

MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228.12.0021 MONITORING WELL NUMBER MW-1DR
 SITE NAME Duke Sparta DATE 10/3/12 TIME OF SAMPLE 11:05
 FIELD PERSONNEL Rodney Clark WEATHER CONDITIONS P. Cloudy

TOTAL WELL DEPTH (TWD) 62 FT. (measured / well tag / drillers log / previous report - circle one)
 SCREENED INTERVAL 57-62 MEASURING POINT FOR DEPTH TOC
 DEPTH TO GROUNDWATER (DGW) 7.17
 LENGTH OF WATER COLUMN (LWC) = TWD - DGW = 54.83
 CASING DIAMETER 2 IN.
 ONE STANDING WELL VOLUME = 8.9 gal.

(NOTE 1/2" = 0.0102 G/FT; 3/4" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 26.8 FIVE STANDING WELL VOLUMES = NA

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE peristaltic (low flow)

TOTAL VOLUME OF WATER REMOVED: 2.5 GAL. FLOW RATE 187/100 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

LOCKING CAP YES ☒ NO ☐

PROTECTIVE POST/ABUTMENT YES ☐ NO ☒

NONPOTABLE LABEL YES ☒ NO ☐

ID PLATE YES ☒ NO ☐

WELL INTEGRITY SATISFACTORY YES ☒ NO ☐

WELL YIELD LOW ☐ MODERATE ☒ HIGH ☐

COMMENTS

1.22 to fill 255 mL

82 ~~100~~ / 255 mL = 60 / X = 186.6

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	<u>7.17</u>	<u>6.98</u>	<u>0.261</u>	<u>139.0</u>	<u>0.02</u>	<u>17.67</u>	<u>172</u>	
<u>10 min</u>	<u>10.45</u>	<u>6.99</u>	<u>0.258</u>	<u>201.0</u>	<u>0.00</u>	<u>17.47</u>	<u>160</u>	
<u>15 min</u>	<u>11.35</u>	<u>7.25</u>	<u>0.256</u>	<u>255.0</u>	<u>0.00</u>	<u>17.40</u>	<u>143</u>	
<u>20 min</u>	<u>11.65</u>	<u>7.45</u>	<u>0.256</u>	<u>302.0</u>	<u>0.00</u>	<u>17.35</u>	<u>29</u>	<u>slow purge rate to 100 mL/min</u>
<u>25 min</u>	<u>11.40</u>	<u>7.63</u>	<u>0.257</u>	<u>312.0</u>	<u>0.00</u>	<u>17.50</u>	<u>51</u>	
<u>30 min</u>	<u>11.31</u>	<u>7.56</u>	<u>0.264</u>	<u>71.5</u>	<u>4.41</u>	<u>17.49</u>	<u>46</u>	<u>Prior to reading empty flow thru cell</u>

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MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-355
 SITE NAME Duke Spartanburg DATE 10-2-17 TIME OF SAMPLE 1120
 FIELD PERSONNEL TLH WEATHER CONDITIONS 73° Partly Cloudy

TOTAL WELL DEPTH (TWD) 13.25 FT. (measured / well tag / drillers log/ previous report – circle one)
 SCREENED INTERVAL _____ MEASURING POINT FOR DEPTH TOC
 DEPTH TO GROUNDWATER (DGW) 8.01
 LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 5.24
 CASING DIAMETER 2 IN.
 ONE STANDING WELL VOLUME = 0.85 gal.
 (NOTE ½" = 0.0102 G/FT; ¾" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)
 THREE STANDING WELL VOLUMES = 2.55 FIVE STANDING WELL VOLUMES = 4.25
 METHOD OF WELL EVACUATION: BAILER / PUMP OTHER: _____ TYPE Peristaltic
 TOTAL VOLUME OF WATER REMOVED: _____ GAL. FLOW RATE _____ mL/min
 WELL TYPE: FLUSH MOUNT / ABOVE GRADE _____ COMMENTS _____
 LOCKING CAP YES / NO _____
 PROTECTIVE POST/ABUTMENT YES _____ NO / _____
 NONPOTABLE LABEL YES / NO _____
 ID PLATE YES / NO _____
 WELL INTEGRITY SATISFACTORY YES / NO _____
 WELL YIELD LOW _____ MODERATE _____ HIGH _____

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	<u>8.05</u>	<u>6.03</u>	<u>0.999</u>	<u>84.7</u>	<u>2.90</u>	<u>22.83</u>	<u>381</u>	
<u>1105</u>	<u>8.36</u>	<u>6.16</u>	<u>0.685</u>	<u>57.8</u>	<u>1.89</u>	<u>22.73</u>	<u>240</u>	
<u>1110</u>	<u>8.42</u>	<u>6.18</u>	<u>0.683</u>	<u>27.1</u>	<u>1.92</u>	<u>22.74</u>	<u>175</u>	
<u>1115</u>	<u>8.45</u>	<u>6.15</u>	<u>0.68</u>	<u>9.9</u>	<u>1.89</u>	<u>22.72</u>	<u>170</u>	

1055

MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-10 S
 SITE NAME Duke Spartanburg DATE 10/3/12 TIME OF SAMPLE 12:00
 FIELD PERSONNEL Rodney Clark WEATHER CONDITIONS P. Cloudy/light rain

TOTAL WELL DEPTH (TWD) 18.54 FT. (measured / well tag / drillers log / previous report - circle one)
 SCREENED INTERVAL 8.51 - 18.51 MEASURING POINT FOR DEPTH TOC
 DEPTH TO GROUNDWATER (DGW) 11.58
 LENGTH OF WATER COLUMN (LWC) = TWD - DGW = 6.96
 CASING DIAMETER 2 IN.
 ONE STANDING WELL VOLUME = 101 gal.

(NOTE 1/2" = 0.0102 G/FT; 3/4" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 3.3 FIVE STANDING WELL VOLUMES = NA
 METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE peristaltic (low flow)
 TOTAL VOLUME OF WATER REMOVED: 1.0 GAL. FLOW RATE 141 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

LOCKING CAP YES ☒ NO ☐
 PROTECTIVE POST/ABUTMENT YES ☐ NO ☒
 NONPOTABLE LABEL YES ☒ NO ☐
 ID PLATE YES ☒ NO ☐
 WELL INTEGRITY SATISFACTORY YES ☒ NO ☐

COMMENTS

1.48 per 255 mL flow rate
108 sec = 60 sec
255 mL X X = 141 mL/min

WELL YIELD LOW ☐ MODERATE ☐ HIGH ☐

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	12.80	5.92	0.444	404.0	0.22	20.93	170	
5 min	12.25	5.74	0.440	187.0	0.00	20.50	185	
10 min	12.50	5.75	0.436	154.0	0.00	20.47	188	
15 min	12.72	5.80	0.435	119.0	0.00	20.42	187	
20 min	13.10	5.87	0.437	72.8	0.00	20.43	172	slow flow rate to approx 100 mL/min
25 min	13.08	5.90	0.453	54.3	0.00	20.77	148	
30 min	13.05	6.03	0.479	34.9	0.00	20.82	116	

1.32



AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW 10 D
SITE NAME Duke Spentanburg DATE 10/3/12 TIME OF SAMPLE 1245
FIELD PERSONNEL Rodney Clark WEATHER CONDITIONS P. Cloudy

(NOTE 1/2" = 0.0102G/FT; 3/4" = 0.023 G/FT; 1" = 0.041G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 13.7 FIVE STANDING WELL VOLUMES = NA

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE peristaltic flow

TOTAL VOLUME OF WATER REMOVED: _____ GAL. FLOW RATE 158 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

LOCKING CAP YES ☒ NO ☐

COMMENTS
 $\frac{97 \text{ sec}}{255 \text{ ml}} = \frac{60 \text{ sec}}{X} \quad X = 158$

PROTECTIVE POST/ABUTMENT YES _____ NO ✓ _____

NONPOTABLE LABEL YES ☒ NO ☐

ID PLATE _____ YES ☒ NO _____

WELL-INTENSITY SATISFACTORY YES ☒ NO ☐

WELL YIELD LOW MODERATE HIGH

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MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-115
 SITE NAME Duke Spartanburg DATE 10/2/12 TIME OF SAMPLE 1130
 FIELD PERSONNEL Rodney Clark WEATHER CONDITIONS Rain heavily overnight/Sunny

TOTAL WELL DEPTH (TWD) 14.60 FT. (measured / well tag) drillers log/ previous report – circle one
 SCREENED INTERVAL 4.6-14.6 MEASURING POINT FOR DEPTH NA
 DEPTH TO GROUNDWATER (DGW) 11.40
 LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 3.2
 CASING DIAMETER 2 IN.
 ONE STANDING WELL VOLUME = 0.5 gal.

(NOTE ½" = 0.0102 G/FT; ¾" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 1.5 FIVE STANDING WELL VOLUMES = 2.5

METHOD OF WELL EVACUATION: BAILER PUMP OTHER: TYPE peristaltic (low flow)

TOTAL VOLUME OF WATER REMOVED: 0.5 GAL. FLOW RATE 40 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

LOCKING CAP YES ✓ NO

PROTECTIVE POST/ABUTMENT YES NO ✓

NONPOTABLE LABEL YES ✓ NO

ID PLATE YES ✓ NO

WELL INTEGRITY SATISFACTORY YES ✓ NO

WELL YIELD LOW ✓ MODERATE HIGH

COMMENTS purged dry @ 1 vol.
collect sample reading
prior to collecting samples
- allowed 1 hr of recharge
- purged dry during sampling/collected
pad cracked all but VOCs, SVOCs
1500 - collected SVOCs and VOCs
(only one SVOC purged dry)

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	11.40	4.60	0.394	888.0	10.15	21.42	229	
5	12.76	3.90	0.517	7100	0.00	21.41	281	
10	13.45	3.96	0.537	7100	0.00	21.47	280	Empty flow thru cell
15	14.05	4.35	0.407	605.0	6.07	21.56	249	
20	14.35	4.34	0.434	526.0	5.10	21.87	243	
25	14.40 (dry)	4.34	0.454	472.0	4.98	22.49	243	Purged dry
35	14.72	4.72	0.089	55.1	0.01	24.39	266	RMC 10/2/12
* Sample	DNM	4.41	0.451	32.1	11.61	26.15	233	



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-002 MONITORING WELL NUMBER MW-11b
SITE NAME Duke Spentairburg DATE 10/2/12 TIME OF SAMPLE 1435
FIELD PERSONNEL Rodney Clark WEATHER CONDITIONS Rain in AM/Sunny

TOTAL WELL DEPTH (TWD) 31.2 FT. (measured / well tag / drillers log/ previous report – circle one)
 SCREENED INTERVAL 26.2 - 31.2 MEASURING POINT FOR DEPTH TAC
 DEPTH TO GROUNDWATER (DGW) 11.22
 LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 19.98
 CASING DIAMETER 2 IN.
 ONE STANDING WELL VOLUME = 3.3 gal.

(NOTE 1/2" = 0.0102 G/FT: 3/4" = 0.023 G/FT: 1" = 0.041 G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 9.9 FIVE STANDING WELL VOLUMES = NA

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE peristaltic (low flow)

TOTAL VOLUME OF WATER REMOVED: 1.5 GAL. FLOW RATE 100 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

COMMENTS

LOCKING CAP YES ✓ NO

PROTECTIVE POST/ABUTMENT YES _____ NO ✓

NONPOTABLE LABEL YES ✓ NO

ID PLATE YES ✓ NO

WELL INTEGRITY SATISFACTORY YES ✓ NO

WELL YIELD LOW _____ MODERATE ✓ _____ HIGH _____

- MW-11D located approx 8' towards creek from MW-11S
- Begin sampling @ 1435

- vegetation high initially, could not find

[illegible]

Empty flow thru cell after	
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Dup-1

MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-125
 SITE NAME Duke-Spartanburg DATE 10-2-12 TIME OF SAMPLE 1440
 FIELD PERSONNEL T L H WEATHER CONDITIONS Sunny 75°

TOTAL WELL DEPTH (TWD) 15.27 FT (measured / well tag / drillers log/ previous report - circle one)
 SCREENED INTERVAL _____ MEASURING POINT FOR DEPTH TOC
 DEPTH TO GROUNDWATER (DGW) 4.92
 LENGTH OF WATER COLUMN (LWC) = TWD - DGW = 10.35
 CASING DIAMETER 2 IN.
 ONE STANDING WELL VOLUME = 1.7 gal.

(NOTE 1/2" = 0.0102 G/FT: 3/4" = 0.023 G/FT: 1" = 0.041 G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 5.1 FIVE STANDING WELL VOLUMES = 8.5

METHOD OF WELL EVACUATION: BAILER PUMP / OTHER: _____ TYPE Peri

TOTAL VOLUME OF WATER REMOVED: _____ GAL. FLOW RATE _____ mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE COMMENTS _____

LOCKING CAP YES ✓ NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO ✓

NONPOTABLE LABEL YES ✓ NO _____

ID PLATE YES ✓ NO _____

WELL INTEGRITY SATISFACTORY YES ✓ NO _____

WELL YIELD LOW _____ MODERATE _____ HIGH _____

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	4.92	6.31	0.699	155	0	20.07	-70	
1408	5.18	6.16	0.484	114	0	20.54	-38	
1418	5.2	5.16	0.206	109	0	20.92	96	
1428	5.28	5.16	0.206	110	0	20.96	103	
1433	5.28	5.15	0.205	112	0	21.01	105	
1438	5.28	5.16	0.205	118	0	21.04	107	

1358
~~1408~~



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-120
 SITE NAME Duke Sparta DATE 10-2-12 TIME OF SAMPLE 750 1345
 FIELD PERSONNEL JLH WEATHER CONDITIONS 75° Partly Cloudy

TOTAL WELL DEPTH (TWD) 35.42 FT. (measured / well tag / drillers log/ previous report - circle one)

SCREENED INTERVAL _____ MEASURING POINT FOR DEPTH TOL

DEPTH TO GROUNDWATER (DGW) 4.95

LENGTH OF WATER COLUMN (LWC) = TWD - DGW = 30.47

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 4.99 gal.

(NOTE 1/2" = 0.0102 G/FT; 3/4" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 15 FIVE STANDING WELL VOLUMES = 25

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: _____ TYPE Peri

TOTAL VOLUME OF WATER REMOVED: _____ GAL. FLOW RATE _____ mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE COMMENTS _____

LOCKING CAP YES / NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO /

NONPOTABLE LABEL YES / NO _____

ID PLATE YES / NO _____

WELL INTEGRITY SATISFACTORY YES / NO _____

WELL YIELD LOW _____ MODERATE _____ HIGH _____

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	<u>4.95</u>	<u>6.24</u>	<u>0.999</u>	<u>6.7</u>	<u>7.93</u>	<u>21.22</u>	<u>236</u>	
<u>1330</u>	<u>5.98</u>	<u>5.98</u>	<u>0.478</u>	<u>8.9</u>	<u>0.09</u>	<u>18.85</u>	<u>203</u>	
<u>1335</u>	<u>6.15</u>	<u>5.96</u>	<u>0.476</u>	<u>7.2</u>	<u>0.0</u>	<u>18.90</u>	<u>201</u>	
<u>1340</u>	<u>6.7</u>	<u>5.92</u>	<u>0.474</u>	<u>4.8</u>	<u>0.0</u>	<u>18.86</u>	<u>199</u>	

1325



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-13 S
 SITE NAME Duke-Spartanburg DATE 10/3/12 TIME OF SAMPLE 1445
 FIELD PERSONNEL Rodney Clark WEATHER CONDITIONS P. Cloudy

TOTAL WELL DEPTH (TWD) 15.02 FT. (measured / well tag / drillers log / previous report - circle one)
 SCREENED INTERVAL 5.02-15.02 MEASURING POINT FOR DEPTH TOC
 DEPTH TO GROUNDWATER (DGW) 7.38
 LENGTH OF WATER COLUMN (LWC) = TWD - DGW = 7.64
 CASING DIAMETER 2 IN.
 ONE STANDING WELL VOLUME = 1.3 gal.

(NOTE 1/2" = 0.0102 G/FT: 3/4" = 0.023 G/FT: 1" = 0.041 G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 3.9 FIVE STANDING WELL VOLUMES = NA

METHOD OF WELL EVACUATION: BAILER / PUMP OTHER: TYPE peristaltic (low flow)

TOTAL VOLUME OF WATER REMOVED: 0.5 GAL. FLOW RATE 145 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

LOCKING CAP YES ✓ NO ✓

PROTECTIVE POST/ABUTMENT YES ✓ NO ✓

NONPOTABLE LABEL YES ✓ NO ✓

ID PLATE YES ✓ NO ✓

WELL INTEGRITY SATISFACTORY YES ✓ NO ✓

WELL YIELD LOW ✓ MODERATE ✓ HIGH ✓

COMMENTS groundwater contains
slime and petroleum like odor
- product on tubing

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	7.41	6.20	0.395	98.7	0.84	20.77	4	
5 min	7.56	5.52	0.594	73.8	0.00	20.54	32	
10 min	7.62	5.76	0.614	63.7	0.00	20.40	12	
15 min	7.62	6.05	0.664	70.6	0.00	20.39	-1	
20 min	7.62	6.08	0.675	70.9	0.00	20.41	-2	slow purge rate to 100 mL/min

1416



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-13 D
 SITE NAME Duke Spartenbiller DATE 10/3/12 TIME OF SAMPLE 1540
 FIELD PERSONNEL Rodney Clark WEATHER CONDITIONS P. Cloudy

TOTAL WELL DEPTH (TWD) 35.4 FT. (measured / well tag drillers log/ previous report - circle one)
 SCREENED INTERVAL 30.4-35.4 MEASURING POINT FOR DEPTH TOC
 DEPTH TO GROUNDWATER (DGW) 8.88
 LENGTH OF WATER COLUMN (LWC) = TWD - DGW = 26.52
 CASING DIAMETER 2 IN.
 ONE STANDING WELL VOLUME = 4.2 gal.

(NOTE 1/2" = 0.0102 G/FT: 3/4" = 0.023 G/FT: 1" = 0.041 G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 12.6 FIVE STANDING WELL VOLUMES = N/A
 METHOD OF WELL EVACUATION: BAILER PUMP OTHER: TYPE peristaltic (low flow)
 TOTAL VOLUME OF WATER REMOVED: 3.0 GAL. FLOW RATE 168 ml/min
 WELL TYPE: FLUSH MOUNT / ABOVE GRADE
 LOCKING CAP YES ✓ NO
 PROTECTIVE POST/ABUTMENT YES NO ✓
 NONPOTABLE LABEL YES ✓ NO
 ID PLATE YES ✓ NO
 WELL INTEGRITY SATISFACTORY YES ✓ NO
 WELL YIELD LOW ✓ MODERATE HIGH

COMMENTS SO₄ and filter
well/removed pump & tubing
- large ant nest adjacent
to well
 $\frac{255 \text{ ml}}{91} = \frac{x}{60} \quad x = 168$

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	9.95	6.92	0.415	34.5	5.72	18.89	86	
5 min	11.12	6.44	0.414	35.7	5.43	18.85	94	
10 min	12.58	6.26	0.412	38.9	5.09	18.81	110	
15 min	14.30	6.40	0.412	48.9	5.02	18.80	107	
20 min	15.90	6.62	0.412	75.3	5.18	18.72	102	slow purge rate to approx 100 ml/min
25 min	18.75	6.68	0.413	93.5	5.23	19.31	106	
30 min	22.53	6.64	0.411	126.0	5.44	18.44	115	slow purge rate to 90 ml/min
35 min	24.50	6.71	0.412	112.0	5.13	19.67	117	
40 min	DNM	DNM	DNM	↑ 23.6	DNM	DNM	DNM	

Stabilized @ 25' bte Recalibrated U-22 U-22 reading 436 on Cal 5. Autocal 5. Recal = 0.0



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-13 ISOL
 SITE NAME Duke-Spartanburg DATE 10-3-12 TIME OF SAMPLE 1600
 FIELD PERSONNEL TLH WEATHER CONDITIONS 68° Cloudy

TOTAL WELL DEPTH (TWD) 21.5 FT. (measured / well tag / drillers log/ previous report – circle one)
 SCREENED INTERVAL 6.5-21.5 MEASURING POINT FOR DEPTH TOC
 DEPTH TO GROUNDWATER (DGW) 7.0

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 14.5

CASING DIAMETER 4 IN.

ONE STANDING WELL VOLUME = 9.4 gal.

(NOTE ½" = 0.0102 G/FT; ¾" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 28.2 FIVE STANDING WELL VOLUMES = 47

METHOD OF WELL EVACUATION: BAILER PUMP OTHER: TYPE Perc

TOTAL VOLUME OF WATER REMOVED: _____ GAL. FLOW RATE _____ mL/min

WELL TYPE: FLUSH MOUNT ABOVE GRADE COMMENTS _____

LOCKING CAP YES / NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO /

NONPOTABLE LABEL YES / NO _____

ID PLATE YES / NO _____

WELL INTEGRITY SATISFACTORY YES / NO _____

WELL YIELD LOW _____ MODERATE _____ HIGH _____

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	<u>7.0</u>	<u>6.43</u>	<u>0.945</u>	<u>32.7</u>	<u>1.07</u>	<u>22.13</u>	<u>-13</u>	
<u>1546</u>	<u>7.4</u>	<u>6.16</u>	<u>0.981</u>	<u>11.2</u>	<u>0.19</u>	<u>21.86</u>	<u>-21</u>	
<u>1551</u>	<u>7.43</u>	<u>6.2</u>	<u>0.990</u>	<u>8.9</u>	<u>0.02</u>	<u>21.79</u>	<u>-26</u>	
<u>1556</u>	<u>7.49</u>	<u>6.23</u>	<u>0.989</u>	<u>5.5</u>	<u>0</u>	<u>21.75</u>	<u>-30</u>	

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MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER G228-12-0021 MONITORING WELL NUMBER MW-145
 SITE NAME Wake Spartanburg DATE 10/2/12 TIME OF SAMPLE 16:25
 FIELD PERSONNEL Rodney Clark WEATHER CONDITIONS P. Cloudy / Rain in AM

TOTAL WELL DEPTH (TWD) 14.88 FT. (measured / well tag / drillers log / previous report - circle one)

SCREENED INTERVAL 4.88 - 11.88 MEASURING POINT FOR DEPTH TO C

DEPTH TO GROUNDWATER (DGW) 7.78

LENGTH OF WATER COLUMN (LWC) = TWD - DGW = 7.1

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 1.2 gal.

(NOTE 1/2" = 0.0102 G/FT; 3/4" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 3.6 FIVE STANDING WELL VOLUMES = NA

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE peristaltic

TOTAL VOLUME OF WATER REMOVED: 1.0 GAL. FLOW RATE 100 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

COMMENTS

LOCKING CAP YES ✓ NO

PROTECTIVE POST/ABUTMENT YES NO ✓

NONPOTABLE LABEL YES ✓ NO

ID PLATE YES ✓ NO

WELL INTEGRITY SATISFACTORY YES ✓ NO

WELL YIELD LOW MODERATE ✓ HIGH

3:30

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	14.88 7.78	5.73	0.367	>1000	1.13	21.59	42	
5	8.15	4.60	0.291	>1000	0.00	20.82	107	After reading empty f.t. cell
10	8.23	4.50	0.176	216.0	5.96	20.54	152	
15	8.44	4.34	0.163	57.1	0.00	20.53	210	After reading empty f.t. cell
20	8.49	4.95	0.162	160.0	5.31	20.49	169	
25	8.50	4.79	0.157	28.5	0.00	20.48	197	
30	8.49	4.74	0.155	27.7	0.00	20.46	209	After reading empty f.t. cell
35	8.53	4.92	0.153	14.5	5.21	20.40	175	



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-14D
 SITE NAME Duke, Spartanburg DATE 10/3/12 TIME OF SAMPLE 9:20
 FIELD PERSONNEL Rodney Clark WEATHER CONDITIONS P. Cloudy

TOTAL WELL DEPTH (TWD) 34.61 FT. (measured / well tag / drillers log / previous report - circle one)
 SCREENED INTERVAL 29.61 - 34.61 MEASURING POINT FOR DEPTH TOC
 DEPTH TO GROUNDWATER (DGW) 8.41
 LENGTH OF WATER COLUMN (LWC) = TWD - DGW = 26.2
 CASING DIAMETER 2 IN.
 ONE STANDING WELL VOLUME = 4.3 gal.

(NOTE 1/2" = 0.0102 G/FT: 3/4" = 0.023 G/FT: 1" = 0.041 G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 12.8 FIVE STANDING WELL VOLUMES = NA

METHOD OF WELL EVACUATION: BAILER / PUMP OTHER: TYPE peristaltic (low flow)

TOTAL VOLUME OF WATER REMOVED: 1.5 GAL. FLOW RATE 100 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

LOCKING CAP YES ✓ NO

PROTECTIVE POST/ABUTMENT YES NO ✓

NONPOTABLE LABEL YES ✓ NO

ID PLATE YES ✓ NO

WELL INTEGRITY SATISFACTORY YES ✓ NO

WELL YIELD LOW ✓ MODERATE HIGH

COMMENTS -bailer in well / tied to cap.

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	9.01	6.81	0.375	42.6	2.13	18.11	36	
5	10.35	6.92	0.372	63.9	0.00	17.67	47	
10	12.90	6.95	0.366	147.0	0.00	17.52	94	
15	15.34	7.01	0.363	168.0	0.00	17.54	94	
20	17.40	6.97	0.359	216.0	0.00	17.57	101	
25	19.18	7.00	0.357	233.0	0.00	17.51	90	
30	22.25	6.88	0.347	240.0	1.13	17.62	107	capt. fit. cell slow purge rate to sample
35	23.55	6.82	0.362	51.1	2.65	17.71	111	
40	23.48	6.85	0.359	33.5	1.01	17.72	114	

8:40



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-155
SITE NAME Duke-Spartanburg DATE 10-3-12 TIME OF SAMPLE 925
FIELD PERSONNEL TLH WEATHER CONDITIONS Cloudy 64

TOTAL WELL DEPTH (TWD) 15.15 FT. (measured / well tag / drillers log/ previous report – circle one)

SCREENED INTERVAL 5-15 MEASURING POINT FOR DEPTH 10c

DEPTH TO GROUNDWATER (DGW) 7.9

LENGTH OF WATER COLUMN (LWC) = TWD - DGW = 7.25

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 1.14 gal.

(NOTE 1/2" = 0.0102G/FT: 3/4" = 0.023 G/FT: 1" = 0.041G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 3.57 FIVE STANDING WELL VOLUMES = 5.95

METHOD OF WELL EVACUATION: BAILER PUMP OTHER: TYPE Peri

TOTAL VOLUME OF WATER REMOVED: 0.1 GAL. FLOW RATE mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

COMMENTS

LOCKING CAP YES NO

PROTECTIVE POST/ABUTMENT YES _____ NO /

NONPOTABLE LABEL YES ☒ NO ☐

ID PLATE YES / NO

WELL INTEGRITY SATISFACTORY YES ✓ NO

WELL YIELD LOW _____ MODERATE _____ HIGH

[illegible]



AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-15D
SITE NAME Duke Spartanburg DATE 10-3-12 TIME OF SAMPLE 840
FIELD PERSONNEL TLH WEATHER CONDITIONS Cloudy 66

TOTAL WELL DEPTH (TWD) 34.60 FT. (measured / well tag / drillers log / previous report - circle one)
 SCREENED INTERVAL 29.6 - 34.6' MEASURING POINT FOR DEPTH TOC
 DEPTH TO GROUNDWATER (DGW) 8.28
 LENGTH OF WATER COLUMN (LWC) = TWD - DGW = 26.32
 CASING DIAMETER 2 IN.
 ONE STANDING WELL VOLUME = 4.31 gal.

(NOTE 1/2" = 0.0102G/FT: 3/4" = 0.023 G/FT: 1" = 0.041G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 12.93 FIVE STANDING WELL VOLUMES = 21.55

METHOD OF WELL EVACUATION: BAILER PUMP OTHER: TYPE Peri

TOTAL VOLUME OF WATER REMOVED: 1.5g GAL. FLOW RATE _____ mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

LOCKING CAP YES ☒ NO ☐

PROTECTIVE POST/ABUTMENT YES NO ☒

NONPOTABLE LABEL YES ☒ NO

ID PLATE YES / NO

WELL INTEGRITY SATISFACTORY YES NO

WELL YIELD LOW MODERATE HIGH

COMMENTS

Noticeable Odor

[illegible]



AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-16D
SITE NAME Duke-Spartanburg DATE 10-3-12 TIME OF SAMPLE 1235
FIELD PERSONNEL TLH WEATHER CONDITIONS 68° Cloudy

1. Name of the person or organization who is the subject of the report	2. Address of the person or organization who is the subject of the report	3. Date of the report	4. Name of the person or organization who is the author of the report	5. Title of the report	6. Summary of the report	7. Details of the report	8. Conclusion of the report	9. Recommendations of the report	10. Other information
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[illegible]



AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-175
SITE NAME Duke-Spartanburg DATE 10-2-12 TIME OF SAMPLE 1605
FIELD PERSONNEL TLH WEATHER CONDITIONS Cloudy 790

SCREENED INTERVAL 5-15 MEASURING POINT FOR DEPTH TOL

LENGTH OF WATER COLUMN (LWC) = TWD - DGW = 11.70

ONE STANDING WELL VOLUME = 1.92 gal.

THREE STANDING WELL VOLUMES = 5.76 FIVE STANDING WELL VOLUMES = 9.6

TOTAL VOLUME OF WATER REMOVED: 91 GAL. FLOW RATE mL/min

COMMENTS

WELL INTEGRITY SATISFACTORY YES / NO

WELL YIELD LOW MODERATE HIGH

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-185
SITE NAME Duke Spartanburg DATE 10/2/17 TIME OF SAMPLE 1230
FIELD PERSONNEL Rodney Clark WEATHER CONDITIONS Rain in morning/sunny

TOTAL WELL DEPTH (TWD) 14.88 FT. (measured / well tag / drillers log / previous report - **circle one**)
 SCREENED INTERVAL 4.88 - 14.88 MEASURING POINT FOR DEPTH TOC
 DEPTH TO GROUNDWATER (DGW) 4.13
 LENGTH OF WATER COLUMN (LWC) = TWD - DGW = 10.75
 CASING DIAMETER 2 IN.
 ONE STANDING WELL VOLUME = 1.75 gal.

(NOTE ½" = 0.0102 G/FT: ¾" = 0.023 G/FT: 1" = 0.041 G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 5.25 FIVE STANDING WELL VOLUMES = 8.75

METHOD OF WELL EVACUATION: BAILER (PUMP) / OTHER: TYPE peristaltic (low flow)

TOTAL VOLUME OF WATER REMOVED: 0.75 GAL. FLOW RATE 100 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

LOCKING CAP YES / NO

PROTECTIVE POST/ABUTMENT YES _____ NO ✓

NONPOTABLE LABEL YES ✓ NO

ID PLATE YES ✓ NO

WELL INTEGRITY SATISFACTORY YES ✓ NO

WELL YIELD LOW _____ MODERATE _____ HIGH _____

COMMENTS

* Sample SVOCs first, then collect sample reading

collect sample reading
before prior to collecting

(Fe, Mn) metals, vocs, and
NO₂, SO₄, Alk.

$\text{NO}_3, \text{SO}_4, \text{Alk.}$
WL meter contains free product

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-18D
 SITE NAME Duke Spartanburg DATE 10-2-12 TIME OF SAMPLE _____
 FIELD PERSONNEL TLH WEATHER CONDITIONS 73° cloudy

TOTAL WELL DEPTH (TWD) 35.05 FT. (measured / well tag / drillers log/ previous report – circle one)

SCREENED INTERVAL _____ MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 5.5

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 30.05

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 4.99 gal.

(NOTE ½" = 0.0102 G/FT; ¾" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 14.97 FIVE STANDING WELL VOLUMES = 24.95

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE Peri

TOTAL VOLUME OF WATER REMOVED: 3 GAL. FLOW RATE _____ mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

COMMENTS _____

LOCKING CAP YES / NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO /

NONPOTABLE LABEL YES / NO _____

ID PLATE YES / NO _____

WELL INTEGRITY SATISFACTORY YES / NO _____

WELL YIELD LOW _____ MODERATE _____ HIGH _____

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	5.5	5.87	0.424	66.4	2.26	19.24	129	
1218	6.15	5.32	0.405	116.0	2.12	18.96	132	
1228	6.2	5.39	0.396	138.0	1.72	19.06	128	
1238	6.22	5.4	0.394	32.1	1.39	18.98	115	
1243	6.25	5.4	0.391	17.2	1.12	18.96	109	
1248	6.26	5.4	0.390	8.7	1.09	18.94	108	

1208



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-193
SITE NAME Duke spartanburg DATE 10-3-12 TIME OF SAMPLE 1040
FIELD PERSONNEL JLH WEATHER CONDITIONS cloudy 68°

TOTAL WELL DEPTH (TWD) 15 FT. (measured) well tag / drillers log/ previous report – circle one

SCREENED INTERVAL 5-15 MEASURING POINT FOR DEPTH 100

DEPTH TO GROUNDWATER (DGW) 8.53

LENGTH OF WATER COLUMN (LWC) = TWD - DGW = 6.47

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 1.06 gal.

(NOTE ½" = 0.0102G/FT: ¾" = 0.023 G/FT: 1" = 0.041G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 3.18 FIVE STANDING WELL VOLUMES = 5.3

METHOD OF WELL EVACUATION: BAILER/PUMP/OTHER: TYPE Peri

TOTAL VOLUME OF WATER REMOVED: _____ GAL. FLOW RATE _____ mL/min

WELL TYPE: (FLUSH MOUNT) / ABOVE GRADE

COMMENTS

LOCKING CAP YES / NO

PROTECTIVE POST/ABUTMENT YES _____ NO /

NONPOTABLE LABEL YES ☒ NO

ID PLATE YES ✓ NO

WELL INTEGRITY SATISFACTORY YES NO

WELL YIELD LOW _____ MODERATE _____ HIGH

[illegible]



AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-OR35
SITE NAME Duke-Spartanburg DATE 10-4-12 TIME OF SAMPLE 1305
FIELD PERSONNEL TLH WEATHER CONDITIONS Partly Cloudy 75°

WELL YIELD LOW MODERATE HIGH ☒

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

PWR
Dup-2

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-OR3W
SITE NAME Duke Spartanburg DATE 10-4-12 TIME OF SAMPLE 1120
FIELD PERSONNEL Troy Holzschuh WEATHER CONDITIONS Cloudy 70°

TOTAL WELL DEPTH (TWD) 23 FT. measured / well tag / drillers log / previous report - circle one
SCREENED INTERVAL 18-23 MEASURING POINT FOR DEPTH TOL
DEPTH TO GROUNDWATER (DGW) 9.56
LENGTH OF WATER COLUMN (LWC) = TWD - DGW = 13.44
CASING DIAMETER 2 IN.
ONE STANDING WELL VOLUME = 2.2 gal.

(NOTE 1/2" = 0.0102 G/FT; 3/4" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 6.6 FIVE STANDING WELL VOLUMES = 11

METHOD OF WELL EVACUATION: BAILER / PUMP OTHER: TYPE Peri

TOTAL VOLUME OF WATER REMOVED: 1 GAL. FLOW RATE _____ mL/min

WELL TYPE: FLUSH MOUNT ABOVE GRADE COMMENTS _____

LOCKING CAP YES / NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO /

NONPOTABLE LABEL YES / NO _____

ID PLATE YES / NO _____

WELL INTEGRITY SATISFACTORY YES / NO _____

WELL YIELD LOW _____ MODERATE _____ HIGH /

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	9.56	6.38	0.682	35.4	2.0	21.53	-432	
1105	11.00	5.97	0.663	27.1	0.13	21.08	-452	
1110	11.02	6.02	0.670	17.6	0.15	21.14	-451	
1115	11.03	6.03	0.671	9.9	0.16	21.09	-453	

1055



AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-OR5W
SITE NAME Duke Spartanburg DATE 10-4-12 TIME OF SAMPLE 930
FIELD PERSONNEL TLH WEATHER CONDITIONS Cloudy 66°

(NOTE 1/2" = 0.0102G/FT: 3/4" = 0.023 G/FT: 1" = 0.041G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

METHOD OF WELL EVACUATION: BAILER (PUMP) OTHER: TYPE Peri

TOTAL VOLUME OF WATER REMOVED: _____ GAL. FLOW RATE _____ mL/min

WELL TYPE: FLUSH MOUNT ABOVE GRADE COMMENTS _____

LOCKING CAP YES ☒ NO ☐

PROTECTIVE POST/ABUTMENT	YES	NO	<input checked="" type="checkbox"/>	
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NONPOTABLE LABEL YES ☒ NO ☐

ID PLATE YES / NO

WELL INTEGRITY SATISFACTORY YES ☒ NO ☐

WELL YIELD LOW MODERATE HIGH

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-055N
SITE NAME Duke Spartaburg DATE 10-5-12 TIME OF SAMPLE 1530
FIELD PERSONNEL TLH WEATHER CONDITIONS Sunny 85°

TOTAL WELL DEPTH (TWD) 13 FT. (measured) / well tag / drillers log / previous report – circle one

SCREENED INTERVAL 8-13 MEASURING POINT FOR DEPTH FOC

DEPTH TO GROUNDWATER (DGW) 8.41

LENGTH OF WATER COLUMN (LWC) = TWD - DGW = 4.59

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 75 gal.

(NOTE 1/2"=0.0102G/FT: 3/4"=0.023 G/FT: 1"=0.041G/FT: 2"=0.163 G/FT: 4"=0.653 G/FT: 6"=1.46 G/FT)

THREE STANDING WELL VOLUMES = 2.23 FIVE STANDING WELL VOLUMES = 3.13

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE Peri

TOTAL VOLUME OF WATER REMOVED: _____ GAL. FLOW RATE _____ mL/min

WELL TYPE: FLUSH MOUNT ABOVE GRADE COMMENTS _____

LOCKING CAP YES NO

PROTECTIVE POST/ABUTMENT YES _____ NO ✓

NONPOTABLE LABEL YES / NO

ID PLATE YES / NO

WELL INTEGRITY SATISFACTORY YES / NO

WELL YIELD LOW MODERATE HIGH

[illegible]



AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-0555
SITE NAME Duke Spartanburg DATE 10-5-12 TIME OF SAMPLE 1305
FIELD PERSONNEL TLH WEATHER CONDITIONS Sunny 85°

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-055E
SITE NAME Duke Spartanburg DATE 10-5-12 TIME OF SAMPLE 1355
FIELD PERSONNEL TLH WEATHER CONDITIONS Sunny 85

TOTAL WELL DEPTH (TWD) 13 FT. (measured/ well tag / drillers log/ previous report – **circle one**)

SCREENED INTERVAL 8-13 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 8.28

LENGTH OF WATER COLUMN (LWC) = TWD - DGW = 4.72

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 77 gal.

(NOTE ½" = 0.0102 G/FT; ¾" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 2.31 FIVE STANDING WELL VOLUMES = 3.85

METHOD OF WELL EVACUATION: BAILER ~~PUMP~~ / OTHER: TYPE Peri

TOTAL VOLUME OF WATER REMOVED: 1 GAL. FLOW RATE _____ mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE COMMENTS _____

LOCKING CAP YES / NO

PROTECTIVE POST/ABUTMENT YES _____ NO

NONPOTABLE LABEL YES / NO

ID PLATE YES NO

WELL INTEGRITY SATISFACTORY YES 1 NO

WELL YIELD LOW MODERATE HIGH

[illegible]



AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-OR105
SITE NAME Duke-Spartanburg DATE 10-4-12 TIME OF SAMPLE 1630
FIELD PERSONNEL TCH WEATHER CONDITIONS Sunny 83°

SCREENED INTERVAL 20-25 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 10.05

LENGTH OF WATER COLUMN (LWC) = TWD - DGW = 14.89

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 2.45 gal.

(NOTE 1/2" = 0.0102 G/FT; 3/4" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 7.35 FIVE STANDING WELL VOLUMES = 12.25

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE Peri

TOTAL VOLUME OF WATER REMOVED: _____ GAL. FLOW RATE _____ mL/min.

WELL TYPE: FLUSH MOUNT / ~~ABOVE GRADE~~ COMMENTS _____

LOCKING CAP YES NO

PROTECTIVE POST/ABUTMENT	YES	NO	<input checked="" type="checkbox"/>
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NONPOTABLE LABEL YES ☒ NO

ID PLATE YES ☒ NO ☐

WELL INTEGRITY SATISFACTORY YES ☒ NO

WELL YIELD LOW MODERATE HIGH

[illegible]

[illegible]



AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-05 105
SITE NAME Duke-Spartanburg DATE 10-5-12 TIME OF SAMPLE 1215
FIELD PERSONNEL TLH WEATHER CONDITIONS Sunny 83°

(NOTE ½" = 0.0102G/FT: ¾" = 0.023 G/FT: 1" = 0.041G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

METHOD OF WELL EVACUATION: BAILER PUMP OTHER: TYPE Peri

WELL TYPE: FLUSH MOUNT / ABOVE GRADE COMMENTS _____

PROTECTIVE POST/ABUTMENT	YES	NO	<input checked="" type="checkbox"/>
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NONPOTABLE LABEL YES ☒ NO

ID PLATE YES ☒ NO

WELL INTEGRITY SATISFACTORY YES ☒ NO

WELL YIELD LOW MODERATE HIGH

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-05155
 SITE NAME Duke Spartanburg DATE 10-4-12 TIME OF SAMPLE 1540
 FIELD PERSONNEL TLH WEATHER CONDITIONS Partly Cloudy 800

TOTAL WELL DEPTH (TWD) 13 FT. (measured / well tag / drillers log / previous report – circle one)

SCREENED INTERVAL 8-13 MEASURING POINT FOR DEPTH TOL

DEPTH TO GROUNDWATER (DGW) 8.7

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 4.3

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 0.7 gal.

(NOTE ½" = 0.0102 G/FT; ¾" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 2.1 FIVE STANDING WELL VOLUMES = 3.5

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE Peri

TOTAL VOLUME OF WATER REMOVED: 1 GAL. FLOW RATE _____ mL/min

WELL TYPE: FLUSH MOUNT ABOVE GRADE COMMENTS _____

LOCKING CAP YES ☒ NO ☐

PROTECTIVE POST/ABUTMENT YES ☐ NO ☒

NONPOTABLE LABEL YES ☒ NO ☐

ID PLATE YES ☒ NO ☐

WELL INTEGRITY SATISFACTORY YES ☒ NO ☐

WELL YIELD LOW _____ MODERATE _____ HIGH _____

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	8.7	6.5	0.630	635	4.09	23.34	75	
1528	9.09	5.81	0.569	66.5	0.31	22.98	87	
1533	9.15	5.79	0.565	21.9	0.22	22.96	90	
1538	9.16	5.78	0.565	9.5	0.21	24.91	93	

1518



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-05205
 SITE NAME Duke-Spartanburg DATE 10-5-12 TIME OF SAMPLE 1035
 FIELD PERSONNEL T L H WEATHER CONDITIONS Sunny 83°

TOTAL WELL DEPTH (TWD) 13 FT. (measured / well tag / drillers log/ previous report - circle one)

SCREENED INTERVAL 8-13 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 8.78

LENGTH OF WATER COLUMN (LWC) = TWD - DGW = 4.22

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 0.64 gal.

(NOTE 1/2" = 0.0102 G/FT; 3/4" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 2.07 FIVE STANDING WELL VOLUMES = 3.45

METHOD OF WELL EVACUATION: BAILER PUMP / OTHER: TYPE Peri

TOTAL VOLUME OF WATER REMOVED: 1.5 GAL. FLOW RATE _____ mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

COMMENTS _____

LOCKING CAP YES ☒ NO ☐

PROTECTIVE POST/ABUTMENT YES ☐ NO ☒

NONPOTABLE LABEL YES ☒ NO ☐

ID PLATE YES ☒ NO ☐

WELL INTEGRITY SATISFACTORY YES ☒ NO ☐

WELL YIELD LOW _____ MODERATE _____ HIGH _____

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	8.78	6.45	0.622	178	1.7	20.16	-24	
1015	8.83	6.34	0.599	67.1	0.23	20.62	-48	
1020	8.83	6.31	0.596	26.1	0.09	20.69	-68	
1025	8.82	6.30	0.591	16.8	0.02	20.66	-72	
1030	8.83	6.30	0.59	4.7	0.02	20.66	-74	

1005



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-1SS
 SITE NAME Duke Energy-Spartanburg DATE 2/27/13 TIME OF SAMPLE 1215
 FIELD PERSONNEL TLH & RC WEATHER CONDITIONS Sunny 60°F

TOTAL WELL DEPTH (TWD) 20.39 FT. (measured / well tag / drillers log/ previous report – **circle one**)
 SCREENED INTERVAL 10.39-20.39 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 11.018

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 9.21

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 1.5 gal.

(NOTE ½" = 0.0102 G/FT; ¾" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 4.5 FIVE STANDING WELL VOLUMES = 7.5

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 1.5 GAL. FLOW RATE 200 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

COMMENTS

LOCKING CAP YES X NO

PROTECTIVE POST/ABUTMENT YES NO X

NONPOTABLE LABEL YES X NO

ID PLATE YES X NO

WELL INTEGRITY SATISFACTORY YES X NO

WELL YIELD LOW MODERATE X HIGH

-Tubing found in well prior to sampling, remove and use new depth tubing.

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	11.05	5.12	0.160	6.9	5.55	17.97	243	1145
5	11.33	5.08	0.160	6.7	3.25	18.19	255	1150
10	11.73	4.89	0.160	6.2	2.71	18.35	327	1155
15	12.02	4.78	0.160	5.9	1.83	18.40	358	1200
20	12.18	4.76	0.160	6.3	1.79	18.50	373	1205
25	12.30	4.80	0.156	5.7	1.83	18.53	381	1210
30	12.29	4.79	0.154	5.4	1.77	18.53	391	1215



AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-3SS
SITE NAME Duke Energy-Spartanburg DATE 2/25/13 TIME OF SAMPLE 1540
FIELD PERSONNEL TLH & RC WEATHER CONDITIONS Cloudy 50%

DEPTH TO GROUNDWATER (DGW) 8.40

LENGTH OF WATER COLUMN (LWC) = TWD - DGW = 4.85

ONE STANDING WELL VOLUME = 0.8 gal.

(NOTE ½" = 0.0102 G/FT: ¾" = 0.023 G/FT: 1" = 0.041 G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 2.4 FIVE STANDING WELL VOLUMES = 4

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 0.5 GAL. FLOW RATE 100 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE COMMENTS: _____

LOCKING CAP YES X NO

PROTECTIVE POST/ABUTMENT YES _____ NO X _____

NONPOTABLE LABEL YES X NO

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW MODERATE HIGH

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-10D
 SITE NAME Duke Energy-Spartanburg DATE 2/25/13 TIME OF SAMPLE 1110
 FIELD PERSONNEL TLH & RC WEATHER CONDITIONS Cloudy 40°F

TOTAL WELL DEPTH (TWD) 39 FT. (measured / well tag / drillers log/ previous report – circle one)
 SCREENED INTERVAL 34-39 MEASURING POINT FOR DEPTH TOC
 DEPTH TO GROUNDWATER (DGW) 10.62
 LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 28.38
 CASING DIAMETER 2 IN.
 ONE STANDING WELL VOLUME = 4.65 gal.

(NOTE 1/2" = 0.0102 G/FT: 3/4" = 0.023 G/FT: 1" = 0.041 G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 13.95 FIVE STANDING WELL VOLUMES = 23.25

METHOD OF WELL EVACUATION: ~~BAILER~~ PUMP / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 0.25 GAL. FLOW RATE 150 mL/min

WELL TYPE: ~~PLUG & ABUTMENT~~ ABOVE GRADE COMMENTS _____

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X _____

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE _____ HIGH _____

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	10.62	5.61	0.146	5.1	4.42	10.35	171	1050
7 min	10.70	6.50	0.167	2.7	1.97	10.74	192	1057
12 min	11.20	6.39	0.163	2.9	1.82	11.07	199	1102
16 min	11.23	6.35	0.162	2.2	1.67	11.29	202	1106
20 min	11.44	6.32	0.161	2.5	1.61	11.45	205	1110

TLH



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-11S
SITE NAME Duke Energy-Spartanburg DATE 2/25/13 TIME OF SAMPLE 1430
FIELD PERSONNEL TLH & RC WEATHER CONDITIONS cloudy, 40°F

TOTAL WELL DEPTH (TWD) 14.6 FT. (measured / well tag / drillers log/ previous report – **circle one**)
 SCREENED INTERVAL 4.6-14.6 MEASURING POINT FOR DEPTH TOC
 DEPTH TO GROUNDWATER (DGW) 11.05
 LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 3.55
 CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 0.58 gal.
(NOTE 1/2" = 0.0102 G/FT; 3/4" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)
THREE STANDING WELL VOLUMES = 1.74 FIVE STANDING WELL VOLUMES = 2.9
METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE Peri-Pump
TOTAL VOLUME OF WATER REMOVED: 0.25 GAL. FLOW RATE ~~200~~ 100 ^{RMC} mL/min

WELL TYPE:	FLUSH MOUNT	ABOVE GRADE	COMMENTS _____
LOCKING CAP	YES	<u>X</u> NO _____	_____
PROTECTIVE POST/ABUTMENT	YES _____	NO <u>X</u> _____	_____
NONPOTABLE LABEL	YES	<u>X</u> NO _____	_____
ID PLATE	YES	<u>X</u> NO _____	_____
WELL INTEGRITY SATISFACTORY	YES	<u>X</u> NO _____	_____
WELL YIELD	LOW	<u>X</u> MODERATE _____	HIGH _____

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-11D
SITE NAME Duke Energy-Spartanburg DATE 2/25/13 TIME OF SAMPLE 1440
FIELD PERSONNEL TLH & RC WEATHER CONDITIONS Cloudy 40°F

TOTAL WELL DEPTH (TWD) 31.2 FT. (measured / well tag / drillers log/ previous report – **circle one**)

SCREENED INTERVAL 26.2-31.2 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 11.13

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 20.07

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 3.29 gal.

(NOTE 1/2" = 0.0102 G/FT; 3/4" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 9.87 FIVE STANDING WELL VOLUMES = 16.45

METHOD OF WELL EVACUATION: BAILER / PUMP OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 0.25 GAL. FLOW RATE 100 mL/min

WELL TYPE:	<u>FLUSH MOUNT</u> / ABOVE GRADE	COMMENTS _____
LOCKING CAP	YES <u>X</u> NO _____	_____
PROTECTIVE POST/ABUTMENT	YES _____ NO <u>X</u>	_____
NONPOTABLE LABEL	YES <u>X</u> NO _____	_____
ID PLATE	YES <u>X</u> NO _____	_____
WELL INTEGRITY SATISFACTORY	YES <u>X</u> NO _____	_____
WELL YIELD	LOW _____ MODERATE <u>X</u> HIGH _____	

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-12S
SITE NAME Duke Energy-Spartanburg DATE 2/27/13 TIME OF SAMPLE 1020
FIELD PERSONNEL TLH & RC WEATHER CONDITIONS Sunny, 60°

TOTAL WELL DEPTH (TWD) 15.27 FT. (measured / well tag / drillers log/ previous report – circle one)

SCREENED INTERVAL 5.27-15.27 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 3.45

LENGTH OF WATER COLUMN (LWC) = TWD - DGW = 11.82

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 1.89 gal.

(NOTE 1/2" = 0.0102 G/FT; 3/4" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 10 FIVE STANDING WELL VOLUMES = 10

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 0.25 GAL. FLOW RATE 100 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

COMMENTS _____

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X _____

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE _____ HIGH _____

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-12D
SITE NAME Duke Energy-Spartanburg DATE 2/27/13 TIME OF SAMPLE 0910
FIELD PERSONNEL TLH & RC WEATHER CONDITIONS Sunny, 60°F

TOTAL WELL DEPTH (TWD) 35.42 FT. (measured / well tag / drillers log/ previous report – circle one)

SCREENED INTERVAL 30.42-35.42 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 3.64

LENGTH OF WATER COLUMN (LWC) = TWD - DGW = 31.78

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 5.1 gal.

(NOTE 1/2" = 0.0102 G/FT: 3/4" = 0.023 G/FT: 1" = 0.041 G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = NA FIVE STANDING WELL VOLUMES = NA

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 0.022 RM GAL. FLOW RATE 100 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

LOCKING CAP YES X NO

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL YES X NO

ID PLATE YES X NO

WELL INTEGRITY SATISFACTORY YES X NO

WELL YIELD LOW _____ MODERATE _____ HIGH _____

COMMENTS

Completed sampling
① 0942, pulled tubing
Tubing not with in screened
interval, resample w/ tubing
in screened interval, leave
sample time as 0910

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. ($\mu\text{S}/\text{cm}$)	Turbidity (NTU)	Dis. O_2 (mg/L)	Temp ($^{\circ}\text{C}$)	ORP (mV)	Notes
Initial Reading	4.35	4.48	0.294	14.0	10.52	4.59	109	TIME 0847
4 min	4.49	6.58	0.285	12.3	13.23	5.69	143	0853
11 min	4.66	6.85	0.275	6.4	11.95	7.50	156	0900
16 min	4.66	6.84	0.273	4.2	11.56	8.29	161	0905
21 min	4.65	6.80	0.267	1.7	10.94	9.32	168	0910
Initial	4.91	6.14	0.256	2.2	1.25	15.41	158	1031
5 min	5.48	6.32	0.252	2.3	0.00	15.38	129	1036
9 min	5.73	6.39	0.248	0.8	0.00	15.53	120	1040
17 min	5.81	6.36	0.246	0.4	0.00	15.76	104	1048
23 min	5.79	6.34	0.246	0.2	0.00	17.79	94	1054
								Sample @ 1055/leave sample time 085 0910



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-13D
 SITE NAME Duke Energy-Spartanburg DATE 2-22-13 TIME OF SAMPLE 1255
 FIELD PERSONNEL TLH & RC WEATHER CONDITIONS partly cloudy 55

TOTAL WELL DEPTH (TWD) 35.4 FT. (measured / well tag / drillers log/ previous report – **circle one**)
 SCREENED INTERVAL 30.4-35.4 MEASURING POINT FOR DEPTH TOC
 DEPTH TO GROUNDWATER (DGW) 7.10
 LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 28.3
 CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 4.64 gal.

(NOTE ½" = 0.0102 G/FT; ¾" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 13.92 FIVE STANDING WELL VOLUMES = 23.1

METHOD OF WELL EVACUATION: BAILER PUMP OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: _____ GAL. FLOW RATE 1.50 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE _____ HIGH _____

COMMENTS _____

Well does not produce enough water for low flow sampling. Dewater well, let recharge then sample

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	8.0	7.20	0.492	3.5	10.41	17.17	115	
1232	13.48	7.25	0.326	1.5	5.1	16.66	117	
1237	18.63	7.25	0.251	2.3	5.62	16.72	112	
1242	23.35	7.25	0.246	2.4	3.4	16.76	111	
1247	28.29	7.25	0.237	2.1	4.32	16.79	110	
1251	Dry	7.25						

1227



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-13 ISOC
SITE NAME Duke Energy-Spartanburg DATE 2-27-13 TIME OF SAMPLE 1140
FIELD PERSONNEL TLH & RC WEATHER CONDITIONS Sunny 52°

TOTAL WELL DEPTH (TWD) 21.5 FT. (measured / well tag / drillers log/ previous report – circle one)
SCREENED INTERVAL 6.5-21.5 MEASURING POINT FOR DEPTH TOC
DEPTH TO GROUNDWATER (DGW) _____
LENGTH OF WATER COLUMN (LWC) = TWD – DGW = _____
CASING DIAMETER 4 IN.

ONE STANDING WELL VOLUME = _____ gal.
(NOTE ½" = 0.0102 G/FT; ¾" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = _____ FIVE STANDING WELL VOLUMES = _____

METHOD OF WELL EVACUATION: BAILER (PUMP) / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 5 GAL. FLOW RATE 150 mL/min

WELL TYPE: FLUSH MOUNT ABOVE GRADE COMMENTS _____

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X _____

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE _____ HIGH _____

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading		6.31	8.73	2.2	3.41	13.32	170	
1126		6.15	8.74	2.2	0	13.72	160	
1131		6.12	8.72	2.1	0	13.74	154	
1136		6.10	8.69	2.1	0	13.81	152	

1121



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-14S
SITE NAME Duke Energy-Spartanburg DATE 2-25-13 TIME OF SAMPLE 1210
FIELD PERSONNEL TLH & RC WEATHER CONDITIONS Cloudy 45°

TOTAL WELL DEPTH (TWD) 14.88 FT. (measured / well tag / drillers log/ previous report – circle one)
SCREENED INTERVAL 4.88-14.88 MEASURING POINT FOR DEPTH TOC
DEPTH TO GROUNDWATER (DGW) 9.03
LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 5.85
CASING DIAMETER 2 IN.
ONE STANDING WELL VOLUME = 0.96 gal.

(NOTE 1/2" = 0.0102 G/FT: 3/4" = 0.023 G/FT: 1" = 0.041 G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 2.88 FIVE STANDING WELL VOLUMES = 4.8

METHOD OF WELL EVACUATION: BAILER PUMP OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: .5 GAL. FLOW RATE 200 mL/min

WELL TYPE: FLUSH MOUNT ABOVE GRADE COMMENTS _____

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X _____

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE _____ HIGH /

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	9.30	6.87	0.099	1.4	9.87	10.95	132	
1157	9.31	6.58	0.096	0	2.72	10.84	154	
1202	9.31	6.38	0.098	0	2.14	10.74	159	
1207	9.31	6.35	0.098	0	2.09	10.76	161	

1152



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-14D
 SITE NAME Duke Energy-Spartanburg DATE 2-25-13 TIME OF SAMPLE 1320
 FIELD PERSONNEL TLH & RC WEATHER CONDITIONS Cloudy 45°

TOTAL WELL DEPTH (TWD) 34.61 FT. (measured / well tag / drillers log/ previous report -- circle one)
 SCREENED INTERVAL 29.61-34.61 MEASURING POINT FOR DEPTH TOC
 DEPTH TO GROUNDWATER (DGW) 7.86
 LENGTH OF WATER COLUMN (LWC) = TWD - DGW = 26.75
 CASING DIAMETER 2 IN.
 ONE STANDING WELL VOLUME = 4.39 gal.

(NOTE 1/2" = 0.0102 G/FT: 3/4" = 0.023 G/FT: 1" = 0.041 G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 13.17 FIVE STANDING WELL VOLUMES = 21.95

METHOD OF WELL EVACUATION: BAILER PUMP OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 2.5 GAL. FLOW RATE 150 initially mL/min

WELL TYPE: FLUSH MOUNT ABOVE GRADE

LOCKING CAP YES X NO

PROTECTIVE POST/ABUTMENT YES NO X

NONPOTABLE LABEL YES X NO

ID PLATE YES X NO

WELL INTEGRITY SATISFACTORY YES X NO

WELL YIELD LOW ✓ MODERATE HIGH

COMMENTS
Well does NOT produce enough
Water to sustain Flow sufficient
for low flow sampling.
Dewater Well, recharge &
sample per EPA guidelines

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	8.62	6.94	0.125	0.5	12.05	11.12	140	
1245	9.65	7.19	0.164	0	8.18	12.26	112	
1250	10.6	7.30	0.182	0	8.03	12.38	103	increase flow
1255	14.2	7.42	0.209	0.3	7.58	14.01	93	sheen on
1300	18.6	7.47	0.214	2.5	7.57	14.65	88	water
1305	23.0	7.49	0.215	2.1	7.49	14.60	86	
1310	27.2	7.50	0.216	2.4	7.47	16.62	84	Dry

1240



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-15S
SITE NAME Duke Energy-Spartanburg DATE 2-25-13 TIME OF SAMPLE 1010
FIELD PERSONNEL TLH & RC WEATHER CONDITIONS Cloudy 45°

TOTAL WELL DEPTH (TWD) 15.15 FT. (measured / well tag / drillers log/ previous report – **circle one**)
 SCREENED INTERVAL 5.15-15.15 MEASURING POINT FOR DEPTH TOC
 DEPTH TO GROUNDWATER (DGW) 6.31
 LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 8.84
 CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = ~~8.84~~ gal. 1.45
(NOTE 1/2" = 0.0102 G/FT; 3/4" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)
THREE STANDING WELL VOLUMES = ~~4.35~~ ~~26.52~~ FIVE STANDING WELL VOLUMES = 7.25
METHOD OF WELL EVACUATION: BAILER PUMP / OTHER: TYPE Peri-Pump
TOTAL VOLUME OF WATER REMOVED: 1 GAL. FLOW RATE 200 mL/min

WELL TYPE: FLUSH MOUNT ABOVE GRADE

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW MODERATE HIGH ✓

COMMENTS Shoen in water
Odor present

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-15D
 SITE NAME Duke Energy-Spartanburg DATE 2-25-13 TIME OF SAMPLE 915
 FIELD PERSONNEL TLH & RC WEATHER CONDITIONS Cloudy 43°

TOTAL WELL DEPTH (TWD) 34.60 FT. (measured / well tag / drillers log/ previous report – circle one)
 SCREENED INTERVAL 29.60-34.60 MEASURING POINT FOR DEPTH TOC
 DEPTH TO GROUNDWATER (DGW) 7.3
 LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 27.3
 CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 4.47 gal.
 (NOTE ½" = 0.0102 G/FT: ¾" = 0.023 G/FT: 1" = 0.041 G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)
 THREE STANDING WELL VOLUMES = 13.41 FIVE STANDING WELL VOLUMES = 22.35
 METHOD OF WELL EVACUATION: BAILER (PUMP) OTHER: TYPE Peri-Pump
 TOTAL VOLUME OF WATER REMOVED: 1 GAL. FLOW RATE 150 mL/min

WELL TYPE: (FLUSH MOUNT) ABOVE GRADE COMMENTS _____
 LOCKING CAP YES X NO _____
 PROTECTIVE POST/ABUTMENT YES _____ NO X _____
 NONPOTABLE LABEL YES X NO _____
 ID PLATE YES X NO _____
 WELL INTEGRITY SATISFACTORY YES X NO _____
 WELL YIELD LOW _____ MODERATE ✓ HIGH _____

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	8.04	6.78	0.338	24.6	3.17	10.12	142	
858	8.62	7.23	0.333	15.4	2.33	11.52	134	Lower Flow
903	8.64	7.29	0.332	10.8	2.08	12.05	126	
908	8.63	7.31	0.331	5.6	1.79	12.10	120	
913	8.63	7.32	0.331	5.5	1.77	12.12	118	

853



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-16S
SITE NAME Duke Energy-Spartanburg DATE 2/25/13 TIME OF SAMPLE 1015
FIELD PERSONNEL TLH & RC WEATHER CONDITIONS Cloudy, Appx. 40°F

TOTAL WELL DEPTH (TWD) 18.35 FT. (measured / well tag / drillers log/ previous report – circle one)

SCREENED INTERVAL 8.35-18.35 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 14.92

LENGTH OF WATER COLUMN (LWC) = TWD - DGW = 3.43

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 0.56 gal.

(NOTE ½" = 0.0102 G/FT: ¾" = 0.023 G/FT: 1" = 0.041 G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 1.68 FIVE STANDING WELL VOLUMES = 2.8

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 0.25 GAL. FLOW RATE 150 mL/min

WELL TYPE: FLUSH MOUNT ~~ABOVE GRADE~~

COMMENTS

LOCKING CAP YES X NO

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL YES X NO

ID PLATE	YES	X	NO
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99			
100			

WELL INTEGRITY SATISFACTORY	YES	X	NO
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WELL YIELD LOW _____ MODERATE ✓ _____ HIGH _____

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-16D
SITE NAME Duke Energy-Spartanburg DATE 2/25/13 TIME OF SAMPLE 0930
FIELD PERSONNEL TLH & RC WEATHER CONDITIONS Cloudy 40°

TOTAL WELL DEPTH (TWD) 31.5 FT. (measured / well tag / drillers log/ previous report – **circle one**)

SCREENED INTERVAL 26.5-31.5 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 14.41

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 17.09

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 2.8 gal.

(NOTE ½"=0.0102G/FT: ¾"=0.023 G/FT: 1"=0.041G/FT: 2"=0.163 G/FT: 4"=0.653 G/FT: 6"=1.46 G/FT)

THREE STANDING WELL VOLUMES = 8.4 FIVE STANDING WELL VOLUMES = 14

METHOD OF WELL EVACUATION: BAILER / PUMP OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 0.25 GAL. FLOW RATE 100 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE
LOCKING CAP YES ☒ NO ☐

COMMENTS
Complete sampling @ 0950

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL YES X NO

ID PLATE YES X NO

WELL INTEGRITY SATISFACTORY YES X NO

WELL YIELD LOW MODERATE  HIGH _____

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-17S
SITE NAME Duke Energy-Spartanburg DATE 2-22-13 TIME OF SAMPLE 935
FIELD PERSONNEL TLH & RC WEATHER CONDITIONS Sunny 45°

TOTAL WELL DEPTH (TWD) 15.15 FT. (measured / well tag / drillers log/ previous report – circle one)
SCREENED INTERVAL 5.15-15.15 MEASURING POINT FOR DEPTH TOC
DEPTH TO GROUNDWATER (DGW) 3.68
LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 11.47
CASING DIAMETER 2 IN.
ONE STANDING WELL VOLUME = 1.88 gal.

(NOTE ½" = 0.0102 G/FT: ¾" = 0.023 G/FT: 1" = 0.041 G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 5.64 FIVE STANDING WELL VOLUMES = 9.4

METHOD OF WELL EVACUATION: BAILER/PUMP OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 5 GAL. FLOW RATE 150 mL/min

WELL TYPE: FLUSH MOUNT ABOVE GRADE COMMENTS _____

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X _____

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE ✓ HIGH _____

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	<u>3.43</u>	<u>7.02</u>	<u>0.226</u>	<u>32.2</u>	<u>6.85</u>	<u>11.65</u>	<u>138</u>	
<u>922</u>	<u>3.52</u>	<u>7.02</u>	<u>0.215</u>	<u>22.7</u>	<u>0.66</u>	<u>12.01</u>	<u>135</u>	<u>Lower Flow</u>
<u>927</u>	<u>3.52</u>	<u>7.02</u>	<u>0.213</u>	<u>23.2</u>	<u>0.33</u>	<u>11.97</u>	<u>132</u>	
<u>932</u>	<u>3.52</u>	<u>7.02</u>	<u>0.213</u>	<u>11.8</u>	<u>0.18</u>	<u>11.96</u>	<u>130</u>	

917



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-18S 4 Dup-1
SITE NAME Duke Energy-Spartanburg DATE 2-25-13 TIME OF SAMPLE 1415
FIELD PERSONNEL TLH & RC WEATHER CONDITIONS Cloudy 47°

TOTAL WELL DEPTH (TWD) 14.88 FT. (measured / well tag / drillers log/ previous report – circle one)
 SCREENED INTERVAL 4.44-14.88 MEASURING POINT FOR DEPTH TOC
 DEPTH TO GROUNDWATER (DGW) 3.04
 LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 11.84
 CASING DIAMETER 2 IN.

(NOTE ½" = 0.0102 G/FT: ¾" = 0.023 G/FT: 1" = 0.041 G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 5.82 FIVE STANDING WELL VOLUMES = 9.7

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 0.5 GAL. FLOW RATE 200 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

LOCKING CAP YES X NO

PROTECTIVE POST/ABUTMENT YES _____ NO X _____

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE _____ HIGH

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-19S
 SITE NAME Duke Energy-Spartanburg DATE 2-27-13 TIME OF SAMPLE 850
 FIELD PERSONNEL TLH & RC WEATHER CONDITIONS Sunny 43°

TOTAL WELL DEPTH (TWD) 15 FT. (measured / well tag / drillers log/ previous report – circle one)
 SCREENED INTERVAL 5-15 MEASURING POINT FOR DEPTH TOC
 DEPTH TO GROUNDWATER (DGW) 7.74
 LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 7.26
 CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 1.19 gal.
 (NOTE ½" = 0.0102 G/FT; ¾" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 3.57 FIVE STANDING WELL VOLUMES = 5.95

METHOD OF WELL EVACUATION: BAILER PUMP / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 1.5 GAL. FLOW RATE 200 mL/min

WELL TYPE: FLUSH MOUNT ABOVE GRADE COMMENTS _____

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X _____

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE _____ HIGH ✓

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	7.93	6.78	0.468	428	5.83	7.65	152	
818	7.92	6.65	0.470	228	2.92	10.00	155	
823	7.92	6.59	0.465	179	2.74	10.25	154	
828	7.92	6.51	0.465	121	2.35	10.69	153	
833	7.92	6.50	0.465	83.8	2.35	10.93	152	
838	7.92	6.48	0.465	36.2	2.37	11.08	151	
843	7.92	6.48	0.465	9.7	2.38	11.09	150	

813



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OR-3S
SITE NAME Duke Energy-Spartanburg DATE 2-18-13 TIME OF SAMPLE 1515
FIELD PERSONNEL TLH WEATHER CONDITIONS Sunny - 60°F

TOTAL WELL DEPTH (TWD) 13 24.5 FT. (measured / well tag / drillers log/ previous report - circle one)
 SCREENED INTERVAL 8-13 19.5-24.4 MEASURING POINT FOR DEPTH TOC
 DEPTH TO GROUNDWATER (DGW) ~~8.75~~ 8.75
 LENGTH OF WATER COLUMN (LWC) = TWD - DGW = ~~15.25~~ 15.75
 CASING DIAMETER 2 IN.
 ONE STANDING WELL VOLUME = ~~2.58~~ 2.58 gal.

(NOTE ½" = 0.0102 G/FT: ¾" = 0.023 G/FT: 1" = 0.041 G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 7.74 FIVE STANDING WELL VOLUMES = 14.9

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 0.25 GAL. FLOW RATE 100 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

COMMENTS _____

LOCKING CAP YES X NO

PROTECTIVE POST/ABUTMENT YES _____ NO X _____

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE _____ HIGH _____

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OR-5S
 SITE NAME Duke Energy-Spartanburg DATE 2-18-13 TIME OF SAMPLE 1400
 FIELD PERSONNEL TLH WEATHER CONDITIONS Sunny 60°F

TOTAL WELL DEPTH (TWD) 25 FT. (measured / well tag / drillers log/ previous report – circle one)

SCREENED INTERVAL 20-25 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 8.05

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 16.95

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 2.8 gal.

(NOTE ½" = 0.0102 G/FT; ¾" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = ✓ FIVE STANDING WELL VOLUMES = ✓

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 0.5 GAL. FLOW RATE 100 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE COMMENTS _____

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X _____

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE X HIGH _____

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	10.48	6.39	0.55	9.7	7.49	17.82	123	1344
8 minutes	12.92	6.52	0.44	4.8	2.15	18.23	102	1352
12 minutes	12.72	6.64	0.41	5.2	2.28	18.31	97	1356
18 minutes	12.85	6.69	0.39	5.4	2.43	18.39	92	1402





MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OR-10S
 SITE NAME Duke Energy-Spartanburg DATE 2/28/13 TIME OF SAMPLE 0830
 FIELD PERSONNEL TLH & RC WEATHER CONDITIONS Sunny, 45°F in the sun

TOTAL WELL DEPTH (TWD) 25.87 FT. (measured / well tag / drillers log/ previous report – circle one)

SCREENED INTERVAL 20-25 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 8.87

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 16.13

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 2.5 gal.

(NOTE 1/2" = 0.0102 G/FT: 3/4" = 0.023 G/FT: 1" = 0.041 G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 7.5 FIVE STANDING WELL VOLUMES = 12.5

METHOD OF WELL EVACUATION: BAILER / PUMP OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 2.5 GAL. FLOW RATE 150 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE COMMENTS _____

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE _____ HIGH _____

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	10.41	6.91	0.741	38.4	13.58	4.20	13	0814
4 min	11.38	6.88	1.04	29.5	8.29	4.81	2	0818
11 min	12.54	6.16	6.64	34.6	7.72	6.28	107	0825
15 min	13.65	6.30	14.1	31.7	9.94	7.05	182	0829
20 min	15.00	6.28	14.7	34.4	8.28	8.03	199	0834
25 min	16.15	6.22	15.8	35.9	7.30	8.06	216	0837, slow for time
31 min	16.58	6.31	15.3	29.8	6.79	9.58	217	0845
34 min	16.58	6.19	15.3	27.7	6.21	9.76	230	0849

accurate slow for time



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OR-5W
SITE NAME Duke Energy-Spartanburg DATE 2-18-13 TIME OF SAMPLE 1110
FIELD PERSONNEL TLH WEATHER CONDITIONS Sunny, 50°

TOTAL WELL DEPTH (TWD) 13 24 FT. (measured / well tag / drillers log/ previous report – circle one)
SCREENED INTERVAL 8-13 19-24 MEASURING POINT FOR DEPTH TOC
DEPTH TO GROUNDWATER (DGW) 9.34
LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 14.66
CASING DIAMETER 2 IN.
ONE STANDING WELL VOLUME = 203 gal.

(NOTE ½" = 0.0102G/FT: ¾" = 0.023 G/FT: 1" = 0.041G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = _____ FIVE STANDING WELL VOLUMES = _____

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: _____ GAL. FLOW RATE 100 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

COMMENTS _____

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES NO X _____

NONPOTABLE LABEL YES X NO

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO

WELL YIELD LOW MODERATE HIGH

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OR-10W
 SITE NAME Duke Energy-Spartanburg DATE 2-18-13 TIME OF SAMPLE 1245
 FIELD PERSONNEL TLH WEATHER CONDITIONS Sunny 45°F

TOTAL WELL DEPTH (TWD) 22.5 FT. (measured well tag / drillers log / previous report – circle one)
 SCREENED INTERVAL 8.5-18.5-22.5 MEASURING POINT FOR DEPTH TOC
 DEPTH TO GROUNDWATER (DGW) 9.80
 LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 12.7

CASING DIAMETER 2 IN.
 ONE STANDING WELL VOLUME = 2.0 gal.
 (NOTE 1/2" = 0.0102 G/FT; 3/4" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 1 FIVE STANDING WELL VOLUMES = 1
 METHOD OF WELL EVACUATION: BAILER PUMP OTHER: TYPE Peri-Pump
 TOTAL VOLUME OF WATER REMOVED: 1.0 GAL. FLOW RATE 100 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE COMMENTS _____
 LOCKING CAP YES X NO _____
 PROTECTIVE POST/ABUTMENT YES _____ NO X _____
 NONPOTABLE LABEL YES X NO _____
 ID PLATE YES X NO _____
 WELL INTEGRITY SATISFACTORY YES X NO _____
 WELL YIELD LOW _____ MODERATE X HIGH _____

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	10.21	5.89	6.61	10.6	6.88	14.28	264	1211
4 min	10.90	5.83	6.68	10.2	1.73	14.56	274	1215
10 min	11.25	5.79	7.23	8.9	1.18	15.05	278	1221
16 min	11.31	5.70	7.87	3.6	0.83	15.58	286	1227
21 min	11.46	5.66	7.64	3.6	0.86	15.70	288	1232
28 min	11.90	5.84	7.63	5.5	1.27	15.83	276	1239
34 min	12.10	5.84	7.72	6.2	1.65	15.84	275	1245



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OS-5N
 SITE NAME Duke Energy-Spartanburg DATE 2-28-13 TIME OF SAMPLE 1100
 FIELD PERSONNEL TLH WEATHER CONDITIONS 46° Partly Sunny

TOTAL WELL DEPTH (TWD) 13 FT. (measured / well tag / drillers log/ previous report – circle one)
 SCREENED INTERVAL 8-13 MEASURING POINT FOR DEPTH TOC
 DEPTH TO GROUNDWATER (DGW) 6.84
 LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 6.16
 CASING DIAMETER 2 IN.
 ONE STANDING WELL VOLUME = 1.01 gal.
 (NOTE ½" = 0.0102G/FT; ¾" = 0.023 G/FT; 1" = 0.041G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)
 THREE STANDING WELL VOLUMES = 3.03 FIVE STANDING WELL VOLUMES = 5.05
 METHOD OF WELL EVACUATION: BAILER/PUMP / OTHER: TYPE Peri-Pump
 TOTAL VOLUME OF WATER REMOVED: 1.5 GAL. FLOW RATE _____ mL/min
 WELL TYPE: FLUSH MOUNT/ ABOVE GRADE COMMENTS _____
 LOCKING CAP YES X NO _____
 PROTECTIVE POST/ABUTMENT YES _____ NO X Per sulfate 70 mg/L
 NONPOTABLE LABEL YES X NO _____
 ID PLATE YES X NO _____
 WELL INTEGRITY SATISFACTORY YES X NO _____
 WELL YIELD LOW _____ MODERATE _____ HIGH _____

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	7.03	6.13	2.26	492	7.04	14.32	144	
1046	7.03	6.01	2.07	312	3.22	14.41	144	
1051	7.03	5.99	2.06	103	3.23	14.48	142	
1056	7.03	5.97	2.06	42.8	3.25	14.52	140	

1041



AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OS-10E
SITE NAME Duke Energy-Spartanburg DATE 2-18-13 TIME OF SAMPLE 840
FIELD PERSONNEL TLH WEATHER CONDITIONS Sunny 43°

WELL YIELD LOW _____ MODERATE _____ HIGH ✓

Per sulfate = 14 mg/L

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OS-5S + Dup-2
SITE NAME Duke Energy-Spartanburg DATE 2-7-13 TIME OF SAMPLE 1200
FIELD PERSONNEL TLH WEATHER CONDITIONS Cloudy 46°

TOTAL WELL DEPTH (TWD) 13 FT. (measured / well tag / drillers log/ previous report – **circle one**)

SCREENED INTERVAL 8-13 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 7.89

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 5.11

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 0.84 gal.

(NOTE ½" = 0.0102G/FT; ¾" = 0.023 G/FT; 1" = 0.041G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 2.52 FIVE STANDING WELL VOLUMES = 4.2

METHOD OF WELL EVACUATION: BAILER ☒ PUMP ☒ OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 0.5 GAL. FLOW RATE mL/min

WELL TYPE: FLUSH MOUNT ABOVE GRADE COMMENTS _____

LOCKING CAP YES X NO

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL YES X NO

ID PLATE YES X NO

WELL INTEGRITY SATISFACTORY YES X NO

WELL YIELD LOW _____ MODERATE / HIGH _____

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OS-15S
SITE NAME Duke Energy-Spartanburg DATE 2-18-13 TIME OF SAMPLE 1420
FIELD PERSONNEL TLH WEATHER CONDITIONS Cloudy 50°

TOTAL WELL DEPTH (TWD) 13 FT. (measured / well tag / drillers log/ previous report – **circle one**)

SCREENED INTERVAL 8-13 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 7.96

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 5.04

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 0.83 gal.

(NOTE ½" = 0.0102 G/FT: ¾" = 0.023 G/FT: 1" = 0.041 G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 2.49 FIVE STANDING WELL VOLUMES = 4.13

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 1.5 GAL. FLOW RATE 1.5 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

COMMENTS

LOCKING CAP YES X NO

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO

WELL INTEGRITY SATISFACTORY YES X NO

WELL YIELD LOW MODERATE HIGH

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OS-20S
SITE NAME Duke Energy-Spartanburg DATE 2-18-13 TIME OF SAMPLE 1515
FIELD PERSONNEL TLH WEATHER CONDITIONS Sunny, 45°F

TOTAL WELL DEPTH (TWD) 13 FT. (measured / well tag / drillers log/ previous report – circle one)

SCREENED INTERVAL 8-13 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 8.15

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 4.85

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 0.8 gal.

(NOTE ½" = 0.0102 G/FT: ¾" = 0.023 G/FT: 1" = 0.041 G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = _____ FIVE STANDING WELL VOLUMES = _____

METHOD OF WELL EVACUATION: BAILER / PUMP OTHER: _____ TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 1.0 GAL. FLOW RATE 100 mL/min

WELL TYPE: FLUSH MOUNT ABOVE GRADE

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE _____ HIGH _____

COMMENTS
Persulfate = 35 mg/L

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OS-5E
SITE NAME Duke Energy-Spartanburg DATE 3-28-13 TIME OF SAMPLE 1050
FIELD PERSONNEL TLH WEATHER CONDITIONS Sunny

TOTAL WELL DEPTH (TWD) 13 _____ FT. (measured / well tag / drillers log/ previous report – **circle one**)

SCREENED INTERVAL	8-13	MEASURING POINT FOR DEPTH	TOC
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DEPTH TO GROUNDWATER (DGW) 1.68

LENGTH OF WATER COLUMN (LWC) = TWD - DGW = 5.32

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 3.87 gal.

(NOTE ½" = 0.0102G/FT: ¾" = 0.023 G/FT: 1" = 0.041G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 2.61 FIVE STANDING WELL VOLUMES = 4.33

METHOD OF WELL EVACUATION: BAILER PUMP OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 2.50 GAL. FLOW RATE 50 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE COMMENTS _____

LOCKING CAP YES X NO

PROTECTIVE POST/ABUTMENT	YES	NO	X
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NONPOTABLE LABEL	YES	X	NO
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ID PLATE	YES	X	NO
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WELL INTEGRITY SATISFACTORY YES X NO

WELL YIELD LOW MODERATE HIGH

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OS-10E
 SITE NAME Duke Energy-Spartanburg DATE ~~7-28-13~~ 7-28-13 TIME OF SAMPLE 1145
 FIELD PERSONNEL TLH WEATHER CONDITIONS Sunny 46°

TOTAL WELL DEPTH (TWD) 13 FT. (measured / well tag / drillers log/ previous report – circle one)
 SCREENED INTERVAL 8-13 MEASURING POINT FOR DEPTH TOC
 DEPTH TO GROUNDWATER (DGW) 7.31
 LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 5.69
 CASING DIAMETER 2 IN.
 ONE STANDING WELL VOLUME = 0.93 gal.

(NOTE ½" = 0.0102 G/FT: ¾" = 0.023 G/FT: 1" = 0.041 G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 2.79 FIVE STANDING WELL VOLUMES = 4.65

METHOD OF WELL EVACUATION: BAILER PUMP OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 5 GAL. FLOW RATE 150 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE COMMENTS _____

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X _____

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE ✓ HIGH _____

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	7.55	6.97	658	NM	5.19	14.44	371	
1131	7.35	6.85	524	NM	2.80	14.42	370	
1136	7.55	6.81	503	NM	2.50	14.43	359.1	
1141	7.55	6.78	487	NM	2.48	14.42	347.8	

1126



AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OS-5S
SITE NAME Duke Energy-Spartanburg DATE 2-18-13 TIME OF SAMPLE 740
FIELD PERSONNEL TLH WEATHER CONDITIONS 34° Sunny

TOTAL WELL DEPTH (TWD) 13 FT. (measured / well tag / drillers log/ previous report – **circle one**)

SCREENED INTERVAL 8-13 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 8.25

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 4.75

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 0.72 gal.

(NOTE 1/2" = 0.0102G/FT: 3/4" = 0.023 G/FT: 1" = 0.041G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 2.34 FIVE STANDING WELL VOLUMES = 3.9

METHOD OF WELL EVACUATION: BAILER ~~PUMP~~ OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 0.5 GAL. FLOW RATE 125 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE COMMENTS _____

LOCKING CAP YES X NO

PROTECTIVE POST/ABUTMENT YES NO X

NONPOTABLE LABEL	YES	X	NO
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ID PLATE YES X NO

WELL INTEGRITY SATISFACTORY	YES	X	NO
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WELL YIELD LOW MODERATE HIGH

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OS-10S
SITE NAME Duke Energy-Spartanburg DATE 2-27-13 TIME OF SAMPLE 17:30
FIELD PERSONNEL TLH WEATHER CONDITIONS 54° Sunny

TOTAL WELL DEPTH (TWD) 13 FT. (measured / well tag / drillers log/ previous report – circle one)
 SCREENED INTERVAL 8-13 MEASURING POINT FOR DEPTH TOC
 DEPTH TO GROUNDWATER (DGW) 8.25
 LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 4.75
 CASING DIAMETER 2 IN. ~~2.75~~
 ONE STANDING WELL VOLUME = ~~0.779~~ gal. 0.779

(NOTE 1/2" = 0.0102 G/FT; 3/4" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 2.34 ~~8.25~~ FIVE STANDING WELL VOLUMES = 4.68 ~~15.39~~ 3.9

METHOD OF WELL EVACUATION: BAILER / PUMP OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 1.5 GAL. FLOW RATE 125 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE COMMENTS _____

LOCKING CAP YES X NO

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO

WELL INTEGRITY SATISFACTORY YES X NO

WELL YIELD LOW MODERATE HIGH 2[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OS-15S
 SITE NAME Duke Energy-Spartanburg DATE 2-18-13 TIME OF SAMPLE 1650
 FIELD PERSONNEL TLH WEATHER CONDITIONS Sunny 54°

TOTAL WELL DEPTH (TWD) 13 FT. (measured / well tag / drillers log/ previous report – circle one)
 SCREENED INTERVAL 8-13 MEASURING POINT FOR DEPTH TOC
 DEPTH TO GROUNDWATER (DGW) 8.35
 LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 4.65
 CASING DIAMETER 2 IN.
 ONE STANDING WELL VOLUME = 0.76 gal.

(NOTE ½" = 0.0102 G/FT: ¾" = 0.023 G/FT: 1" = 0.041 G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 2.28 FIVE STANDING WELL VOLUMES = 3.8

METHOD OF WELL EVACUATION: BAILER PUMP OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 1.5 GAL. FLOW RATE _____ mL/min

WELL TYPE: FLUSH MOUNT ABOVE GRADE COMMENTS _____

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE _____ HIGH ✓

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading:	8.61	6.47	1081	NM	3.52	21.36	104	
1636	8.62	6.16	444	NM	0.29	16.34	149.9	
1641	8.62	6.17	441	NM	0	16.22	154	
1646	8.62	6.17	439	NM	0	16.18	158	

1631



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OS-20S
SITE NAME Duke Energy-Spartanburg DATE 3-27-13 TIME OF SAMPLE 1605
FIELD PERSONNEL TLH WEATHER CONDITIONS Sunny 54°

TOTAL WELL DEPTH (TWD) 13 FT. (measured / well tag / drillers log/ previous report – circle one)

SCREENED INTERVAL 8-13 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 8.37

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 4.63

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 0.76 gal.

(NOTE ½" = 0.0102 G/FT; ¾" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 2.28 FIVE STANDING WELL VOLUMES = 3.8

METHOD OF WELL EVACUATION: BAILER/PUMP OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 1 GAL. FLOW RATE _____ mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE COMMENTS _____

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X _____

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE _____ HIGH ✓

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	8.43	6.28	1652	NM	2.10	16.11	202.3	
1551	8.43	6.30	723	NM	0.27	15.99	113.8	
1556	8.43	6.33	751	NM	0	15.92	93.2	
1601	8.43	6.34	752	NM	0	15.89	90.6	

1546



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OR-3S
 SITE NAME Duke Energy-Spartanburg DATE 2-18-13 TIME OF SAMPLE 1350
 FIELD PERSONNEL TLH WEATHER CONDITIONS Sunny 48°

TOTAL WELL DEPTH (TWD) 24.5 FT. (measured / well tag / drillers log/ previous report – circle one)
 SCREENED INTERVAL 19.5-24.5 MEASURING POINT FOR DEPTH TOC
 DEPTH TO GROUNDWATER (DGW) 8.60
 LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 15.9
 CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 2.01 gal.

(NOTE 1/2" = 0.0102 G/FT; 3/4" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 7.83 FIVE STANDING WELL VOLUMES = 13.05

METHOD OF WELL EVACUATION: BAILER PUMP OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: .5 GAL. FLOW RATE _____ mL/min

WELL TYPE: FLUSH MOUNT ABOVE GRADE COMMENTS _____

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE ✓ HIGH _____

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	9.24	12.58	30408	NM	5.87	20.42	108.7	
1335	10.24	12.81	31876	NM	2.78	20.17	165.8	Lower Flow
1340	10.26	12.86	35090	NM	2.94	20.12	175.5	
1345	10.26	12.89	35220	NM	2.96	20.07	183.2	

1330



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OR-5S
 SITE NAME Duke Energy-Spartanburg DATE 2/28/13 TIME OF SAMPLE 1430
 FIELD PERSONNEL TLH WEATHER CONDITIONS Sunny 58°

TOTAL WELL DEPTH (TWD) 25 FT. (measured / well tag / drillers log/ previous report – circle one)
 SCREENED INTERVAL 20-25 MEASURING POINT FOR DEPTH TOC
 DEPTH TO GROUNDWATER (DGW) 8.65
 LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 16.35
 CASING DIAMETER 2 IN.
 ONE STANDING WELL VOLUME = 2.68 gal.

(NOTE 1/2" = 0.0102 G/FT; 3/4" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 8.04 FIVE STANDING WELL VOLUMES = 13.4

METHOD OF WELL EVACUATION: BAILER / PUMP OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: .5 GAL. FLOW RATE _____ mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE COMMENTS _____

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X _____

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE _____ HIGH _____

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	9.75	8.3	1647	NM	1.08	19.12	300	
1417	10.12	6.87	833	NM	0.64	18.65	321	
1422	10.12	6.62	656	NM	0.55	18.59	318	
1427	10.12	6.58	602	NM	0.51	18.61	308	

1412



AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OR-3W
SITE NAME Duke Energy-Spartanburg DATE 3-27 TIME OF SAMPLE 1255
FIELD PERSONNEL TLH & RC WEATHER CONDITIONS Sunny 48°

SCREENED INTERVAL	18-23	MEASURING POINT FOR DEPTH	TOC
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LENGTH OF WATER COLUMN (LWC) = TWD - DGW = 14.15

ONE STANDING WELL VOLUME = 2.32 gal.

THREE STANDING WELL VOLUMES = 6.96 FIVE STANDING WELL VOLUMES = 11.6

TOTAL VOLUME OF WATER REMOVED: 2.5 GAL. FLOW RATE _____ mL/min

LOCKING CAP YES X NO

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL	YES	X	NO
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ID PLATE YES X NO

WELL INTEGRITY SATISFACTORY YES X NO

WELL YIELD LOW MODERATE HIGH

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OR-10W
SITE NAME Duke Energy-Spartanburg DATE ~~2-18-18~~ 3-22-18 TIME OF SAMPLE 1055
FIELD PERSONNEL TLH WEATHER CONDITIONS Sunny 45°

TOTAL WELL DEPTH (TWD) 22.5 FT. (measured / well tag / drillers log/ previous report – circle one)

SCREENED INTERVAL 18.5-22.5 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 8.66

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 13.84

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 2.27 gal.

(NOTE 1/2" = 0.0102 G/FT: 3/4" = 0.023 G/FT: 1" = 0.041 G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 6.81 FIVE STANDING WELL VOLUMES = 11.35

METHOD OF WELL EVACUATION: BAILER PUMP OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: _____ GAL.		FLOW RATE _____ mL/min
WELL TYPE: FLUSH MOUNT / <u>ABOVE GRADE</u>	COMMENTS _____	
LOCKING CAP	YES <u>X</u> NO _____	_____
PROTECTIVE POST/ABUTMENT	YES _____ NO <u>X</u>	_____
NONPOTABLE LABEL	YES <u>X</u> NO _____	_____
ID PLATE	YES <u>X</u> NO _____	_____
WELL INTEGRITY SATISFACTORY	YES <u>X</u> NO _____	_____
WELL YIELD	LOW MODERATE HIGH	

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-13 ISOC
 SITE NAME Duke Energy-Spartanburg DATE 3-27-13 TIME OF SAMPLE 1015
 FIELD PERSONNEL TLH & RC WEATHER CONDITIONS 40° Sunny

TOTAL WELL DEPTH (TWD) 21.5 FT. (measured / well tag / drillers log/ previous report – **circle one**)

SCREENED INTERVAL 6.5-21.5 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 6.13

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 15.37

CASING DIAMETER 4 IN.

ONE STANDING WELL VOLUME = 10.04 gal.

(NOTE ½" = 0.0102 G/FT: ¾" = 0.023 G/FT: 1" = 0.041 G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 30.12 FIVE STANDING WELL VOLUMES = 50.2

METHOD OF WELL EVACUATION: BAILER / PUMP OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 1 GAL. FLOW RATE _____ mL/min

WELL TYPE: FLUSH MOUNT ABOVE GRADE COMMENTS _____

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE _____ HIGH ✓

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	<u>6.13</u>	<u>6.79</u>	<u>7335</u>	<u>NM</u>	<u>5.2</u>	<u>16.10</u>	<u>126.1</u>	
<u>1003</u>	<u>6.20</u>	<u>6.77</u>	<u>7358</u>	<u>NM</u>	<u>1.19</u>	<u>16.20</u>	<u>139.6</u>	
<u>1008</u>	<u>6.20</u>	<u>6.76</u>	<u>7350</u>	<u>NM</u>	<u>1.11</u>	<u>16.21</u>	<u>145.8</u>	
<u>1013</u>	<u>6.20</u>	<u>6.76</u>	<u>7347</u>	<u>NM</u>	<u>1.07</u>	<u>16.21</u>	<u>150.1</u>	

958



AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OS-10E
SITE NAME Duke Energy-Spartanburg DATE 4-9 -13 TIME OF SAMPLE N/A
FIELD PERSONNEL TLH WEATHER CONDITIONS Sunny 75°

WELL YIELD LOW MODERATE HIGH

[illegible]



AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OS-5E
SITE NAME Duke Energy-Spartanburg DATE 4-9-13 TIME OF SAMPLE N/A
FIELD PERSONNEL TLH WEATHER CONDITIONS 75° Sunny

WELL YIELD LOW _____ MODERATE _____ HIGH _____

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OS-10S
SITE NAME Duke Energy-Spartanburg DATE 4-9-13 TIME OF SAMPLE N/A
FIELD PERSONNEL TLH WEATHER CONDITIONS 74° Sunny

TOTAL WELL DEPTH (TWD) 13 FT. (measured / well tag / drillers log/ previous report – **circle one**)

SCREENED INTERVAL 8-13 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 8.49

LENGTH OF WATER COLUMN (LWC) = TWD - DGW = 4.51

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 0.74 gal.

(NOTE ½" = 0.0102G/FT: ¾" = 0.023 G/FT: 1"= 0.041G/FT: 2"= 0.163 G/FT: 4"= 0.653 G/FT: 6"= 1.46 G/FT)

THREE STANDING WELL VOLUMES = 2.22 FIVE STANDING WELL VOLUMES = 3.7

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 0.5 GAL. FLOW RATE _____ mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE COMMENTS _____

LOCKING CAP YES X NO

PROTECTIVE POST/ABUTMENT	YES	NO	X
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NONPOTABLE LABEL	YES	X	NO
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ID PLATE	YES	X	NO
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WELL INTEGRITY SATISFACTORY YES X NO

WELL YIELD LOW MODERATE HIGH

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OR-5W
 SITE NAME Duke Energy-Spartanburg DATE 3-9-13 TIME OF SAMPLE ~~6:50~~ N/A
 FIELD PERSONNEL TLH WEATHER CONDITIONS 65° Sunny

TOTAL WELL DEPTH (TWD) 24 FT. (measured / well tag / drillers log/ previous report – circle one)

SCREENED INTERVAL 19-24 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 8.98

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 15.02

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 2.46 gal.

(NOTE ½" = 0.0102 G/FT; ¾" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 7.38 FIVE STANDING WELL VOLUMES = 12.3

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 0.5 GAL. FLOW RATE _____ mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

COMMENTS

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE / HIGH _____

26 g/L K10241 Persulfate

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	9.5	8.85	23.2	17.2	7.49	21.73	228	
1031	9.54	6.60	19.0	16.1	7.13	22.02	318	
1034	9.55	6.18	16.5	16.7	6.80	22.19	350	
1037	9.55	5.92	15.9	16.9	5.43	22.22	387	

1028



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OR-10S
SITE NAME Duke Energy-Spartanburg DATE 4-9-13 TIME OF SAMPLE N/A
FIELD PERSONNEL TLH WEATHER CONDITIONS 70° Sunny

TOTAL WELL DEPTH (TWD) 25 FT. (measured / well tag / drillers log/ previous report – circle one)

SCREENED INTERVAL	20-25	MEASURING POINT FOR DEPTH	TOC
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DEPTH TO GROUNDWATER (DGW) 9.88

LENGTH OF WATER COLUMN (LWC) = TWD - DGW = 15.12

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 2.48 gal.

(NOTE 1/2" = 0.0102G/FT: 3/4" = 0.023 G/FT: 1"= 0.041G/FT: 2"= 0.163 G/FT: 4"= 0.653 G/FT: 6"= 1.46 G/FT)

THREE STANDING WELL VOLUMES = 2.44 FIVE STANDING WELL VOLUMES = 12.4

METHOD OF WELL EVACUATION: BAILER (PUMP) / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 15 GAL. FLOW RATE _____ mL/min

WELL TYPE:	FLUSH MOUNT / <u>ABOVE GRADE</u>	COMMENTS
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LOCKING CAP	YES	X	NO
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PROTECTIVE POST/ABUTMENT	YES	NO	X
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NONPOTABLE LABEL	YES	X	NO
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ID PLATE	YES	X	NO
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WELL INTEGRITY SATISFACTORY YES X NO

WELL YIELD LOW MODERATE HIGH

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OR-3W
SITE NAME Duke Energy-Spartanburg DATE 4-9-13 TIME OF SAMPLE N/A
FIELD PERSONNEL TLH WEATHER CONDITIONS 68° Sunny

TOTAL WELL DEPTH (TWD) 23 FT. (measured / well tag / drillers log/ previous report – circle one)

SCREENED INTERVAL	18-23	MEASURING POINT FOR DEPTH	TOC
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DEPTH TO GROUNDWATER (DGW) 9.13

LENGTH OF WATER COLUMN (LWC) = TWD - DGW = 13.87

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 2.27 gal.

(NOTE 1/2" = 0.0102G/FT: 3/4" = 0.023 G/FT: 1"= 0.041G/FT: 2"= 0.163 G/FT: 4"= 0.653 G/FT: 6"= 1.46 G/FT)

THREE STANDING WELL VOLUMES = 6.8 FIVE STANDING WELL VOLUMES = 11.35

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 4.5 GAL. FLOW RATE _____ mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

COMMENTS
14.5 g/L Klorur persulfate

LOCKING CAP	YES	X	NO
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PROTECTIVE POST/ABUTMENT	YES	NO	X
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NONPOTABLE LABEL	YES	X	NO
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ID PLATE	YES	X	NO
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WELL INTEGRITY SATISFACTORY YES X NO

WELL YIELD LOW MODERATE HIGH

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-13 ISOC
 SITE NAME Duke Energy-Spartanburg DATE 4-9-13 TIME OF SAMPLE N/A
 FIELD PERSONNEL TLH WEATHER CONDITIONS 65° Partly Cloudy

TOTAL WELL DEPTH (TWD) 21.5 FT. (measured / well tag / drillers log/ previous report – circle one)

SCREENED INTERVAL 6.5-21.5 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 6.39

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 15.11

CASING DIAMETER 4 IN.

ONE STANDING WELL VOLUME = 9.86 gal.

(NOTE ½" = 0.0102 G/FT: ¾" = 0.023 G/FT: 1" = 0.041 G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 29.58 FIVE STANDING WELL VOLUMES = 49.3

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 1 GAL. FLOW RATE _____ mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

COMMENTS 8.5 g/L Klorox Persulfate

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE _____ HIGH /

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	6.42	6.64	8.31	44.8	0.59	19.32	251	
947	6.42	6.64	8.28	23.9	0.35	19.70	236	
950	6.42	6.64	8.28	13.7	0.18	19.65	230	
953	6.42	6.64	8.27	8.9	0	19.62	225	

944



AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OS-5E
SITE NAME Duke Energy-Spartanburg DATE 4-23-13 TIME OF SAMPLE N/A
FIELD PERSONNEL TLH WEATHER CONDITIONS 65° Sunny Windy

SCREENED INTERVAL	8-13	MEASURING POINT FOR DEPTH	TOC
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LENGTH OF WATER COLUMN (LWC) = TWD - DGW = 4.94

ONE STANDING WELL VOLUME = 0.81 gal.

THREE STANDING WELL VOLUMES = 2.93 FIVE STANDING WELL VOLUMES = 4.05

METHOD OF WELL EVACUATION: BAILER (PUMP) OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 1.5 GAL. FLOW RATE _____ mL/min

WELL TYPE: FLUSH MOUNT (ABOVE GRADE) COMMENTS _____

LOCKING CAP YES X NO

PROTECTIVE POST/ABUTMENT	YES	NO	X
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NONPOTABLE LABEL	YES	X	NO
1. Is the water used for drinking?			
2. Is the water used for cooking?			
3. Is the water used for bathing?			
4. Is the water used for washing clothes?			
5. Is the water used for irrigation?			
6. Is the water used for industrial purposes?			
7. Is the water used for other purposes?			

ID PLATE	YES	X	NO
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WELL INTEGRITY SATISFACTORY	YES	X	NO
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WELL YIELD LOW MODERATE HIGH

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OS-10S
SITE NAME Duke Energy-Spartanburg DATE 4-23-13 TIME OF SAMPLE N/A
FIELD PERSONNEL TLH WEATHER CONDITIONS 65° Sunny Windy

TOTAL WELL DEPTH (TWD) 13 FT. (measured / well tag / drillers log/ previous report – circle one)
 SCREENED INTERVAL 8-13 MEASURING POINT FOR DEPTH TOC
 DEPTH TO GROUNDWATER (DGW) 8.63
 LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 4.37
 CASING DIAMETER 2 IN.
 ONE STANDING WELL VOLUME = 0.72 gal.

(NOTE 1/2" = 0.0102 G/FT: 3/4" = 0.023 G/FT: 1" = 0.041 G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 2.16 FIVE STANDING WELL VOLUMES = 3.16

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 0.5 GAL. FLOW RATE _____ mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE COMMENTS _____

LOCKING CAP YES X NO

PROTECTIVE POST/ABUTMENT	YES	NO	X
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NONPOTABLE LABEL	YES	X	NO
1. Is the water used for drinking?			
2. Is the water used for cooking?			
3. Is the water used for bathing?			
4. Is the water used for washing clothes?			
5. Is the water used for irrigation?			
6. Is the water used for other purposes?			

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WELL INTEGRITY SATISFACTORY YES X NO

WELL YIELD LOW MODERATE HIGH

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OS-15S
 SITE NAME Duke Energy-Spartanburg DATE 4- 23 -13 TIME OF SAMPLE N/A
 FIELD PERSONNEL TLH WEATHER CONDITIONS 65° Sunny Windy

TOTAL WELL DEPTH (TWD) 13 FT. (measured / well tag / drillers log/ previous report – circle one)
 SCREENED INTERVAL 8-13 MEASURING POINT FOR DEPTH TOC
 DEPTH TO GROUNDWATER (DGW) 8.69
 LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 4.31
 CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 0.71 gal.

(NOTE ½" = 0.0102 G/FT: ¾" = 0.023 G/FT: 1" = 0.041 G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 2.13 FIVE STANDING WELL VOLUMES = 3.55

METHOD OF WELL EVACUATION: BAILER / PUMP OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: .5 GAL. FLOW RATE _____ mL/min

WELL TYPE: FLUSH MOUNT ABOVE GRADE COMMENTS _____

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE _____ HIGH ✓

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	9.03	4.78	9.95	9.8	0.18	18.93	331	
1215	9.03	5.21	10.5	9.5	0.05	19.07	288	
1218	9.03	5.45	7.72	9.5	0	19.20	255	
1221	9.03	5.52	6.93	11.6	0	19.21	249	

1212



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OR-10S
 SITE NAME Duke Energy-Spartanburg DATE 4-23-13 TIME OF SAMPLE N/A
 FIELD PERSONNEL TLH WEATHER CONDITIONS 65° Sunny Windy

TOTAL WELL DEPTH (TWD) 25 FT. (measured / well tag / drillers log/ previous report – circle one)
 SCREENED INTERVAL 20-25 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 9.95

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 15.05

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 2.47 gal.

(NOTE ½" = 0.0102 G/FT; ¾" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 7.41 FIVE STANDING WELL VOLUMES = 12.35

METHOD OF WELL EVACUATION: BAILER/PUMP / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 0.5 GAL. FLOW RATE _____ mL/min

WELL TYPE: FLUSH MOUNT ABOVE GRADE

COMMENTS _____

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE / HIGH _____

14 g/L Klorox Peroxide

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	10.56	6.21	12.0	17.0	3.21	19.09	174	
1201	10.56	3.52	17.5	11.1	0.46	19.27	447	
1206	10.56	3.42	17.7	9.7	0	19.36	453	
1211	10.56	3.44	17.8	8.6	0	19.41	457	

1156



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OR-55
 SITE NAME Duke Energy-Spartanburg DATE 4-23-13 TIME OF SAMPLE N/A
 FIELD PERSONNEL TLH WEATHER CONDITIONS 60° Sunny Windy

TOTAL WELL DEPTH (TWD) 25 FT. (measured / well tag / drillers log / previous report – circle one)
 SCREENED INTERVAL 20-25 MEASURING POINT FOR DEPTH TOC
 DEPTH TO GROUNDWATER (DGW) 9.0
 LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 16
 CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 2.62 gal.

(NOTE 1/2" = 0.0102 G/FT; 3/4" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 7.86 FIVE STANDING WELL VOLUMES = 13.1

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: .5 GAL. FLOW RATE 200 mL/min

WELL TYPE: FLUSH MOUNT ABOVE GRADE COMMENTS _____

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE / HIGH _____

14 g/L K1024 Persulfate

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	<u>10.14</u>	<u>6.78</u>	<u>1.41</u>	<u>4.6</u>	<u>7.51</u>	<u>19.34</u>	<u>194</u>	
<u>1145</u>	<u>10.15</u>	<u>6.71</u>	<u>1.09</u>	<u>4.3</u>	<u>4.56</u>	<u>19.62</u>	<u>191</u>	
<u>1150</u>	<u>10.15</u>	<u>6.72</u>	<u>0.787</u>	<u>5.7</u>	<u>3.86</u>	<u>19.63</u>	<u>189</u>	
<u>1155</u>	<u>10.15</u>	<u>6.72</u>	<u>0.786</u>	<u>5.8</u>	<u>3.82</u>	<u>19.65</u>	<u>187</u>	

1140



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OR-3W
 SITE NAME Duke Energy-Spartanburg DATE 4-23 -13 TIME OF SAMPLE N/A
 FIELD PERSONNEL TLH WEATHER CONDITIONS 60° Sunny Windy

TOTAL WELL DEPTH (TWD) 23 FT. (measured / well tag / drillers log/ previous report – circle one)
 SCREENED INTERVAL 18-23 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 9.28

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 13.72

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 2.25 gal.

(NOTE ½" = 0.0102 G/FT; ¾" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 6.75 FIVE STANDING WELL VOLUMES = 11.25

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: .5 GAL. FLOW RATE 200 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE COMMENTS _____

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW AM MODERATE ✓ HIGH _____

17.5 g/L Klorox Persulfate

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	9.68	6.18	5.18	11.0	5.26	19.27	235	
1106	9.68	5.45	5.67	10.5	3.77	19.88	287	
1107	9.68	5.49	10.8	10.7	1.30	19.95	281	
1116	9.68	5.42	11.1	10.6	0.98	20.05	293	

1101



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OR-10W
 SITE NAME Duke Energy-Spartanburg DATE 4- 23 -13 TIME OF SAMPLE N/A
 FIELD PERSONNEL TLH WEATHER CONDITIONS 60° Sunny Windy

TOTAL WELL DEPTH (TWD) 22.5 FT. (measured / well tag / drillers log/ previous report – circle one)
 SCREENED INTERVAL 18.5-22.5 MEASURING POINT FOR DEPTH TOC
 DEPTH TO GROUNDWATER (DGW) 9.16
 LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 13.34
 CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 2.19 gal.
 (NOTE ½" = 0.0102G/FT: ¾" = 0.023 G/FT: 1" = 0.041G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)
 THREE STANDING WELL VOLUMES = 6.57 FIVE STANDING WELL VOLUMES = 10.95

METHOD OF WELL EVACUATION: BAILER PUMP / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 1.5 GAL. FLOW RATE 1.75 mL/min

WELL TYPE: FLUSH MOUNT ABOVE GRADE COMMENTS _____

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE ✓ HIGH _____

14 g/L Klozur Persulfate

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	9.45	6.47	6.30	22.5	0.61	19.15	34	
1034	9.52	5.43	6.67	23.4	0.38	18.68	186	
1039	9.52	5.26	6.60	22.5	0.20	18.75	243	
1044	9.52	5.24	6.57	22.3	0.10	18.84	265	

1029



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-13 ISOC
 SITE NAME Duke Energy-Spartanburg DATE 4- 23 -13 TIME OF SAMPLE N/A
 FIELD PERSONNEL TLH WEATHER CONDITIONS 60° Sunny Windy

TOTAL WELL DEPTH (TWD) 21.5 FT. (measured / well tag / drillers log/ previous report – circle one)

SCREENED INTERVAL 6.5-21.5 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 6.64

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 14.56

CASING DIAMETER 4 IN.

ONE STANDING WELL VOLUME = 9.5 gal.

(NOTE ½" = 0.0102 G/FT: ¾" = 0.023 G/FT: 1" = 0.041 G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 28.5 FIVE STANDING WELL VOLUMES = 47.5

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 1.5 GAL. FLOW RATE _____ mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE COMMENTS _____

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE _____ HIGH ✓

2.5 g/L Kbrzr Persulfate

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	6.69	6.64	6.25	48.4	1.7	19.61	18	
1011	6.69	6.68	6.28	45.9	0.82	19.12	-3	
1014	6.69	6.69	6.32	42.8	0.36	19.08	-10	
1017	6.69	6.68	6.32	45.1	0	18.99	-15	

1008



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-1SS
 SITE NAME Duke Energy-Spartanburg DATE 7-31-13 TIME OF SAMPLE 13:15
 FIELD PERSONNEL TLH & SS WEATHER CONDITIONS overcast mid 80's

TOTAL WELL DEPTH (TWD) 20.39 FT. (measured / well tag / drillers log/ previous report – circle one)

SCREENED INTERVAL 10.39-20.39 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 7.83

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 12.56

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 2.05 gal.

(NOTE 1/2" = 0.0102 G/FT: 3/4" = 0.023 G/FT: 1" = 0.041 G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 6.15 FIVE STANDING WELL VOLUMES = 10.25

METHOD OF WELL EVACUATION: BAILER (PUMP) OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 5 GAL. FLOW RATE 125 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE COMMENTS _____

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE / HIGH _____

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	8.40	4.66	0.212	3.3	3.82	26.36	228	
13:57	8.51	4.46	0.215	2.1	2.70	25.70	251	
14:02	8.60	4.41	0.217	6.2	2.24	25.25	287	
14:07	8.62	4.41	0.215	6.5	1.92	25.14	295	

13:52



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-1DR
SITE NAME Duke Energy-Spartanburg DATE 7-31-13 TIME OF SAMPLE 1105
FIELD PERSONNEL TLH & SS WEATHER CONDITIONS Cloudy 75°

TOTAL WELL DEPTH (TWD) 62 FT. (measured / well tag / drillers log/ previous report – **circle one**)

SCREENED INTERVAL 57-62 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 6.67

LENGTH OF WATER COLUMN (LWC) = TWD - DGW = 55.38

CASING DIAMETER. 2 IN.

ONE STANDING WELL VOLUME = 9.08 gal.

(NOTE ½" = 0.0102 G/FT: ¾" = 0.023 G/FT: 1" = 0.041 G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 27.25 FIVE STANDING WELL VOLUMES = 45.4

METHOD OF WELL EVACUATION: BAILER PUMP OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 1 GAL. FLOW RATE 200 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE COMMENTS _____

LOCKING CAP YES X NO

PROTECTIVE POST/ABUTMENT YES _____ NO X NONPOTABLE LABEL YES X NO

YES X NO

WELL INTEGRITY SATISFACTORY YES X NO

WELL YIELD LOW _____ MODERATE / HIGH _____

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-3SS
 SITE NAME Duke Energy-Spartanburg DATE 8-1-13 TIME OF SAMPLE 8:05
 FIELD PERSONNEL TLH & SS WEATHER CONDITIONS overcast mid 70's

TOTAL WELL DEPTH (TWD) 13.25 FT. (measured / well tag / drillers log/ previous report – circle one)
 SCREENED INTERVAL 8.25-13.25 MEASURING POINT FOR DEPTH TOC
 DEPTH TO GROUNDWATER (DGW) 8.13

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 5.12

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 1.84 gal.

(NOTE 1/2" = 0.0102 G/FT; 3/4" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 2.52 FIVE STANDING WELL VOLUMES = 4.2

METHOD OF WELL EVACUATION: BAILER PUMP OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 5 GAL. FLOW RATE 100 mL/min

WELL TYPE: FLUSH MOUNT ABOVE GRADE

COMMENTS _____

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE ✓ HIGH _____

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (μS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	8.3	6.62	0.467	5.6	3.45	22.57	143	
7:56	8.3	6.63	0.471	1.3	1.40	22.85	142	
8:01	8.3	6.63	0.472	0.9	1.43	22.09	142	

7:51



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-11S *4 Dup - 2*
 SITE NAME Duke Energy-Spartanburg DATE 8-1-13 TIME OF SAMPLE 9:20
 FIELD PERSONNEL TLH & SS WEATHER CONDITIONS overcast mid 70's

TOTAL WELL DEPTH (TWD) 14.6 FT. (measured / well tag / drillers log/ previous report – circle one)

SCREENED INTERVAL 4.6-14.6 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 10.93

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 3.67

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 0.6 gal.

(NOTE 1/2" = 0.0102 G/FT: 3/4" = 0.023 G/FT: 1" = 0.041 G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 1.8 FIVE STANDING WELL VOLUMES = 3

METHOD OF WELL EVACUATION: BAILER PUMP / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 1.5 GAL. FLOW RATE 100 (80) mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

COMMENTS _____

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE ✓ HIGH _____

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	11.54	5.00	0.186	19.7	4.95	20.47	233	
8:56	12.07	3.99	0.194	17.5	4.06	19.87	302	
9:01	12.14	3.80	0.196	11.7	3.22	19.58	312	
9:06	13.08	3.75	0.219	14.0	2.65	19.06	332	lowered pump rate
9:11	13.00	3.75	0.221	14.1	2.97	19.49	337	

8:51



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-11D
 SITE NAME Duke Energy-Spartanburg DATE 8-1-13 TIME OF SAMPLE 1125
 FIELD PERSONNEL TLH & SS WEATHER CONDITIONS overcast mid 70's

TOTAL WELL DEPTH (TWD) 31.2 FT. (measured / well tag / drillers log/ previous report – circle one)

SCREENED INTERVAL 26.2-31.2 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 8.03

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 23.17

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 3.79 gal.

(NOTE ½" = 0.0102 G/FT: ¾" = 0.023 G/FT: 1" = 0.041 G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 11.37 FIVE STANDING WELL VOLUMES = 18.95

METHOD OF WELL EVACUATION: BAILER PUMP OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 1.5 GAL. FLOW RATE 100 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE COMMENTS _____

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X _____

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE ✓ HIGH _____

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	<u>11.65</u>	<u>6.26</u>	<u>0.233</u>	<u>6.5</u>	<u>3.53</u>	<u>25.9</u>	<u>225</u>	
<u>1118</u>	<u>11.67</u>	<u>6.59</u>	<u>0.237</u>	<u>2.81</u>	<u>2.85</u>	<u>25.56</u>	<u>217</u>	
<u>1118</u>	<u>11.67</u>	<u>6.6</u>	<u>0.240</u>	<u>6.2</u>	<u>2.49</u>	<u>25.52</u>	<u>204</u>	
<u>1128</u>	<u>11.68</u>	<u>6.63</u>	<u>0.241</u>	<u>5.1</u>	<u>2.47</u>	<u>25.51</u>	<u>198</u>	

1113



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-12S
SITE NAME Duke Energy-Spartanburg DATE 7-31-13 TIME OF SAMPLE 15:15
FIELD PERSONNEL TLH & SS WEATHER CONDITIONS overcast mid 80's

TOTAL WELL DEPTH (TWD) 15.27 FT. (measured / well tag / drillers log/ previous report -- circle one)

SCREENED INTERVAL 5.27-15.27 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 3.41

$$\text{LENGTH OF WATER COLUMN (LWC)} = \text{TWD} - \text{DGW} = 11.86$$

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 1.94 gal.

(NOTE ½" = 0.0102G/FT: ¾" = 0.023 G/FT: 1" = 0.041G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 5.82 FIVE STANDING WELL VOLUMES = 9.7

METHOD OF WELL EVACUATION: BAILER (PUMP) OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 5 GAL. FLOW RATE 100 mL/min

WELL TYPE: (FLUSH MOUNT)/ ABOVE GRADE	COMMENTS
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LOCKING CAP YES X NO

PROTECTIVE POST/ABUTMENT	YES	NO	X
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NONPOTABLE LABEL YES X NO

ID PLATE YES X NO

WELL INTEGRITY SATISFACTORY YES X NO

WELL YIELD LOW _____ MODERATE ☒ HIGH

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-12D
SITE NAME Duke Energy-Spartanburg DATE 7-31-13 TIME OF SAMPLE 16:00
FIELD PERSONNEL TLH & SS WEATHER CONDITIONS overcast mid 80's

TOTAL WELL DEPTH (TWD) 35.42 FT. (measured / well tag / drillers log/ previous report – **circle one**)

SCREENED INTERVAL 30.42-35.42 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 4.62

LENGTH OF WATER COLUMN (LWC) = TWD - DGW = 30.80

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 3.05 gal.

(NOTE $\frac{1}{2}'' = 0.0102 \text{ G/FT}$; $\frac{3}{4}'' = 0.023 \text{ G/FT}$; $1'' = 0.041 \text{ G/FT}$; $2'' = 0.163 \text{ G/FT}$; $4'' = 0.653 \text{ G/FT}$; $6'' = 1.46 \text{ G/FT}$)

THREE STANDING WELL VOLUMES = 15.15 FIVE STANDING WELL VOLUMES = 25.25

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 1 GAL. FLOW RATE 100 mL/min

WELL TYPE: <u>FLUSH MOUNT / ABOVE GRADE</u>	COMMENTS
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LOCKING CAP YES X NO

PROTECTIVE POST/ABUTMENT YES _____ NO ☒ X

NONPOTABLE LABEL YES X NO

ID PLATE YES X NO

WELL INTEGRITY SATISFACTORY YES X NO

WELL YIELD LOW _____ MODERATE _____ HIGH _____

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-13S
SITE NAME Duke Energy-Spartanburg DATE 7-30-13 TIME OF SAMPLE 1430
FIELD PERSONNEL TLH & SS WEATHER CONDITIONS Cloudy 82°

TOTAL WELL DEPTH (TWD) 15.02 FT. (measured / well tag / drillers log/ previous report – **circle one**).

SCREENED INTERVAL 5.02-15.02 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 6.73

LENGTH OF WATER COLUMN (LWC) = TWD - DGW = ~~8.23~~ 8.29

CASING DIAMETER. 4 IN.

ONE STANDING WELL VOLUME = ~~3.11~~ 1.36 gal.

(NOTE 1/2" = 0.0102 G/FT: 3/4" = 0.023 G/FT: 1" = 0.041 G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = ~~16.13~~ 4.08 FIVE STANDING WELL VOLUMES = ~~27.85~~ 6.8

METHOD OF WELL EVACUATION: BAILER PUMP / OTHER: TYPE Peri-Pump Bailer due to Prod

TOTAL VOLUME OF WATER REMOVED: 17g GAL. FLOW RATE N/A mL/min

WELL TYPE:	FLUSH MOUNT / ABOVE GRADE	COMMENTS
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LOCKING CAP YES X NO *No Geochronistric data*

PROTECTIVE POST/ABUTMENT YES _____ NO X to Product in Water

NONPOTABLE LABEL YES X NO Column

ID PLATE YES X NO

WELL INTEGRITY SATISFACTORY YES X NO

WELL YIELD LOW _____ MODERATE _____ HIGH

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-13 ~~1302~~ F302
 SITE NAME Duke Energy-Spartanburg DATE 7-31-13 TIME OF SAMPLE 7:35
 FIELD PERSONNEL TLH & SS WEATHER CONDITIONS Cloudy 85°

TOTAL WELL DEPTH (TWD) 21.5 FT. (measured / well tag / drillers log/ previous report – circle one)

SCREENED INTERVAL 6.5-21.5 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) ~~20.0~~ 5.94

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 15.56

CASING DIAMETER 4 IN.

ONE STANDING WELL VOLUME = 2.55 gal.

(NOTE ½" = 0.0102 G/FT: ¾" = 0.023 G/FT: 1" = 0.041 G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 7.65 FIVE STANDING WELL VOLUMES = 12.75

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 1.0 GAL. FLOW RATE 200 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

COMMENTS _____

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE HL HIGH ✓

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	<u>6.85</u>	<u>7.02</u>	<u>1.46</u>	<u>11.3</u>	<u>3.12</u>	<u>22.11</u>	<u>281</u>	
<u>723</u>	<u>6.85</u>	<u>9.71</u>	<u>8.94</u>	<u>5.6</u>	<u>0.02</u>	<u>21.36</u>	<u>135</u>	
<u>728</u>	<u>6.85</u>	<u>9.68</u>	<u>8.87</u>	<u>6.1</u>	<u>0</u>	<u>20.92</u>	<u>112</u>	
<u>733</u>	<u>6.85</u>	<u>9.68</u>	<u>8.82</u>	<u>7.3</u>	<u>0</u>	<u>20.89</u>	<u>104</u>	

718



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-14S
SITE NAME Duke Energy-Spartanburg DATE 7-31-13 TIME OF SAMPLE 1310
FIELD PERSONNEL TLH & SS WEATHER CONDITIONS 80° Cloudy

TOTAL WELL DEPTH (TWD) 14.88 FT. (measured / well tag / drillers log/ previous report – circle one)

SCREENED INTERVAL 4.88-14.88 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 9.15

$$\text{LENGTH OF WATER COLUMN (LWC)} = \text{TWD} - \text{DGW} = \underline{5.73}$$

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 0.94 gal.

(NOTE $\frac{1}{2}'' = 0.0102 \text{ G/FT}$; $\frac{3}{4}'' = 0.023 \text{ G/FT}$; $1'' = 0.041 \text{ G/FT}$; $2'' = 0.163 \text{ G/FT}$; $4'' = 0.653 \text{ G/FT}$; $6'' = 1.46 \text{ G/FT}$)

THREE STANDING WELL VOLUMES = 2.82 FIVE STANDING WELL VOLUMES = 4.7

METHOD OF WELL EVACUATION: ~~BAILER~~ PUMP / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 1.3 GAL. FLOW RATE 150 mL/min

WELL TYPE: (FLUSH MOUNT) / ABOVE GRADE

LOCKING CAP YES X NO

PROTECTIVE POST/ABUTMENT YES _____ NO ☒ X

NONPOTABLE LABEL YES X NO

ID PLATE YES X NO

WELL INTEGRITY SATISFACTORY YES X NO

WELL YIELD LOW _____ MODERATE _____ HIGH

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-15S
SITE NAME Duke Energy-Spartanburg DATE 7-31-13 TIME OF SAMPLE 1025
FIELD PERSONNEL TLH & SS WEATHER CONDITIONS Cloudy 75°

TOTAL WELL DEPTH (TWD) 15.15 FT. (measured / well tag / drillers log/ previous report – **circle one**)

SCREENED INTERVAL	5.15-15.15	MEASURING POINT FOR DEPTH	TOC
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DEPTH TO GROUNDWATER (DGW) 6.12

LENGTH OF WATER COLUMN (LWC) = TWD - DGW = 9.03

CASING DIAMETER___ 2 IN.

ONE STANDING WELL VOLUME = 1.48 gal.

(NOTE 1/2" = 0.0102G/FT: 3/4" = 0.023 G/FT: 1" = 0.041G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 9.44 FIVE STANDING WELL VOLUMES = 7.4

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 1.9 GAL. FLOW RATE 150 mL/min

WELL TYPE: <input checked="" type="radio"/> FLUSH MOUNT / ABOVE GRADE	COMMENTS
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LOCKING CAP YES X NO

PROTECTIVE POST/ABUTMENT YES _____ NO ☒ X

NONPOTABLE LABEL YES X NO

ID PLATE YES X NO

WELL INTEGRITY SATISFACTORY YES X NO

WELL YIELD LOW _____ MODERATE HIGH

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-15D
 SITE NAME Duke Energy-Spartanburg DATE 7-31-13 TIME OF SAMPLE 945
 FIELD PERSONNEL TLH & SS WEATHER CONDITIONS Cloudy 75°

TOTAL WELL DEPTH (TWD) 34.60 FT. (measured / well tag / drillers log/ previous report – circle one)

SCREENED INTERVAL 29.60-34.60 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 2.15

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 27.45

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 4.5 gal.

(NOTE ½" = 0.0102 G/FT; ¾" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 13.5 FIVE STANDING WELL VOLUMES = 22.5

METHOD OF WELL EVACUATION: BAILER PUMP / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: .5 GAL. FLOW RATE 200 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

COMMENTS _____

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE ✓ HIGH _____

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	7.96	7.52	0.607	5.3	0.67	22.51	-131	Lower Flow
932	8.01	6.97	0.437	6.1	0.21	21.48	-123	
937	8.01	6.96	0.428	4.7	0	21.44	-117	
942	8.02	6.95	0.413	5.0	0	21.30	-116	

927



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-16S
SITE NAME Duke Energy-Spartanburg DATE 8-1-13 TIME OF SAMPLE 745
FIELD PERSONNEL TLH & SS WEATHER CONDITIONS Cloudy 73°

TOTAL WELL DEPTH (TWD) 18.35 FT. (measured / well tag / drillers log/ previous report – circle one)

SCREENED INTERVAL 8.35-18.35 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 14.82

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 3.53

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = .58 gal.

(NOTE 1/2" = 0.0102 G/FT; 3/4" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 1.74 FIVE STANDING WELL VOLUMES = 2.9

METHOD OF WELL EVACUATION: BAILER/PUMP / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: .5 GAL. FLOW RATE 200 mL/min

WELL TYPE: FLUSH MOUNT ABOVE GRADE COMMENTS

LOCKING CAP YES X NO

PROTECTIVE POST/ABUTMENT YES NO X

NONPOTABLE LABEL YES X NO

ID PLATE YES X NO

WELL INTEGRITY SATISFACTORY YES X NO

WELL YIELD LOW MODERATE / HIGH

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	15.1	6.49	0.48	3.0	1.85	21.69	137	
733	15.1	6.44	0.475	5.8	1.65	21.30	151	
738	15.1	6.43	0.476	4.7	1.59	21.05	155	
743	15.1	6.43	0.476	4.3	1.54	21.11	158	

728



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-18S
 SITE NAME Duke Energy-Spartanburg DATE 7-31-13 TIME OF SAMPLE 11:15
 FIELD PERSONNEL TLH & SS WEATHER CONDITIONS overcast 75

TOTAL WELL DEPTH (TWD) 14.88 FT. (measured / well tag / drillers log/ previous report – circle one)

SCREENED INTERVAL 4.44-14.88 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 3.95

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 10.93

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 1.8 gal.

(NOTE ½" = 0.0102 G/FT; ¾" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 5.4 FIVE STANDING WELL VOLUMES = 9

METHOD OF WELL EVACUATION: BAILER PUMP / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 5 GAL. FLOW RATE 150 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE COMMENTS _____

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE / HIGH _____

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	3.15	6.11	0.135	35.5	1.41	23.90	101	
11:02	3.15	5.71	0.095	19.0	0.70	28.93	145	
11:07	3.15	5.23	0.076	19.7	0.32	23.81	171	

10:57



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-18D
 SITE NAME Duke Energy-Spartanburg DATE 7-31-13 TIME OF SAMPLE 12:00
 FIELD PERSONNEL TLH & SS WEATHER CONDITIONS overcast 80°

TOTAL WELL DEPTH (TWD) 35.05 FT. (measured / well tag / drillers log/ previous report – circle one)

SCREENED INTERVAL 30.5-35.5 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 4.49

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 30.56

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 5 gal.

(NOTE ½" = 0.0102 G/FT: ¾" = 0.023 G/FT: 1" = 0.041 G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 15 FIVE STANDING WELL VOLUMES = 25

METHOD OF WELL EVACUATION: BAILER PUMP OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 5 GAL. FLOW RATE 120 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE COMMENTS _____

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE ✓ HIGH _____

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	4.92	6.03	0.263	8.9	2.42	22.66	135	
11:50	4.91	6.02	0.225	8.3	0.94	22.63	131	
11:55	4.91	6.00	0.283	8.5	0.18	22.26	129	

11:45



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-19S
SITE NAME Duke Energy-Spartanburg DATE 7-31-13 TIME OF SAMPLE 9:55
FIELD PERSONNEL TLH & SS WEATHER CONDITIONS overcast high 70's

TOTAL WELL DEPTH (TWD) 15 FT. (measured / well tag / drillers log/ previous report – **circle one**)

SCREENED INTERVAL 5-15 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 7.89

$$\text{LENGTH OF WATER COLUMN (LWC)} = \text{TWD} - \text{DGW} = 7.11$$

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 1.16 gal.

(NOTE 1/2" = 0.0102 G/FT: 3/4" = 0.023 G/FT: 1" = 0.041 G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 3.48 FIVE STANDING WELL VOLUMES = 5.8

METHOD OF WELL EVACUATION: BAILER (PUMP) OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 1.5 GAL. FLOW RATE 140 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

COMMENTS Storm water
ponding in wells outer casing

LOCKING CAP YES X NO

PROTECTIVE POST/ABUTMENT YES _____ NO ☒ X

NONPOTABLE LABEL YES X NO

ID PLATE	YES	X	NO
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WELL INTEGRITY SATISFACTORY YES X NO

WELL YIELD LOW _____ MODERATE _____ HIGH

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OS-5N
 SITE NAME Duke Energy-Spartanburg DATE 7-30-13 TIME OF SAMPLE 11:34
 FIELD PERSONNEL TLH WEATHER CONDITIONS sunny mid 80's

TOTAL WELL DEPTH (TWD) 13 FT. (measured / well tag / drillers log/ previous report – circle one)

SCREENED INTERVAL 8-13 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 6.9

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 6.1

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 0.994 gal.

(NOTE ½" = 0.0102 G/FT: ¾" = 0.023 G/FT: 1" = 0.041 G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 2.98 FIVE STANDING WELL VOLUMES = 4.97

METHOD OF WELL EVACUATION: BAILER PUMP OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 6.5 GAL. FLOW RATE 115 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE COMMENTS _____

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE ✓ HIGH _____

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	7.3	6.49	0.544	8.8	4.29	26.38	132	
11:19	7.15	6.41	0.554	4.5	3.27	25.83	148	
11:24	7.15	6.40	0.565	3.3	3.11	25.62	154	
11:29	7.15	6.40	0.570	2.5	2.78	25.55	156	
11:34								

11:14



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OS10E
 SITE NAME Duke Energy-Spartanburg DATE 7-30-13 TIME OF SAMPLE 9:10
 FIELD PERSONNEL TLH WEATHER CONDITIONS Sunny ~~at~~ low 80's

TOTAL WELL DEPTH (TWD) 13 FT. (measured / well tag / drillers log/ previous report – circle one)

SCREENED INTERVAL 8-13 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 6.8

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 6.2

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 1.01 gal.

(NOTE 1/2" = 0.0102 G/FT; 3/4" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 3.03 FIVE STANDING WELL VOLUMES = 5.05

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: GAL. FLOW RATE 100 mL/min

WELL TYPE: FLUSH MOUNT ABOVE GRADE COMMENTS

LOCKING CAP YES X NO

PROTECTIVE POST/ABUTMENT YES NO X

NONPOTABLE LABEL YES X NO

ID PLATE YES X NO

WELL INTEGRITY SATISFACTORY YES X NO

WELL YIELD LOW MODERATE HIGH

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	<u>6.86</u>	<u>6.71</u>	<u>0.325</u>	<u>8.7</u>	<u>3.63</u>	<u>24.13</u>	<u>145</u>	
<u>8:53</u>	<u>6.95</u>	<u>6.90</u>	<u>0.329</u>	<u>6.8</u>	<u>2.90</u>	<u>24.04</u>	<u>131</u>	
<u>8:58</u>	<u>6.97</u>	<u>6.89</u>	<u>0.347</u>	<u>7.3</u>	<u>2.47</u>	<u>23.88</u>	<u>120</u>	
<u>9:03</u>	<u>6.97</u>	<u>6.86</u>	<u>0.356</u>	<u>6.5</u>	<u>2.07</u>	<u>23.75</u>	<u>113</u>	
<u>9:08</u>	<u>6.97</u>	<u>6.87</u>	<u>0.359</u>	<u>7.0</u>	<u>1.66</u>	<u>23.65</u>	<u>109</u>	

8:48



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OR-3W
 SITE NAME Duke Energy-Spartanburg DATE 7-30-13 TIME OF SAMPLE 1225
 FIELD PERSONNEL TLH & SS WEATHER CONDITIONS 79 Partly Cloudy

TOTAL WELL DEPTH (TWD) 23 FT. (measured / well tag / drillers log/ previous report – circle one)

SCREENED INTERVAL 18-23 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 8.76

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 14.24

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 2.33 gal.

(NOTE ½" = 0.0102 G/FT; ¾" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 6.99 FIVE STANDING WELL VOLUMES = 11.65

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 1.5 GAL. FLOW RATE 200 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

LOCKING CAP YES X NO

PROTECTIVE POST/ABUTMENT YES NO X

NONPOTABLE LABEL YES X NO

ID PLATE YES X NO

WELL INTEGRITY SATISFACTORY YES X NO

WELL YIELD LOW MODERATE HIGH

COMMENTS water level was
not working. Flow rate of
200 ml/min was used on 4-23-13
so used that flow rate today

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	NM	6.18	19.4	11.5	6.21	30.12	457	
1213	↓	6.65	21.0	9.5	8.73	27.92	378	
1218	↓	6.60	21.3	8.8	9.05	27.65	370	
1223	↓	6.57	22.6	8.9	10.47	27.62	368	
	Instrument							
	Not Working							

1208



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OR-5W
 SITE NAME Duke Energy-Spartanburg DATE 7-30-13 TIME OF SAMPLE 1110
 FIELD PERSONNEL TLH WEATHER CONDITIONS 77 Sunny

TOTAL WELL DEPTH (TWD) 24 FT. (measured / well tag / drillers log/ previous report – circle one)
 SCREENED INTERVAL 19-24 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 8.65
 LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 15.35

CASING DIAMETER 2 IN.
 ONE STANDING WELL VOLUME = 2.92 gal.

(NOTE 1/2" = 0.0102 G/FT; 3/4" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 2.56 FIVE STANDING WELL VOLUMES = 12.6

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 1.5 GAL. FLOW RATE 205 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

LOCKING CAP YES X NO

PROTECTIVE POST/ABUTMENT YES NO X

NONPOTABLE LABEL YES X NO

ID PLATE YES X NO

WELL INTEGRITY SATISFACTORY YES X NO

WELL YIELD LOW MODERATE ✓ HIGH

COMMENTS
water level was not working
Flow rate of 200 mL/min
was used on 4-23-13 so
used that Flow rate today

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	NM	4.85	0.003	33.4	8.13	31.02	576	
1055	↓	3.42	8.93	17.7	0.39	28.77	552	
1100	↓	3.44	8.98	9.5	0.18	28.62	544	
1105	↓	3.46	9.04	8.3	0.10	28.53	538	
	instrument							
	not working							

050



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OR-10W
 SITE NAME Duke Energy-Spartanburg DATE 7-30-13 TIME OF SAMPLE 9:50
 FIELD PERSONNEL TLH WEATHER CONDITIONS 77° Sunny

TOTAL WELL DEPTH (TWD) 22.5 FT. (measured / well tag / drillers log/ previous report – circle one)
 SCREENED INTERVAL 18.5-22.5 MEASURING POINT FOR DEPTH TOC
 DEPTH TO GROUNDWATER (DGW) 8.59
 LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 9.5
 CASING DIAMETER 2 IN.
 ONE STANDING WELL VOLUME = 1.56 gal.
 (NOTE 1/2" = 0.0102 G/FT; 3/4" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)
 THREE STANDING WELL VOLUMES = 4.68 FIVE STANDING WELL VOLUMES = 7.8
 METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE Peri-Pump
 TOTAL VOLUME OF WATER REMOVED: .5 GAL. FLOW RATE 1.50 mL/min
 WELL TYPE: FLUSH MOUNT / ABOVE GRADE COMMENTS _____
 LOCKING CAP YES X NO _____ Water Level was not working
 PROTECTIVE POST/ABUTMENT YES _____ NO X Flow rate of 1.00 was used
 NONPOTABLE LABEL YES X NO _____ on 2-28-13 + Flow rate of
 ID PLATE YES X NO _____ 1.75 was used on 4-23-13
 WELL INTEGRITY SATISFACTORY YES X NO _____
 WELL YIELD LOW _____ MODERATE / HIGH _____

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	NR	3.25	8.35	14.1	1.73	23.19	550	
935	↓	3.14	8.70	12.1	1.17	22.80	569	
940	↓	3.15	8.25	11.8	0.86	22.79	575	
945	↓	3.12	8.79	9.7	0.69	22.75	578	
	instrument not working							

431



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OR-3S
 SITE NAME Duke Energy-Spartanburg DATE 7-30-13 TIME OF SAMPLE 1335
 FIELD PERSONNEL TLH WEATHER CONDITIONS 81° Cloudy

TOTAL WELL DEPTH (TWD) 24.5 FT. (measured / well tag / drillers log/ previous report – circle one)

SCREENED INTERVAL 19.5-24.5 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 8.26

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 16.24

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 2.66 gal.

(NOTE 1/2" = 0.0102 G/FT: 3/4" = 0.023 G/FT: 1" = 0.041 G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 7.98 FIVE STANDING WELL VOLUMES = 13.3

METHOD OF WELL EVACUATION: BAILER/PUMP / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 200 GAL. FLOW RATE 200 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

COMMENTS

LOCKING CAP YES X NO

PROTECTIVE POST/ABUTMENT YES NO X

NONPOTABLE LABEL YES X NO

ID PLATE YES X NO

WELL INTEGRITY SATISFACTORY YES X NO

WELL YIELD LOW MODERATE ✓ HIGH

Water level was Not working. Used 200 ml/min on 4-23-13

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	<u>NM</u>	<u>6.58</u>	<u>12.7</u>	<u>31.5</u>	<u>7.14</u>	<u>30.07</u>	<u>332</u>	
<u>1320</u>	<u>↓</u>	<u>6.61</u>	<u>5.77</u>	<u>3.3</u>	<u>6.64</u>	<u>28.89</u>	<u>315</u>	
<u>1325</u>	<u>↓</u>	<u>6.61</u>	<u>4.18</u>	<u>1.1</u>	<u>6.39</u>	<u>28.83</u>	<u>309</u>	
<u>1330</u>	<u>↓</u>	<u>6.61</u>	<u>4.15</u>	<u>1.3</u>	<u>6.32</u>	<u>28.78</u>	<u>301</u>	
	<u>Instrument Not Working</u>							

1315



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OR-10S
 SITE NAME Duke Energy-Spartanburg DATE 7-30-13 TIME OF SAMPLE 15:45
 FIELD PERSONNEL TLH & RC WEATHER CONDITIONS overcast 85

TOTAL WELL DEPTH (TWD) 25 FT. (measured / well tag / drillers log/ previous report – circle one)

SCREENED INTERVAL 20-25 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 9.55

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 14.45

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 2.33 gal.

(NOTE 1/2" = 0.0102 G/FT; 3/4" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 7.06 FIVE STANDING WELL VOLUMES = _____

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 1.5 GAL. FLOW RATE 90 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE COMMENTS _____

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE X HIGH _____

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	10.61	3.85	18.9	16.1	0.35	32.4	460	
15:25	11.08	3.61	21.2	30.7	0.13	31.37	481	
15:30	11.09	3.58	22.0	50	0.0	30.94	468	
15:35	11.09	3.56	22.0	55.4	0.0	30.84	472	

15:20



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OS-5S
 SITE NAME Duke Energy-Spartanburg DATE 7-30-13 TIME OF SAMPLE 1250
 FIELD PERSONNEL TLH WEATHER CONDITIONS overcast mid 80's

TOTAL WELL DEPTH (TWD) 13 FT. (measured / well tag / drillers log/ previous report – circle one)

SCREENED INTERVAL 8-13 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 7.42

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 5.58

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 0.909 gal.

(NOTE ½" = 0.0102 G/FT; ¾" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 2.72 FIVE STANDING WELL VOLUMES = 4.54

METHOD OF WELL EVACUATION: BAILER (PUMP) OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 15 GAL. FLOW RATE 100 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE COMMENTS _____

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE X HIGH _____

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	<u>8.31</u>	<u>9.55</u>	<u>1.70</u>	<u>133</u>	<u>4.01</u>	<u>27.67</u>	<u>7.0</u>	
<u>12:35</u>	<u>8.55</u>	<u>9.78</u>	<u>2.11</u>	<u>25.7</u>	<u>4.49</u>	<u>26.74</u>	<u>-21</u>	
<u>12:40</u>	<u>8.73</u>	<u>9.73</u>	<u>2.52</u>	<u>15.4</u>	<u>4.29</u>	<u>26.74</u>	<u>-25</u>	<u>Lower Flow Rate</u>
<u>1245</u>	<u>8.73</u>	<u>9.69</u>	<u>2.67</u>	<u>12.1</u>	<u>3.99</u>	<u>26.79</u>	<u>-25</u>	

12:30

12:35



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OS-10S
 SITE NAME Duke Energy-Spartanburg DATE 7-30-13 TIME OF SAMPLE 13:55
 FIELD PERSONNEL TLH WEATHER CONDITIONS Sunny mid 90's

TOTAL WELL DEPTH (TWD) 13 FT. (measured / well tag / drillers log/ previous report – circle one)

SCREENED INTERVAL 8-13 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 7.89

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 5.11

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 0.833 gal.

(NOTE 1/2" = 0.0102 G/FT; 3/4" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = ~~2.499~~ 2.499 FIVE STANDING WELL VOLUMES = 4.16

METHOD OF WELL EVACUATION: BAILER PUMP OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 3 GAL. FLOW RATE 110 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

COMMENTS _____

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE X HIGH _____

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (uS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	8.5	8.29	1.09	12.0	2.29	29.51	29	
13:41	8.5	6.37	0.505	0.0	0.60	25.50	114	
13:46	8.5	5.70	0.489	0.0	0.17	24.26	137	

13:56



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OS-15S

SITE NAME Duke Energy-Spartanburg DATE 7-30-13 TIME OF SAMPLE 14:40

FIELD PERSONNEL TLH WEATHER CONDITIONS Cloudy 75°

TOTAL WELL DEPTH (TWD) 13 FT. (measured / well tag / drillers log/ previous report – **circle one**)

SCREENED INTERVAL 8-13 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 7.93

LENGTH OF WATER COLUMN (LWC) = TWD - DGW = 5.07

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 0.82 gal.

(NOTE $\frac{1}{2}'' = 0.0102 \text{ G/FT}$; $\frac{3}{4}'' = 0.023 \text{ G/FT}$; $1'' = 0.041 \text{ G/FT}$; $2'' = 0.163 \text{ G/FT}$; $4'' = 0.653 \text{ G/FT}$; $6'' = 1.46 \text{ G/FT}$)

THREE STANDING WELL VOLUMES = 2.48 FIVE STANDING WELL VOLUMES = _____

METHOD OF WELL EVACUATION: BAILER (PUMP) OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 65 GAL. FLOW RATE ~~222~~ 110 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

COMMENTS _____

LOCKING CAP YES X NO

PROTECTIVE POST/ABUTMENT YES _____ NO ☒ XNONPOTABLE LABEL YES X NO

ID PLATE _____ YES X NO

WELL INTEGRITY SATISFACTORY YES X NO

WELL YIELD LOW _____ MODERATE ✓ HIGH _____

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OS-20S
 SITE NAME Duke Energy-Spartanburg DATE 7-30-13 TIME OF SAMPLE 7:35
 FIELD PERSONNEL TLH WEATHER CONDITIONS overcast w/ 70 raining

TOTAL WELL DEPTH (TWD) 13 FT. (measured / well tag / drillers log/ previous report – circle one)

SCREENED INTERVAL 8-13 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 8.04

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 4.96

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 0.809 gal.

(NOTE ½" = 0.0102 G/FT; ¾" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 2.425 FIVE STANDING WELL VOLUMES = _____

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 1.5 GAL. FLOW RATE 100 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE COMMENTS _____

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE / HIGH _____

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	<u>8.17</u>	<u>6.28</u>	<u>0.831</u>	<u>191</u>	<u>4.91</u>	<u>22.1</u>	<u>162</u>	
<u>7:22</u>	<u>8.17</u>	<u>6.37</u>	<u>0.622</u>	<u>135</u>	<u>3.74</u>	<u>22.01</u>	<u>104</u>	
<u>7:27</u>	<u>8.17</u>	<u>6.39</u>	<u>0.554</u>	<u>68.2</u>	<u>2.84</u>	<u>21.76</u>	<u>82</u>	

7:17



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OS-5S
SITE NAME Duke Energy-Spartanburg DATE 9-12-13 TIME OF SAMPLE 1700
FIELD PERSONNEL TLH WEATHER CONDITIONS 90° Sunny Cloudy

TOTAL WELL DEPTH (TWD) 13 FT. (measured / well tag / drillers log/ previous report – circle one)

SCREENED INTERVAL 8-13 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 8.42

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 4.58

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = .75 gal.

(NOTE 1/2" = 0.0102 G/FT; 3/4" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 2.25 FIVE STANDING WELL VOLUMES = 3.75

METHOD OF WELL EVACUATION: BAILER PUMP / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: .5 GAL. FLOW RATE 125 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE COMMENTS _____

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE _____ HIGH _____

23 g/L

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	8.59	6.33	5.67	309	4.30	24.37	368	
1651	8.59	6.62	5.25	10.2	2.25	24.03	297	
1654	8.59	6.63	5.22	64.0	2.18	24.01	294	
1657	8.59	6.63	5.22	41.1	2.03	24.05	289	

1648



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OS-25S

SITE NAME Duke Energy-Spartanburg DATE 9-12-13 TIME OF SAMPLE 1400

FIELD PERSONNEL TLH WEATHER CONDITIONS 86° Sunny

TOTAL WELL DEPTH (TWD) 13 FT. (measured / well tag / drillers log/ previous report -- **circle one**)

SCREENED INTERVAL 8-13 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 8.82

LENGTH OF WATER COLUMN (LWC) = TWD - DGW = 4.18

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 0.69 gal.

(NOTE 1/2" = 0.0102G/FT: 3/4" = 0.023 G/FT: 1" = 0.041G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 2.07 FIVE STANDING WELL VOLUMES = 3.45

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 1.5 GAL. FLOW RATE 200 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE COMMENTS _____

LOCKING CAP YES X NO

PROTECTIVE POST/ABUTMENT YES _____ NO ☒ XNONPOTABLE LABEL YES X NO

ID PLATE YES X NO

WELL INTEGRITY SATISFACTORY YES X NO

WELL YIELD LOW _____ MODERATE _____ HIGH _____

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OR-10S
 SITE NAME Duke Energy-Spartanburg DATE 9-12-13 TIME OF SAMPLE 1315
 FIELD PERSONNEL TLH WEATHER CONDITIONS Sunny 86

TOTAL WELL DEPTH (TWD) 25 FT. (measured / well tag / drillers log/ previous report – circle one)

SCREENED INTERVAL 20-25 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 10.06

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 14.94

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 2.45 gal.

(NOTE ½" = 0.0102 G/FT; ¾" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 7.35 FIVE STANDING WELL VOLUMES = 12.25

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 15 GAL. FLOW RATE 150 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE COMMENTS _____

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE _____ HIGH _____

5g/L

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	10.72	3.90	20.0	7.9	1.58	33.73	442	
1308	10.75	3.9	19.9	7.8	0.66	33.72	442	
1311	10.75	3.87	19.5	7.9	0.28	33.69	440	
1314	10.75	3.85	19.3	8.3	0	33.65	439	

1305
1308



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OR-5S
SITE NAME Duke Energy-Spartanburg DATE 9-12-13 TIME OF SAMPLE 1215
FIELD PERSONNEL TLH WEATHER CONDITIONS 80° Sunny

TOTAL WELL DEPTH (TWD) 25 FT. (measured / well tag / drillers log/ previous report – **circle one**)

SCREENED INTERVAL 20-25 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 9.34

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 15.66

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 2.57 gal.
(NOTE 1/2" = 0.0102 G/FT; 3/4" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)
THREE STANDING WELL VOLUMES = 7.71 FIVE STANDING WELL VOLUMES = 12.85
METHOD OF WELL EVACUATION: BAILER / PUMP OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: _____ GAL. FLOW RATE 100 mL/min

WELL TYPE: FLUSH MOUNT ~~ABOVE GRADE~~ COMMENTS _____

LOCKING CAP YES X NO

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL YES X NO

ID PLATE YES X NO

WELL INTEGRITY SATISFACTORY YES X NO

WELL YIELD LOW _____ MODERATE _____ HIGH _____

5 g/L of persulfate

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OR-3W

SITE NAME Duke Energy-Spartanburg DATE 9-12-13 TIME OF SAMPLE 1050

FIELD PERSONNEL TLH WEATHER CONDITIONS Sunny 78°

TOTAL WELL DEPTH (TWD) 23 FT. (measured / well tag / drillers log/ previous report – **circle one**)

SCREENED INTERVAL	18-23	MEASURING POINT FOR DEPTH	TOC
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DEPTH TO GROUNDWATER (DGW) 10.16

LENGTH OF WATER COLUMN (LWC) = TWD - DGW = 12.89

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 2.1 gal.

(NOTE ½" = 0.0102G/FT; ¾" = 0.023 G/FT; 1" = 0.041G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 6.3 FIVE STANDING WELL VOLUMES = 10.5

METHOD OF WELL EVACUATION: BAILER/ PUMP/ OTHER: TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 15 GAL. FLOW RATE 100 mL/min

WELL TYPE: FLUSH MOUNT / ~~ABOVE GRADE~~ COMMENTS _____

LOCKING CAP YES X NO

PROTECTIVE POST/ABUTMENT	YES	NO	X
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NONPOTABLE LABEL YES X NO

ID PLATE	YES	X	NO
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WELL INTEGRITY SATISFACTORY YES X NO

WELL YIELD LOW MODERATE HIGH

[illegible]



MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-13 ISOC
 SITE NAME Duke Energy-Spartanburg DATE 9-12-13 TIME OF SAMPLE 810
 FIELD PERSONNEL TLH WEATHER CONDITIONS _____

TOTAL WELL DEPTH (TWD) 21.5 FT. (measured / well tag / drillers log/ previous report – circle one)

SCREENED INTERVAL 6.5-21.5 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 7.03

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 14.47

CASING DIAMETER 4 IN.

ONE STANDING WELL VOLUME = 9.45 gal.

(NOTE ½" = 0.0102 G/FT; ¾" = 0.023 G/FT; 1" = 0.041 G/FT; 2" = 0.163 G/FT; 4" = 0.653 G/FT; 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 28.35 FIVE STANDING WELL VOLUMES = 47.25

METHOD OF WELL EVACUATION: BAILER PUMP OTHER: _____ TYPE Peri-Pump

TOTAL VOLUME OF WATER REMOVED: 1 GAL. FLOW RATE 200 mL/min

WELL TYPE: FLUSH MOUNT ABOVE GRADE COMMENTS _____

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE _____ HIGH _____

2.5 g/L of K1024r

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
Initial Reading	7.17	5.31	4.49	222	2.87	24.8	138	
755	7.29	5.32	4.61	132	2.55	24.7	144	Lower flow Rate
800	7.29	5.35	4.74	34.1	2.53	24.7	149	
805	7.29	5.36	4.73	18.9	2.51	24.7	152	

750

[illegible]

[illegible]

[illegible]



AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OS-10S
SITE NAME Duke Energy - Spartansburg DATE 9/20/13 TIME OF SAMPLE 952
FIELD PERSONNEL Shane Sisco WEATHER CONDITIONS Sunny mid-70's

TOTAL WELL DEPTH (TWD) 13 FT. (measured / well tag / drillers log / previous report - circle one)

SCREENED INTERVAL 8-13 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 8.89

LENGTH OF WATER COLUMN (LWC) = TWD - DGW = 4.11

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 0.669 gal.

(NOTE 1/2" = 0.0102 G/FT: 3/4" = 0.023 G/FT: 1" = 0.041 G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 2.007 FIVE STANDING WELL VOLUMES = 3.335

METHOD OF WELL EVACUATION: BAILER / PUMP OTHER: TYPE per:

TOTAL VOLUME OF WATER REMOVED: _____ GAL.

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

COMMENTS 5.27 per: speed

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE X HIGH _____

	Well Volume Removed	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
-	9.31'	4.06	7.52	27.5	3.57	23.52	407	
5	9.43'	5.37	1.31	40.0	0.14	24.01	311	
10	9.42'	5.67	1.25	68.2	0.87	23.90	307	
15	9.42'	4.51	2.68	35.8	3.41	23.74	304	
20	9.42'	4.42	2.90	15.3	3.50	23.69	319	
25	9.42'	4.36	3.19	9.5	3.61	23.68	341	



AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OS-5S
SITE NAME Duke Energy - Spartansburg DATE 9/20/13 TIME OF SAMPLE 1024
FIELD PERSONNEL Shane Sisco WEATHER CONDITIONS Sunny mid-70's

TOTAL WELL DEPTH (TWD) 13 FT. (measured / well tag / drillers log / previous report → circle one)

SCREENED INTERVAL 8-13 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 8.69

LENGTH OF WATER COLUMN (LWC) = TWD - DGW = 4.31

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 0.702 gal.

(NOTE 1/2" = 0.0102 G/FT: 3/4" = 0.023 G/FT: 1" = 0.041 G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 2.106 FIVE STANDING WELL VOLUMES = 3.51

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE peri

TOTAL VOLUME OF WATER REMOVED: _____ GAL.

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

COMMENTS 5.00 peri-speed

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE X HIGH _____

	Well Volume Removed	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
1	9.41'	6.61	4.11	8.3	3.60	24.21	241	
5	9.99'	6.63	4.41	6.3	3.28	24.55	168	slowed pump
10	9.87'	6.61	4.95	97.5	2.80	24.65	146	turbidity spiked
15	10.20'	6.36	6.11	80.2	0.20	24.82	131	can't get NTU down
20	10.27'	6.33	5.98	50.4	0.52	24.97	123	
25	10.30'	6.29	6.21	29.2	0.80	24.99	122	



AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OS-5E
SITE NAME Duke Energy - Spartansburg DATE 9/20/13 TIME OF SAMPLE 1058
FIELD PERSONNEL Shane Sisco WEATHER CONDITIONS Sunny 80°

SCREENED INTERVAL	8-13	MEASURING POINT FOR DEPTH	TOC
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DEPTH TO GROUNDWATER (DGW) 8.28'

$$\text{LENGTH OF WATER COLUMN (LWC)} = \text{TWD} - \text{DGW} = 4.72$$

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 0.769 gal.

(NOTE 1/2" = 0.0102G/FT: 3/4" = 0.023 G/FT: 1" = 0.041G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 2.307 FIVE STANDING WELL VOLUMES = 3.845

METHOD OF WELL EVACUATION: BAILER (PUMP) OTHER: TYPE peri

TOTAL VOLUME OF WATER REMOVED: _____ GAL.

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

COMMENTS 499 peri-speed

LOCKING CAP YES X NO

PROTECTIVE POST/ABUTMENT	YES	NO	X
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NONPOTABLE LABEL YES X NO

ID PLATE	YES	X	NO
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WELL INTEGRITY SATISFACTORY	YES	X	NO
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WELL YIELD LOW MODERATE **X** HIGH

[illegible]

[illegible]

[illegible]



AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OR-10S
SITE NAME Duke Energy - Spartansburg DATE 9/20/13 TIME OF SAMPLE 1208
FIELD PERSONNEL Shane Sisco WEATHER CONDITIONS Sunny 85°

SCREENED INTERVAL	20-25	MEASURING POINT FOR DEPTH	TOC
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LENGTH OF WATER COLUMN (LWC) = TWD - DGW = 14.89

ONE STANDING WELL VOLUME = 2.42 gal.

THREE STANDING WELL VOLUMES = 726 FIVE STANDING WELL VOLUMES = 12.1

METHOD OF WELL EVACUATION: BAILER (PUMP) OTHER: TYPE Peri

TOTAL VOLUME OF WATER REMOVED: _____ GAL.

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

COMMENTS peri pump speed

LOCKING CAP YES X NO

PROTECTIVE POST/ABUTMENT	YES	NO	X
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NONPOTABLE LABEL YES X NO

ID PLATE	YES	X	NO
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WELL INTEGRITY SATISFACTORY YES X NO

WELL YIELD LOW **X** MODERATE HIGH

[illegible]

[illegible]

[illegible]



AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER OK-10W
SITE NAME Duke Energy - Spartansburg DATE 9/20/13 TIME OF SAMPLE 1506
FIELD PERSONNEL Shane Sisco WEATHER CONDITIONS overcast 85°

SCREENED INTERVAL	18.5-22.5	MEASURING POINT FOR DEPTH	TOC
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DEPTH TO GROUNDWATER (DGW) 9.37

LENGTH OF WATER COLUMN (LWC) = TWD - DGW = 13.13

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 2.140 gal.

(NOTE ½" = 0.0102G/FT: ¾" = 0.023 G/FT: 1" = 0.041G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 6.42 FIVE STANDING WELL VOLUMES = 10.7

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE peri

TOTAL VOLUME OF WATER REMOVED: _____ GAL.

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

COMMENTS 2.34 peri-speed

LOCKING CAP YES X NO

PROTECTIVE POST/ABUTMENT	YES	NO	X
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NONPOTABLE LABEL YES X NO

ID PLATE	YES	X	NO
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WELL INTEGRITY SATISFACTORY	YES	X	NO
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WELL YIELD LOW **X** MODERATE HIGH

[illegible]

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5
10
15
20

[illegible]



AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

MONITORING WELL SAMPLING FIELD DATA WORKSHEET

AMEC PROJECT NUMBER 6228-12-0021 MONITORING WELL NUMBER MW-13 ISOC

SITE NAME Duke Energy - Spartansburg DATE 9/20/13 TIME OF SAMPLE 1533

FIELD PERSONNEL Shane Sisco WEATHER CONDITIONS overcast 85°

TOTAL WELL DEPTH (TWD) 21.5 FT. (measured / well tag / drillers log / previous report - circle one)

SCREENED INTERVAL 6.5-21.5 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 7.25

LENGTH OF WATER COLUMN (LWC) = TWD - DGW = 14.25

CASING DIAMETER 4 IN.

ONE STANDING WELL VOLUME = 9.053 gal.

(NOTE 1/2" = 0.0102 G/FT: 3/4" = 0.023 G/FT: 1" = 0.041 G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 27.159 FIVE STANDING WELL VOLUMES = 45.265

METHOD OF WELL EVACUATION: BAILER / PUMP OTHER: TYPE peri

TOTAL VOLUME OF WATER REMOVED: _____ GAL.

WELL TYPE: FLUSH MOUNT ABOVE GRADE

COMMENTS 2.42 speed

LOCKING CAP YES X NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO X

NONPOTABLE LABEL YES X NO _____

ID PLATE YES X NO _____

WELL INTEGRITY SATISFACTORY YES X NO _____

WELL YIELD LOW _____ MODERATE X HIGH _____

turbidity slowly stabilizing
* much longer than others

-
5
10
15
20
25

Well Volume Removed	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O ₂ (mg/L)	Temp (°C)	ORP (mV)	Notes
7.35'	5.10	4.65	201	0.00	32.93	266	
7.39'	5.49	4.62	203	0.00	32.50	133	
7.40'	5.41	4.59	136	0.00	32.45	190	
7.42'	5.48	4.60	80.2	0.00	32.42	119	
7.47'	5.59	4.57	93.3	0.00	32.64	86	
7.50'	5.62	4.55	80.2	0.00	32.77	71	