



Drilling Contractor: McRae's Environmental/Uniwide Drilling
 Drilling Method : Vacuum Truck/Solid Stem Auger
 Borehole Dia. (m) : 0.15
 Pipe/Slotted Pipe Dia. (m): 0.05, 0.05

Date Monitored : 2011 04 13
 Ground Surf Elev. (m) : 9.133
 Top of Casing Elev. (m) : 9.707
 Northing: 100 Easting: 100

Project Number :133263
 Borehole Logged By :RMT
 Date Drilled :2010 09 22
 Log Typed By :AR

| Depth in Metres | Drilling Legend | Water/NAPL Levels | Stratigraphy Plot | Sample Interval/ Core Run | Sample Number | Blow Count | % Recovery | Soil Vapour (ppm) | Well Name: MW10-11 |
|-----------------|---|--|-------------------|------------------------------|---------------|------------|------------|-------------------|--------------------|
| | <ul style="list-style-type: none"> Sample Interval Auger Flight Vac. Extraction | <ul style="list-style-type: none"> Water Level 1 Water Level 2 NAPL NAPL | | | | | | | |
| 0 | Soil Description | | | | | | | | |
| 0 | ASPHALT. SAND (FILL). | | | | 11-1 | | | ○ 25 | SAND |
| 1 | SAND, fine to medium grained, silty, dark brown, damp, rootlets, organic matter. | | | | 11-2 | | | ○ 40 | CUTTINGS |
| 1 | SILT, some fine grained sand, grey-brown, firm, damp. | | | | 11-3 | | | ○ 10 | BENTONITE |
| 2 | SILT, clayey, some fine grained sand, grey, soft, wet. | | | | 11-4 | | | ⊙ | SAND |
| 4 | SAND, fine to medium grained, trace silt, grey, soft, wet. | | | | 11-5 | | | ○ 20 | BENTONITE |
| 5 | SILT, some fine grained sand, soft, wet. | | | | 11-6 | | | | SLOUGH |
| 5 | SAND, fine grained, silty, grey, soft, wet. | | | | | | | | |
| 6 | End of borehole at 6.1 m. | | | | | | | | |

Notes:
 Bolded sample denotes sample analyzed.

attached Drawings. The gradient was approximately 0.012. Slug tests were completed on a well with representative geology. A conductivity value of approximately 6×10^{-4} m/s was measured in MW 10-2. Groundwater flow direction appeared to be north northwest during all the monitoring events, which is consistent with topography. Seasonally, groundwater appeared to be highest in winter and lowest in summer.

Inferred potentiometric contours on April 13, 2011 show that groundwater flow is to the northwest on the west portion of the Site (i.e., west of drainage channel) and north/northeast on the eastern portion of the Site (Drawing 133263-012). On April 13, 2011, depth to water below ground surface ranged from 0.53 m at MW 11-24 to 1.36 m at MW 10-17 (excluding MW 11-27 a deeper zone well). Since the depth of the buried swamp and drainage feature prior to development was approximately 0.7 m to 2.0 m, it is highly likely that the groundwater is in contact with any buried organic material and that the drainage channel will act as a preferential pathway or a groundwater divide separating flow on the west side of the Site from the east side of the Site. As expected, the hydraulic gradient appears to be flatter in the vicinity of the former swamp area and steepens toward the north. As mentioned earlier, this is discussed in more detail in the attached letters, completed as part of the background application.

Regardless of the above, background standards for iron and manganese were established by the MoE at concentrations higher than the CSR DW standards.

During none of the monitoring events was NAPL measured in any of the MWs.

Analytical results for the groundwater sampling conducted at Site wells between 2010 and 2011 indicated that all groundwater samples contained hydrocarbon and PAH concentrations less than the Standards. We note that although the groundwater table was above the well screens in some wells during some monitoring events, it was not in MWs 10-3, 10-4, 10-5, 10-6 and 10-7. MWs 10-3, 10-4, 10-5, 10-6 and 10-7 were the only wells located APECs where hydrocarbons and PAHs were PCOCs in groundwater. Typically there was 1 m of water in those wells, and the groundwater table was located within the screened interval, during the sampling of those five wells. The hydrocarbon results from the remainder of the wells, some screened slightly below the groundwater table during sampling, were ultimately not needed to characterize site conditions.