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**MEMO**

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Date:  
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ARCADIS Project No.:  
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Subject:  
Area 16 Metals Summary  
RACER Trust Plant 3, Lansing, Michigan

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Following the submittal of the *Resource Conservation and Recovery Act Facility Investigation (RFI) Phase 2 Supplemental Activities Summary Report* dated February 26, 2014 for the RACER Trust Plants 2, 3 and 6, located in Lansing, Michigan (Site), additional work was completed to further characterize and evaluate metals in soil and groundwater in Area 16 located adjacent to the southeast Plant 3 property boundary. As described in the *RFI Phase 2 Supplemental Report*, metals exceed Michigan Department of Environmental Quality (MDEQ) Part 201 Criteria in soil and groundwater near the property boundary. The adjacent property is a 200 foot wide railroad yard owned by the Adrian & Blissfield Railroad. The owner has refused to allow access for additional sampling. The location of Area 16 relative to the railroad property is included on Figure 1.

The additional work completed in Area 16 consisted of the following:

1. A total of five hand auger borings were advanced at the fence line of the rail yard easement east of MW-13-32 / SB-A16-HU181 previously completed as part of the RFI activities. Soil samples were collected and submitted to Merit Laboratories, Inc. for Target Analyte List (TAL) metals analysis.

The locations of soil borings advanced along the Plant 3 boundary are shown on Figure 1. All of the soil boring logs for Area 16 are included as Attachment 1. The laboratory analytical report for the new soil samples is included as Attachment 2.

Soil and groundwater samples for the area are not compared to the Groundwater Surface Water Interface (GSI) Criteria. Although GSI is an applicable pathway for the Site as a whole, storm sewers are not present in Area 16 and there is no surface water close to this area so GSI is not a complete pathway. Relevant criteria exceedances for Area 16 include Part 201 Soil Direct Contact (DC) Criteria, as well as Soil Drinking Water Protection (DWP) and Groundwater Drinking Water (DW) Criteria.

## Background

Area 16 was selected as an Area of Interest (AOI) for the RFI investigation due to the former proximity of scrap metal storage areas. The stratigraphy at Area 16 generally consists of 2 to 10 feet of sandy fill material underlain by glacial till. In the central portion of Area 16, the fill is generally described as fine sand overlying coarser fill that includes pieces of concrete, as well as debris such as asphalt and glass. Near the eastern property boundary, adjacent to the railroad property, the fill consists of a thin layer of clay overlying fine to coarse sand mixed with debris such as glass, foundry slag, coal, and pieces of metal. The majority of soil and groundwater metals exceedances outlined below occur within the fill material. A cross-section illustrating the stratigraphy of Area 16 is included as Figure 2.

As part of the 2011 RFI Phase 1 investigation, soil boring P3-SB-24 was completed in Area 16 and indicated SVOCs were present in soil. During the 2012 RFI Phase 2 Assessment and Characterization stages, several step-out borings were completed to delineate the extent of SVOCs. Although SVOCs were successfully defined, lead was encountered to the east (SB-A16-HU168) at a concentration exceeding the DC Criteria. Additional step-out borings (SB-A16-HU171 and SB-A16-IE168) were completed during the RFI Phase 2 Delineation stage to define lead and encountered arsenic in soil and groundwater above DW and DWP Criteria to the east and south of Area 16. The location of P3-SB-24, subsequent step-out borings and a summary of the soil and groundwater metals results are included on Figure 1.

As part of the RFI Phase 2 supplemental work completed in July 2013, two additional borings (SB-A16-IL168 and SB-A16-HU181) were advanced south and east of Area 16 to delineate arsenic in soil and groundwater. Arsenic was delineated to the south in soil and groundwater, but lead was again detected above DC Criteria in soil to the east at soil boring SB-A16-HU181. Three monitoring wells were installed within, east, and south of Area 16 (MW-13-31, MW-13-32, and MW-13-33, respectively) to evaluate the concentration of metals in groundwater. At monitoring wells MW-13-31 and MW-13-33, sporadic exceedances of lead, manganese and vanadium appear to be related to turbidity, as dissolved metals analysis indicates all metals are below Part 201 Criteria. Monitoring well MW-13-32 is located east of Area 16, approximately 12 feet from the fence separating the Site from the adjacent railroad property. Groundwater samples from MW-13-32 have indicated lead, manganese and nickel concentrations above DW Criteria, although lead at this location also appears to be related to turbidity. Manganese is generally elevated across the region and dissolved concentrations at MW-13-32 do not exceed the Health Based Part 201 Criteria. Nickel has not been detected in soil samples collected from the area at concentrations

above criteria, and nickel has not exceeded criteria in any of the other groundwater samples collected from the area.

Based on the work completed during RFI activities, lead in soil and nickel in groundwater was not delineated at the Plant 3 southeast property boundary.

### **Additional Work**

On April 9, 2014, a hand auger boring was advanced between monitoring well MW-13-32 and the fence line separating the Adrian & Blissfield Railroad property from the Site (Figure 1). Four attempts to advance the hand auger within two feet the fence met refusal at four feet below ground surface (bgs). The final hand auger boring (SB-A16-HU181E) was advanced to a depth of 8.5 ft bgs, at a location four feet west of the fence line. The locations of the attempted and final hand auger borings are included on Figure 1. Soil samples were collected from the top, middle, and bottom of SB-A16-HU181E and submitted for analysis of TAL Metals. Fill material from the four attempted borings was composited and submitted for TAL Metals and Toxicity Characteristic Leaching Procedure (TCLP) analysis to determine how the fill material may contribute to metal concentrations in groundwater. Using the TCLP procedure is conservative in that the leaching process uses an acidic extraction fluid that results in greater leaching than would be expected by infiltration of precipitation.

### **Discussion**

As noted above, the fill material near the property boundary consists of fine to coarse sand with glass, foundry slag, coal, and pieces of metal to a maximum depth of 10 feet bgs at SB-A16-HU181. Staining was also observed in several of the borings. In general, the fill near the property boundary (adjacent to the railroad property) is different in character than fill observed interior to Area 16, which consists of a thicker overlying clay and then fine to coarse sand with construction debris such as concrete, asphalt and glass.

As shown on Figure 1, the soil samples collected from the fill material near the fence indicate criteria exceedances for arsenic and lead. Monitoring well MW-13-32, installed within this fill material has exhibited DW Criteria exceedances for nickel and lead, although as indicated above the lead in groundwater appears to be associated with turbidity. These results indicate that although arsenic exceeds DWP criteria within the fill material, it does not leach to groundwater at concentrations above the DW criteria. The TCLP results for the composite sample collected from the fill material also show that arsenic and nickel do not leach from the fill above DW Criteria. Table 1 includes a summary of soil analytical results and Table 2 includes a summary of groundwater analytical results. The results of the TCLP analysis are summarized on Table 3.

## Conclusions

Based on the descriptions of fill material in Area 16, the fill near the property boundary (e.g. SB-A16-HU181 & HU181E) appears different than fill observed interior to Area 16 (e.g. SB-A16-HU168). Although unclear when fill material was placed at the Site, it seems likely that fill near the fence line was placed as part of railroad construction and continues onto the railroad property.

Based on the soil sampling results, although lead was defined at the property boundary by the additional hand auger borings, arsenic is still present above DWP within the fill located along the fence line. However, sampling at monitoring well MW-13-32 and TCLP analysis of the fill material indicate that arsenic does not leach to groundwater above the DW Criteria and is therefore does not warrant further action. No additional soil sampling is proposed for this area at this time.

Metals in groundwater are defined in Area 16 with the exception of nickel at MW-13-32 on the eastern property boundary. Groundwater monitoring will continue at MW-13-32 to monitor nickel and other metals. Due to the access issues associated with the adjacent Adrian & Blissfield Railroad property, no additional groundwater sampling is proposed east of Plant 3 at this time. The source of the nickel at MW-13-32 is not clear. The nickel in groundwater appears isolated and has not exceeded DW Criteria in other groundwater samples collected from Area 16. In addition, the TCLP analysis did not indicate nickel leaches from the fill collected near the property boundary.

As indicated in the Resource Conservation and Recovery Act (RCRA) Corrective Measures Study submitted to the MDEQ on June 4, 2014, the remedy proposed for this area includes maintenance of a cap to limit exposure to fill material, a site-wide deed restriction restricting the use of groundwater, and a restriction requiring appropriate health and safety measures in the event of intrusive activities. These measures adequately address the risk associated with the fill material located on the RACER property. We do not believe that RACER is not responsible for the fill placed on the railroad property or any associated perched groundwater impacts.

**Tables**

**Table 1**  
**Summary of Area 16 Soil Sampling Analytical Results**  
**2014 Area 16 Metals Memo**  
**RACER Trust**  
**Plant 3 - Lansing, Michigan**

Location ID:		SB-MI SO (DEQ2013) Res DWP <sup>(a)</sup>	SB-MI SO (DEQ2013) Non-Res Vol to Indoor Air <sup>(c)</sup>	SB-MI SO (DEQ2013) Non-Res Direct Contact <sup>(d)</sup>	SB-MI SO (DEQ2013) Non- Res PSIC <sup>(e)</sup>	MI SO (DEQ2013) Background <sup>(f)</sup>	P3-SB-24 3 - 4 08/18/11	P3-SB-24 9 - 10 08/18/11	P3-SB-31 2 - 3 08/18/11	P3-SB-31 9 - 10 08/18/11	SB-A16-GX162 1 - 2 06/05/12
Sample Depth(ft):	Units										
Date Collected:											
<b>Inorganics</b>											
Antimony	mg/kg	4.3	NLV	670	2,537	NA	<0.11	<0.13	<0.12	<0.11 [<<0.1]	<0.20
Arsenic	mg/kg	4.6	NLV	37	391.3	5.8	<b>1.34</b>	<b>1.03</b>	<b>0.6</b>	<b>0.66 [1.33]</b>	<b>1.34</b>
Barium	mg/kg	1,300	NLV	1.30E+5	64,500	75	<b>34</b>	<b>58.3</b>	<b>60.2</b>	<b>11.3 [13.3]</b>	<b>53.4</b>
Beryllium	mg/kg	51	NLV	1,600	590	NA	<b>0.15</b>	<b>0.35</b>	<b>0.4</b>	<b>0.11 [0.16]</b>	<b>0.31</b>
Boron	mg/kg	10	NLV	3.5E+5(DD)	NA	NA	<4.48	<5.04	<4.84	<4.30 [<4.04]	<4.0
Cadmium	mg/kg	6	NLV	2,100	946	1.2	<b>0.13</b>	<b>0.38</b>	<b>0.15</b>	<0.11 [<<0.1]	<b>0.27</b>
Chromium	mg/kg	30	NLV	9,200	64,500	18	<b>3.16</b>	<b>4.12</b>	<b>4.43</b>	<b>2.06 [1.93]</b>	<b>9.68</b>
Cobalt	mg/kg	2	NLV	9,000	2,537	6.8	<b>3.88</b>	<b>3.35</b>	<b>3.56</b>	<b>1.89 [2.21]</b>	<b>4.54</b>
Copper	mg/kg	5,800	NLV	73,000	25,370	32	<b>7.25</b>	<b>23</b>	<b>5.6</b>	<b>5.01 [7.97]</b>	<b>8.65</b>
Lead	mg/kg	700	NLV	900	18,920	21	<b>6.65</b>	<b>9.27</b>	<b>9.04</b>	<b>2.73 [2.54]</b>	<b>17</b>
Manganese	mg/kg	1	NLV	90,000	990 <sup>(1)</sup>	440	<b>279</b>	<b>204</b>	<b>251</b>	<b>105 [117]</b>	<b>328</b>
Mercury	mg/kg	1.7	89	580	3,784	0.13	<b>0.0156</b>	<b>0.0183</b>	<b>0.032</b>	<b>0.0080 [&lt;0.0058]</b>	<b>0.0436</b>
Nickel	mg/kg	100	NLV	1.50E+5	6,880	20	<b>8.75</b>	<b>8.93</b>	<b>5.06</b>	<b>5.32 [5.81]</b>	<b>7.1</b>
Selenium	mg/kg	4	NLV	9,600	25,370	0.41	<b>0.25</b>	<b>0.2</b>	<b>0.14</b>	<b>&lt;0.11 [0.13]</b>	<0.20
Silver	mg/kg	13	NLV	9,000	1,247	1	<0.11	<0.13	<0.12	<0.11 [<<0.1]	<0.10
Thallium	mg/kg	2.3	NLV	130	5,900	NA	<0.11	<0.13	<0.12	<0.11 [<<0.1]	<0.20
Vanadium	mg/kg	990	NLV	5,500(DD)	NA	NA	<b>4.81</b>	<b>13.1</b>	<b>8.96</b>	<b>3.57 [5.03]</b>	<b>10.2</b>
Zinc	mg/kg	5,000	NLV	6.3E+5	NA	47	<b>16.1</b>	<b>38.1</b>	<b>11.9</b>	<b>9.00 [8.4]</b>	<b>22.5</b>
<b>Miscellaneous</b>											
Total solids	%	--	--	--	--	--	<b>92</b>	<b>82</b>	<b>87</b>	<b>85 [86]</b>	<b>91</b>

**Table 1**  
**Summary of Area 16 Soil Sampling Analytical Results**  
**2014 Area 16 Metals Memo**  
**RACER Trust**  
**Plant 3 - Lansing, Michigan**

Location ID:		SB-A16-GX162	SB-A16-GX162	SB-A16-HA159	SB-A16-HA159	SB-A16-HA159	SB-A16-HA165	SB-A16-HA165	SB-A16-HA165	SB-A16-HD162	SB-A16-HD162	SB-A16-HP165
Sample Depth(ft):		7 - 8	18 - 19	0 - 1	9 - 10	19 - 20	1 - 2	7 - 8	14 - 15	1 - 2	8 - 9	3 - 4
Date Collected:	Units	06/05/12	06/05/12	06/05/12	06/05/12	06/05/12	06/06/12	06/06/12	06/06/12	06/06/12	06/06/12	09/20/12
<b>Inorganics</b>												
Antimony	mg/kg	<0.22	<0.20	<0.20	<0.20	<0.20	<0.20	<0.21 [ <b>&lt;0.2</b> ]	<0.22	<0.21	<0.21	<0.20
Arsenic	mg/kg	<b>0.19</b>	<b>0.87</b>	<b>1.69</b>	<b>0.27</b>	<b>0.66</b>	<b>3.32</b>	<b>0.62 [1.32]</b>	<b>1.74</b>	<b>1.67</b>	<b>0.49 J</b>	<b>2.31</b>
Barium	mg/kg	<b>41.2</b>	<b>10.1</b>	<b>41.4</b>	<b>14.1</b>	<b>8.94</b>	<b>18.8</b>	<b>50.1 [47.7]</b>	<b>4.2</b>	<b>55.9</b>	<b>69.1</b>	<b>35</b>
Beryllium	mg/kg	<b>0.46</b>	<0.20	<b>0.26</b>	<0.20	<0.20	<0.20	<b>0.28 [0.28]</b>	<0.22	<b>0.37</b>	<b>0.42</b>	NA
Boron	mg/kg	<4.4	<4.1	<4.1	<4.1	<4.1	<4.0	<4.3 [ <b>&lt;4.1</b> ]	<4.4	<4.3	<4.3	<4.0
Cadmium	mg/kg	<0.11	<0.10	<b>0.41</b>	<0.10	<0.10	<b>0.16</b>	<b>0.43 [0.23]</b>	<0.11	<b>0.18</b>	<b>0.24</b>	<b>0.12</b>
Chromium	mg/kg	<b>5.33</b>	<b>3.66</b>	<b>11.4</b>	<b>3.64</b>	<b>3.52</b>	<b>4.41</b>	<b>3.15 [6.13]</b>	<b>3.73</b>	<b>9.33</b>	<b>3.8</b>	<b>5.01</b>
Cobalt	mg/kg	<b>2.57</b>	<b>2.9</b>	<b>4.27</b>	<b>2.09</b>	<b>3.19</b>	<b>2.92</b>	<b>1.22 [3.36]</b>	<b>1.34</b>	<b>4.8</b>	<b>1.45</b>	<b>2.14</b>
Copper	mg/kg	<b>9.87</b>	<b>6.93</b>	<b>10.3</b>	<b>7.33</b>	<b>6.48</b>	<b>5.95</b>	<b>7.96 [9.14]</b>	<b>30.3</b>	<b>9.37</b>	<b>14.3</b>	<b>7.34</b>
Lead	mg/kg	<b>4.7</b>	<b>3.45</b>	<b>20.4</b>	<b>2.74</b>	<b>3.09</b>	<b>8.21</b>	<b>8.38 [9.59]</b>	<b>2</b>	<b>13.3</b>	<b>7.1</b>	<b>12.8</b>
Manganese	mg/kg	<b>43.2</b>	<b>221</b>	<b>293</b>	<b>47.8</b>	<b>186</b>	<b>215</b>	<b>62.5 J [290 J]</b>	<b>86.6</b>	<b>308</b>	<b>48.7 J</b>	<b>180</b>
Mercury	mg/kg	<b>0.0367</b>	<b>0.0105</b>	<b>0.0362</b>	<0.0058	<b>0.0067</b>	<b>0.0106</b>	<b>0.0286 [0.0271]</b>	<0.0061	<b>0.0365</b>	<b>0.0282</b>	<b>0.0166</b>
Nickel	mg/kg	<b>4.75</b>	<b>10.9</b>	<b>9.54</b>	<b>6.24</b>	<b>12.4</b>	<b>9.62</b>	<b>2.57 [8.59]</b>	<b>6.62</b>	<b>7.98</b>	<b>3.22 J</b>	<b>9.33</b>
Selenium	mg/kg	<0.22	<0.20	<0.20	<0.20	<b>0.32</b>	<0.20	<0.21 [ <b>&lt;0.2</b> ]	<b>0.42<sup>f</sup></b>	<0.21	<0.21	<0.20
Silver	mg/kg	<0.11	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10 [ <b>&lt;0.1</b> ]	<0.11	<0.10	<0.10	<0.10
Thallium	mg/kg	<0.22	<0.20	<0.20	<0.20	<0.20	<0.20	<0.21 [ <b>&lt;0.2</b> ]	<0.22	<0.21	<0.21	NA
Vanadium	mg/kg	<b>8.08</b>	<b>6.31</b>	<b>8.77</b>	<b>5.37</b>	<b>6.29</b>	<b>4.76</b>	<b>6.12 [8.81]</b>	<b>8.13</b>	<b>11.2</b>	<b>9.24</b>	<b>6.74</b>
Zinc	mg/kg	<b>11.9</b>	<b>13.1</b>	<b>32.3</b>	<b>9.41</b>	<b>13.2</b>	<b>13.8</b>	<b>9.82 [17.9]</b>	<b>4.69</b>	<b>18.2</b>	<b>10.0 J</b>	<b>14.4</b>
<b>Miscellaneous</b>												
Total solids	%	<b>84</b>	<b>88</b>	<b>87</b>	<b>87</b>	<b>91</b>	<b>94</b>	<b>84 [85]</b>	<b>80</b>	<b>84</b>	<b>85 [90]</b>	<b>95</b>

**Table 1**  
**Summary of Area 16 Soil Sampling Analytical Results**  
**2014 Area 16 Metals Memo**  
**RACER Trust**  
**Plant 3 - Lansing, Michigan**

Location ID:		SB-A16-HP165	SB-A16-HP178	SB-A16-HP178	SB-A16-HQ168	SB-A16-HQ168	SB-A16-HQ168	SB-A16-HR162	SB-A16-HR162	SB-A16-HR162	SB-A16-HU159	SB-A16-HU165
Sample Depth(ft):		9 - 10	2 - 3	10 - 11	1 - 2	10 - 11	17 - 18	1 - 2	9 - 10	19 - 20	1 - 2	1 - 2
Date Collected:	Units	09/20/12	11/28/12	11/28/12	11/09/12	11/09/12	11/09/12	06/06/12	06/06/12	06/06/12	06/06/12	06/06/12
<b>Inorganics</b>												
Antimony	mg/kg	<0.20	NA	NA	<0.24 [ $<0.22$ ]	<0.25	<0.22	<0.20	<0.22	<0.20	<0.20	<0.20
Arsenic	mg/kg	<b>1.56</b>	<b>2.47</b>	<b>3.50 [2.3]</b>	<b>1.13 [1.41]</b>	<b>2.35</b>	<b>1.13</b>	<b>1.12</b>	<b>0.85</b>	<b>1.32</b>	<b>1.29</b>	<b>2.45</b>
Barium	mg/kg	<b>138<sup>f</sup></b>	NA	NA	<b>23.0 [26.6]</b>	<b>59.8</b>	<b>33.5</b>	<b>30.7</b>	<b>59.2</b>	<b>22.1</b>	<b>32.2</b>	<b>35.5</b>
Beryllium	mg/kg	NA	NA	NA	NA	NA	NA	<0.20	<b>0.34</b>	<0.20	<b>0.27</b>	<b>0.21</b>
Boron	mg/kg	<4.0	NA	NA	<4.8 [ $<4.5$ ]	<5.0	<4.4	<4.0	<4.4	<4.0	<4.0	<b>4.19</b>
Cadmium	mg/kg	<b>2.12<sup>f</sup></b>	NA	NA	<b>&lt;0.12 [0.13]</b>	<b>0.19</b>	<0.11	<b>0.14</b>	<b>0.19</b>	<0.10	<b>0.22</b>	<b>0.12</b>
Chromium	mg/kg	<b>8.46</b>	NA	NA	<b>4.93 [6.42]</b>	<b>12.9</b>	<b>8.34</b>	<b>8</b>	<b>3.88</b>	<b>3.65</b>	<b>7.22</b>	<b>8.76</b>
Cobalt	mg/kg	<b>2.91</b>	<b>2.76</b>	<b>4.29 [4.77]</b>	<b>3.15 [3.71]</b>	<b>8.34<sup>af</sup></b>	<b>4.54</b>	<b>3.58</b>	<b>3.28</b>	<b>3.14</b>	<b>3.44</b>	<b>3.81</b>
Copper	mg/kg	<b>124<sup>f</sup></b>	NA	NA	<b>5.60 [7.97]</b>	<b>16.3</b>	<b>11.4</b>	<b>11.4</b>	<b>12.4</b>	<b>9.87</b>	<b>9.16</b>	<b>37.9<sup>f</sup></b>
Lead	mg/kg	<b>29.8<sup>f</sup></b>	NA	NA	<b>3.48 [4.8]</b>	<b>8.05</b>	<b>5.18</b>	<b>11.4</b>	<b>7.9</b>	<b>4.32</b>	<b>17.2</b>	<b>18.3</b>
Manganese	mg/kg	<b>103</b>	<b>193</b>	<b>336 [447<sup>af</sup>]</b>	<b>189 [248]</b>	<b>508<sup>af</sup></b>	<b>317</b>	<b>246</b>	<b>236</b>	<b>248</b>	<b>254</b>	<b>278</b>
Mercury	mg/kg	<b>0.2373<sup>f</sup></b>	NA	NA	<b>0.0184 [0.0316]</b>	<b>0.013</b>	<b>0.0098</b>	<b>0.0151</b>	<b>0.0195</b>	<b>0.0088</b>	<b>0.0335</b>	<b>0.0159</b>
Nickel	mg/kg	<b>16.1</b>	NA	NA	<b>7.25 [9.37]</b>	<b>18.7</b>	<b>11.5</b>	<b>11.1</b>	<b>7.06</b>	<b>9.62</b>	<b>8.39</b>	<b>16.6</b>
Selenium	mg/kg	<b>0.4</b>	<0.20	<b>0.22 [0.27]</b>	<0.12 [ $<0.11$ ]	<b>0.13</b>	<0.11	<0.20	<0.22	<0.20	<0.20	<0.20
Silver	mg/kg	<0.10	NA	NA	<b>&lt;0.02 [0.02]</b>	<b>0.05</b>	<b>0.04</b>	<b>0.1</b>	<0.11	<0.10	<0.10	<0.10
Thallium	mg/kg	NA	NA	NA	NA	NA	NA	<0.20	<0.22	<0.20	<0.20	<0.20
Vanadium	mg/kg	<b>21</b>	NA	NA	<b>6.88 [8.86]</b>	<b>16.1</b>	<b>11.5</b>	<b>6.42</b>	<b>12</b>	<b>5.7</b>	<b>6.97</b>	<b>8.78</b>
Zinc	mg/kg	<b>167<sup>f</sup></b>	<b>40.9</b>	<b>29.9 [29.3]</b>	<b>15.2 [19.7]</b>	<b>35</b>	<b>23.6</b>	<b>16</b>	<b>29</b>	<b>13.8</b>	<b>32.3</b>	<b>32.6</b>
<b>Miscellaneous</b>												
Total solids	%	<b>77</b>	<b>92</b>	<b>76 [77]</b>	<b>89 [90]</b>	<b>79</b>	<b>88</b>	<b>95</b>	<b>83</b>	<b>94</b>	<b>92</b>	<b>96</b>

**Table 1**  
**Summary of Area 16 Soil Sampling Analytical Results**  
**2014 Area 16 Metals Memo**  
**RACER Trust**  
**Plant 3 - Lansing, Michigan**

Location ID:		SB-A16-HU165	SB-A16-HU165	SB-A16-HU168	SB-A16-HU168	SB-A16-HU168	SB-A16-HU171	SB-A16-HU171	SB-A16-HU171	SB-A16-HU178	SB-A16-HU178	SB-A16-HU178
Sample Depth(ft):		4 - 5	15 - 16	4.5 - 5.5	9 - 10	19 - 20	1 - 2	12 - 13	18 - 19	0 - 1	5 - 6	24 - 25
Date Collected:	Units	06/06/12	06/06/12	09/20/12	09/20/12	09/20/12	11/09/12	11/09/12	11/09/12	11/28/12	11/28/12	11/28/12
<b>Inorganics</b>												
Antimony	mg/kg	<0.21	<0.22	<0.20	<0.20 [ <b>&lt;0.2</b> ]	<0.20	<0.22	<0.27 [ <b>&lt;0.27</b> ]	<0.23	NA	NA	NA
Arsenic	mg/kg	<b>2.23</b>	<b>2.36</b>	<b>1.26</b>	<b>9.97 [9.05]</b> <sup>af</sup>	<b>2.55</b>	<b>1.66</b>	<b>4.73 [6.84]</b> <sup>af</sup>	<b>3.46</b>	<b>15.1</b> <sup>af</sup>	<b>7.94</b> <sup>af</sup>	<b>2.19</b>
Barium	mg/kg	<b>32.8</b>	<b>35.5</b>	<b>24.8</b>	<b>456 [413]</b> <sup>f</sup>	<b>47.5</b>	<b>31.7</b>	<b>60.2 [70.3]</b>	<b>44.6</b>	NA	NA	NA
Beryllium	mg/kg	<0.21	<b>0.28</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boron	mg/kg	<4.2	<4.4	<4.0	<b>10.3 [6.45]</b> <sup>a</sup>	<4.0	<4.4	<b>&lt;5.5 [6.1]</b>	<4.6	NA	NA	NA
Cadmium	mg/kg	<b>0.14</b>	<b>0.18</b>	<b>0.134</b>	<b>1.08 [0.62]</b>	<b>0.18</b>	<b>0.18</b>	<b>0.25 [0.34]</b>	<b>0.12</b>	NA	NA	NA
Chromium	mg/kg	<b>5.39</b>	<b>6.57</b>	<b>2.86</b>	<b>6.81 [11.1]</b>	<b>4.5</b>	<b>7.19</b>	<b>11.2 [12.9]</b>	<b>11.1</b>	NA	NA	NA
Cobalt	mg/kg	<b>3.31</b>	<b>4.61</b>	<b>2.63</b>	<b>3.08 [1.67]</b>	<b>4.35</b>	<b>4.51</b>	<b>6.13 [6.28]</b>	<b>6.17</b>	<b>2.96</b>	<b>2.67</b>	<b>3.38</b>
Copper	mg/kg	<b>16.7</b>	<b>19.4</b>	<b>7.76</b>	<b>292 J [35.6 J]</b> <sup>f</sup>	<b>16.3</b>	<b>7.17</b>	<b>19.3 [21.4]</b>	<b>14.4</b>	NA	NA	NA
Lead	mg/kg	<b>10.6</b>	<b>8.23</b>	<b>5.29</b>	<b>4,100 [7,230]</b> <sup>adf</sup>	<b>7.7</b>	<b>5.39</b>	<b>7.94 [8.09]</b>	<b>6.34</b>	NA	NA	NA
Manganese	mg/kg	<b>253</b>	<b>503</b> <sup>af</sup>	<b>200</b>	<b>386 [285]</b>	<b>465</b> <sup>af</sup>	<b>235</b>	<b>388 [370]</b>	<b>368</b>	<b>258</b>	<b>244</b>	<b>200</b>
Mercury	mg/kg	<b>0.0136</b>	<b>0.0164</b>	<b>0.0328</b>	<b>2.378 [1.341]</b> <sup>af</sup>	<b>0.013</b>	<b>0.0191</b>	<b>0.0138 [0.0164]</b>	<b>0.0129</b>	NA	NA	NA
Nickel	mg/kg	<b>13</b>	<b>14.5</b>	<b>10</b>	<b>13.7 [12.3]</b>	<b>14.5</b>	<b>10.4</b>	<b>15.3 [16.8]</b>	<b>16.4</b>	NA	NA	NA
Selenium	mg/kg	<0.21	<0.22	<0.20	<b>0.65 [0.47]</b> <sup>f</sup>	<b>0.3</b>	<0.11	<b>0.30 [0.45]</b> <sup>f</sup>	<b>0.18</b>	<b>0.39</b>	<b>0.31</b>	<b>0.33</b>
Silver	mg/kg	<0.10	<0.11	<0.10	<b>1.31 [1.59]</b> <sup>f</sup>	<0.10	<b>0.03</b>	<b>0.08 [0.07]</b>	<b>0.05</b>	NA	NA	NA
Thallium	mg/kg	<0.21	<0.22	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	mg/kg	<b>7.72</b>	<b>12.4</b>	<b>4.25</b>	<b>14.2 [11]</b>	<b>8.82</b>	<b>9.11</b>	<b>17.2 [19.2]</b>	<b>16.1</b>	NA	NA	NA
Zinc	mg/kg	<b>21.2</b>	<b>31.2</b>	<b>10.2</b>	<b>538 [262]</b> <sup>f</sup>	<b>25</b>	<b>20.5</b>	<b>36.7 [38.4]</b>	<b>30.9</b>	<b>453</b> <sup>f</sup>	<b>616</b> <sup>f</sup>	<b>13.7</b>
<b>Miscellaneous</b>												
Total solids	%	<b>89</b>	<b>77</b>	<b>91</b>	<b>68 [73]</b>	<b>75</b>	<b>93</b>	<b>77 [76]</b>	<b>85</b>	<b>87</b>	<b>80</b>	<b>89</b>

**Table 1**  
**Summary of Area 16 Soil Sampling Analytical Results**  
**2014 Area 16 Metals Memo**  
**RACER Trust**  
**Plant 3 - Lansing, Michigan**

Location ID:		SB-A16-HX162	SB-A16-HX162	SB-A16-HX162	SB-A16-HX165	SB-A16-HX165	SB-A16-HX176	SB-A16-HX176	SB-A16-HX176	SB-A16-HY168	SB-A16-HY168	SB-A16-HY168
Sample Depth(ft):		1 - 2	8 - 9	19 - 20	1 - 2	19 - 20	0 - 1	5 - 6	15 - 16	1 - 2	11 - 12	17 - 18
Date Collected:	Units	06/06/12	06/06/12	06/06/12	09/20/12	09/20/12	11/28/12	11/28/12	11/28/12	11/09/12	11/09/12	11/09/12
<b>Inorganics</b>												
Antimony	mg/kg	<0.20	<0.20 [<0.21]	<0.21	<0.20	<0.20	NA	NA	NA	<0.23	<0.29 [<0.32]	<0.22
Arsenic	mg/kg	1.4	1.41 [2.2 J]	0.87	1.98	2.5	3.28	0.73 [0.34]	1.84	1.65	6.45 [4.72] <sup>af</sup>	3.96
Barium	mg/kg	31.7	58.2 [51.2 J]	28.4	30.1	52.5	NA	NA	NA	31.8	70.9 [66.9]	57.5
Beryllium	mg/kg	<0.20	0.33 [0.36]	<0.21	NA	NA	NA	NA	NA	NA	NA	NA
Boron	mg/kg	<4.0	<4.1 [<4.2]	<4.2	<4.0	<4.0	NA	NA	NA	<4.5	7.4 [7.3]	5.2
Cadmium	mg/kg	0.21	0.43 [0.46]	<0.10	0.19	0.21	NA	NA	NA	0.15	0.43 [0.21]	0.19
Chromium	mg/kg	5.66	4.44 [5.85]	3.53	4.75	6.81	NA	NA	NA	8.03	14.7 [16.4]	15.5
Cobalt	mg/kg	2.83	3.33 [5.09 J]	3.05	2.75	5.52	3.06	2.81 [2.37]	2.94	4.14	7.76 [8.14] <sup>af</sup>	7.5 <sup>af</sup>
Copper	mg/kg	13	15.7 [16.1]	12	9.67	17.2	NA	NA	NA	8.97	25.6 [21.5]	18.6
Lead	mg/kg	27 <sup>f</sup>	35.7 [20.3] <sup>f</sup>	5.07	18.9	7.67	NA	NA	NA	11.2	9.90 [10.3]	8.04
Manganese	mg/kg	249	257 [734 J] <sup>af</sup>	292	294	414	234	69.5 [36.1]	233	226	294 [351]	473 <sup>af</sup>
Mercury	mg/kg	0.023	0.063 [0.0394]	0.0122	0.0259	0.0155	NA	NA	NA	0.0201	0.0196 [0.0258]	0.0154
Nickel	mg/kg	7.36	7.8 [12.3 J]	8.49	8.67	17.6	NA	NA	NA	11.5	21.5 [21.7] <sup>f</sup>	21.2 <sup>f</sup>
Selenium	mg/kg	<0.20	0.28 [<0.21]	<0.21	<0.20	0.26	0.23	0.37 [0.24]	0.3	<0.11	0.98 [0.38] <sup>f</sup>	0.23
Silver	mg/kg	<0.10	<0.10 [<0.10]	<0.10	<0.10	<0.10	NA	NA	NA	<0.20	0.10 [0.1]	0.06
Thallium	mg/kg	<0.20	<0.20 [<0.21]	<0.21	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	mg/kg	5.62	10 [9.39]	7.58	5.29	10.8	NA	NA	NA	9.09	22.6 [23.2]	20.2
Zinc	mg/kg	25.1	84.3 [49.4 J] <sup>f</sup>	14	20.4	29.8	47.2 <sup>f</sup>	37.2 [22.2]	18.2	24.3	49.1 [51.2] <sup>f</sup>	42.9
<b>Miscellaneous</b>												
Total solids	%	95	89	87	94	74	88	80 [82]	89	92	68 [66]	88

**Table 1**  
**Summary of Area 16 Soil Sampling Analytical Results**  
**2014 Area 16 Metals Memo**  
**RACER Trust**  
**Plant 3 - Lansing, Michigan**

Location ID:		SB-A16-IE168	SB-A16-IE168	SB-A16-IE168	SB-A16-HU181	SB-A16-HU181	SB-A16-HU181	SB-A16-HU181	SB-A16-HU181	SB-A16-HU181	SB-A16-IL168	SB-A16-IL168
Sample Depth(ft):		0 - 1	6 - 7	15 - 16	0 - 1	4 - 5	10 - 11	15 - 16	20 - 21	24 - 25	1 - 2	6 - 7
Date Collected:	Units	11/28/12	11/28/12	11/28/12	07/10/13	07/10/13	07/10/13	07/10/13	07/10/13	07/10/13	07/10/13	07/10/13
<b>Inorganics</b>												
Antimony	mg/kg	NA	NA	NA	0.30 J	0.54	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic	mg/kg	1.46	5.46	1.11	9.08 <sup>af</sup>	16.7 <sup>af</sup>	1.77	1.31	0.84	1.74	3.33	1.25
Barium	mg/kg	NA	NA	NA	178 <sup>f</sup>	230 <sup>f</sup>	45	23	28.9	25.6	31.5	44.2
Beryllium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boron	mg/kg	NA	NA	NA	1.82 J	6.84	<2.0	<2.0	<2.0	1.06 J	<2.0	1.39 J
Cadmium	mg/kg	NA	NA	NA	1.39 <sup>f</sup>	1.13	0.19 J	0.09 J	0.10 J	0.09 J	0.07 J	0.35
Chromium	mg/kg	NA	NA	NA	8.48	11.8	5.13	2.35	3.34	2.78	1.75	3.45
Cobalt	mg/kg	2.8	4.8	2.46	4.54	4.18	3.59	2.74	2.85	2.79	1.04	2.38
Copper	mg/kg	NA	NA	NA	293 <sup>f</sup>	154 <sup>f</sup>	15.5	9.33	10	9.39	11.4	36.7 <sup>f</sup>
Lead	mg/kg	NA	NA	NA	427 <sup>f</sup>	1,250 <sup>adf</sup>	10.1	4.52	5.73	4.21	25.9 <sup>f</sup>	108 <sup>f</sup>
Manganese	mg/kg	200	75.8	188	450 <sup>af</sup>	395	457 <sup>af</sup>	294	277	242	82.3	171
Mercury	mg/kg	NA	NA	NA	1.067 <sup>f</sup>	0.8965 <sup>f</sup>	0.029	0.0159	0.0151	0.0129	0.0131	0.0194
Nickel	mg/kg	NA	NA	NA	12.9	14.5	12.3	8.7	8.56	9.08	3.15	8.68
Selenium	mg/kg	<0.20	1.37 <sup>f</sup>	0.31	0.29 J	0.49 <sup>f</sup>	<0.40	<0.40	<0.40	<0.40	<0.40	0.44 <sup>f</sup>
Silver	mg/kg	NA	NA	NA	0.26	0.32	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Thallium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	mg/kg	NA	NA	NA	11.7	31.5	8.8	4.33	5.83	4.98	4.83	5.66
Zinc	mg/kg	17.4	231 <sup>f</sup>	13.9	446 <sup>f</sup>	572 <sup>f</sup>	19.9	15.7	13.9	12.9	12.9	117 <sup>f</sup>
<b>Miscellaneous</b>												
Total solids	%	91	70	89	86	59	78	88	87	89	88	90

**Table 1**  
**Summary of Area 16 Soil Sampling Analytical Results**  
**2014 Area 16 Metals Memo**  
**RACER Trust**  
**Plant 3 - Lansing, Michigan**

Location ID:		SB-A16-IL168	SB-A16-IL168	SB-A16-IL168	SB-A16-HU181E-E	SB-A16-HU181E-E	SB-A16-HU181E-E	A16-HU181E-Composite
Sample Depth(ft):		11 - 12	17 - 18	23 - 24	0 - 1	4 - 4.5	7.5 - 8.5	NA
Date Collected:	Units	07/10/13	07/10/13	07/10/13	04/09/14	04/09/14	04/09/14	04/10/14

**Inorganics**

Antimony	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic	mg/kg	<b>0.9</b>	<b>1.79</b>	<b>1.33</b>	<b>3.1</b>	<b>8.17<sup>af</sup></b>	<b>0.74</b>	<b>12.4<sup>af</sup></b>
Barium	mg/kg	<b>14.6</b>	<b>8.25</b>	<b>14.9</b>	<b>39.3</b>	<b>178<sup>f</sup></b>	<b>80.1<sup>f</sup></b>	<b>226<sup>f</sup></b>
Beryllium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Boron	mg/kg	<2.0	<2.0	<b>1.06 J</b>	NA	NA	NA	NA
Cadmium	mg/kg	<b>0.17 J</b>	<b>0.07 J</b>	<b>0.06 J</b>	<b>0.17 J</b>	<b>4.09<sup>f</sup></b>	<b>0.81</b>	<b>3.37<sup>f</sup></b>
Chromium	mg/kg	<b>2.86</b>	<b>1.32</b>	<b>2.12</b>	<b>8.39</b>	<b>6.53</b>	<b>9.28</b>	<b>14.9</b>
Cobalt	mg/kg	<b>3.57</b>	<b>1.41</b>	<b>2.22</b>	<b>4.22</b>	<b>3.22</b>	<b>4.36</b>	<b>4.86</b>
Copper	mg/kg	<b>10</b>	<b>4.4</b>	<b>8.8</b>	<b>19.5</b>	<b>77.1<sup>f</sup></b>	<b>35.6<sup>f</sup></b>	<b>111<sup>f</sup></b>
Lead	mg/kg	<b>5.05</b>	<b>2.63</b>	<b>3.74</b>	<b>9.47</b>	<b>298<sup>f</sup></b>	<b>11.9</b>	<b>386<sup>f</sup></b>
Manganese	mg/kg	<b>288</b>	<b>159</b>	<b>262</b>	<b>311</b>	<b>232</b>	<b>67.3</b>	<b>366</b>
Mercury	mg/kg	<b>0.016</b>	<b>0.0114</b>	<b>0.0147</b>	<b>0.0281</b>	<b>0.2094<sup>f</sup></b>	<b>0.068</b>	<b>1.341<sup>f</sup></b>
Nickel	mg/kg	<b>10.4</b>	<b>5.67</b>	<b>7.82</b>	<b>10.9</b>	<b>9.23</b>	<b>11.4</b>	<b>13.7</b>
Selenium	mg/kg	<b>1.31<sup>f</sup></b>	<0.40	<b>0.24 J</b>	<b>0.34 J</b>	<b>0.44<sup>f</sup></b>	<b>0.46<sup>f</sup></b>	<b>0.47<sup>f</sup></b>
Silver	mg/kg	<0.20	<0.20	<0.20	<0.20	<b>0.19 J</b>	<0.20	<b>0.47</b>
Thallium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Vanadium	mg/kg	<b>6.45</b>	<b>2.89</b>	<b>4.12</b>	<b>9.43</b>	<b>12.1</b>	<b>19.3</b>	<b>18.3</b>
Zinc	mg/kg	<b>15.4</b>	<b>9.02</b>	<b>10.4</b>	<b>33.2</b>	<b>990<sup>f</sup></b>	<b>44.2</b>	<b>998<sup>f</sup></b>

**Miscellaneous**

Total solids	%	<b>84</b>	<b>90</b>	<b>85</b>	<b>87</b>	<b>82</b>	<b>79</b>	<b>45</b>
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**Table 1**  
**Summary of Area 16 Soil Sampling Analytical Results**  
**2014 Area 16 Metals Memo**  
**RACER Trust**  
**Plant 3 - Lansing, Michigan**

**Table Notes:**

(1) Adjusted by a factor of 0.43 for a 100-acre source area.

-- Shading indicates result exceeding one or more MDEQ Part 201 Generic Cleanup Criteria and Screening Levels, Dated December 31, 2013

-- Bold fonts represent data where detections were noted above the MDL but below MDEQ Part 201 Generic Cleanup Criteria

-- Data shown in [ ] represent duplicate sample analytical results.

mg/kg - milligrams per kilogram

<sup>a</sup> - Sample exceeds Residential Drinking Water Protection Criteria

<sup>b</sup> - Sample exceeds Groundwater Surface Water Interface Protection Criteria

<sup>c</sup> - Sample exceeds Non-Residential Soil Volatilization to Indoor Air Criteria

<sup>d</sup> - Sample exceeds Non-Residential Direct Contact Criteria

<sup>e</sup> - Sample exceeds Non-Residential Particulate Soil Inhalation Criteria

<sup>f</sup> - Sample exceeds Statewide Background Default Levels

**MDEQ Criteria Footnotes: (as revised September 28, 2012)**

-- = Not listed in MDEQ Criteria Tables.

NA = Not available.

NLV = Not likely to volatilize.

G = Groundwater surface water interface (GSI) criterion depends on the pH or water hardness, or both, of the receiving surface water. The final chronic value (FCV) for the protection of aquatic life shall be calculated based on the pH or hardness of the receiving surface water. A hardness value of 257 mg/L was used.

DD = Hazardous substance causes developmental effects. Residential direct contact criteria are protective of both prenatal and postnatal exposure.

Nonresidential direct contact criteria are protective for a pregnant adult receptor.

**Lab Data Qualifiers:**

J = The compound/constituent was positively identified; however, the associated numerical value is an estimated concentration only

Table 2  
 Summary of Area 16 Groundwater Sampling Analytical Results  
 2014 Area 16 Metals Memo  
 RACER Trust  
 Plant 3 - Lansing, Michigan

Location ID: Sample Depth(): Date Collected:	Units	MI GW (DEQ2013) RES DW	MW-13-31 5 - 10 08/22/13	MW-13-31 5 - 10 11/07/13	MW-13-31 5 - 10 02/06/14	MW-13-32 5 - 10 08/27/13	MW-13-32 5 - 10 11/08/13	MW-13-32 5 - 10 02/10/14	MW-13-33 12 - 17 08/23/13	MW-13-33 12 - 17 11/06/13	MW-13-33 12 - 17 02/10/14	SB-A16-HD162 15 - 20 06/06/12	SB-A16-HP165 16 - 20 09/20/12	SB-A16-HP178 19 - 23 11/28/12
<b>Inorganics</b>														
Antimony	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	NA
Arsenic	mg/L	0.01	<0.002	0.004	<0.002	0.006	0.002	0.005	<0.002	<0.002	<0.002	NA	NA	NA
Barium	mg/L	2	0.198	0.364	0.136	0.223	0.143	0.163	0.249	0.087	0.071	NA	NA	NA
Beryllium	mg/L	0.004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boron	mg/L	0.5	0.28	0.27	0.17	0.22	0.32	0.29	0.14	0.14	0.09	NA	NA	NA
Cadmium	mg/L	0.005	<0.0005	0.0033	0.0010	<0.0005	<0.0005	<0.0005	0.0018	<0.0005	<0.0005	NA	NA	NA
Chromium	mg/L	--	0.011	0.018	<0.005	0.010	<0.005	<b>1.43</b>	0.017	<0.005	0.008	NA	NA	NA
Chromium VI (hexavalent)	mg/L	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	mg/L	0.04	<0.005	<0.005	<0.005	0.005	<0.005	0.026	0.021	<0.005	<0.005	NA	NA	NA
Copper	mg/L	1	0.018	<b>0.117</b>	0.006	<b>0.047</b>	0.016	<b>0.067</b>	<b>0.120</b>	0.011	0.020	NA	NA	NA
Lead	mg/L	0.004	<b>0.070</b>	<b>0.337</b>	<0.003	<b>0.065</b>	<0.003	<b>0.021</b>	<b>0.065</b>	<0.003	<b>0.007</b>	NA	NA	NA
Manganese	mg/L	0.05	<b>0.740</b>	<b>0.165</b>	0.013	<b>0.625</b>	<b>0.737</b>	<b>1.27</b>	<b>1.38</b>	0.029	<b>0.155</b>	NA	NA	NA
Mercury	mg/L	0.002	<0.0001	<b>0.0002</b>	<0.0001	<b>0.0015</b>	<0.0001	<b>0.0005</b>	<0.0001	<0.0001	<0.0001	NA	NA	NA
Nickel	mg/L	0.1	0.021	0.078	0.016	0.043	<b>0.241</b>	<b>2.25</b>	0.065	0.011	0.011	NA	NA	NA
Selenium	mg/L	0.05	0.007	0.011	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	NA
Silver	mg/L	0.034	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA	NA
Thallium	mg/L	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	mg/L	0.0045	<b>0.007</b>	<b>0.024</b>	<0.004	<b>0.017</b>	<0.004	<0.004	<b>0.027</b>	<0.004	<b>0.006</b>	NA	NA	NA
Zinc	mg/L	2.4	0.140	<b>0.883</b>	<b>0.463</b>	0.191	0.035	0.078	0.183	0.009	0.020	NA	NA	NA
<b>Inorganics-Filtered</b>														
Antimony (dissolved)	mg/L	0.006	<0.005	<0.005	NA	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.002	<0.002	NA
Arsenic (dissolved)	mg/L	0.01	<0.002	<0.002	NA	0.005	NA	<0.002	<0.002	<0.002	<0.002	0.010	<b>0.025</b>	<0.002
Barium (dissolved)	mg/L	2	0.161	0.153	NA	0.146	NA	0.088	0.106	0.084	0.043	0.063	0.139	NA
Beryllium (dissolved)	mg/L	0.004	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.001	NA	NA
Boron (Dissolved)	mg/L	0.5	0.26	0.25	NA	0.22	NA	0.26	0.14	0.13	0.08	0.11	0.28	NA
Cadmium (dissolved)	mg/L	0.005	<0.0005	0.0009	NA	<0.0005	NA	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001	NA
Chromium (Dissolved)	mg/L	--	<0.005	<0.005	NA	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.010	<0.010	NA
Chromium VI (hexavalent) (dissolved)	mg/L	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt (dissolved)	mg/L	0.04	<0.005	<0.005	NA	<0.005	NA	0.012	<0.005	<0.005	<0.005	<0.010	<0.010	<0.010
Copper (dissolved)	mg/L	1	0.007	<0.005	NA	<0.005	NA	<0.005	0.006	0.008	<0.005	<0.002	<0.002	NA
Lead (dissolved)	mg/L	0.004	<0.003	<0.003	NA	<0.003	NA	<0.003	<0.003	<0.003	<0.003	<0.002	<0.002	NA
Manganese (dissolved)	mg/L	0.05	<b>0.606</b>	<b>0.058</b>	NA	<b>0.641</b>	NA	<b>0.823</b>	<b>0.163</b>	0.017	<0.005	<b>0.361</b>	<b>0.724</b>	<b>0.228</b>
Mercury (dissolved)	mg/L	--	<0.0001	<0.0001	NA	<0.0001	NA	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	NA
Nickel (dissolved)	mg/L	0.1	0.017	0.024	NA	0.013	NA	<b>1.26</b>	0.020	0.010	0.006	<0.010	<0.010	NA
Selenium (dissolved)	mg/L	0.05	<0.005	0.011	NA	<0.005	NA	<0.005	<0.005	<0.005	<0.005	<0.002	<0.002	<0.002
Silver (dissolved)	mg/L	0.034	<0.0005	<0.0005	NA	<0.0005	NA	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	NA
Thallium (dissolved)	mg/L	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.002	NA	NA
Vanadium (dissolved)	mg/L	0.0045	<0.005	<0.004	NA	<0.005	NA	<0.004	<0.005	<0.004	<0.004	<0.002	<0.002	NA
Zinc (dissolved)	mg/L	2.4	0.038	<b>0.392</b>	NA	<0.005	NA	0.014	<0.005	0.009	<0.005	<0.010	<0.010	0.014
<b>Field</b>														
Turbidity (field)	NTU	--	6.95	88.8	1.65	73.5	5.48	212	73.5	272	330	NA	NA	NA

Table 2  
 Summary of Area 16 Groundwater Sampling Analytical Results  
 2014 Area 16 Metals Memo  
 RACER Trust  
 Plant 3 - Lansing, Michigan

Location ID: Sample Depth(): Date Collected:	Units	MI GW (DEQ2013) RES DW	SB-A16-HQ168 5 - 9 11/09/12	SB-A16-HU159 10 - 14 06/06/12	SB-A16-HU171 5 - 9 11/09/12	SB-A16-HU178 14 - 18 11/28/12	SB-A16-HX165 7 - 11 09/20/12	SB-A16-HX176 19 - 23 11/28/12	SB-A16-HY168 6 - 10 11/09/12	SB-A16-IE168 19 - 23 11/28/12
<b>Inorganics</b>										
Antimony	mg/L	0.006	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	mg/L	0.01	NA	NA	NA	NA	NA	NA	NA	NA
Barium	mg/L	2	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	mg/L	0.004	NA	NA	NA	NA	NA	NA	NA	NA
Boron	mg/L	0.5	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	mg/L	0.005	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/L	- -	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI (hexavalent)	mg/L	0.1	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	mg/L	0.04	NA	NA	NA	NA	NA	NA	NA	NA
Copper	mg/L	1	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/L	0.004	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/L	0.05	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	mg/L	0.002	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	mg/L	0.1	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	mg/L	0.05	NA	NA	NA	NA	NA	NA	NA	NA
Silver	mg/L	0.034	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	mg/L	0.002	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	mg/L	0.0045	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/L	2.4	NA	NA	NA	NA	NA	NA	NA	NA
<b>Inorganics-Filtered</b>										
Antimony (dissolved)	mg/L	0.006	<0.002	<0.002	<0.002	NA	<0.002	NA	<0.002	NA
Arsenic (dissolved)	mg/L	0.01	<0.001	<b>0.016</b>	<b>0.032</b>	<b>0.014</b>	0.010	0.008	0.007	<b>0.024</b>
Barium (dissolved)	mg/L	2	0.23	0.084	0.13	NA	0.238	NA	0.20	NA
Beryllium (dissolved)	mg/L	0.004	NA	<0.001	NA	NA	NA	NA	NA	NA
Boron (Dissolved)	mg/L	0.5	0.25	0.13	0.19	NA	0.27	NA	0.27	NA
Cadmium (dissolved)	mg/L	0.005	<0.001	<0.001	<0.001	NA	<0.001	NA	<0.001	NA
Chromium (Dissolved)	mg/L	- -	<0.002	<0.010	<0.002	NA	<0.010	NA	<0.002	NA
Chromium VI (hexavalent) (dissolved)	mg/L	0.1	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt (dissolved)	mg/L	0.04	<0.002	<0.010	<0.002	<0.010	<0.010	<0.010	<0.002	<0.010
Copper (dissolved)	mg/L	1	<0.002	<0.002	<0.002	NA	<0.002	NA	<0.002	NA
Lead (dissolved)	mg/L	0.004	0.002	<0.002	<0.002	NA	<0.002	NA	<0.002	NA
Manganese (dissolved)	mg/L	0.05	<b>0.139</b>	<b>0.554</b>	<b>0.667</b>	<b>0.315</b>	<b>0.628</b>	<b>0.354</b>	<b>0.577</b>	<b>0.606</b>
Mercury (dissolved)	mg/L	- -	<0.0001	<0.0001	<0.0001	NA	<0.0001	NA	<0.0001	NA
Nickel (dissolved)	mg/L	0.1	0.006	<0.010	0.014	NA	<0.010	NA	0.003	NA
Selenium (dissolved)	mg/L	0.05	0.014	<0.002	<0.001	<0.002	<0.002	<0.002	<0.001	<0.002
Silver (dissolved)	mg/L	0.034	<0.0002	<0.0002	<0.0002	NA	<0.0002	NA	<0.0002	NA
Thallium (dissolved)	mg/L	0.002	NA	<0.002	NA	NA	NA	NA	NA	NA
Vanadium (dissolved)	mg/L	0.0045	<0.002	<0.002	<0.002	NA	<0.002	NA	<0.002	NA
Zinc (dissolved)	mg/L	2.4	<b>0.37</b>	<0.010	0.01	0.013	<0.010	0.042	0.04	0.037
<b>Field</b>										
Turbidity (field)	NTU	- -	NA	NA	NA	NA	NA	NA	NA	NA

**Table 2**  
**Summary of Area 16 Groundwater Sampling Analytical Results**  
**2014 Area 16 Metals Memo**  
**RACER Trust**  
**Plant 3 - Lansing, Michigan**

**Table Notes:**

- Shading indicates result exceeding one or more MDEQ Part 201 Generic Cleanup Criteria and Screening Levels, Dated December 31, 2013.
- Bold fonts represent data where detections were noted above the MDL but below MDEQ Part 201 Generic Cleanup Criteria.
- Data shown in [ ] represent duplicate sample analytical results.

mg/L - milligrams per liter

<sup>a</sup> - Sample exceeds Residential Drinking Water Criteria

<sup>b</sup> - Sample exceeds Groundwater Surface Water Interface Criteria

<sup>c</sup> - Sample exceeds Non-Residential Groundwater Volatilization to Indoor Air Inhalation Criteria

**MDEQ Criteria Footnotes: (as revised September 28, 2012)**

-- = Not listed in the MDEQ Criteria Tables.

NA = Not available.

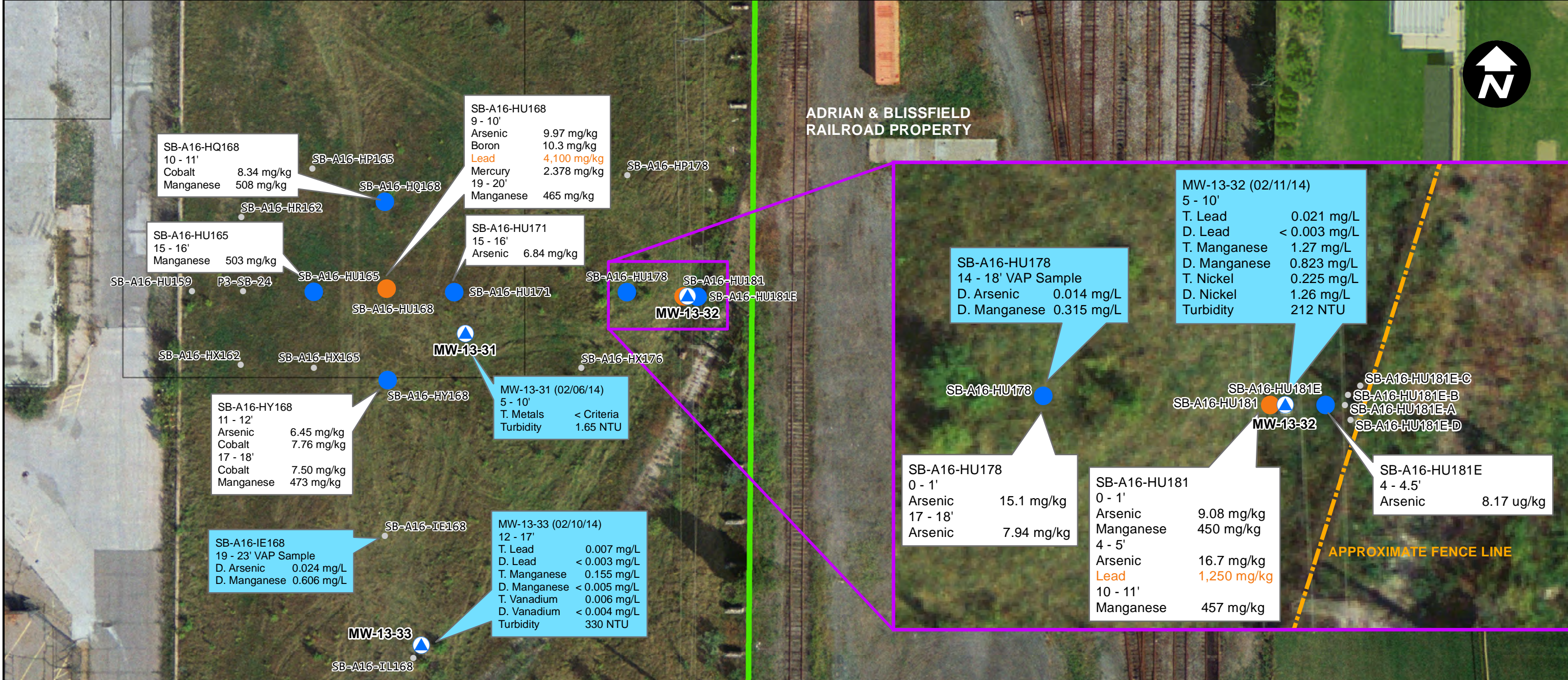
**Table 3**  
**Summary of Area 16 Fill TCLP Analytical Results**  
**2014 Area 16 Metals Memo**  
**RACER Trust**  
**Plant 3 - Lansing, Michigan**

Table 2. Soil Toxicity Characteristic Leaching Procedure (TCLP) Analytical Results			
Date Collected:	Units	Michigan GW (DEQ2013) RES DW	A16-HU181E-Composite 04/10/14
<b>Metals -TCLP Analysis</b>			
Antimony	mg/L	0.006	<0.05
Arsenic	mg/L	0.01	<0.02
Barium	mg/L	2	<b>7.7</b>
Beryllium	mg/L	0.004	NA
Boron	mg/L	0.5	NA
Cadmium	mg/L	0.005	<b>0.023</b>
Chromium Total	mg/L	--	<0.05
Cobalt	mg/L	0.04	<0.05
Copper	mg/L	1	<0.05
Manganese	mg/L	0.05	<b>2.18</b>
Mercury	mg/L	0.002	<0.0002
Nickel	mg/L	0.1	<0.05
Selenium	mg/L	0.05	<0.05
Silver	mg/L	0.034	<b>0.005</b>
Thallium	mg/L	0.002	NA
Vanadium	mg/L	0.0045	<0.04
Lead	mg/L	0.004	<b>0.30</b>
Zinc	mg/L	2.4	<b>11.9</b>

**Table Notes:**

- mg/L - milligrams per liter
- Shading indicates result exceeds MDEQ Part 201 Residential Drinking Water Criteria, dated December 31, 2013.
- Bold fonts represent data where detections were noted above the MDL but below MDEQ Part 201 Generic Cleanup Criteria.

**Figures**



**NOTES:**

White boxes contain soil analytical data. Only soil concentrations exceeding MDEQ Drinking Water Protection (DWP) and/or Direct Contact (DC) Criteria are noted. Concentrations must exceed Statewide Background Default (SBG) levels, where applicable, to be considered an exceedance. Concentrations in orange exceed DC Criteria. All values are presented in milligrams per kilogram (mg/kg).

Blue boxes contain groundwater analytical data. Only groundwater concentrations exceeding Drinking Water (DW) Criteria are noted. The Health-Based Value (HBV) of manganese is also noted due to its widespread occurrence.

T. Metals indicates total metals in unfiltered groundwater.  
 D. Metals indicates dissolved metals in filtered groundwater.  
 All values are presented in milligrams per liter (mg/L).

**Soil Criteria -**

Arsenic (DWP: 4.6 mg/kg ; SBG: 5.8 mg/kg)  
 Boron (DWP: 10 mg/kg)  
 Cobalt (DWP: 0.8 mg/kg ; SBG: 6.8 mg/kg)  
 Lead (DWP: 700 mg/kg ; DC: 900 mg/kg ; SBG: 21 mg/kg)  
 Manganese (DWP: 1.0 mg/kg ; SBG: 440 mg/kg)

**GW Criteria -**

Arsenic (DW: 0.01 mg/L)  
 Lead (DW: 0.004 mg/L)  
 Manganese (DW: 0.05 mg/L ; HBV: 0.860 mg/L)  
 Nickel (DW: 0.1 mg/L)  
 Vanadium (DW: 0.0045 mg/L)

**LEGEND**

- SHALLOW MONITORING WELL
- SOIL BORING LOCATIONS
- SOIL METAL DWP EXCEEDANCE
- SOIL METAL DC EXCEEDANCE
- APPROXIMATE PLANT 3 BOUNDARY

0 40 80  
 SCALE IN FEET

RACER TRUST  
 PLANTS 2, 3 & 6  
 LANSING, MICHIGAN

**DRINKING WATER EXCEEDANCES IN  
 SOIL AND GROUNDWATER - AREA 16**

**ARCADIS**

FIGURE  
**1**

WEST

EAST

ADRIAN & BLISSFIELD RAILROAD PROPERTY →

SB-A16-HU159

P3-SB-24

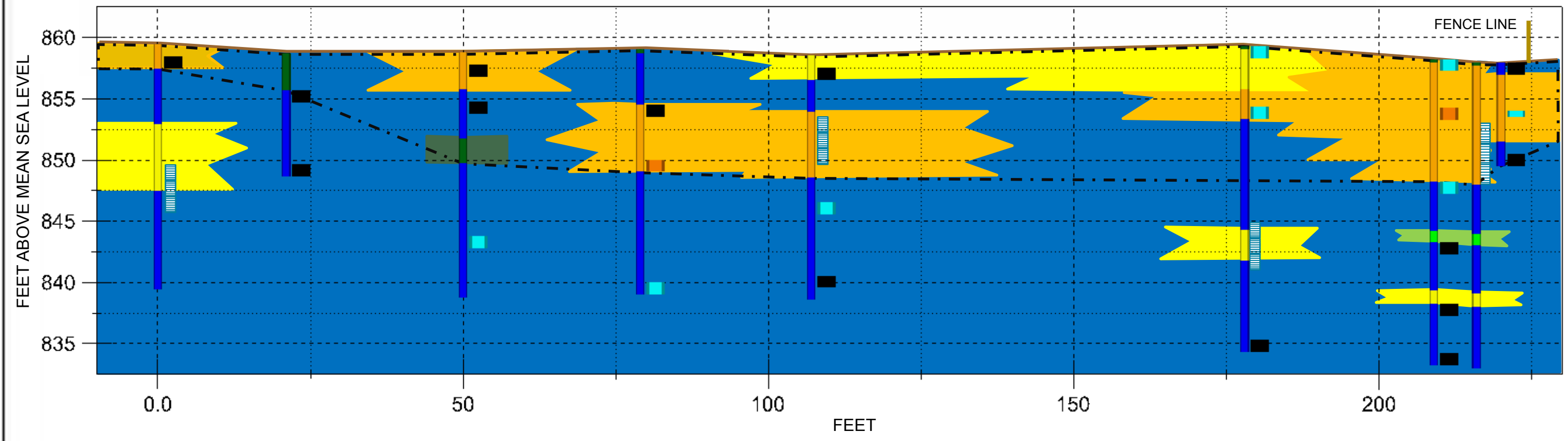
SB-A16-HU165

SB-A16-HU168

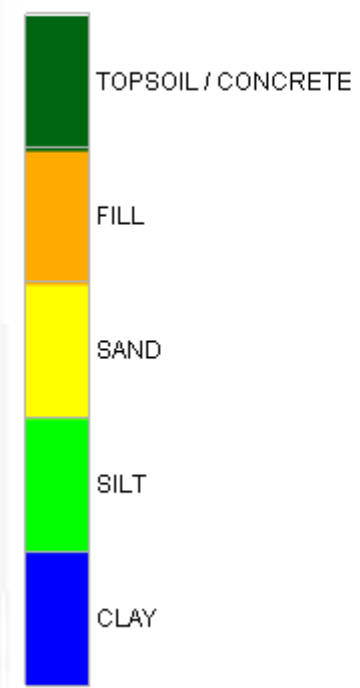
SB-A16-HU171

SB-A16-HU178

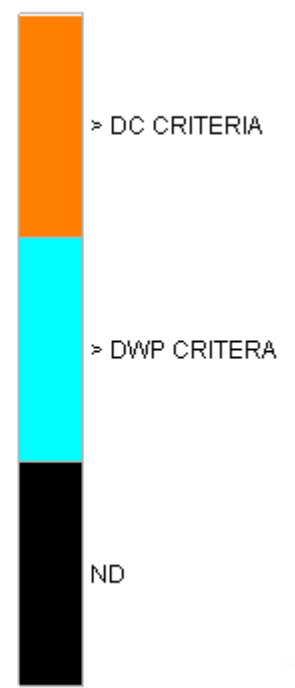
SB-A16-HU181  
MW-13-32  
SB-A16-HU181E



STRATIGRAPHY



SOIL METALS



- SOIL SAMPLING INTERVAL (FOR ANALYTICAL RESULTS, PLEASE SEE TABLE 1)
- APPROXIMATE MONITORING WELL SCREEN INTERVAL
- ALL SOILS WITHIN THIS AREA ARE CONSIDERED FILL
- GROUND SURFACE



RACER TRUST  
PLANT 3  
LANSING, MICHIGAN

AREA 16 CROSS SECTION



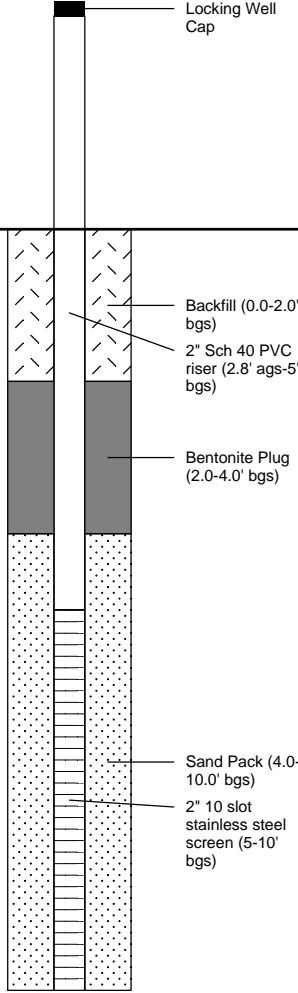
**Attachment 1**

Boring Logs

**Date Start:** 7-25-2013  
**Date Finish:** 7-25-2013  
**Drilling Company:** STOCK  
**Driller's Name:** Austin Goldsmith  
**Drilling Method:** HSA  
**Sampling Method:**  
**Rig Type:** CME 750  
**Water Level Start (ft. bgs.):**  
**Water Level Finish (ft. btoc.):**

**Northing:**  
**Easting:**  
**Casing Elevation:**  
  
**Borehole Depth (ft. bgs.):** 20.0' bgs  
**Surface Elevation:**  
  
**Descriptions By:** R. Christensen

**Well/Boring ID:** MW-13-31  
**Client:** RACER  
  
**Location:** RACER Lansing Plant 3  
 2801 West Saginaw  
 Lansing, MI 48909  
  
**Weather Conditions:**

DEPTH (feet bgs.)	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Water Level (ft. bgs.)	Well/Boring Construction
0	0									
0.0								(0.0-2.0') SAND and CLAY; fine, trace granules, subrounded; moist, brown (10YR 4/3).		
0.0								(2.0-4.6') CLAY; low plasticity, some fine sand, trace granules to small pebbles; moist, medium stiff, brown (10YR 4/3).		
5	-5							(4.6-10.0') SAND; fine to coarse, some granules to small pebbles, angular, some concrete and organic debris, poorly sorted; wet, very dark brown (10YR 2/2).		
10	-10							(10.0-18.0') CLAY; high plasticity; moist, soft, gray (10YR 5/1).		

**Remarks:** bgs = below ground surface  
 Groundwater encountered at 4.6' bgs.  
 No odor or staining observed.  
  
 Lithology transferred from PM log for SB-A16-HU-171 installed on 11-09-2013





**Date Start:** 7-25-2013  
**Date Finish:** 7-25-2013  
**Drilling Company:** STOCK  
**Driller's Name:** Austin Goldsmith  
**Drilling Method:** HSA  
**Sampling Method:**  
**Rig Type:** CME 750  
**Water Level Start (ft. bgs.):**  
**Water Level Finish (ft. btoc.):**

**Northing:**  
**Easting:**  
**Casing Elevation:**  
  
**Borehole Depth (ft. bgs.):** 25.0' bgs  
**Surface Elevation:**  
  
**Descriptions By:** R. Christensen

**Well/Boring ID:** MW-13-32  
**Client:** RACER  
  
**Location:** RACER Lansing Plant 3  
 2801 West Saginaw  
 Lansing, MI 48909  
  
**Weather Conditions:** 85, Partly Cloudy

DEPTH (feet bgs.)	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headpace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Water Level (ft. bgs.)	Well/Boring Construction
0	0									<p>           Locking Well Cap            Backfill (0.0-2.0' bgs)            2" Sch 40 PVC riser (2.8' ags-5' bgs)            Bentonite Plug (2.0-4.0' bgs)            Sand Pack (4.0-10.0' bgs)            2" 10 slot stainless steel screen (5-10' bgs)         </p>
		1	0-1'	1.0	1.9	X		(0.0'-0.3') TOPSOIL/GRASS		
		2	1-2'	1.0	1.1	X		(0.3'-3.0') SAND, coarse to very coarse, subangular; little medium; little granules to small pebbles, subrounded; poorly sorted; dry; dark brown (10YR 4/1). NOTE: Fill		
		3	2-3'	1.0	1.1	X		NOTE: Trace glass at 1.0'-2.0' bgs.		
		4	3-4'	1.0	0.2	X		(3.0'-10.0') SAND, fine to medium; little silt; little granules to small pebbles, subangular to angular; poorly sorted; wet; brown (10YR 4/3). NOTE: Trace metal.		
5	-5	5	4-5'	1.0	0.9	X		NOTE: Poor recovery from 5.0'-10.0' bgs.		
		6	5-10'	0.1	NA	X				
10	-10				0.0	X		(10.0'-14.0') CLAY, some silt, high plasticity, rapid dilatancy; wet; very soft; gray (10YR 5/1).		
					0.0	X				













**Remarks:** bgs = below ground surface  
 Groundwater encountered from 3.0'-24.0' bgs.  
 No odor or staining observed.  
  
 Lithology transferred from SB-A16-HU181 installed on 7-10-2013



**Date Start:** 7-25-2013  
**Date Finish:** 7-25-2013  
**Drilling Company:** STOCK  
**Driller's Name:** Austin Goldsmith  
**Drilling Method:** HSA  
**Sampling Method:**  
**Rig Type:** CME 750  
**Water Level Start (ft. bgs.):**  
**Water Level Finish (ft. btoc.):**

**Northing:**  
**Eastings:**  
**Casing Elevation:**  
  
**Borehole Depth (ft. bgs.):** 25.0' bgs  
**Surface Elevation:**  
  
**Descriptions By:** R. Christensen

**Well/Boring ID:** MW-13-32  
**Client:** RACER  
  
**Location:** RACER Lansing Plant 3  
 2801 West Saginaw  
 Lansing, MI 48909  
  
**Weather Conditions:** 85, Partly Cloudy

DEPTH (feet bgs.)	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headpace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Water Level (ft. bgs.)	Well/Boring Construction
15	-15	7	10-15'	4.1	0.0					
					0.3			(14.0'-15.0') SILT, rapid dilatancy, little clay, little very fine sand; trace granules to small pebbles, subangular; wet; very soft; dark gray (5Y 4/1).		
					0.2					
					4.3			(15.0'-18.9') CLAY, some silt, slow dilatancy, medium plasticity; medium to large pebbles, little very fine sand subangular to subrounded; wet, medium stiff; grayish brown (10YR 5/2).		
		8	15-20'	3.2	1.5					
					3.8					
					8.4			(18.9'-20.0') SAND, very fine to medium, little coarse, subangular; poorly sorted; trace silt; wet; gray (10YR 5/1).		
20	-20				0.3			(20.0'-24.0') CLAY, some silt, slow dilatancy, high plasticity; little very fine sand; trace small to medium pebbles, subangular; moist to wet; soft; grayish brown (10YR 5/2).		
					2.2					
		9	20-25'	4.0	4.2					
					1.2					
					1.5			(24.0'-25.0') CLAY, some silt, high plasticity, no dilatancy, little very fine sand, trace small pebbles, subangular to subrounded; moist, medium stiff, grayish brown (10YR 5/2).		
25	-25							End of boring at 25.0' bgs.		

**Remarks:** bgs = below ground surface  
 Groundwater encountered from 3.0'-24.0' bgs.  
 No odor or staining observed.  
  
 Lithology transferred from SB-A16-HU181 installed on 7-10-2013



**Date Start:** 7-24-2013  
**Date Finish:** 7-24-2013  
**Drilling Company:** STOCK  
**Driller's Name:** Austin Goldsmith  
**Drilling Method:** HSA  
**Sampling Method:**  
**Rig Type:** CME 750  
**Water Level Start (ft. bgs.):**  
**Water Level Finish (ft. btoc.):**

**Northing:**  
**Easting:**  
**Casing Elevation:**  
  
**Borehole Depth (ft. bgs.):** 25.0' bgs  
**Surface Elevation:**  
  
**Descriptions By:** R. Christensen

**Well/Boring ID:** MW-13-33  
**Client:** RACER  
  
**Location:** RACER Lansing Plant 3  
 2801 West Saginaw  
 Lansing, MI 48909  
  
**Weather Conditions:** 86, Partly Cloudy

DEPTH (feet bgs.)	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headpace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Water Level (ft. bgs.)	Well/Boring Construction
0	0									Locking Well Cap
		1	0-1'	1.0	0.0		(0.0'-0.3') TOPSOIL/GRASS			Backfill (0.0-2.0' bgs)
		2	1-2'	1.0	0.0	X	(0.3'-1.0') SAND; very fine to fine, little silt, trace clay; poorly sorted; dry, olive brown (2.5Y 4/5).			
		3	2-3'	1.0	0.4		(1.0'-2.0') SAND; fine to very coarse, little granules, trace small to medium pebbles, subangular to angular, poorly sorted; dry, dark brown (7.5YR 3/4).			
		4	3-4'	1.0	0.2		(2.0'-3.0') SAND; very fine to medium, little coarse to very coarse; trace small to medium pebbles, subangular; trace wood; poorly sorted; dry; very dark grayish brown (10YR 3/2).			
		5	4-5'	1.0	0.5		(3.0'-5.0') CLAY; low plasticity; some silt; little very fine sand; trace small pebbles, subangular; moist; no dilatancy; soft; grayish brown (2.5Y 5/2) with yellowish brown (10YR 5/6) mottling.			
5	-5				0.0		(5.0'-7.0') SILT; little clay, little very fine sand; trace granules to small pebbles, subangular to subrounded; dry; stiff; brown (10YR 4/3).			
		6	5-10'	2.4	0.0	X	(7.0'-10.1') CLAY; some silt, low plasticity, little very fine sand, trace medium pebbles, subrounded to subangular; dry, medium stiff, dark yellowish brown(10YR 4/6) with olive gray (5Y 4/2) mottling.			Bentonite Plug (2.0-11.0' bgs)
					0.0		(10.1'-12.0') SAND and SILT; very fine to fine, medium plasticity, rapid dilatancy; wet, soft, gray (10YR 3/1).			
10	-10				0.0					

**Remarks:** bgs = below ground surface  
 Groundwater encountered from 10.1'-15.0' and 17.0'-25.0' bgs.  
 No odor or staining observed.  
  
 Lithology transferred from SB-A16-IL168 installed on 7-10-2013



**Date Start:** 7-24-2013  
**Date Finish:** 7-24-2013  
**Drilling Company:** STOCK  
**Driller's Name:** Austin Goldsmith  
**Drilling Method:** HSA  
**Sampling Method:**  
**Rig Type:** CME 750  
**Water Level Start (ft. bgs.):**  
**Water Level Finish (ft. btoc.):**

**Northing:**  
**Eastings:**  
**Casing Elevation:**  
  
**Borehole Depth (ft. bgs.):** 25.0' bgs  
**Surface Elevation:**  
  
**Descriptions By:** R. Christensen

**Well/Boring ID:** MW-13-33  
**Client:** RACER  
  
**Location:** RACER Lansing Plant 3  
 2801 West Saginaw  
 Lansing, MI 48909  
  
**Weather Conditions:** 86, Partly Cloudy

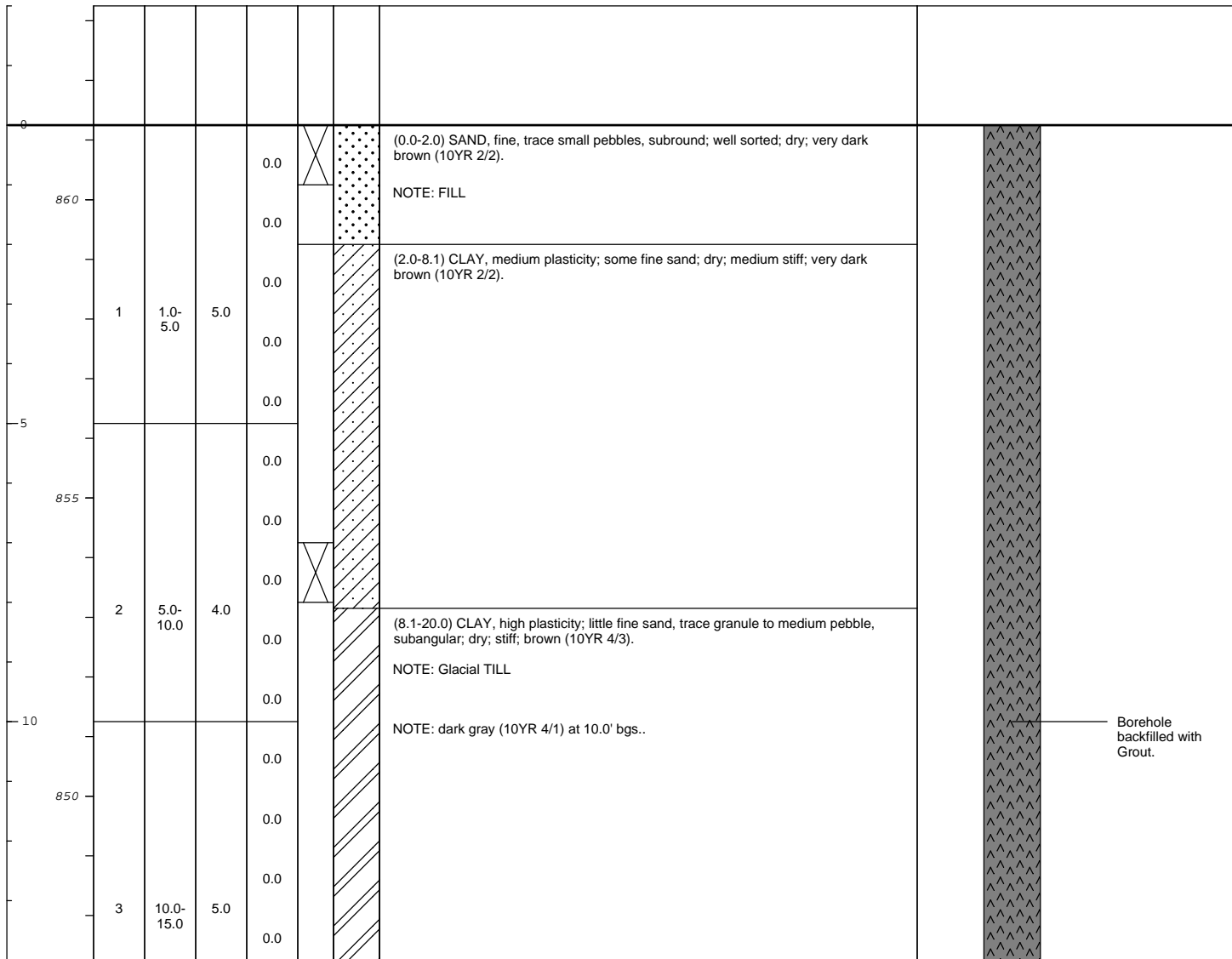
DEPTH (feet bgs.)	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Water Level (ft. bgs.)	Well/Boring Construction
15	-15	7	10-15'	4.0	0.6			(12.0'-15.0') SILT; little clay, medium plasticity, rapid dilatancy, little very fine sand; wet, soft, gray (10YR 5/1).  NOTE: Sand and silt seam, medium to very coarse; wet; from 14.5'-14.7' bgs.		
					0.0			(15.0'-17.0') SILT and CLAY; no dilatancy, trace granules to small pebbles, subangular; moist, medium stiff, gray (10YR 5/2).		
		8	15-20'	3.9	0.0			(17.0'-19.5') SAND; very fine to coarse, some silt; rapid dilatancy; trace granules to small pebbles, subrounded to subangular; wet; poorly sorted; gray (10YR 5/1).		
20	-20				0.0			(19.5'-22.5') CLAY; some silt, little very fine sand, trace granules to small pebbles, subrounded to subangular; wet; gray (10YR 5/1).		
		9	20-25'	4.0	0.0			(22.5'-25.0') CLAY and SILT; rapid dilatancy, trace small to medium pebbles, subrounded to subangular; moist to wet, medium stiff, gray (10YR 5/1).		
25	-25				0.0			End of boring at 25.0' bgs.		

**Remarks:** bgs = below ground surface  
 Groundwater encountered from 10.1'-15.0' and 17.0'-25.0' bgs.  
 No odor or staining observed.  
  
 Lithology transferred from SB-A16-IL168 installed on 7-10-2013



<b>Date Start/Finish:</b> 6/5/2012 <b>Drilling Company:</b> Stock <b>Driller's Name:</b> Jake <b>Drilling Method:</b> Geoprobe <b>Sampling Method:</b> Macrocore <b>Rig Type:</b> Geoprobe	<b>Northing:</b> 452910.24 <b>Easting:</b> 13065156.90 <b>Casing Elevation:</b> NA  <b>Borehole Depth:</b> 20.0' bgs <b>Surface Elevation:</b> 861.25  <b>Descriptions By:</b> A. Villhauer	<b>Well/Boring ID:</b> SB-A16-GX162  <b>Client:</b> RACER Trust  <b>Location:</b> Lansing, MI
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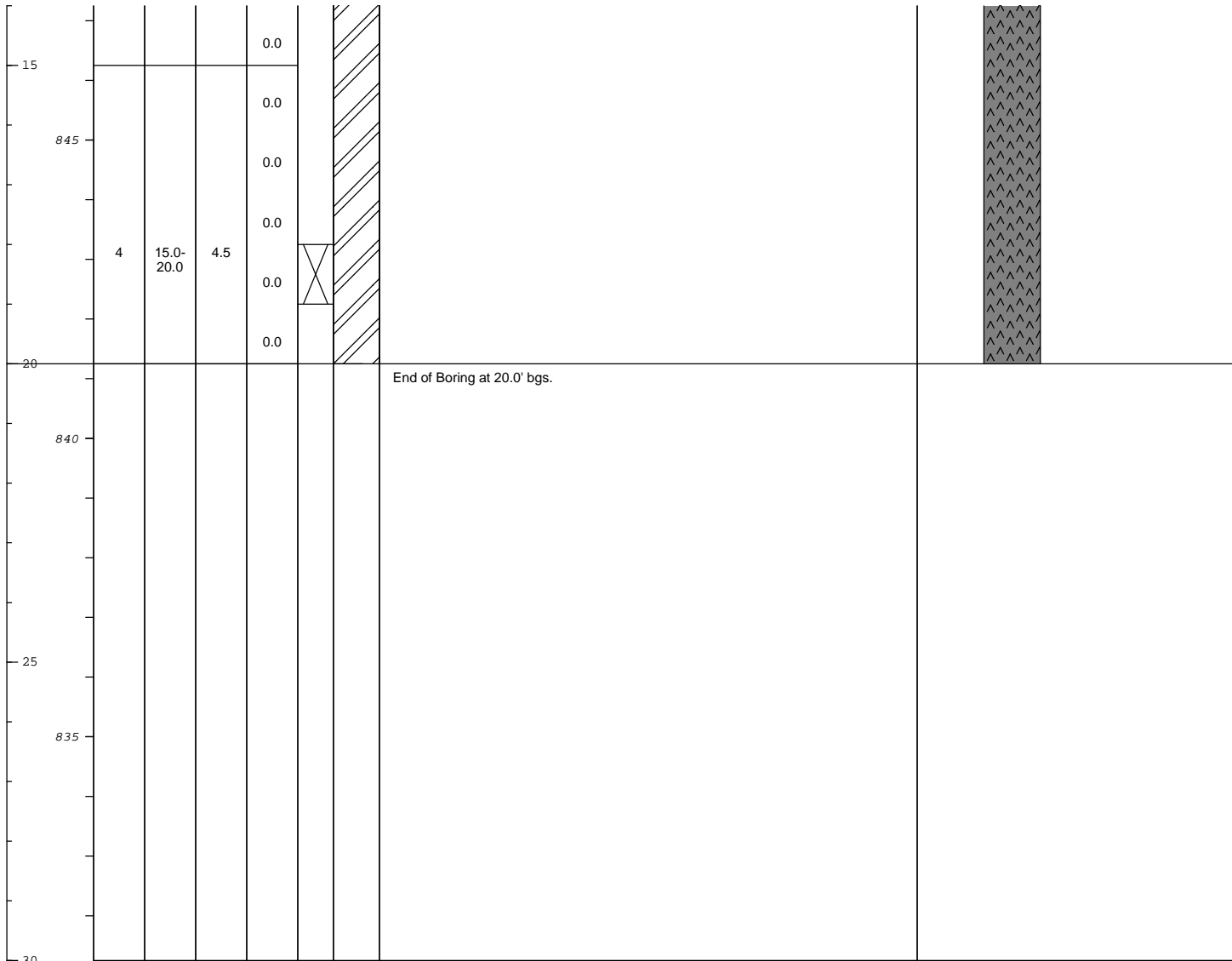
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	<b>Remarks:</b> BGS = Below ground surface
	Groundwater not encountered No Odor or Staining detected

<b>Date Start/Finish:</b> 6/5/2012 <b>Drilling Company:</b> Stock <b>Driller's Name:</b> Jake <b>Drilling Method:</b> Geoprobe <b>Sampling Method:</b> Macrocore <b>Rig Type:</b> Geoprobe	<b>Northing:</b> 452910.24 <b>Easting:</b> 13065156.90 <b>Casing Elevation:</b> NA  <b>Borehole Depth:</b> 20.0' bgs <b>Surface Elevation:</b> 861.25  <b>Descriptions By:</b> A. Villhauer	<b>Well/Boring ID:</b> SB-A16-GX162  <b>Client:</b> RACER Trust  <b>Location:</b> Lansing, MI
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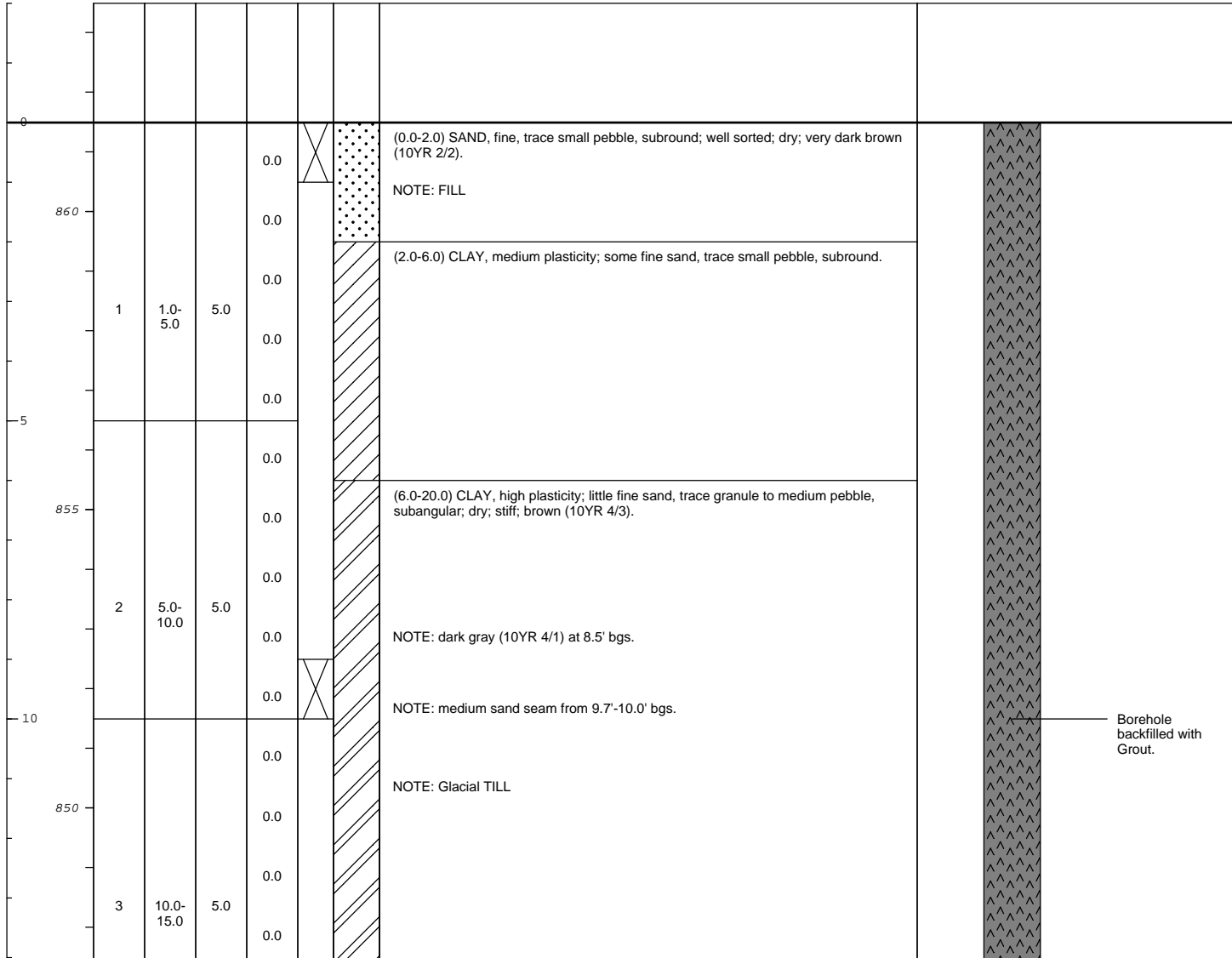
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	<b>Remarks:</b> BGS = Below ground surface
	Groundwater not encountered No Odor or Staining detected

<b>Date Start/Finish:</b> 6/5/2012 <b>Drilling Company:</b> Stock <b>Driller's Name:</b> Jake <b>Drilling Method:</b> Geoprobe <b>Sampling Method:</b> Macrocore <b>Rig Type:</b> Geoprobe	<b>Northing:</b> 452880.21 <b>Easting:</b> 13065126.51 <b>Casing Elevation:</b> NA  <b>Borehole Depth:</b> 20.0' bgs <b>Surface Elevation:</b> 861.49  <b>Descriptions By:</b> A. Villhauer	<b>Well/Boring ID:</b> SB-A16-HA159  <b>Client:</b> RACER Trust  <b>Location:</b> Lansing, MI
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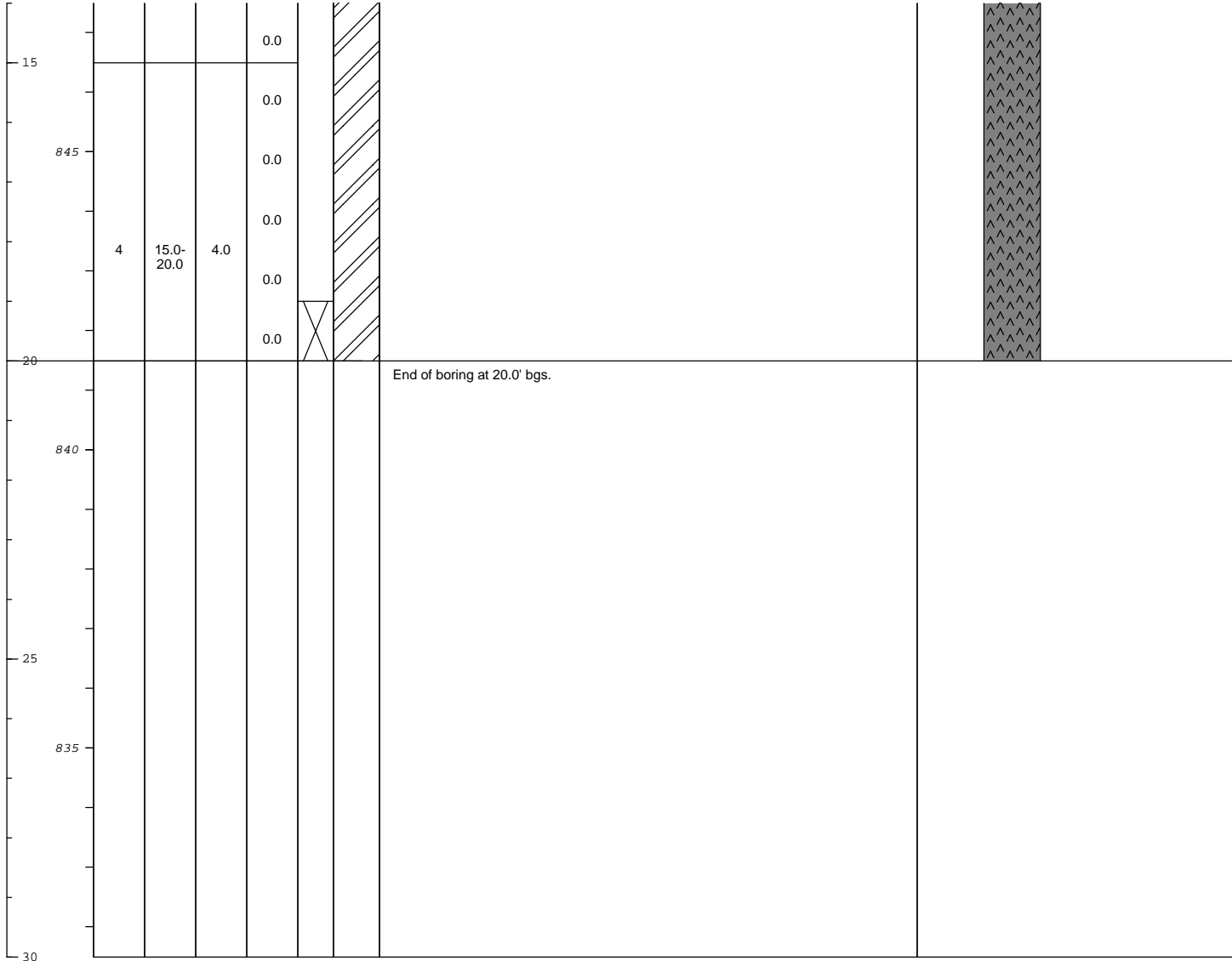
DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
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	<b>Remarks:</b> BGS = Below ground surface  Groundwater not encountered No Odor or Staining detected
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<b>Date Start/Finish:</b> 6/5/2012 <b>Drilling Company:</b> Stock <b>Driller's Name:</b> Jake <b>Drilling Method:</b> Geoprobe <b>Sampling Method:</b> Macrocore <b>Rig Type:</b> Geoprobe	<b>Northing:</b> 452880.21 <b>Easting:</b> 13065126.51 <b>Casing Elevation:</b> NA  <b>Borehole Depth:</b> 20.0' bgs <b>Surface Elevation:</b> 861.49  <b>Descriptions By:</b> A. Villhauer	<b>Well/Boring ID:</b> SB-A16-HA159  <b>Client:</b> RACER Trust  <b>Location:</b> Lansing, MI
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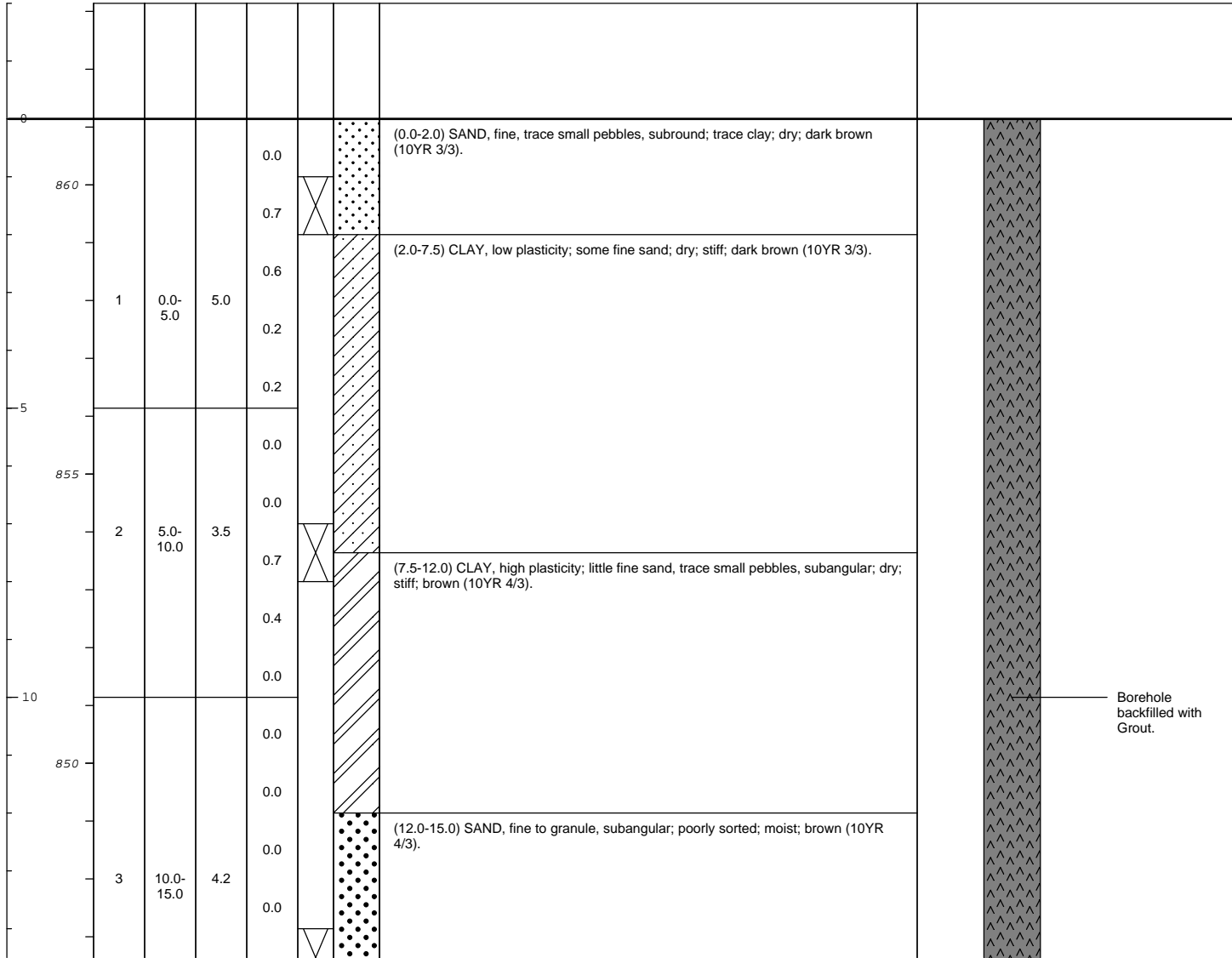
DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
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	<b>Remarks:</b> BGS = Below ground surface
	Groundwater not encountered No Odor or Staining detected

<b>Date Start/Finish:</b> 6/6/2012 <b>Drilling Company:</b> Stock <b>Driller's Name:</b> Jake <b>Drilling Method:</b> Geoprobe <b>Sampling Method:</b> Dual-tube <b>Rig Type:</b> Geoprobe	<b>Northing:</b> 452880.38 <b>Easting:</b> 13065185.89 <b>Casing Elevation:</b> NA  <b>Borehole Depth:</b> 20.0' bgs <b>Surface Elevation:</b> 861.14  <b>Descriptions By:</b> A. Villhaues	<b>Well/Boring ID:</b> SB-A16-HA165  <b>Client:</b> RACER Trust  <b>Location:</b> Lansing, MI
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DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
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	<b>Remarks:</b> BGS = Below ground surface  Groundwater not encountered. No Odor or Staining detected
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<b>Date Start/Finish:</b> 6/6/2012 <b>Drilling Company:</b> Stock <b>Driller's Name:</b> Jake <b>Drilling Method:</b> Geoprobe <b>Sampling Method:</b> Dual-tube <b>Rig Type:</b> Geoprobe	<b>Northing:</b> 452880.38 <b>Easting:</b> 13065185.89 <b>Casing Elevation:</b> NA  <b>Borehole Depth:</b> 20.0' bgs <b>Surface Elevation:</b> 861.14  <b>Descriptions By:</b> A. Villhaues	<b>Well/Boring ID:</b> SB-A16-HA165  <b>Client:</b> RACER Trust  <b>Location:</b> Lansing, MI
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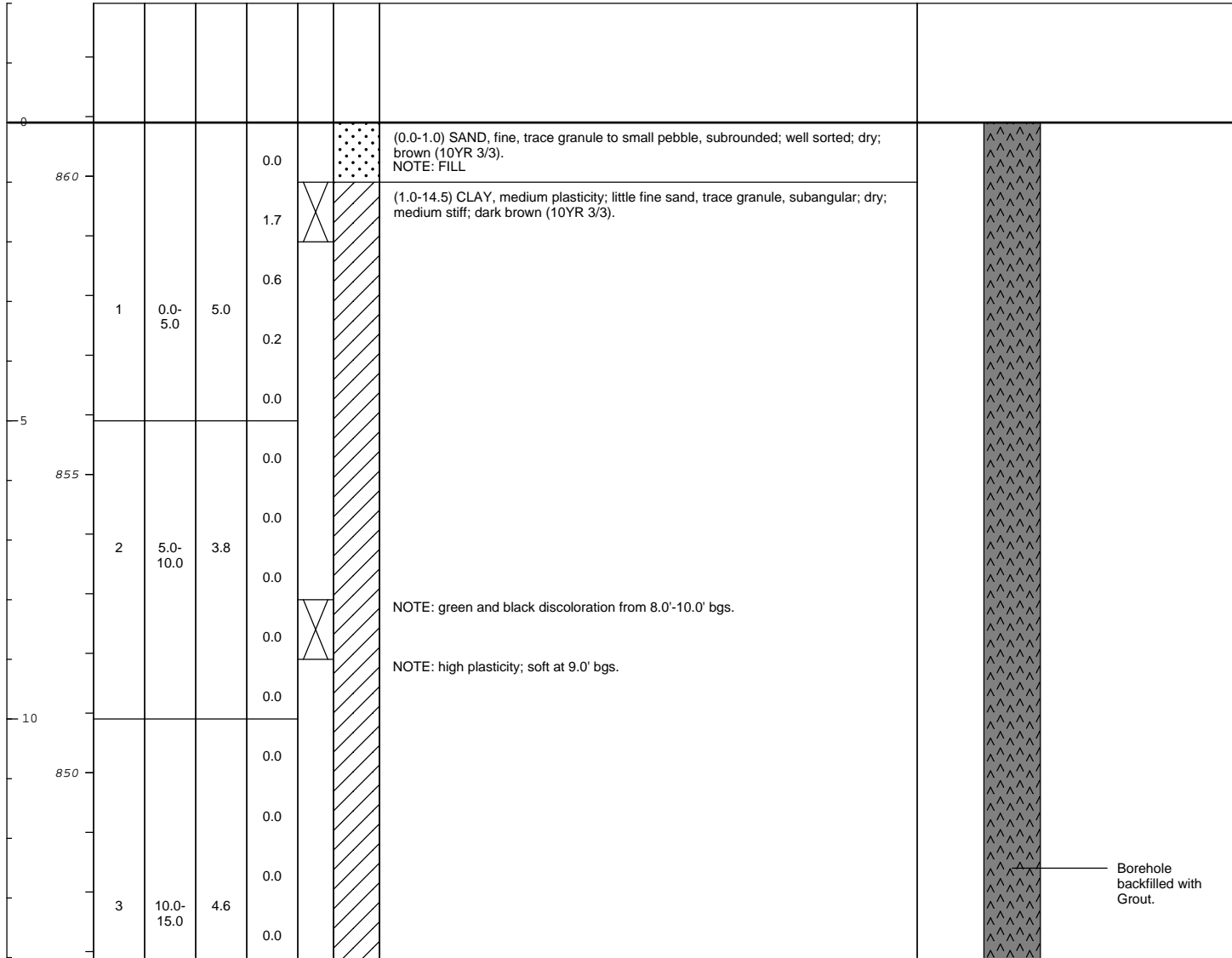
DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
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15					6.0			(15.0-20.0) CLAY, high plasticity; little fine sand, trace granules to small pebbles, angular; dry; stiff; dark gray (10YR 4/1).	
845				0.0					
		4	15.0-20.0	4.1	0.0				
					0.0				
					0.0				
					0.0				
20							End of boring 20.0' bgs		
840									
25									
835									
30									

	<b>Remarks:</b> BGS = Below ground surface
	Groundwater not encountered. No Odor or Staining detected

<b>Date Start/Finish:</b> 6/6/2012 <b>Drilling Company:</b> Stock <b>Driller's Name:</b> Jake <b>Drilling Method:</b> Geoprobe <b>Sampling Method:</b> Dual-tube <b>Rig Type:</b> Geoprobe	<b>Northing:</b> 452850.17 <b>Easting:</b> 13065157.24 <b>Casing Elevation:</b> NA  <b>Borehole Depth:</b> 25.0' bgs. <b>Surface Elevation:</b> 860.90  <b>Descriptions By:</b> A. Villhaues	<b>Well/Boring ID:</b> SB-A16-HD162  <b>Client:</b> RACER Trust  <b>Location:</b> Lansing, MI
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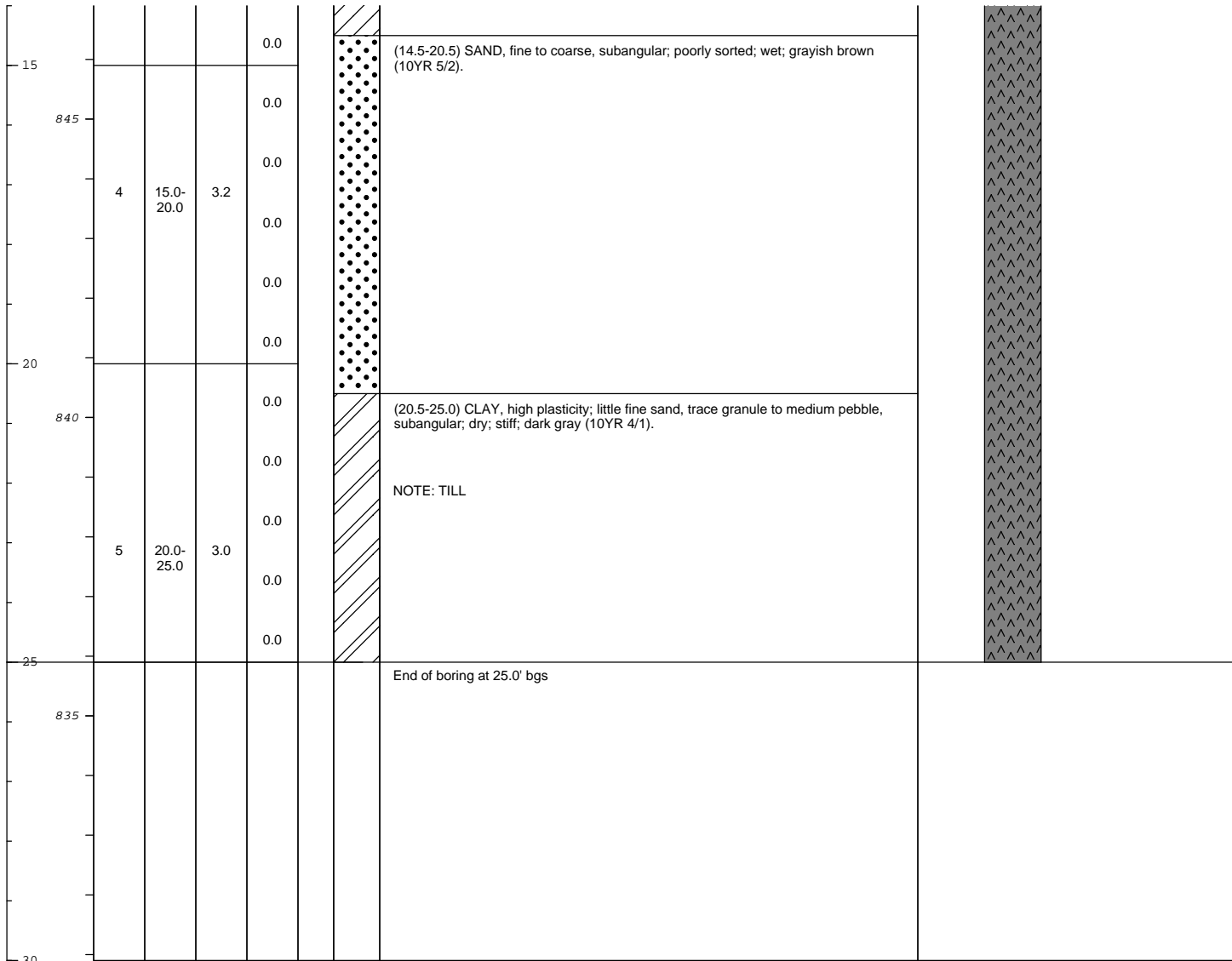
DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
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	<b>Remarks:</b> BGS = Below ground surface
	Groundwater encountered at 14.5' bgs No Odor or Staining detected Groundwater sample collected from 15-20' bgs

<b>Date Start/Finish:</b> 6/6/2012 <b>Drilling Company:</b> Stock <b>Driller's Name:</b> Jake <b>Drilling Method:</b> Geoprobe <b>Sampling Method:</b> Dual-tube <b>Rig Type:</b> Geoprobe	<b>Northing:</b> 452850.17 <b>Easting:</b> 13065157.24 <b>Casing Elevation:</b> NA  <b>Borehole Depth:</b> 25.0' bgs. <b>Surface Elevation:</b> 860.90  <b>Descriptions By:</b> A. Villhaues	<b>Well/Boring ID:</b> SB-A16-HD162  <b>Client:</b> RACER Trust  <b>Location:</b> Lansing, MI
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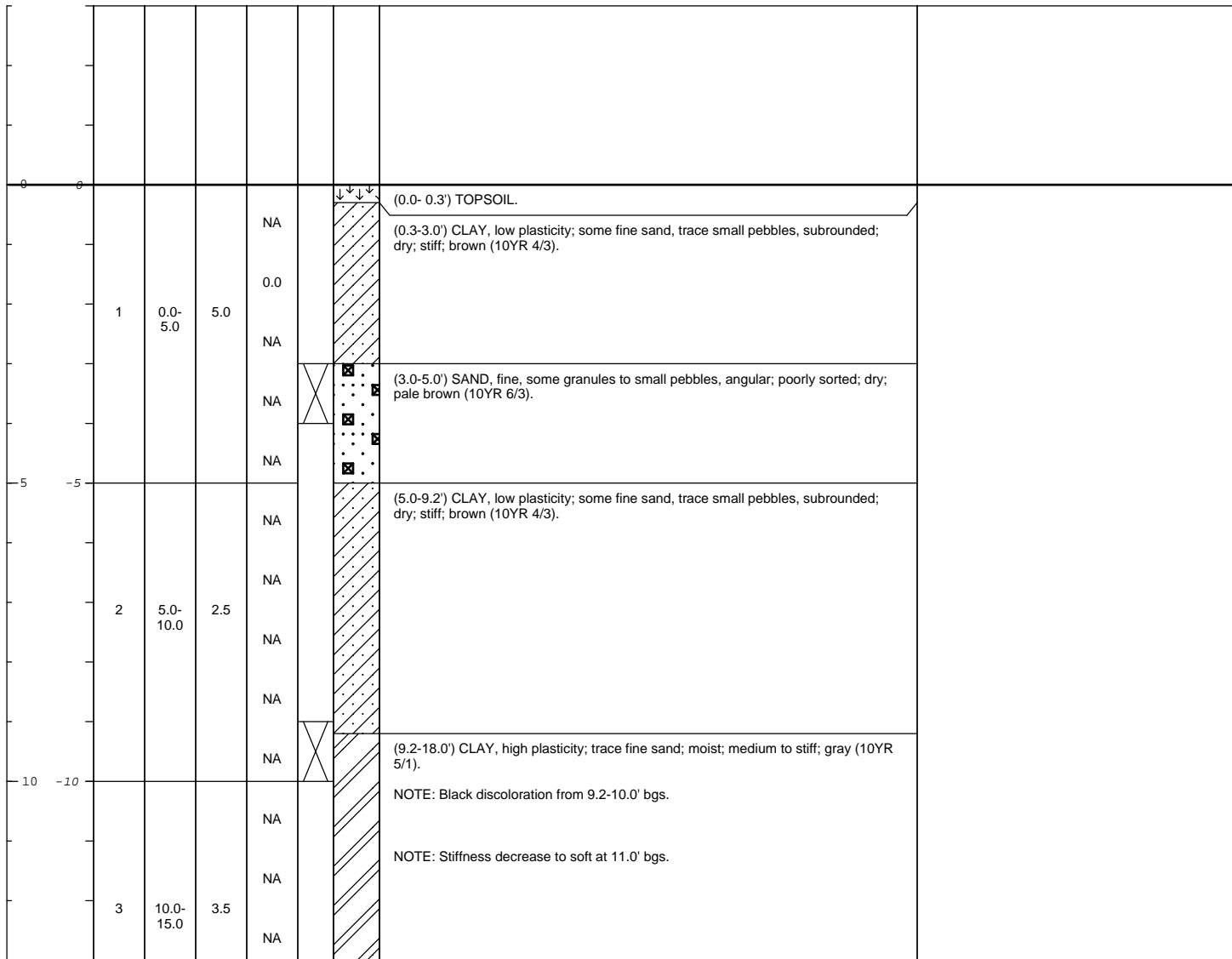
DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
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	<b>Remarks:</b> BGS = Below ground surface
	Groundwater encountered at 14.5' bgs No Odor or Staining detected Groundwater sample collected from 15-20' bgs

<b>Date Start/Finish:</b> 9.20.12 <b>Drilling Company:</b> PME <b>Driller's Name:</b> Steve / Kelly <b>Drilling Method:</b> Geoprobe <b>Sampling Method:</b> Direct Push <b>Rig Type:</b> Geoprobe	<b>Northing:</b> 452727.2908 <b>Easting:</b> 13065185.35 <b>Casing Elevation:</b> NA  <b>Borehole Depth:</b> 20.0' bgs <b>Surface Elevation:</b> 859.44  <b>Descriptions By:</b> Alex Villhauer	<b>Well/Boring ID:</b> SB-A16-HP165  <b>Client:</b> RACER  <b>Location:</b> RACER Lansing Plant 3
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DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
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	<b>Remarks:</b> bgs = below ground surface Groundwater encountered from 18.0'-18.9' bgs. No odor or staining observed.
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<b>Date Start/Finish:</b> 9.20.12 <b>Drilling Company:</b> PME <b>Driller's Name:</b> Steve / Kelly <b>Drilling Method:</b> Geoprobe <b>Sampling Method:</b> Direct Push <b>Rig Type:</b> Geoprobe	<b>Northing:</b> 452727.2908 <b>Easting:</b> 13065185.35 <b>Casing Elevation:</b> NA  <b>Borehole Depth:</b> 20.0' bgs <b>Surface Elevation:</b> 859.44  <b>Descriptions By:</b> Alex Villhauer	<b>Well/Boring ID:</b> SB-A16-HP165  <b>Client:</b> RACER  <b>Location:</b> RACER Lansing Plant 3
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DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
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15	-15	4	15.0-20.0	3.8	NA				
					NA				
					NA				
					NA				
					NA				
					NA			(18.0-18.9') SAND, medium to coarse, subrounded; some granules, subangular; poorly sorted; saturated; dark grayish brown (10YR 4/2).	
					NA			(18.9-20.0') CLAY, high plasticity; trace fine sand; moist; soft; gray (10YR 5/1).	
20	-20				NA			End of boring at 20.0' bgs.	
25	-25								

	<b>Remarks:</b> bgs = below ground surface Groundwater encountered from 18.0'-18.9' bgs. No odor or staining observed.
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# Boring Log .

**Project No.:** 01-4172-0

**Boring No.:** SB-A16-HP178

**Project Name:** RACER Lansing Plants

**Date Drilled:** 11/28/12

**Facility ID#:**

**Drill Rig:** Geoprobe

**Logged By:** Alexander Villhauer

**Sampling Method:** Dual Tube DT22

SUBSURFACE PROFILE			SAMPLE			
Depth (ft.)	Boring Profile	Description and Comments	Sample # Depth	Blow Counts	PID (ppm)	No Well Installed
0		Ground Surface				
0.0 - 0.3		<b>(0.0 - 0.3) TOPSOIL / GRASS</b>		-	0.0	
0.3 - 5.0		<b>CL- (0.3 - 5.0) CLAY</b> low plasticity; little fine sand, trace small pebbles, subangular; moist; medium stiff; brown (10YR 4/3)	HP-178 2.0' - 3.0'	-	0.0	
5.0 - 10.0		<b>(5.0 - 10.0) NO RECOVERY</b>		-	0.0	
10.0 - 19.2		<b>CH- (10.0 - 19.2) CLAY</b> high plasticity; moist; soft; gray (10YR 5/1)	HP-178 10.0' - 11.0'	-	0.0	
19.2 - 22.0		<b>SW- (19.2 - 22.0) SAND</b> fine to coarse; subangular; little granules to small pebbles, subrounded; saturated; dark gray (10YR 4/1)	HP-178	-	0.0	
22.0 - 25.0		<b>CH- (22.0 - 25.0) CLAY</b> high plasticity; trace fine sand, trace granules to small pebbles, subangular; moist; medium stiff; gray (10YR 5/1)	19.0' - 23.0'	-	0.0	
25.0 - 25.0		Note: fining upward	19.0' - 25.0'	-	0.0	

**Completion Notes:** End Of Boring at 25' bgs hole filled with bentonite grout

- The indicated stratification lines are approximate in situ. The transitions between materials may be gradual.
- Boring backfilled with natural soils unless otherwise noted.



# Boring Log .

**Project No.:** 01-4172-0

**Boring No.:** SB-A16-HQ168

**Project Name:** RACER Lansing Plants

**Date Drilled:** 11/09/12

**Facility ID#:**

**Drill Rig:** Geoprobe

**Logged By:** Alexander Villhauer

**Sampling Method:** Dual Tube DT22

SUBSURFACE PROFILE			SAMPLE			
Depth (ft.)	Boring Profile	Description and Comments	Sample # Depth	Blow Counts	PID (ppm)	No Well Installed
0		Ground Surface				
0 - 2		<b>SC- (0.0 - 2.0) SAND</b> fine and clay, trace granules to small pebbles, subangular; moist; brown (10YR 4/3)	HQ-168 1.0' - 2.0'	-	0.0	
2 - 6		Note: staining (black) 1.0' - 2.0' <b>CLS- (2.0 - 6.0) CLAY</b> low plasticity; some fine sand, trace granules to small pebbles, subangular; moist; medium stiff; brown (10YR 4/3)	HQ-168	-	0.0	
6 - 8		<b>SWG- (6.0 - 8.5) SAND</b> fine to coarse, some granules to medium pebbles, subangular; some concrete and organic debris, trace clay, poorly sorted; very dark brown (10YR 2/2)		-	0.0	
8 - 10		<b>CH- (8.5 - 20.0) CLAY</b> high plasticity; trace fine sand, trace granules, angular; moist; medium stiff; gray (10YR 5/1)	HQ-168 5.0' - 9.0'	-	0.0	
10 - 12		Note: becomes soft at 12.0' - 18.0' absense of granules	HQ-168 10.0' - 11.0'	-	0.0	
12 - 14				-	0.0	
14 - 16				-	0.0	
16 - 18			HQ-168	-	0.0	
18 - 20			HQ-168 17.0' - 18.0'	-	0.0	
20				-	0.0	

**Completion Notes:** End Of Boring at 20' bgs hole filled with bentonite grout

- The indicated stratification lines are approximate in situ. The transitions between materials may be gradual.
- Boring backfilled with natural soils unless otherwise noted.

**Date Start/Finish:** 6/6/2012  
**Drilling Company:** Stock  
**Driller's Name:** Jake  
**Drilling Method:** Geoprobe  
**Sampling Method:** Dual-tube  
**Rig Type:** Geoprobe

**Northing:** 452707.44  
**Easting:** 13065156.29  
**Casing Elevation:** NA

**Well/Boring ID:** SB-A16-HR162

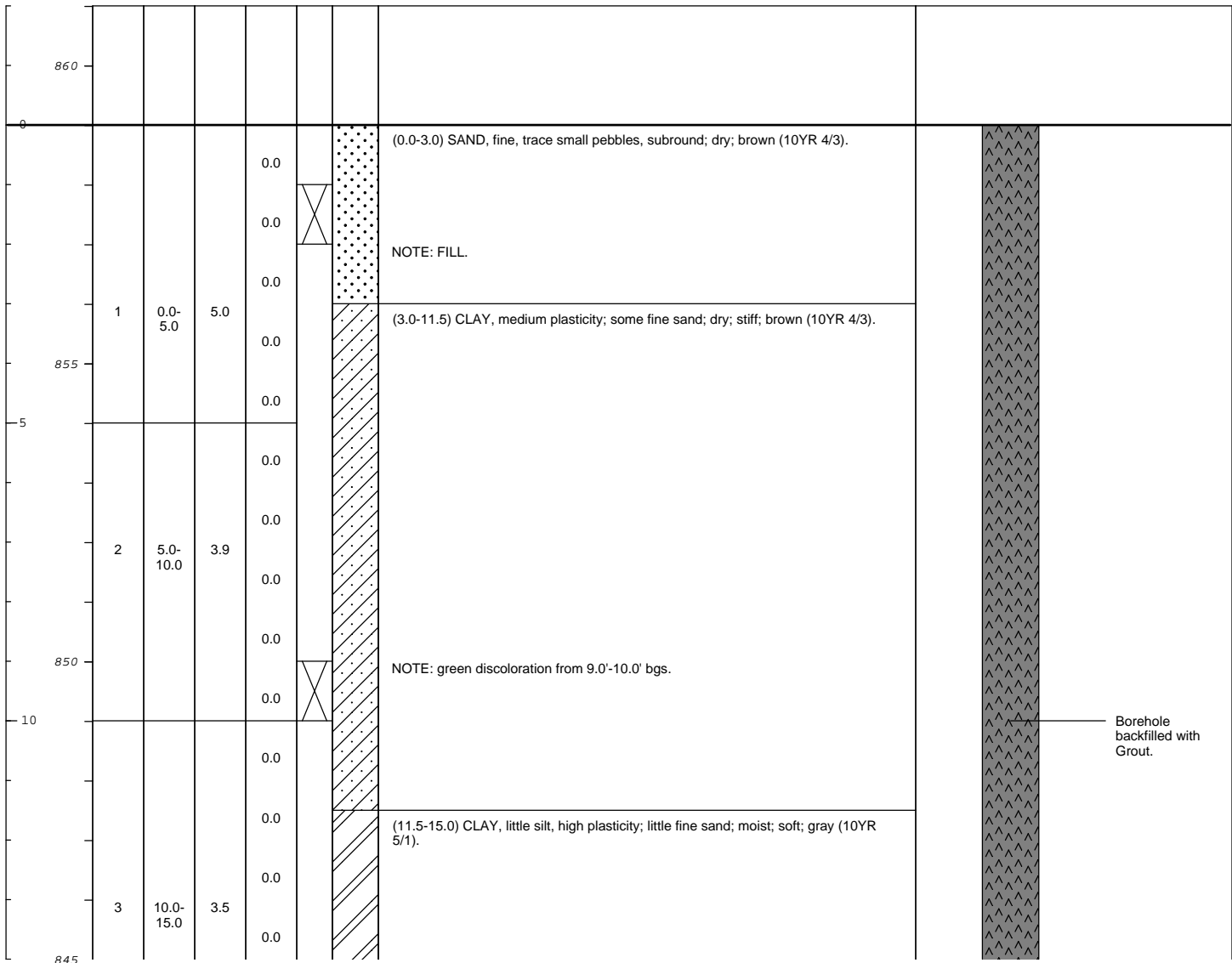
**Client:** RACER Trust

**Location:** Lansing, MI

**Borehole Depth:** 20.0' bgs  
**Surface Elevation:** 859.01

**Descriptions By:** A. Villhaues

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
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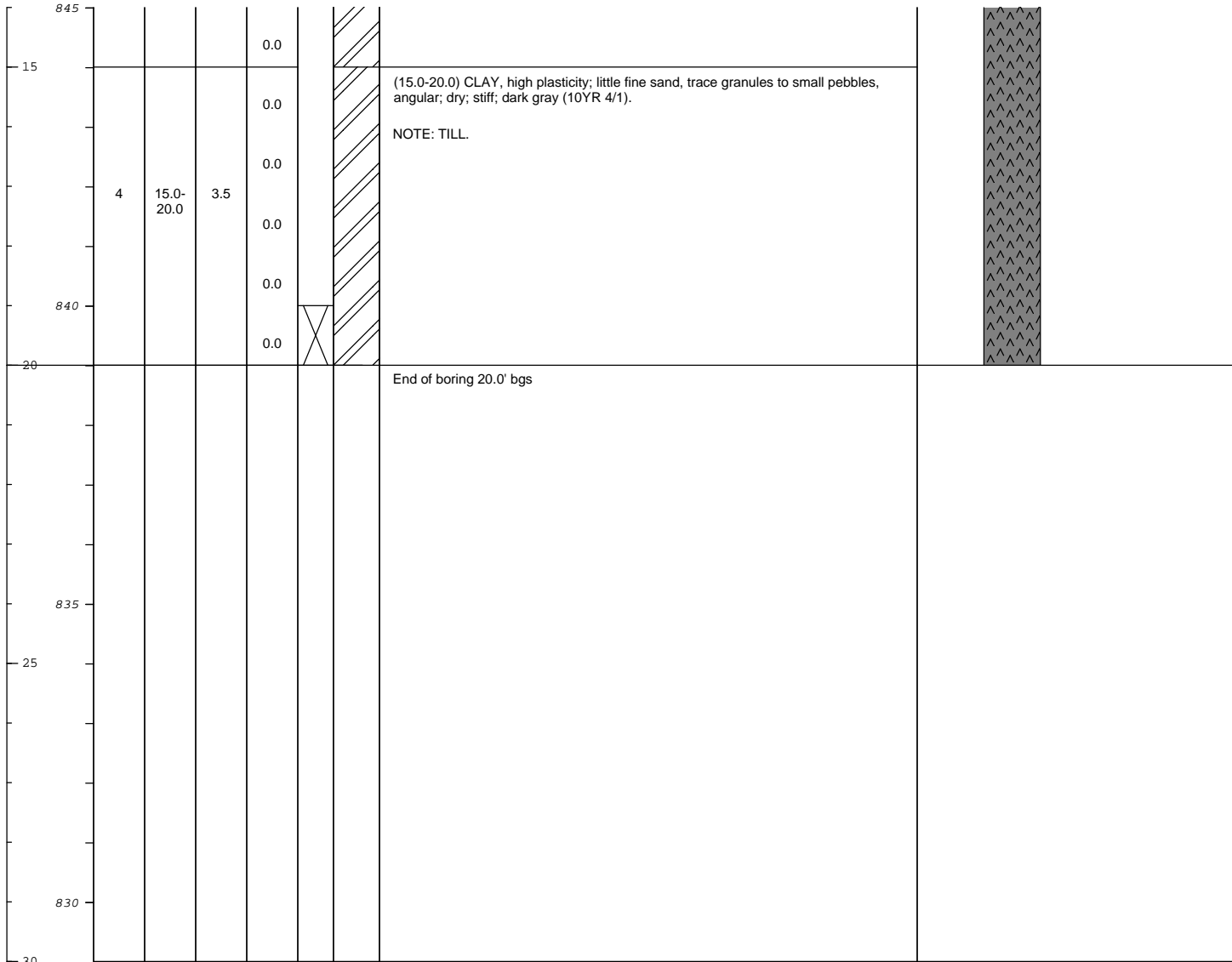
**Remarks:** BGS = Below ground surface


Groundwater not encountered  
 No Odor or Staining detected



<b>Date Start/Finish:</b> 6/6/2012 <b>Drilling Company:</b> Stock <b>Driller's Name:</b> Jake <b>Drilling Method:</b> Geoprobe <b>Sampling Method:</b> Dual-tube <b>Rig Type:</b> Geoprobe	<b>Northing:</b> 452707.44 <b>Easting:</b> 13065156.29 <b>Casing Elevation:</b> NA  <b>Borehole Depth:</b> 20.0' bgs <b>Surface Elevation:</b> 859.01  <b>Descriptions By:</b> A. Villhaues	<b>Well/Boring ID:</b> SB-A16-HR162  <b>Client:</b> RACER Trust  <b>Location:</b> Lansing, MI
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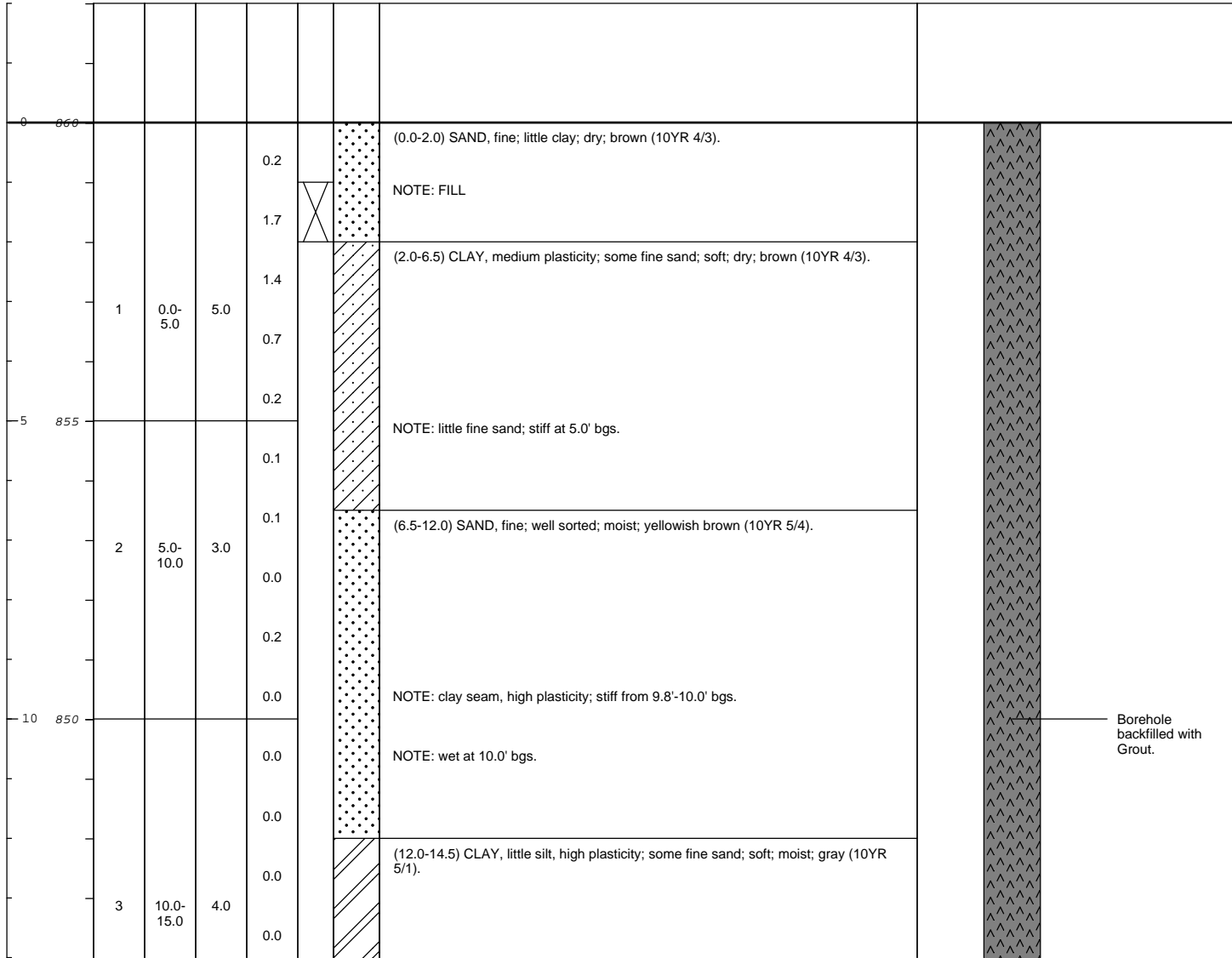
DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
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	<b>Remarks:</b> BGS = Below ground surface
	Groundwater not encountered No Odor or Staining detected

<b>Date Start/Finish:</b> 6/6/2012 <b>Drilling Company:</b> Stock <b>Driller's Name:</b> Jake <b>Drilling Method:</b> Geoprobe <b>Sampling Method:</b> Dual-tube <b>Rig Type:</b> Geoprobe	<b>Northing:</b> 452677.39 <b>Easting:</b> 13065125.36 <b>Casing Elevation:</b> NA  <b>Borehole Depth:</b> 20.0' bgs <b>Surface Elevation:</b> 860.01  <b>Descriptions By:</b> A. Villhaues	<b>Well/Boring ID:</b> SB-A16-HU159  <b>Client:</b> RACER Trust  <b>Location:</b> Lansing, MI
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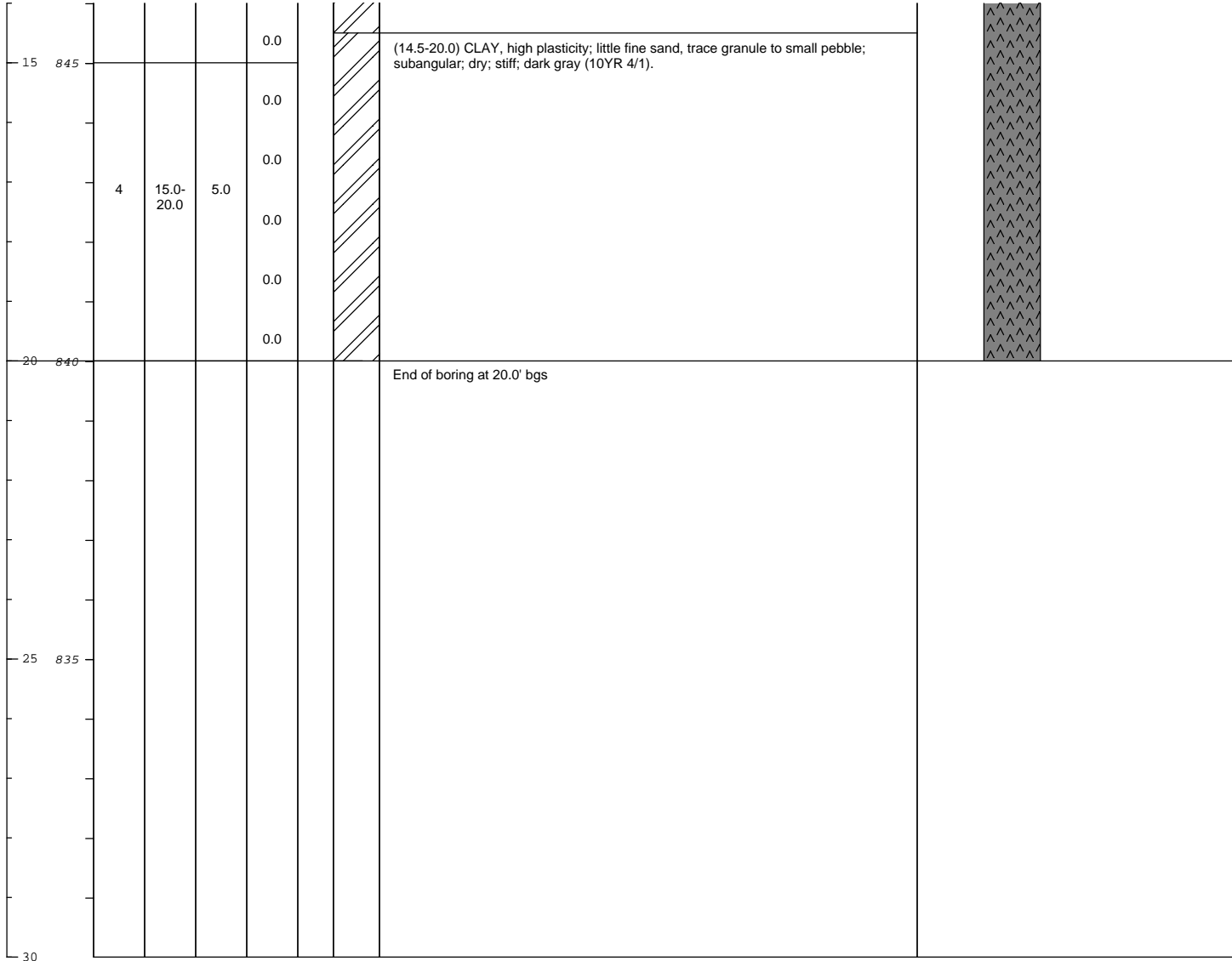
DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
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	<b>Remarks:</b> BGS = Below ground surface  Groundwater encountered at 10.0' bgs No Odor or Staining detected Groundwater sample collected from 10.0-14.0' bgs
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<b>Date Start/Finish:</b> 6/6/2012 <b>Drilling Company:</b> Stock <b>Driller's Name:</b> Jake <b>Drilling Method:</b> Geoprobe <b>Sampling Method:</b> Dual-tube <b>Rig Type:</b> Geoprobe	<b>Northing:</b> 452677.39 <b>Easting:</b> 13065125.36 <b>Casing Elevation:</b> NA  <b>Borehole Depth:</b> 20.0' bgs <b>Surface Elevation:</b> 860.01  <b>Descriptions By:</b> A. Villhaues	<b>Well/Boring ID:</b> SB-A16-HU159  <b>Client:</b> RACER Trust  <b>Location:</b> Lansing, MI
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DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
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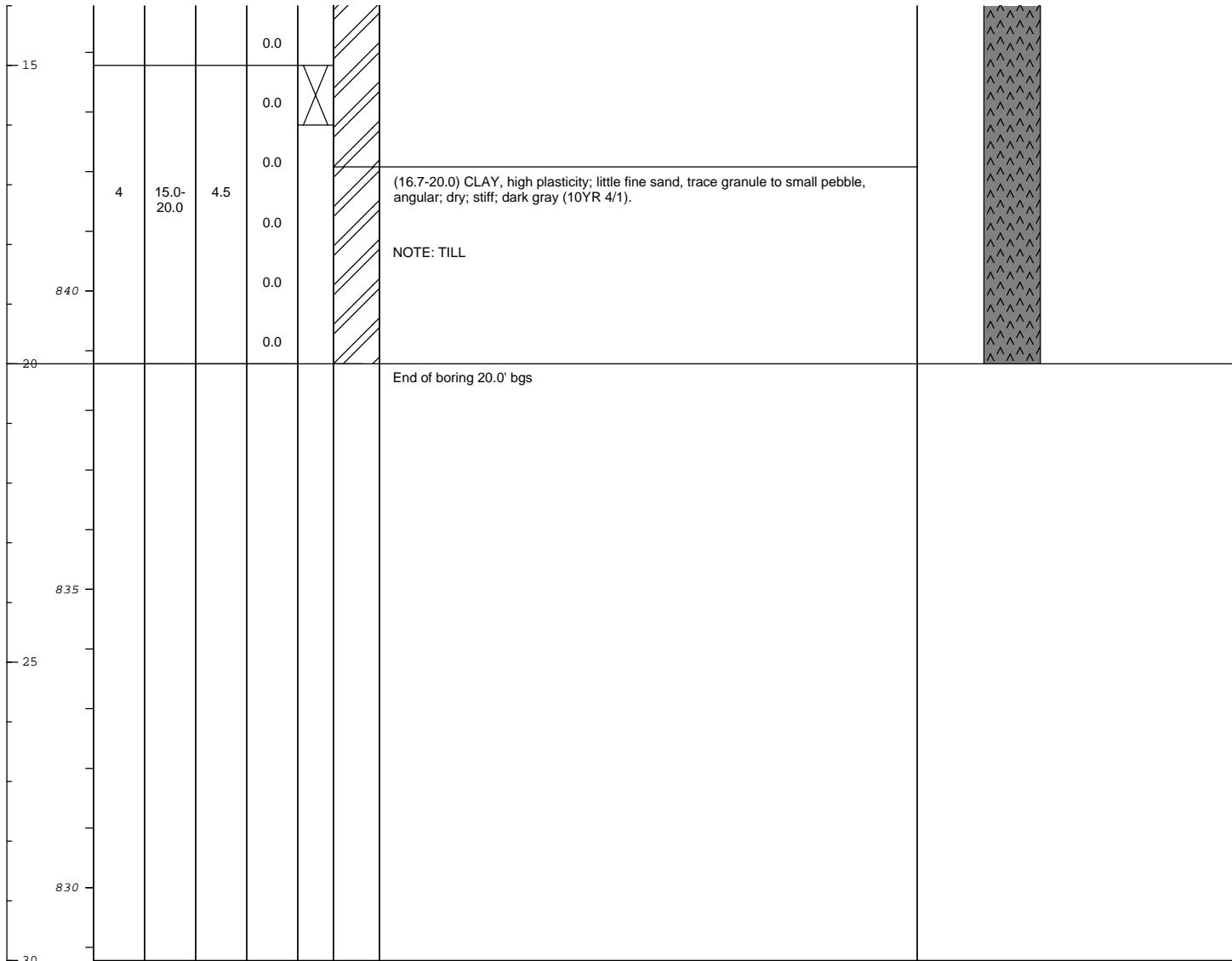


	<b>Remarks:</b> BGS = Below ground surface  Groundwater encountered at 10.0' bgs No Odor or Staining detected Groundwater sample collected from 10.0-14.0' bgs
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<b>Date Start/Finish:</b> 6/6/2012 <b>Drilling Company:</b> Stock <b>Driller's Name:</b> Jake <b>Drilling Method:</b> Geoprobe <b>Sampling Method:</b> Dual-tube <b>Rig Type:</b> Geoprobe	<b>Northing:</b> 452677.06 <b>Easting:</b> 13065185.80 <b>Casing Elevation:</b> NA  <b>Borehole Depth:</b> 20.0' bgs <b>Surface Elevation:</b> 858.78  <b>Descriptions By:</b> A. Villhaues	<b>Well/Boring ID:</b> SB-A16-HU165  <b>Client:</b> RACER Trust  <b>Location:</b> Lansing, MI
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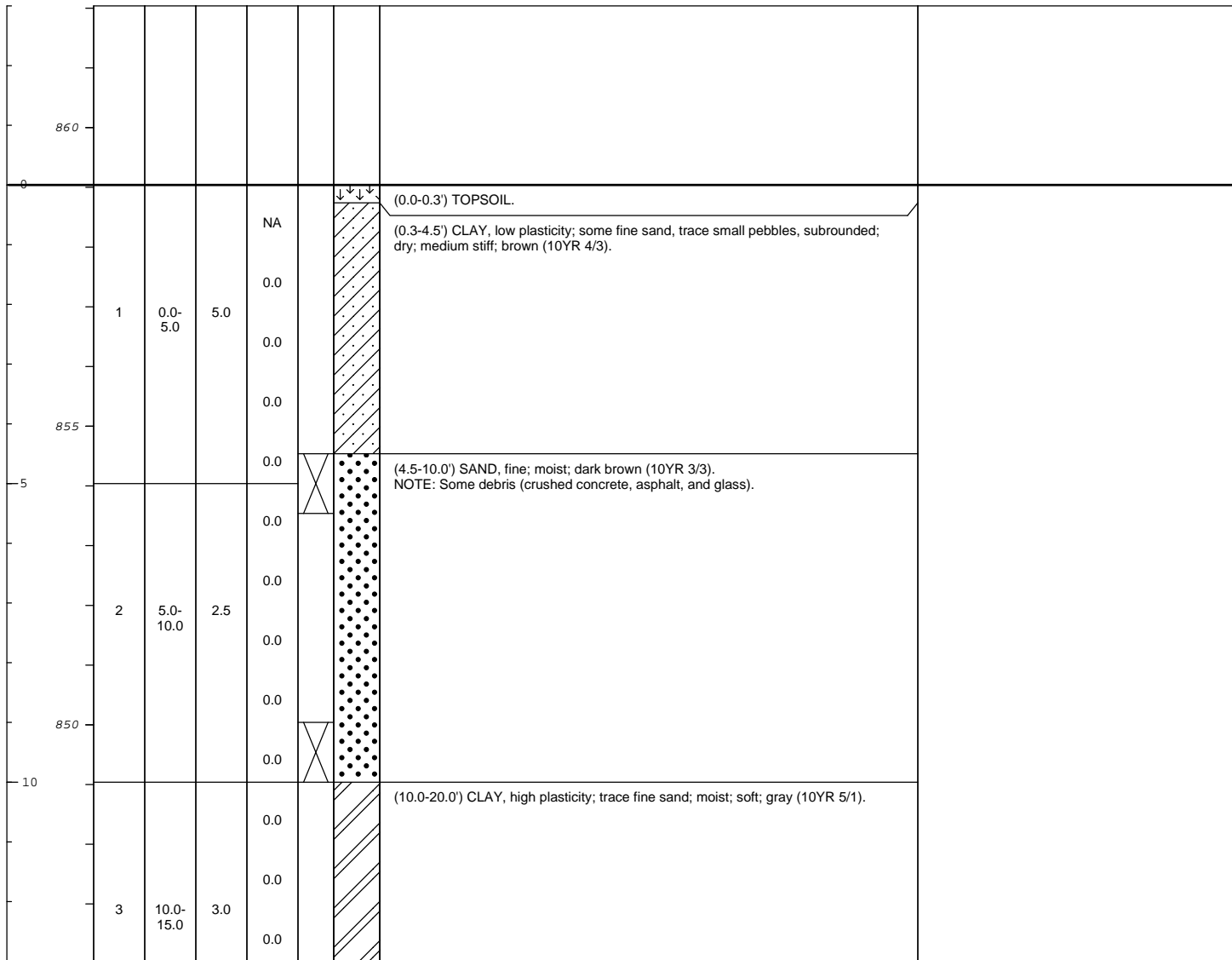
DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
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	<b>Remarks:</b> BGS = Below ground surface
	Groundwater not encountered No Odor or Staining detected

<b>Date Start/Finish:</b> 9.20.12 <b>Drilling Company:</b> PME <b>Driller's Name:</b> Steve / Kelly <b>Drilling Method:</b> Geoprobe <b>Sampling Method:</b> Direct Push <b>Rig Type:</b> Geoprobe	<b>Northing:</b> 452678.3325 <b>Easting:</b> 13065215.56 <b>Casing Elevation:</b> NA  <b>Borehole Depth:</b> 20.0' bgs <b>Surface Elevation:</b> 859.04  <b>Descriptions By:</b> Alex Villhauer	<b>Well/Boring ID:</b> SB-A16-HU168  <b>Client:</b> RACER  <b>Location:</b> RACER Lansing Plant 3
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DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
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	<b>Remarks:</b> bgs = below ground surface Groundwater not encountered. No odor or staining observed.
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<b>Date Start/Finish:</b> 9.20.12 <b>Drilling Company:</b> PME <b>Driller's Name:</b> Steve / Kelly <b>Drilling Method:</b> Geoprobe <b>Sampling Method:</b> Direct Push <b>Rig Type:</b> Geoprobe	<b>Northing:</b> 452678.3325 <b>Easting:</b> 13065215.56 <b>Casing Elevation:</b> NA  <b>Borehole Depth:</b> 20.0' bgs <b>Surface Elevation:</b> 859.04  <b>Descriptions By:</b> Alex Villhauer	<b>Well/Boring ID:</b> SB-A16-HU168  <b>Client:</b> RACER  <b>Location:</b> RACER Lansing Plant 3
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DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
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15	845	4	15.0-20.0	3.9	0.0				
20	840				0.0			End of boring at 20.0' bgs.	
25	835				0.0				

	<b>Remarks:</b> bgs = below ground surface Groundwater not encountered. No odor or staining observed.
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## Boring Log .

**Project No.:** 01-4172-0

**Boring No.:** SB-A16-HU171

**Project Name:** RACER Lansing Plants

**Date Drilled:** 11/09/12

**Facility ID#:**

**Drill Rig:** Geoprobe

**Logged By:** Alexander Villhauer

**Sampling Method:** Dual Tube DT22

SUBSURFACE PROFILE			SAMPLE			
Depth (ft.)	Boring Profile	Description and Comments	Sample # Depth	Blow Counts	PID (ppm)	No Well Installed
0		Ground Surface				
0		<b>SC- (0.0 - 2.0) SAND</b> fine; and clay, trace granules; subrounded; moist; brown (10YR 4/3)	HU-171 1.0' - 2.0'	-	0.0	
2		<b>CLS- (2.0 - 4.6) CLAY</b> low plasticity; some fine sand, trace granules to small pebbles, moist; medium stiff; brown (10YR 4/3)		-	0.0	
4				-	0.0	
6		<b>SWG- (4.6 - 10.0) SAND</b> fine to coarse; some granules to small pebbles, angular; some concrete and organic debris, poorly sorted; saturated; very dark brown (10YR 2/2)	HU-171 5.0' - 9.0'	-	0.0	
8				-	0.0	
10		<b>CH- (10.0 - 18.0) CLAY</b> high plasticity; moist; soft; gray (10YR 5/1)		-	0.0	
12			HU-171 12.0' - 13.0'	-	0.0	
14				-	0.0	
16				-	0.0	
18			HU-171 18.0' - 19.0'	-	0.0	
20		Note: thin seam of moist fine sand at 18.0'		-	0.0	

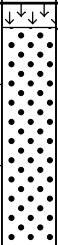
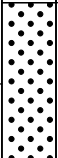
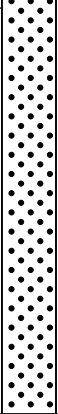
**Completion Notes:** End Of Boring at 20' bgs hole filled with bentonite grout

- The indicated stratification lines are approximate in situ. The transitions between materials may be gradual.
- Boring backfilled with natural soils unless otherwise noted.

**Date Start:** 7-10-2013  
**Date Finish:** 7-10-2013  
**Drilling Company:** PM  
**Driller's Name:** Steve / Cliff  
**Drilling Method:** Direct Push Dual Tube  
**Sampling Method:** HA to 5.0' bgs / 5.0' Dual tube  
**Rig Type:** Geoprobe 6610DT  
**Water Level Start (ft. bgs.):**  
**Water Level Finish (ft. btoc.):**

**Northing:**  
**Eastings:**  
**Casing Elevation:**  
**Borehole Depth (ft. bgs.):** 25.0' bgs  
**Surface Elevation:**  
**Descriptions By:** C.Snyder






**Well/Boring ID:** SB-A16-HU181  
**Client:** RACER  
**Location:** RACER Lansing Plant 3  
 2801 West Saginaw  
 Lansing, MI 48909  
**Weather Conditions:** 85, Partly Cloudy


DEPTH (feet bgs.)	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Water Level (ft. bgs.)	Well/Boring Construction
0	0							(0.0'-0.3') TOPSOIL/GRASS		
		1	0-1'	1.0	1.9	X		(0.3'-3.0') SAND, coarse to very coarse, subangular; little medium; little granules to small pebbles, subrounded; poorly sorted; dry; dark brown (10YR 4/1). NOTE: Fill  NOTE: Trace glass at 1.0'-2.0' bgs.		
		2	1-2'	1.0	1.1					
		3	2-3'	1.0	1.1					
		4	3-4'	1.0	0.2			(3.0'-10.0') SAND, fine to medium; little silt; little granules to small pebbles, subangular to angular; poorly sorted; wet; brown (10YR 4/3). NOTE: Trace metal.		
5	-5	5	4-5'	1.0	0.9	X			NOTE: Poor recovery from 5.0'-10.0' bgs.	
		6	5-10'	0.1	NA			(10.0'-14.0') CLAY, some silt, high plasticity, rapid dilatancy; wet; very soft; gray (10YR 5/1).		
10	-10	7	10-15'	4.1	0.0	X				

**Remarks:** bgs = below ground surface  
 Groundwater encountered from 3.0'-24.0' bgs.  
 No odor or staining observed.




<b>Date Start:</b> 7-10-2013 <b>Date Finish:</b> 7-10-2013 <b>Drilling Company:</b> PM <b>Driller's Name:</b> Steve / Cliff <b>Drilling Method:</b> Direct Push Dual Tube <b>Sampling Method:</b> HA to 5.0' bgs / 5.0' Dual tube <b>Rig Type:</b> Geoprobe 6610DT <b>Water Level Start (ft. bgs.):</b> <b>Water Level Finish (ft. btoc.):</b>	<b>Northing:</b> <b>Easting:</b> <b>Casing Elevation:</b>  <b>Borehole Depth (ft. bgs.):</b> 25.0' bgs <b>Surface Elevation:</b>  <b>Descriptions By:</b> C.Snyder	<b>Well/Boring ID:</b> SB-A16-HU181  <b>Client:</b> RACER  <b>Location:</b> RACER Lansing Plant 3 2801 West Saginaw Lansing, MI 48909  <b>Weather Conditions:</b> 85, Partly Cloudy
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DEPTH (feet bgs.)	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Water Level (ft. bgs.)	Well/Boring Construction
-15	-15	8	15-20'	3.2				(14.0'-15.0') SILT, rapid dilatancy, little clay, little very fine sand; trace granules to small pebbles, subangular; wet; very soft; dark gray (5Y 4/1).		
								(15.0'-18.9') CLAY, some silt, slow dilatancy, medium plasticity; medium to large pebbles, subangular to subrounded; little very fine sand; wet; medium stiff; grayish brown (10YR 5/2).		
								(18.9'-20.0') SAND, very fine to medium; little coarse, subangular; trace silt, poorly sorted; wet; gray (10YR 5/1).		
-20	-20	9	20-25'	4.0				(20.0'-24.0') CLAY, some silt, slow dilatancy, high plasticity; little very fine sand; trace small to medium pebbles, subangular; moist to wet; soft; grayish brown (10YR 5/2).		
								(24.0'-25.0') CLAY, some silt, high plasticity, no dilatancy, little very fine sand, trace small pebbles, subangular to subrounded; moist; medium stiff; grayish brown (10YR 5/2).		
-25	-25							End of boring at 25.0' bgs.		



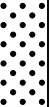
	<b>Remarks:</b> bgs = below ground surface Groundwater encountered from 3.0'-24.0' bgs. No odor or staining observed.
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<b>Date Start:</b> 4-9-14 <b>Date Finish:</b> 4-9-14 <b>Drilling Company:</b> NA <b>Driller's Name:</b> A.Villhauer <b>Drilling Method:</b> Hand Auger <b>Sampling Method:</b> 3-1/2" SS Bucket <b>Rig Type:</b> NA <b>Water Level Start (ft. bgs.):</b> NA <b>Water Level Finish (ft. btoc.):</b> NA	<b>Northing:</b> <b>Easting:</b> <b>Casing Elevation:</b> NA  <b>Borehole Depth (ft. bgs.):</b> 4.0' bgs <b>Surface Elevation:</b>  <b>Descriptions By:</b> A.Villhauer	<b>Well/Boring ID:</b> SB-A16-HU181E-A  <b>Client:</b> RACER  <b>Location:</b> RACER Lansing Plant 3  <b>Weather Conditions:</b> Sunny 50
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DEPTH (feet bgs.)	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Water Level (ft. bgs.)	Well/Boring Construction
0	0									
		1	0.0-1.0	1.0	0.0		Diagonal lines	(0.0'-1.0') CLAY, low plasticity; some fine sand, trace small to large pebbles, subangular; moist; soft; brown (10YR 4/3).		
		2	1.0-2.0	1.0	0.0	X	Small dots	(1.0'-2.0') SAND, fine to coarse, subangular; some small pebbles to small cobbles, subrounded to subangular; some debris, glass, slag, coal, metal; poorly sorted; moist; dark brown (10YR 3/3). NOTE: Reddish to black staining.		
		3	2.0-4.0	2.0	0.0	X	Small dots	(2.0'-4.0') SAND, fine to coarse, subangular; small to large pebbles, subangular; little debris, glass, slag, coal, metal; poorly sorted; moist; brown (10YR 4/3). NOTE: Reddish staining.		
					0.0			Refusal at 4.0' bgs.		
-5	-5							End of boring at 4.0' bgs. - due to refusal.		
-10	-10									

 Infrastructure · Water · Environment · Buildings	<b>Remarks:</b> bgs = below ground surface No groundwater encountered. No odor observed. Reddish staining observed from 1.0'-4.0' bgs. Refusal at 4.0' bgs.
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<b>Date Start:</b> 4-9-14 <b>Date Finish:</b> 4-9-14 <b>Drilling Company:</b> NA <b>Driller's Name:</b> A.Villhauer <b>Drilling Method:</b> Hand Auger <b>Sampling Method:</b> 3-1/2" SS Bucket <b>Rig Type:</b> NA <b>Water Level Start (ft. bgs.):</b> NA <b>Water Level Finish (ft. btoc.):</b> NA	<b>Northing:</b> <b>Easting:</b> <b>Casing Elevation:</b> NA  <b>Borehole Depth (ft. bgs.):</b> 2.5' bgs <b>Surface Elevation:</b>  <b>Descriptions By:</b> A.Villhauer	<b>Well/Boring ID:</b> SB-A16-HU181E-B  <b>Client:</b> RACER  <b>Location:</b> RACER Lansing Plant 3  <b>Weather Conditions:</b> Sunny 50
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DEPTH (feet bgs.)	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headpace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Water Level (ft. bgs.)	Well/Boring Construction
0	0									
		1	0.0-1.0	1.0	0.0			(0.0'-1.0') CLAY, low plasticity; some fine sand, trace small pebbles, subangular; moist; soft; brown (10YR 4/3).		
		2	1.0-2.5	1.5	0.0			(1.0'-2.5') SAND, fine to coarse, subangular; some granules to large pebbles, subangular; some debris, glass, slag, coal, metal; poorly sorted; moist; dark brown (10YR 3/3). NOTE: Black staining at 1.5' bgs. Refusal at 2.5' bgs.		
								End of boring at 2.5' bgs. - due to refusal.		
5	-5									
10	-10									

 Infrastructure · Water · Environment · Buildings	<b>Remarks:</b> bgs = below ground surface No groundwater encountered. No odor observed. Black staining observed at 1.5' bgs. Refusal at 2.5' bgs.
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<b>Date Start:</b> 4-9-14 <b>Date Finish:</b> 4-9-14 <b>Drilling Company:</b> NA <b>Driller's Name:</b> A.Villhauer <b>Drilling Method:</b> Hand Auger <b>Sampling Method:</b> 3-1/2" SS Bucket <b>Rig Type:</b> NA <b>Water Level Start (ft. bgs.):</b> NA <b>Water Level Finish (ft. btoc.):</b> NA	<b>Northing:</b> <b>Easting:</b> <b>Casing Elevation:</b> NA  <b>Borehole Depth (ft. bgs.):</b> 4.0' bgs <b>Surface Elevation:</b>  <b>Descriptions By:</b> A.Villhauer	<b>Well/Boring ID:</b> SB-A16-HU181E-C  <b>Client:</b> RACER  <b>Location:</b> RACER Lansing Plant 3  <b>Weather Conditions:</b> Sunny 50
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DEPTH (feet bgs.)	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Water Level (ft. bgs.)	Well/Boring Construction
0	0									
		1	0.0-1.0	1.0	0.0		Diagonal lines	(0.0'-1.0') CLAY, low plasticity; some fine sand, trace small pebbles, subrounded; moist; soft; brown (10YR 4/3).		
		2	1.0-2.0	1.0	0.0	X	Small dots	(1.0'-2.0') SAND, fine to coarse, subangular; some granules to large pebbles, subrounded to subangular; some debris, coal, glass, metal; poorly sorted; moist; dark brown (10YR 3/3). NOTE: Black staining.		
		3	2.0-4.0	2.0	0.0	X	Small dots	(2.0'-4.0') SAND, fine to coarse, subangular; some granules to small pebbles, subrounded to subangular; little debris, coal, glass, slag, metal; poorly sorted; moist; brown (10YR 4/3). NOTE: Reddish staining.		
					0.0	X	Small dots	Refusal at 4.0' bgs.		
-5	-5							End of boring at 4.0' bgs. - due to refusal.		
-10	-10									

 <p>ARCADIS Infrastructure · Water · Environment · Buildings</p>	<b>Remarks:</b> bgs = below ground surface No groundwater encountered. No odor observed. Black staining observed from 1.0'-2.0' bgs. Reddish staining observed from 2.0'-4.0' bgs. Refusal at 4.0' bgs.
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<b>Date Start:</b> 4-9-14 <b>Date Finish:</b> 4-9-14 <b>Drilling Company:</b> NA <b>Driller's Name:</b> A.Villhauer <b>Drilling Method:</b> Hand Auger <b>Sampling Method:</b> 3-1/2" SS Bucket <b>Rig Type:</b> NA <b>Water Level Start (ft. bgs.):</b> NA <b>Water Level Finish (ft. btoc.):</b> NA	<b>Northing:</b> <b>Easting:</b> <b>Casing Elevation:</b> NA  <b>Borehole Depth (ft. bgs.):</b> 4.0' bgs <b>Surface Elevation:</b>  <b>Descriptions By:</b> A.Villhauer	<b>Well/Boring ID:</b> SB-A16-HU181E-D  <b>Client:</b> RACER  <b>Location:</b> RACER Lansing Plant 3  <b>Weather Conditions:</b> Sunny 50
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DEPTH (feet bgs.)	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Water Level (ft. bgs.)	Well/Boring Construction
0	0									
		1	0.0-1.0	1.0	0.0		Diagonal lines	(0.0'-1.0') CLAY, low plasticity; some fine sand, moist; soft; brown (10YR 4/3).		
		2	1.0-4.0	3.0	0.0	X	Dotted pattern	(1.0'-4.0') SAND, fine to coarse, subangular; some granules to large pebbles, subrounded to subangular; little debris, coal, glass, slag; poorly sorted; moist; dark brown (10YR 3/3). NOTE: Black staining from 1.5'-2.0' bgs; Reddish staining from 2.0'-4.0' bgs. Refusal at 4.0' bgs.		
					0.0	X				
					0.0			End of boring at 4.0' bgs. - due to refusal.		
-5	-5									
-10	-10									

 Infrastructure · Water · Environment · Buildings	<b>Remarks:</b> bgs = below ground surface No groundwater encountered. No odor observed. Black staining observed from 1.5'-2.0' bgs. Reddish staining observed from 2.0'-4.0' bgs. Refusal at 4.0' bgs.
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<b>Date Start:</b> 4-9-14 <b>Date Finish:</b> 4-9-14 <b>Drilling Company:</b> NA <b>Driller's Name:</b> A.Villhauer <b>Drilling Method:</b> Hand Auger <b>Sampling Method:</b> 3-1/2" SS Bucket <b>Rig Type:</b> NA <b>Water Level Start (ft. bgs.):</b> NA <b>Water Level Finish (ft. btoc.):</b> NA	<b>Northing:</b> <b>Eastings:</b> <b>Casing Elevation:</b> NA  <b>Borehole Depth (ft. bgs.):</b> 4.0' bgs <b>Surface Elevation:</b>  <b>Descriptions By:</b> A.Villhauer	<b>Well/Boring ID:</b> SB-A16-HU181E-E  <b>Client:</b> RACER  <b>Location:</b> RACER Lansing Plant 3  <b>Weather Conditions:</b> Sunny 50
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DEPTH (feet bgs.)	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headpace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Water Level (ft. bgs.)	Well/Boring Construction
0	0									
		1	0.0-1.0	1.0	0.0	X	Diagonal lines	0.0'-1.0') CLAY, low plasticity; some fine sand, trace small to large pebbles, subrounded; moist; soft; brown (10YR 4/3).		
		2	1.0-2.0	1.0	0.0		Small dots	(1.0'-2.0') SAND, fine to coarse, subangular; some small pebbles to medium cobbles, subangular to subrounded; little debris, coal, glass; poorly sorted; moist; black (10YR 2/1).		
		3	2.0-4.5	2.5	0.0		Small dots	(2.0'-4.5') SAND, fine to coarse, subangular; some small pebbles to medium cobbles, subrounded to subangular; little debris, coal, glass, metal, slag; poorly sorted; moist; brown (10YR 5/3). NOTE: Red discoloration.		
		4	4.5-6.5	2.0	0.0	X	Small dots	(4.5'-6.5') SAND, fine to coarse, subrounded to subangular; some granules to small pebbles, subrounded; trace debris, glass; poorly sorted; wet; brown (10YR 4/3).		
		5	6.5-8.5	2.0	0.0	X	Diagonal lines	(6.5'-8.5') CLAY, high plasticity; trace granules, subangular; moist; stiff; dark gray (10YR 4/1).		
								End of boring at 8.6' bgs.		
-10	-10									

	<b>Remarks:</b> bgs = below ground surface Groundwater encountered from 4.5'-6.5' bgs. No odor or staining observed.
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# Boring Log .

**Project No.:** 01-4172-0

**Boring No.:** SB-A16-HV178

**Project Name:** RACER Lansing Plants

**Date Drilled:** 11/28/12

**Facility ID#:**

**Drill Rig:** Geoprobe

**Logged By:** Alexander Villhauer

**Sampling Method:** Dual Tube DT22

SUBSURFACE PROFILE			SAMPLE		
Depth (ft.)	Boring Profile	Description and Comments	Sample # Depth	Blow Counts	PID (ppm)
		Ground Surface			
0		<b>(0.0 - 0.3) TOPSOIL / GRASS</b>	HV-178 0.0' - 1.0'	-	0.0
2		<b>SP- (0.3 - 3.5) SAND</b> fine to medium; well sorted; moist; dark yellowish brown (10YR 4/6)		-	0.0
4		<b>SWG- (3.5 - 6.0) SAND</b> fine to coarse; subangular; some granules, angular; some concrete and organic debris, poorly sorted; moist; very dark brown (10YR 2/2)		-	0.0
6		<b>CH- (6.0 - 15.0) CLAY</b> high plasticity; trace fine sand, moist; soft; dark gray (10YR 4/2)	HV-178 5.0' - 6.0'	-	0.0
8				-	0.0
10				-	0.0
12				-	0.0
14				-	0.0
16		<b>SW- (15.0 - 17.5) SAND</b> fine to coarse; subangular; little granules to small pebbles, subrounded; poorly sorted; saturated; dark gray (10YR 4/1)		-	0.0
18		<b>CH- (17.5 - 25.0) CLAY</b> high plasticity; trace fine sand, trace small pebbles, subangular; moist; medium stiff; gray (10YR 4/1)	14.0' - 18.0'	-	0.0
20				-	0.0
22				-	0.0
24				-	0.0
24			HV-178 24.0' - 25.0'	-	0.0
26					

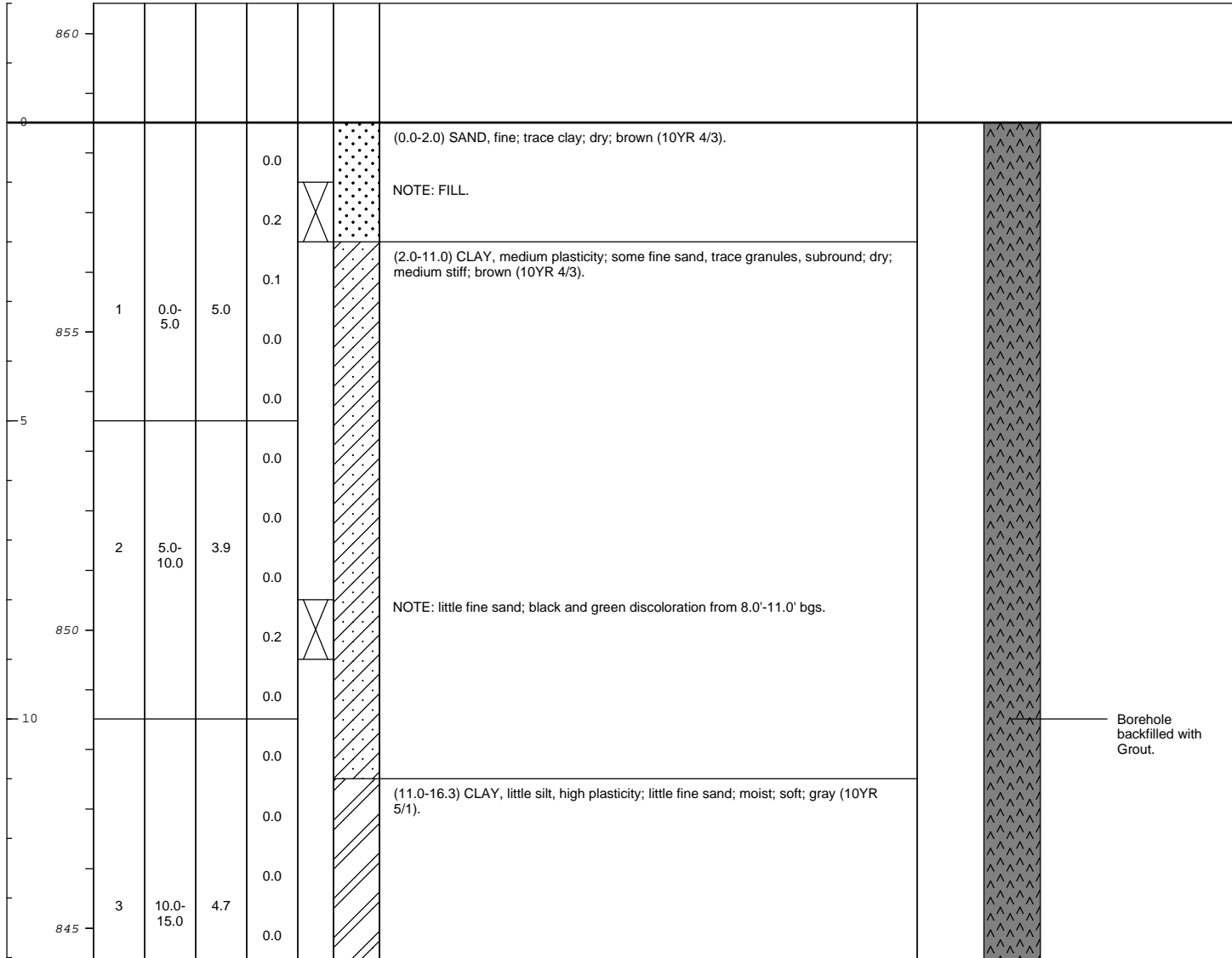
No Well Installed


**Completion Notes:** End Of Boring at 25' bgs hole filled with bentonite grout

- The indicated stratification lines are approximate in situ. The transitions between materials may be gradual.
- Boring backfilled with natural soils unless otherwise noted.

<b>Date Start/Finish:</b> 6/6/2012 <b>Drilling Company:</b> Stock <b>Driller's Name:</b> Jake <b>Drilling Method:</b> Geoprobe <b>Sampling Method:</b> Dual-tube <b>Rig Type:</b> Geoprobe	<b>Northing:</b> 452647.22 <b>Easting:</b> 13065156.07 <b>Casing Elevation:</b> NA  <b>Borehole Depth:</b> 20.0' bgs <b>Surface Elevation:</b> 585.51  <b>Descriptions By:</b> A. Villhaues	<b>Well/Boring ID:</b> SB-A16-HX162  <b>Client:</b> RACER Trust  <b>Location:</b> Lansing, MI
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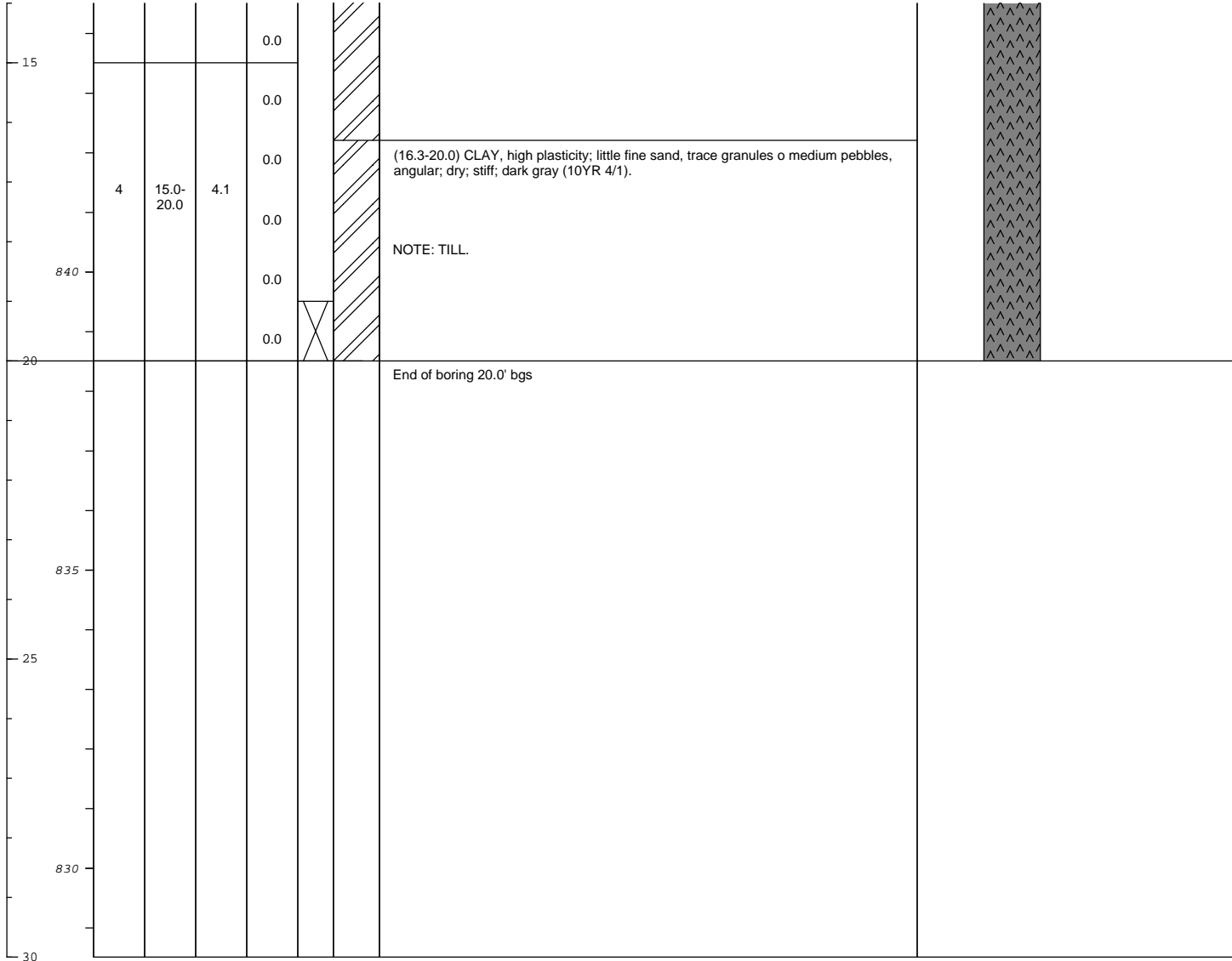
DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
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	<b>Remarks:</b> BGS = Below ground surface  Groundwater not encountered No Odor or Staining detected
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<b>Date Start/Finish:</b> 6/6/2012 <b>Drilling Company:</b> Stock <b>Driller's Name:</b> Jake <b>Drilling Method:</b> Geoprobe <b>Sampling Method:</b> Dual-tube <b>Rig Type:</b> Geoprobe	<b>Northing:</b> 452647.22 <b>Easting:</b> 13065156.07 <b>Casing Elevation:</b> NA  <b>Borehole Depth:</b> 20.0' bgs <b>Surface Elevation:</b> 585.51  <b>Descriptions By:</b> A. Villhaues	<b>Well/Boring ID:</b> SB-A16-HX162  <b>Client:</b> RACER Trust  <b>Location:</b> Lansing, MI
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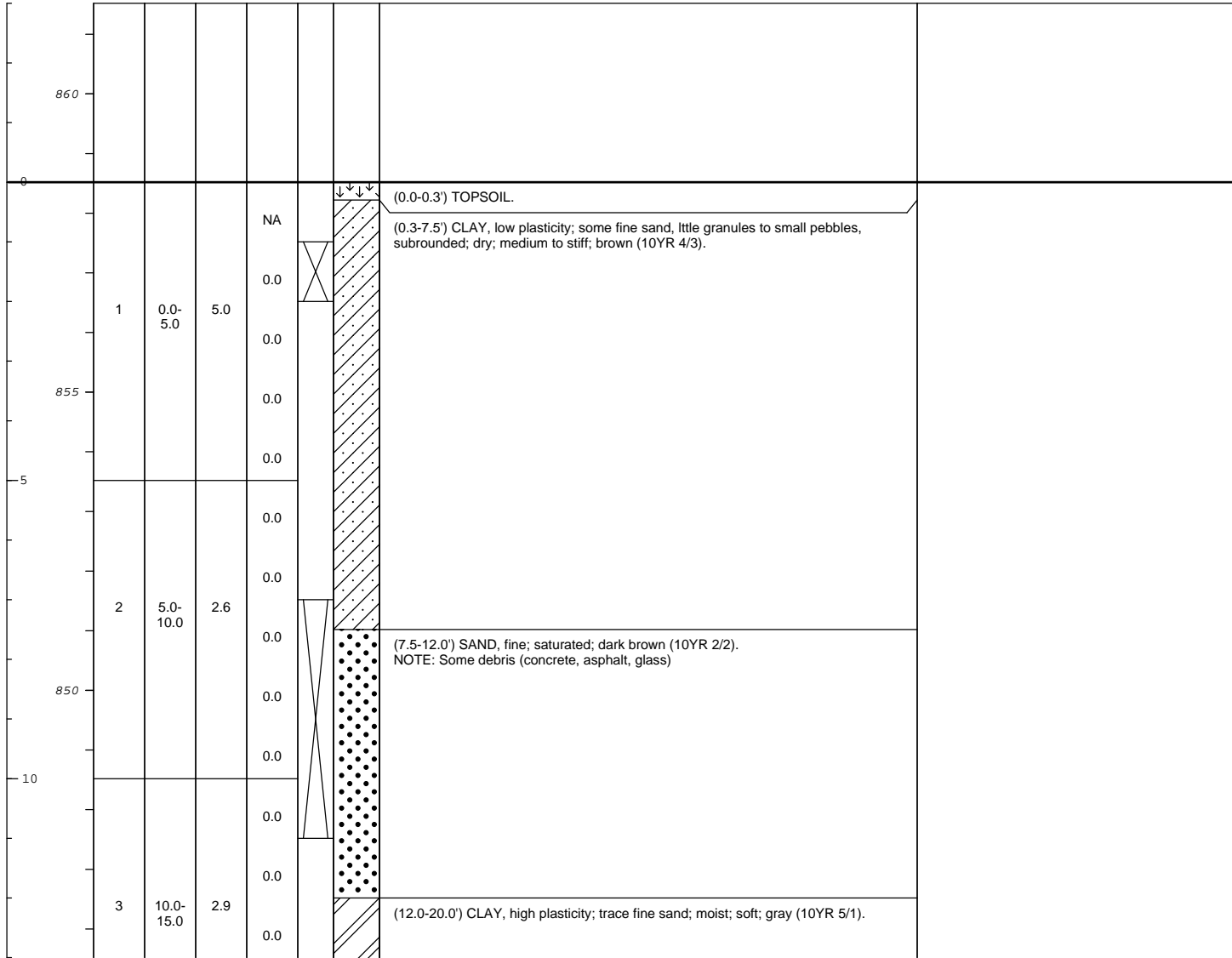
DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
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	<b>Remarks:</b> BGS = Below ground surface  Groundwater not encountered No Odor or Staining detected
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<b>Date Start/Finish:</b> 9.20.12 <b>Drilling Company:</b> PME <b>Driller's Name:</b> Steve / Kelly <b>Drilling Method:</b> Geoprobe <b>Sampling Method:</b> Direct Push <b>Rig Type:</b> Geoprobe	<b>Northing:</b> 452646.0408 <b>Easting:</b> 13065185.87 <b>Casing Elevation:</b> NA  <b>Borehole Depth:</b> 20.0' bgs <b>Surface Elevation:</b> 858.52  <b>Descriptions By:</b> Alex Villhauer	<b>Well/Boring ID:</b> SB-A16-HX165  <b>Client:</b> RACER  <b>Location:</b> RACER Lansing Plant 3
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DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
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	<b>Remarks:</b> bgs = below ground surface Groundwater encountered from 7.5'-12.0' bgs. No odor or staining observed.
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<b>Date Start/Finish:</b> 9.20.12 <b>Drilling Company:</b> PME <b>Driller's Name:</b> Steve / Kelly <b>Drilling Method:</b> Geoprobe <b>Sampling Method:</b> Direct Push <b>Rig Type:</b> Geoprobe	<b>Northing:</b> 452646.0408 <b>Easting:</b> 13065185.87 <b>Casing Elevation:</b> NA  <b>Borehole Depth:</b> 20.0' bgs <b>Surface Elevation:</b> 858.52  <b>Descriptions By:</b> Alex Villhauer	<b>Well/Boring ID:</b> SB-A16-HX165  <b>Client:</b> RACER  <b>Location:</b> RACER Lansing Plant 3
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DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
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845					0.0				
15		4	15.0-20.0	3.8	0.0				
840					0.0				
20					0.0			End of boring at 20.0' bgs.	
835									
25									
830									

	<b>Remarks:</b> bgs = below ground surface Groundwater encountered from 7.5'-12.0' bgs. No odor or staining observed.
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## Boring Log .

**Project No.:** 01-4172-0

**Boring No.:** SB-A16-HX176

**Project Name:** RACER Lansing Plants

**Date Drilled:** 11/28/12

**Facility ID#:**

**Drill Rig:** Geoprobe

**Logged By:** Alexander Villhauer

**Sampling Method:** Dual Tube DT22

SUBSURFACE PROFILE			SAMPLE			
Depth (ft.)	Boring Profile	Description and Comments	Sample # Depth	Blow Counts	PID (ppm)	
		Ground Surface				
0	(0.0 - 0.3) TOPSOIL / GRASS  CL- (0.3 - 6.0) CLAY low plasticity; little fine sand, trace granules to small pebbles, subangular; moist; medium stiff; brown (10YR 4/3)  Note: crushed brick and glass @ 4.0' - 5.0'		HX-176 0.0' - 1.0'	-	0.0	
2				-	0.0	
4				-	0.0	
6				-	0.0	
8					-	0.0
10					-	0.0
12					-	0.0
14					-	0.0
16					-	0.0
18					-	0.0
20	SP- (19.0 - 22.0) SAND fine; well sorted; saturated; gray (10YR 5/1)		HX-176	-	0.0	
22				-	0.0	
24	CH- (22.0 - 25.0) CLAY high plasticity; trace fine sand, trace small pebbles, subangular; moist; medium stiff; gray (10YR 5/1)		HX-176 19.0' - 23.0'	-	0.0	
26				-	0.0	

No Well Installed

**Completion Notes:** End Of Boring at 25' bgs hole filled with bentonite grout

- The indicated stratification lines are approximate in situ. The transitions between materials may be gradual.
- Boring backfilled with natural soils unless otherwise noted.



# Boring Log .

**Project No.:** 01-4172-0

**Boring No.:** SB-A16-HY168

**Project Name:** RACER Lansing Plants

**Date Drilled:** 11/09/12

**Facility ID#:**

**Drill Rig:** Geoprobe

**Logged By:** Alexander Villhauer

**Sampling Method:** Dual Tube DT22

SUBSURFACE PROFILE			SAMPLE			
Depth (ft.)	Boring Profile	Description and Comments	Sample # Depth	Blow Counts	PID (ppm)	No Well Installed
0		Ground Surface				
0		<b>CL- (0.0 - 6.5) CLAY</b> low plasticity; little fine sand, trace granules to small pebbles, subangular; moist; medium stiff; brown (10YR 4/3)		-	0.0	
2			HY-168 1.0' - 2.0'	-	0.0	
4			-	0.0		
6			-	0.0		
6			HY-168	-	0.0	
8		<b>SWG- (6.5 - 10.0) SAND</b> fine to coarse; some granules to small pebbles, angular; little concrete and organic debris, poorly sorted; saturated; very dark brown (10YR 2/2)		-	0.0	
8			-	0.0		
10			-	0.0		
10			6.0' - 10.0'	-	0.0	
12		<b>CH- (10.0 - 20.0) CLAY</b> high plasticity; trace small pebbles, angular; moist; soft; gray (10YR 5/1)  Note: stiffness increase to medium stiff at 19.5'  Note: greenish discoloration 10.0' - 13.0'		-	0.0	
12			HY-168 11.0' - 12.0'	-	0.0	
14			-	0.0		
16			-	0.0		
16			-	0.0		
18			HY-168 17.0' - 18.0'	-	0.0	
18			-	0.0		
20	-	0.0				

**Completion Notes:** End Of Boring at 20' bgs hole filled with bentonite grout

- The indicated stratification lines are approximate in situ. The transitions between materials may be gradual.
- Boring backfilled with natural soils unless otherwise noted.



## Boring Log .

**Project No.:** 01-4172-0

**Boring No.:** SB-A16-IE168

**Project Name:** RACER Lansing Plants

**Date Drilled:** 11/28/12

**Facility ID#:**

**Drill Rig:** Geoprobe

**Logged By:** Alexander Villhauer

**Sampling Method:** Dual Tube DT22

SUBSURFACE PROFILE			SAMPLE			
Depth (ft.)	Boring Profile	Description and Comments	Sample # Depth	Blow Counts	PID (ppm)	No Well Installed
0		Ground Surface				
0.0 - 1.0'		<b>(0.0 - 0.3) TOPSOIL / GRASS</b>	IE-168	-	0.0	
1.0 - 4.8'		<b>CL- (0.3 - 4.8) CLAY</b> low plasticity; little fine sand, trace granules to small pebbles, subangular; moist; medium stiff; brown (10YR 4/3)		-	0.0	
4.8 - 7.0'		<b>SWG- (4.8 - 7.0) SAND</b> fine to coarse, subangular; some granules to small pebbles, some concrete and organic debris, trace clay, poorly sorted; moist; very dark brown (10YR 2/2)		-	0.0	
7.0 - 11.5'		<b>CH- (7.0 - 11.5) CLAY</b> high plasticity; moist; soft; gray (10YR 5/1)	IE-168	-	0.0	
11.5 - 20.0'		<b>CH- (11.5 - 20.0) CLAY</b> high plasticity; trace fine sand, trace granules to small pebbles, angular-subangular; moist; medium stiff; gray (10YR 5/1)		-	0.0	
20.0 - 22.3'		<b>SM- (20.0 - 22.3) SAND</b> fine; some silt, saturated; gray (10YR 5/1)		-	0.0	
22.3 - 25.0'		<b>CH- (22.3 - 25.0) CLAY</b> high plasticity; little silt, trace fine sand, trace small pebbles, angular; moist; medium stiff; gray (10YR 5/1)		-	0.0	

**Completion Notes:** End Of Boring at 25' bgs hole filled with bentonite grout

- The indicated stratification lines are approximate in situ. The transitions between materials may be gradual.
- Boring backfilled with natural soils unless otherwise noted.

<b>Date Start:</b> 7-10-2013 <b>Date Finish:</b> 7-10-2013 <b>Drilling Company:</b> PM <b>Driller's Name:</b> Steve / Cliff <b>Drilling Method:</b> Direct Push Dual Tube <b>Sampling Method:</b> HA to 5.0' bgs / 5.0' Dual tube <b>Rig Type:</b> Geoprobe 6610DT <b>Water Level Start (ft. bgs.):</b> <b>Water Level Finish (ft. btoc.):</b>	<b>Northing:</b> <b>Easting:</b> <b>Casing Elevation:</b>  <b>Borehole Depth (ft. bgs.):</b> 25.0' bgs <b>Surface Elevation:</b>  <b>Descriptions By:</b> C.Snyder	<b>Well/Boring ID:</b> SB-A16-IL168  <b>Client:</b> RACER  <b>Location:</b> RACER Lansing Plant 3 2801 West Saginaw Lansing, MI 48909  <b>Weather Conditions:</b> 86, Partly Cloudy
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DEPTH (feet bgs.)	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headpace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Water Level (ft. bgs.)	Well/Boring Construction
0	0									
		1	0-1'	1.0	0.0			(0.0'-0.3') TOPSOIL/GRASS		
		2	1-2'	1.0	0.0			(0.3'-1.0') SAND, very fine to fine, little silt, trace clay; poorly sorted; dry; olive brown (2.5Y 4/5).		
		3	2-3'	1.0	0.4			(1.0'-2.0') SAND, fine to very coarse, little granules, subangular to angular, trace small to medium pebbles, poorly sorted; dry, dark brown (7.5YR 3/4).		
		4	3-4'	1.0	0.2			(2.0'-3.0') SAND, very fine to medium, little coarse to very coarse; trace small to medium pebbles, subangular; trace wood; poorly sorted; dry; very dark grayish brown (10YR 3/2).		
		5	4-5'	1.0	0.5			(3.0'-5.0') CLAY, low plasticity; some silt, no dilatancy, little very fine sand; trace small pebbles, subangular; moist; soft; grayish brown (2.5Y 5/2) with yellowish brown (10YR 5/6) mottling.		
-5	-5				0.0			(5.0'-7.0') SILT, little clay, little very fine sand; trace granules to small pebbles, subangular to subrounded; dry; stiff; brown (10YR 4/3).		
		6	5-10'	2.4	0.0			(7.0'-10.1') CLAY, some silt, low plasticity, little very fine sand, trace medium pebbles, subrounded to subangular; dry, medium stiff, dark yellowish brown (10YR 4/6) with olive gray (5Y 4/2) mottling.		
					0.0					
					0.2					
-10	-10				0.0			(10.1'-12.0') SAND and SILT, very fine to fine, medium plasticity, rapid dilatancy; wet, soft, gray (10YR 3/1).		
					0.0					
		7	10-15'	4.0	0.6			(12.0'-15.0') SILT, little clay, medium plasticity, rapid dilatancy, little very fine sand; wet, soft, gray (10YR 5/1).		

	<b>Remarks:</b> bgs = below ground surface Groundwater encountered from 10.1'-15.0' and 17.0'-25.0' bgs. No odor or staining observed.
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**Date Start:** 7-10-2013  
**Date Finish:** 7-10-2013  
**Drilling Company:** PM  
**Driller's Name:** Steve / Cliff  
**Drilling Method:** Direct Push Dual Tube  
**Sampling Method:** HA to 5.0' bgs / 5.0' Dual tube  
**Rig Type:** Geoprobe 6610DT  
**Water Level Start (ft. bgs.):**  
**Water Level Finish (ft. btoc.):**

**Northing:**  
**Easting:**  
**Casing Elevation:**  
**Borehole Depth (ft. bgs.):** 25.0' bgs  
**Surface Elevation:**  
**Descriptions By:** C.Snyder

**Well/Boring ID:** SB-A16-IL168  
**Client:** RACER  
**Location:** RACER Lansing Plant 3  
 2801 West Saginaw  
 Lansing, MI 48909  
**Weather Conditions:** 86, Partly Cloudy

DEPTH (feet bgs.)	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Water Level (ft. bgs.)	Well/Boring Construction
15	-15				0.0			NOTE: Sand and silt seam, medium to very coarse; wet; from 14.5'-14.7' bgs.		
		8	15-20'	3.9	0.0			(15.0'-17.0') SILT and CLAY, no dilatancy, trace granules to small pebbles, subangular; moist; medium stiff; gray (10YR 5/2).		
					0.0			(17.0'-19.5') SAND, very fine to coarse, some silt; rapid dilatancy; trace granules to small pebbles, subrounded to subangular; poorly sorted; wet; gray (10YR 5/1).		
20	-20				0.0			(19.5'-22.5') CLAY, some silt, little very fine sand, trace granules to small pebbles, subrounded to subangular, wet; gray (10YR 5/1).		
		9	20-25'	4.0	0.0			(22.5'-25.0') CLAY and SILT, rapid dilatancy; trace small to medium pebbles, subrounded to subangular; moist to wet, medium stiff, gray (10YR 5/1).		
25	-25				0.0			End of boring at 25.0' bgs.		

**Remarks:** bgs = below ground surface  
 Groundwater encountered from 10.1'-15.0' and 17.0'-25.0' bgs.  
 No odor or staining observed.





**Attachment 2**

Laboratory Analytical Report



# Analytical Laboratory Report

Report ID: S60634.01(01)  
Generated on 04/21/2014

Report to

Attention: Randy Christensen  
Arcadis  
10559 Citation Drive  
Suite 100  
Brighton, MI 48116

Phone: 810-225-1940 FAX: 810-229-8837  
Email: Randy.Christensen@arcadis-us.com

Additional Contacts: Patrick Curry

Report produced by

Merit Laboratories, Inc.  
2680 East Lansing Drive  
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Contacts for report questions:

Kevin George (kgeorge@meritlabs.com)  
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S60634.01-S60634.04  
Project: B0064480.0014.00102 / RACER Lansing Plant 3  
Collected Date: 04/09/2014 - 04/10/2014  
Submitted Date/Time: 04/11/2014 08:00  
Sampled by: Alex Villhauer  
P.O. #: B0064480.0014.00102

Report Notes

Results relate only to items tested as received by the laboratory.  
Methods may be modified for improved performance.  
Results reported on a dry weight basis where applicable.  
'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).  
Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.  
Report shall not be reproduced except in full, without the written approval of Merit Laboratories, Inc..

Laboratory Certifications:

Michigan DNRE (#9956), DOD/ISO 17025 (#69699), WBENC (#2005110032), Ohio EPA (#CL0002)  
IN Drinking Water (#C-MI-07), NELAC NY (#11814), NCDENR (#680), NC Drinking Water (#26702)  
Some analytes reported may not be certified. Full certification lists are available upon request.

Violetta F. Murshak  
Laboratory Director



# Analytical Laboratory Report

## Sample Summary (4 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S60634.01	SB-AI6-HU181E-E_0-1	Soil	04/09/2014 14:40
S60634.02	SB-AI6-HU181E-E_4-4.5	Soil	04/09/2014 14:47
S60634.03	SB-AI6-HU181E-E_7.5-8.5	Soil	04/09/2014 14:55
S60634.04	AI6-HU181E-Composite	Soil	04/10/2014 16:45



# Analytical Laboratory Report

Lab Sample ID: S60634.01  
 Sample Tag: SB-AI6-HU181E-E\_0-1  
 Collected Date/Time: 04/09/2014 14:40  
 Matrix: Soil  
 COC Reference: 73330

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	9.6	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	Limits	Flags
<b>Extraction / Prep.</b>								
Mercury Digestion	Completed			SW7471B	04/15/14 11:45	CCM		
Metal Digestion	Completed			SW3050B	04/18/14 09:00	PER		
<b>Inorganics</b>								
Total Solids	87	%	1	Std M 2540 B	04/13/14 16:31	WAR		
<b>Metals</b>								
Antimony	Not detected	mg/kg	0.50	SW6020A	04/18/14 15:40	PER		
Arsenic	3.10	mg/kg	0.20	SW6020A	04/18/14 15:40	PER		
Barium	39.3	mg/kg	1.0	SW6020A	04/18/14 15:40	PER		
Cadmium	0.17	mg/kg	0.20	SW6020A	04/18/14 15:40	PER		b
Chromium	8.39	mg/kg	0.50	SW6020A	04/18/14 15:40	PER		
Cobalt	4.22	mg/kg	0.50	SW6020A	04/18/14 15:40	PER		
Copper	19.5	mg/kg	0.50	SW6020A	04/18/14 15:40	PER		
Lead	9.47	mg/kg	0.30	SW6020A	04/18/14 15:40	PER		
Magnesium	20,900	mg/kg	5.0	SW6020A	04/18/14 12:09	PER		
Manganese	311	mg/kg	0.50	SW6020A	04/18/14 15:40	PER		
Mercury	0.0281	mg/kg	0.0056	SW7471B	04/15/14 16:45	CCM		
Nickel	10.9	mg/kg	0.50	SW6020A	04/18/14 15:40	PER		
Selenium	0.34	mg/kg	0.40	SW6020A	04/18/14 15:40	PER		b
Silver	Not detected	mg/kg	0.20	SW6020A	04/18/14 15:40	PER		
Vanadium	9.43	mg/kg	0.50	SW6020A	04/18/14 15:40	PER		
Zinc	33.2	mg/kg	0.50	SW6020A	04/18/14 15:40	PER		

b-Value detected less than reporting limit, but greater than MDL



# Analytical Laboratory Report

Lab Sample ID: S60634.02  
 Sample Tag: SB-AI6-HU181E-E\_4-4.5  
 Collected Date/Time: 04/09/2014 14:47  
 Matrix: Soil  
 COC Reference: 73330

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	9.6	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	Limits	Flags
<b>Extraction / Prep.</b>								
Mercury Digestion	Completed			SW7471B	04/15/14 11:45	CCM		
Metal Digestion	Completed			SW3050B	04/18/14 09:00	PER		
<b>Inorganics</b>								
Total Solids	82	%	1	Std M 2540 B	04/13/14 16:31	WAR		
<b>Metals</b>								
Antimony	Not detected	mg/kg	0.50	SW6020A	04/18/14 15:25	PER		
Arsenic	8.17	mg/kg	0.20	SW6020A	04/18/14 15:25	PER		
Barium	178	mg/kg	1.0	SW6020A	04/18/14 15:25	PER		
Cadmium	4.09	mg/kg	0.20	SW6020A	04/18/14 15:25	PER		
Chromium	6.53	mg/kg	0.50	SW6020A	04/18/14 15:25	PER		
Cobalt	3.22	mg/kg	0.50	SW6020A	04/18/14 15:25	PER		
Copper	77.1	mg/kg	0.50	SW6020A	04/18/14 15:25	PER		
Lead	298	mg/kg	0.30	SW6020A	04/18/14 15:25	PER		
Magnesium	15,500	mg/kg	5.0	SW6020A	04/18/14 12:03	PER		
Manganese	232	mg/kg	0.50	SW6020A	04/18/14 15:25	PER		
Mercury	0.2094	mg/kg	0.0060	SW7471B	04/15/14 16:03	CCM		
Nickel	9.23	mg/kg	0.50	SW6020A	04/18/14 15:25	PER		
Selenium	0.44	mg/kg	0.40	SW6020A	04/18/14 15:25	PER		
Silver	0.19	mg/kg	0.20	SW6020A	04/18/14 15:25	PER		b
Vanadium	12.1	mg/kg	0.50	SW6020A	04/18/14 15:25	PER		
Zinc	990	mg/kg	0.50	SW6020A	04/18/14 15:25	PER		

b-Value detected less than reporting limit, but greater than MDL



# Analytical Laboratory Report

Lab Sample ID: S60634.03  
 Sample Tag: SB-AI6-HU181E-E\_7.5-8.5  
 Collected Date/Time: 04/09/2014 14:55  
 Matrix: Soil  
 COC Reference: 73330

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	9.6	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	Limits	Flags
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### Extraction / Prep.

Mercury Digestion	Completed			SW7471B	04/15/14 11:45	CCM		
Metal Digestion	Completed			SW3050B	04/18/14 09:00	PER		

### Inorganics

Total Solids	79	%	1	Std M 2540 B	04/13/14 16:31	WAR		
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### Metals

Antimony	Not detected	mg/kg	0.50	SW6020A	04/18/14 15:33	PER		
Arsenic	0.74	mg/kg	0.20	SW6020A	04/18/14 15:33	PER		
Barium	80.1	mg/kg	1.0	SW6020A	04/18/14 15:33	PER		
Cadmium	0.81	mg/kg	0.20	SW6020A	04/18/14 15:33	PER		
Chromium	9.28	mg/kg	0.50	SW6020A	04/18/14 15:33	PER		
Cobalt	4.36	mg/kg	0.50	SW6020A	04/18/14 15:33	PER		
Copper	35.6	mg/kg	0.50	SW6020A	04/18/14 15:33	PER		
Lead	11.9	mg/kg	0.30	SW6020A	04/18/14 15:33	PER		
Magnesium	3,610	mg/kg	5.0	SW6020A	04/18/14 12:06	PER		
Manganese	63.7	mg/kg	0.50	SW6020A	04/18/14 15:33	PER		
Mercury	0.0680	mg/kg	0.0063	SW7471B	04/15/14 16:05	CCM		
Nickel	11.4	mg/kg	0.50	SW6020A	04/18/14 15:33	PER		
Selenium	0.46	mg/kg	0.40	SW6020A	04/18/14 15:33	PER		
Silver	Not detected	mg/kg	0.20	SW6020A	04/18/14 15:33	PER		
Vanadium	19.3	mg/kg	0.50	SW6020A	04/18/14 15:33	PER		
Zinc	44.2	mg/kg	0.50	SW6020A	04/18/14 15:33	PER		



# Analytical Laboratory Report

Lab Sample ID: S60634.04  
 Sample Tag: A16-HU181E-Composite  
 Collected Date/Time: 04/10/2014 16:45  
 Matrix: Soil  
 COC Reference: 73330

## Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	32oz Glass	None	Yes	9.6	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	Limits	Flags
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### Extraction / Prep.

Mercury Digestion	Completed			SW7471B	04/15/14 11:45	CCM		
Mercury Digestion	Completed			SW7471B	04/17/14 11:57	CCM		
Metal Digestion	Completed			SW3050B	04/18/14 09:00	PER		
Metal Digestion	Completed			SW3015A	04/17/14 14:00	PER		

### TCLP Extraction

Initial Sample pH	9.18			SW1311	04/15/14 17:20	WAR		
pH after 3.5 ml HCl	2.68			SW1311	04/15/14 17:20	WAR		
% Solids	100			SW1311	04/15/14 17:20	WAR		
Sample Used g	40			SW1311	04/15/14 17:20	WAR		
Final Volume mL	800			SW1311	04/15/14 17:20	WAR		
TCLP Extraction Fluid	1			SW1311	04/15/14 17:20	WAR		
Final Extract pH	5.49			SW1311	04/15/14 17:20	WAR		

### Inorganics

Total Solids	75	%	1	Std M 2540 B	04/13/14 16:31	WAR		
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### Metals

Antimony	Not detected	mg/kg	0.50	SW6020A	04/18/14 15:35	PER		
Arsenic	12.4	mg/kg	0.20	SW6020A	04/18/14 15:35	PER		
Barium	226	mg/kg	1.0	SW6020A	04/18/14 15:35	PER		
Cadmium	3.37	mg/kg	0.20	SW6020A	04/18/14 15:35	PER		
Chromium	14.9	mg/kg	0.50	SW6020A	04/18/14 15:35	PER		
Cobalt	4.86	mg/kg	0.50	SW6020A	04/18/14 15:35	PER		
Copper	111	mg/kg	0.50	SW6020A	04/18/14 15:35	PER		
Lead	386	mg/kg	0.30	SW6020A	04/18/14 15:35	PER		
Magnesium	12,900	mg/kg	5.0	SW6020A	04/18/14 12:07	PER		
Manganese	366	mg/kg	0.50	SW6020A	04/18/14 15:35	PER		
Mercury	1.3410	mg/kg	0.0255	SW7471B	04/15/14 16:11	CCM		
Nickel	13.7	mg/kg	0.50	SW6020A	04/18/14 15:35	PER		
Selenium	0.47	mg/kg	0.40	SW6020A	04/18/14 15:35	PER		
Silver	0.47	mg/kg	0.20	SW6020A	04/18/14 15:35	PER		
Vanadium	18.3	mg/kg	0.50	SW6020A	04/18/14 15:35	PER		
Zinc	998	mg/kg	0.50	SW6020A	04/18/14 15:35	PER		
Antimony, TCLP	Not detected	mg/L	0.05	SW6020A	04/17/14 15:37	PER		
Arsenic, TCLP	Not detected	mg/L	0.02	SW6020A	04/17/14 15:37	PER	5.0	
Barium, TCLP	7.77	mg/L	0.05	SW6020A	04/17/14 15:37	PER	100.0	
Cadmium, TCLP	0.023	mg/L	0.005	SW6020A	04/17/14 15:37	PER	1.0	
Chromium, TCLP	Not detected	mg/L	0.05	SW6020A	04/17/14 15:37	PER	5.0	
Cobalt, TCLP	Not detected	mg/L	0.05	SW6020A	04/17/14 15:37	PER		
Copper, TCLP	Not detected	mg/L	0.05	SW6020A	04/17/14 15:37	PER		
Lead, TCLP	0.30	mg/L	0.03	SW6020A	04/17/14 15:37	PER	5.0	
Magnesium, TCLP	40.9	mg/L	0.5	SW6020A	04/18/14 11:37	PER		



# Analytical Laboratory Report

Lab Sample ID: S60634.04 (continued)

Sample Tag: A16-HU181E-Composite

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	Limits	Flags
<b>Metals (continued)</b>								
Manganese, TCLP	2.18	mg/L	0.05	SW6020A	04/17/14 15:37	PER		
Mercury, TCLP	Not detected	mg/L	0.0002	SW7471B	04/17/14 15:09	CCM	0.2	
Nickel, TCLP	Not detected	mg/L	0.05	SW6020A	04/17/14 15:37	PER		
Selenium, TCLP	Not detected	mg/L	0.05	SW6020A	04/17/14 15:37	PER	1.0	
Silver, TCLP	0.005	mg/L	0.005	SW6020A	04/17/14 15:37	PER	5.0	
Vanadium, TCLP	Not detected	mg/L	0.04	SW6020A	04/17/14 15:37	PER		
Zinc, TCLP	11.9	mg/L	0.05	SW6020A	04/17/14 15:37	PER		

