su - standard units
 umhos/cm - micromhos/cm

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 Summary of Groundwater Analytical Results
 June 2012
 Auriga Spartanburg Facility
 AECOM Project No. 60242428

Parameter	Unit	EW-38 6/14/2012	EW-39 6/13/2012	EW-40 6/13/2012	EW-41 6/13/2012	EW-41 Dup 6/13/2012	EW-43 6/14/2012	EW-44 6/12/2012	EW-47 6/14/2012	EW-49 6/13/2012	EW-50 6/12/2012
Volatiles Organics and 1,4-Dioxane											
acetone	mg/L	<0.01	<0.01	4.14	<0.01	<0.01	0.0604	<0.01	<0.01	<0.01	<0.01
1,4-dioxane	mg/L	0.0333	NA	NA	<0.01	0.0145	0.0604	NA	0.0292	<0.01	NA
chloroform	mg/L	0.00893	<0.005	<0.25	0.128	0.13	NA	<0.005	0.00508	<0.005	<0.005
1,1-dichloroethane	mg/L	<0.005	<0.005	<0.25	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005
1,1-dichloroethene	mg/L	<0.005	<0.005	<0.25	<0.005	<0.005	NA	<0.005	<0.005	0.00755	<0.005
cis-1,2-dichloroethene	mg/L	<0.005	<0.005	<0.25	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005
trans-1,2-dichloroethene	mg/L	<0.005	<0.005	<0.25	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005
1,1,2,2-tetrachloroethane	mg/L	<0.005	<0.005	<0.25	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005
2-butanone	mg/L	<0.01	<0.01	1.79	<0.01	<0.01	NA	<0.01	<0.01	<0.01	<0.01
tetrachloroethene	mg/L	<0.005	<0.005	<0.25	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005
trichloroethene	mg/L	<0.005	<0.005	<0.25	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005
vinyl chloride	mg/L	<0.01	<0.01	<0.5	<0.01	<0.01	NA	<0.01	<0.01	<0.01	<0.01
DowTherm A™											
1,1-diphenyl	mg/L	<0.01	NA	NA	<0.01	<0.01	<0.01	NA	<0.01	<0.01	NA
biphenyl ether	mg/L	<0.01	NA	NA	<0.01	<0.01	0.074	NA	<0.01	<0.01	NA
Field and Natural Attenuation Parameters											
alkalinity	mg/L	NA	324	15100	22.4	21.9	NA	171	NA	75.6	221
chloride	mg/L	NA	14.4	5.49	3.6	3.61	NA	6.36	NA	2.05	7.32
dissolved oxygen	mg/L	0.55	0.41	0.15	0.17	NA	0.06	0.21	3.06	0.3	0.43
groundwater elevation	feet MSL	661.85	705.09	669.63	669.8	NA	670.28	685.0575	661.88	725.7025	722.53
manganese	mg/L	NA	0.318	0.721	0.854	0.822	NA	0.193	NA	0.057	0.04
nitrate nitrogen	mg/L	NA	<0.1	<0.1	0.197	0.225	NA	<0.1	NA	<0.1	<0.1
nitrite nitrogen	mg/L	NA	<0.1	<0.1	<0.1	<0.1	NA	<0.1	183.1	12.2	-57.9
ORP	mV	-43	-92.2	-166.6	31.6	NA	-106.8	<0.1	<0.1	0.0475	<0.1
orthophosphate phosphorus	mg/L	NA	0.15	NA	NA	NA	NA	<0.1	NA	6.66	6.3
pH	su	6.57	6.84	6.63	5.69	NA	7.14	7.15	5.44	81	470
specific conductance	umhos/cm	119	656	27224	94	<1	220	351	81	12.3	2.24
sulfate	mg/L	NA	<1	1.59	<1	<1	NA	1.81	NA	NA	<0.05
sulfide	mg/L	NA	<0.05	<0.05	<0.05	<0.05	NA	0.41	NA	0.0652	<0.05
temperature	degrees C	16.17	20.38	17.52	19.9	NA	16.05	17.31	15.7	22.73	20.99
total organic carbon	mg/L	NA	2.28	11200	<1	<1	NA	2.52	NA	<1	4.36
turbidity	NTU	145	18.3	12.2	87	NA	65.4	29.2	14.7	150	6.9

NA - Not Analyzed
 degrees C - degrees Celsius
 feet MSL - feet above mean sea level
 mg/L - milligrams per liter
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 su - standard units
 umhos/cm - micromhos/cm

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Parameter	Unit	EW-52 6/12/2012	EW-53 6/12/2012	MW-03 6/12/2012	MW-05 6/11/2012	MW-06 6/11/2012	MW-07 6/11/2012	MW-09A 6/12/2012	MW-26 6/13/2012	MW-27 6/13/2012	MW-39 6/11/2012
Volatile Organics and 1,4-Dioxane											
acetone	mg/L	<0.01	<0.01	0.0494	NA	NA	NA	NA	NA	<0.01	NA
1,4-dioxane	mg/L	0.0157	<0.01	<0.01	0.668	<0.01	0.0545	0.0496	0.089	<0.01	0.662
chloroform	mg/L	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	<0.005	NA
1,1-dichloroethane	mg/L	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	<0.005	NA
1,1-dichloroethene	mg/L	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	<0.005	NA
cis-1,2-dichloroethene	mg/L	0.0525	<0.005	<0.005	NA	NA	NA	NA	NA	<0.005	NA
trans-1,2-dichloroethene	mg/L	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	<0.005	NA
1,1,2,2-tetrachloroethane	mg/L	<0.01	<0.01	<0.01	NA	NA	NA	NA	NA	<0.01	NA
2-butanone	mg/L	<0.005	<0.005	0.00644	NA	NA	NA	NA	NA	<0.005	NA
tetrachloroethene	mg/L	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	<0.005	NA
trichloroethene	mg/L	<0.01	<0.01	<0.01	NA	NA	NA	NA	NA	<0.01	NA
vinyl chloride											
DowTherm A™											
1,1-diphenyl	mg/L	<0.01	<0.01	NA	0.0408	<0.01	1.25	<0.01	<0.01	<0.01	1.07
biphenyl ether	mg/L	<0.01	<0.01	NA	0.138	<0.01	5.46	<0.01	<0.01	<0.01	3.73
Field and Natural Attenuation Parameters											
alkalinity	mg/L	49.3	60.2	NA	NA	NA	NA	NA	NA	NA	NA
chloride	mg/L	2.89	9.68	NA	NA	NA	NA	NA	NA	NA	NA
dissolved oxygen	mg/L	0.11	0.2	1.08	0.26	0.33	0.56	4.09	1.91	3.22	0.38
groundwater elevation	feet MSL	722.34	694.6	748.81	747.22	734.7	737.68	748.17	680.29	635.41	739.52
manganese	mg/L	0.201	1.7	NA	NA	NA	NA	NA	NA	NA	NA
nitrate nitrogen	mg/L	<0.1	<0.1	NA	NA	NA	NA	NA	NA	NA	NA
nitrite nitrogen	mg/L	<0.1	<0.1	NA	NA	NA	NA	NA	NA	NA	NA
ORP	mV	-25.8	-3.2	215.7	10.6	27.5	-57	50.6	27.1	203.8	-133.3
orthophosphate phosphorus	mg/L	<0.1	<0.1	NA	NA	NA	NA	NA	NA	NA	NA
pH	su	5.88	6.11	4.88	5.04	4.8	6.65	6.11	5.1	3.27	6.81
specific conductance	umhos/cm	148	167	47	65	26	224	55	0.06	54	160
sulfate	mg/L	1.34	1.25	NA	NA	NA	NA	NA	NA	NA	NA
sulfide	mg/L	<0.05	<0.05	NA	NA	NA	NA	NA	NA	NA	NA
temperature	degrees C	21.4	20.96	19.87	22.93	22.07	22.7	21.83	20.29	16.06	23.55
total organic carbon	mg/L	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA
turbidity	NTU	105	60.2	155	1.93	5.11	3.85	4.97	0.91	0.7	22.4

NA - Not Analyzed
 degrees C - degrees Celsius
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 umhos/cm - micromhos/cm

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Parameter	Unit	MW-41 6/12/2012	MW-42 6/11/2012	MW-45 6/12/2012	MW-46 6/12/2012	MW-53 6/11/2012	MW-54 6/12/2012	MW-57 6/14/2012	MW-81 6/12/2012	MW-96 6/14/2012	MW-97 6/13/2012
Volatiles Organics and 1,4-Dioxane											
acetone	mg/L	NA	NA	<0.01	<0.01	NA	NA	NA	NA	NA	NA
1,4-dioxane	mg/L	0.0215	0.0105	NA	NA	7.3	<0.01	0.016	0.0282	0.0212	0.0106
chloroform	mg/L	NA	NA	<0.005	<0.005	NA	NA	NA	NA	NA	NA
1,1-dichloroethane	mg/L	NA	NA	<0.005	<0.005	NA	NA	NA	NA	NA	NA
1,1-dichloroethene	mg/L	NA	NA	<0.005	<0.005	NA	NA	NA	NA	NA	NA
cis-1,2-dichloroethene	mg/L	NA	NA	<0.005	<0.005	NA	NA	NA	NA	NA	NA
trans-1,2-dichloroethene	mg/L	NA	NA	<0.005	<0.005	NA	NA	NA	NA	NA	NA
1,1,1,2-tetrachloroethane	mg/L	NA	NA	<0.005	<0.005	NA	NA	NA	NA	NA	NA
2-butanone	mg/L	NA	NA	<0.005	<0.005	NA	NA	NA	NA	NA	NA
tetrachloroethene	mg/L	NA	NA	<0.005	<0.005	NA	NA	NA	NA	NA	NA
trichloroethene	mg/L	NA	NA	<0.005	<0.005	NA	NA	NA	NA	NA	NA
vinyl chloride	mg/L	NA	NA	<0.01	<0.01	NA	NA	NA	NA	NA	NA
DowTherm A™											
1,1-diphenyl	mg/L	<0.01	<0.01	NA	NA	0.219	<0.01	<0.01	0.45	<0.01	<0.01
biphenyl ether	mg/L	<0.01	<0.01	NA	NA	1.28	<0.01	<0.01	1.84	0.082	0.0108
Field and Natural Attenuation Parameters											
alkalinity	mg/L	NA	NA	4.98	4.98	NA	NA	NA	NA	NA	NA
chloride	mg/L	NA	NA	1.63	31	NA	NA	NA	NA	NA	NA
dissolved oxygen	mg/L	0.4	0.29	0.4	7.3	0.55	2.08	6.05	0.25	1.46	5.74
groundwater elevation	feet MSL	745.78	737.98	745.78	690.44	757.85	756.5	731.11	759.62	672.15	684.7
manganese	mg/L	NA	NA	<0.01	0.11	NA	NA	NA	NA	NA	NA
nitrate nitrogen	mg/L	NA	NA	1.85	1.62	NA	NA	NA	NA	NA	NA
nitrite nitrogen	mg/L	NA	NA	<0.1	<0.1	NA	NA	NA	NA	NA	NA
ORP	mV	-46.8	-131.1	-46.8	38.7	-32.1	4.2	265.5	19.9	147.9	116.8
orthophosphate phosphorus	mg/L	NA	NA	<0.1	<0.1	NA	NA	NA	NA	NA	NA
pH	su	7.99	7.94	7.99	5.47	4.97	7.08	5.06	6.01	5.37	5.32
specific conductance	umhos/cm	124	45	124	218	2026	359	27	147	51	36
sulfate	mg/L	NA	NA	<1	31.7	NA	NA	NA	NA	NA	NA
sulfide	mg/L	NA	NA	<0.05	<0.05	NA	NA	NA	NA	NA	NA
temperature	degrees C	26.91	20.21	26.91	20.48	24.62	24.19	20.2	24.7	16.81	17.62
total organic carbon	mg/L	NA	NA	<1	<1	NA	NA	NA	NA	NA	NA
turbidity	NTU	11.2	42.9	11.2	8.44	9.1	30.1	0.2	8.55	2.5	25.9

NA - Not Analyzed
 degrees C - degrees Celsius
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 umhos/cm - micromhos/cm

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Parameter	Unit	MW-98 6/12/2012	MW-99 6/12/2012	MW-102 6/11/2012	MW-103 6/12/2012	MW-105 6/13/2012	MW-106 6/13/2012	MW-107 6/12/2012	MW-109 6/11/2012	RW-08 6/11/2012	RW-24 6/14/2012
Volatiles Organics and 1,4-Dioxane											
acetone	mg/L	<0.01	<0.01	NA	<0.01	<0.01	<0.04	<0.01	<0.05	NA	NA
1,4-dioxane	mg/L	0.0492	0.0348	0.0971	<0.01	<0.01	<0.01	<0.01	<0.01	0.0522	0.459
chloroform	mg/L	<0.005	0.00851	NA	<0.005	0.104	0.352	0.166	0.631	NA	NA
1,1-dichloroethane	mg/L	<0.005	<0.005	NA	<0.005	<0.005	<0.02	<0.005	<0.025	NA	NA
1,1-dichloroethene	mg/L	<0.005	<0.005	NA	<0.005	<0.005	<0.02	<0.005	<0.025	NA	NA
cis-1,2-dichloroethene	mg/L	0.133	0.123	NA	<0.005	0.0197	<0.02	<0.005	<0.025	NA	NA
trans-1,2-dichloroethene	mg/L	<0.005	<0.005	NA	<0.005	<0.005	<0.02	<0.005	<0.025	NA	NA
1,1,2,2-tetrachloroethane	mg/L	<0.01	<0.005	NA	<0.005	<0.005	<0.02	<0.005	<0.025	NA	NA
2-butanone	mg/L	0.0323	0.179	NA	<0.01	<0.01	<0.04	<0.01	<0.05	NA	NA
tetrachloroethene	mg/L	0.0132	0.038	NA	<0.005	<0.005	<0.02	<0.005	<0.025	NA	NA
trichloroethene	mg/L	<0.01	<0.01	NA	<0.005	<0.005	<0.02	<0.005	<0.025	NA	NA
vinyl chloride	mg/L	<0.01	<0.01	NA	<0.01	<0.01	<0.04	<0.01	<0.05	NA	NA
DowTherm A™											
1,1-diphenyl ether	mg/L	NA	<0.01	0.0255	<0.01	<0.01	<0.01	<0.01	<0.01	0.0645	<0.01
biphenyl ether	mg/L	NA	<0.01	0.0504	<0.01	<0.01	<0.01	<0.01	<0.01	2.3	0.0442
Field and Natural Attenuation Parameters											
alkalinity	mg/L	NA	<1	NA	<1	9.45	<1	24.9	16.4	NA	NA
chloride	mg/L	NA	1.79	NA	3.03	5.65	10.9	2.01	3.28	NA	NA
dissolved oxygen	mg/L	2.52	2.17	0.16	6.03	4.89	7.95	6.5	6.68	0.25	0.11
groundwater elevation	feet MSL	731.9	723.88	745.72	689.6	716.28	716.43	685.68	674.18	743.57	655.21
manganese	mg/L	NA	0.037	NA	0.046	<0.01	0.018	<0.01	<0.01	NA	NA
nitrate nitrogen	mg/L	NA	0.895	NA	2.59	1.78	1.21	1.28	1.21	NA	NA
nitrite nitrogen	mg/L	NA	<0.1	NA	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA
ORP	mV	165.8	231.8	37.5	38.1	90.1	167.2	45.8	77.4	-15	-97
orthophosphate phosphorus	mg/L	NA	<0.1	NA	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA
pH	su	5.47	4.86	4.34	4.66	6.94	5.54	5.41	5.09	6.36	6.58
specific conductance	umhos/cm	56	30	274	51	69	58	67	0.059	248	760
sulfate	mg/L	NA	<1	NA	1.05	1.11	<1	<1	<1	NA	NA
sulfide	mg/L	NA	<0.05	NA	<0.05	<0.05	<0.05	<0.05	<0.05	NA	NA
temperature	degrees C	20.38	20.67	21.57	22.91	19.25	19.36	19.06	18.49	19.4	16.53
total organic carbon	mg/L	NA	<1	NA	<1	<1	<1	<1	<1	NA	NA
turbidity	NTU	NA	24.2	9.33	9.41	6.3	2.44	2.27	295	2.61	12.8

NA - Not Analyzed
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 umhos/cm - micromhos/cm

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Parameter	Unit	RW-29 6/12/2012	RW-29 Dup 6/12/2012	RW-43 6/14/2012	RW-47 6/12/2012	RW-48 6/12/2012	RW-56 6/14/2012	RW-65 6/12/2012	RW-79 6/11/2012	RW-80 6/11/2012	RW-82 6/11/2012
Volatiles Organics and 1,4-Dioxane											
acetone	mg/L	<0.01	<0.01	NA	0.0465	<0.01	NA	<0.01	NA	NA	NA
1,4-dioxane	mg/L	<0.01	<0.01	1.35	NA	<0.01	0.0702	<0.01	0.0187	2.88	0.0265
chloroform	mg/L	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	NA	NA	NA
1,1-dichloroethane	mg/L	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	NA	NA	NA
1,1-dichloroethene	mg/L	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	NA	NA	NA
cis-1,2-dichloroethene	mg/L	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	NA	NA	NA
trans-1,2-dichloroethene	mg/L	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	NA	NA	NA
1,1,2,2-tetrachloroethane	mg/L	<0.01	<0.01	NA	<0.01	<0.01	NA	<0.01	NA	NA	NA
2-butanone	mg/L	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	NA	NA	NA
tetrachloroethene	mg/L	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.005	NA	NA	NA
trichloroethene	mg/L	<0.01	<0.01	NA	<0.01	<0.01	NA	<0.01	NA	NA	NA
vinyl chloride	mg/L	<0.01	<0.01	NA	<0.01	<0.01	NA	<0.01	NA	NA	NA
DowTherm A™											
1,1-diphenyl	mg/L	<0.01	<0.01	<0.01	NA	<0.01	<0.01	<0.01	<0.01	<0.1	0.0153
biphenyl ether	mg/L	<0.01	<0.01	<0.01	NA	<0.01	<0.01	<0.01	<0.01	0.484	0.0652
Field and Natural Attenuation Parameters											
alkalinity	mg/L	63.2	61.7	NA	610	132	NA	100	NA	NA	NA
chloride	mg/L	1.44	1.46	NA	2.92	6.57	NA	12.3	NA	NA	NA
dissolved oxygen	mg/L	0.11	NA	0.69	0.14	0.08	3.61	0.35	4.37	0.51	0.14
groundwater elevation	feet MSL	771.77	NA	641.72	686.43	704.84	731.65	683.63	754.44	759.55	753.99
manganese	mg/L	<0.01	<0.01	NA	0.104	2	NA	1.96	NA	NA	NA
nitrate nitrogen	mg/L	<0.1	<0.1	NA	<0.1	<0.1	NA	<0.1	NA	NA	NA
nitrite nitrogen	mg/L	<0.1	<0.1	NA	<0.1	<0.1	NA	<0.1	NA	NA	NA
ORP	mV	36.2	NA	17.4	25	-120.3	121.7	-52.7	86.3	85	-162.9
orthophosphate phosphorus	mg/L	<0.1	<0.1	NA	<0.1	<0.1	NA	<0.1	NA	NA	NA
pH	su	7.25	NA	9.35	6.77	6.8	6.89	7.27	6.29	4.68	6.56
specific conductance	umhos/cm	150	NA	310	1064	290	88	258	136	924	279
sulfate	mg/L	10.4	10.5	NA	<1	<1	NA	9.28	NA	NA	NA
sulfide	mg/L	<0.05	<0.05	NA	<0.05	<0.05	NA	<0.05	NA	NA	NA
temperature	degrees C	17	NA	17.89	22.77	19.26	20.15	18.41	23.25	29.1	25.57
total organic carbon	mg/L	<1	<1	NA	1.19	<1	NA	<1	NA	NA	NA
turbidity	NTU	6.93	NA	5.8	6.4	55	1.8	2.1	4.6	7.56	9.3

NA - Not Analyzed
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Parameter	Unit	RW-83A 6/12/2012	RW-83B 6/12/2012	RW-84 6/12/2012	RW-85 6/12/2012	RW-86 6/11/2012	RW-87 6/12/2012	RW-91 6/11/2012	RW-92 6/11/2012	RW-108 6/11/2012
Volatile Organics and 1,4-Dioxane										
acetone	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	<0.01
1,4-dioxane	mg/L	<0.01	<0.01	0.0305	<0.01	3.03	<0.01	1.09	0.779	<0.01
chloroform	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	<0.005
1,1-dichloroethane	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	<0.005
1,1-dichloroethene	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	<0.005
cis-1,2-dichloroethene	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	<0.005
trans-1,2-dichloroethene	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	<0.01
1,1,2,2-tetrachloroethane	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	<0.005
2-butanone	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	<0.005
tetrachloroethene	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	<0.01
trichloroethene	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	<0.01
vinyl chloride	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	<0.01
DowTherm A™										
1,1-diphenyl biphenyl ether	mg/L	<0.01	<0.01	<0.01	<0.01	0.368	<0.01	0.11	<0.01	<0.01
	mg/L	<0.01	<0.01	<0.01	<0.01	1.19	0.0183	0.343	0.183	<0.01
Field and Natural Attenuation Parameters										
alkalinity	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	237
chloride	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	4.72
dissolved oxygen	mg/L	1.93	0.7	0.39	0.56	0.53	0.4	0.35	0.76	0.09
groundwater elevation	feet MSL	762.79	762.68	759.77	756.28	754.87	762.32	753.02	754.01	NA
manganese	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	0.293
nitrate nitrogen	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	<0.1
nitrite nitrogen	mg/L	29.3	22.1	3.6	-38.5	-87.2	-49.1	-5.1	-75.5	-57.2
ORP	mV	NA	NA	NA	NA	NA	NA	NA	NA	<0.1
orthophosphate phosphorus	mg/L	NA	NA	NA	NA	6.59	6.91	5.44	6.54	7.21
	su	5.42	5.3	5.58	6.96	891	239	170	425	0.377
pH	umhos/cm	111	139	108	142	891	239	170	425	1.57
specific conductance	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
sulfate	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	<0.05
sulfide	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
temperature	degrees C	25.06	25.11	26.43	24.45	26.09	23.22	24.04	23.22	17.82
total organic carbon	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	1.48
turbidity	NTU	3.21	8.91	9.13	38.5	2.5	1.07	2.06	6.95	8.91

NA - Not Analyzed
 degrees C - degrees Celsius
 feet MSL - feet above mean sea level
 mg/L - milligrams per liter
 mV - millivolts
 NTU = nephelometric turbidity units
 su - standard units
 umhos/cm - micromhos/cm

1

Summary of Surface Water Analytical Results
June 2012
Auriga Spartanburg Facility
AECOM Project No. 60242428

Parameter	Unit	Boundary 6/13/2012	SW-01 6/14/2012	SW-02 6/14/2012	SW-03 6/14/2012	SW-04 6/14/2012	SW-05 6/13/2012	SW-06 6/13/2012	SW-07 6/13/2012	SW-08 6/13/2012	SW-09 6/13/2012	SW-10 6/13/2012	SW-11 6/13/2012
turbidity	NTU	0.8	NA	14.6	12.4	6.9	17.4	18.7	18.6	14.3	6.9	5.4	28.1
temperature	degrees C	NA	21.19	21.04	21.22	20.99	24.1	22.24	23.78	23.9	23.51	25.94	20.15
ORP	mV	148.5	96.7	81.7	24	129.5	36.1	147.1	103	80.4	140.1	136.9	109.7
dissolved oxygen	mg/L	5.83	6.9	9.23	6.18	7.97	5.74	6.72	7.84	8.15	7.96	7.87	7.55
pH	su	6.19	6.98	6.92	6.76	7.08	6.75	6.25	6.91	7.11	7.24	6.63	6.4
specific conductance	umhos/cm	80	64	65	74	69	71	55	56	63	55	138	62

NA - Not Analyzed
degrees C - degrees Celsius
mg/L - milligrams per liter
mV - millivolts
NTU = nephelometric turbidity units
su - standard units
umhos/cm - micromhos/cm

8/2/2012

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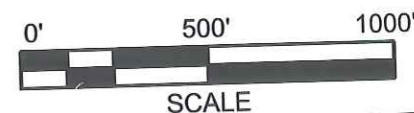
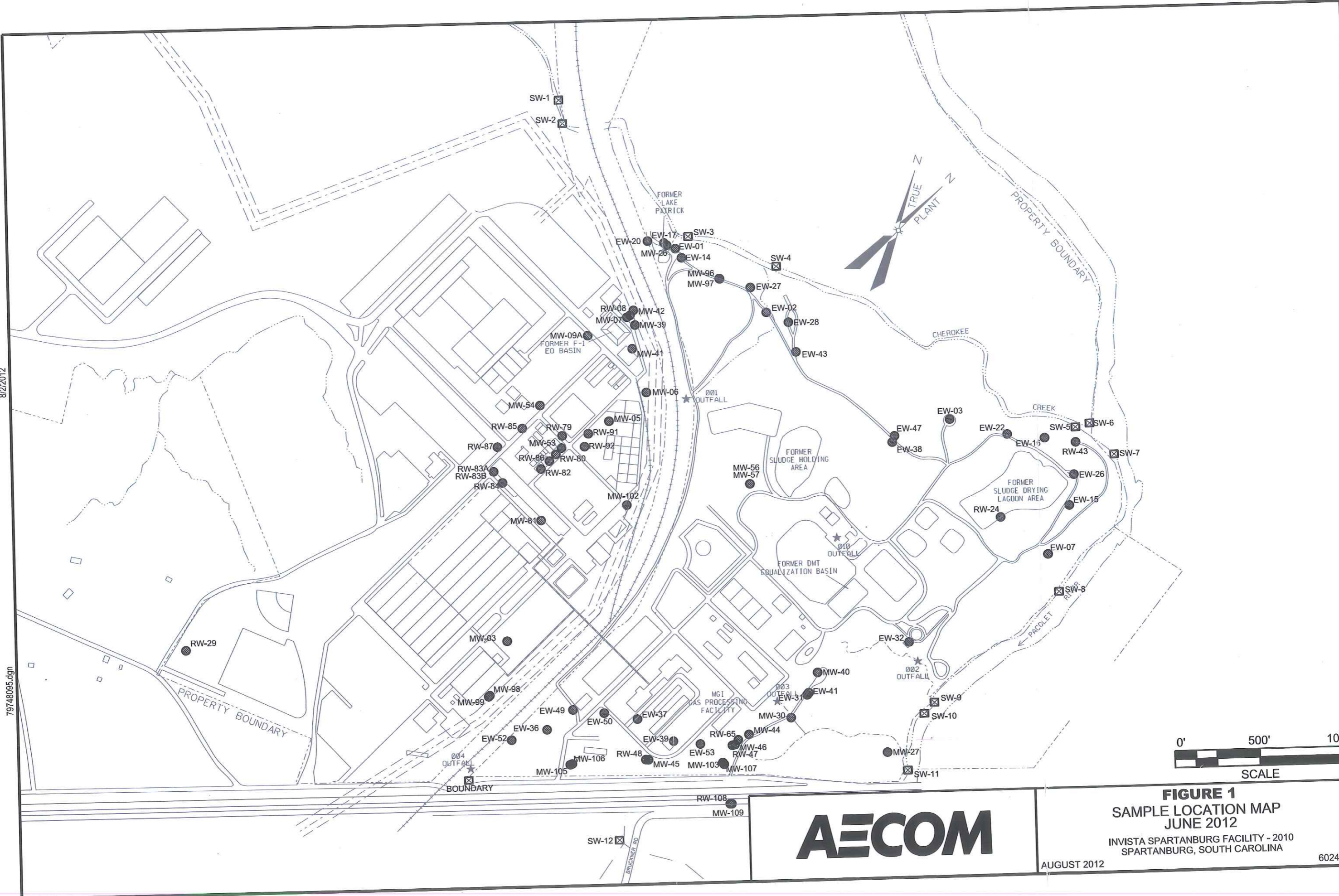


FIGURE 1
SAMPLE LOCATION MAP
JUNE 2012

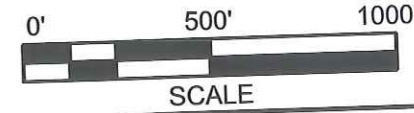
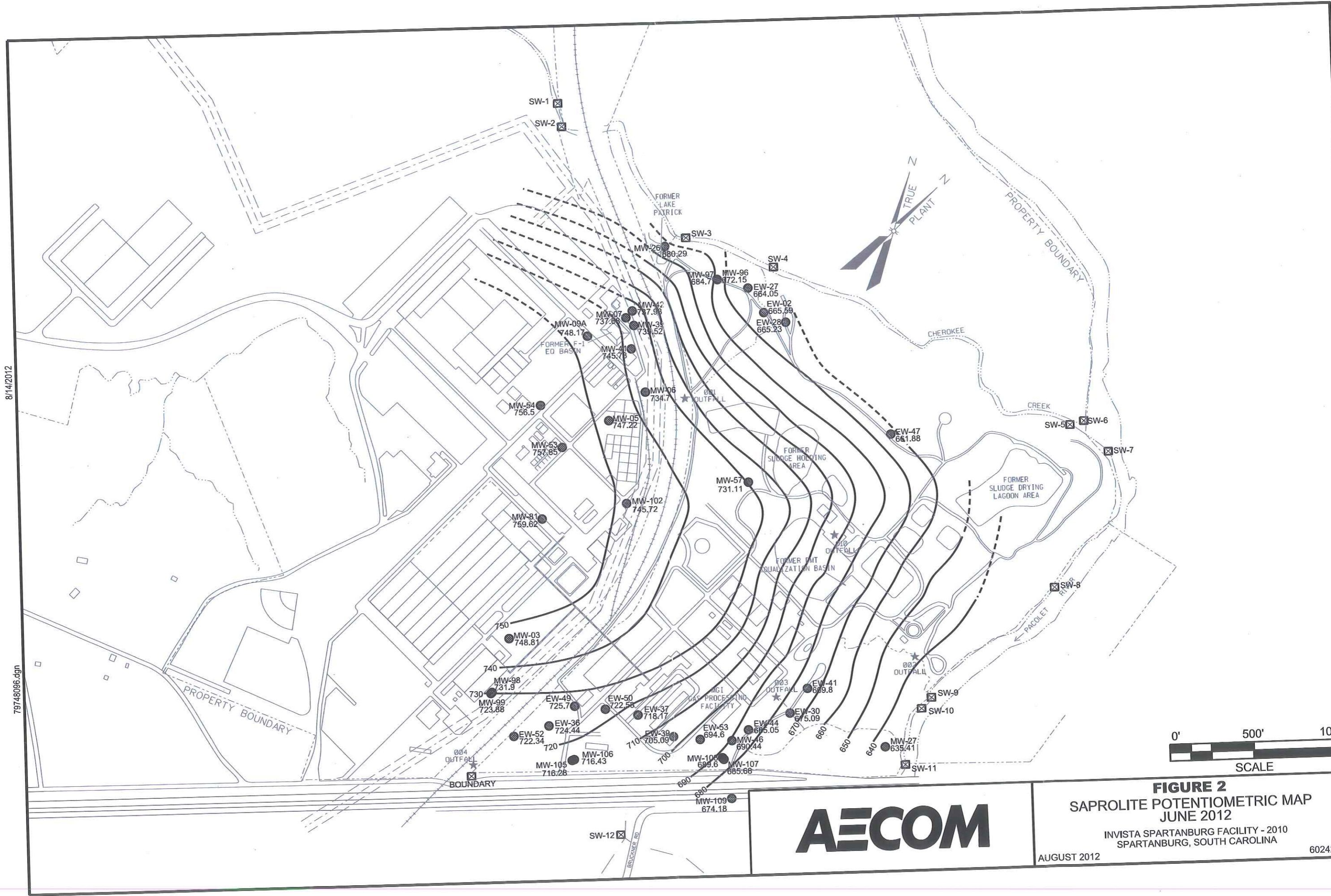
INVISTA SPARTANBURG FACILITY - 2010
SPARTANBURG, SOUTH CAROLINA

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8/14/2012

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FIGURE 2
SAPROLITE POTENTIOMETRIC MAP
JUNE 2012

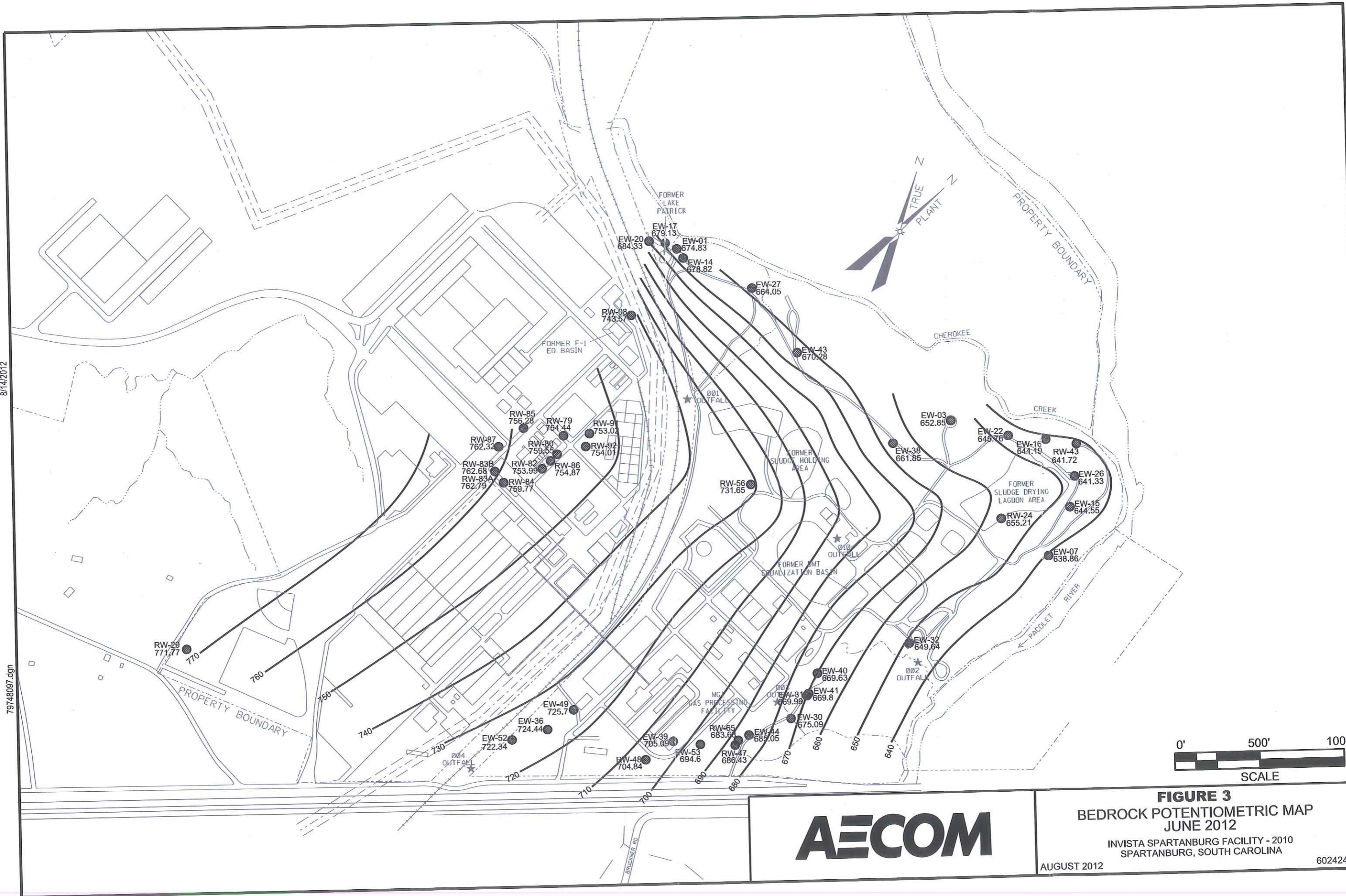
INVISTA SPARTANBURG FACILITY - 2010
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FIGURE 3
BEDROCK POTENTIOMETRIC MAP
JUNE 2012

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SPARTANBURG, SOUTH CAROLINA

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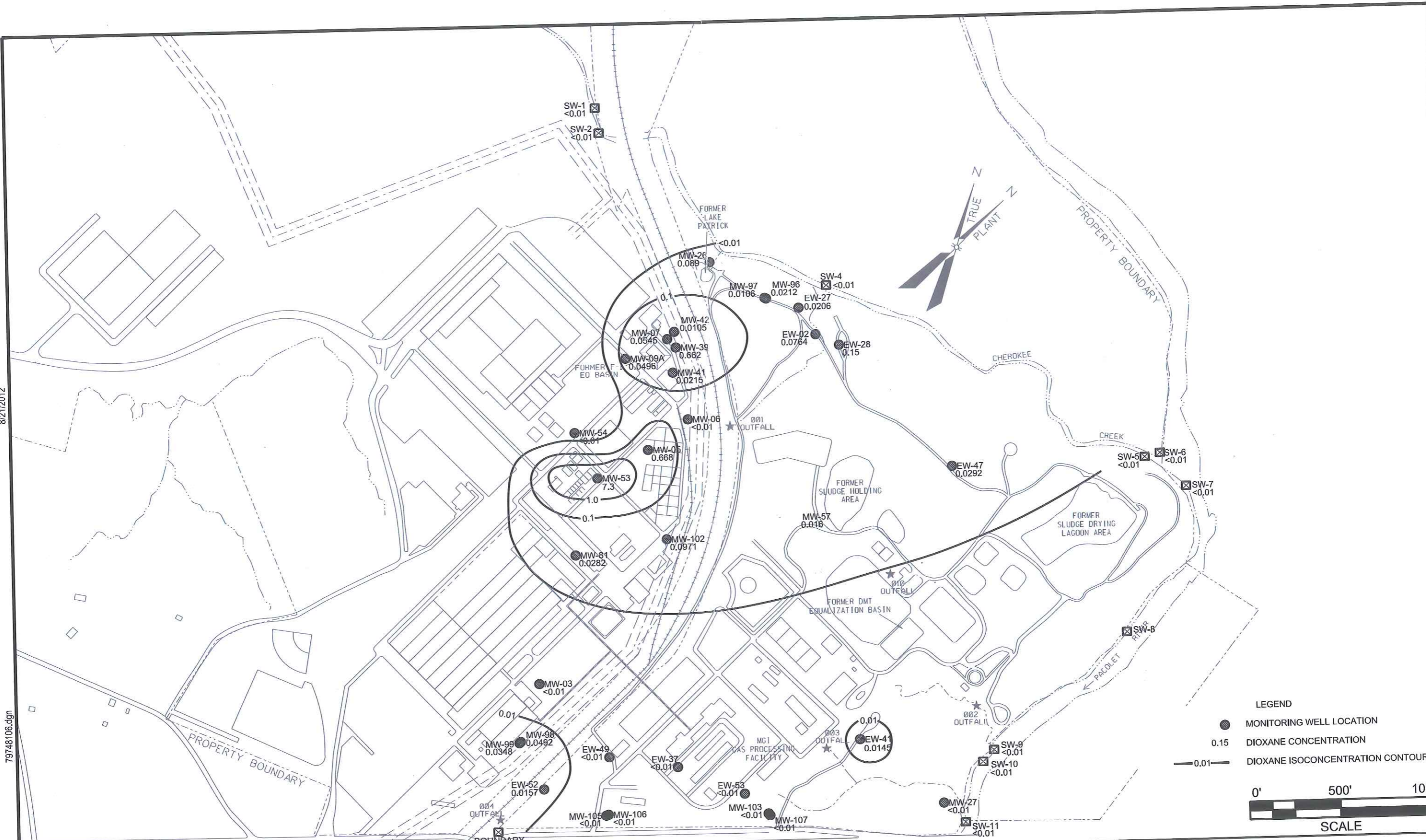


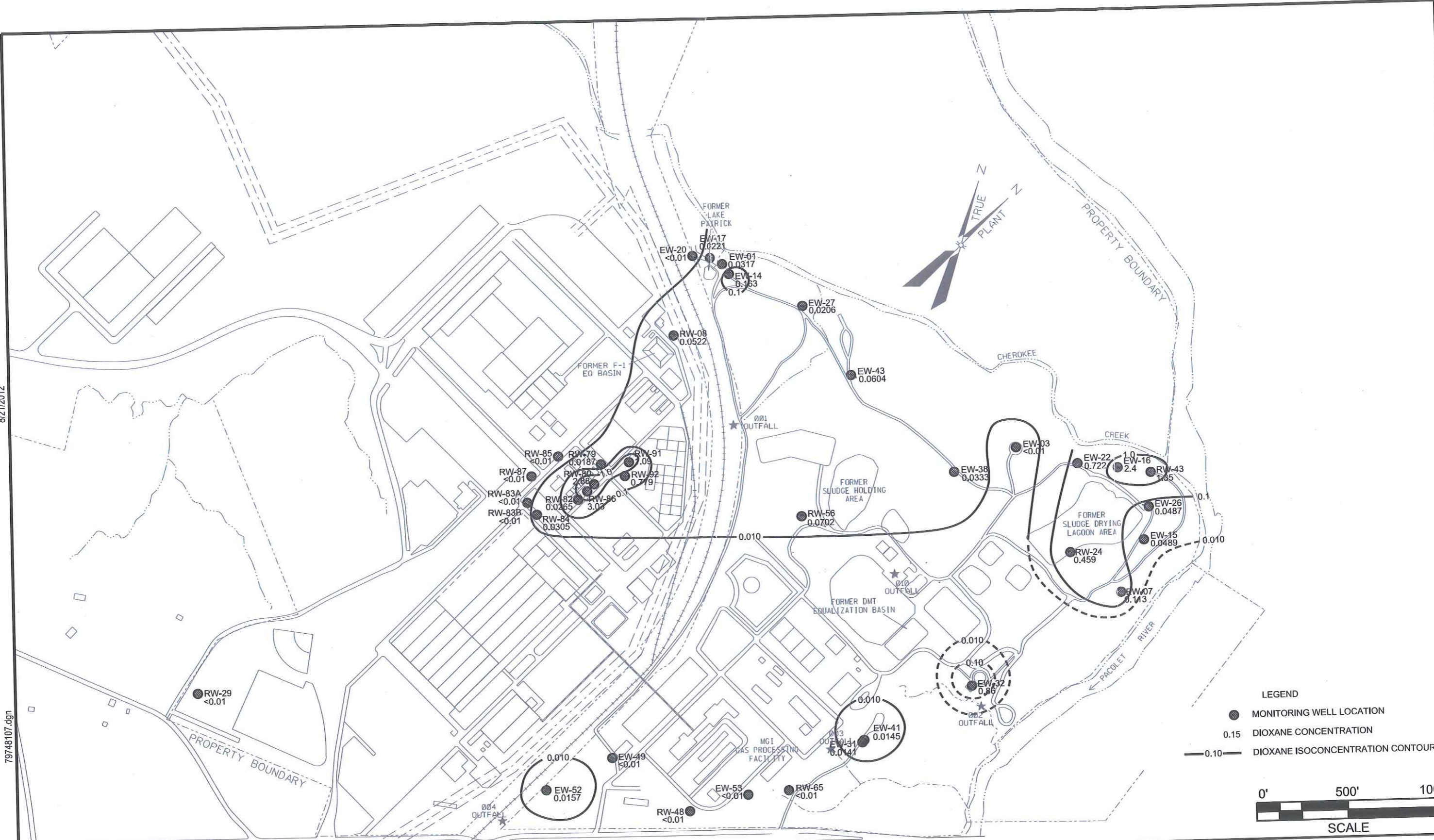
FIGURE 4
SAPROLITE DIOXANE
ISOCONCENTRATION MAP - JUNE 2012
 INVISTA SPARTANBURG FACILITY - 2010
 SPARTANBURG, SOUTH CAROLINA
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NOT Sampled
 SW-12 <0.01

8/21/2012

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FIGURE 5
BEDROCK DIOXANE
ISOCONCENTRATION MAP - JUNE 2012
 INVISTA SPARTANBURG FACILITY - 2010
 SPARTANBURG, SOUTH CAROLINA
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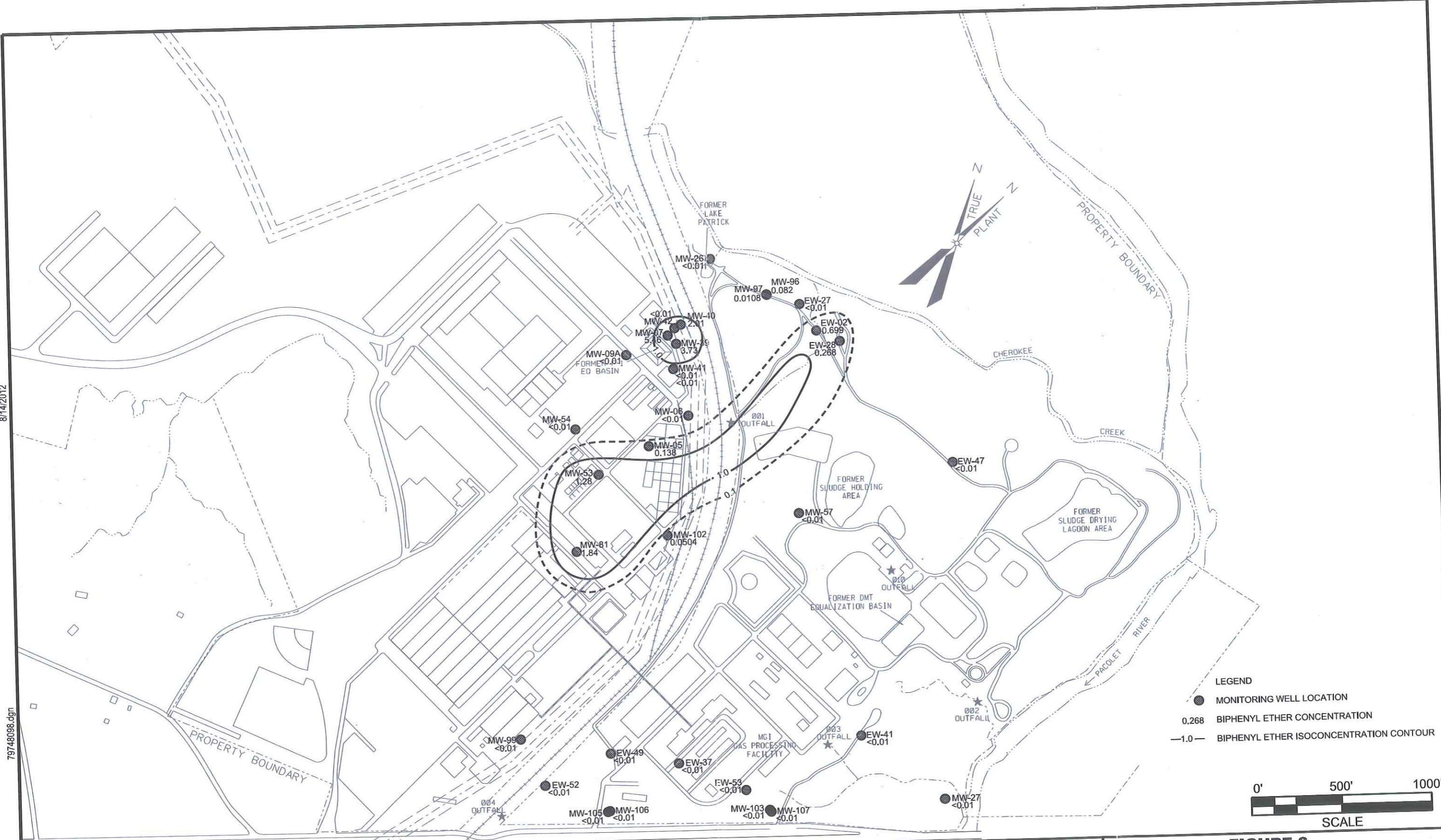


FIGURE 6
SAPROLITE BIPHENYL ETHER
ISOCONCENTRATION MAP - JUNE 2012
 INVISTA SPARTANBURG FACILITY - 2010
 SPARTANBURG, SOUTH CAROLINA
 AUGUST 2012 60242428



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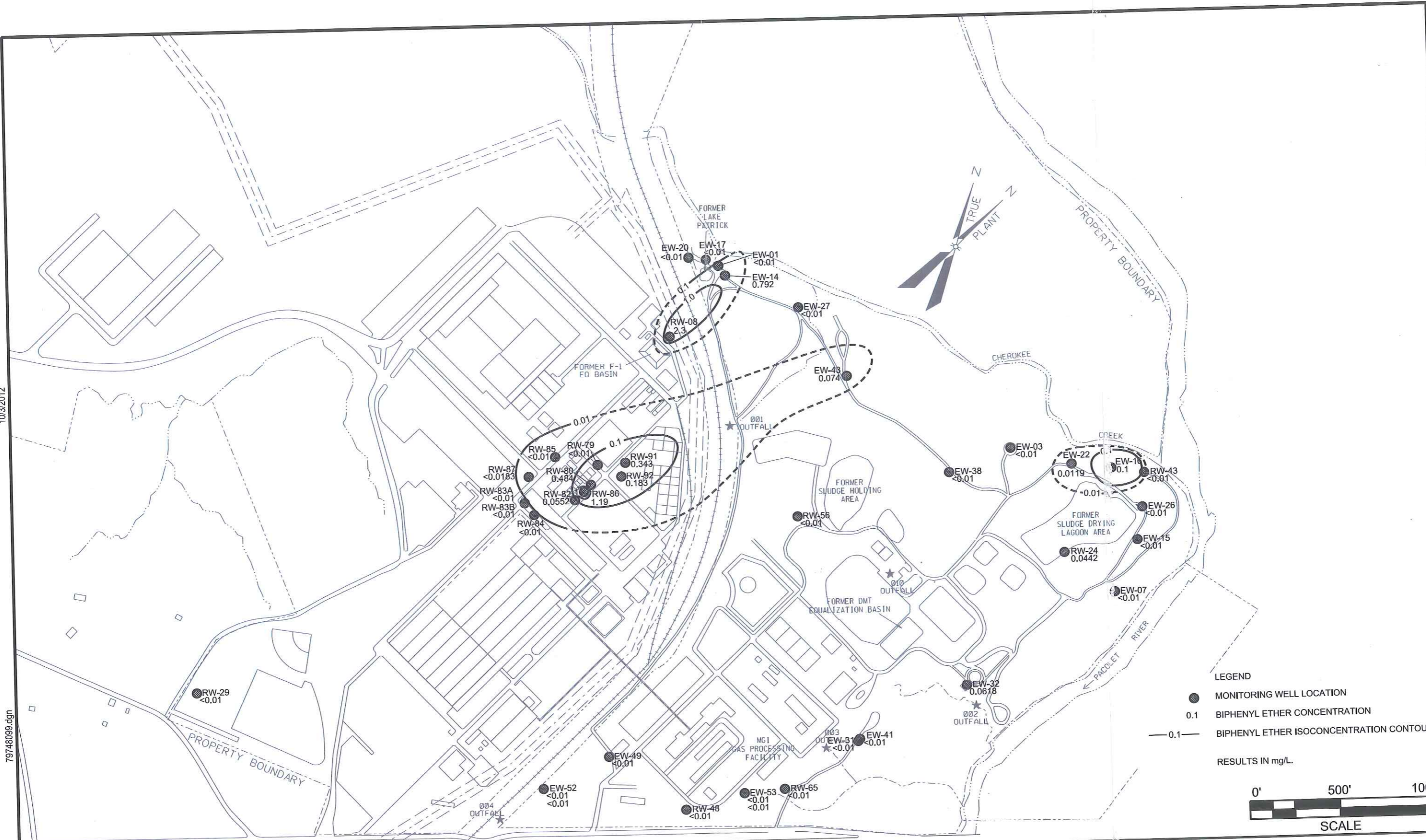


FIGURE 7
BEDROCK BIPHENYL ETHER
ISOCONCENTRATION MAP - JUNE 2012
 INVISTA SPARTANBURG FACILITY - 2010
 SPARTANBURG, SOUTH CAROLINA
 AUGUST 2012 60242428



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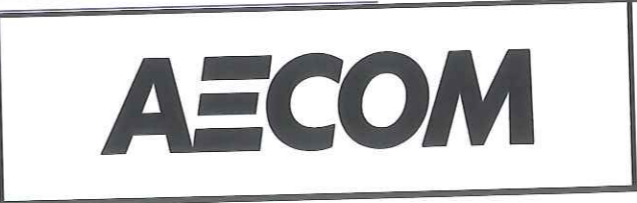
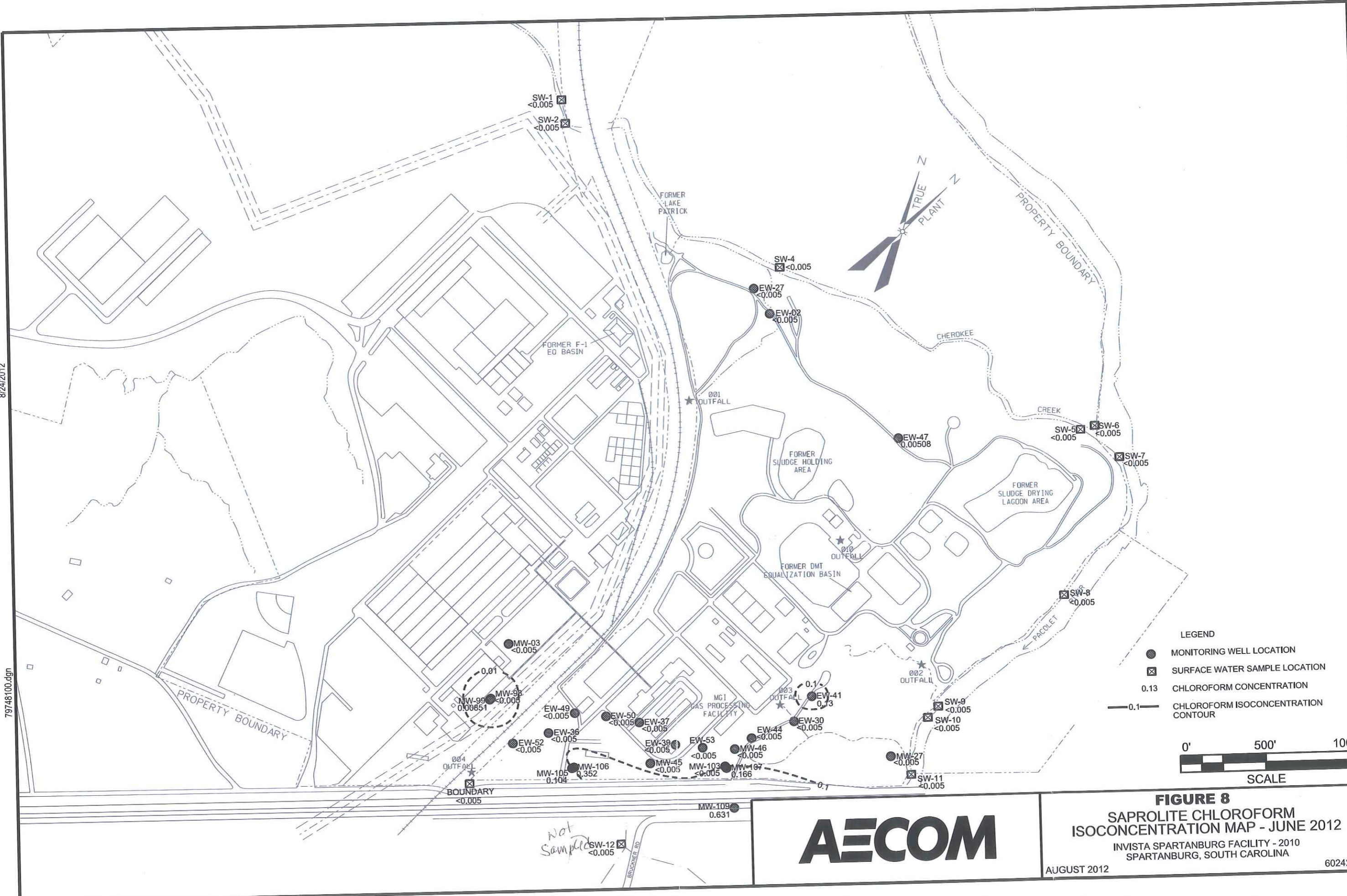
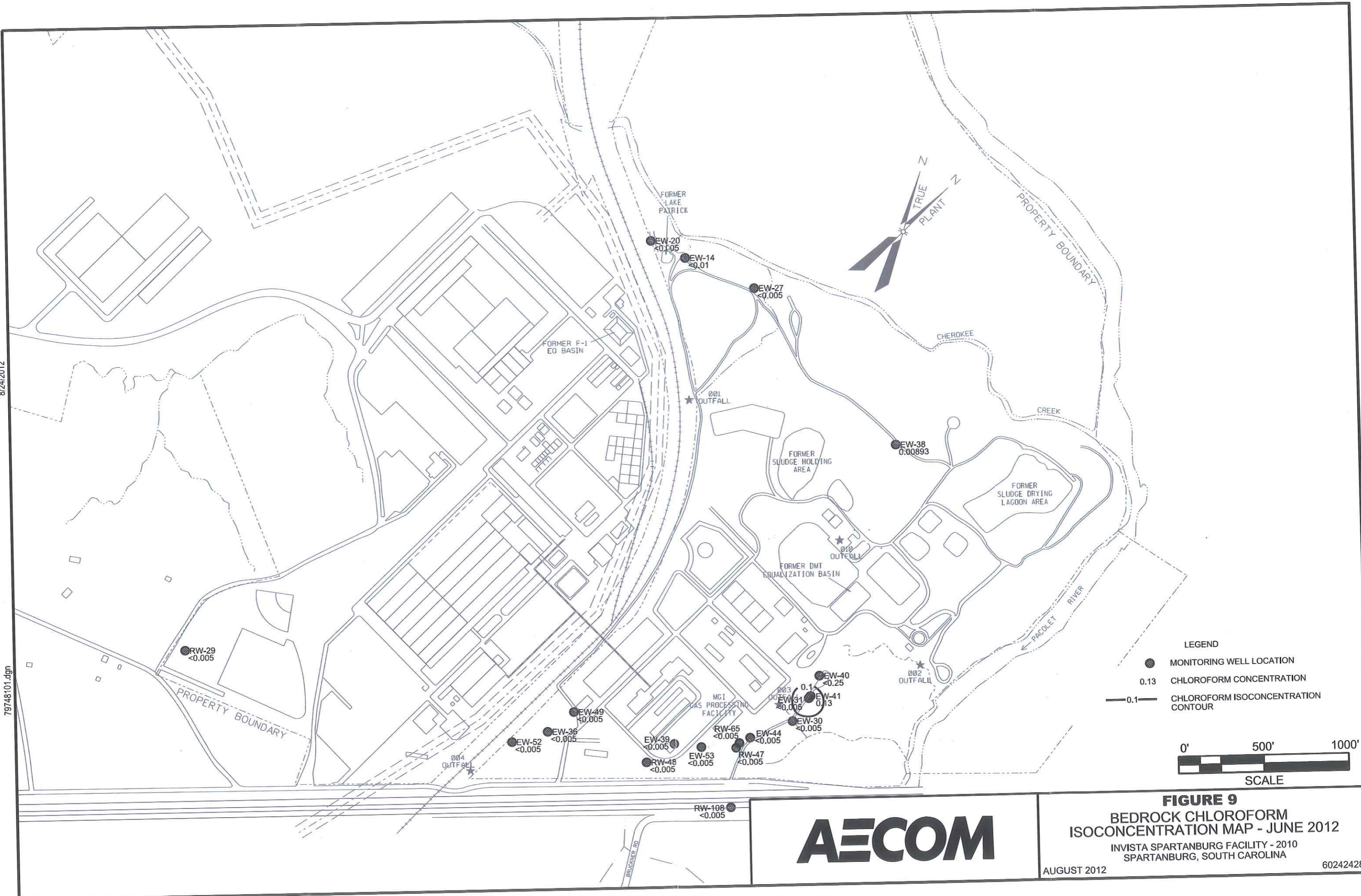


FIGURE 8
SAPROLITE CHLOROFORM
ISOCONCENTRATION MAP - JUNE 2012
 INVISTA SPARTANBURG FACILITY - 2010
 SPARTANBURG, SOUTH CAROLINA
 AUGUST 2012 60242428

8/24/2012

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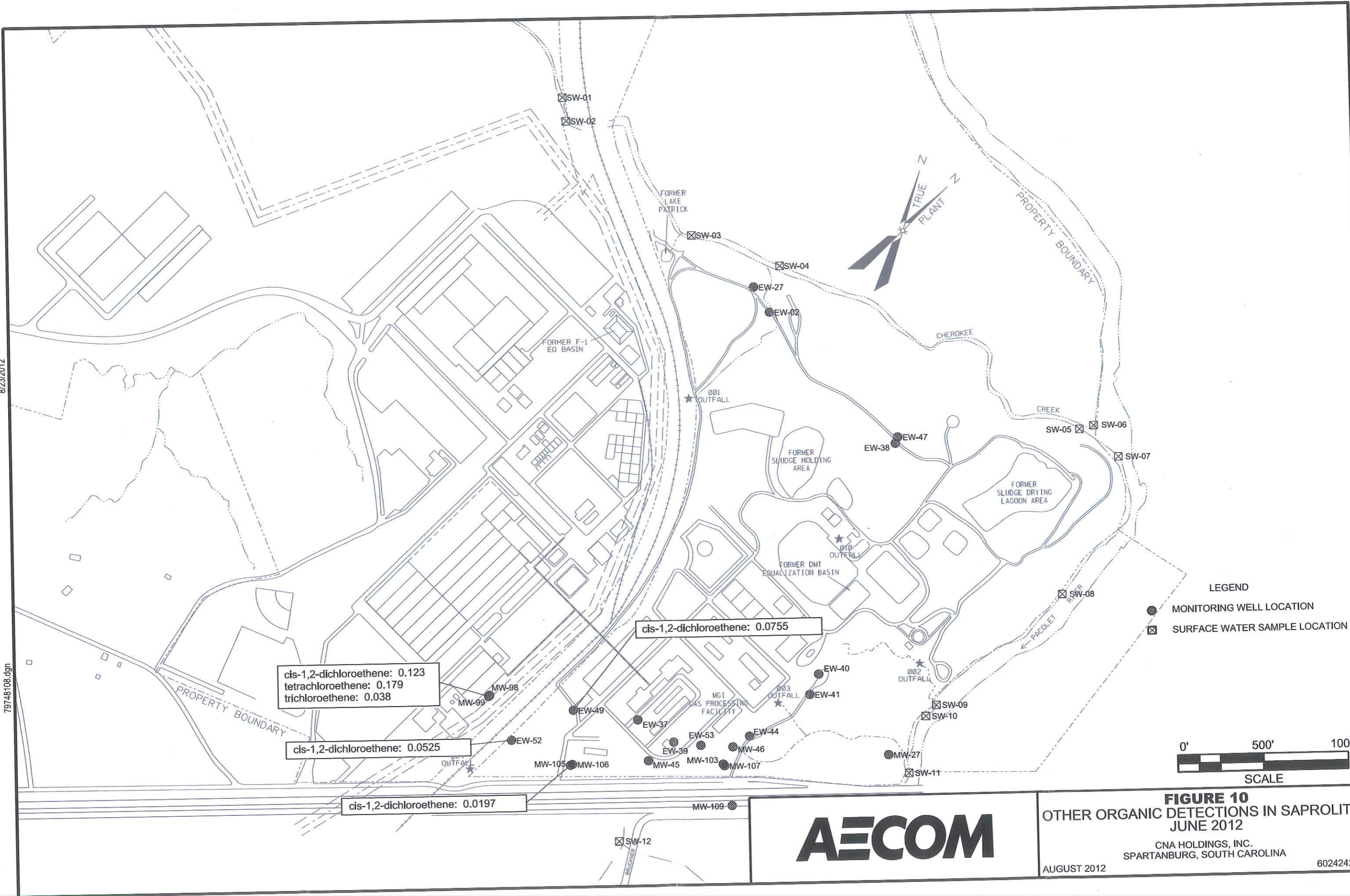
FIGURE 9
BEDROCK CHLOROFORM
ISOCONCENTRATION MAP - JUNE 2012
 INVISTA SPARTANBURG FACILITY - 2010
 SPARTANBURG, SOUTH CAROLINA

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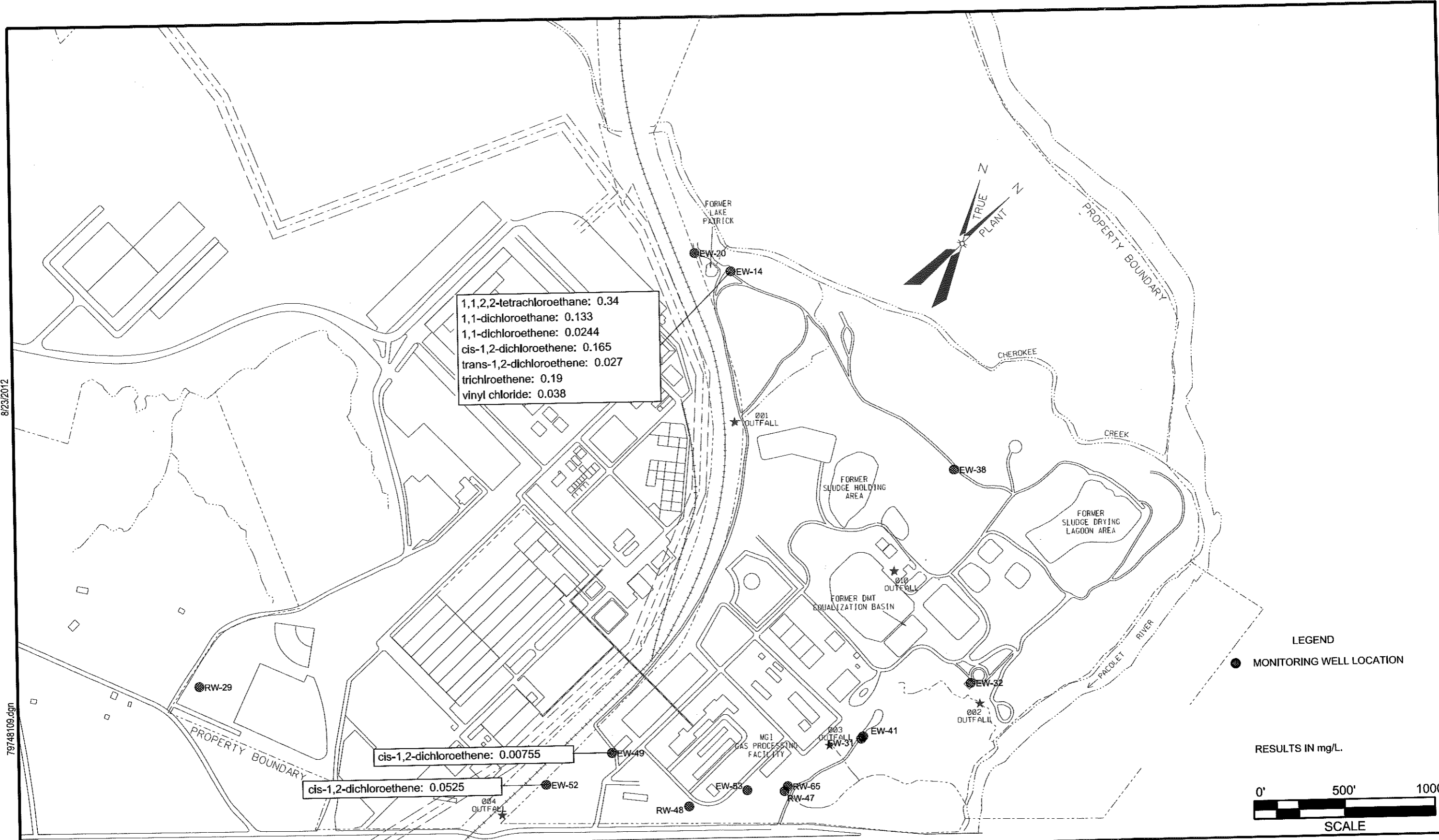
8/23/2012

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8/23/2012

79748109.dgn



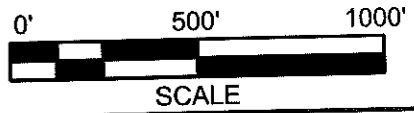
1,1,2,2-tetrachloroethane: 0.34
 1,1-dichloroethane: 0.133
 1,1-dichloroethene: 0.0244
 cis-1,2-dichloroethene: 0.165
 trans-1,2-dichloroethene: 0.027
 trichloroethene: 0.19
 vinyl chloride: 0.038

cis-1,2-dichloroethene: 0.00755

cis-1,2-dichloroethene: 0.0525

LEGEND
 ● MONITORING WELL LOCATION

RESULTS IN mg/L.



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FIGURE 11
 OTHER ORGANIC DETECTIONS
 IN BEDROCK - JUNE 2012

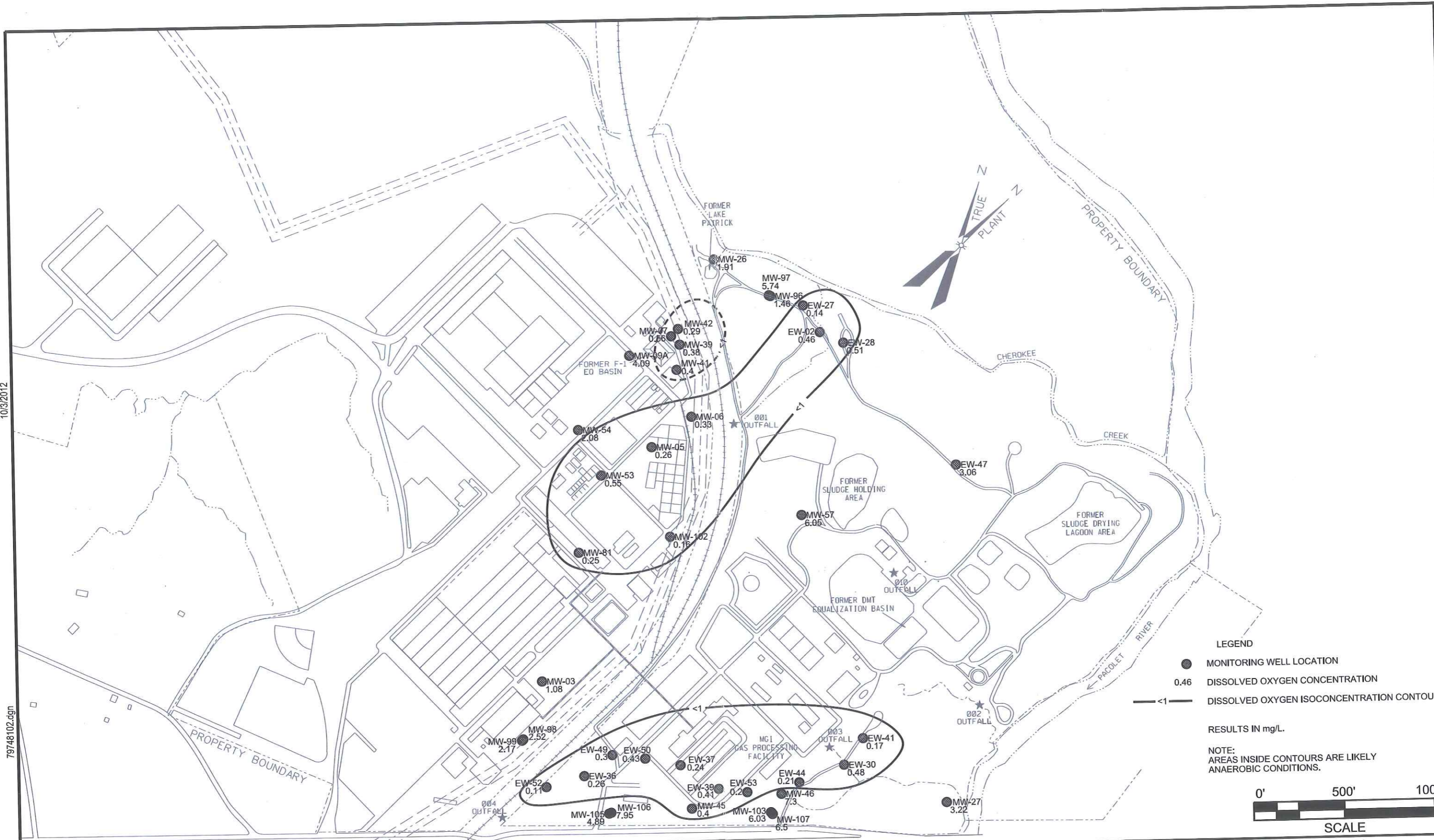
CNA HOLDINGS, INC.
 SPARTANBURG, SOUTH CAROLINA

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LEGEND

- MONITORING WELL LOCATION
- 0.46 DISSOLVED OXYGEN CONCENTRATION
- <1— DISSOLVED OXYGEN ISOCONCENTRATION CONTOUR

RESULTS IN mg/L.

NOTE:
AREAS INSIDE CONTOURS ARE LIKELY ANAEROBIC CONDITIONS.

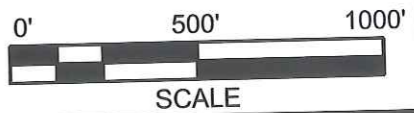


FIGURE 12
SAPROLITE DISSOLVED OXYGEN
ISOCONCENTRATION MAP - JUNE 2012

INVISTA SPARTANBURG FACILITY - 2010
 SPARTANBURG, SOUTH CAROLINA

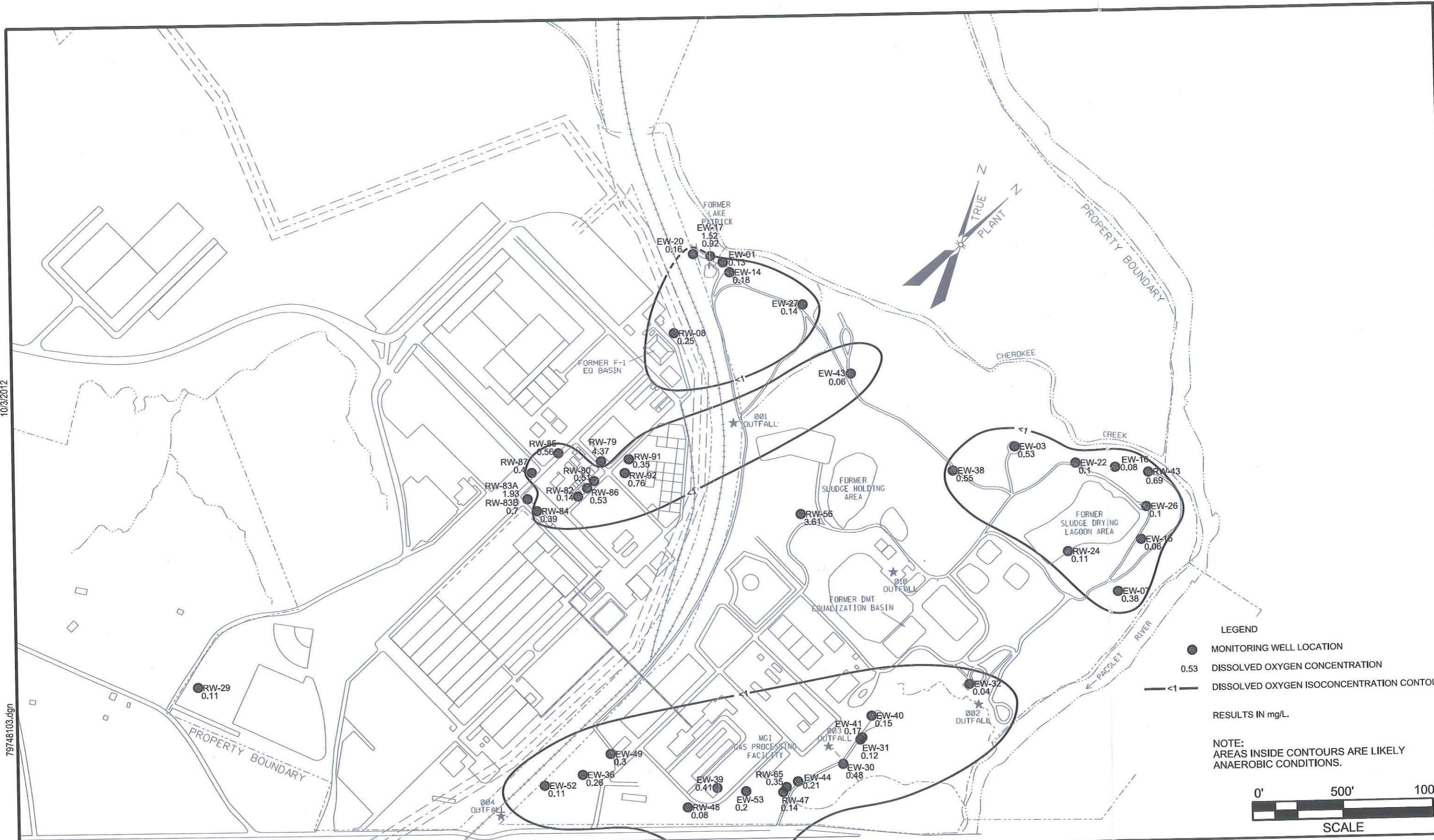
AUGUST 2012

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LEGEND

- MONITORING WELL LOCATION
- 0.53 DISSOLVED OXYGEN CONCENTRATION
- <1— DISSOLVED OXYGEN ISOCONCENTRATION CONTOUR

RESULTS IN mg/L.

NOTE:
AREAS INSIDE CONTOURS ARE LIKELY ANAEROBIC CONDITIONS.

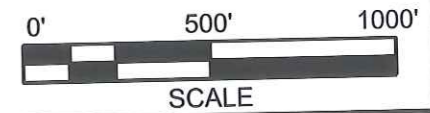


FIGURE 13
BEDROCK DISSOLVED OXYGEN
ISOCONCENTRATION MAP - JUNE 2012

INVISTA SPARTANBURG FACILITY - 2010
SPARTANBURG, SOUTH CAROLINA

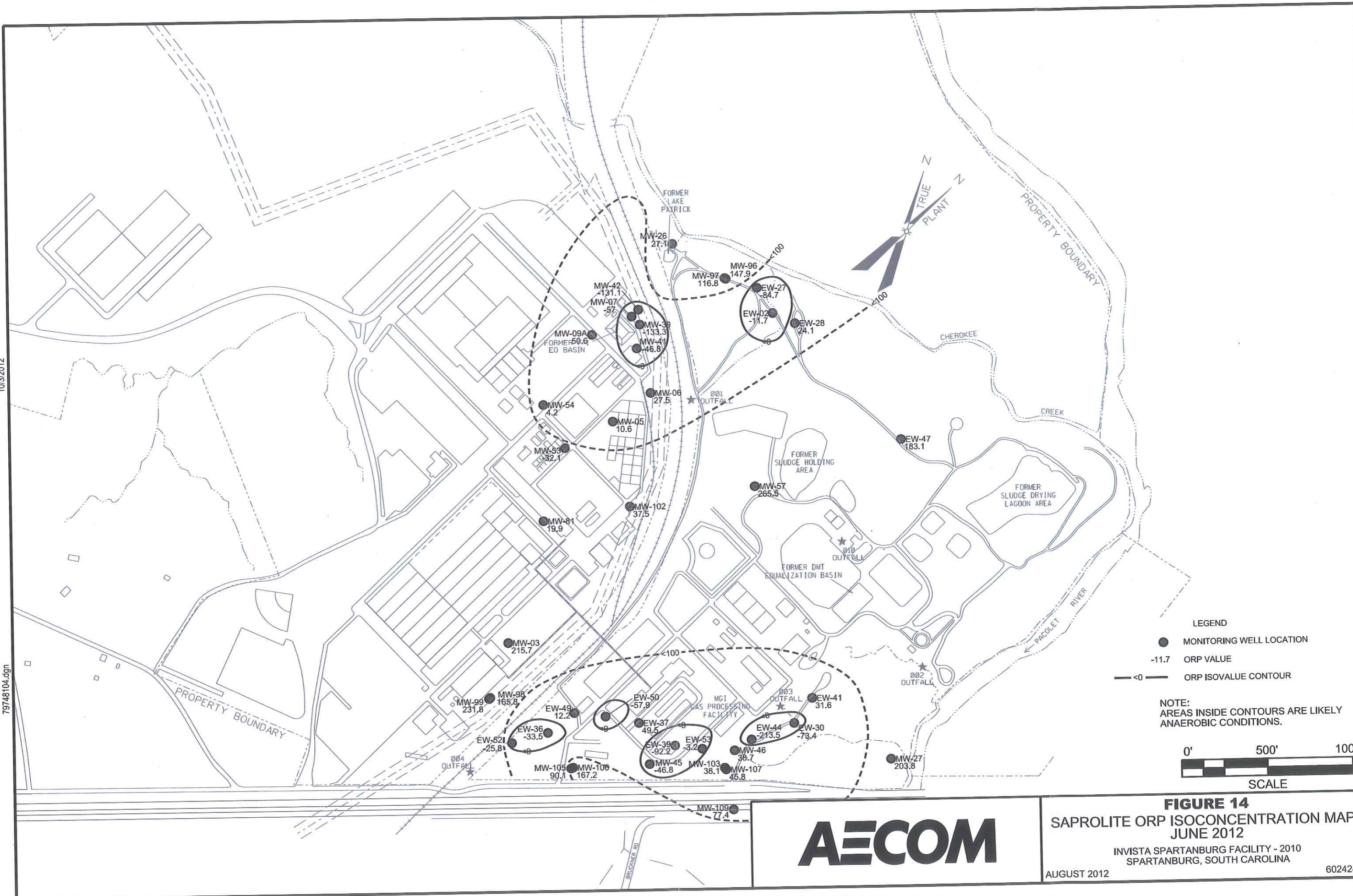
AUGUST 2012

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10/3/2012

79748104.dgn



LEGEND

- MONITORING WELL LOCATION
- 11.7 ORP VALUE
- <math>< 0</math> ORP ISOVALUE CONTOUR

NOTE:
AREAS INSIDE CONTOURS ARE LIKELY ANAEROBIC CONDITIONS.

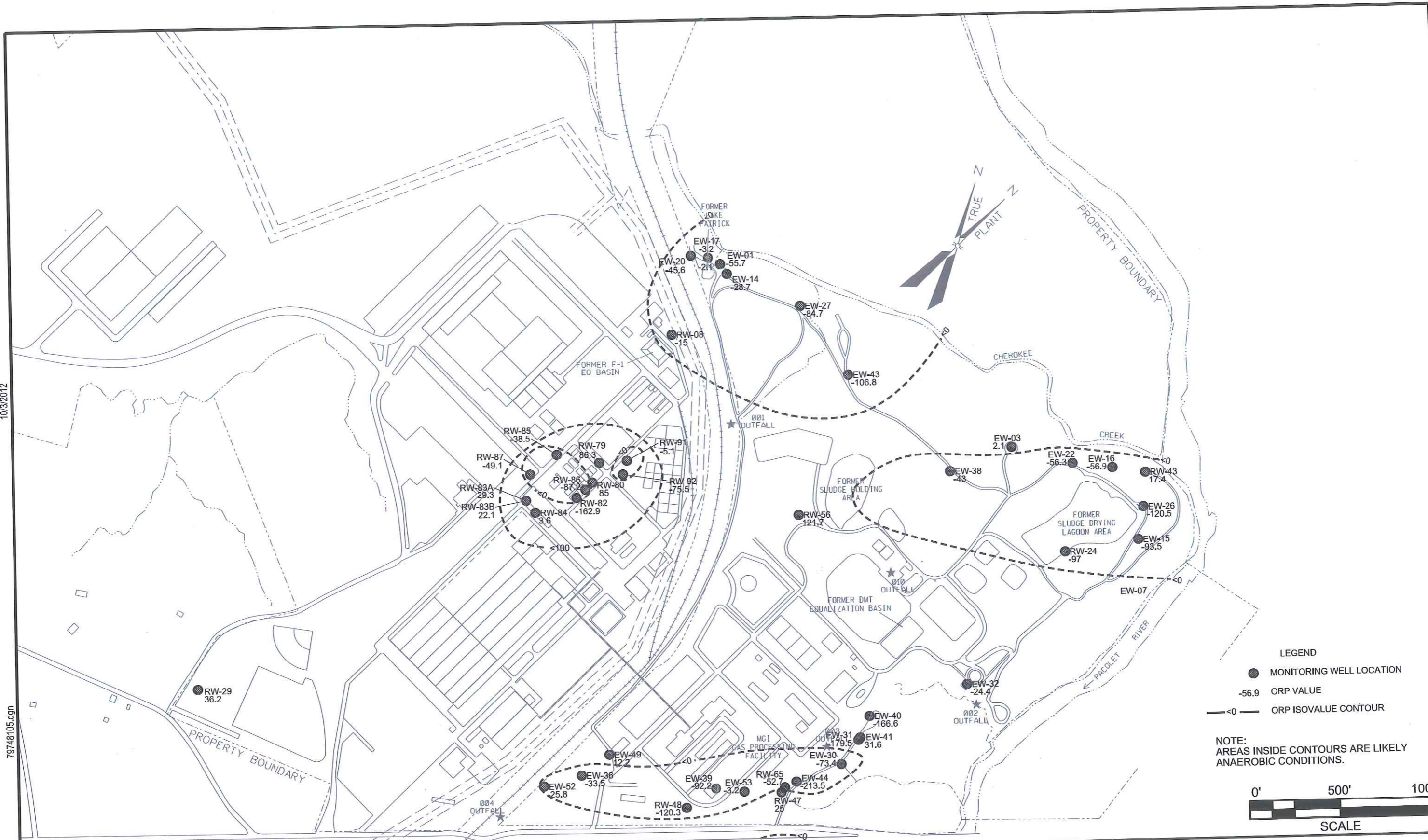
0' 500' 1000'
SCALE

AECOM

FIGURE 14
SAPROLITE ORP ISOCONCENTRATION MAP
 JUNE 2012
 INVISTA SPARTANBURG FACILITY - 2010
 SPARTANBURG, SOUTH CAROLINA
 AUGUST 2012 60242428

10/3/2012

79748105.dgn



LEGEND

- MONITORING WELL LOCATION
- 56.9 ORP VALUE
- <0 ORP ISOVALUE CONTOUR

NOTE:
AREAS INSIDE CONTOURS ARE LIKELY ANAEROBIC CONDITIONS.



FIGURE 15
BEDROCK ORP ISOCONCENTRATION MAP
JUNE 2012

INVISTA SPARTANBURG FACILITY - 2010
SPARTANBURG, SOUTH CAROLINA

AUGUST 2012

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Appendix A
June 2012 Analytical Data

AECOM

Environment

Included in electronic deliverable and available on request

October 2012
