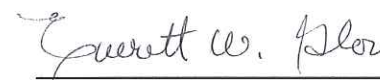
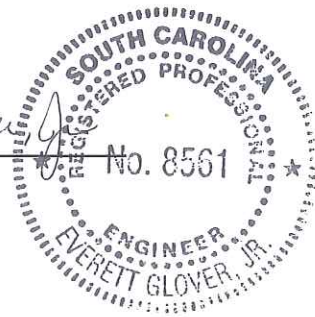


INVISTA Spartanburg Site Assessment Report June 2010


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SEP 29 2010

SITE ASSESSMENT,
REMEDICATION &
REVITALIZATION

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1.0 Introduction

This report is the first of two reports for the INVISTA Spartanburg site groundwater and surface water data collected in June 2010. This report details the data that was collected and provides an update on the overall environmental conditions at this time. The data was gathered based on agreements reached during the meeting held at the South Carolina Department of Health and Environmental Control (DHEC) offices on February 2, 2010 and subsequent communications.

A Sampling and Analysis Plan (SAP) for the work was submitted in April 2010 and was approved by DHEC on June 1. The June sampling plan approved under the SAP is included as Table 1 of this report. The June 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 2010 event are presented in Table 2. Groundwater data collected during June 2010 is summarized in Table 3 and surface water data is presented in Table 4. Only parameters detected in at least one sample are included in Tables 3 and 4. Results of 1,4-dioxane analyses in surface water were included in Table 4 even though there were no detections. The complete laboratory reports are included as an appendix to this report.

2.0 Groundwater Elevations

Groundwater elevations were collected from wells throughout the site. The groundwater elevation data is presented in Table 2. Potentiometric Maps were developed based on the June elevation data. Separate potentiometric maps were developed for wells screened in saprolite and 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. However, water throughout the transition flow is biased toward the conflux of the two surface water features. Groundwater flow along the southern end of the site tends to flow in a more southern direction, which is consistent with the immediate local topography.

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 as for 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

Results of analyses for 1,4-dioxane are presented in 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.

Surface water data is included in the saprolite data on Figure 4. Surface water sampling was modified for this event. Historically, surface water samples have been collected "mid/mid", meaning they are collected away from the stream bank and approximately halfway between the water surface and stream bed. DHEC stated during the February 2 meeting that this method may not be appropriate for site conditions. If 1,4-dioxane is discharged into the stream along the bank, a relatively concentrated band could persist along the bank with minimal mixing. Samples collected at the mid-point of the stream could potentially be removed from this band and not be representative of conditions near the bank and in the hyporheic zone. The SAP proposed that surface water samples would be collected directly at the water edge and at the stream bed. The surface water samples collected in June 2010 were collected as described in the SAP. All 1,4-dioxane results in surface water samples were non-detect (<0.01 mg/L).

The locations of detections of 1,4-dioxane are consistent with the assessment presented in the 2001 Operating Strategy Report. The Operating Strategy Report included estimates of impact to surface water and determined that the flux of 1,4-dioxane into the Pacolet River and Cherokee Creek would not result in significant concentrations. UV-oxidation of dilute concentrations in surface water is expected to attenuate remaining 1,4-dioxane mass over a period of days, depending on the degree of exposure to direct sunlight.

Because the data supports the conclusions of the Operating Strategy Report, continued monitoring as recommended in that report is appropriate for 1,4-dioxane.

*6ppb health number
70 state uses course
of DL*

4.0 DowTherm A™

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

The results of analyses of biphenyl ether 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. Approximately 77 gallons of phase material has been extracted from this well since the extraction 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.

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 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 prior to injection were up to a maximum of 15 mg/L. The extent and magnitude of detections have been significantly decreased since the injection activities were completed.

June 2010 chloroform concentrations are presented in Figures 8 and 9.

The highest concentration reported was 0.478 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, with the exception of two wells. All of the chloroform detections in bedrock wells and in saprolite wells outside of the region south of the treatment are below the total trihalomethane MCL of 0.080 mg/L.

DHEC also requested that six downgradient, off-site properties be investigated for the presence of wells and sampled for chloroform if wells were present. These properties were identified as having "limited" or "minimal" chance for chloroform impact in the Receptor Survey submitted earlier this year.

Three of the properties were determined to have no well present. These properties are the undeveloped property at 545 Conway Black Road, the Transfer Case Express property (former Bruckner Industries) property at 600 Bruckner Road, and the "Music Camp" property at 190 Childress Road. Public water is available at both the Transfer Case Express and "Music Camp" properties.

The other three properties are each residential properties. The property at 611 Bruckner has a well which has been sampled twice before, in 2002 and 2006. Each of the previous times the well was non-detect for chloroform. The properties at 615 Bruckner Road and 175 Childress Road were also found to have wells. At each these two properties there is a well, but the residence is on public water. One of the two properties uses the well for agricultural use. The other property no longer uses its well.

All three wells were sampled in August 2010. In each of the three events the result of analysis for chloroform was non-detect (<0.005 mg/L). The laboratory analytical data for these samples is included in Appendix A. The samples were identified as Spartanburg-001, Spartanburg-002, and Spartanburg-003.

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.

Low detections of tetrachloroethene were noted at two wells in saprolite. Trichloroethene and cis-1,2-dichloroethene were also detected in one of these two wells and cis-1,2-dichloroethene was also detected in three other wells. Two of these three wells are transition zone wells and are therefore presented on both Figures 10 and 11.

On the north side of the property a detection of 1,1-dichloroethene was noted at transition well EW-27 and several chlorinated organics were detected in bedrock well EW-14 near Lake Patrick.

Detections of acetone were noted at bedrock wells EW-31 and RW-109. 2-Butanone was also noted at well RW-109. Each of these compounds is believed to be associated with the ERD treatment. Concentrations of these parameters have been reported in other wells during the remediation process and have rapidly attenuated. Since injection at well RW-108 the concentrations have been more than an order of magnitude higher than currently reported and continued attenuation is expected. The detection of acetone at well EW-31 is slightly above the reporting limit and acetone has not been detected at this well since 2006. Acetone is also a common lab contaminant.

6.0 Attenuation Parameters

Most attenuation parameters were monitored only in the former DMT area. Other parameters are routinely collected as part of the sample collection procedure. The results of attenuation parameter monitoring are presented in Figures 12 through 33.

Dissolved oxygen data is 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. Aerobic degradation of DowTherm A™ components is thought to be the primary cause of depressed oxygen concentrations in these areas.

ORP readings are presented on Figures 14 and 15 with areas of reduced ORP designated by the contours. The areas of reduced ORP are consistent with the areas of suppressed dissolved oxygen presented on the prior two figures. The one significant distinction is a gap in the suppressed ORP measurements in saprolite in the southern edge of the former DMT area. This location is consistent with the area of chloroform detections as shown in Figure 8.

Dissolved ferrous iron and dissolved manganese concentrations are presented in Figures 16 through 19. Elevated concentrations of these parameters are indications of biological activity and reduced conditions. As with the prior figures, the contours indicate activity in the former DMT area as well as the central plant area, Fiber 1 EQ Basin, and former sludge drying lagoon. Contours outside of the former DMT area are not present on Figures 18 and 19 because manganese was not monitored away from this area.

Sulfate and sulfide results are presented in Figures 20 through 23. These parameters are only monitored in the former DMT area. Sulfate is converted to sulfide under reducing conditions and depending on other factors sulfide can precipitate out of solution. Neither parameter was frequently detected.

Nitrate and Nitrite results are presented in Figures 24 through 27. These parameters are only monitored in the former DMT area. Nitrate is converted to nitrite under reducing conditions. Detections of nitrate were noted primarily in saprolite in the same region with chloroform detections. There were no detections of nitrite. Because the detections of nitrate correspond to the area of chloroform detections, it is likely that nitrate was present at other locations but has been reduced and nitrite is either precipitated or further reduced through denitrification.

Orthophosphate data is presented on Figures 28 and 29. Detections of orthophosphate were infrequent and low.

Alkalinity results are presented on Figures 30 and 31. Increased alkalinity is an indicator of biological activity. Alkalinity is higher in bedrock and highest at well RW-108. These results are consistent with the minimal detections of chloroform in bedrock and that RW-108 was the most recent location of injection.

Total organic carbon (TOC) concentrations are presented on Figures 32 and 33. Detections of TOC are at generally low levels throughout the former DMT area. During ERD treatment TOC concentrations were measured at thousands of milligrams per liter (mg/L). The much lower levels of TOC remaining indicate that the treatment period is complete, as is expected for the amount of time that has passed since injection activities were completed.

In summary, the attenuation data supports the previously established conclusion that the ERD process has been effective in creating reductive conditions capable of treating the chloroform plume.

7.0 Receptor Survey Update

SCDHEC has requested that the previously submitted receptor survey be updated to include properties to the East of the Pacolet River. The receptor survey is updated in Figure 34 and Table 5.

North of Interstate 85 the property across the Pacolet River is part of the Invista property.

The two northernmost properties on the southern side of Interstate 85 are undeveloped. The remaining properties are residential. Public water is available to these properties. The residential properties are on the far side of a significant dogleg in the Pacolet River. The local geology that creates this dogleg feature is expected to significantly limit groundwater flow from the direction of the plant to these properties. Therefore the potential for any impact from the chloroform plume to the groundwater at these locations is considered to be highly remote.

8.0 Summary and Plan Forward

This report provides the data collected in the June 2010 sampling event and a summary of the current site conditions.

The primary parameters of interest at the site are 1,4-dioxane, DowTherm A™ (1,1-biphenyl and biphenyl ether), and chloroform.

Plumes of 1,4-dioxane and DowTherm A™ are comparable to the assessment as presented in the Operating Strategy Report and Preliminary Risk Evaluation. These parameters remain below detectable levels in surface water samples.

Chloroform has been significantly reduced in concentrations and extent as a result of the ERD treatment program. Chloroform does not exceed the MCL in any of the bedrock sample locations. Elevated concentrations of chloroform in saprolite are limited to a region in the southern edge of the former DMT area and through the MW-109 area. Non-detections in off-site wells downgradient and west of the remaining detections indicate that the plume does not extend in that direction.

A Remedial Effectiveness report will be submitted in November. The Remedial Effectiveness report will review previous site conditions and remedial activities to date. Additional actions will be recommended based on the assessment. This report will be submitted by November 30, 2010.

The Remedial Effectiveness report will include an updated recommendation for groundwater and surface water monitoring in 2011. The recommendations will revise the monitoring wells planned for sampling based on the conclusions of both this report and the Remedial Effectiveness assessment. Sulfide, sulphate, and orthophosphate will be removed from the parameter list because the limited detections of these parameters indicate that continued analysis is not justified.

The December sampling event will be completed as described in the SAP. A report summarizing the results of this event will be submitted by March 31, 2011.

Tables

TABLE 1-1: SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Table 1
June 2010 Sampling Plan
INVISTA Spartanburg Facility
AECOM Project No. 60135440

Sample Location	VOCs	1,4-Dioxane	DowTherm A	NA Params
Groundwater				
EW-01		X	X	
EW-03		X		
EW-07		X		
EW-14	X	X	X	
EW-15		X		
EW-16		X	X	
EW-17		X		
EW-22		X		
EW-26		X		
EW-27	X	X	X	
EW-31	X			X
EW-32	X	X		
EW-37	X			X
EW-38	X	X		
EW-41	X	X		X
EW-47	X	X		
EW-49	X			X
EW-52	X	X		X
EW-53	X			X
MW-27	X	X		
MW-40		X		
MW-41		X		
MW-53		X	X	
MW-54			X	
MW-96		X		
MW-99	X	X		X
MW-103	X			X
MW-105	X			X
MW-106	X	X		X
MW-107	X	X		X
MW-109	X			X
RW-08		X	X	
RW-24		X		
RW-29	X	X	X	X
RW-43		X		
RW-48	X	X		X
RW-65	X			X
RW-79		X	X	
RW-80		X	X	
RW-82		X	X	
RW-86			X	
RW-91		X	X	
RW-92		X	X	
RW-108	X			X
Surface Water				
SW-01	X	X	X	
SW-02	X	X	X	
SW-03	X	X	X	
SW-04	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	
SW-12	X			

NA Params - Natural Attenuation Parameters:

Temperature, pH, dissolved oxygen (DO), ORP, ortho phosphate, sulfate, sulfide, alkalinity, chloride, nitrate, nitrite, dissolved ferrous iron, dissolved manganese, and total organic carbon (TOC)

**Table 2
Groundwater Elevations
June 2010
INVISTA Spartanburg Facility
AECOM Project No. 60135440**

Location	Groundwater Elevation
EW-01	675.29
EW-02	665.61
EW-07	640.37
EW-09	650.88
EW-10	648.87
EW-11	644.12
EW-12	643
EW-14	678.53
EW-16	645.61
EW-17	678.87
EW-18	651.92
EW-19	654.35
EW-20	683.74
EW-25	652.08
EW-27	664.2
EW-28	665.46
EW-29	651.26
EW-30	676.86
EW-31	671.18
EW-32	650.57
EW-34	725.96
EW-35	674.79
EW-36	726.7
EW-40	671.09
EW-41	671.1
EW-42	668.06
EW-43	672.02
EW-44	687.61
EW-45	685.09
EW-46	662.91
EW-48	647.45
EW-50	725.85
EW-51	650.32
EW-53	697.7
MW-02	722.37
MW-03	751.23
MW-05	748.19
MW-06	735.27
MW-07	739.49
MW-09A	751.47

Location	Groundwater Elevation
MW-13	730.8
MW-15	648.73
MW-17	711.18
MW-18	700.31
MW-21	685.48
MW-26	680.87
MW-35	693.95
MW-37	778.31
MW-39	742.68
MW-40	726.79
MW-41	749.44
MW-42	740.59
MW-45	710.02
MW-46	693.96
MW-53	759.24
MW-54	758.64
MW-55	687.63
MW-57	732.7
MW-62	660.71
MW-78	672.34
MW-81	761.14
MW-88	671.84
MW-93	683.82
MW-94	635.11
MW-96	687.29
MW-97	687.81
MW-98	733.69
MW-99	732.37
MW-102	745.12
MW-103	692.78
MW-104	634.15
MW-107	688.71
MW-109	676.21
PZ-30	762.35
PZ-31	716.43
PZ-32	774.32
PZ-33	764.34
PZ-36	750.15
PZ-60	663.35
PZ-63	683.95

Location	Groundwater Elevation
PZ-64	683.93
PZ-67	658.76
PZ-68	659.25
PZ-69	676
PZ-71	727.09
PZ-71	726.97
PZ-72	723.73
PZ-73	641.07
PZ-74	636.56
PZ-75	647.81
PZ-76	650.01
PZ-77	663.41
RW-08	746.38
RW-16	644.61
RW-19	705.91
RW-24	660.56
RW-29	774.1
RW-38	774.58
RW-43	642.28
RW-44	640.85
RW-47	688.88
RW-48	709.06
RW-61	647.58
RW-65	685.28
RW-79	756.45
RW-80	761.56
RW-82	756.31
RW-83A	763.79
RW-83B	763.73
RW-84	761.35
RW-85	758.13
RW-86	758.39
RW-87	763.22
RW-89	671.52
RW-90	708.37
RW-91	754.43
RW-92	754.86
RW-108	675.63

Table 3
 Summary of Groundwater Analytical Results
 June 2010
 INVISTA Spartanburg Facility
 AECOM Project No. 60135440

Parameter	Unit	EW-01 6/23/2010	EW-03 6/24/2010	EW-07 6/24/2010	EW-14 6/23/2010	EW-15 6/23/2010	EW-16 6/23/2010	EW-17 6/23/2010	EW-22 6/24/2010	EW-26 6/23/2010	EW-27 6/24/2010	EW-27 Dup 6/24/2010	EW-31 6/23/2010
Volatile Organics and 1,4-Dioxane													
1,4-dioxane	mg/L	0.0342	<0.01	0.106	0.279	<0.01	2.23	0.0139	0.967	0.0709	<0.01	<0.01	NA
2-butanone	mg/L	NA	NA	NA	<0.01	NA	NA	NA	NA	NA	<0.01	<0.01	<0.01
acetone	mg/L	NA	NA	NA	<0.01	NA	NA	NA	NA	NA	<0.01	<0.01	0.0126
chloroform	mg/L	NA	NA	NA	<0.005	NA	NA	NA	NA	NA	<0.005	<0.005	<0.005
1,1-dichloroethane	mg/L	NA	NA	NA	0.132	NA	NA	NA	NA	NA	<0.005	<0.005	<0.005
1,1-dichloroethene	mg/L	NA	NA	NA	0.0557	NA	NA	NA	NA	NA	0.0142	0.0146	<0.005
cis-1,2-dichloroethene	mg/L	NA	NA	NA	0.243	NA	NA	NA	NA	NA	<0.005	<0.005	<0.005
trans-1,2-dichloroethene	mg/L	NA	NA	NA	0.0432	NA	NA	NA	NA	NA	<0.005	<0.005	<0.005
1,1,2,2-tetrachloroethane	mg/L	NA	NA	NA	0.434	NA	NA	NA	NA	NA	<0.005	<0.005	<0.005
tetrachloroethene	mg/L	NA	NA	NA	<0.005	NA	NA	NA	NA	NA	<0.005	<0.005	<0.005
trichloroethene	mg/L	NA	NA	NA	0.25	NA	NA	NA	NA	NA	<0.005	<0.005	<0.005
vinyl chloride	mg/L	NA	NA	NA	0.0549	NA	NA	NA	NA	NA	<0.01	<0.01	<0.01
DowTherm A™													
1,1-biphenyl	mg/L	<0.01	NA	NA	0.0827	NA	<0.01	NA	NA	NA	<0.01	<0.01	NA
biphenyl ether	mg/L	<0.01	NA	NA	0.967	NA	0.105	NA	NA	NA	<0.01	<0.01	NA
Field and Natural Attenuation Parameters													
alkalinity	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	190
chloride	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.76
dissolved oxygen	mg/L	2.09	0.9	0.7	1.52	3.69	2.9	1.69	1.4	1.3	1.28	1.28	0.2
ferrous iron	mg/L	2	5.8	9	1.52	3.3	6.8	2.4	9.4	5.6	2.8	2.8	2.4
manganese (dissolved)	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.61
nitrate nitrogen	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.1
ORP	mV	-61	8.54	9.42	-31	7.67	8.1	-61	7.91	9.44	66	66	-168
orthophosphate phosphorus	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.03
pH	su	6.18	6.6	6.9	5.99	6.3	6.5	6.02	6.6	6.8	5.41	5.41	7.24
specific conductance	umhos/cm	0.133	0.0378	0.187	0.134	0.135	0.911	0.122	0.743	0.313	0.037	0.037	383
sulfate	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
sulfide	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0622
temperature	degrees C	22.1	26.7	15.6	20.7	19.9	23.8	22.8	18.8	22.2	18	18	21
total organic carbon	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	13.5
turbidity	NTU	27	15.2	6.31	7	246	24.1	33	26.5	28.5	23	23	51

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

Table 3
 Summary of Groundwater Analytical Results
 June 2010
 INVISTA Spartanburg Facility
 AECOM Project No. 60135440

Parameter	Unit	EW-32 6/23/2010	EW-37 6/24/2010	EW-38 6/24/2010	EW-41 6/23/2010	EW-41 Dup 6/23/2010	EW-47 6/24/2010	EW-49 6/24/2010	EW-52 6/24/2010	EW-53 6/24/2010	MW-27 6/22/2010	MW-40 6/25/2010	MW-41 6/25/2010	MW-53 6/28/2010
Volatile Organics and 1,4-Dioxane														
1,4-dioxane	mg/L	0.963	NA	0.0352	<0.01	<0.01	0.0175	NA	0.0131	NA	<0.01	1.56	0.0243	3.18
2-butanone	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
acetone	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
chloroform	mg/L	<0.005	<0.005	0.016	0.0625	0.0684	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	NA
1,1-dichloroethane	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	NA
1,1-dichloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	NA
cis-1,2-dichloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.00867	<0.005	<0.005	<0.005	NA	NA	NA
trans-1,2-dichloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	NA
1,1,1,2-tetrachloroethane	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	NA
tetrachloroethene	mg/L	<0.005	0.00636	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	NA
trichloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	NA
vinyl chloride	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
DowTherm A**														
1,1-biphenyl	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.324
biphenyl ether	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.28
Field and Natural Attenuation Parameters														
alkalinity	mg/L	NA	29.8	NA	26.3	28.8	NA	80.2	27.8	57	NA	NA	NA	NA
chloride	mg/L	NA	11.5	NA	3.03	3.05	NA	1.95	2.81	9.45	NA	NA	NA	NA
dissolved oxygen	mg/L	0.92	1	1.89	0.5	0.5	3.9	0.4	0.2	0.4	3.89	0.7	3	0.7
ferrous iron	mg/L	1.8	0.8	2.1	2.2	2.2	<0.2	1.4	4.4	2.6	<0.2	NA	3.2	3.6
manganese (dissolved)	mg/L	NA	1.24	NA	0.974	1.02	NA	0.066	0.234	1.46	NA	NA	NA	NA
nitrate nitrogen	mg/L	NA	2.54	NA	0.19	0.2	NA	<0.1	<0.1	<0.1	NA	NA	NA	NA
ORP	mV	6.9	109	-22	53	55	197	-148	-19	-28	127	71	-45	100
orthophosphate phosphorus	mg/L	NA	<0.03	NA	<0.03	<0.03	NA	0.051	<0.03	<0.03	NA	NA	NA	NA
pH	su	6.2	5.8	6.31	5.92	5.92	5.17	7.88	6.14	6.35	5.8	5.5	6.08	4.72
specific conductance	umhos/cm	0.249	0.123	0.091	89	0.001	0.053	0.183	0.115	0.148	0.05	0.156	0.134	1.52
sulfate	mg/L	NA	<1	NA	<1	<1	NA	12.3	<1	<1	NA	NA	NA	NA
sulfide	mg/L	NA	<0.05	NA	<0.05	<0.05	NA	0.168	<0.05	0.0665	NA	NA	NA	NA
temperature	degrees C	24.3	20	19	21	21	18	22	21	21	22	21	25	27
total organic carbon	mg/L	NA	2.77	NA	3.51	2.13	NA	1.73	3.66	2.62	NA	NA	NA	NA
turbidity	NTU	1.41	2	20	37	44	20	3	32	80	6	9	188	6

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

Page 3
 Summary of Groundwater Analytical Results
 June 2010
 INVISTA Spartanburg Facility
 AECOM Project No. 60135440

Parameter	Unit	MW-54 6/28/2010	MW-99 6/24/2010	MW-103 6/21/2010	MW-105 6/22/2010	MW-106 6/22/2010	MW-107 6/22/2010	MW-109 6/21/2010	RW-08 6/25/2010	RW-24 6/24/2010	RW-29 6/22/2010	RW-29 Dup 6/22/2010	RW-43 6/24/2010
Volatile Organics and 1,4-Dioxane													
1,4-dioxane	mg/L	NA	0.0206	NA	NA	<0.01	<0.01	NA	0.0539	0.664	<0.01	<0.01	1.32
2-butanone	mg/L	NA	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	<0.01	<0.01	NA
acetone	mg/L	NA	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	<0.01	<0.01	NA
chloroform	mg/L	NA	0.00836	<0.005	0.202	<0.005	0.253	0.478	NA	NA	<0.005	<0.005	NA
1,1-dichloroethane	mg/L	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	<0.005	<0.005	NA
1,1-dichloroethene	mg/L	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	<0.005	<0.005	NA
cis-1,2-dichloroethene	mg/L	NA	0.126	<0.005	0.0164	<0.005	<0.005	<0.005	NA	NA	<0.005	<0.005	NA
trans-1,2-dichloroethene	mg/L	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	<0.005	<0.005	NA
1,1,2,2-tetrachloroethane	mg/L	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	<0.005	<0.005	NA
tetrachloroethene	mg/L	NA	0.164	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	<0.005	<0.005	NA
trichloroethene	mg/L	NA	0.0319	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	<0.005	<0.005	NA
vinyl chloride	mg/L	NA	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	<0.01	<0.01	NA
Dow Therm A™													
1,1-biphenyl	mg/L	<0.01	NA	NA	NA	NA	NA	NA	0.357	NA	<0.01	<0.01	NA
biphenyl ether	mg/L	<0.01	NA	NA	NA	NA	NA	NA	1.86	NA	<0.01	<0.01	NA
Field and Natural Attenuation Parameters													
alkalinity	mg/L	NA	4.55	2.46	9.85	<1	25.1	22.2	NA	NA	65	64.5	NA
chloride	mg/L	NA	1.68	3.27	6.25	8.27	1.71	2.51	NA	NA	1.23	1.24	NA
dissolved oxygen	mg/L	2.52	3.05	6.20	6.60	6.20	6.40	5.9	0.20	1.3	0.5	0.4	0.88
ferrous iron	mg/L	<0.2	<0.2	<0.200	<2.00	<0.200	<0.200	<0.2	<0.200	8.6	<0.2	<0.2	<0.2
manganese (dissolved)	mg/L	NA	0.051	0.05	<0.01	0.017	<0.01	<0.01	NA	NA	0.016	0.016	NA
nitrate nitrogen	mg/L	NA	0.86	2.65	1.75	1	1.25	1.12	NA	NA	<0.1	<0.1	NA
ORP	mV	92	228	211	218	263	181	189	-201	9.22	98	81	-102
orthophosphate phosphorus	mg/L	NA	<0.03	<0.03	<0.03	<0.03	0.0417	0.0495	NA	NA	<0.03	<0.03	NA
pH	su	5.85	4.76	4.9	5.43	4.92	5.85	5.9	8.16	6.7	7.99	8.01	8.76
specific conductance	umhos/cm	232	0.022	0.490	0.0610	0.0400	0.640	59	0.236	0.582	145	145	0.223
sulfate	mg/L	NA	<1	<1	<1	<1	<1	<1	NA	NA	8.8	8.9	NA
sulfide	mg/L	NA	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	NA	NA	<0.05	<0.05	NA
temperature	degrees C	24	20.6	19.0	20.0	20.0	18.0	19	20.0	20.6	18	18	18.1
total organic carbon	mg/L	NA	1.33	1.92	1.73	2.15	1.68	1.25	NA	NA	1.08	1.1	NA
turbidity	NTU	9	15	8.00	<1.00	3.00	6.00	12	16.0	14.3	2	2	9

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

Table 3
 Summary of Groundwater Analytical Results
 June 2010
 INVISTA Spartanburg Facility
 AECOM Project No. 60135440

Parameter	Unit	RW-48 6/23/2010	RW-65 6/23/2010	RW-79 6/28/2010	RW-80 6/28/2010	RW-82 6/28/2010	RW-86 6/28/2010	RW-91 6/28/2010	RW-92 6/28/2010	RW-108 6/21/2010
Volatiles Organics and 1,4-Dioxane										
1,4-dioxane	mg/L	<0.01	NA	0.176	4.86	1.25	NA	0.322	1.4	NA
2-butanone	mg/L	<0.01	<0.01	NA	NA	NA	NA	NA	NA	0.0186
acetone	mg/L	<0.01	<0.01	NA	NA	NA	NA	NA	NA	0.0459
chloroform	mg/L	<0.005	<0.005	NA	NA	NA	NA	NA	NA	<0.005
1,1-dichloroethane	mg/L	<0.005	<0.005	NA	NA	NA	NA	NA	NA	<0.005
1,1-dichloroethene	mg/L	<0.005	<0.005	NA	NA	NA	NA	NA	NA	<0.005
cis-1,2-dichloroethene	mg/L	<0.005	<0.005	NA	NA	NA	NA	NA	NA	<0.005
trans-1,2-dichloroethene	mg/L	<0.005	<0.005	NA	NA	NA	NA	NA	NA	<0.005
1,1,2,2-tetrachloroethane	mg/L	<0.005	<0.005	NA	NA	NA	NA	NA	NA	<0.005
tetrachloroethene	mg/L	<0.005	<0.005	NA	NA	NA	NA	NA	NA	<0.005
trichloroethene	mg/L	<0.005	<0.005	NA	NA	NA	NA	NA	NA	<0.005
vinyl chloride	mg/L	<0.01	<0.01	NA	NA	NA	NA	NA	NA	<0.01
Dow Therm A™										
1,1-biphenyl	mg/L	NA	NA	0.0337	0.153	2.41	0.623	1.65	0.636	NA
biphenyl ether	mg/L	NA	NA	1.61	0.316	7.26	2.37	4.96	3.17	NA
Field and Natural Attenuation Parameters										
alkalinity	mg/L	249	109	NA	NA	NA	NA	NA	NA	729
chloride	mg/L	16.8	11.8	NA	NA	NA	NA	NA	NA	4.1
dissolved oxygen	mg/L	0.1	0.1	1.21	0.7	1.1	0.98	0.76	0.8	0.4
ferrous iron	mg/L	2.2	<0.2	0.2	4	4.3	3.6	3.2	2.7	1.2
manganese (dissolved)	mg/L	0.14	2.08	NA	NA	NA	NA	NA	NA	2.01
nitrate nitrogen	mg/L	<0.1	<0.1	NA	NA	NA	NA	NA	NA	<0.1
ORP	mV	-212	-191	NA	86	-71	-56	10.1	-4.6	-183
orthophosphate phosphorus	mg/L	0.387	<0.03	NA	NA	NA	NA	NA	NA	<0.03
pH	su	7.61	7.5	5.21	4.43	5.99	6.64	6.08	6.25	6.95
specific conductance	umhos/cm	0.502	307	0.186	0.936	0.376	1.29	0.442	0.966	1150
sulfate	mg/L	<1	9.65	NA	NA	NA	NA	NA	NA	<1
sulfide	mg/L	<0.05	0.0643	NA	NA	NA	NA	NA	NA	<0.05
temperature	degrees C	19	18	25	37	27	33	24	25	23
total organic carbon	mg/L	6.95	34	NA	NA	NA	NA	NA	NA	21.5
turbidity	NTU	9	2	6	7	9	10	8	5	31

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

Table 4
 Summary of Surface Water Analytical Results
 June 2010

INVISTA Spartanburg Facility
 AECOM Project No. 60135440

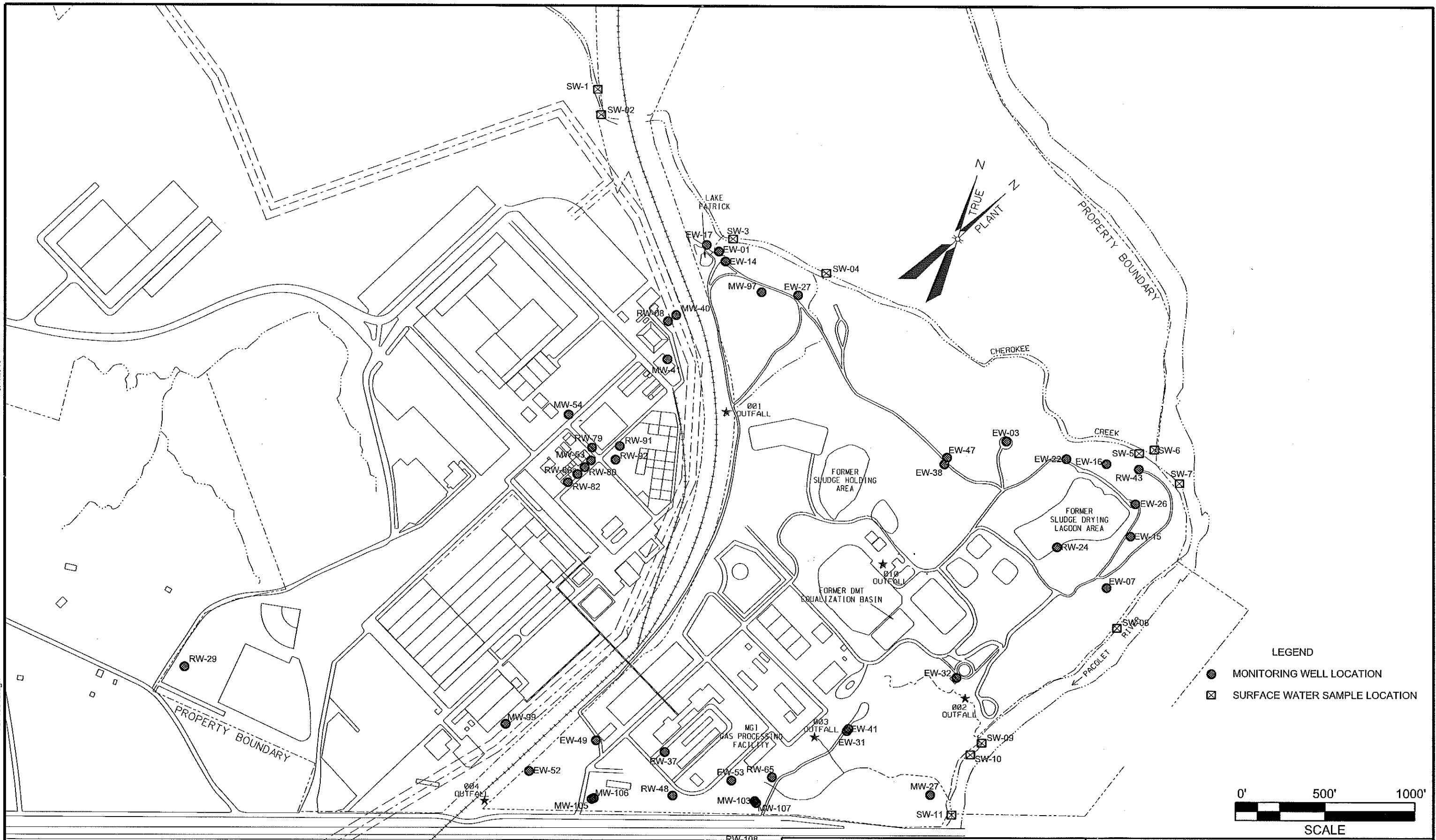
Parameter	Unit	SW-01 6/22/2010	SW-02 6/22/2010	SW-03 6/22/2010	SW-04 6/22/2010	SW-04 Dup 6/22/2010	SW-05 6/22/2010	SW-06 6/22/2010	SW-07 6/22/2010	SW-08 6/22/2010	SW-09 6/22/2010	SW-10 6/22/2010	SW-11 6/22/2010	SW-11 Dup 6/22/2010	SW-12 6/22/2010
chloroform	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0179
1,4-dioxane	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
dissolved oxygen	mg/L	8.6	8.3	5.9	6	6	5.5	4.8	4.3	6.2	5.7	4.9	5.2	5.2	5.4
ORP	mV	134	77	101	88	88	100	100	120	127	130	140	139	139	177
pH	su	5.61	5.7	6.1	6	6	7.31	7.31	7.22	7.61	8	7.5	7.41	7.41	5.41
specific conductance	umhos/cm	0.54	0.07	0.066	0.056	0.056	0.046	0.044	0.047	0.046	0.052	0.101	0.07	0.07	0.09
temperature	degrees C	21	21	23	23	23	30	30	30	30	31	31	31	31	24
turbidity	NTU	3	4	4	5	5	11	3	3	3	6	3	7	7	6

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

Figures

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LEGEND

- MONITORING WELL LOCATION
- ☒ SURFACE WATER SAMPLE LOCATION



FIGURE 1
SAMPLING LOCATIONS

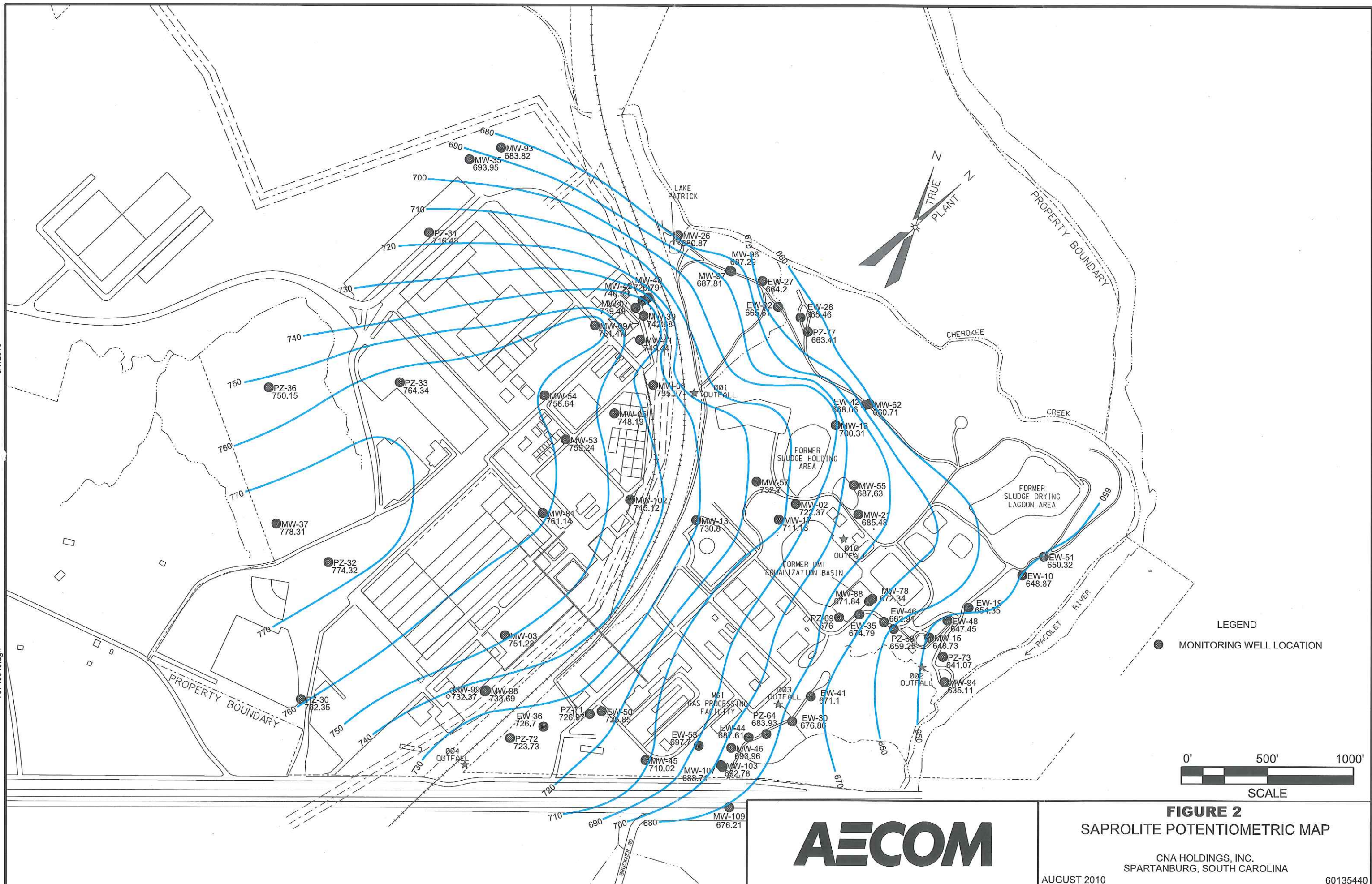
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LEGEND
 ● MONITORING WELL LOCATION

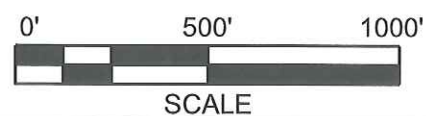


FIGURE 2
 SAPROLITE POTENTIOMETRIC MAP

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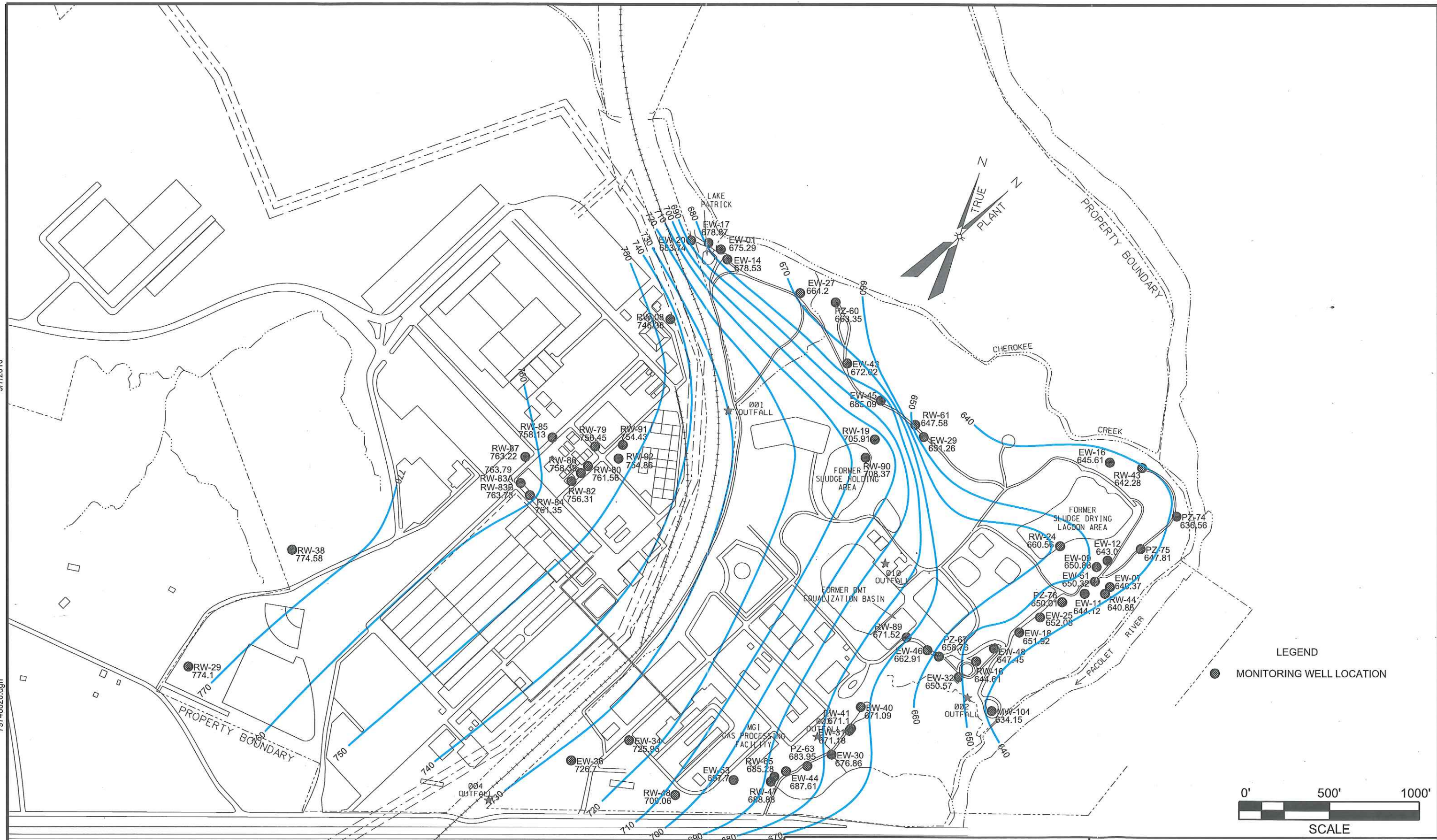
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FIGURE 3 BEDROCK POTENTIOMETRIC MAP

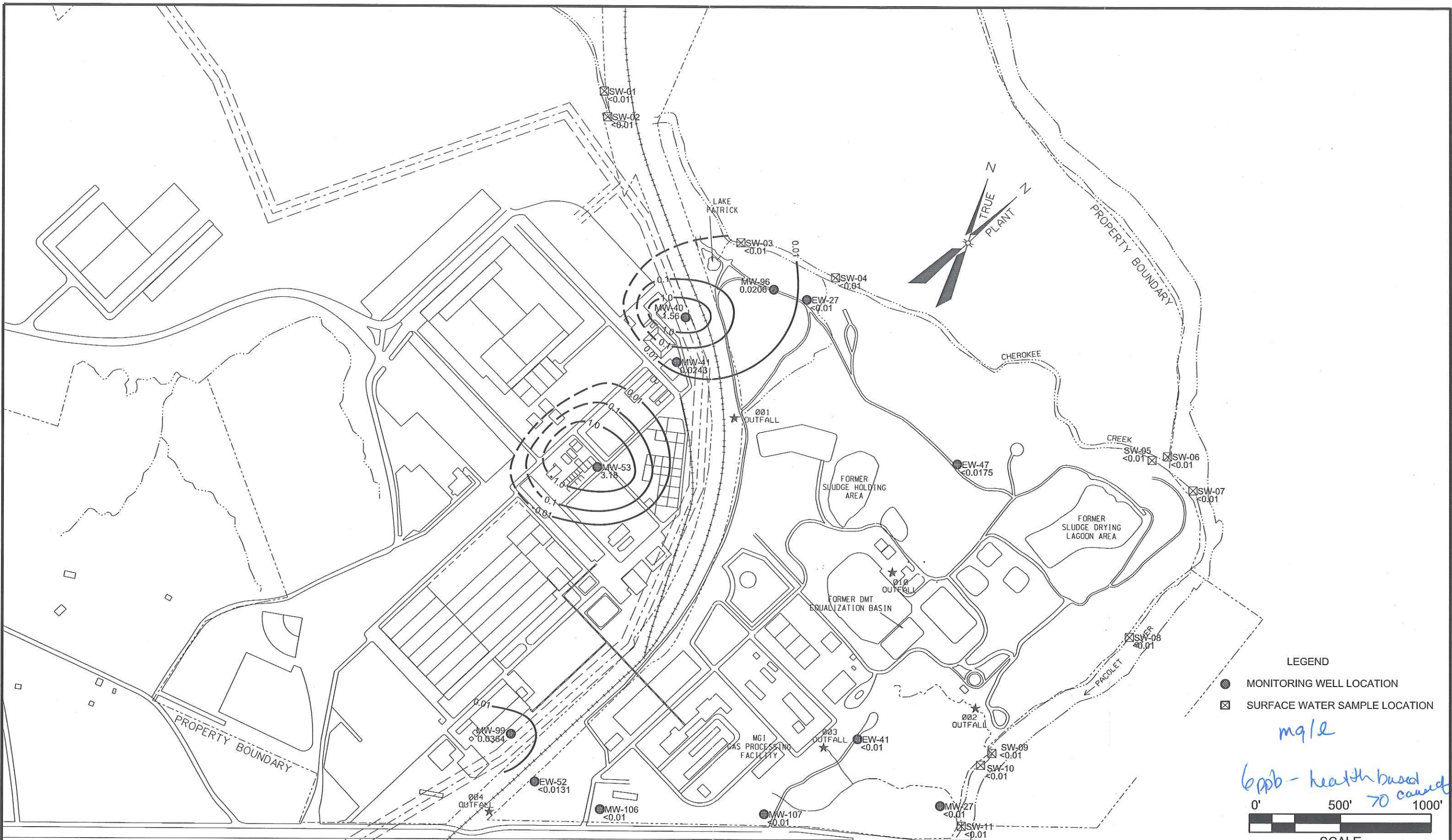
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FIGURE 4
SAPROLITE 1,4-DIOXANE CONCENTRATIONS

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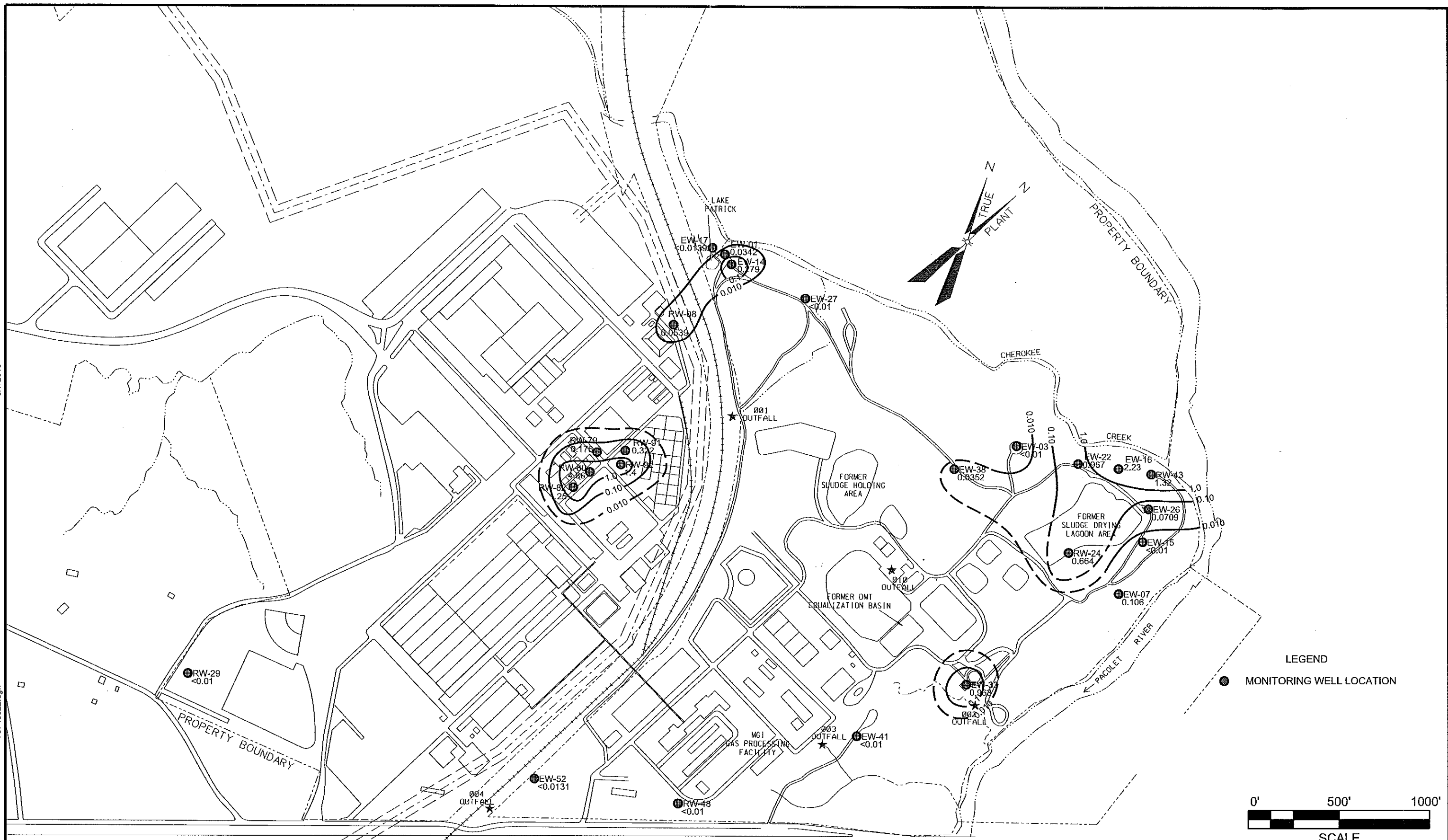


FIGURE 5
BEDROCK 1,4-DIOXANE CONCENTRATIONS

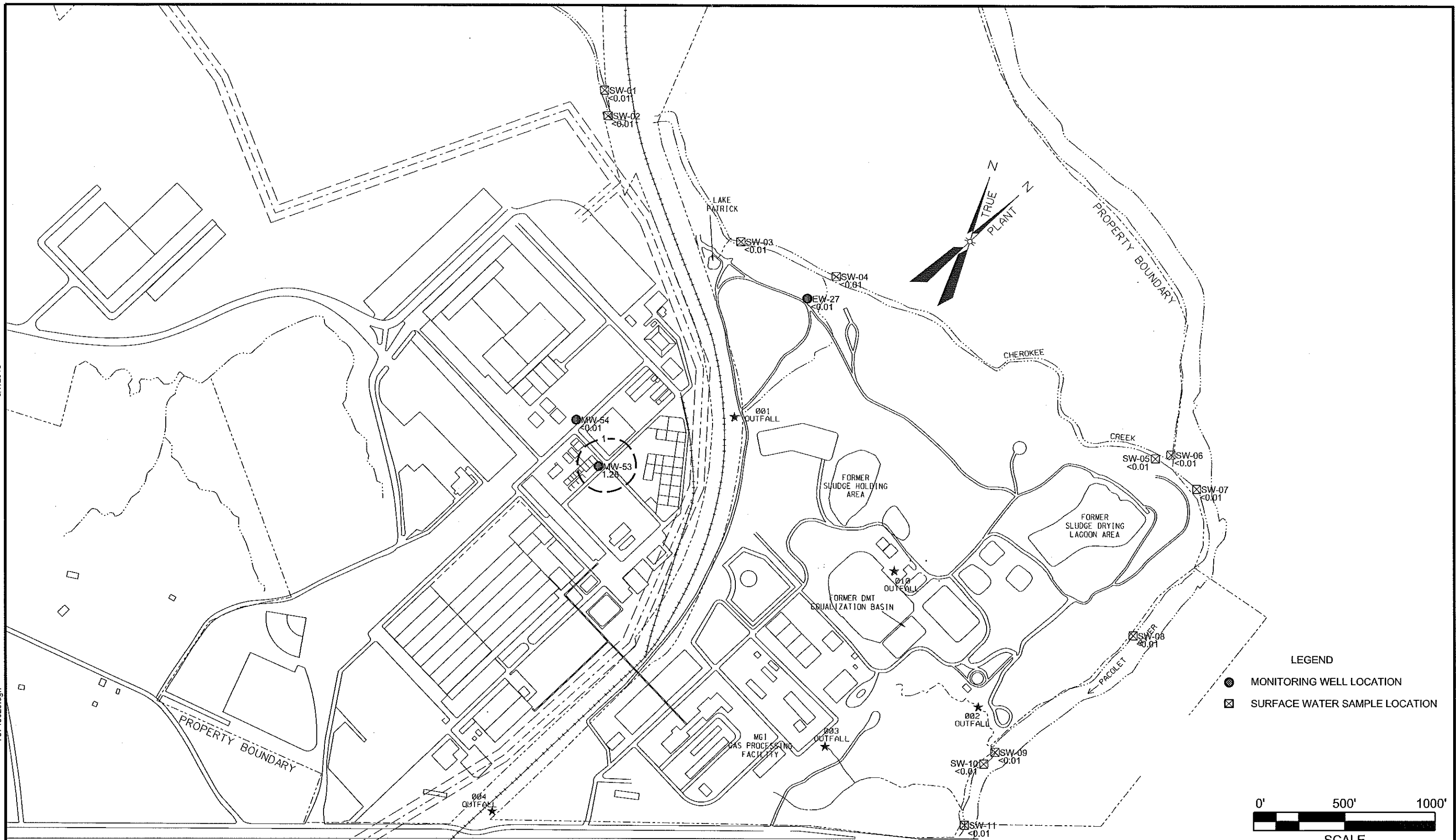
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LEGEND

- MONITORING WELL LOCATION
- ☒ SURFACE WATER SAMPLE LOCATION



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FIGURE 6
SAPROLITE BIPHENYL ETHER
CONCENTRATIONS

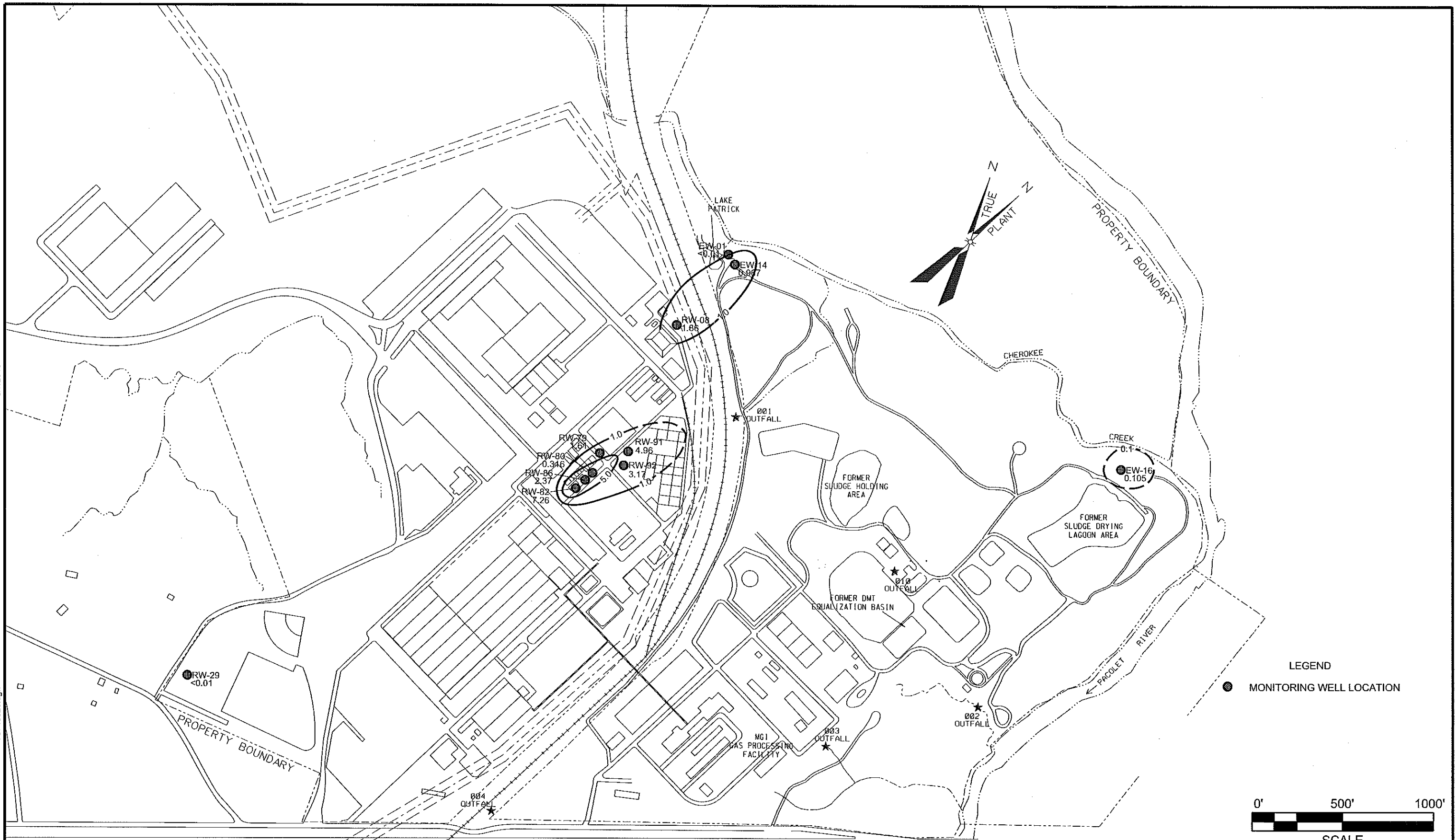
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FIGURE 7
BEDROCK BIPHENYL ETHER
CONCENTRATIONS

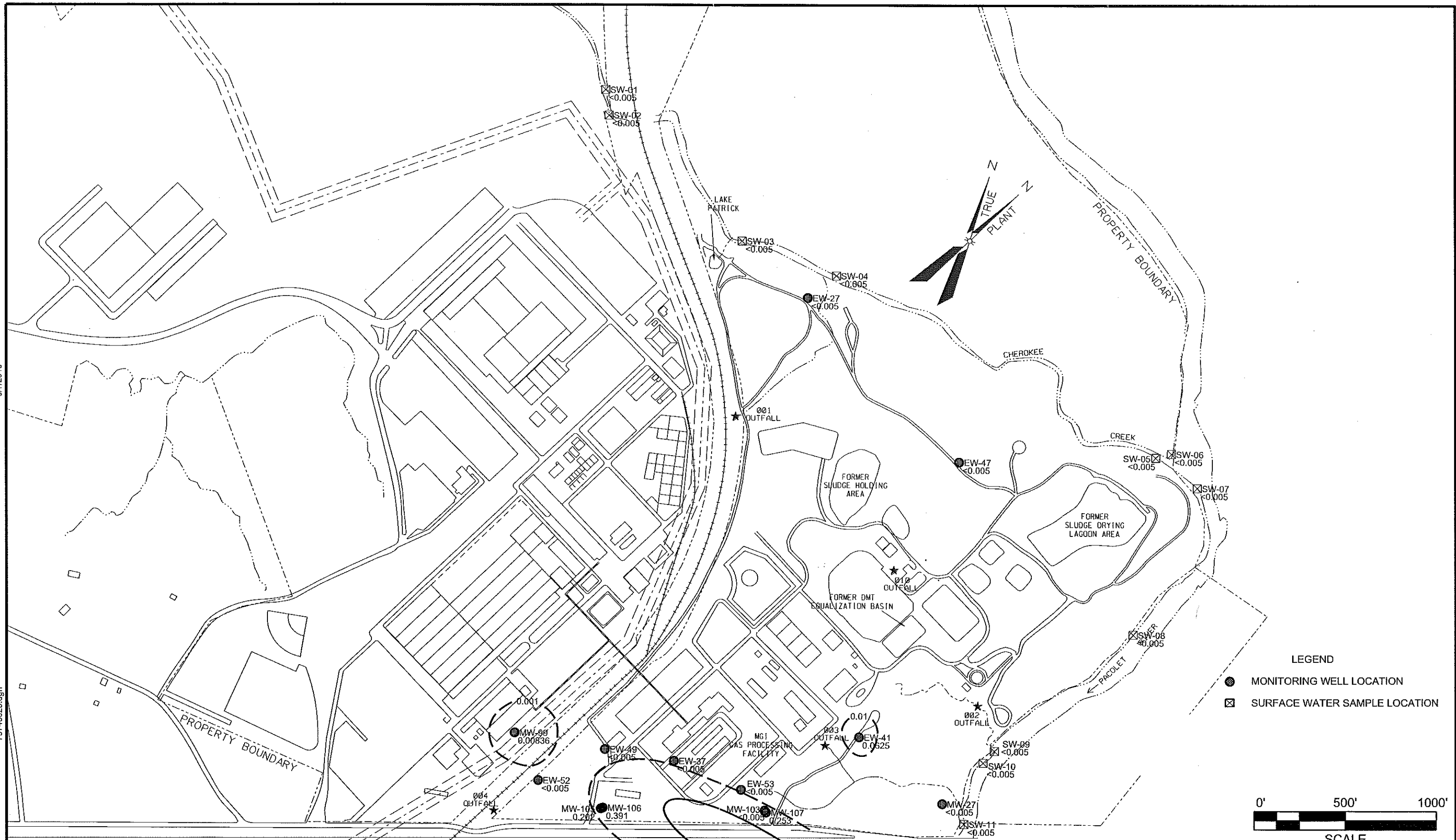
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- LEGEND
- MONITORING WELL LOCATION
 - ☒ SURFACE WATER SAMPLE LOCATION



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FIGURE 8
SAPROLITE CHLOROFORM
CONCENTRATIONS

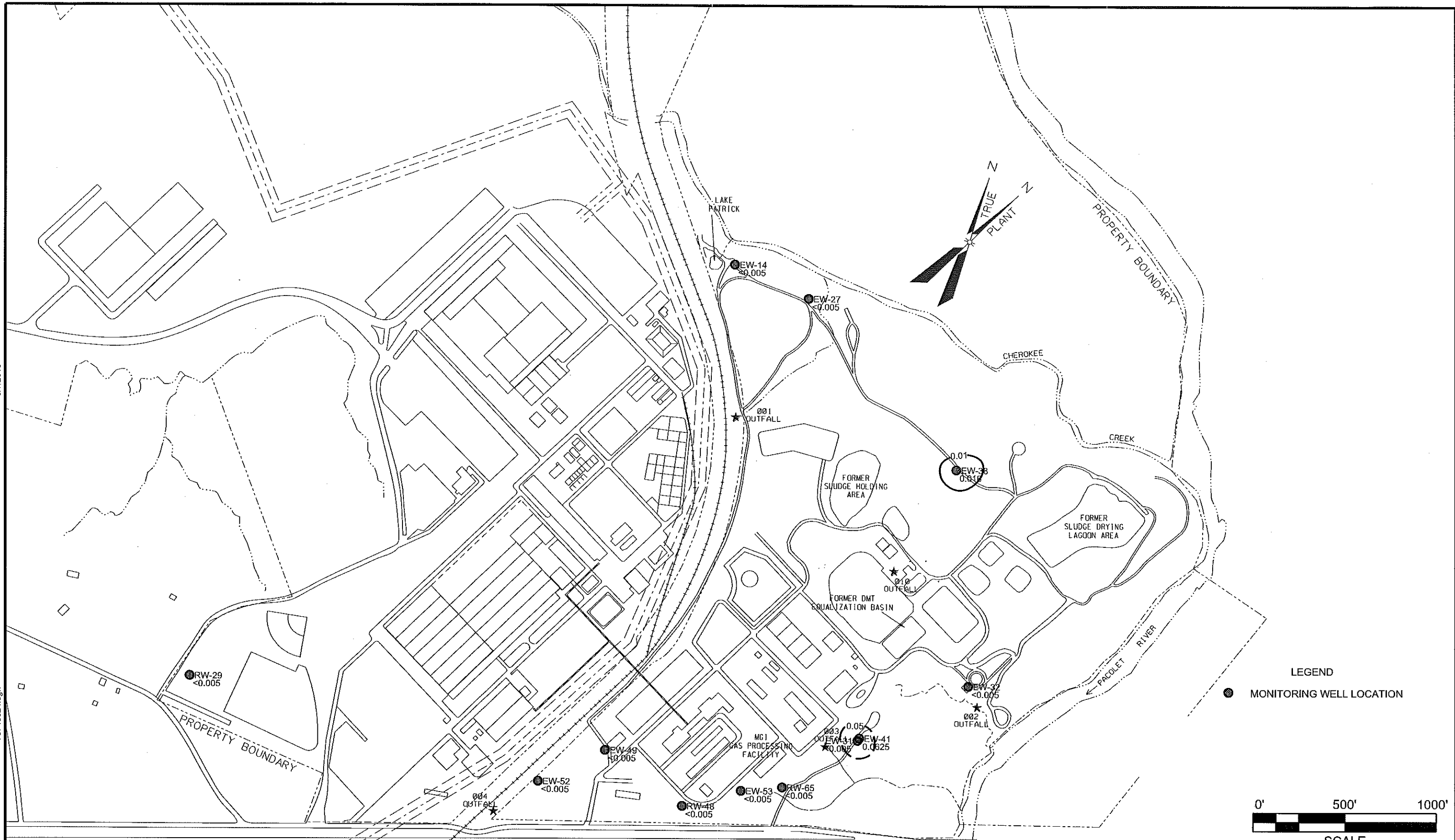
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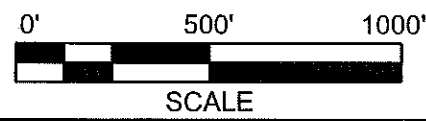
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LEGEND

● MONITORING WELL LOCATION



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FIGURE 9 BEDROCK CHLOROFORM CONCENTRATIONS

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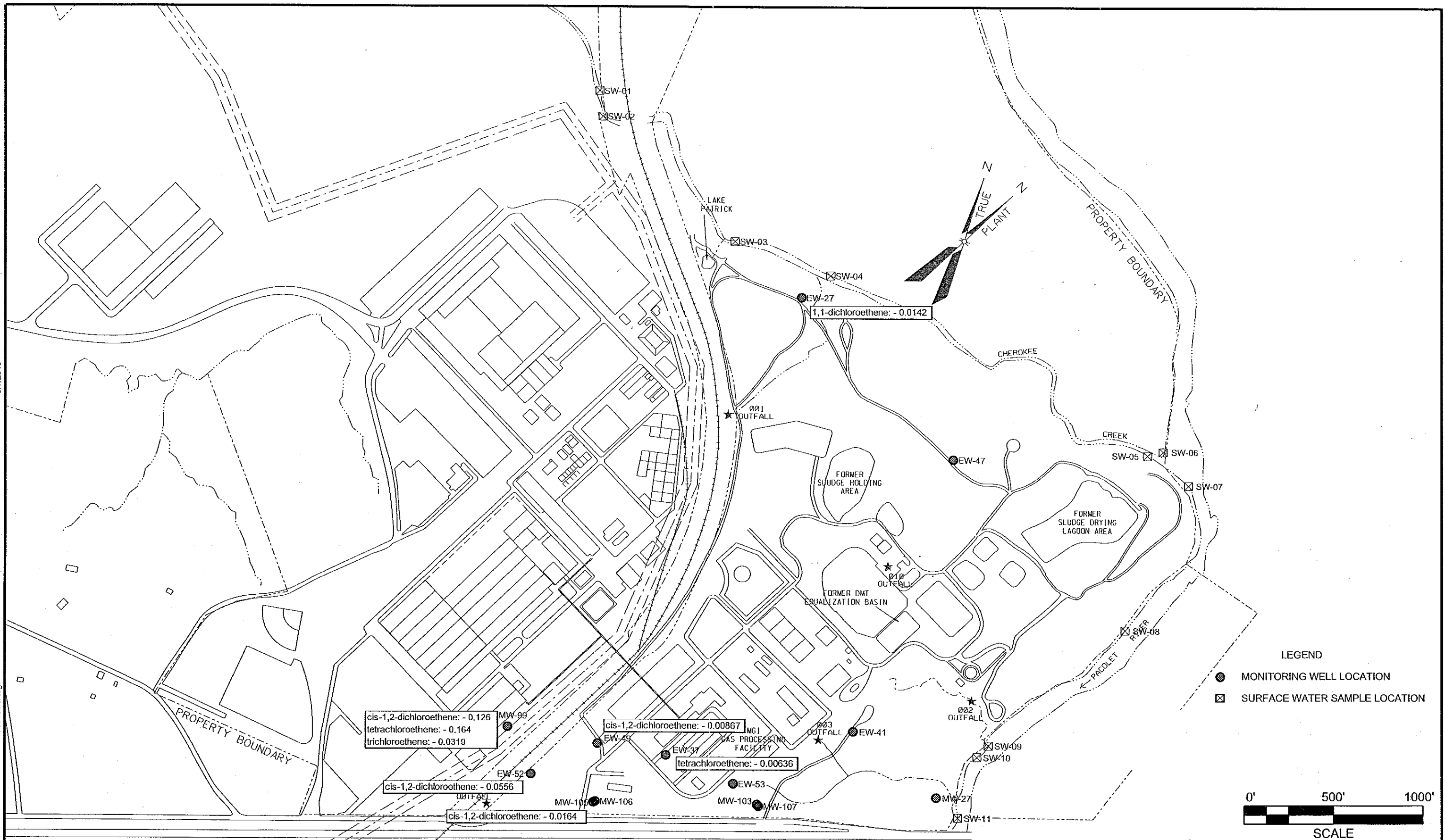


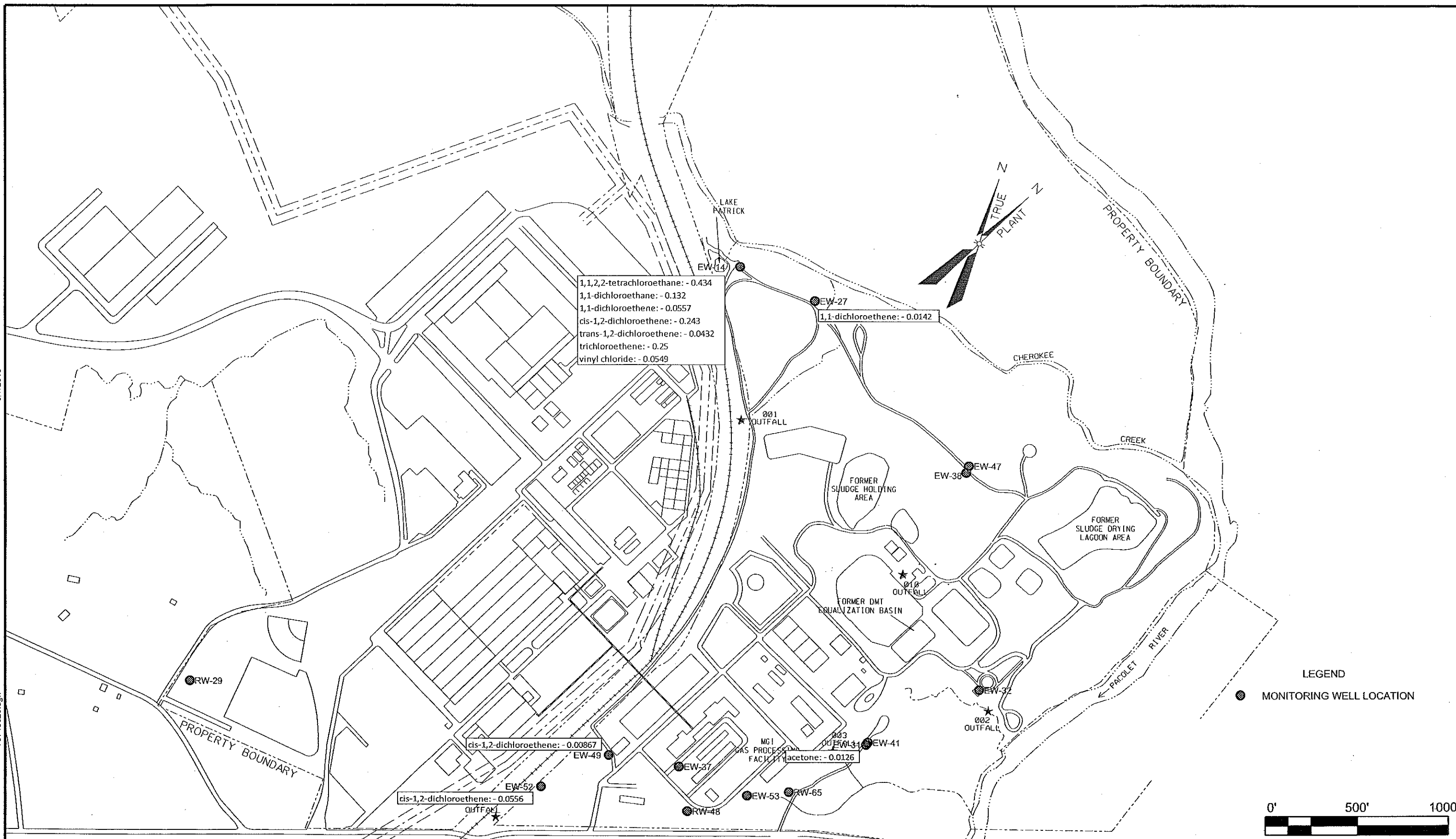
FIGURE 10
OTHER ORGANIC DETECTIONS
IN SAPROLITE
 CNA HOLDINGS, INC.
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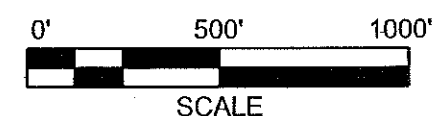
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LEGEND

● MONITORING WELL LOCATION



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FIGURE 11 OTHER ORGANIC DETECTIONS IN BEDROCK

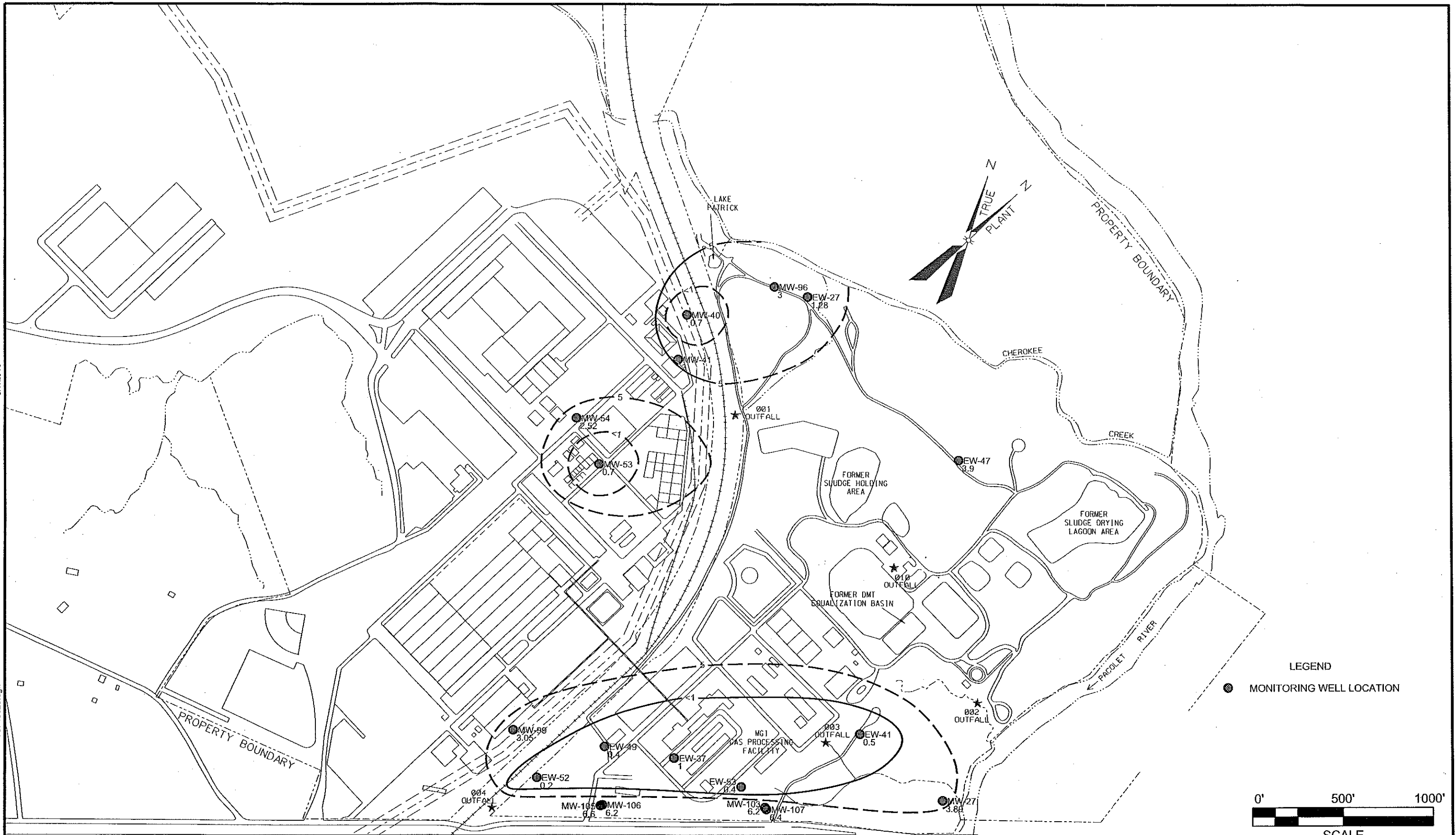
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FIGURE 12
SAPROLITE DISSOLVED OXYGEN
CONCENTRATIONS

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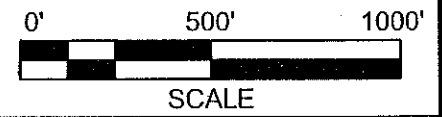
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LEGEND
 ● MONITORING WELL LOCATION



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FIGURE 13
 BEDROCK DISSOLVED OXYGEN
 CONCENTRATIONS

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 SPARTANBURG, SOUTH CAROLINA

AUGUST 2010

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9/7/2010

79748031.dgn



AECOM

LEGEND
 ● MONITORING WELL LOCATION

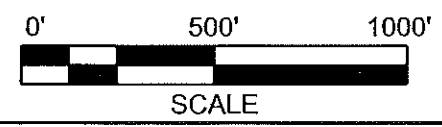


FIGURE 14
 SAPROLITE ORP
 CONCENTRATIONS

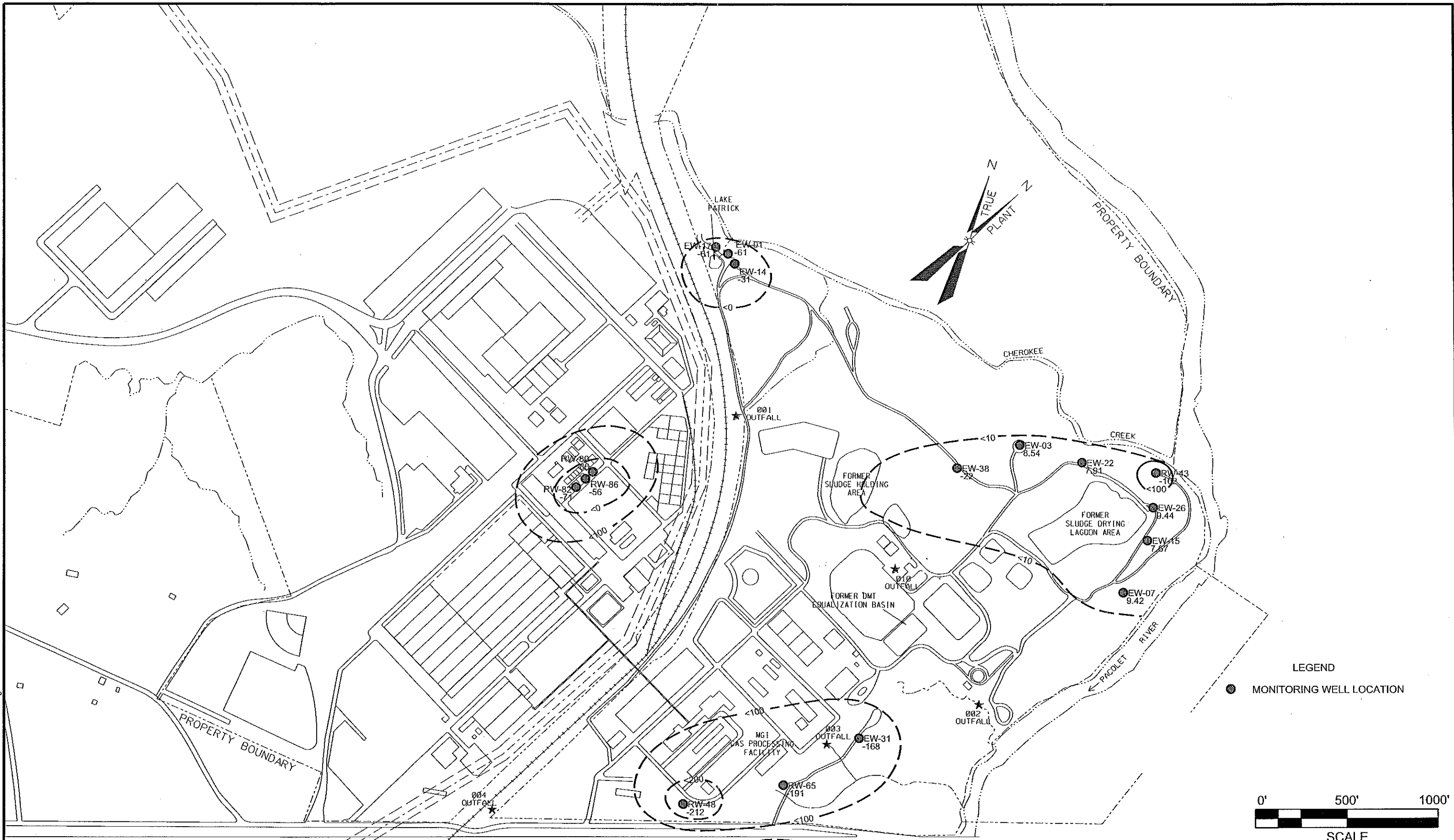
CNA HOLDINGS, INC.
 SPARTANBURG, SOUTH CAROLINA

AUGUST 2010

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AECOM

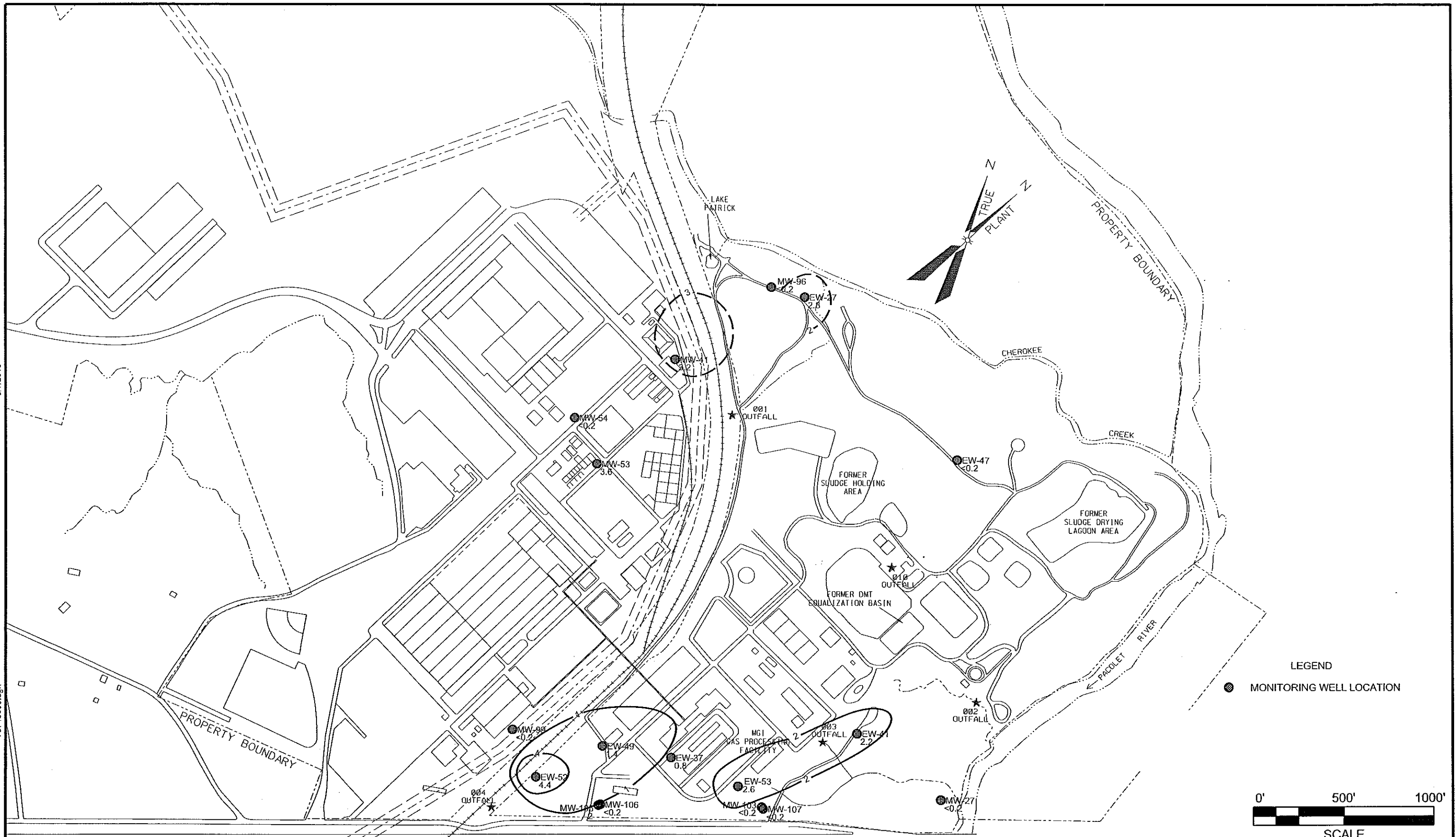
FIGURE 15
BEDROCK ORP
CONCENTRATIONS
 CNA HOLDINGS, INC.
 SPARTANBURG, SOUTH CAROLINA

AUGUST 2010

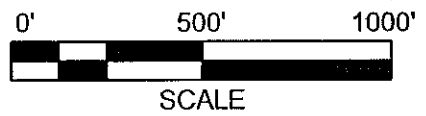
60135440

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LEGEND
 ● MONITORING WELL LOCATION



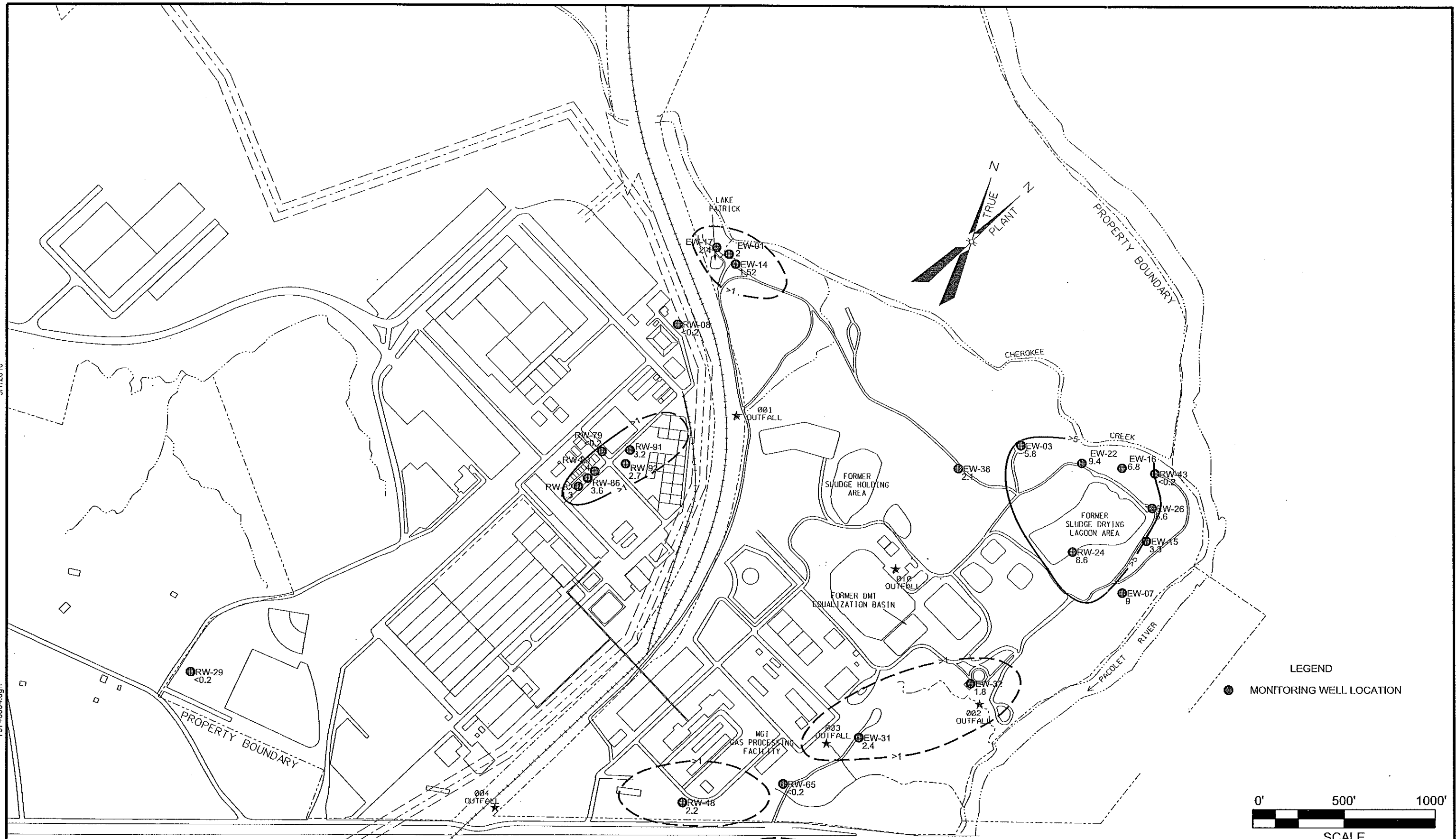
AECOM

FIGURE 16
 SAPROLITE DISSOLVED FERROUS IRON
 CONCENTRATIONS

CNA HOLDINGS, INC.
 SPARTANBURG, SOUTH CAROLINA
 AUGUST 2010 60135440

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AECOM

FIGURE 17
BEDROCK DISSOLVED FERROUS IRON
CONCENTRATIONS

CNA HOLDINGS, INC.
 SPARTANBURG, SOUTH CAROLINA
 AUGUST 2010 60135440

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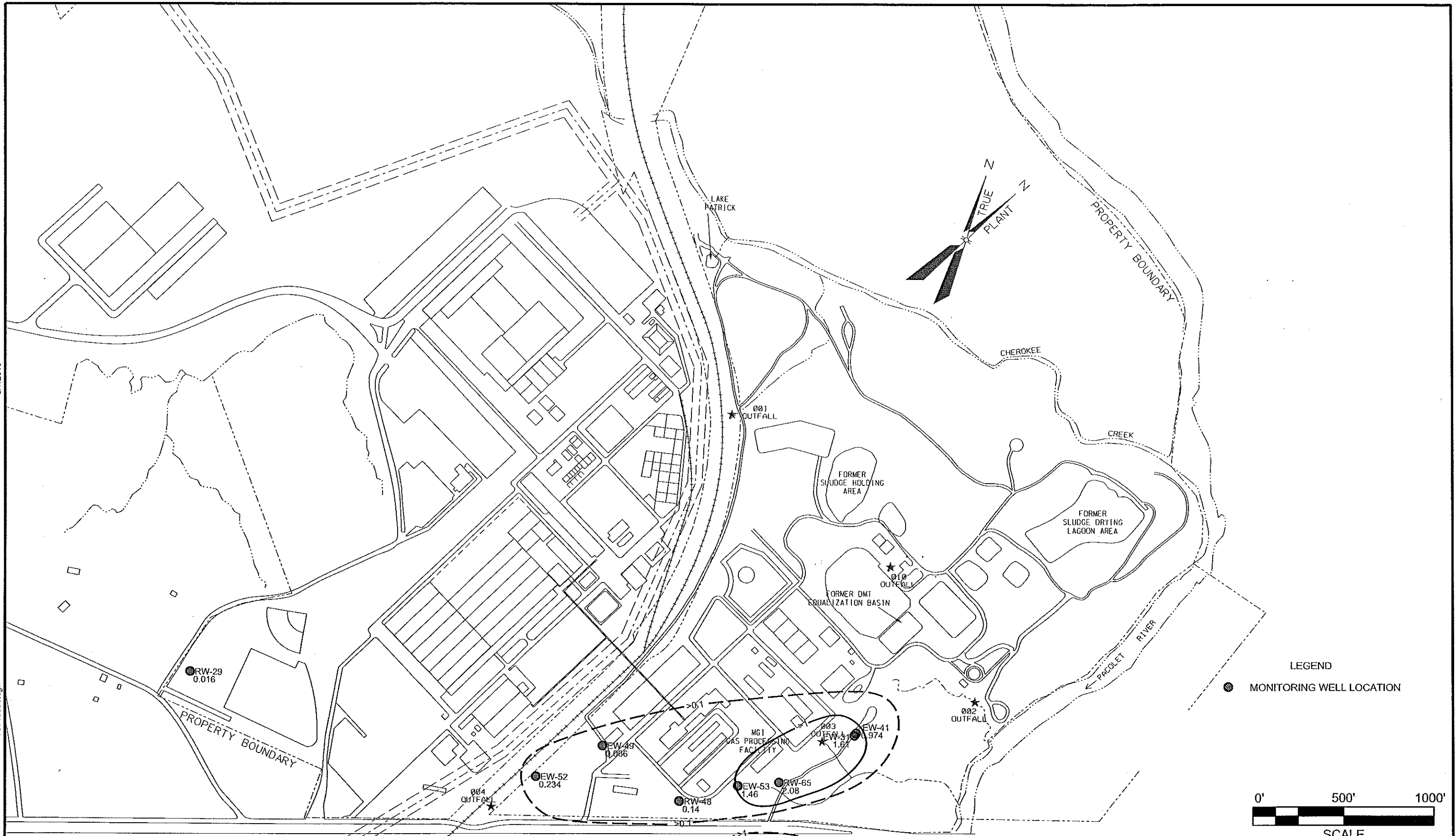
FIGURE 18
SAPROLITE MANGANESE
CONCENTRATIONS
 CNA HOLDINGS, INC.
 SPARTANBURG, SOUTH CAROLINA

AUGUST 2010

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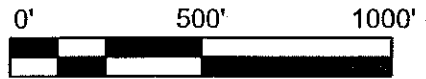
9/7/2010

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LEGEND

● MONITORING WELL LOCATION



SCALE

AECOM

FIGURE 19 BEDROCK MANGANESE CONCENTRATIONS

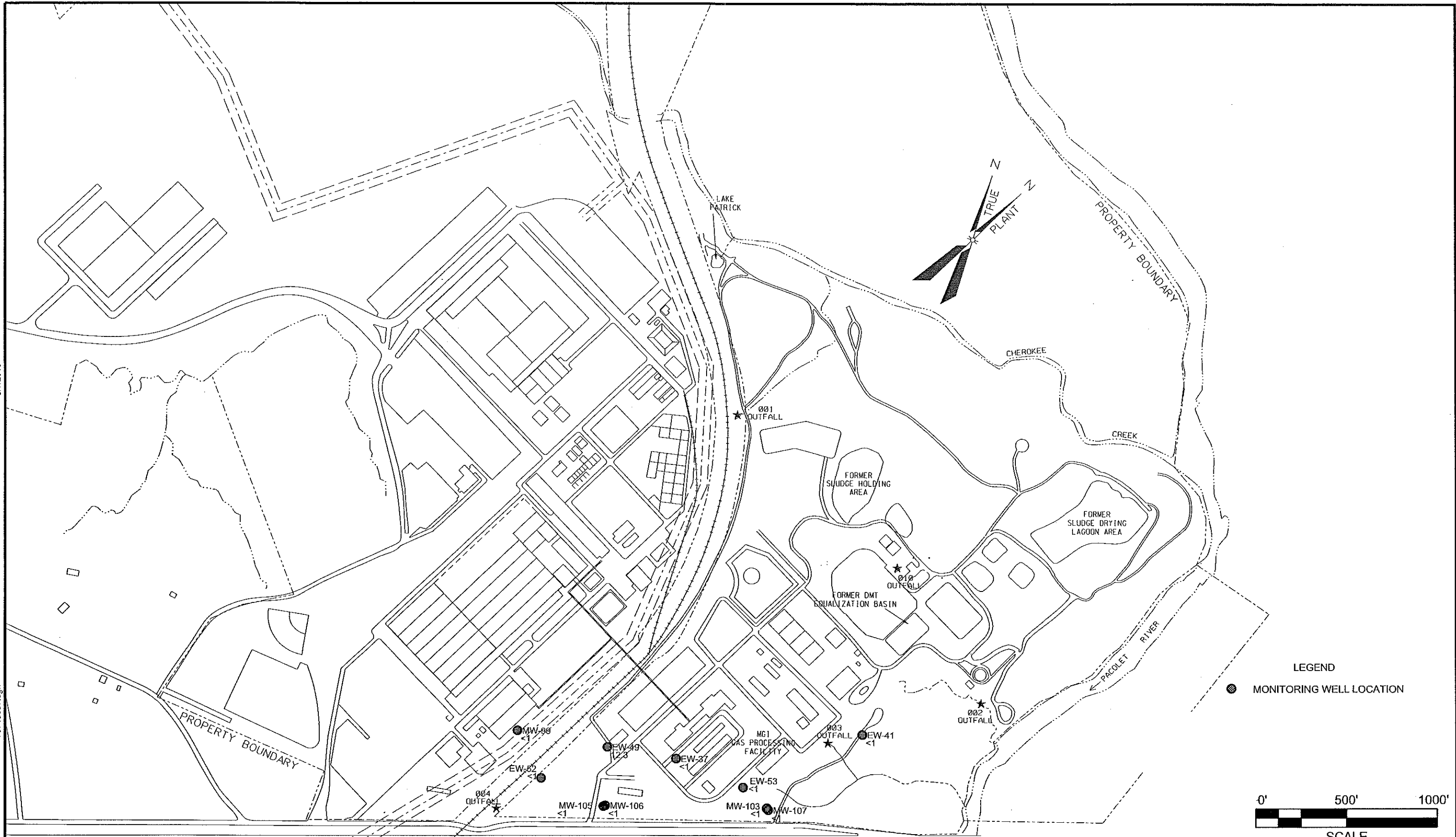
CNA HOLDINGS, INC.
SPARTANBURG, SOUTH CAROLINA

AUGUST 2010

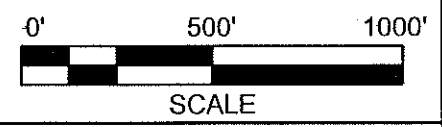
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LEGEND
 ● MONITORING WELL LOCATION



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FIGURE 20
 SAPROLITE SULFATE
 CONCENTRATIONS

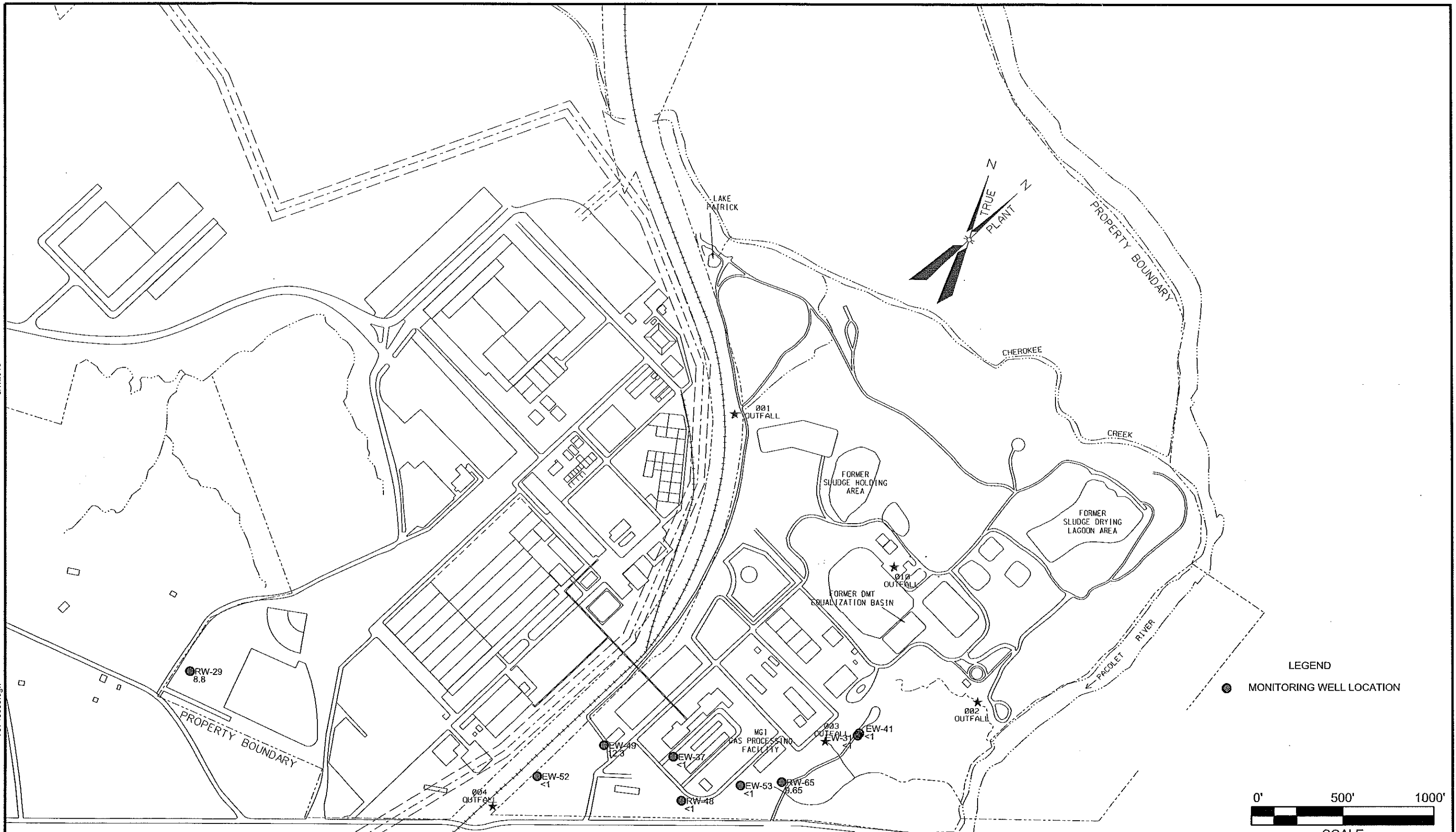
CNA HOLDINGS, INC.
 SPARTANBURG, SOUTH CAROLINA

AUGUST 2010

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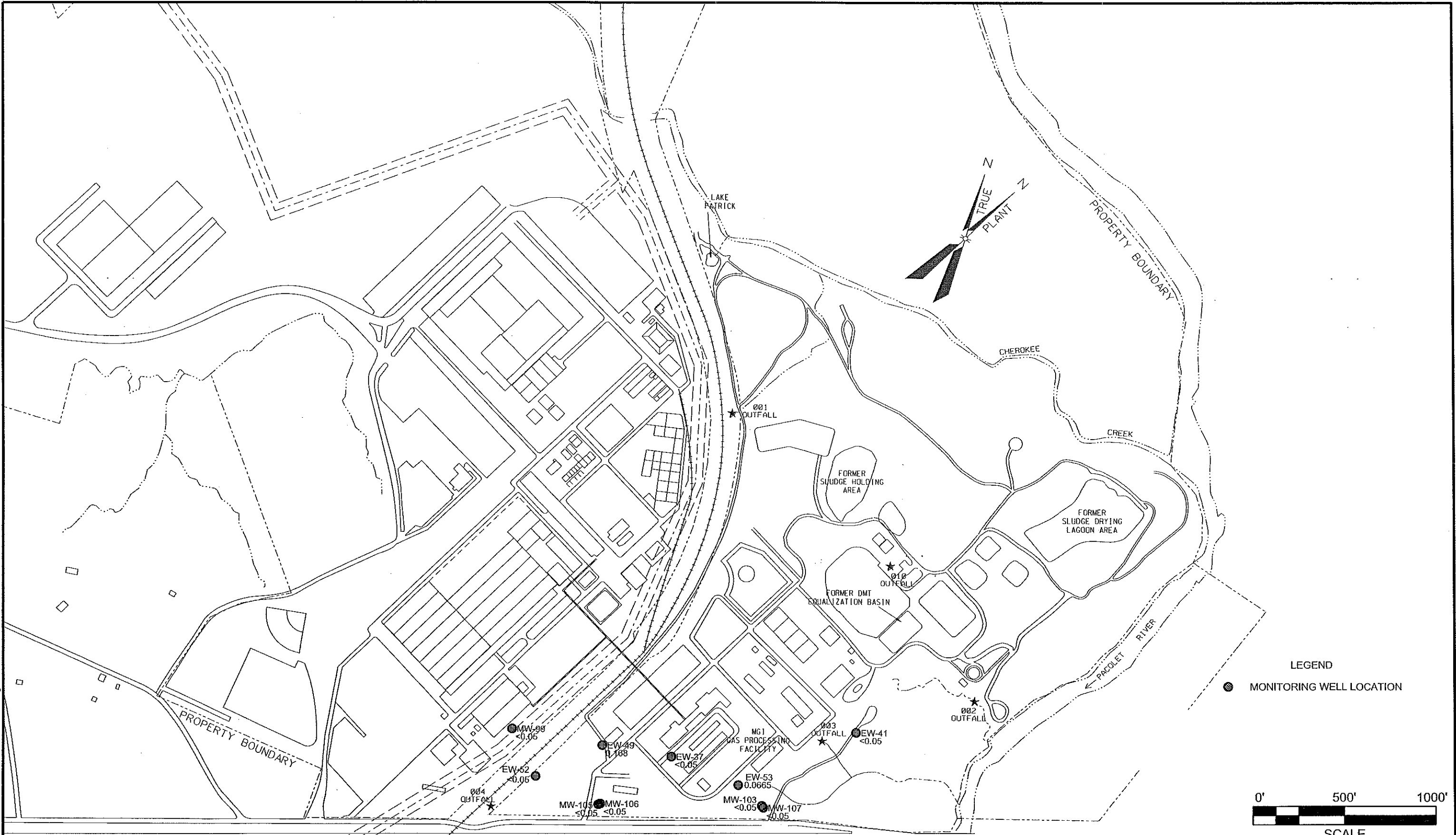
FIGURE 21
BEDROCK SULFATE
CONCENTRATIONS
 CNA HOLDINGS, INC.
 SPARTANBURG, SOUTH CAROLINA

AUGUST 2010

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LEGEND
 ● MONITORING WELL LOCATION



AECOM

FIGURE 22
 SAPROLITE SULFIDE
 CONCENTRATIONS

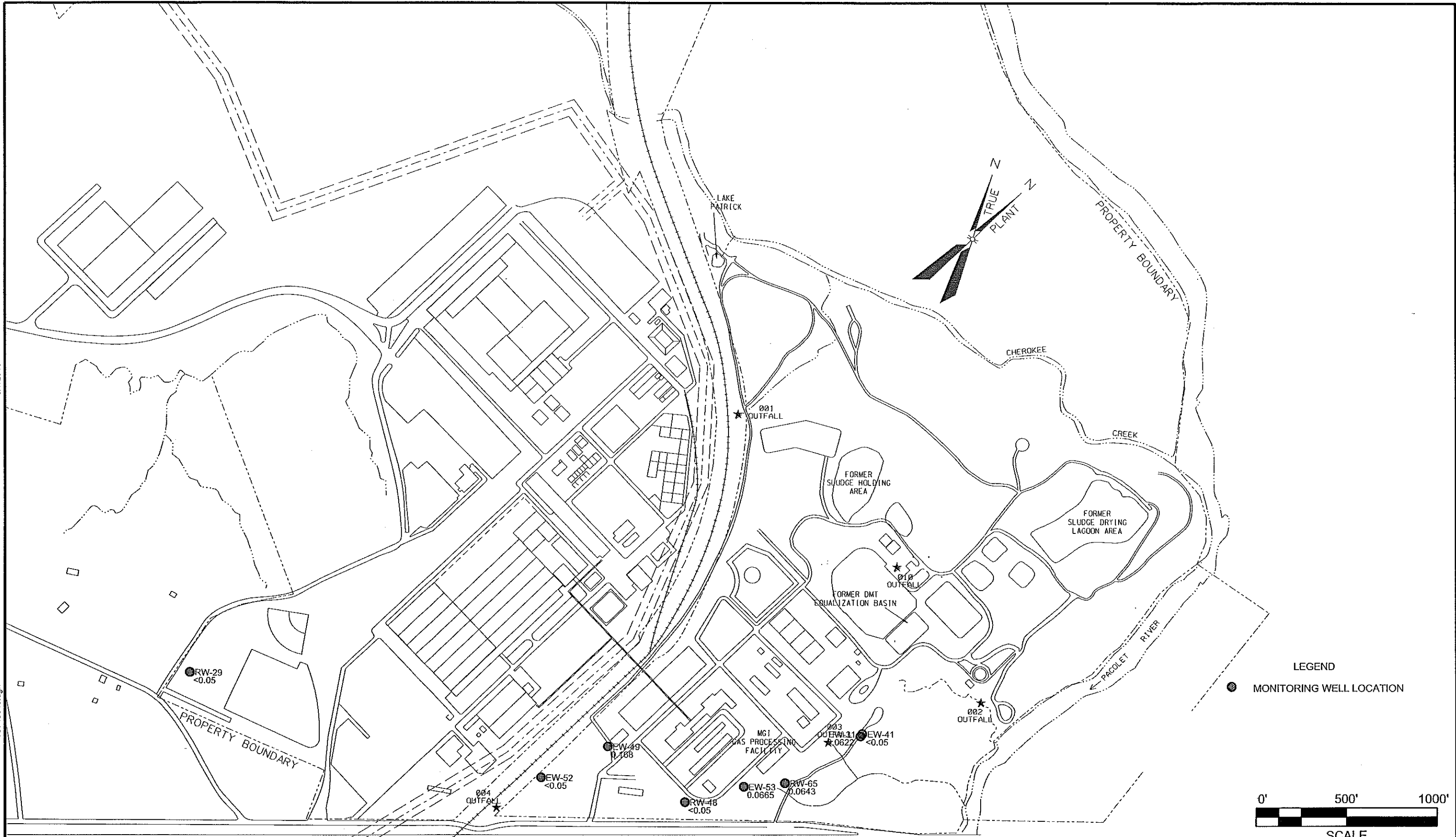
CNA HOLDINGS, INC.
 SPARTANBURG, SOUTH CAROLINA

AUGUST 2010

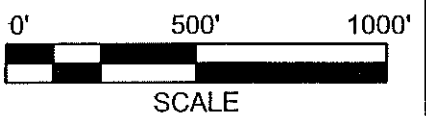
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LEGEND
 ● MONITORING WELL LOCATION



AECOM

FIGURE 23
 BEDROCK SULFIDE
 CONCENTRATIONS

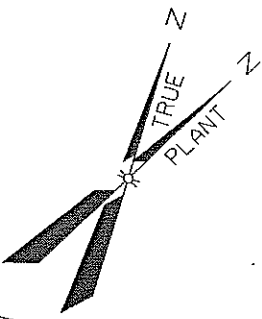
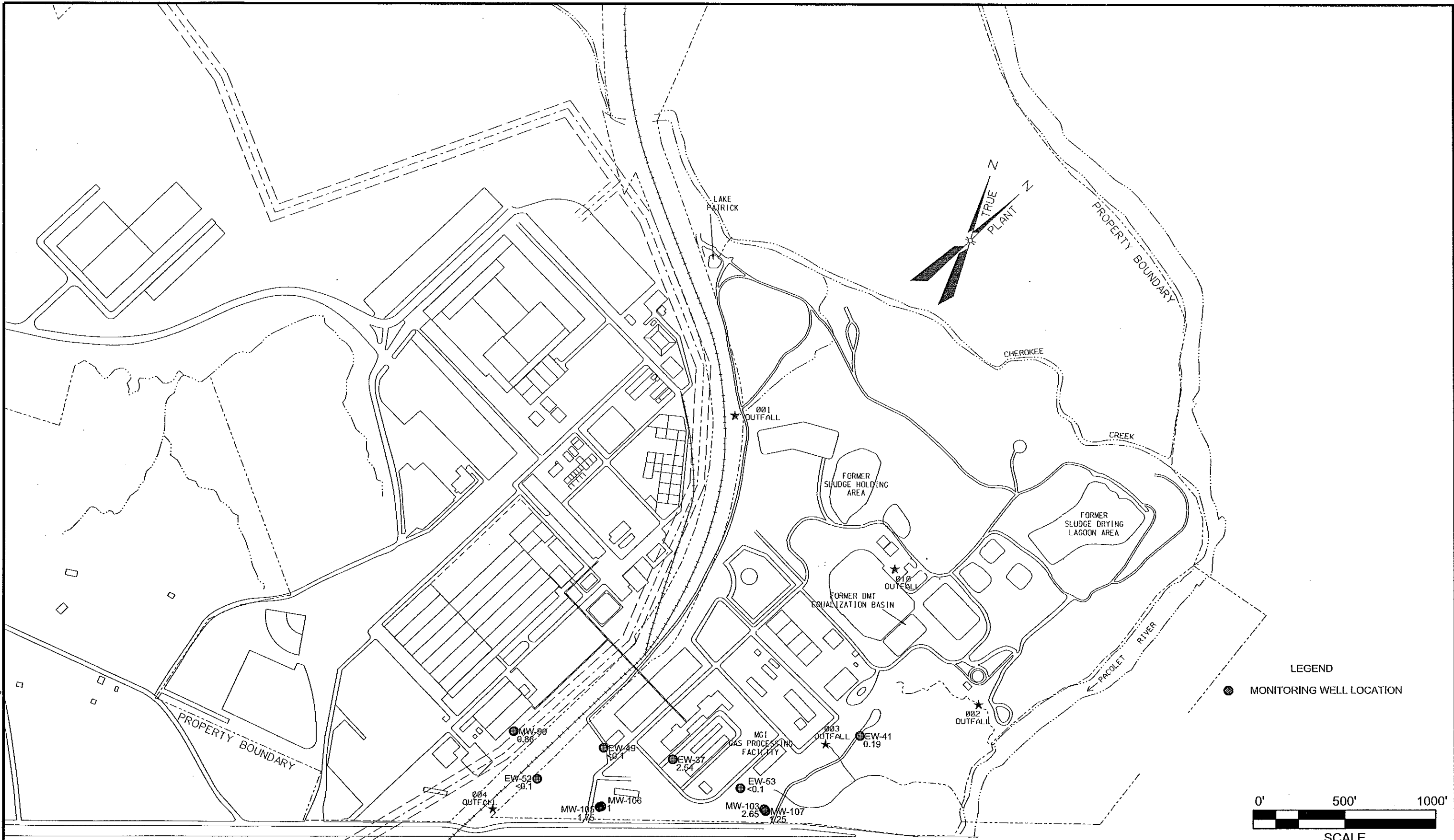
CNA HOLDINGS, INC.
 SPARTANBURG, SOUTH CAROLINA

AUGUST 2010

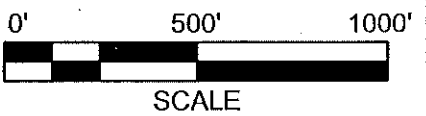
60135440

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LEGEND
 ● MONITORING WELL LOCATION



AECOM

FIGURE 24
 SAPROLITE NITRATE
 CONCENTRATIONS

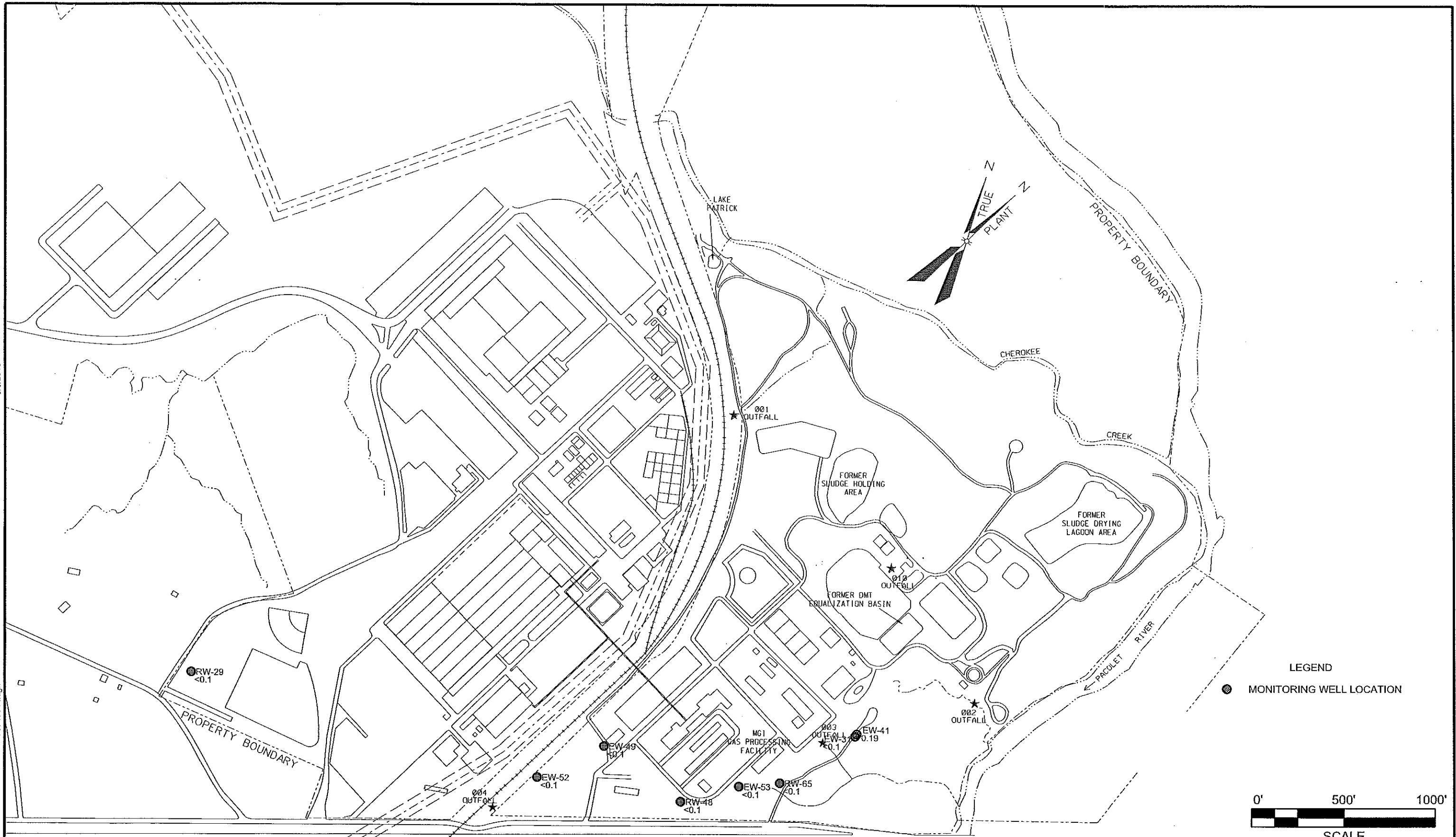
CNA HOLDINGS, INC.
 SPARTANBURG, SOUTH CAROLINA

AUGUST 2010

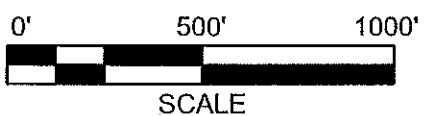
60135440

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LEGEND
 ● MONITORING WELL LOCATION



AECOM

FIGURE 25
 BEDROCK NITRATE
 CONCENTRATIONS

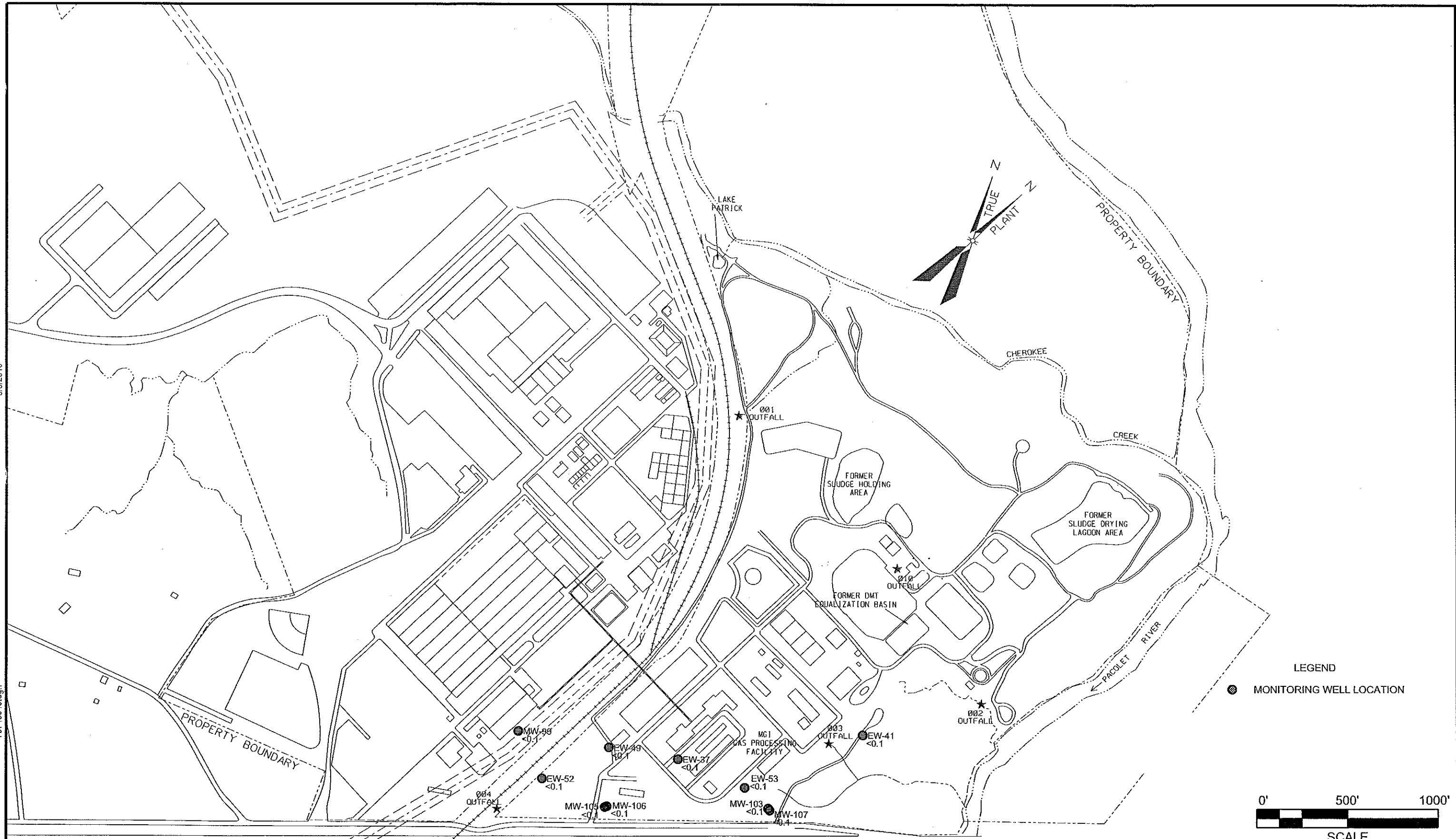
CNA HOLDINGS, INC.
 SPARTANBURG, SOUTH CAROLINA

AUGUST 2010

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AECOM

FIGURE 26
SAPROLITE NITRITE
CONCENTRATIONS
 CNA HOLDINGS, INC.
 SPARTANBURG, SOUTH CAROLINA

AUGUST 2010

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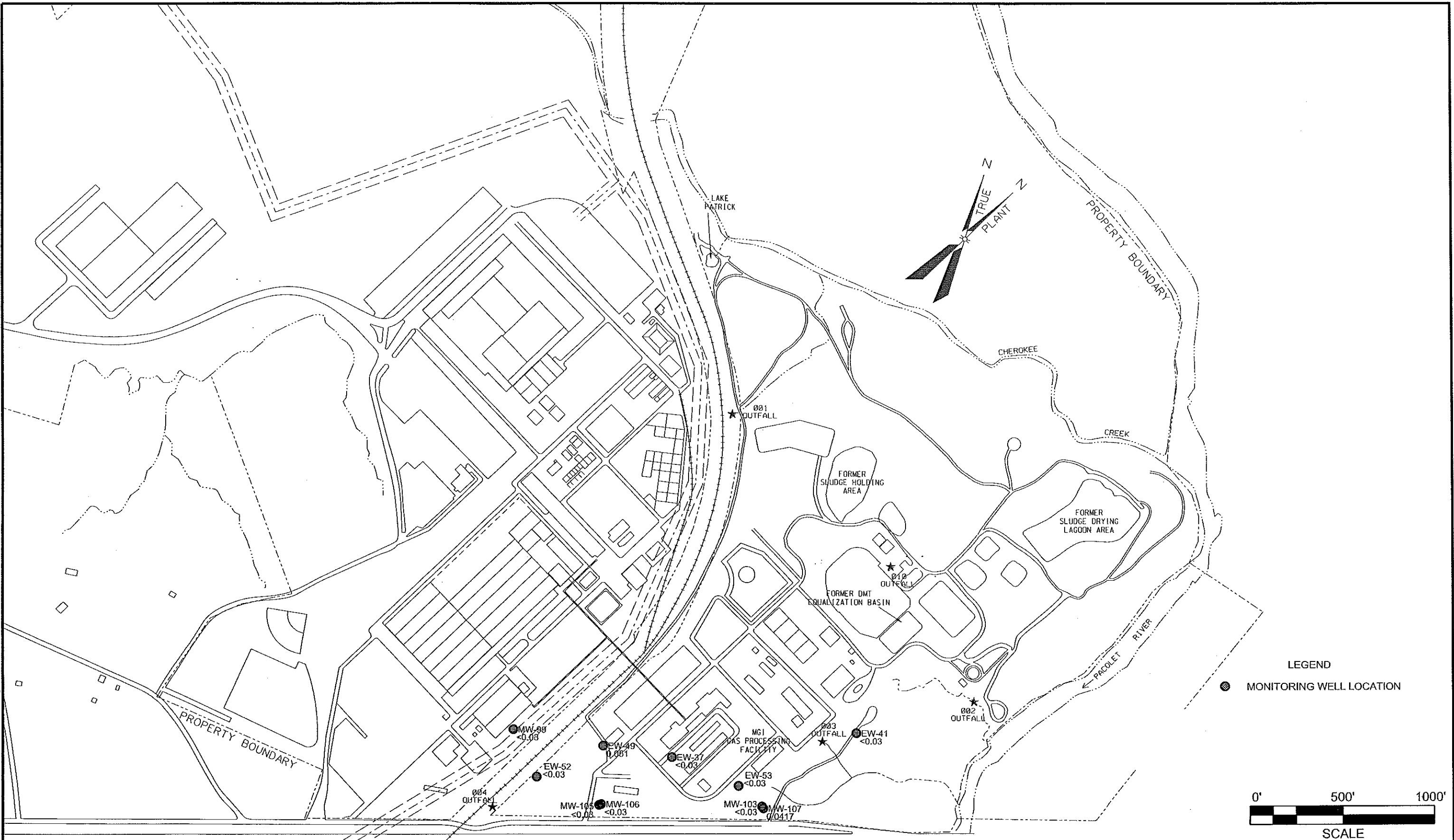
FIGURE 27
BEDROCK NITRITE
CONCENTRATIONS
 CNA HOLDINGS, INC.
 SPARTANBURG, SOUTH CAROLINA

AUGUST 2010

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AECOM

FIGURE 28
 SAPROLITE ORTHOPHOSPHATE
 PHOSPHOROUS CONCENTRATIONS

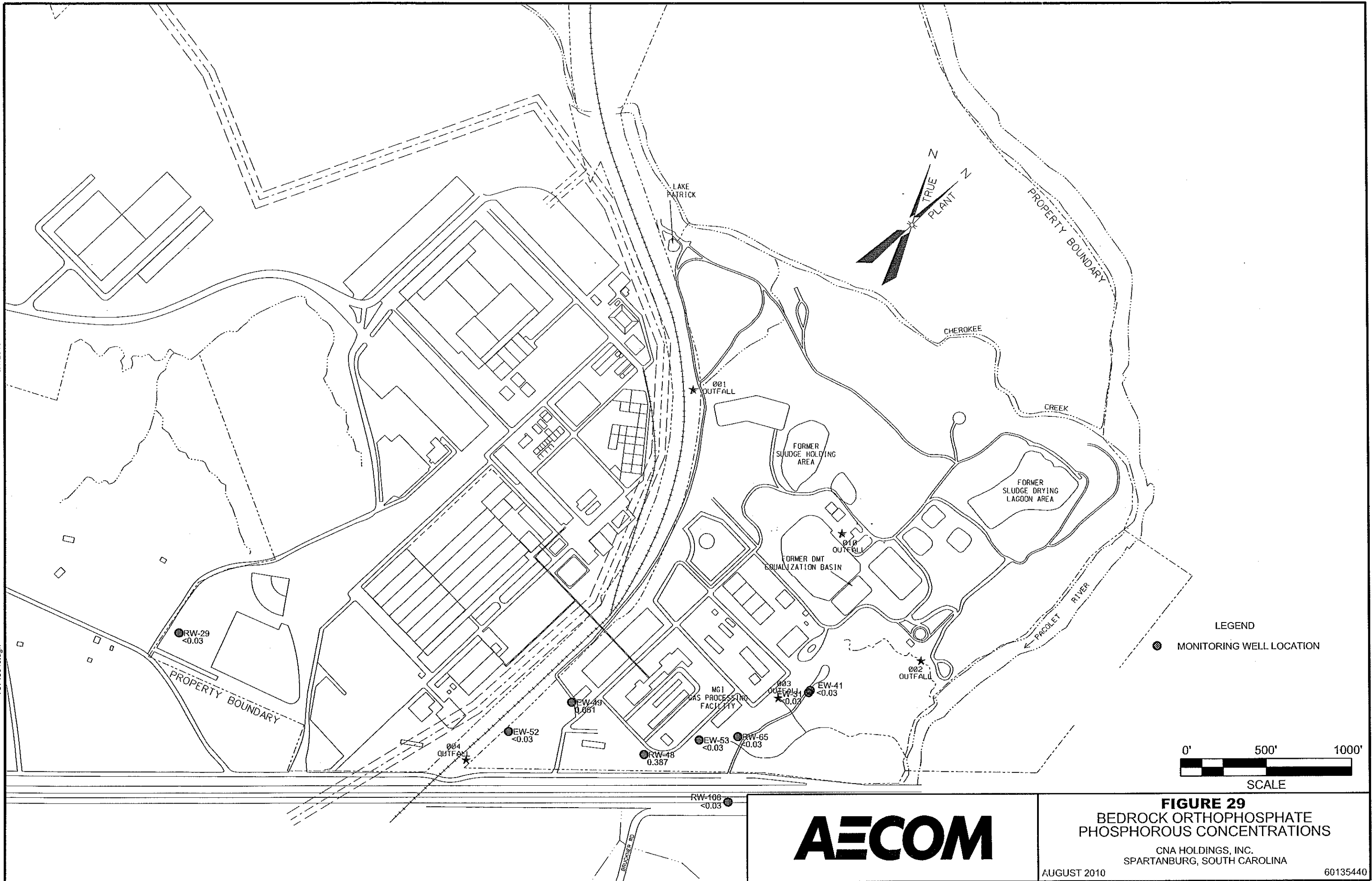
CNA HOLDINGS, INC.
 SPARTANBURG, SOUTH CAROLINA

AUGUST 2010

60135440

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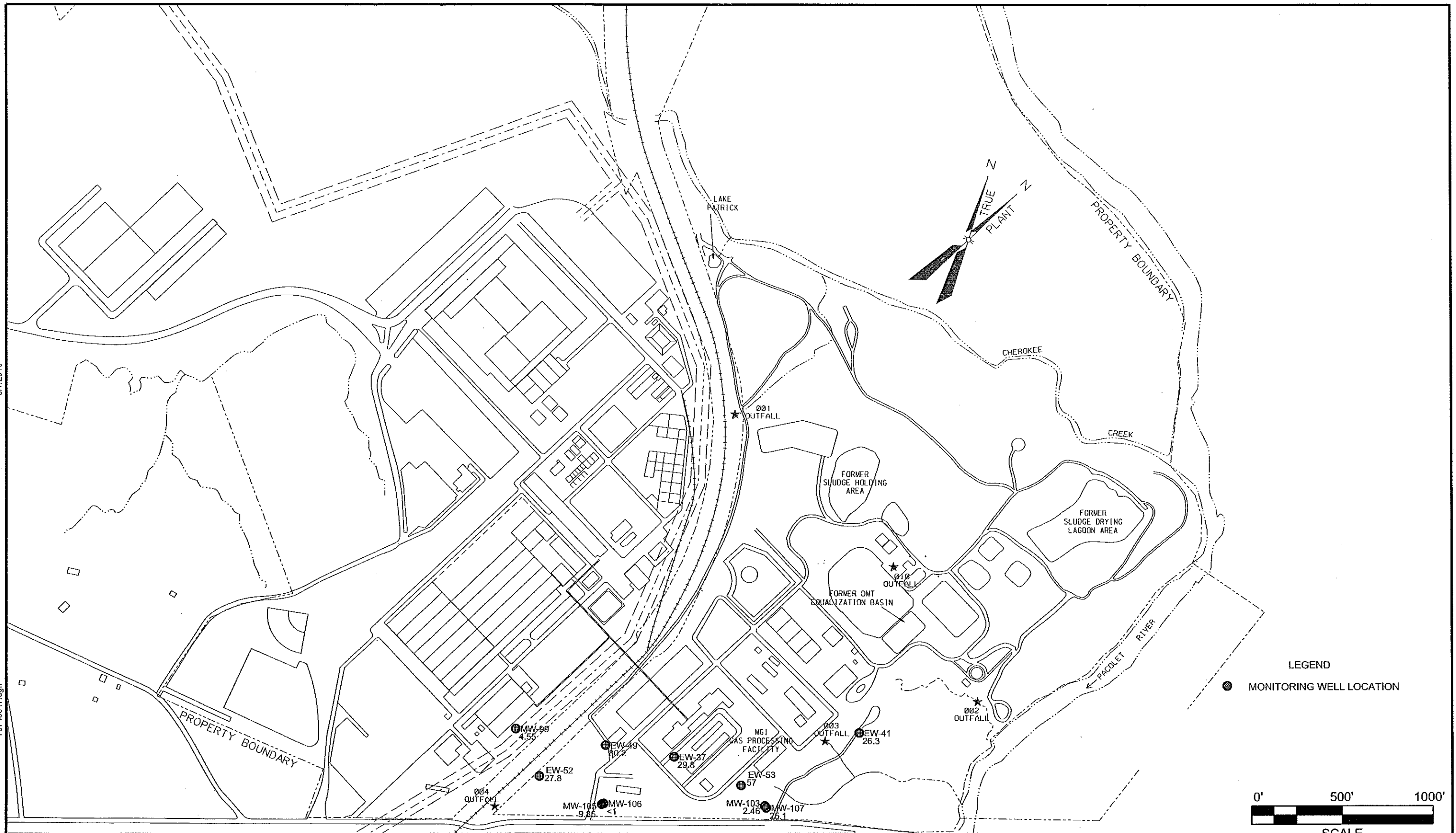
79749046.dgn



AECOM

9/7/2010

79748047.dgn



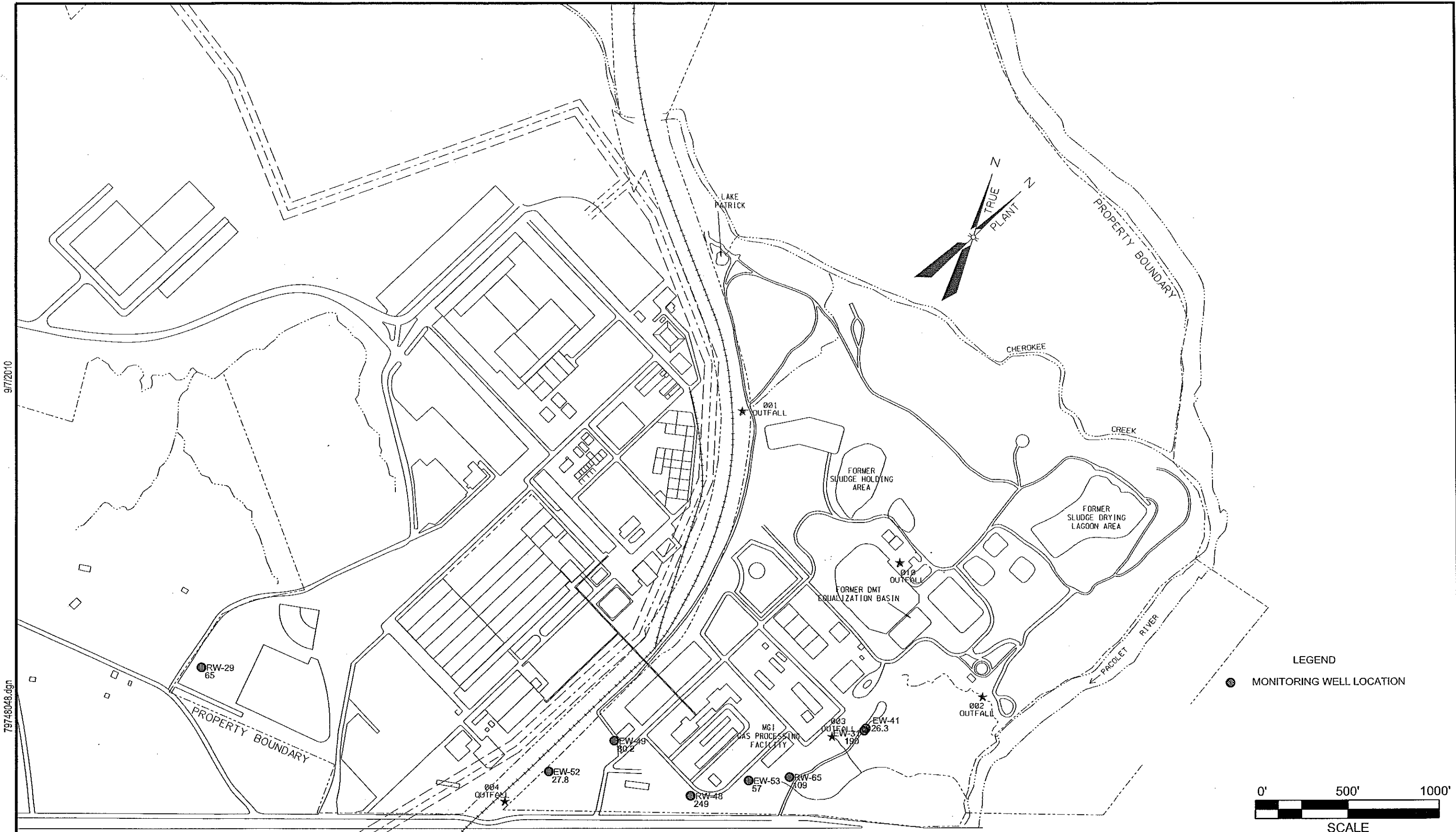
AECOM

FIGURE 30
SAPROLITE ALKALINITY
CONCENTRATIONS

CNA HOLDINGS, INC.
SPARTANBURG, SOUTH CAROLINA

AUGUST 2010

60135440



AECOM

FIGURE 31
BEDROCK ALKALINITY
CONCENTRATIONS

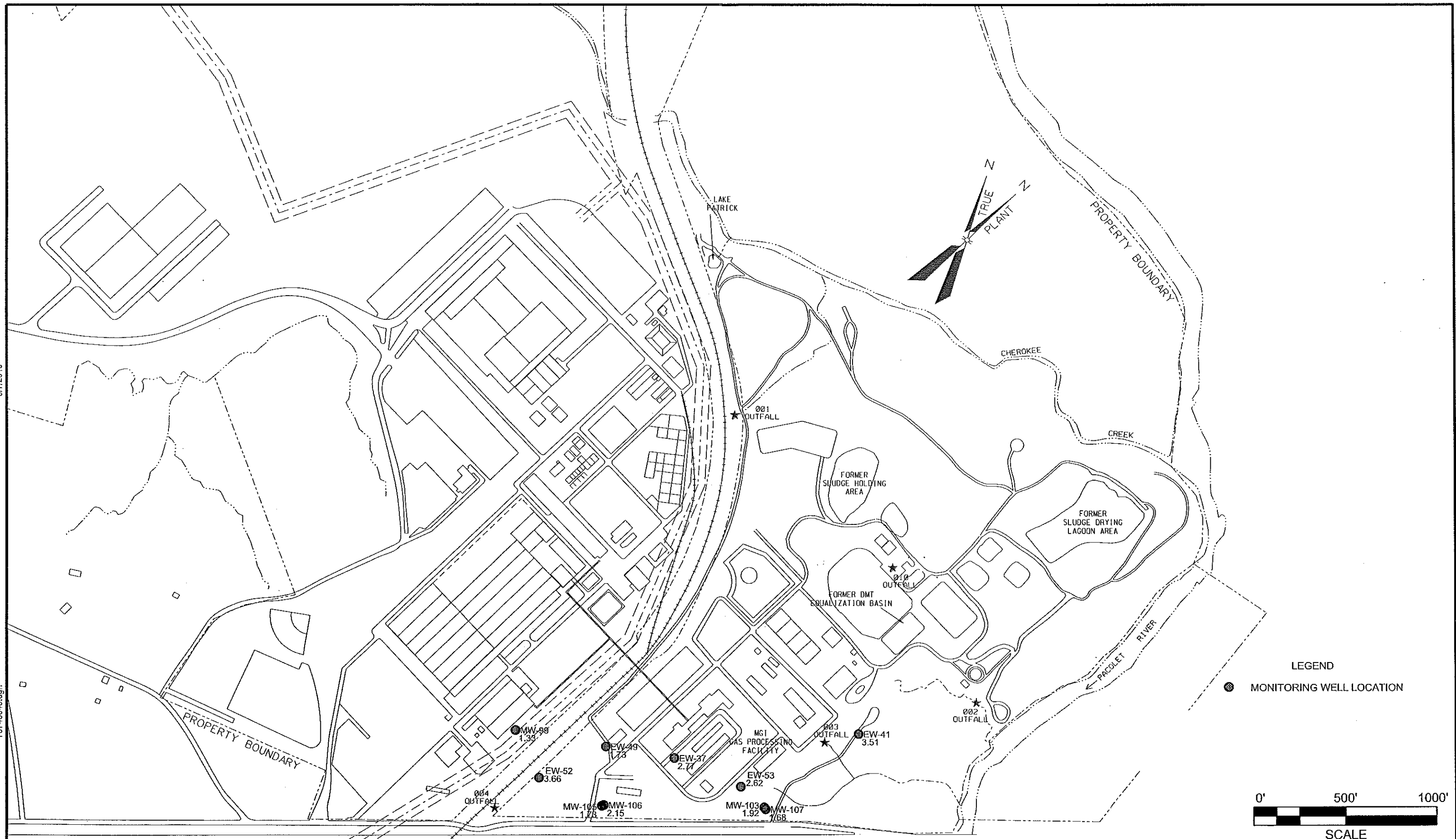
CNA HOLDINGS, INC.
 SPARTANBURG, SOUTH CAROLINA

AUGUST 2010

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LEGEND
 ● MONITORING WELL LOCATION



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FIGURE 32
 SAPROLITE TOTAL ORGANIC CARBON
 CONCENTRATIONS

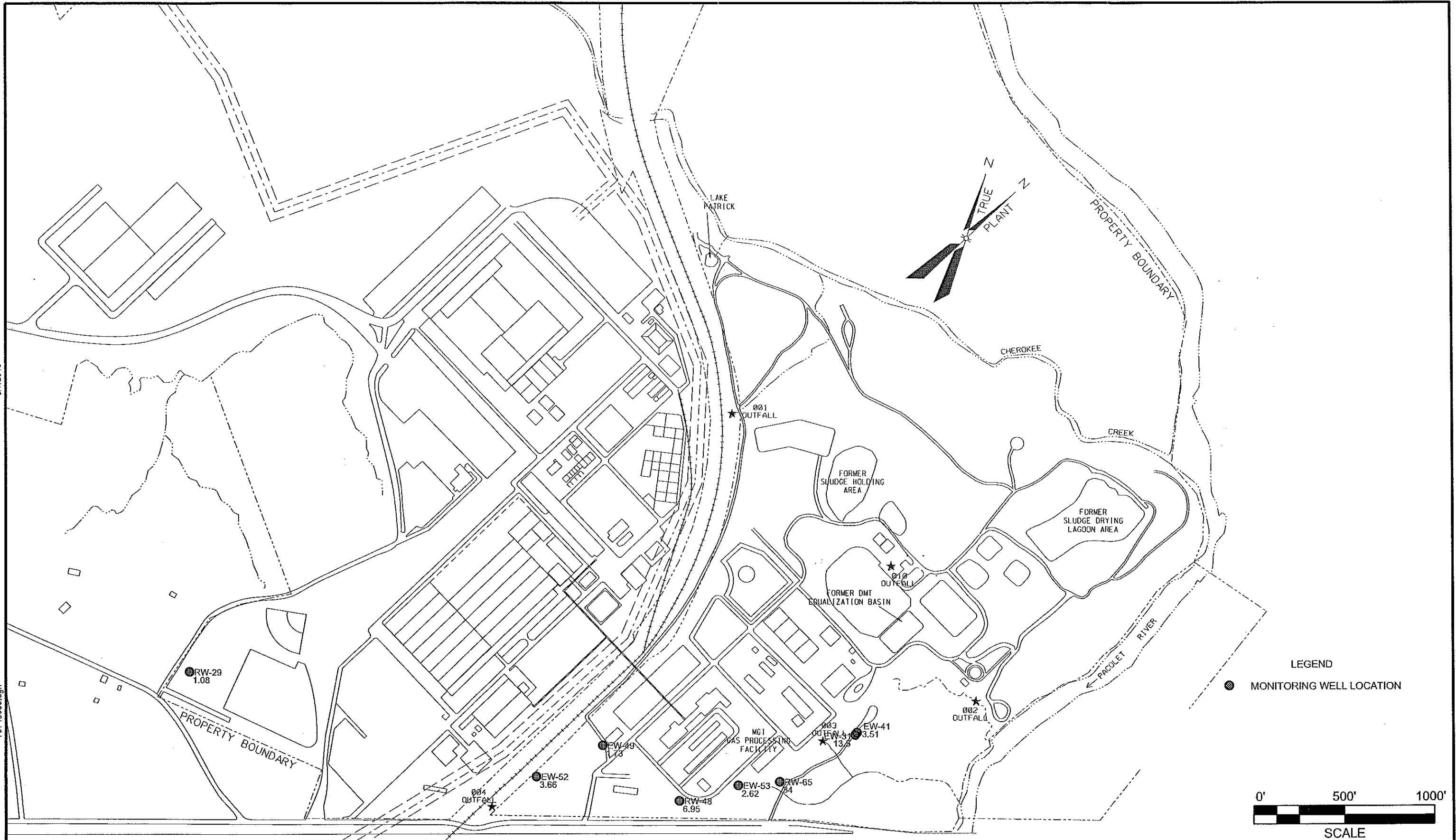
CNA HOLDINGS, INC.
 SPARTANBURG, SOUTH CAROLINA

AUGUST 2010

60135440

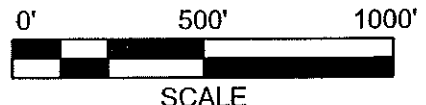
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LEGEND

● MONITORING WELL LOCATION



AECOM

FIGURE 33
BEDROCK TOTAL ORGANIC CARBON
CONCENTRATIONS

CNA HOLDINGS, INC.
SPARTANBURG, SOUTH CAROLINA

AUGUST 2010

60135440

**Table 5
INVISTA Spartanburg
Updated Receptor Survey**

Spartanburg County, SC Plat Number:	PHYSICAL ADDRESS:	Municipal Line Data from Spartanburg Water	Evidence of Private Well seen on Plat	Chance for Groundwater Impact	Comments
3-09-00-014.00	408 Conway Black Rd, Spartanburg, SC 29307	Water Not Available - Has Well	Unknown	Remote	Gated Private Drive; looks unused in a while
3-09-00-014.00	Same As Above		No	Remote	Vacant house, Agricultural use
3-09-00-005.00	545 Conway Black Rd, Spartanburg, SC 29307	Water Not Available - Has Well	No	Minimal	Vacant plat, Agricultural use
3-09-00-005.01	525 Conway Black Rd, Spartanburg, SC 29307	Water Not Available - Has Well	Yes	Remote	Well house sited, fire hydrant sighted in front of building, but may not be functional
3-09-00-005.02	505 & 515 Conway Black Rd, Spartanburg, SC 29307	Water Not Available - Has Well	Not visible	Remote	A-frame buildings
3-09-00-007.00	616 Bruckner Rd, Spartanburg, SC 29307	Water Not Available - Has Well	Not visible	Minimal	Private Drive; couldn't see back of property; nothing in the front
3-09-00-006.00	611 Bruckner Rd, Spartanburg, SC 29307	Water Not Available - Has Well	Yes	Minimal	Private Drive; Across the street from 616 Buckner Rd; Large bored well sited in back of property near creek across from SW-12 location
3-09-00-008.00	190 Childress Rd, Spartanburg, SC 29307	Water Not Available - Has Well	Unknown	Limited	Gated Private Drive; locked; Music Camp
3-06-00-051.00	600 Bruckner Road, Spartanburg, SC 29307-4407	Has Public Water	Not visible	Limited	Business: J&J Forklift Services
3-09-00-015.00	650 Conway Black Rd, Spartanburg, SC 29307	Water Not Available - Has Well	Yes	Remote	Well house sited
3-09-00-015.01	602 Conway Black Rd, Spartanburg, SC 29307	Water Not Available - Has Well	Yes	Remote	Well house sited
	95 Euial Dr, Spartanburg, SC 29307	Water Not Available - Has Well	Not visible	Remote	Private Drive
3-09-00-015.02	586 Conway Black Rd, Spartanburg, SC 29307	Water Not Available - Has Well	Not visible	Remote	
3-09-00-015.03	Unknown (Conway Black Rd)	Water Not Available - Has Well	No	Remote	Vacant plat
3-09-00-016.00	Unknown (Conway Black Rd)	Has Water Available	No	Remote	Vacant plat
3-09-00-016.01	702 Conway Black Rd, Spartanburg, SC 29307	Has Water Available	Not visible	Remote	Private Drive
3-09-00-007.01	138 Childress Rd, Spartanburg, SC 29307	Has Public Water	Not visible	Remote	
3-09-00-007.02	134 Childress Rd, Spartanburg, SC 29307	Has Public Water	Not visible	Remote	
3-09-00-007.03	132 Childress Rd, Spartanburg, SC 29307	Has Water Available	Yes	Remote	two well houses sited in front of property
3-09-00-007.04	120 Childress Rd, Spartanburg, SC 29307	Has Public Water	Yes	Remote	bored well & well house on property
3-09-00-007.05	124 Childress Rd, Spartanburg, SC 29307	Has Public Water	Not visible	Remote	
3-09-00-007.06	Unknown (Childress Rd)	Has Water Available	Not visible	Remote	
3-09-00-007.07	136 Childress Rd, Spartanburg, SC 29307	Has Water Available	Not visible	Remote	
3-09-00-007.08	175 & 185 Childress Rd, Spartanburg, SC 29307	Has Public Water	Unknown	Minimal	Long Private Drive
3-09-00-007.09	135 Childress Rd, Spartanburg, SC 29307	Has Public Water	Not visible	Remote	
3-09-00-007.10	109 Childress Rd, Spartanburg, SC 29307	Has Public Water	Not visible	Remote	now vacant plat; mobile home moved
3-09-00-007.11	Unknown (Childress Rd)	Has Public Water	No	Remote	vacant plat
3-09-00-007.12	143 Childress Rd, Spartanburg, SC 29307	Has Public Water	Not visible	Remote	fire hydrant off roadside in front of property
3-06-00-052.00	285 Buds Dr, Cowpens, SC, 29330	Has Water Available	Not visible	Remote	Agricultural, undeveloped
3-09-00-132.00	1330 Bud Arthur Bridge Rd, Cowpens, SC 29330	Has Water Available	Not visible	Remote	Undeveloped
3-09-00-132.01	1334 Bud Arthur Bridge Rd, Cowpens, SC 29330	Has Public Water	Not visible	Remote	
3-09-00-188.00	122 Riverview Pk, Cowpens, SC 29330	Has Public Water	Not visible	Remote	
3-09-00-190.00	134 Riverview Pk, Cowpens, SC 29330	Has Public Water	Not visible	Remote	

Appendix A
Analytical Data

August 18, 2010

BRYON DAHLGREN
AECOM
1455 OLD ALABAMA RD.
SUITE 170
ROSWELL, GA 30076

Report ID : AH1886
Page 1 of 7

Login Number :L10081208
Project Number :61576.06
Description :INVISTA SPARTANBURG SITE

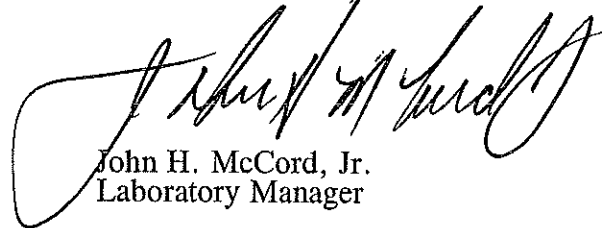
Dear Bryon Dahlgren:

We are pleased to provide the enclosed analytical results for the samples received by Davis & Floyd, Inc. on August 12, 2010.

A formal Quality Assurance/Quality Control program is maintained by Davis & Floyd, which is designed to meet or exceed the EPA, NELAC or other appropriate regulatory requirements. All analytical analyses for this project met QA/QC criteria and the results are within the 99% confidence interval for each method unless otherwise stated in the footnotes. This report is to be reproduced only in full.

Feel free to contact our Client Services Representative at (864) 229-4413 if further explanation of the analysis is required. Unless other arrangements have been made, samples will be disposed of or returned 14 days from the date of the report. We appreciate the opportunity to provide services to your firm.

Sincerely,
DAVIS & FLOYD, INC.



John H. McCord, Jr.
Laboratory Manager

This report contains a TOTAL of 9 pages, including attachments.

Initials: 

SC Certification Number: 24110001

Client : AECOM
1455 OLD ALABAMA RD.
SUITE 170
ROSWELL, GA 30076
Contact : BRYON DAHLGREN

Project Number: 61576.06
Report Date : August 18, 2010
Page 2 of 7 Report ID: AH1886

Certificate of Analysis Report

Sample ID	Client ID	Date Collected	Date Received
L10081208-01	SPARTANBURG 001	08/10/2010 1130	08/12/2010
L10081208-02	SPARTANBURG 001 DUP	08/10/2010 1130	08/12/2010
L10081208-03	SPARTANBURG 002	08/10/2010 1335	08/12/2010
L10081208-04	SPARTANBURG 003	08/10/2010 0945	08/12/2010
L10081208-05	TRIP BLANK	08/05/2010 1145	08/12/2010

This data report has been prepared and reviewed in accordance with standard operating procedures. Test results relate only to the sample tested. Please direct any questions to your Project Manager.

Reviewed by  John K. McCord, Jr.
Laboratory Manager

SC Certification Number: 24110001

Client : AECOM
1455 OLD ALABAMA RD.
SUITE 170
ROSWELL, GA 30076
Contact : BRYON DAHLGREN

Project Number: 61576.06
Report Date : August 18, 2010
Page 3 of 7 Report ID: AH1886

Certificate of Analysis

Client ID: SPARTANBURG 001 Date Collected: 08/10/2010 1130
Sample ID: L10081208-01 Date Received : 08/12/2010

Parameter	Result	Qual	RDL	Units
-----------	--------	------	-----	-------

Matrix : GW/ChemW

Volatile Organics

SWB46 8260B

Date/Time: 08/17/2010 1239 Analyst: PAP Dilution: 1

CHLOROFORM	<	5.00	U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		95	%	(68-149)	
Surr: BROMOFLUOROBENZENE		103	%	(81-134)	
Surr: TOLUENE-D8		106	%	(72-148)	

SC Certification Number: 24110001

Client : AECOM
1455 OLD ALABAMA RD.
SUITE 170
ROSWELL, GA 30076
Contact : BRYON DAHLGRENProject Number: 61576.06
Report Date : August 18, 2010
Page 4 of 7 Report ID: AH1886**Certificate of Analysis**Client ID: SPARTANBURG 001 DUP
Sample ID: L10081208-02Date Collected: 08/10/2010 1130
Date Received : 08/12/2010

Parameter	Result	Qual	RDL	Units
-----------	--------	------	-----	-------

Matrix : GW/ChemW

Volatile Organics

SW846 8260B

Date/Time: 08/17/2010 1301 Analyst: PAP Dilution: 1

CHLOROFORM	<	5.00	U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		96	%	(68-149)	
Surr: BROMOFLUOROBENZENE		100	%	(81-134)	
Surr: TOLUENE-D8		103	%	(72-148)	

SC Certification Number: 24110001

Client : AECOM
1455 OLD ALABAMA RD.
SUITE 170
ROSWELL, GA 30076
Contact : BRYON DAHLGREN

Project Number: 61576.06
Report Date : August 18, 2010
Page 5 of 7 Report ID: AH1886

Certificate of Analysis

Client ID: SPARTANBURG 002 Date Collected: 08/10/2010 1335
Sample ID: L10081208-03 Date Received : 08/12/2010

Parameter	Result	Qual	RDL	Units
-----------	--------	------	-----	-------

Matrix : GW/ChemW

Volatile Organics

SW846 8260B

Date/Time: 08/17/2010 1324	Analyst: PAP	Dilution: 1		
CHLOROFORM	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		96 %	(68-149)	
Surr: BROMOFLUOROBENZENE		103 %	(81-134)	
Surr: TOLUENE-D8		104 %	(72-148)	

SC Certification Number: 24110001

Client : AECOM
1455 OLD ALABAMA RD.
SUITE 170
ROSWELL, GA 30076
Contact : BRYON DAHLGREN

Project Number: 61576.06
Report Date : August 18, 2010
Page 6 of 7 Report ID: AH1886

Certificate of Analysis

Client ID: SPARTANBURG 003 Date Collected: 08/10/2010 0945
Sample ID: L10081208-04 Date Received : 08/12/2010

Parameter	Result	Qual	RDL	Units
-----------	--------	------	-----	-------

Matrix : GW/ChemW

Volatile Organics

SW846 8260B

Date/Time: 08/17/2010 1346 Analyst: PAP Dilution: 1

CHLOROFORM	<	5.00	U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		98	%	(68-149)	
Surr: BROMOFLUOROBENZENE		101	%	(81-134)	
Surr: TOLUENE-D8		104	%	(72-148)	

SC Certification Number: 24110001

Client : AECOM
1455 OLD ALABAMA RD.
SUITE 170
ROSWELL, GA 30076
Contact : BRYON DAHLGREN

Project Number: 61576.06
Report Date : August 18, 2010
Page 7 of 7 Report ID: AH1886

Certificate of Analysis

Client ID: TRIP BLANK Date Collected: 08/05/2010 1145
Sample ID: L10081208-05 Date Received : 08/12/2010

Parameter	Result	Qual	RDL	Units
-----------	--------	------	-----	-------

Matrix : GW/ChemW

Volatile Organics

SW846 8260B

Date/Time: 08/17/2010 1216	Analyst: PAP	Dilution: 1			
CHLOROFORM	<	5.00	U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		101	%	(68-149)	
Surr: BROMOFLUOROBENZENE		108	%	(81-134)	
Surr: TOLUENE-D8		108	%	(72-148)	

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RDL	Report Detection Limit	MDL	Method Detection Limit
PQL	Practical Quantitation Limit	DL	Detection Limit
LOQ	Limit of Quantitation	LOD	Limit of Detection
SQL	Sample Quantitation Limit	TIC	Tentatively Identified Compound
C	Degrees Centigrade	F	Degrees Fahrenheit
umhos/cm	micromhos/cm	meq	milliequivalents
su	Standard Units		

mg/l, mg/kg Units of concentration in milligrams per liter for liquids and milligrams per kilogram for solids. Also referred to as Parts Per Million or "ppm".

ug/l, ug/kg Units of concentration in micrograms per liter for liquids and micrograms per kilograms for solids. Also referred to as Parts Per Billion or "ppb".

< Less Than

> Greater Than

Solid samples (i.e. soil, sludge, and solid waste) are reported on an as received basis unless otherwise noted.

Data Qualifiers:

- B** Analyte also detected in the method blank.
- C** Amendable Cyanide is a negative value due to an unknown interference.
- J** The reported result is an estimated value (eg matrix interference observed or concentration outside the quantitation range).
- N** Non-target analyte. The analyte is TIC (using mass spectrometry).
- P** Concentration difference between primary and confirmation columns >25%.
- Q** One or more quality control criteria failed (e.g., LCS recovery, surrogate spike recovery or CCV)
- U** Final concentration is below the detection limit.
- *** Defined in report comments.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or biological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of the material involved, the test results will be meaningless. If you have any questions regarding the proper techniques of collecting samples, please contact us. However, we cannot be held responsible for sample integrity unless sampling has been performed by a member of our staff.

REPRESENTATION AND LIMITATION OF LIABILITY – The accuracy of all analytical results for samples begins as it is received by the laboratory. Integrity of the sample begins at the time it is placed in the possession of authorized Davis & Floyd, Inc. Laboratories personnel. All other warranties, expressed or implied, are disclaimed. Liability is limited to the cost of the analysis.

Client: Greenville, SC
 Project / Site Location: Invista Spartanburg, SC, Site
 Report To: Bryan Dahlgren
 Contact: Mark Hartford
 Collected By: Mark Hartford

Laboratory Certification Numbers: SC - 24110, NC - 25, NELAP - E87633, TN - 2923, VA - 77
 816 E. Durst Avenue, Greenwood, SC 29649 (864) 229-4413 Fax: (864) 229-7119
 Email: Laboratory@davisfloyd.com Internet: www.davisfloyd.com

Office Use Only
 Laboratory Work Request

PO7 Quote Number: 0
 State: SC, Site

Reporting Requirements: Standard Data Package (Specify Level: 1 2 3 4)
 Turnaround Requirements: Standard Rush (Specify:)
 Required Parameters: Containers and Preservatives (P)

Indicate any known or expected hazards with a "X"

Sample Description	Date Initiated	Time	Composite Sampling Only		Grab	Matrix Type	Number of Containers	Total	Type	Comments	Fraction
			Date	Time							
TRIP BLANK	05 AUG 10	11:45			X		2	2	X		05
Spartanburg-001	10 Aug 10	10:30			X		3	3	X		01
Spartanburg 001-DUP	10 Aug 10	11:30			X		3	3	X		02
Spartanburg-002	10 Aug 10	13:35			X		3	3	X		03
Spartanburg-003	11 Aug 10	9:45			X		3	3	X		04
											-8

Reinquisitioned By: Mark Hartford
 Received By: Randy Johnson
 Date: 11 Aug 10 10:45
 Date: 11 Aug 10 10:45

Reinquisitioned By: Randy Johnson
 Received By: Randy Johnson
 Date: 11 Aug 10 11:15
 Date: 11 Aug 10 11:15

Shipped Via: UPS
 Tracking Number: 812-10-1200

Receipt Information:
 Cooler ID (if available):
 On Ice: Yes No Temp(C): 4
 Immediate Delivery: Yes No
 Custody Seal: Intact Broken None

Matrix Type Definitions 1 - Drinking Water 2 - Clean Water 5 - Groundwater 7 - Soil/Sediment 8 - Liquid Sludge 9 - Oil 12 - Air
 (P) Preservative Definitions A - None B - H2SO4 C - HCl D - HNO3 E - NaOH F - Filtered G - Na2S2O3

(Note 1) For Discharge Measurements
 Davis & Floyd, Inc.
 FLO2_03 (04/10)

**June 2010 Analytical Data on
attached cd**