



**BURNSIDE**

[ THE DIFFERENCE IS OUR PEOPLE ]

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**Appendix L - Part 2**

**Hydrogeological Existing Conditions Review  
Report**



# BURNSIDE

[ THE DIFFERENCE IS OUR PEOPLE ]

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**Appendix A**

**Borehole Logs**

Appendix A

PROJECT: 20146456  
 LOCATION: N 4862071.08; E 632899.94

# RECORD OF BOREHOLE: C1

SHEET 1 OF 1  
 DATUM: Geodetic

BORING DATE: January 13, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD | SOIL PROFILE  |             | SAMPLES         |        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |            |                        |    | HYDRAULIC CONDUCTIVITY, k, cm/s |    |                       |          | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |       |       |
|--------------------|---------------|---|-------------|-----------------|--------|--|------------|------------------------|----|---------------------------------|----|-----------------------|----------|-------------------------|--------------------------------------|-------|-------|
|                    |               | DESCRIPTION   | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE                                       | BLOWS/0.3m | SHEAR STRENGTH Cu, kPa |    |                                 |    | WATER CONTENT PERCENT |          |                         |                                      |       |       |
|                    |               |   |             |                 |        |  |            | 20                     | 40 | 60                              | 80 | nat V. +              | rem V. ⊕ |                         |                                      | Q - ● | U - ○ |
| 0                  |               | GROUND SURFACE  |             | 213.50          |        |  |            |                        |    |                                 |    |                       |          |                         |                                      |       |       |
|                    |               | ASPHALT (210 mm thick)  |             | 0.00            |        |  |            |                        |    |                                 |    |                       |          |                         |                                      |       |       |
|                    |               | FILL - (SP) SAND, some gravel, trace fines; brown; moist  |             | 213.29          |        |  |            |                        |    |                                 |    |                       |          |                         |                                      |       |       |
|                    |               |   |             | 0.21            | 1      | AS   | -          |                        |    |                                 |    |                       |          |                         |                                      |       |       |
| 1                  |               | FILL - (Cl) sandy SILTY CLAY, some gravel, dark brown and grey; cohesive, w>PL, firm to soft  |             | 212.67          |        |  |            |                        |    |                                 |    |                       |          |                         |                                      |       |       |
|                    |               |   |             | 0.83            | 2      | SS   | 8          |                        |    |                                 |    |                       |          |                         |                                      |       |       |
|                    |               |   |             |                 | 3      | SS   | 3          |                        |    |                                 |    |                       |          |                         |                                      |       |       |
| 2                  |               | (CL) SILTY CLAY, brown to grey; cohesive, w>PL, stiff to very stiff   |             | 211.37          |        |  |            |                        |    |                                 |    |                       |          |                         |                                      |       |       |
|                    |               |   |             | 2.13            | 4      | SS   | 10         |                        |    |                                 |    |                       |          |                         |                                      |       |       |
| 3                  |               | - Becoming grey at a depth of 2.9 m   |             |                 | 5      | SS   | 16         |                        |    |                                 |    |                       |          |                         |                                      |       |       |
| 4                  |               | (CL-ML) SILTY CLAY-CLAYEY SILT and SAND, some gravel; grey (TILL); cohesive, w<PL, hard   |             | 209.46          |        |  |            |                        |    |                                 |    |                       |          |                         |                                      |       |       |
|                    |               |   |             | 4.04            | 6      | SS   | 50/0.13    |                        |    |                                 |    |                       |          |                         |                                      |       |       |
| 5                  |               |   |             |                 | 7      | SS   | 50/0.13    |                        |    |                                 |    |                       |          |                         |                                      |       |       |
| 6                  |               |   |             |                 | 8      | SS   | 50/0.08    |                        |    |                                 |    |                       |          |                         |                                      |       |       |
| 7                  |               |   |             |                 |        |  |            |                        |    |                                 |    |                       |          |                         |                                      |       |       |
| 8                  |               | END OF BOREHOLE   |             | 205.65          |        |  |            |                        |    |                                 |    |                       |          |                         |                                      |       |       |
|                    |               |   |             | 7.85            |        |  |            |                        |    |                                 |    |                       |          |                         |                                      |       |       |
| 9                  |               | NOTES:<br>1. Water was encountered at a depth of 3.1 m during drilling.<br>2. Water measured in open borehole at a depth of 4.3 m (El. 209.2m) upon completion of drilling. |             |                 |        |  |            |                        |    |                                 |    |                       |          |                         |                                      |       |       |
| 10                 |               |   |             |                 |        |  |            |                        |    |                                 |    |                       |          |                         |                                      |       |       |

GTA-BHS 001 S:\CLIENTS\REGION OF YORK\MAJOR MACKENZIE DRIVE\02 DATA\GINT\MARKHAM\_WARDEN&KENNEDY\_RD.GPJ GAL-MIS.GDT 3/23/21

PROJECT: 20146456  
 LOCATION: N 4862076.92; E 632892.20

# RECORD OF BOREHOLE: C2

SHEET 1 OF 1  
 DATUM: Geodetic

BORING DATE: January 12, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD | SOIL PROFILE  |             | SAMPLES         |        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |         |    |    | HYDRAULIC CONDUCTIVITY, k, cm/s |                  |                  |                  | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |    |
|--------------------|---------------|---|-------------|-----------------|--------|--|---------|----|----|---------------------------------|------------------|------------------|------------------|-------------------------|--------------------------------------|----|
|                    |               | DESCRIPTION   | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE                                       | 20      | 40 | 60 | 80                              | 10 <sup>-5</sup> | 10 <sup>-4</sup> | 10 <sup>-3</sup> |                         |                                      | Wp |
| 0                  |               | GROUND SURFACE  |             | 213.50          |        |  |         |    |    |                                 |                  |                  |                  |                         |                                      |    |
|                    |               | ASPHALT (315 mm thick)  |             | 0.00            |        |  |         |    |    |                                 |                  |                  |                  |                         |                                      |    |
|                    |               | Crushed granular; brown   |             | 213.18          |        |  |         |    |    |                                 |                  |                  |                  |                         |                                      |    |
|                    |               |   |             | 0.32            | 1      | AS   | -       |    |    |                                 |                  |                  |                  |                         |                                      |    |
|                    |               | FILL - (Cl) sandy SILTY CLAY, some gravel, dark brown and grey; cohesive, w>PL, stiff to firm   |             | 212.76          |        |  |         |    |    |                                 |                  |                  |                  |                         |                                      |    |
|                    |               |   |             | 0.74            | 2      | SS   | 13      |    |    |                                 |                  |                  |                  |                         |                                      | MH |
|                    |               |   |             | 211.37          |        |  |         |    |    |                                 |                  |                  |                  |                         |                                      |    |
|                    |               |   |             | 2.13            | 3      | SS   | 4       |    |    |                                 |                  |                  |                  |                         |                                      |    |
|                    |               | (CL) SILTY CLAY, brown; cohesive, w>PL, very stiff to stiff   |             | 211.37          |        |  |         |    |    |                                 |                  |                  |                  |                         |                                      |    |
|                    |               |   |             | 2.13            | 4      | SS   | 16      |    |    |                                 |                  |                  |                  |                         |                                      |    |
|                    |               |   |             | 209.46          |        |  |         |    |    |                                 |                  |                  |                  |                         |                                      |    |
|                    |               |   |             | 4.04            | 5      | SS   | 14      |    |    |                                 |                  |                  |                  |                         |                                      |    |
|                    |               | (CL-ML) SILTY CLAY-CLAYEY SILT and SAND, some gravel; grey (TILL); cohesive, w<PL, hard   |             | 209.46          |        |  |         |    |    |                                 |                  |                  |                  |                         |                                      |    |
|                    |               |   |             | 4.04            | 6      | SS   | 70      |    |    |                                 |                  |                  |                  |                         |                                      |    |
|                    |               |   |             | 205.68          |        |  |         |    |    |                                 |                  |                  |                  |                         |                                      |    |
|                    |               |   |             | 7.82            | 7      | SS   | 50/0.13 |    |    |                                 |                  |                  |                  |                         |                                      |    |
|                    |               |   |             | 205.68          |        |  |         |    |    |                                 |                  |                  |                  |                         |                                      |    |
|                    |               |   |             | 7.82            | 8      | SS   | 50/0.05 |    |    |                                 |                  |                  |                  |                         |                                      |    |
|                    |               | END OF BOREHOLE   |             | 205.68          |        |  |         |    |    |                                 |                  |                  |                  |                         |                                      |    |
|                    |               | NOTES:<br>1. Water was encountered at a depth of 6.1 m during drilling.<br>2. Water measured in open borehole at a depth of 4.3 m (El. 209.2m) upon completion of drilling. |             |                 |        |  |         |    |    |                                 |                  |                  |                  |                         |                                      |    |

GTA-BHS 001 S:\CLIENTS\REGION OF YORK\MAJOR MACKENZIE DRIVE\02 DATA\GINT\MARKHAM\_WARDEN&KENNEDY\_RD.GPJ GAL-MIS.GDT 3/23/21

PROJECT: 20146456  
 LOCATION: N 4861296.93; E 633061.47

# RECORD OF BOREHOLE: P1

SHEET 1 OF 1  
 DATUM: Geodetic

BORING DATE: January 20, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD                                     | SOIL PROFILE  |             | SAMPLES         |        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |            |                |  | HYDRAULIC CONDUCTIVITY, k, cm/s |  |                       |  | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |         |  |
|--------------------|---|---|-------------|-----------------|--------|--|------------|----------------|--|---------------------------------|--|-----------------------|--|-------------------------|--------------------------------------|---------|--|
|                    |   | DESCRIPTION   | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE                                       | BLOWS/0.3m | SHEAR STRENGTH |  |                                 |  | WATER CONTENT PERCENT |  |                         |                                      |         |  |
|                    |   |   |             |                 |        |  |            | Cu, kPa        |  | nat V. rem V.                   |  | +                     |  |                         |                                      | Q - U - |  |
| 0                  | Truck Mount B57<br>150 mm O.D. Hollow Stem Augers | GROUND SURFACE  |             | 213.50          |        |  |            |                |  |                                 |  |                       |  |                         |                                      |         |  |
|                    |   | ASPHALT (340 mm thick)  |             | 0.00            |        |  |            |                |  |                                 |  |                       |  |                         |                                      |         |  |
|                    |   | Crushed granular; brown   |             | 213.16          | 0.34   | 1A   | AS         |                |  |                                 |  |                       |  |                         |                                      |         |  |
|                    |   | FILL - (SP) SAND, some gravel; trace fines; brown; moist                                |             | 212.79          | 0.51   | 1B   | AS         |                |  |                                 |  |                       |  |                         |                                      |         |  |
| 1                  |   | (CL) SILTY CLAY and SAND, some gravel; brown (TILL); cohesive, w<PL, very stiff to hard |             | 212.79          | 0.71   | 2  | SS         | 22             |  |                                 |  |                       |  |                         |                                      |         |  |
|                    |   |   |             |                 |        | 3  | SS         | 97             |  |                                 |  |                       |  |                         |                                      |         |  |
| 2                  |   | END OF BOREHOLE   |             | 211.52          | 1.98   |  |            |                |  |                                 |  |                       |  |                         |                                      |         |  |
| 3                  |   | NOTE:<br>1. Borehole open and dry upon completion of drilling.                          |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |         |  |
| 4                  |   |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |         |  |
| 5                  |   |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |         |  |
| 6                  |   |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |         |  |
| 7                  |   |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |         |  |
| 8                  |   |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |         |  |
| 9                  |   |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |         |  |
| 10                 |   |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |         |  |

GTA-BHS 001 S:\CLIENTS\REGION OF YORK\MAJOR MACKENZIE DRIVE\02 DATA\GINT\MARKHAM\_WARDEN&KENNEDY\_RD.GPJ GAL-MIS.GDT 3/23/21

PROJECT: 20146456  
 LOCATION: N 4861450.81; E 633030.53

# RECORD OF BOREHOLE: P2

SHEET 1 OF 1  
 DATUM: Geodetic

BORING DATE: January 6, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD                                     | SOIL PROFILE  |             | SAMPLES         |        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |            |                        |    | HYDRAULIC CONDUCTIVITY, k, cm/s |    |                       |          | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |       |       |
|--------------------|---|---|-------------|-----------------|--------|--|------------|------------------------|----|---------------------------------|----|-----------------------|----------|-------------------------|--------------------------------------|-------|-------|
|                    |   | DESCRIPTION   | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE                                       | BLOWS/0.3m | SHEAR STRENGTH Cu, kPa |    |                                 |    | WATER CONTENT PERCENT |          |                         |                                      |       |       |
|                    |   |   |             |                 |        |  |            | 20                     | 40 | 60                              | 80 | nat V. +              | rem V. ⊕ |                         |                                      | Q - ● | U - ○ |
| 0                  | Truck Mount B57<br>200 mm O.D. Hollow Stem Augers | GROUND SURFACE  |             | 217.60          |        |  |            |                        |    |                                 |    |                       |          |                         |                                      |       |       |
|                    |   | ASPHALT (200 mm thick)  |             | 0.00            |        |  |            |                        |    |                                 |    |                       |          |                         |                                      |       |       |
|                    |   | Crushed granular; brown   |             | 217.40          |        |  |            |                        |    |                                 |    |                       |          |                         |                                      |       |       |
|                    |   |   |             | 0.20            | 1      | AS   | -          |                        |    |                                 |    |                       |          |                         |                                      |       |       |
| 1                  |   | FILL - (SP) SAND, trace fines; brown; non-cohesive, moist, compact                        |             | 216.85          |        |  |            |                        |    |                                 |    |                       |          |                         |                                      |       |       |
|                    |   |   |             | 0.75            | 2      | SS   | 17         |                        |    |                                 |    |                       |          |                         |                                      |       |       |
|                    |   | (ML) SILT and SAND, trace gravel; brown; non-cohesive, moist, compact                     |             | 216.23          |        |  |            |                        |    |                                 |    |                       |          |                         |                                      |       |       |
|                    |   |   |             | 1.37            | 3      | SS   | 15         |                        |    |                                 |    |                       |          |                         |                                      |       |       |
| 2                  |   | END OF BOREHOLE   |             | 215.62          |        |  |            |                        |    |                                 |    |                       |          |                         |                                      |       |       |
|                    |   | NOTES:<br>1. Borehole was open and dry upon completion of drilling.<br>2. NP= Non-plastic |             | 1.98            |        |  |            |                        |    |                                 |    |                       |          |                         |                                      |       |       |

GTA-BHS 001 S:\CLIENTS\REGION OF YORK\MAJOR MACKENZIE DRIVE\02 DATA\GINT\MARKHAM\_WARDEN&KENNEDY\_RD.GPJ GAL-MIS.GDT 3/23/21

PROJECT: 20146456  
 LOCATION: N 4861664.23; E 632982.24

# RECORD OF BOREHOLE: P3

SHEET 1 OF 1  
 DATUM: Geodetic

BORING DATE: January 6, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD                                     | SOIL PROFILE  |             | SAMPLES         |        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |            |                |  | HYDRAULIC CONDUCTIVITY, k, cm/s |  |                       |  | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |         |  |
|--------------------|---|---|-------------|-----------------|--------|--|------------|----------------|--|---------------------------------|--|-----------------------|--|-------------------------|--------------------------------------|---------|--|
|                    |   | DESCRIPTION   | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE                                       | BLOWS/0.3m | SHEAR STRENGTH |  |                                 |  | WATER CONTENT PERCENT |  |                         |                                      |         |  |
|                    |   |   |             |                 |        |  |            | Cu, kPa        |  | nat V. rem V.                   |  | +                     |  |                         |                                      | Q - U - |  |
| 0                  | Truck Mount B57<br>200 mm O.D. Hollow Stem Augers | GROUND SURFACE  |             | 219.80          |        |  |            |                |  |                                 |  |                       |  |                         |                                      |         |  |
|                    |   | ASPHALT (230 mm thick)  |             | 0.00            |        |  |            |                |  |                                 |  |                       |  |                         |                                      |         |  |
|                    |   | FILL - (SP) SAND, some gravel, trace fines; brown; moist                              |             | 0.23            | 1      | AS   | -          |                |  |                                 |  |                       |  |                         |                                      |         |  |
|                    |   | FILL - (CI) sandy SILTY CLAY, some gravel; brown and dark grey; cohesive, w>PL, stiff |             | 0.50            |        |  |            |                |  |                                 |  |                       |  |                         |                                      |         |  |
| 1                  |   |   |             |                 | 2      | SS   | 11         |                |  |                                 |  |                       |  |                         |                                      |         |  |
| 2                  |   |   |             |                 | 3      | SS   | 10         |                |  |                                 |  |                       |  |                         |                                      |         |  |
| 2                  |   | END OF BOREHOLE   |             | 217.82          |        |  |            |                |  |                                 |  |                       |  |                         |                                      |         |  |
|                    |   | NOTE:<br>1. Borehole was open and dry upon completion of drilling.                    |             | 1.98            |        |  |            |                |  |                                 |  |                       |  |                         |                                      |         |  |
| 3                  |   |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |         |  |
| 4                  |   |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |         |  |
| 5                  |   |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |         |  |
| 6                  |   |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |         |  |
| 7                  |   |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |         |  |
| 8                  |   |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |         |  |
| 9                  |   |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |         |  |
| 10                 |   |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |         |  |

GTA-BHS 001 S:\CLIENTS\REGION OF YORK\MAJOR MACKENZIE DRIVE\02 DATA\GINT\MARKHAM\_WARDEN&KENNEDY\_RD.GPJ GAL-MIS.GDT 3/23/21

PROJECT: 20146456  
 LOCATION: N 4861851.29; E 632945.93




# RECORD OF BOREHOLE: P4

SHEET 1 OF 1  
 DATUM: Geodetic

BORING DATE: January 6, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD                                     | SOIL PROFILE   |   | SAMPLES         |        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |            |                        |    | HYDRAULIC CONDUCTIVITY, k, cm/s |    |                       |           | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |    |   |
|--------------------|---|--|---|-----------------|--------|--|------------|------------------------|----|---------------------------------|----|-----------------------|-----------|-------------------------|--------------------------------------|----|---|
|                    |   | DESCRIPTION  | STRATA PLOT   | ELEV. DEPTH (m) | NUMBER | TYPE                                       | BLOWS/0.3m | SHEAR STRENGTH Cu, kPa |    |                                 |    | WATER CONTENT PERCENT |           |                         |                                      |    |   |
|                    |   |  |   |                 |        |  |            | 20                     | 40 | 60                              | 80 | nat V. + rem V. ⊕     | Q - U - ○ |                         |                                      | Wp | W |
| 0                  | Truck Mount B57<br>150 mm C.D. Hollow Stem Augers | GROUND SURFACE   |   | 216.50          |        |  |            |                        |    |                                 |    |                       |           |                         |                                      |    |   |
|                    |   | ASPHALT (60 mm thick)<br>Crushed granular; brown   |  | 215.98<br>0.08  | 1      | AS   | -          |                        |    |                                 |    |                       |           |                         |                                      |    |   |
| 1                  |   | FILL - (Cl) sandy SILTY CLAY, some sand, some gravel; dark grey, organic inclusions; cohesive, w>PL, stiff |  | 215.98<br>0.52  | 2      | SS   | 8          |                        |    |                                 |    |                       |           | ○                       |                                      |    |   |
|                    |   | (SM) SILTY SAND, some gravel; brown; non-cohesive, moist, compact  |  | 215.13<br>1.37  | 3      | SS   | 19         |                        |    |                                 |    |                       |           | ○                       | MH                                   |    |   |
| 2                  |   | END OF BOREHOLE  |   | 214.52<br>1.98  |        |  |            |                        |    |                                 |    |                       |           |                         |                                      |    |   |
| 3                  |   | NOTE:<br>1. Borehole was open and dry upon completion of drilling.   |   |                 |        |  |            |                        |    |                                 |    |                       |           |                         |                                      |    |   |
| 4                  |   |  |   |                 |        |  |            |                        |    |                                 |    |                       |           |                         |                                      |    |   |
| 5                  |   |  |   |                 |        |  |            |                        |    |                                 |    |                       |           |                         |                                      |    |   |
| 6                  |   |  |   |                 |        |  |            |                        |    |                                 |    |                       |           |                         |                                      |    |   |
| 7                  |   |  |   |                 |        |  |            |                        |    |                                 |    |                       |           |                         |                                      |    |   |
| 8                  |   |  |   |                 |        |  |            |                        |    |                                 |    |                       |           |                         |                                      |    |   |
| 9                  |   |  |   |                 |        |  |            |                        |    |                                 |    |                       |           |                         |                                      |    |   |
| 10                 |   |  |   |                 |        |  |            |                        |    |                                 |    |                       |           |                         |                                      |    |   |

GTA-BHS 001 S:\CLIENTS\REGION OF YORK\MAJOR MACKENZIE DRIVE\02 DATA\GINT\MARKHAM\_WARDEN&KENNEDY\_RD.GPJ GAL-MIS.GDT 3/23/21



PROJECT: 20146456  
 LOCATION: N 4862041.54; E 632903.86

# RECORD OF BOREHOLE: P5

SHEET 1 OF 1  
 DATUM: Geodetic

BORING DATE: January 6, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD                                     | SOIL PROFILE   |             | SAMPLES         |        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |            |                |  | HYDRAULIC CONDUCTIVITY, k, cm/s |  |                       |  | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |       |  |
|--------------------|---|--|-------------|-----------------|--------|--|------------|----------------|--|---------------------------------|--|-----------------------|--|-------------------------|--------------------------------------|-------|--|
|                    |   | DESCRIPTION  | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE                                       | BLOWS/0.3m | SHEAR STRENGTH |  |                                 |  | WATER CONTENT PERCENT |  |                         |                                      |       |  |
|                    |   |  |             |                 |        |  |            | Cu, kPa        |  | nat V. rem V.                   |  | +                     |  |                         |                                      | Q - U |  |
| 0                  | Truck Mount B57<br>150 mm C.D. Hollow Stem Augers | GROUND SURFACE   |             | 213.50          |        |  |            |                |  |                                 |  |                       |  |                         |                                      |       |  |
|                    |   | ASPHALT (220 mm thick)   |             | 0.00            |        |  |            |                |  |                                 |  |                       |  |                         |                                      |       |  |
|                    |   | Crushed granular; brown  |             | 0.22            |        |  |            |                |  |                                 |  |                       |  |                         |                                      |       |  |
|                    |   | FILL - (SP) SAND, some gravel, trace fines; brown; moist   |             | 0.66            | 1      | AS   | -          |                |  |                                 |  |                       |  |                         |                                      |       |  |
| 1                  |   | FILL - (CI) sandy SILTY CLAY, some gravel; black and grey, organic inclusions; cohesive, w>PL, stiff to firm |             | 0.85            | 2A     | SS   | 12         |                |  |                                 |  |                       |  |                         |                                      |       |  |
|                    |   |  |             | 2B              |        |  |            |                |  |                                 |  |                       |  |                         |                                      |       |  |
| 2                  |   |  |             | 3               | SS     | 4  |            |                |  |                                 |  |                       |  |                         |                                      |       |  |
|                    |   | END OF BOREHOLE  |             | 211.52          |        |  |            |                |  |                                 |  |                       |  |                         |                                      |       |  |
|                    |   | NOTE:  |             | 1.98            |        |  |            |                |  |                                 |  |                       |  |                         |                                      |       |  |
|                    |   | 1. Borehole was open and dry upon completion of drilling   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |       |  |

GTA-BHS 001 S:\CLIENTS\REGION OF YORK\MAJOR MACKENZIE DRIVE\02 DATA\GINT\MARKHAM\_WARDEN&KENNEDY\_RD.GPJ GAL-MIS.GDT 3/23/21

PROJECT: 20146456  
 LOCATION: N 4862147.36; E 632884.51

# RECORD OF BOREHOLE: P6

SHEET 1 OF 1  
 DATUM: Geodetic

BORING DATE: January 6, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD                                     | SOIL PROFILE  |             | SAMPLES         |        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |            |                        |    | HYDRAULIC CONDUCTIVITY, k, cm/s |    |                       |       | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |          |       |
|--------------------|---|---|-------------|-----------------|--------|--|------------|------------------------|----|---------------------------------|----|-----------------------|-------|-------------------------|--------------------------------------|----------|-------|
|                    |   | DESCRIPTION   | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE                                       | BLOWS/0.3m | SHEAR STRENGTH Cu, kPa |    |                                 |    | WATER CONTENT PERCENT |       |                         |                                      |          |       |
|                    |   |   |             |                 |        |  |            | 20                     | 40 | 60                              | 80 | nat V. +              | Q - ● |                         |                                      | rem V. ⊕ | U - ○ |
| 0                  | Truck Mount B57<br>150 mm C.D. Hollow Stem Augers | GROUND SURFACE  |             | 214.10          |        |  |            |                        |    |                                 |    |                       |       |                         |                                      |          |       |
|                    |   | ASPHALT (150 mm thick)  |             | 0.00            |        |  |            |                        |    |                                 |    |                       |       |                         |                                      |          |       |
|                    |   | Crushed granular; brown   |             | 0.15            | 1A     |  |            |                        |    |                                 |    |                       |       |                         |                                      |          |       |
|                    |   | FILL - (SP) SAND, some gravel; trace fines; brown; moist  |             | 0.48<br>213.44  | 1B     | AS   | -          |                        |    |                                 |    |                       |       |                         |                                      |          |       |
| 1                  |   | FILL - (CI) SILTY CLAY, some sand, some gravel; dark brown, organic inclusions; cohesive, w-PL to w>PL, stiff |             | 0.66            | 2      | SS   | 9          |                        |    |                                 |    |                       |       |                         |                                      |          |       |
| 2                  |   | END OF BOREHOLE   |             | 212.12<br>1.98  | 3      | SS   | 9          |                        |    |                                 |    |                       |       |                         |                                      |          |       |
| 3                  |   | NOTE:<br>1. Borehole was open and dry upon completion of drilling   |             |                 |        |  |            |                        |    |                                 |    |                       |       |                         |                                      |          |       |
| 4                  |   |   |             |                 |        |  |            |                        |    |                                 |    |                       |       |                         |                                      |          |       |
| 5                  |   |   |             |                 |        |  |            |                        |    |                                 |    |                       |       |                         |                                      |          |       |
| 6                  |   |   |             |                 |        |  |            |                        |    |                                 |    |                       |       |                         |                                      |          |       |
| 7                  |   |   |             |                 |        |  |            |                        |    |                                 |    |                       |       |                         |                                      |          |       |
| 8                  |   |   |             |                 |        |  |            |                        |    |                                 |    |                       |       |                         |                                      |          |       |
| 9                  |   |   |             |                 |        |  |            |                        |    |                                 |    |                       |       |                         |                                      |          |       |
| 10                 |   |   |             |                 |        |  |            |                        |    |                                 |    |                       |       |                         |                                      |          |       |

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PROJECT: 20146456  
 LOCATION: N 4862351.03; E 632840.88

# RECORD OF BOREHOLE: P7

SHEET 1 OF 1  
 DATUM: Geodetic

BORING DATE: January 6, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD                                     | SOIL PROFILE   |             | SAMPLES         |        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |            |                        |    | HYDRAULIC CONDUCTIVITY, k, cm/s |    |                       |       | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |          |       |
|--------------------|---|--|-------------|-----------------|--------|--|------------|------------------------|----|---------------------------------|----|-----------------------|-------|-------------------------|--------------------------------------|----------|-------|
|                    |   | DESCRIPTION  | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE                                       | BLOWS/0.3m | SHEAR STRENGTH Cu, kPa |    |                                 |    | WATER CONTENT PERCENT |       |                         |                                      |          |       |
|                    |   |  |             |                 |        |  |            | 20                     | 40 | 60                              | 80 | nat V. +              | Q - ● |                         |                                      | rem V. ⊕ | U - ○ |
| 0                  | Truck Mount B57<br>150 mm O.D. Hollow Stem Augers | GROUND SURFACE   |             | 219.20          |        |  |            |                        |    |                                 |    |                       |       |                         |                                      |          |       |
|                    |   | ASPHALT (230 mm thick)   |             | 0.00            |        |  |            |                        |    |                                 |    |                       |       |                         |                                      |          |       |
|                    |   | Crushed granular; brown  |             | 0.23            | 1A     | AS   | -          |                        |    |                                 |    |                       |       |                         |                                      |          |       |
|                    |   | FILL - (SP) SAND, some gravel; trace fines; brown; moist   |             | 0.39            | 1B     |  |            |                        |    |                                 |    |                       |       |                         |                                      |          |       |
|                    |   | FILL - (Cl) sandy SILTY CLAY, some gravel; brown and dark grey, organic inclusions; cohesive, w>PL, very stiff |             | 0.66            |        |  |            |                        |    |                                 |    |                       |       |                         |                                      |          |       |
| 1                  |   |  |             | 217.83          |        |  |            |                        |    |                                 |    |                       |       |                         |                                      |          |       |
|                    |   | (ML) sandy SILT, some gravel; brown (TILL); non-cohesive, moist, compact                                       |             | 1.37            |        |  |            |                        |    |                                 |    |                       |       |                         |                                      |          |       |
|                    |   |  |             | 217.22          |        |  |            |                        |    |                                 |    |                       |       |                         |                                      |          |       |
| 2                  |   | END OF BOREHOLE  |             | 1.98            |        |  |            |                        |    |                                 |    |                       |       |                         |                                      |          |       |
| 3                  |   | NOTE:<br>1. Borehole was open and dry upon completion of drilling  |             |                 |        |  |            |                        |    |                                 |    |                       |       |                         |                                      |          |       |
| 4                  |   |  |             |                 |        |  |            |                        |    |                                 |    |                       |       |                         |                                      |          |       |
| 5                  |   |  |             |                 |        |  |            |                        |    |                                 |    |                       |       |                         |                                      |          |       |
| 6                  |   |  |             |                 |        |  |            |                        |    |                                 |    |                       |       |                         |                                      |          |       |
| 7                  |   |  |             |                 |        |  |            |                        |    |                                 |    |                       |       |                         |                                      |          |       |
| 8                  |   |  |             |                 |        |  |            |                        |    |                                 |    |                       |       |                         |                                      |          |       |
| 9                  |   |  |             |                 |        |  |            |                        |    |                                 |    |                       |       |                         |                                      |          |       |
| 10                 |   |  |             |                 |        |  |            |                        |    |                                 |    |                       |       |                         |                                      |          |       |

GTA-BHS 001 S:\CLIENTS\REGION OF YORK\MAJOR MACKENZIE DRIVE\02 DATA\GINT\MARKHAM\_WARDEN&KENNEDY\_RD.GPJ GAL-MIS.GDT 3/23/21

PROJECT: 20146456  
 LOCATION: N 4861359.73; E 633031.43

# RECORD OF BOREHOLE: S1

SHEET 1 OF 2  
 DATUM: Geodetic

BORING DATE: January 15, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD | SOIL PROFILE  |             | SAMPLES         |        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |            |                |  | HYDRAULIC CONDUCTIVITY, k, cm/s |  |                       |  | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |   |  |
|--------------------|---------------|---|-------------|-----------------|--------|--|------------|----------------|--|---------------------------------|--|-----------------------|--|-------------------------|--------------------------------------|---|--|
|                    |               | DESCRIPTION   | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE                                       | BLOWS/0.3m | SHEAR STRENGTH |  |                                 |  | WATER CONTENT PERCENT |  |                         |                                      |   |  |
|                    |               |   |             |                 |        |  |            | Cu, kPa        |  | nat V. rem V.                   |  | Wp                    |  |                         |                                      | W |  |
| 0                  |               | GROUND SURFACE  |             | 215.10          |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |               | ASPHALT (125 mm thick)  |             | 0.00            |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |               | Crushed granular; brown   |             | 0.13            | 1      | AS   | -          |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |               | FILL - (SP) SAND, brown, trace fines; non-cohesive, moist, dense                        |             | 214.68          |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 1                  |               |   |             | 0.42            | 2      | SS   | 39         |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 2                  |               |   |             | 212.97          |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |               | (SM) SILTY SAND, some gravel; brown (TILL); non-cohesive, moist, very dense             |             | 2.13            | 4      | SS   | 64         |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 3                  |               |   |             |                 | 5      | SS   | 71         |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 4                  |               |   |             | 211.06          |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |               | (SM) SILTY SAND, some gravel; brown to grey; non-cohesive, wet, very dense              |             | 4.04            | 6      | SS   | 79         |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 5                  |               |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 6                  |               |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |               | - Becoming grey at a depth of 5.6 m   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 7                  |               |   |             | 208.01          |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |               | (CL-ML) SILTY CLAY-CLAYEY SILT and SAND, some gravel; grey (TILL); cohesive, w<PL, hard |             | 7.09            | 8      | SS   | 50/0.08    |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 8                  |               |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 9                  |               |   |             | 205.68          | 9      | SS   | 50/0.13    |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |               | END OF BOREHOLE   |             | 9.42            |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 10                 |               | NOTES:  |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |               | CONTINUED NEXT PAGE   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |

GTA-BHS 001 S:\CLIENTS\REGION OF YORK\MAJOR MACKENZIE DRIVE\02 DATA\GINT\MARKHAM WARDEN&KENNEDY\_RD.GPJ GAL-MIS.GDT 3/23/21

PROJECT: 20146456

# RECORD OF BOREHOLE: S1

SHEET 2 OF 2

LOCATION: N 4861359.73; E 633031.43

BORING DATE: January 15, 2021

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD | SOIL PROFILE  |             |                 | SAMPLES |      | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |                        |    |    | HYDRAULIC CONDUCTIVITY, k, cm/s |                       |          |       | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |       |
|--------------------|---------------|---|-------------|-----------------|---------|------|--|------------------------|----|----|---------------------------------|-----------------------|----------|-------|-------------------------|--------------------------------------|-------|
|                    |               | DESCRIPTION   | STRATA PLOT | ELEV. DEPTH (m) | NUMBER  | TYPE | BLOWS/0.3m                                 | SHEAR STRENGTH Cu, kPa |    |    |                                 | WATER CONTENT PERCENT |          |       |                         |                                      |       |
|                    |               |   |             |                 |         |      |  | 20                     | 40 | 60 | 80                              | nat V. +              | rem V. ⊕ | Q - ● |                         |                                      | U - ○ |
| 10                 |               | --- CONTINUED FROM PREVIOUS PAGE ---  |             |                 |         |      |  |                        |    |    |                                 |                       |          |       |                         |                                      |       |
| 11                 |               | 1. Water was encountered at a depth of 4.6 m during drilling.   |             |                 |         |      |  |                        |    |    |                                 |                       |          |       |                         |                                      |       |
| 11                 |               | 2. Groundwater level was measured at a depth of 4.4 mbgs (El. 210.7m) after well installation.                |             |                 |         |      |  |                        |    |    |                                 |                       |          |       |                         |                                      |       |
| 11                 |               | 3. Groundwater level was measured in monitoring well at a depth of 3.7 mbgs (El. 211.4m) on January 29, 2021. |             |                 |         |      |  |                        |    |    |                                 |                       |          |       |                         |                                      |       |
| 12                 |               |   |             |                 |         |      |  |                        |    |    |                                 |                       |          |       |                         |                                      |       |
| 13                 |               |   |             |                 |         |      |  |                        |    |    |                                 |                       |          |       |                         |                                      |       |
| 14                 |               |   |             |                 |         |      |  |                        |    |    |                                 |                       |          |       |                         |                                      |       |
| 15                 |               |   |             |                 |         |      |  |                        |    |    |                                 |                       |          |       |                         |                                      |       |
| 16                 |               |   |             |                 |         |      |  |                        |    |    |                                 |                       |          |       |                         |                                      |       |
| 17                 |               |   |             |                 |         |      |  |                        |    |    |                                 |                       |          |       |                         |                                      |       |
| 18                 |               |   |             |                 |         |      |  |                        |    |    |                                 |                       |          |       |                         |                                      |       |
| 19                 |               |   |             |                 |         |      |  |                        |    |    |                                 |                       |          |       |                         |                                      |       |
| 20                 |               |   |             |                 |         |      |  |                        |    |    |                                 |                       |          |       |                         |                                      |       |

GTA-BHS 001 S:\CLIENTS\REGION OF YORK\MAJOR MACKENZIE DRIVE\02 DATA\GINT\MARKHAM\_WARDEN&KENNEDY\_RD.GPJ GAL-MIS.GDT 3/23/21

DEPTH SCALE

1 : 50



LOGGED: YS

CHECKED: TO

PROJECT: 20146456  
 LOCATION: N 4861546.26; E 633002.39

# RECORD OF BOREHOLE: S2

SHEET 1 OF 1  
 DATUM: Geodetic

BORING DATE: January 15, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD | SOIL PROFILE  |             | SAMPLES         |        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |            |                        |    | HYDRAULIC CONDUCTIVITY, k, cm/s |    |                       |          | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |     |     |
|--------------------|---------------|---|-------------|-----------------|--------|--|------------|------------------------|----|---------------------------------|----|-----------------------|----------|-------------------------|--------------------------------------|-----|-----|
|                    |               | DESCRIPTION   | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE                                       | BLOWS/0.3m | SHEAR STRENGTH Cu, kPa |    |                                 |    | WATER CONTENT PERCENT |          |                         |                                      |     |     |
|                    |               |   |             |                 |        |  |            | 20                     | 40 | 60                              | 80 | nat V. +              | rem V. ⊕ |                         |                                      | Q - | U - |
| 0                  |               | GROUND SURFACE  |             | 219.80          |        |  |            |                        |    |                                 |    |                       |          |                         |                                      |     |     |
|                    |               | ASPHALT (120 mm thick)  |             | 0.00            |        |  |            |                        |    |                                 |    |                       |          |                         |                                      |     |     |
|                    |               | FILL - (SM) gravelly SILTY SAND, brown; non-cohesive, moist   |             | 0.12            | 1      | AS   | -          |                        |    |                                 |    |                       |          |                         | M                                    |     |     |
| 1                  |               | FILL - (CI) sandy SILTY CLAY, some gravel; brown and black, organic inclusions; cohesive, w>PL, stiff |             | 219.05          | 2      | SS   | 11         |                        |    |                                 |    |                       |          |                         |                                      |     |     |
|                    |               |   |             | 0.75            | 3      | SS   | 9          |                        |    |                                 |    |                       |          |                         |                                      |     |     |
| 2                  |               | (SM) SILTY SAND, trace to some gravel; brown; non-cohesive, moist to wet, dense to very dense         |             | 217.67          | 4      | SS   | 35         |                        |    |                                 |    |                       |          |                         |                                      |     |     |
|                    |               |   |             | 2.13            | 5      | SS   | 54         |                        |    |                                 |    |                       |          |                         |                                      |     |     |
| 3                  |               |   |             |                 |        |  |            |                        |    |                                 |    |                       |          |                         |                                      |     |     |
| 4                  |               |   |             |                 |        |  |            |                        |    |                                 |    |                       |          |                         |                                      |     |     |
| 5                  |               | - Becoming wet at a depth of 4.6 m  |             |                 | 6      | SS   | 48         |                        |    |                                 |    |                       |          |                         |                                      |     |     |
| 6                  |               |   |             |                 |        |  |            |                        |    |                                 |    |                       |          |                         |                                      |     |     |
| 7                  |               | (GP) sandy GRAVEL, trace fines; grey; non-cohesive, wet, very dense                                   |             | 212.71          | 7      | SS   | 50/0.1     |                        |    |                                 |    |                       |          |                         |                                      |     |     |
|                    |               |   |             | 7.09            |        |  |            |                        |    |                                 |    |                       |          |                         |                                      |     |     |
| 8                  |               | END OF BOREHOLE   |             | 212.05          | 8      | SS   | 50/0.13    |                        |    |                                 |    |                       |          |                         |                                      |     |     |
|                    |               |   |             | 7.75            |        |  |            |                        |    |                                 |    |                       |          |                         |                                      |     |     |
| 9                  |               | NOTE:<br>1. Water was encountered at a depth of 4.6 m during drilling.                                |             |                 |        |  |            |                        |    |                                 |    |                       |          |                         |                                      |     |     |
| 10                 |               |   |             |                 |        |  |            |                        |    |                                 |    |                       |          |                         |                                      |     |     |

GTA-BHS 001 S:\CLIENTS\REGION OF YORK\MAJOR MACKENZIE DRIVE\02 DATA\GINT\MARKHAM\_WARDEN&KENNEDY\_RD.GPJ GAL-MIS.GDT 3/23/21

PROJECT: 20146456  
 LOCATION: N 4861732.90; E 632961.79

# RECORD OF BOREHOLE: S3

SHEET 1 OF 2  
 DATUM: Geodetic

BORING DATE: January 13, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD                                     | SOIL PROFILE   |             | SAMPLES         |        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |            |                |    | HYDRAULIC CONDUCTIVITY, k, cm/s |  |                       |  | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |    |  |
|--------------------|---|--|-------------|-----------------|--------|--|------------|----------------|----|---------------------------------|--|-----------------------|--|-------------------------|--------------------------------------|----|--|
|                    |   | DESCRIPTION  | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE                                       | BLOWS/0.3m | SHEAR STRENGTH |    |                                 |  | WATER CONTENT PERCENT |  |                         |                                      |    |  |
|                    |   |  |             |                 |        |  |            | Cu, kPa        |    | nat V. rem V.                   |  | Q - U                 |  |                         |                                      | Wp |  |
| 0                  |   | GROUND SURFACE   |             | 218.90          |        |  | 20         | 40             | 60 | 80                              |  |                       |  |                         |                                      |    |  |
|                    |   | ASPHALT (200 mm thick)   |             | 0.00            |        |  |            |                |    |                                 |  |                       |  |                         |                                      |    |  |
|                    |   | FILL - (SP) SAND, some gravel, trace fines; brown; moist   |             | 218.70          | 1      | AS   |            |                |    |                                 |  |                       |  |                         | 50 mm Dia. PVC Monitoring Well       |    |  |
|                    |   |  |             | 0.20            |        |  |            |                |    |                                 |  |                       |  |                         |                                      |    |  |
|                    |   |  |             | 218.20          |        |  |            |                |    |                                 |  |                       |  |                         |                                      |    |  |
| 1                  |   | FILL - (CI) sandy SILTY CLAY, trace gravel, brown and black; organic inclusions; cohesive, w>PL, firm to stiff |             | 0.70            | 2      | SS   |            |                |    |                                 |  |                       |  | MH                      |                                      |    |  |
|                    |   |  |             | 216.77          |        |  |            |                |    |                                 |  |                       |  |                         |                                      |    |  |
|                    |   |  |             | 2.13            | 3      | SS   |            |                |    |                                 |  |                       |  |                         |                                      |    |  |
| 2                  |   |  |             | 2.90            |        |  |            |                |    |                                 |  |                       |  |                         |                                      |    |  |
|                    |   | (CL) SILTY CLAY and SAND, some gravel; brown (TILL); cohesive, w~PL, stiff                                     |             | 2.13            | 4      | SS   |            |                |    |                                 |  |                       |  |                         |                                      |    |  |
|                    |   |  |             | 216.00          |        |  |            |                |    |                                 |  |                       |  |                         |                                      |    |  |
| 3                  |   | (SM) SILTY SAND, some gravel; brown (TILL); non-cohesive, moist, dense   |             | 2.90            | 5      | SS   |            |                |    |                                 |  |                       |  |                         |                                      |    |  |
|                    |   |  |             | 214.86          |        |  |            |                |    |                                 |  |                       |  |                         |                                      |    |  |
| 4                  |   | (CL-ML) SILTY CLAY-CLAYEY SILT and SAND, some gravel; grey (TILL); cohesive, w<PL, hard                        |             | 4.04            | 6      | SS   |            |                |    |                                 |  |                       |  |                         | January 29, 2021                     |    |  |
|                    |   |  |             | 50/0.15         |        |  |            |                |    |                                 |  |                       |  |                         |                                      |    |  |
| 5                  | Truck Mount B57<br>200 mm O.D. Hollow Stem Augers |  |             |                 |        |  |            |                |    |                                 |  |                       |  |                         | Bentonite                            |    |  |
|                    |   |  |             |                 |        |  |            |                |    |                                 |  |                       |  |                         |                                      |    |  |
| 6                  |   |  |             |                 |        |  |            |                |    |                                 |  |                       |  |                         |                                      |    |  |
|                    |   |  |             |                 |        |  |            |                |    |                                 |  |                       |  |                         |                                      |    |  |
| 7                  |   |  |             |                 |        |  |            |                |    |                                 |  |                       |  |                         |                                      |    |  |
|                    |   |  |             |                 |        |  |            |                |    |                                 |  |                       |  |                         |                                      |    |  |
| 8                  |   |  |             |                 |        |  |            |                |    |                                 |  |                       |  |                         |                                      |    |  |
|                    |   |  |             |                 |        |  |            |                |    |                                 |  |                       |  |                         |                                      |    |  |
| 9                  |   |  |             |                 |        |  |            |                |    |                                 |  |                       |  |                         |                                      |    |  |
|                    |   |  |             |                 |        |  |            |                |    |                                 |  |                       |  |                         |                                      |    |  |
| 10                 |   | END OF BOREHOLE  |             | 209.32          | 9      | SS   |            |                |    |                                 |  |                       |  |                         |                                      |    |  |
|                    |   |  |             | 9.58            |        |  |            |                |    |                                 |  |                       |  |                         |                                      |    |  |
|                    |   | NOTES:   |             |                 |        |  |            |                |    |                                 |  |                       |  |                         |                                      |    |  |
|                    |   | CONTINUED NEXT PAGE  |             |                 |        |  |            |                |    |                                 |  |                       |  |                         |                                      |    |  |

GTA-BHS 001 S:\CLIENTS\REGION OF YORK\MAJOR MACKENZIE DRIVE\02 DATA\GINT\MARKHAM\_WARDEN&KENNEDY\_RD.GPJ GAL-MIS.GDT 3/23/21

PROJECT: 20146456  
 LOCATION: N 4861732.90; E 632961.79

# RECORD OF BOREHOLE: S3

SHEET 2 OF 2  
 DATUM: Geodetic

BORING DATE: January 13, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD | SOIL PROFILE   |             |                 | SAMPLES |      | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |                |  |               | HYDRAULIC CONDUCTIVITY, k, cm/s |                       |  |         | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |    |
|--------------------|---------------|--|-------------|-----------------|---------|------|--|----------------|--|---------------|---------------------------------|-----------------------|--|---------|-------------------------|--------------------------------------|----|
|                    |               | DESCRIPTION  | STRATA PLOT | ELEV. DEPTH (m) | NUMBER  | TYPE | BLOWS/0.3m                                 | SHEAR STRENGTH |  |               |                                 | WATER CONTENT PERCENT |  |         |                         |                                      |    |
|                    |               |  |             |                 |         |      |  | Cu, kPa        |  | nat V. rem V. |                                 | +                     |  | Q - U - |                         |                                      | Wp |
| 10                 |               | --- CONTINUED FROM PREVIOUS PAGE ---   |             |                 |         |      |  |                |  |               |                                 |                       |  |         |                         |                                      |    |
| 11                 |               | 1. Borehole was open and dry upon completion of drilling.  |             |                 |         |      |  |                |  |               |                                 |                       |  |         |                         |                                      |    |
| 12                 |               | 2. Groundwater level was measured in monitoring well at a depth of 3.5 mbgs (El. 215.4m) on January 29, 2021 |             |                 |         |      |  |                |  |               |                                 |                       |  |         |                         |                                      |    |
| 13                 |               |  |             |                 |         |      |  |                |  |               |                                 |                       |  |         |                         |                                      |    |
| 14                 |               |  |             |                 |         |      |  |                |  |               |                                 |                       |  |         |                         |                                      |    |
| 15                 |               |  |             |                 |         |      |  |                |  |               |                                 |                       |  |         |                         |                                      |    |
| 16                 |               |  |             |                 |         |      |  |                |  |               |                                 |                       |  |         |                         |                                      |    |
| 17                 |               |  |             |                 |         |      |  |                |  |               |                                 |                       |  |         |                         |                                      |    |
| 18                 |               |  |             |                 |         |      |  |                |  |               |                                 |                       |  |         |                         |                                      |    |
| 19                 |               |  |             |                 |         |      |  |                |  |               |                                 |                       |  |         |                         |                                      |    |
| 20                 |               |  |             |                 |         |      |  |                |  |               |                                 |                       |  |         |                         |                                      |    |

GTA-BHS 001 S:\CLIENTS\REGION OF YORK\MAJOR MACKENZIE DRIVE\02 DATA\GINT\MARKHAM\_WARDEN&KENNEDY\_RD.GPJ GAL-MIS.GDT 3/23/21





PROJECT: 20146456  
 LOCATION: N 4861956.56; E 632915.36

# RECORD OF BOREHOLE: S4

SHEET 1 OF 1  
 DATUM: Geodetic

BORING DATE: January 13, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD | SOIL PROFILE  |             | SAMPLES         |        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |                        |    |    | HYDRAULIC CONDUCTIVITY, k, cm/s |                       |     |          | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |     |
|--------------------|---------------|---|-------------|-----------------|--------|--|------------------------|----|----|---------------------------------|-----------------------|-----|----------|-------------------------|--------------------------------------|-----|
|                    |               | DESCRIPTION   | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE                                       | SHEAR STRENGTH Cu, kPa |    |    |                                 | WATER CONTENT PERCENT |     |          |                         |                                      |     |
|                    |               |   |             |                 |        |  | 20                     | 40 | 60 | 80                              | nat V. +              | Q - | rem V. ⊕ |                         |                                      | U - |
| 0                  |               | GROUND SURFACE  |             | 213.80          |        |  |                        |    |    |                                 |                       |     |          |                         |                                      |     |
|                    |               | ASPHALT (215 mm thick)  |             | 0.00            |        |  |                        |    |    |                                 |                       |     |          |                         |                                      |     |
|                    |               | Curshed granular; brown   |             | 213.58          |        |  |                        |    |    |                                 |                       |     |          |                         |                                      |     |
|                    |               | FILL - (SP) SAND, some gravel, trace fines; brown, moist  |             | 0.22            | 1A     | AS   | -                      |    |    |                                 |                       |     |          |                         |                                      |     |
|                    |               | FILL - (CI) sandy SILTY CLAY, some gravel; brown and black, organic inclusions; cohesive, w>PL, stiff   |             | 213.34          | 1B     |  |                        |    |    |                                 |                       |     |          |                         |                                      |     |
| 1                  |               |   |             | 0.46            |        |  |                        |    |    |                                 |                       |     |          |                         |                                      |     |
|                    |               |   |             | 0.63            |        |  |                        |    |    |                                 |                       |     |          |                         |                                      |     |
| 2                  |               |   |             | 211.67          | 2      | SS   | 11                     |    |    |                                 |                       |     |          |                         |                                      |     |
|                    |               | (SM) gravelly SILTY SAND, brown (TILL); non-cohesive, moist, compact  |             | 2.13            |        |  |                        |    |    |                                 |                       |     |          |                         |                                      |     |
|                    |               | (SM) SILTY SAND, some gravel; grey; non-cohesive, moist, loose  |             | 211.29          | 4      | SS   | 15                     |    |    |                                 |                       |     |          |                         |                                      |     |
| 3                  |               |   |             | 2.51            |        |  |                        |    |    |                                 |                       |     |          |                         |                                      |     |
|                    |               |   |             | 209.76          | 5      | SS   | 8                      |    |    |                                 |                       |     |          |                         |                                      |     |
| 4                  |               | (CL-ML) SILTY CLAY-CLAYEY SILT and SAND, some gravel; grey (TILL); cohesive, w<PL, hard   |             | 4.04            |        |  |                        |    |    |                                 |                       |     |          |                         |                                      |     |
| 5                  |               |   |             |                 | 6      | SS   | 89                     |    |    |                                 |                       |     |          |                         |                                      |     |
| 6                  |               |   |             |                 |        |  |                        |    |    |                                 |                       |     |          |                         |                                      |     |
| 7                  |               |   |             |                 | 7      | SS   | 80                     |    |    |                                 |                       |     |          |                         |                                      |     |
| 8                  |               | END OF BOREHOLE   |             | 205.95          | 8      | SS   | 50/0.08                |    |    |                                 |                       |     |          |                         |                                      |     |
|                    |               | NOTES:<br>1. Water was encountered at a depth of 2.3 m during drilling.<br>2. Groundwater level was measured at a depth of 5.3 mbgs (El. 208.5m) after well installation.<br>3. Groundwater level was measured in monitoring well at 2.4 mbgs (El. 211.5m) on January 29, 2021. |             | 7.85            |        |  |                        |    |    |                                 |                       |     |          |                         |                                      |     |

GTA-BHS 001 S:\CLIENTS\REGION OF YORK\MAJOR MACKENZIE DRIVE\02 DATA\INT\MARKHAM\_WARDEN&KENNEDY\_RD.GPJ GAL-MIS.GDT 3/23/21

DEPTH SCALE  
 1 : 50



LOGGED: YS  
 CHECKED: TO

PROJECT: 20146456  
 LOCATION: N 4862226.60; E 632859.96

# RECORD OF BOREHOLE: S5

SHEET 1 OF 1  
 DATUM: Geodetic

BORING DATE: January 12, 2021

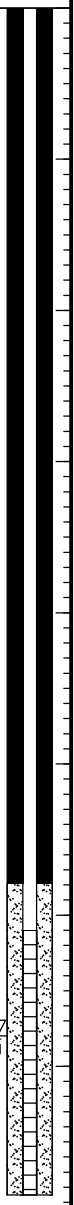
SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD | SOIL PROFILE  |             | SAMPLES         |        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |                        |    |    | HYDRAULIC CONDUCTIVITY, k, cm/s |                       |          |       | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |       |
|--------------------|---------------|---|-------------|-----------------|--------|--|------------------------|----|----|---------------------------------|-----------------------|----------|-------|-------------------------|--------------------------------------|-------|
|                    |               | DESCRIPTION   | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE                                       | SHEAR STRENGTH Cu, kPa |    |    |                                 | WATER CONTENT PERCENT |          |       |                         |                                      |       |
|                    |               |   |             |                 |        |  | 20                     | 40 | 60 | 80                              | nat V. +              | rem V. ⊕ | Q - ● |                         |                                      | U - ○ |
| 0                  |               | GROUND SURFACE  |             | 215.70          |        |  |                        |    |    |                                 |                       |          |       |                         |                                      |       |
|                    |               | ASPHALT (200 mm thick)  |             | 0.00<br>215.50  |        |  |                        |    |    |                                 |                       |          |       |                         |                                      |       |
|                    |               | Crushed granular; brown   |             | 0.20<br>215.23  | 1A     | AS   | -                      |    |    |                                 |                       |          |       |                         | 50 mm Dia. PVC Monitoring Well       |       |
|                    |               | FILL - (SP) SAND, some gravel, trace fines; brown; moist  |             | 0.47<br>215.02  | 1B     | AS   | -                      |    |    |                                 |                       |          |       |                         |                                      |       |
|                    |               | FILL - (CI) sandy SILTY CLAY, some gravel; brown; cohesive, w>PL, stiff to very stiff   |             | 0.68            | 2      | SS   | 14                     |    |    |                                 |                       |          |       |                         |                                      |       |
| 1                  |               |   |             |                 |        |  |                        |    |    |                                 |                       |          |       |                         |                                      |       |
|                    |               |   |             |                 | 3      | SS   | 16                     |    |    |                                 |                       |          |       |                         |                                      |       |
| 2                  |               |   |             |                 |        |  |                        |    |    |                                 |                       |          |       |                         |                                      |       |
|                    |               | (CL-ML) SILTY CLAY-CLAYEY SILT and SAND, some gravel; brown to grey (TILL); cohesive, w<PL, hard  |             | 213.57<br>2.13  | 4      | SS   | 86/<br>0.23            |    |    |                                 |                       |          |       |                         |                                      |       |
| 3                  |               |   |             |                 |        |  |                        |    |    |                                 |                       |          |       |                         |                                      |       |
|                    |               |   |             |                 | 5      | SS   | 50/<br>0.13            |    |    |                                 |                       |          |       |                         |                                      |       |
| 4                  |               |   |             |                 |        |  |                        |    |    |                                 |                       |          |       |                         |                                      |       |
|                    |               |   |             |                 | 6      | SS   | 50/<br>0.15            |    |    |                                 |                       |          |       |                         |                                      |       |
| 5                  |               |   |             |                 |        |  |                        |    |    |                                 |                       |          |       |                         |                                      |       |
|                    |               | - Becoming grey at a depth of 5.5 m   |             |                 |        |  |                        |    |    |                                 |                       |          |       |                         |                                      |       |
| 6                  |               |   |             |                 |        |  |                        |    |    |                                 |                       |          |       |                         |                                      |       |
|                    |               |   |             |                 | 7      | SS   | 50/<br>0.1             |    |    |                                 |                       |          |       |                         |                                      |       |
| 7                  |               |   |             |                 |        |  |                        |    |    |                                 |                       |          |       |                         |                                      |       |
|                    |               |   |             |                 |        |  |                        |    |    |                                 |                       |          |       |                         |                                      |       |
| 8                  |               | END OF BOREHOLE   |             | 207.85<br>7.85  | 8      | SS   | 50/<br>0.08            |    |    |                                 |                       |          |       |                         |                                      |       |
| 9                  |               | NOTES:<br>1. Borehole was open and dry upon completion of drilling.<br>2. Groundwater level was measured in monitoring well at a depth of 6.8 mbgs (El.208.9m) on January 29, 2021. |             |                 |        |  |                        |    |    |                                 |                       |          |       |                         |                                      |       |
| 10                 |               |   |             |                 |        |  |                        |    |    |                                 |                       |          |       |                         |                                      |       |

GTA-BHS 001 S:\CLIENTS\REGION OF YORK\MAJOR MACKENZIE DRIVE\02 DATA\GINT\MARKHAM WARDEN&KENNEDY\_RD.GPJ GAL-MIS.GDT 3/23/21

Truck Mount B57  
200 mm O.D. Hollow Stem Augers





# LOG OF DRILLING OPERATIONS

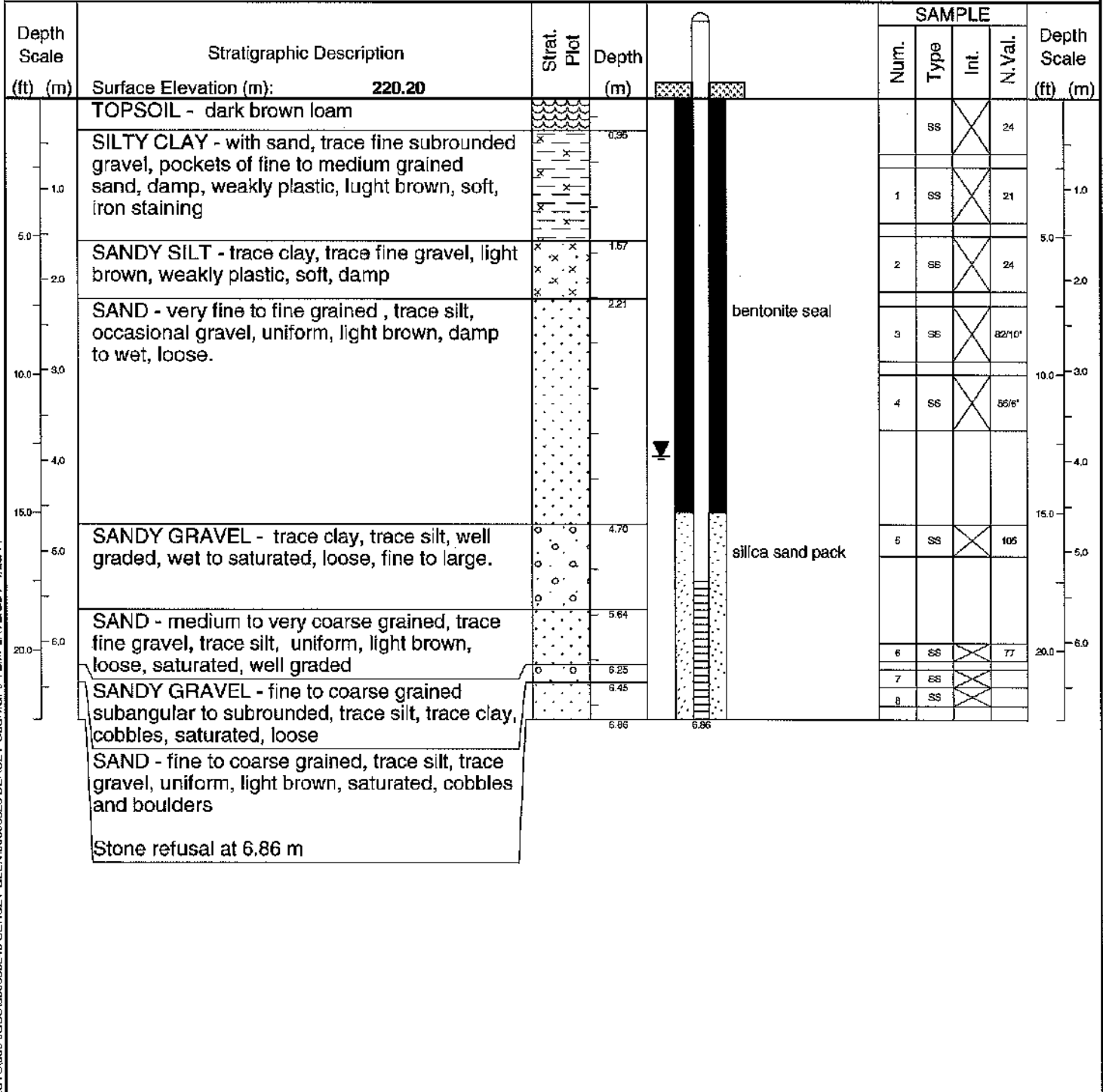


R.J. Burnside & Associates Limited  
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 telephone (519) 823-4995 fax (519) 836-5477

**BG-MW1**

Page 1 of 1

|   |  |  |
|---|--|--|
| Client: <b>Berczy Glen Landowners Group</b>         | Project Name: <b>Berczy Glen Lands</b> | Logged by: <b>C. Dinulescu</b>           |
| Project No.: <b>300033248</b>                       | Location: <b>Markham, ON</b>           | Ground (m arsl): <b>220.2</b>            |
| Drilling Co.: <b>Lantech Drilling Services Inc.</b> | Date Started: <b>9/18/2013</b>         | Static Water Level Depth (m):            |
| Drilling Method: <b>Hollow Stem Auger</b>           | Date Completed: <b>9/18/2013</b>       | Sand Pack Depth (m) : <b>4.57 - 6.86</b> |



BH-LOG GUELPH (P:\GINT\PROJECTS\300 JOBS\300033248 BERCZY GLEN.GR\TEMPLATE.GDT 1/28/14

Prepared By: **S. Charity**      Checked By: **C. Dinulescu**      Date Prepared: **10/7/2013**

This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

|                                |  |                    |
|--------------------------------|--|--------------------|
| <b>LEGEND</b>                  | <b>MONITORING WELL DATA</b>            | <b>SAMPLE TYPE</b> |
| Water found @ time of drilling | Pipe: <b>51 mm dia. PVC</b>            | AC  Auger Cutting  |
| Static Water Level -           | Screen: <b>51 mm dia. PVC #10 slot</b> | CS  Continuous     |
|                                |  | RC  Rock Core      |
|                                |  | SS  Split Spoon    |
|                                |  | AR  Air Rotary     |
|                                |  | WC  Wash Cuttings  |

# LOG OF DRILLING OPERATIONS

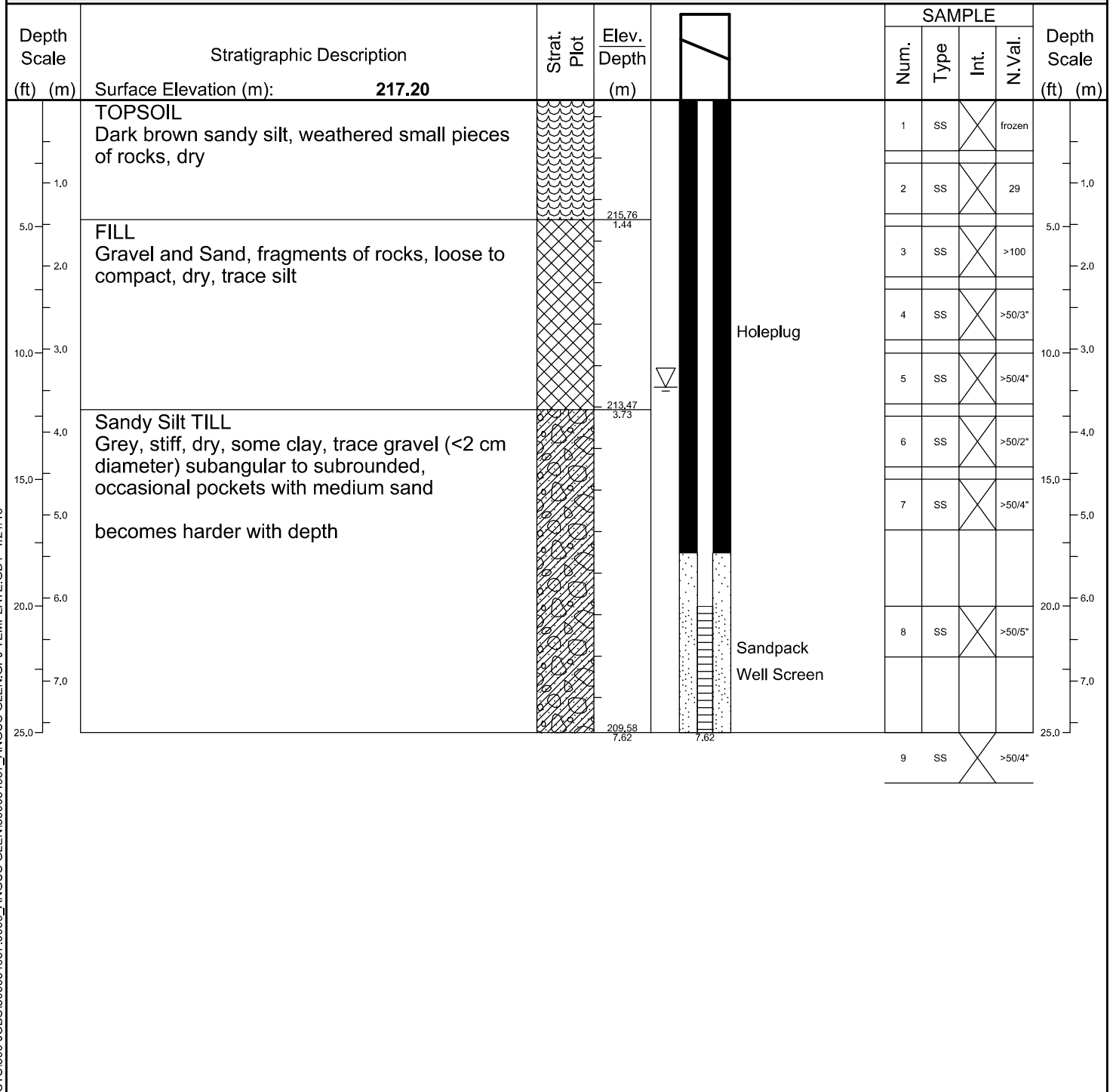
**AG-MW12**

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R.J. Burnside & Associates Limited  
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telephone (519) 823-4995 fax (519) 836-5477

|   |                                      |   |
|---|--------------------------------------|---|
| Client: <b>Angus Glen Developments Inc.</b>         | Project Name: <b>Angus Glen MESP</b> | Logged by: <b>C. D.</b>                   |
| Project No.: <b>300034937</b>                       | Location: <b>Markham, ON</b>         | Ground (m amsl): <b>217.20</b>            |
| Drilling Co.: <b>Lantech Drilling Services Inc.</b> | Date Started: <b>2/25/2015</b>       | Static Water Level Depth (m): <b>3.46</b> |
| Drilling Method: <b>Hollow Stem Auger</b>           | Date Completed: <b>2/25/2015</b>     | Sand Pack Depth (m) : <b>5.46 - 7.62</b>  |



BHLOG GUELPH P:\GINT\PROJECTS\300034937\0000\_ANGUS GLEN\300034937\_Angus Glen.GPJ TEMPLATE.GDT 1/21/16

Prepared By: **C. D.** Checked By: **J. S.** Date Prepared: **7/26/2015**  
 This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

|  |   |  |
|--|---|--|
| <b>LEGEND</b>  | <b>MONITORING WELL DATA</b>   | <b>SAMPLE TYPE</b>   |
| ▼ Water found @ time of drilling<br>▽ Static Water Level - 6/16/2015 | Pipe: <b>51 mm dia. PVC</b><br>Screen: <b>51 mm dia. PVC #10 slot</b> | AC [Auger Cutting] Auger Cutting<br>CS [Continuous] Continuous<br>RC [Rock Core] Rock Core<br>SS [Split Spoon] Split Spoon<br>AR [Air Rotary] Air Rotary<br>WC [Wash Cuttings] Wash Cuttings |

# Log of Borehole 113

Project No. BRM-00609175-AO

Drawing No. 16

Project: Geotechnical Investigation - Berczy Warden Subdivision

Sheet No. 1 of 2

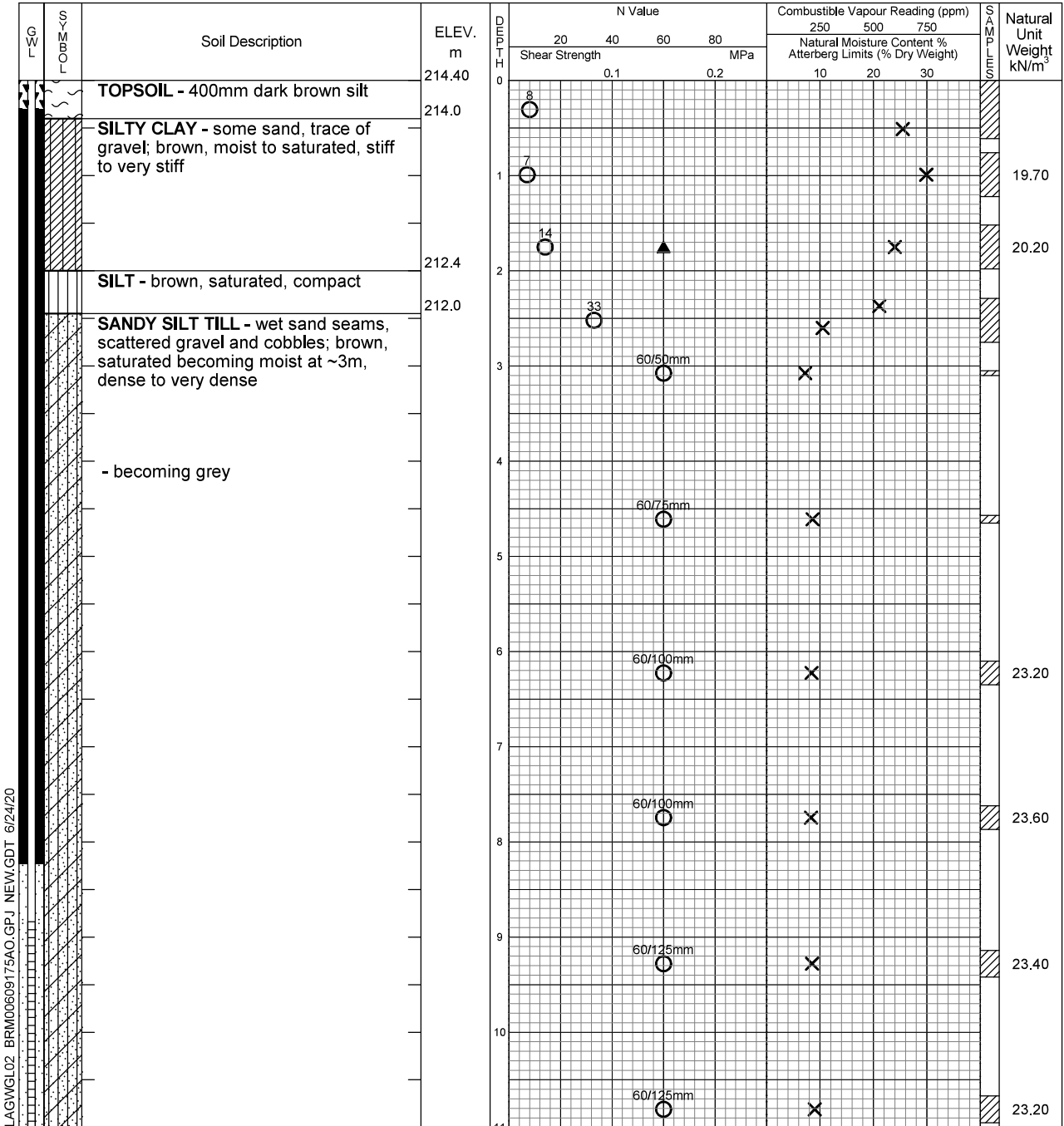
Location: 10206 and 10348 Warden Avenue, Markham, Ontario

Date Drilled: May 19 and 22, 2020

Drill Type: Dietrich 120

Datum: Geodetic

- Auger Sample
- SPT (N) Value
- Dynamic Cone Test
- Shelby Tube
- Field Vane Test
- Combustible Vapour Reading
- Natural Moisture
- Plastic and Liquid Limit
- Undrained Triaxial at % Strain at Failure
- Penetrometer



Continued Next Page



| Time          | Water Level (m) | Depth to Cave (m) |
|---------------|-----------------|-------------------|
| On completion | 3.96            | Borehole          |
| After 4 hours | 0.61            | Well              |
| After 5 days  | 0.58            | Well              |

# Log of Borehole 113

Project No. BRM-00609175-AO

Drawing No. 16

Project: Geotechnical Investigation - Berczy Warden Subdivision

Sheet No. 2 of 2

| G<br>W<br>L | S<br>O<br>I<br>L | Soil Description  | ELEV.<br>m | D<br>I<br>T<br>H | N Value                                 |  |     |   | Combustible Vapour Reading (ppm)                              |  |  | S<br>O<br>I<br>L<br>T<br>E<br>S<br>T | Natural<br>Unit<br>Weight<br>kN/m <sup>3</sup> |
|-------------|------------------|---|------------|------------------|---|--|-----|---|---|--|--|--------------------------------------|--|
|             |                  |   |            |                  | 20    40    60    80                    |  |     |   | 250    500    750   |  |  |                                      |  |
|             |                  |   |            |                  | Shear Strength                      MPa |  |     |   | Natural Moisture Content %<br>Atterberg Limits (% Dry Weight) |  |  |                                      |  |
|             |                  |   | 203.40     | 11               | 0.1                                     |  | 0.2 |   |   |  |  |                                      |  |
|             |                  |   | 201.9      |                  | 50/150mm<br>○                           |  |     | X |   |  |  | 23.30                                |  |
|             |                  | <b>END OF BOREHOLE</b>  |            |                  |   |  |     |   |   |  |  |                                      |  |
|             |                  | <b>NOTES:</b><br>1. Groundwater monitoring well installed to 11.89m; sealed with bentonite from 0.3 to 8.23m. |            |                  |   |  |     |   |   |  |  |                                      |  |

LAGWGL02 BRM00609175AO.GPJ NEW.GDT 6/24/20



| Time          | Water Level (m) | Depth to Cave (m) |
|---------------|-----------------|-------------------|
| On completion | 3.96            | Borehole          |
| After 4 hours | 0.61            | Well              |
| After 5 days  | 0.58            | Well              |

# Log of Borehole 113A

Project No. BRM-00609175-AO

Drawing No. 17

Project: Geotechnical Investigation - Berczy Warden Subdivision

Sheet No. 1 of 1

Location: 10206 and 10348 Warden Avenue, Markham, Ontario

Date Drilled: May 22, 2020

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Dynamic Cone Test

Plastic and Liquid Limit

Shelby Tube

Undrained Triaxial at % Strain at Failure

Drill Type: Dietrich 120

Field Vane Test

Penetrometer

Datum: Geodetic

| GWL | SYMBOL | Soil Description  | ELEV. m | DEPTH (m) | N Value            |     |     |    | Combustible Vapour Reading (ppm)                           |     |     | Natural Unit Weight kN/m <sup>3</sup> |
|-----|--------|---|---------|-----------|--------------------|-----|-----|----|--|-----|-----|---------------------------------------|
|     |        |   |         |           | 20                 | 40  | 60  | 80 | 250  | 500 | 750 |                                       |
|     |        |   |         |           | Shear Strength MPa |     |     |    | Natural Moisture Content % Atterberg Limits (% Dry Weight) |     |     |                                       |
|     |        | TOPSOIL - 400mm dark brown silt   | 214.40  | 0         |                    | 0.1 | 0.2 |    |  |     |     |                                       |
|     |        | SILTY CLAY - some sand, trace of gravel; brown, moist to saturated, stiff to very stiff                                     | 214.0   | 1         |                    |     |     |    |  |     |     |                                       |
|     |        | SILT - brown, saturated, compact  | 212.4   | 2         |                    |     |     |    |  |     |     |                                       |
|     |        | SANDY SILT TILL - wet sand seams, scattered gravel and cobbles; brown, saturated becoming moist at ~3m, dense to very dense | 212.0   | 3         |                    |     |     |    |  |     |     |                                       |
|     |        | - becoming grey   |         | 4         |                    |     |     |    |  |     |     |                                       |
|     |        |   |         | 5         |                    |     |     |    |  |     |     |                                       |
|     |        |   |         | 6         |                    |     |     |    |  |     |     |                                       |
|     |        |   |         | 7         |                    |     |     |    |  |     |     |                                       |
|     |        | END OF BOREHOLE   | 207.2   |           |                    |     |     |    |  |     |     |                                       |
|     |        | NOTES:<br>1. Groundwater monitoring well installed to 7.19m; sealed with bentonite from 0.3 to 3.53m.                       |         |           |                    |     |     |    |  |     |     |                                       |

LAGWGL02 BRM00609175AO.GPJ NEW.GDT 6/24/20



| Time          | Water Level (m) | Depth to Cave (m) |
|---------------|-----------------|-------------------|
| On completion | Dry             | Borehole          |
| After 4 hours | 1.14            | Well              |
| After 5 days  | 1.09            | Well              |



# Log of Borehole 116

Project No. BRM-00609175-AO

Drawing No. 20

Project: Geotechnical Investigation - Berczy Warden Subdivision

Sheet No. 1 of 1

Location: 10206 and 10348 Warden Avenue, Markham, Ontario

Date Drilled: May 13, 2020

Auger Sample

Combustible Vapour Reading

Drill Type: Dietrich 120

SPT (N) Value

Natural Moisture

Datum: Geodetic

Dynamic Cone Test

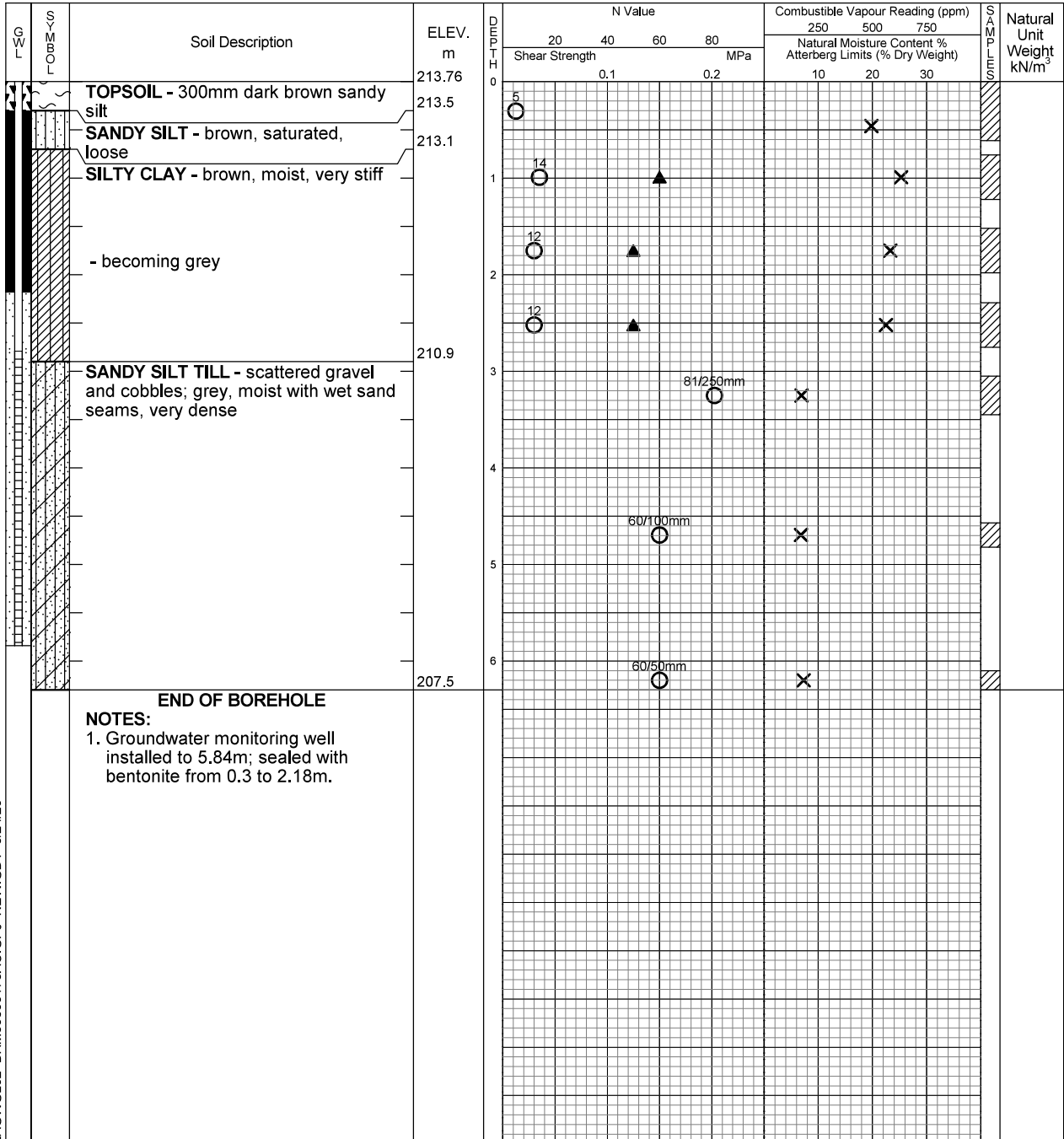
Plastic and Liquid Limit

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



LAGWGL02 BRM00609175AO.GPJ NEW.GDT 6/24/20



| Time          | Water Level (m) | Depth to Cave (m) |
|---------------|-----------------|-------------------|
| On completion | Dry             | Borehole          |
| After 9 days  | 0.97            | Well              |
| After 14 days | 0.99            | Well              |

PROJECT: 14-1186-0012

# RECORD OF BOREHOLE: 14-16

SHEET 1 OF 2

LOCATION: See Figure 2

BORING DATE: May 8, 2014

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD | SOIL PROFILE  |             | SAMPLES         |        |      | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |                |  |               | HYDRAULIC CONDUCTIVITY, k, cm/s |                       |   |    | ADDITIONAL LAB TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |  |
|--------------------|---------------|---|-------------|-----------------|--------|------|--|----------------|--|---------------|---------------------------------|-----------------------|---|----|------------------------|--------------------------------------|--|
|                    |               | DESCRIPTION   | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE | BLOWS/0.3m                                 | SHEAR STRENGTH |  |               |                                 | WATER CONTENT PERCENT |   |    |                        |                                      |  |
|                    |               |   |             |                 |        |      |  | Cu, kPa        |  | nat V. rem V. | Q - U -                         | Wp                    | W | Wi |                        |                                      |  |
| 0                  |               | GROUND SURFACE  |             | 214.70          |        |      |  |                |  |               |                                 |                       |   |    |                        |                                      |  |
|                    |               | FILL - (ML) CLAYEY SILT, some sand, organic inclusions; dark brown; cohesive, W<PL to W~PL, firm                              |             | 0.00            | 1      | SS   | 5  |                |  |               |                                 |                       |   |    |                        | Concrete                             |  |
| 1                  |               | (ML) sandy CLAYEY SILT; pale brown, with oxidation staining; cohesive, W<PL, stiff  |             | 214.01          | 2      | SS   | 9  |                |  |               |                                 |                       |   |    |                        |                                      |  |
|                    |               | (CI) SILTY CLAY, some sand; grey, with oxidation staining; cohesive, W>PL, firm to stiff                                      |             | 213.33          | 3      | SS   | 7  |                |  |               |                                 |                       |   |    |                        | PI                                   |  |
| 2                  |               | Very thinly bedded with fine sand below a depth of approximately 2.1 m below existing ground surface                          |             | 1.37            | 4      | SS   | 12   |                |  |               |                                 |                       |   |    |                        |                                      |  |
| 3                  |               | (ML) sandy SILT, some clay to clayey, trace gravel, with pockets of medium sand; grey (TILL); non-cohesive, moist, very dense |             | 211.80          | 5      | SS   | 83   |                |  |               |                                 |                       |   |    |                        |                                      |  |
| 4                  |               |   |             | 2.90            | 6      | SS   | 50/05                                      |                |  |               |                                 |                       |   |    |                        |                                      |  |
| 5                  |               |   |             |                 | 7      | SS   | 50/13                                      |                |  |               |                                 |                       |   |    |                        |                                      |  |
| 6                  |               |   |             |                 | 8      | SS   | 50/08                                      |                |  |               |                                 |                       |   |    |                        |                                      |  |
| 7                  |               |   |             |                 | 9      | SS   | 50/13                                      |                |  |               |                                 |                       |   |    |                        |                                      |  |
| 8                  |               |   |             |                 | 10     | SS   | 50/13                                      |                |  |               |                                 |                       |   |    |                        |                                      |  |
| 9                  |               |   |             |                 | 11     | SS   | 50/13                                      |                |  |               |                                 |                       |   |    |                        |                                      |  |
| 10                 |               |   |             |                 | 12     | SS   | 50/13                                      |                |  |               |                                 |                       |   |    |                        |                                      |  |

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DEPTH SCALE

1:50



LOGGED: JG

CHECKED: AM

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TRACK MOUNTED CME 55  
Hollow Stem Augers

PROJECT: 14-1186-0012

# RECORD OF BOREHOLE: 14-16

SHEET 2 OF 2

LOCATION: See Figure 2

BORING DATE: May 8, 2014

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD                              | SOIL PROFILE  |             | SAMPLES         |        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |            |                |    | HYDRAULIC CONDUCTIVITY, k, cm/s |                  |                       |                  | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |    |  |  |  |
|-----------------------|--|---|-------------|-----------------|--------|--|------------|----------------|----|---------------------------------|------------------|-----------------------|------------------|-------------------------|--------------------------------------|----|--|--|--|
|                       |  | DESCRIPTION   | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE                                       | BLOWS/0.3m | SHEAR STRENGTH |    |                                 |                  | WATER CONTENT PERCENT |                  |                         |                                      |    |  |  |  |
|                       |  |   |             |                 |        |  |            | Cu, kPa        |    | nat V. rem V.                   | Q - U -          | Wp                    | W                |                         |                                      | WI |  |  |  |
|                       |  | — CONTINUED FROM PREVIOUS PAGE —  |             |                 |        |  | 20         | 40             | 60 | 80                              | 10 <sup>-8</sup> | 10 <sup>-5</sup>      | 10 <sup>-4</sup> | 10 <sup>-3</sup>        |                                      |    |  |  |  |
| 10                    | TRACK MOUNTED CME 55<br>Hollow Stem Augers | (ML) sandy SILT, some clay to clayey, trace gravel, with pockets of medium sand; grey (TILL); non-cohesive, moist, very dense |             |                 |        |  |            |                |    |                                 |                  |                       |                  |                         |                                      |    |  |  |  |
|                       |  |   |             | 10              | SS     | 50/13                                      |            |                |    |                                 |                  |                       |                  |                         |                                      |    |  |  |  |
| 11                    |  |   |             |                 |        |  |            |                |    |                                 |                  |                       |                  |                         |                                      |    |  |  |  |
|                       |  |   |             | 11              | SS     | 50/13                                      |            |                |    |                                 |                  |                       |                  |                         |                                      |    |  |  |  |
| 12                    |  | Becoming more moist below a depth of approximately 13.1 m below ground surface  |             |                 |        |  |            |                |    |                                 |                  |                       |                  |                         |                                      |    |  |  |  |
|                       | 11   |   |             | SS              | 50/13  |  |            |                |    |                                 |                  |                       |                  |                         |                                      |    |  |  |  |
| 13                    |  |   |             |                 |        |  |            |                |    |                                 |                  |                       |                  |                         |                                      |    |  |  |  |
| 14                    |  | Augers grinding below a depth of approximately 14.9 m below ground surface. Inferred cobble/boulder                           |             |                 |        |  |            |                |    |                                 |                  |                       |                  |                         |                                      |    |  |  |  |
|                       | 12   |   |             | SS              | 99/13  |  |            |                |    |                                 |                  |                       |                  |                         |                                      |    |  |  |  |
| 15                    |  | AUGER REFUSAL ON INFERRED COBBLE/BOULDER<br>END OF BOREHOLE   |             |                 |        |  |            |                |    |                                 |                  |                       |                  |                         |                                      |    |  |  |  |
|                       | 13   |   |             | SS              | 50/13  |  |            |                |    |                                 |                  |                       |                  |                         |                                      |    |  |  |  |
|                       |  |   |             | 199.16          |        |  |            |                |    |                                 |                  |                       |                  |                         |                                      |    |  |  |  |
|                       |  |   |             | 15.54           |        |  |            |                |    |                                 |                  |                       |                  |                         |                                      |    |  |  |  |
| 18                    |  |   |             |                 |        |  |            |                |    |                                 |                  |                       |                  |                         |                                      |    |  |  |  |
| 17                    |  |   |             |                 |        |  |            |                |    |                                 |                  |                       |                  |                         |                                      |    |  |  |  |
| 19                    |  |   |             |                 |        |  |            |                |    |                                 |                  |                       |                  |                         |                                      |    |  |  |  |
| 20                    |  |   |             |                 |        |  |            |                |    |                                 |                  |                       |                  |                         |                                      |    |  |  |  |

Bentonite Seal

Silica Sand Filter

1. Water level measured at a depth of 3.87 m below ground surface, June 20/14

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DEPTH SCALE

1 : 50



LOGGED: JG

CHECKED: AM

PROJECT: 19119989 (2000)

LOCATION: See Figure 1

# RECORD OF BOREHOLE: 20-12

BORING DATE: July 10, 2020

SHEET 1 OF 2

DATUM: Geodetic

SPT/DCPT HAMMER, MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD | SOIL PROFILE  |             | SAMPLES               |        | DYNAMIC PENETRATION<br>RESISTANCE, BLOWS/0.3m |             |    |    | HYDRAULIC CONDUCTIVITY,<br>k, cm/s |                  |                  |                  | ADDITIONAL<br>LAB. TESTING | PIEZOMETER<br>OR<br>STANDPIPE<br>INSTALLATION |
|-----------------------|---------------|---|-------------|-----------------------|--------|---|-------------|----|----|------------------------------------|------------------|------------------|------------------|----------------------------|---|
|                       |               | DESCRIPTION   | STRATA PLOT | ELEV.<br>DEPTH<br>(m) | NUMBER | TYPE  | 20          | 40 | 60 | 80                                 | 10 <sup>-4</sup> | 10 <sup>-5</sup> | 10 <sup>-4</sup> |                            |   |
|                       |               |   |             |                       |        | SHEAR STRENGTH<br>Cu, kPa                     |             |    |    | WATER CONTENT PERCENT              |                  |                  |                  |                            |   |
|                       |               |   |             |                       |        | net v. + q - ●<br>rem v. ⊕ U - ○              |             |    |    | Wp   —   Wl                        |                  |                  |                  |                            |   |
|                       |               | GROUND SURFACE  |             | 220.20                |        |   |             |    |    |                                    |                  |                  |                  |                            |   |
| 0                     |               | FILL - (CL) SILTY CLAY, some sand,<br>trace rootlets, trace gravel, brown;<br>cohesive, w<PL, stiff               |             | 0.00                  | 1      | SS  | 12          |    |    |                                    |                  |                  |                  |                            |   |
|                       |               | FILL - (CL) SILTY CLAY, trace gravel,<br>some sand; brown, oxidation staining,<br>cohesive, w<PL, firm            |             | 219.58<br>0.61        | 2      | SS  | 7           |    |    |                                    |                  |                  |                  |                            |   |
| 1                     |               | (ML) sandy SILT, trace gravel; brown;<br>oxidation staining; non-cohesive, moist<br>to wet, compact to very dense |             | 218.83<br>1.37        | 3      | SS  | 21          |    |    |                                    |                  |                  |                  |                            |   |
| 2                     |               |   |             |                       | 4      | SS  | 69          |    |    |                                    |                  |                  |                  |                            |   |
| 3                     |               |   |             |                       | 5      | SS  | 73          |    |    |                                    |                  |                  |                  |                            |   |
| 4                     |               |   |             |                       | 6      | SS  | 57          |    |    |                                    |                  |                  |                  |                            |   |
| 5                     |               |   |             |                       | 7      | SS  | 40          |    |    |                                    |                  |                  |                  |                            |   |
| 6                     |               | (SP) SAND, some gravel; brown;<br>non-cohesive, wet, dense to very dense  |             | 214.64<br>5.56        | 8      | SS  | 50/<br>0.05 |    |    |                                    |                  |                  |                  |                            |   |
| 7                     |               |   |             |                       | 9      | SS  | 50/<br>0.08 |    |    |                                    |                  |                  |                  |                            |   |
| 8                     |               | (SM) gravelly SILTY SAND, grey (TILL),<br>contains cobbles and boulders;<br>non-cohesive, moist, very dense       |             | 211.60<br>8.60        |        |   |             |    |    |                                    |                  |                  |                  |                            |   |
| 9                     |               |   |             |                       |        |   |             |    |    |                                    |                  |                  |                  |                            |   |
| 10                    |               |   |             |                       |        |   |             |    |    |                                    |                  |                  |                  |                            |   |

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DEPTH SCALE

1 : 50



LOGGED: MJB/BD

CHECKED: KN

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PROJECT: 19119989 (2000)

# RECORD OF BOREHOLE: 20-12

SHEET 2 OF 2


LOCATION: See Figure 1

BORING DATE: July 10, 2020

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD  | SOIL PROFILE  |  | SAMPLES         |                        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |             |    |    | HYDRAULIC CONDUCTIVITY, $k_v$ , cm/s |                  |                  |                  | ADDITIONAL LAB TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |  |  |  |  |
|--------------------|--|---|--|-----------------|------------------------|--|-------------|----|----|--------------------------------------|------------------|------------------|------------------|------------------------|--------------------------------------|--|--|--|--|
|                    |  | DESCRIPTION   | STRATA PLAT  | ELEV. DEPTH (m) | NUMBER TYPE BLOWS/0.3m | 20   | 40          | 60 | 80 | 10 <sup>-6</sup>                     | 10 <sup>-5</sup> | 10 <sup>-4</sup> | 10 <sup>-3</sup> |                        |                                      |  |  |  |  |
|                    |  | — CONTINUED FROM PREVIOUS PAGE —  |  |                 |                        |  |             |    |    |                                      |                  |                  |                  |                        |                                      |  |  |  |  |
| 10                 | Mobile B-45<br>110 mm Tricone with Mud   | (CL-ML) CLAYEY SILT and SAND, some gravel; grey (TILL), contains cobbles and boulders; cohesive, w<PL, hard |  | 9.96            |                        |  |             |    |    |                                      |                  |                  |                  |                        |                                      |  |  |  |  |
| 11                 |  |   |  | 10              | SS                     | 50'<br>0.10                                |             |    |    |                                      |                  |                  |                  |                        |                                      |  |  |  |  |
| 12                 |  |   |  | 11              | SS                     | 50'<br>0.05                                |             |    |    |                                      |                  |                  |                  |                        |                                      |  |  |  |  |
| 13                 |  |   |  | 12              | SS                     | 50'<br>0.08                                |             |    |    |                                      |                  |                  |                  |                        |                                      |  |  |  |  |
| 14                 |  |   |  | 13              | SS                     | 50'<br>0.10                                |             |    |    |                                      |                  |                  |                  |                        |                                      |  |  |  |  |
| 17                 |  |   |  | 14              | SS                     | 50'<br>0.13                                |             |    |    |                                      |                  |                  |                  |                        |                                      |  |  |  |  |
| 17                 | END OF BOREHOLE  |   |  | 303.31<br>16.59 | 14                     | SS   | 50'<br>0.13 |    |    |                                      |                  |                  |                  |                        |                                      |  |  |  |  |
| 18                 | NOTE:<br>1. Borehole open upon completion of drilling.<br>2. Heaving sand encountered at a depth of 7.6 m, drilling method changed to 110 mm tricone with mud. |   |  |                 |                        |  |             |    |    |                                      |                  |                  |                  |                        |                                      |  |  |  |  |

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DEPTH SCALE

1 : 50



LOGGED: MJB/BD

CHECKED: KN

PROJECT: 19119989 (2000)

# RECORD OF BOREHOLE: 20-13

SHEET 1 OF 2

LOCATION: See Figure 1

BORING DATE: July 20, 2020

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD | SOIL PROFILE  |             | SAMPLES         |        |      | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |    |    |    | HYDRAULIC CONDUCTIVITY, $k_v$ cm/s |                  |                  |                  | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |
|--------------------|---------------|---|-------------|-----------------|--------|------|--|----|----|----|------------------------------------|------------------|------------------|------------------|-------------------------|--------------------------------------|
|                    |               | DESCRIPTION   | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE | BLOWS/0.3m                                 | 20 | 40 | 60 | 80                                 | 10 <sup>-8</sup> | 10 <sup>-5</sup> | 10 <sup>-4</sup> |                         |                                      |
| 0                  |               | GROUND SURFACE  |             | 218.30          |        |      |  |    |    |    |                                    |                  |                  |                  |                         |                                      |
|                    |               | TOPSOIL (690 mm)  |             | 0.00            | 1      | SS   | 6  |    |    |    |                                    |                  |                  |                  |                         |                                      |
| 1                  |               | (CL) SILTY CLAY, trace sand to sandy, trace gravel; brown, organic staining, oxidation staining; cohesive, w/PL, stiff      |             | 217.81<br>0.59  | 2      | SS   | 10   |    |    |    |                                    |                  |                  |                  |                         |                                      |
| 2                  |               |   |             |                 | 3      | SS   | 12   |    |    |    |                                    |                  |                  |                  |                         |                                      |
| 3                  |               | (SM) SILTY SAND, some gravel; brown to grey (TILL), contains cobbles and boulders; non-cohesive, moist, dense to very dense |             | 216.17<br>2.13  | 4      | SS   | 31   |    |    |    |                                    |                  |                  |                  |                         |                                      |
| 4                  |               |   |             |                 | 5      | SS   | 73   |    |    |    |                                    |                  |                  |                  |                         |                                      |
| 5                  |               | - Becoming grey at a depth of 3.4 m   |             |                 | 6      | SS   | 91/0.2                                     |    |    |    |                                    |                  |                  |                  |                         |                                      |
| 6                  |               | - Auger grinding between depths of 5.5 m and 6.1 m  |             |                 | 7      | SS   | 59/0.1                                     |    |    |    |                                    |                  |                  |                  |                         | MH                                   |
| 7                  |               |   |             |                 | 8      | SS   | 50/0.13                                    |    |    |    |                                    |                  |                  |                  |                         |                                      |
| 8                  |               |   |             |                 | 9      | SS   | 50/0.08                                    |    |    |    |                                    |                  |                  |                  |                         |                                      |
| 9                  |               |   |             |                 |        |      |  |    |    |    |                                    |                  |                  |                  |                         |                                      |
| 10                 |               |   |             |                 |        |      |  |    |    |    |                                    |                  |                  |                  |                         |                                      |

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DEPTH SCALE

1:50



LOGGED: BD

CHECKED: KN

PROJECT: 19119989 (2000)

# RECORD OF BOREHOLE: 20-13

SHEET 2 OF 2

LOCATION: See Figure 1

BORING DATE: July 20, 2020

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD | SOIL PROFILE  |                 | STRATA PLOT | SAMPLES |      |            | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |    |    |    | HYDRAULIC CONDUCTIVITY, $k_v$ , cm/s |                          |                  |                  | ADDITIONAL LAB TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |
|--------------------|---------------|---|-----------------|-------------|---------|------|------------|--|----|----|----|--------------------------------------|--------------------------|------------------|------------------|------------------------|--------------------------------------|
|                    |               | DESCRIPTION   | ELEV. DEPTH (m) |             | NUMBER  | TYPE | BLOWS/0.3m | SHEAR STRENGTH $C_u$ , kPa                 |    |    |    | WATER CONTENT PERCENT                |                          |                  |                  |                        |                                      |
|                    |               |   |                 |             |         |      |            | 20   | 40 | 60 | 80 | nat V. rem V.                        | + $\ominus$ U. $\ominus$ | 10 <sup>-6</sup> | 10 <sup>-5</sup> |                        |                                      |
| 10                 |               | — CONTINUED FROM PREVIOUS PAGE —  |                 |             |         |      |            |  |    |    |    |                                      |                          |                  |                  |                        |                                      |
| 10.5               |               | (SM) SILTY SAND, some gravel; brown to grey (TILL), contains cobbles and boulders; non-cohesive, moist, dense to very dense |                 |             | 10      | SS   | 50         |  |    |    |    |                                      |                          |                  |                  |                        |                                      |
| 11                 |               |   |                 |             |         |      |            |  |    |    |    |                                      |                          |                  |                  |                        |                                      |
| 12                 |               | - Auger grinding between depths of 12.2 m and 13.1 m  |                 |             | 11      | SS   | 50         |  |    |    |    |                                      |                          |                  |                  |                        |                                      |
| 13                 |               |   |                 |             |         |      |            |  |    |    |    |                                      |                          |                  |                  |                        |                                      |
| 14                 |               |   |                 |             | 12      | SS   | 50         |  |    |    |    |                                      |                          |                  |                  |                        |                                      |
| 15                 |               |   |                 |             |         |      |            |  |    |    |    |                                      |                          |                  |                  |                        |                                      |
| 16                 |               |   |                 |             | 13      | SS   | 50         |  |    |    |    |                                      |                          |                  |                  |                        |                                      |
| 17                 |               |   |                 |             |         |      |            |  |    |    |    |                                      |                          |                  |                  |                        |                                      |
| 17                 |               | END OF BOREHOLE   |                 |             | 14      | SS   | 50         |  |    |    |    |                                      |                          |                  |                  |                        |                                      |
| 17                 |               | NOTE:<br>1. Borehole open upon completion of drilling.  |                 |             | 201.26  |      |            |  |    |    |    |                                      |                          |                  |                  |                        |                                      |
| 18                 |               |   |                 |             | 17.04   |      |            |  |    |    |    |                                      |                          |                  |                  |                        |                                      |

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DEPTH SCALE  
1 : 50



LOGGED: BD  
CHECKED: KN

PROJECT: 19119989 (2000)  
 LOCATION: N 4861885.83; E 632932.01

# RECORD OF BOREHOLE: 21-1

SHEET 1 OF 2  
 DATUM: Geodetic

BORING DATE: May 10, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD | SOIL PROFILE   |             | SAMPLES         |        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |         |    |    | HYDRAULIC CONDUCTIVITY, $k_v$ cm/s |                  |                  |                  | ADDITIONAL LAB TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |
|--------------------|---------------|--|-------------|-----------------|--------|--|---------|----|----|------------------------------------|------------------|------------------|------------------|------------------------|--------------------------------------|
|                    |               | DESCRIPTION  | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE                                       | 20      | 40 | 60 | 80                                 | 10 <sup>-9</sup> | 10 <sup>-5</sup> | 10 <sup>-4</sup> |                        |                                      |
| 0                  |               | GROUND SURFACE   |             | 216.45          |        |  |         |    |    |                                    |                  |                  |                  |                        |                                      |
|                    |               | ASPHALT (150 mm)   |             | 0.00            |        |  |         |    |    |                                    |                  |                  |                  |                        |                                      |
|                    |               | FILL - (SP) gravelly SAND; brown; non-cohesive, moist, dense   |             | 0.15            | 1      | SS   | 30      |    |    |                                    |                  |                  |                  |                        |                                      |
|                    |               |  |             | 215.66          |        |  |         |    |    |                                    |                  |                  |                  |                        |                                      |
|                    |               | FILL - (CL) sandy SILTY CLAY; brown; cohesive, w<PL, firm  |             | 0.76            | 2      | SS   | 8       |    |    |                                    |                  |                  |                  |                        |                                      |
|                    |               |  |             | 214.32          |        |  |         |    |    |                                    |                  |                  |                  |                        |                                      |
|                    |               |  |             | 2.13            |        |  |         |    |    |                                    |                  |                  |                  |                        |                                      |
|                    |               | (CL) sandy SILTY CLAY to SILTY CLAY and SAND, some gravel; brown to grey at 6.1 m (TLL), contains cobbles and boulders; cohesive, w<PL, very stiff to hard |             |                 | 3      | SS   | 6       |    |    |                                    |                  |                  |                  |                        |                                      |
|                    |               |  |             |                 | 4      | SS   | 17      |    |    |                                    |                  |                  |                  |                        |                                      |
|                    |               |  |             |                 | 5      | SS   | 20      |    |    |                                    |                  |                  |                  |                        |                                      |
|                    |               |  |             |                 | 6      | SS   | 50/0.13 |    |    |                                    |                  |                  |                  |                        |                                      |
|                    |               |  |             |                 | 7      | SS   | 93/0.23 |    |    |                                    |                  |                  |                  |                        |                                      |
|                    |               |  |             |                 | 8      | SS   | 53      |    |    |                                    |                  |                  |                  |                        |                                      |
|                    |               |  |             |                 | 9      | SS   | 50/0.13 |    |    |                                    |                  |                  |                  |                        |                                      |

DEPTH SCALE  
 1 : 50



LOGGED: YS  
 CHECKED: YS

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CONTINUED NEXT PAGE



PROJECT: 19119989 (2000)

# RECORD OF BOREHOLE: 21-1

SHEET 2 OF 2

LOCATION: N 4861885.83; E 632932.01

BORING DATE: May 10, 2021

DATUM: Geodatic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD                                       | SOIL PROFILE  |             | SAMPLES         |        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |            |                |    | HYDRAULIC CONDUCTIVITY, k, cm/s |    |                       |                    | ADDITIONAL LAB TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |   |     |
|--------------------|---|---|-------------|-----------------|--------|--|------------|----------------|----|---------------------------------|----|-----------------------|--------------------|------------------------|--------------------------------------|---|-----|
|                    |   | DESCRIPTION   | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE                                       | BLOWS/0.3m | SHEAR STRENGTH |    |                                 |    | WATER CONTENT PERCENT |                    |                        |                                      |   |     |
|                    |   |   |             |                 |        |  |            | 20             | 40 | 60                              | 80 | nat V. Cu, kPa        | rem V. rem V. U. - |                        |                                      | + | Q - |
|                    |   | — CONTINUED FROM PREVIOUS PAGE —  |             |                 |        |  |            |                |    |                                 |    |                       |                    |                        |                                      |   |     |
| 10                 |   | (CL) sandy SILTY CLAY to SILTY CLAY and SAND, some gravel; brown to grey at 6.1 m (FILL), contains cobbles and boulders; cohesive, w<PL, very stiff to hard |             |                 |        |  |            |                |    |                                 |    |                       |                    |                        |                                      |   |     |
| 11                 |   |   |             | 10              | SS     | 50/0.07                                    |            |                |    |                                 |    |                       |                    |                        |                                      |   |     |
| 12                 |   |   |             | 11              | SS     | 50/0.07                                    |            |                |    |                                 |    |                       |                    |                        |                                      |   |     |
| 13                 |   |   |             | 12              | SS     | 50/0.13                                    |            |                |    |                                 |    |                       |                    |                        |                                      |   |     |
| 14                 | Track Mount Mobile B57<br>130 mm Tricone Mud Rotary |   |             | 13              | SS     | 100/0.25                                   |            |                |    |                                 |    |                       |                    |                        |                                      |   |     |
| 15                 |   |   |             | 14              | SS     | 50/0.07                                    |            |                |    |                                 |    |                       |                    |                        |                                      |   |     |
| 16                 |   |   |             | 15              | SS     | 52   |            |                |    |                                 |    |                       |                    |                        |                                      |   |     |
| 17                 |   |   |             | 16              | SS     | 50/0.13                                    |            |                |    |                                 |    |                       |                    |                        |                                      |   |     |
| 17                 |   | END OF BOREHOLE   |             | 199.41          |        | 17.04                                      |            |                |    |                                 |    |                       |                    |                        |                                      |   |     |
| 18                 |   | NOTES:  |             |                 |        |  |            |                |    |                                 |    |                       |                    |                        |                                      |   |     |
| 19                 |   | 1. Water encountered at a depth of 4.6 m during drilling.   |             |                 |        |  |            |                |    |                                 |    |                       |                    |                        |                                      |   |     |
| 20                 |   | 2. Water level measured in monitoring well as follows:  |             |                 |        |  |            |                |    |                                 |    |                       |                    |                        |                                      |   |     |
|                    |   | Date  | Depth (m)   | Elev. (m)       |        |  |            |                |    |                                 |    |                       |                    |                        |                                      |   |     |
|                    |   | 20-May-21   | 0.6         | 215.9           |        |  |            |                |    |                                 |    |                       |                    |                        |                                      |   |     |

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DEPTH SCALE

1 : 50



LOGGED: YS

CHECKED: YS



PROJECT: 19119989 (2000)  
 LOCATION: N 4861617.47; E 632979.74

# RECORD OF BOREHOLE: 21-2

SHEET 2 OF 2

BORING DATE: May 7, 2021

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD | SOIL PROFILE   |             | SAMPLES         |   | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |            |                |  | HYDRAULIC CONDUCTIVITY, k, cm/s |  |                       |  | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |   |  |
|-----------------------|---------------|--|-------------|-----------------|---|--|------------|----------------|--|---------------------------------|--|-----------------------|--|-------------------------|--------------------------------------|---|--|
|                       |               | DESCRIPTION  | STRATA PLOT | ELEV. DEPTH (m) | NUMBER  | TYPE                                       | BLOWS/0.3m | SHEAR STRENGTH |  |                                 |  | WATER CONTENT PERCENT |  |                         |                                      |   |  |
|                       |               |  |             |                 |   |  |            | Cu, kPa        |  | rem V. U.                       |  | Wp                    |  |                         |                                      | W |  |
|                       |               | — CONTINUED FROM PREVIOUS PAGE —   |             |                 |   |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                       |               | (CL) sandy SILTY CLAY, some gravel; grey (TILL), contains cobbles and boulders; cohesive, w<PL, hard |             |                 |   |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 10                    |               |  |             |                 | 10  | SS   | 50/0.15    |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 11                    |               |  |             |                 | 11  | SS   | 50/0.10    |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 12                    |               |  |             |                 | 12  | SS   | 50/0.08    |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 13                    |               |  |             |                 | 13  | SS   | 50/0.08    |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 14                    |               |  |             |                 | 14  | SS   | 50/0.08    |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 15                    |               |  |             |                 | 15  | SS   | 50/0.10    |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 16                    |               |  |             |                 | 16  | SS   | 50/0.10    |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 17                    |               |  |             |                 | 17  | SS   | 50/0.10    |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 18                    |               |  |             |                 | 18  | SS   | 50/0.10    |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 19                    |               |  |             |                 | 19  | SS   | 50/0.10    |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 20                    |               |  |             |                 | 20  | SS   | 50/0.10    |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                       |               |  |             |                 | 20242   | 17   | SS         | 50/0.10        |  |                                 |  |                       |  |                         |                                      |   |  |
|                       |               |  |             |                 | 18.38   |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                       |               |  |             |                 | END OF BOREHOLE   |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                       |               |  |             |                 | NOTES:  |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                       |               |  |             |                 | 1. Water encountered at a depth of 4.6 m during drilling. |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                       |               |  |             |                 | 2. Water level measured in monitoring well as follows:    |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                       |               |  |             |                 | Date      Depth (m)      Elev. (m)                        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                       |               |  |             |                 | 20-May-21      4.7      216.1                             |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |

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DEPTH SCALE  
1 : 50



LOGGED: SC  
CHECKED: YS

PROJECT: 19119989 (2000)  
 LOCATION: N 4861620.43; E 633018.12

# RECORD OF BOREHOLE: 21-3

SHEET 1 OF 3

BORING DATE: May 4, 2021

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg, DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD | SOIL PROFILE   |             | SAMPLES         |        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |                |  |               | HYDRAULIC CONDUCTIVITY, k, cm/s |                       |  |    | ADDITIONAL LAB TESTING | PIEZOMETER OR STANDPIPE INSTALLATION             |  |
|--------------------|---------------|--|-------------|-----------------|--------|--|----------------|--|---------------|---------------------------------|-----------------------|--|----|------------------------|--|--|
|                    |               | DESCRIPTION  | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE                                       | SHEAR STRENGTH |  |               |                                 | WATER CONTENT PERCENT |  |    |                        |  |  |
|                    |               |  |             |                 |        |  | Cu, kPa        |  | nat V. rem V. |                                 | Wp                    |  | Wi |                        |  |  |
| 0                  |               | GROUND SURFACE   |             | 220.82          |        |  |                |  |               |                                 |                       |  |    |                        |  |  |
|                    |               | TOPSOIL (680 mm)   |             | 0.00            | 1      | SS   | 8              |  |               |                                 |                       |  |    |                        | 50 mm Diameter PAC Monitoring Well (Flush mount) |  |
| 1                  |               | (CL) SILTY CLAY and SAND, some gravel, brown, cohesive, w-PL, stiff        |             | 220.14<br>0.68  | 2      | SS   | 11             |  |               |                                 |                       |  |    |                        |  |  |
| 2                  |               | (SM) SILTY SAND, trace gravel; brown (TILL); very dense                    |             | 219.45<br>1.37  | 3      | SS   | 50             |  |               |                                 |                       |  |    |                        | Bentonite  |  |
| 3                  |               | (ML) SILT and SAND; brown; non-cohesive, moist to wet, dense to very dense |             | 218.89<br>2.13  | 4      | SS   | 84             |  |               |                                 |                       |  |    |                        |  |  |
| 4                  |               |  |             |                 | 5      | SS   | 61             |  |               |                                 |                       |  |    |                        |  |  |
| 5                  |               |  |             |                 | 6      | SS   | 32             |  |               |                                 |                       |  |    |                        | Sand   |  |
| 6                  |               | (SP) gravelly SAND, trace fines; brown; non-cohesive, wet, very dense      |             | 215.25<br>5.56  | 7      | SS   | 84             |  |               |                                 |                       |  |    |                        | Screen   |  |
| 7                  |               |  |             |                 | 8      | SS   | 71             |  |               |                                 |                       |  |    |                        |  |  |
| 8                  |               |  |             |                 | 9      | SS   | 50             |  |               |                                 |                       |  |    |                        |  |  |
| 9                  |               |  |             |                 |        |  |                |  |               |                                 |                       |  |    |                        |  |  |
| 10                 |               |  |             |                 |        |  |                |  |               |                                 |                       |  |    |                        |  |  |

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Track Mount Model B67  
200 mm O.D. Hollow Stem Auger

CONTINUED NEXT PAGE

DEPTH SCALE  
1:50



LOGGED: SC  
CHECKED: YS

PROJECT: 19119989 (2000)  
 LOCATION: N 4861620.43; E 633018.12

# RECORD OF BOREHOLE: 21-3

SHEET 2 OF 3  
 DATUM: Geodetic

BORING DATE: May 4, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES   | BORING METHOD  | SOIL PROFILE  |           | STRATA PLOT | SAMPLES |      |            | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |    |    |    | HYDRAULIC CONDUCTIVITY, $k_v$ cm/s |       |   |   | ADDITIONAL LAB TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |    |
|--|--|---|-----------|-------------|---------|------|------------|--|----|----|----|------------------------------------|-------|---|---|------------------------|--------------------------------------|----|
|  |  | DESCRIPTION   | ELEV. (m) |             | NUMBER  | TYPE | BLOWS/0.3m | SHEAR STRENGTH $C_u$ , kPa                 |    |    |    | WATER CONTENT PERCENT              |       |   |   |                        |                                      |    |
|  |  |   |           |             |         |      |            | 20   | 40 | 60 | 80 | nat V                              | rem V | + | - |                        |                                      | Wp |
| — CONTINUED FROM PREVIOUS PAGE —   |  |   |           |             |         |      |            |  |    |    |    |                                    |       |   |   |                        |                                      |    |
| 10   | Track Mount Mobile BS7<br>200 mm O.D. Hollow Stem Augers | (CL) sandy SILTY CLAY, some gravel; grey (TILL), contains cobbles and boulders; cohesive, $w < PL$ to $w = PL$ , hard | 210.89    | 10          | SS      | 50'  |            |  |    |    |    |                                    |       |   |   |                        |                                      |    |
|  |  |   | 10.13     |             |         |      |            |  |    |    |    |                                    |       |   |   |                        |                                      |    |
| 11   |  |   |           |             |         |      |            |  |    |    |    |                                    |       |   |   |                        |                                      |    |
| 12   |  |   |           |             |         |      |            |  |    |    |    |                                    |       |   |   |                        |                                      |    |
| 13   |  |   |           |             |         |      |            |  |    |    |    |                                    |       |   |   |                        |                                      |    |
| 14   |  |   |           |             |         |      |            |  |    |    |    |                                    |       |   |   |                        |                                      |    |
| 15   |  |   |           |             |         |      |            |  |    |    |    |                                    |       |   |   |                        |                                      |    |
| 16   |  |   |           |             |         |      |            |  |    |    |    |                                    |       |   |   |                        |                                      |    |
| 17   |  |   |           |             |         |      |            |  |    |    |    |                                    |       |   |   |                        |                                      |    |
| 18   |  |   |           |             |         |      |            |  |    |    |    |                                    |       |   |   |                        |                                      |    |
| 19   |  |   |           |             |         |      |            |  |    |    |    |                                    |       |   |   |                        |                                      |    |
| 20   |  |   |           |             |         |      |            |  |    |    |    |                                    |       |   |   |                        |                                      |    |
|  |  |   |           |             | 202.40  | 17   | SS         | 50'  |    |    |    |                                    |       |   |   |                        |                                      |    |
|  |  |   |           |             | 16.42   |      |            |  |    |    |    |                                    |       |   |   |                        |                                      |    |
| END OF BOREHOLE  |  |   |           |             |         |      |            |  |    |    |    |                                    |       |   |   |                        |                                      |    |
| NOTES:<br>1. NP = Non-Plastic<br>2. Water encountered at a depth of 4.6 m during drilling. |  |   |           |             |         |      |            |  |    |    |    |                                    |       |   |   |                        |                                      |    |
| CONTINUED NEXT PAGE  |  |   |           |             |         |      |            |  |    |    |    |                                    |       |   |   |                        |                                      |    |

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DEPTH SCALE  
1 : 50



LOGGED: SC  
CHECKED: YS

PROJECT: 19119989 (2000)  
 LOCATION: N 4861620.43, E 633018.12

# RECORD OF BOREHOLE: 21-3

SHEET 3 OF 3  
 DATUM: Geodetic

BORING DATE: May 4, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD | SOIL PROFILE   |             | SAMPLES         |           | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |            |    |    | HYDRAULIC CONDUCTIVITY, $k, \text{cm/s}$ |    |                  |                  | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |
|--------------------|---------------|--|-------------|-----------------|-----------|--|------------|----|----|--|----|------------------|------------------|-------------------------|--------------------------------------|
|                    |               | DESCRIPTION  | STRATA PLOT | ELEV. DEPTH (m) | NUMBER    | TYPE                                       | BLOWS/0.3m | 20 | 40 | 60                                       | 80 | 10 <sup>-5</sup> | 10 <sup>-5</sup> |                         |                                      |
|                    |               | --- CONTINUED FROM PREVIOUS PAGE ---                   |             |                 |           |  |            |    |    |  |    |                  |                  |                         |                                      |
|                    |               | 3. Water level measured in monitoring well as follows: |             |                 |           |  |            |    |    |  |    |                  |                  |                         |                                      |
|                    |               |  |             | Date            | Depth (m) | Elev. (m)                                  |            |    |    |  |    |                  |                  |                         |                                      |
|                    |               |  |             | 20-May-21       | 4.5       | 216.3                                      |            |    |    |  |    |                  |                  |                         |                                      |
| 20                 |               |  |             |                 |           |  |            |    |    |  |    |                  |                  |                         |                                      |
| 21                 |               |  |             |                 |           |  |            |    |    |  |    |                  |                  |                         |                                      |
| 22                 |               |  |             |                 |           |  |            |    |    |  |    |                  |                  |                         |                                      |
| 23                 |               |  |             |                 |           |  |            |    |    |  |    |                  |                  |                         |                                      |
| 24                 |               |  |             |                 |           |  |            |    |    |  |    |                  |                  |                         |                                      |
| 25                 |               |  |             |                 |           |  |            |    |    |  |    |                  |                  |                         |                                      |
| 26                 |               |  |             |                 |           |  |            |    |    |  |    |                  |                  |                         |                                      |
| 27                 |               |  |             |                 |           |  |            |    |    |  |    |                  |                  |                         |                                      |
| 28                 |               |  |             |                 |           |  |            |    |    |  |    |                  |                  |                         |                                      |
| 29                 |               |  |             |                 |           |  |            |    |    |  |    |                  |                  |                         |                                      |
| 30                 |               |  |             |                 |           |  |            |    |    |  |    |                  |                  |                         |                                      |

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DEPTH SCALE  
 1 : 50



LOGGED: SC  
 CHECKED: YS

# LOG OF DRILLING OPERATIONS

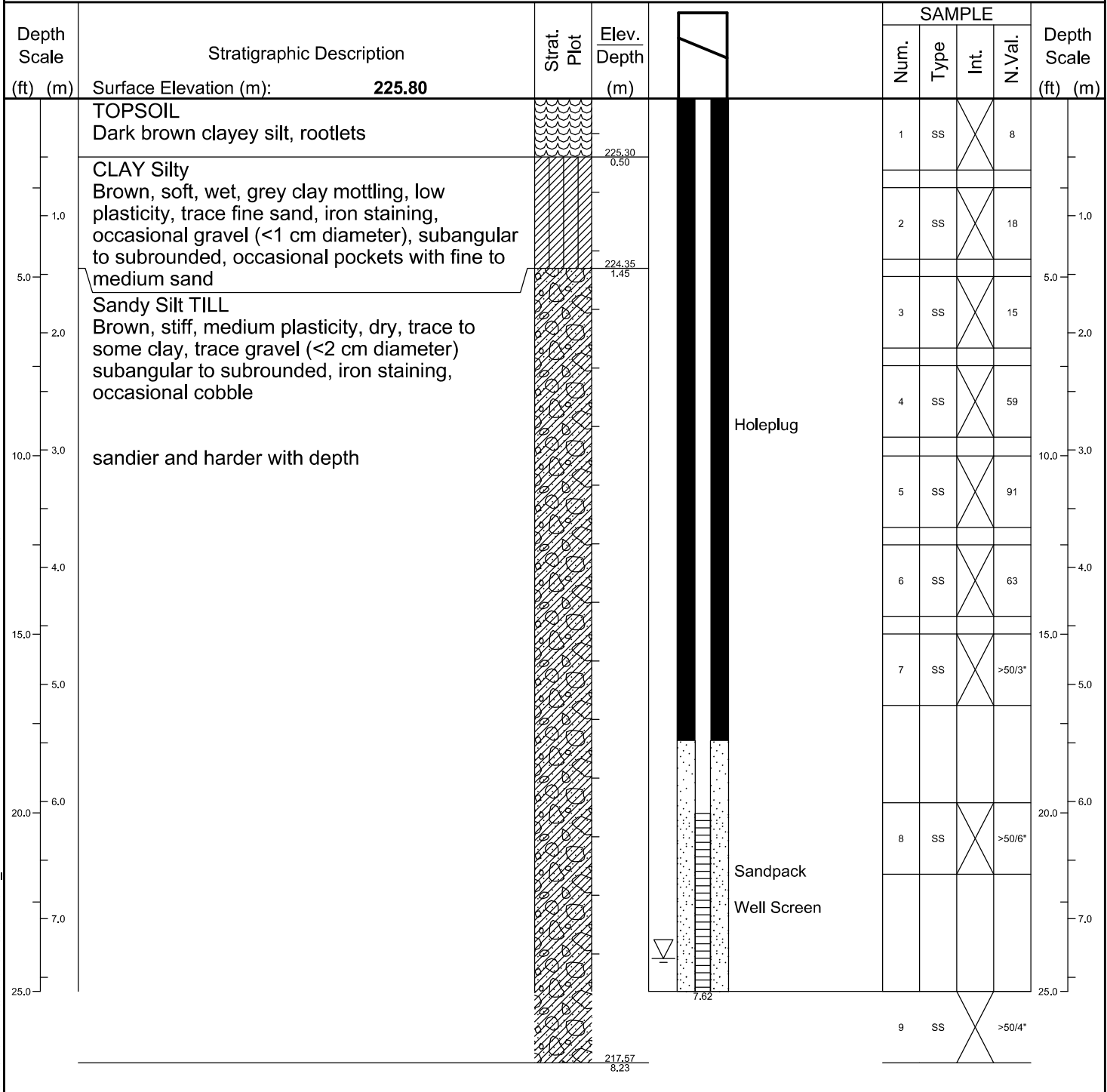
**AG-MW1**

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R.J. Burnside & Associates Limited  
292 Speedvale Avenue West, Guelph, Ontario N1H 1C4  
telephone (519) 823-4995 fax (519) 836-5477

|   |                                      |   |
|---|--------------------------------------|---|
| Client: <b>Angus Glen Developments Inc.</b>         | Project Name: <b>Angus Glen MESP</b> | Logged by: <b>C. D.</b>                   |
| Project No.: <b>300036802</b>                       | Location: <b>Markham, ON</b>         | Ground (m amsl): <b>225.80</b>            |
| Drilling Co.: <b>Lantech Drilling Services Inc.</b> | Date Started: <b>3/2/2015</b>        | Static Water Level Depth (m): <b>7.34</b> |
| Drilling Method: <b>Hollow Stem Auger</b>           | Date Completed: <b>3/2/2015</b>      | Sand Pack Depth (m) : <b>5.48 - 7.62</b>  |



BHLOG GUELPH P:\GINT\PROJECTS\300 JOBS\300036802\_SE WARDEN AND ELGIN MILLS.GPJ TEMPLATE.GDT 1/21/16

Prepared By: **C. D.** Checked By: **J. S.** Date Prepared: **3/3/2015**  
 This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

|                                |  |                    |
|--------------------------------|--|--------------------|
| <b>LEGEND</b>                  | <b>MONITORING WELL DATA</b>            | <b>SAMPLE TYPE</b> |
| Water found @ time of drilling | Pipe: <b>51 mm dia. PVC</b>            | AC  Auger Cutting  |
| Static Water Level - 6/16/2015 | Screen: <b>51 mm dia. PVC #10 slot</b> | CS  Continuous     |
|                                |  | RC  Rock Core      |
|                                |  | SS  Split Spoon    |
|                                |  | AR  Air Rotary     |
|                                |  | WC  Wash Cuttings  |

# LOG OF DRILLING OPERATIONS

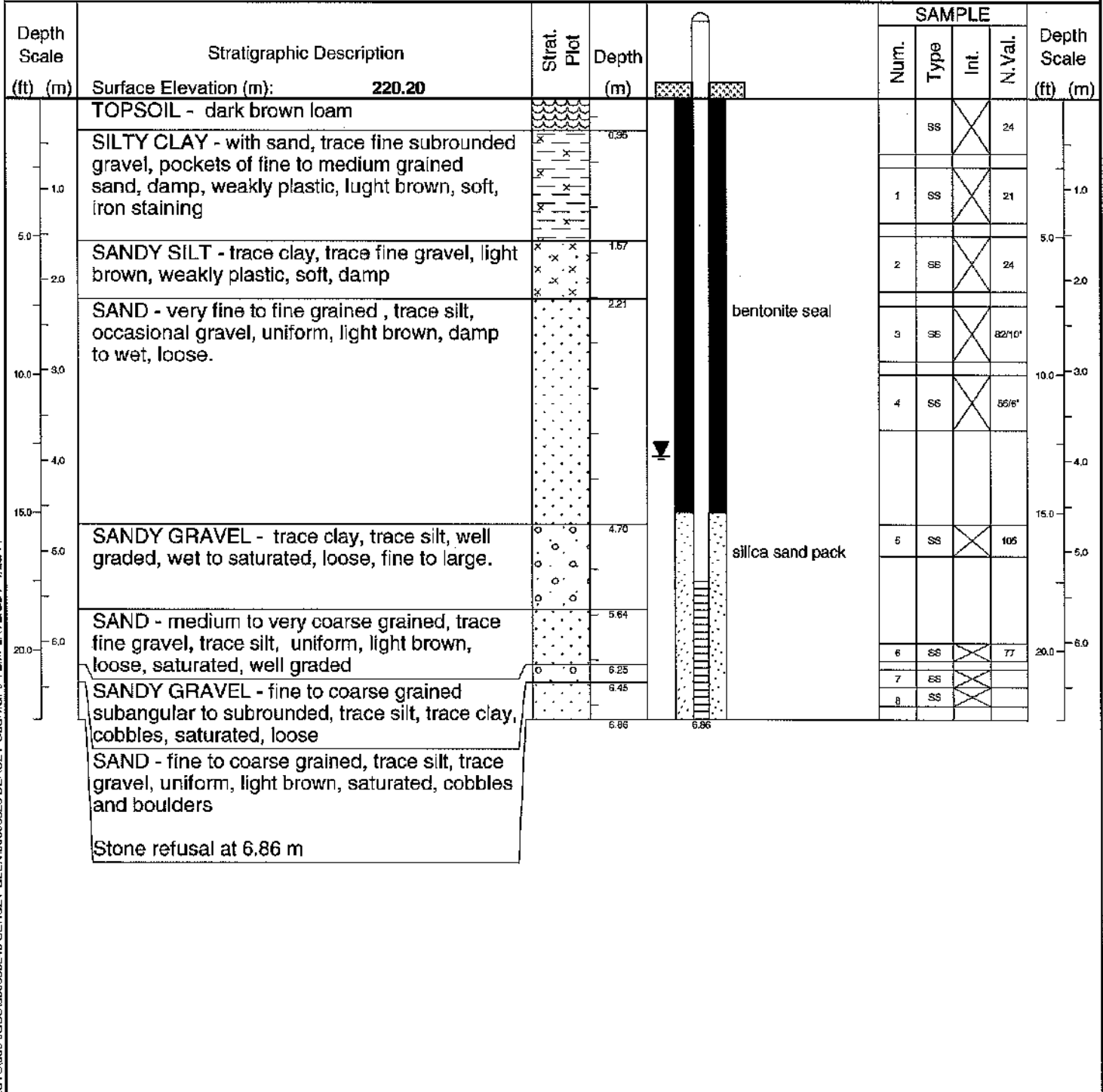


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**BG-MW1**

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|   |  |  |
|---|--|--|
| Client: <b>Berczy Glen Landowners Group</b>         | Project Name: <b>Berczy Glen Lands</b> | Logged by: <b>C. Dinulescu</b>           |
| Project No.: <b>300033248</b>                       | Location: <b>Markham, ON</b>           | Ground (m arsl): <b>220.2</b>            |
| Drilling Co.: <b>Lantech Drilling Services Inc.</b> | Date Started: <b>9/18/2013</b>         | Static Water Level Depth (m):            |
| Drilling Method: <b>Hollow Stem Auger</b>           | Date Completed: <b>9/18/2013</b>       | Sand Pack Depth (m) : <b>4.57 - 6.86</b> |



BH-LOG GUELPH (P:\GINT\PROJECTS\300 JOBS\300033248 BERCZY GLEN.GR\TEMPLATE.GDT 1/28/14

Prepared By: **S. Charity**      Checked By: **C. Dinulescu**      Date Prepared: **10/7/2013**

This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

|                                |  |                    |
|--------------------------------|--|--------------------|
| <b>LEGEND</b>                  | <b>MONITORING WELL DATA</b>            | <b>SAMPLE TYPE</b> |
| Water found @ time of drilling | Pipe: <b>51 mm dia. PVC</b>            | AC  Auger Cutting  |
| Static Water Level -           | Screen: <b>51 mm dia. PVC #10 slot</b> | CS  Continuous     |
|                                |  | RC  Rock Core      |
|                                |  | SS  Split Spoon    |
|                                |  | AR  Air Rotary     |
|                                |  | WC  Wash Cuttings  |



# Log of Borehole 116

Project No. BRM-00609175-AO

Drawing No. 20

Project: Geotechnical Investigation - Berczy Warden Subdivision

Sheet No. 1 of 1

Location: 10206 and 10348 Warden Avenue, Markham, Ontario

Date Drilled: May 13, 2020

Auger Sample

Combustible Vapour Reading

Drill Type: Dietrich 120

SPT (N) Value

Natural Moisture

Datum: Geodetic

Dynamic Cone Test

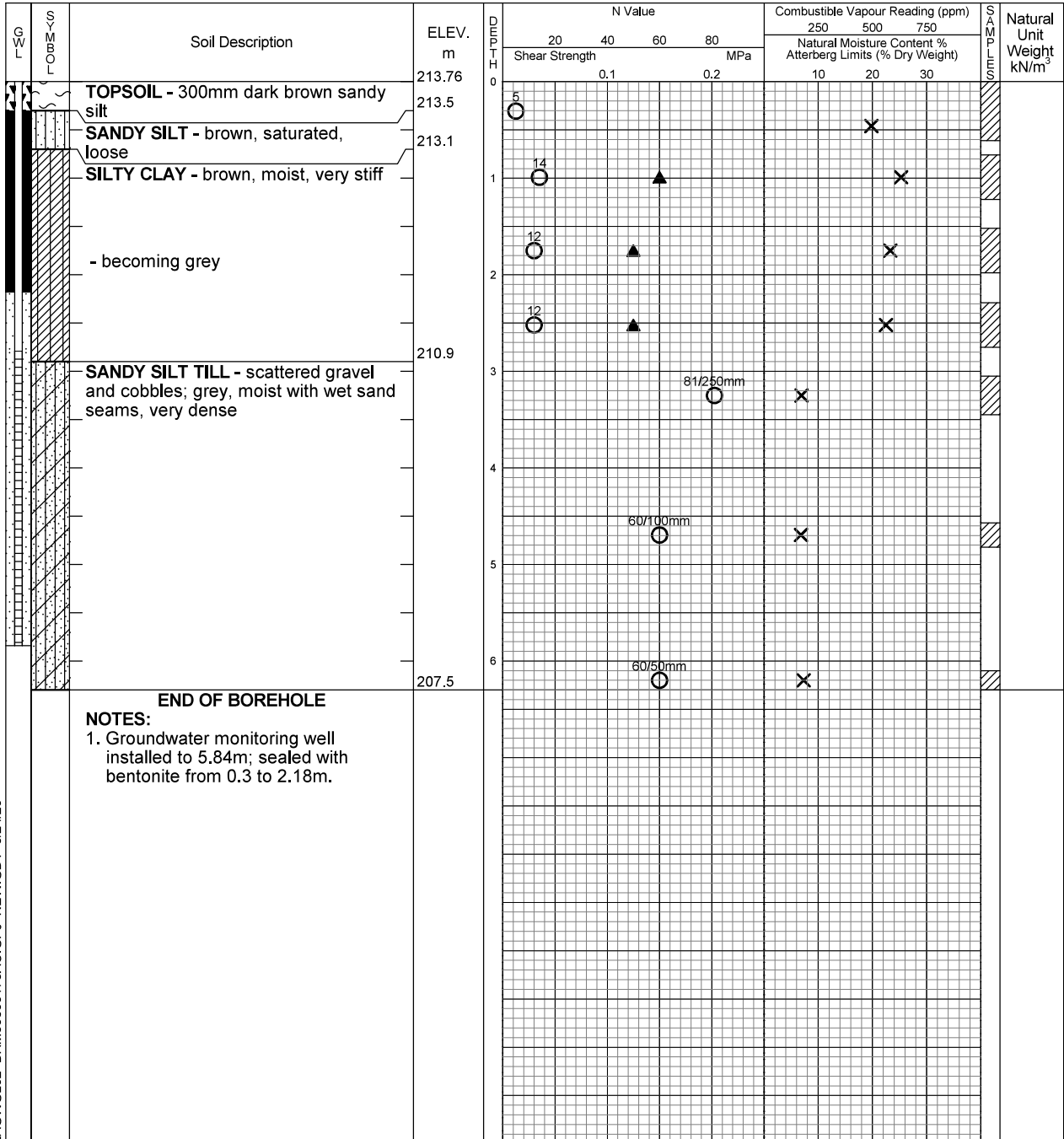
Plastic and Liquid Limit

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



LAGWGL02 BRM00609175AO.GPJ NEW.GDT 6/24/20



| Time          | Water Level (m) | Depth to Cave (m) |
|---------------|-----------------|-------------------|
| On completion | Dry             | Borehole          |
| After 9 days  | 0.97            | Well              |
| After 14 days | 0.99            | Well              |

# Log of Borehole 113

Project No. BRM-00609175-AO

Drawing No. 16

Project: Geotechnical Investigation - Berczy Warden Subdivision

Sheet No. 1 of 2

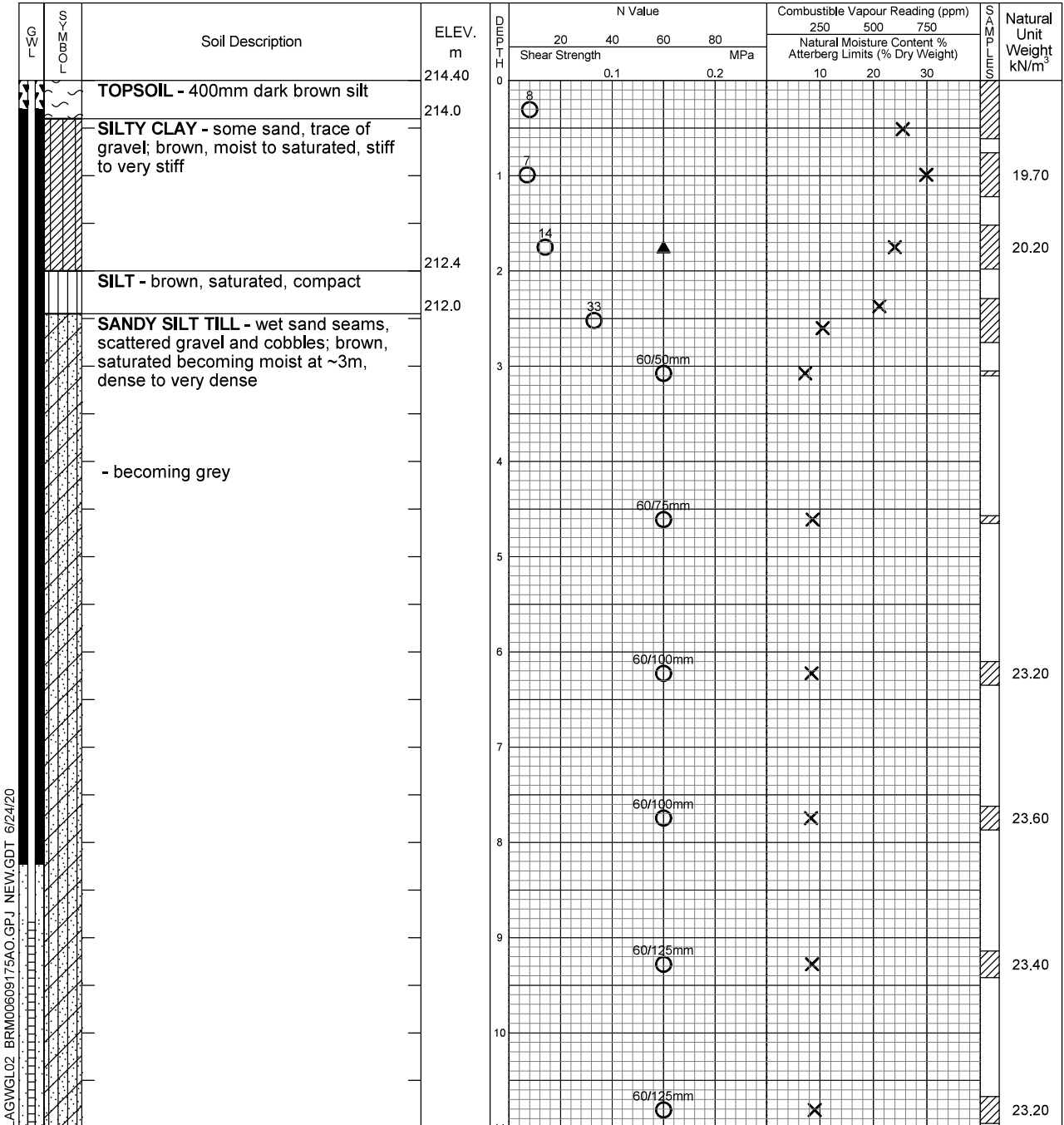
Location: 10206 and 10348 Warden Avenue, Markham, Ontario

Date Drilled: May 19 and 22, 2020

Drill Type: Dietrich 120

Datum: Geodetic

- Auger Sample
- SPT (N) Value
- Dynamic Cone Test
- Shelby Tube
- Field Vane Test
- Combustible Vapour Reading
- Natural Moisture
- Plastic and Liquid Limit
- Undrained Triaxial at % Strain at Failure
- Penetrometer



Continued Next Page



| Time          | Water Level (m) | Depth to Cave (m) |
|---------------|-----------------|-------------------|
| On completion | 3.96            | Borehole          |
| After 4 hours | 0.61            | Well              |
| After 5 days  | 0.58            | Well              |

# Log of Borehole 113

Project No. BRM-00609175-AO

Drawing No. 16

Project: Geotechnical Investigation - Berczy Warden Subdivision

Sheet No. 2 of 2

| G<br>W<br>L | S<br>O<br>I<br>L | Soil Description  | ELEV.<br>m | D<br>I<br>P<br>T<br>H | N Value            |    |     |    | Combustible Vapour Reading (ppm)                              |     |     | S<br>O<br>I<br>L | Natural<br>Unit<br>Weight<br>kN/m <sup>3</sup> |  |
|-------------|------------------|---|------------|-----------------------|--------------------|----|-----|----|---|-----|-----|------------------|--|--|
|             |                  |   |            |                       | 20                 | 40 | 60  | 80 | 250   | 500 | 750 |                  |  |  |
|             |                  |   |            |                       | Shear Strength MPa |    |     |    | Natural Moisture Content %<br>Atterberg Limits (% Dry Weight) |     |     |                  |  |  |
|             |                  |   | 203.40     | 11                    | 0.1                |    | 0.2 |    |   | 10  | 20  | 30               |  |  |
|             |                  |   | 201.9      |                       | 50/150mm<br>○      |    |     |    | X   |     |     |                  | 23.30  |  |
|             |                  | <b>END OF BOREHOLE</b>  |            |                       |                    |    |     |    |   |     |     |                  |  |  |
|             |                  | <b>NOTES:</b><br>1. Groundwater monitoring well installed to 11.89m; sealed with bentonite from 0.3 to 8.23m. |            |                       |                    |    |     |    |   |     |     |                  |  |  |

LAGWGL02 BRM00609175AO.GPJ NEW.GDT 6/24/20



| Time          | Water Level (m) | Depth to Cave (m) |
|---------------|-----------------|-------------------|
| On completion | 3.96            | Borehole          |
| After 4 hours | 0.61            | Well              |
| After 5 days  | 0.58            | Well              |

# Log of Borehole 113A

Project No. BRM-00609175-AO

Drawing No. 17

Project: Geotechnical Investigation - Berczy Warden Subdivision

Sheet No. 1 of 1

Location: 10206 and 10348 Warden Avenue, Markham, Ontario

Date Drilled: May 22, 2020

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Dynamic Cone Test

Plastic and Liquid Limit

Shelby Tube

Undrained Triaxial at

Field Vane Test

% Strain at Failure

Penetrometer

Datum: Geodetic

| GWL | SYMBOL | Soil Description  | ELEV. m | DEPTH | N Value            |    |     |    | Combustible Vapour Reading (ppm)                           |     |     | Natural Unit Weight kN/m <sup>3</sup> |  |
|-----|--------|---|---------|-------|--------------------|----|-----|----|--|-----|-----|---------------------------------------|--|
|     |        |   |         |       | 20                 | 40 | 60  | 80 | 250  | 500 | 750 |                                       |  |
|     |        |   |         |       | Shear Strength MPa |    |     |    | Natural Moisture Content % Atterberg Limits (% Dry Weight) |     |     |                                       |  |
|     |        | TOPSOIL - 400mm dark brown silt   | 214.40  | 0     | 0.1                |    | 0.2 |    |  | 10  | 20  | 30                                    |  |
|     |        | SILTY CLAY - some sand, trace of gravel; brown, moist to saturated, stiff to very stiff                                     | 214.0   | 1     |                    |    |     |    |  |     |     |                                       |  |
|     |        | SILT - brown, saturated, compact  | 212.4   | 2     |                    |    |     |    |  |     |     |                                       |  |
|     |        | SANDY SILT TILL - wet sand seams, scattered gravel and cobbles; brown, saturated becoming moist at ~3m, dense to very dense | 212.0   | 3     |                    |    |     |    |  |     |     |                                       |  |
|     |        | - becoming grey   |         | 4     |                    |    |     |    |  |     |     |                                       |  |
|     |        |   |         | 5     |                    |    |     |    |  |     |     |                                       |  |
|     |        |   |         | 6     |                    |    |     |    |  |     |     |                                       |  |
|     |        |   |         | 7     |                    |    |     |    |  |     |     |                                       |  |
|     |        | END OF BOREHOLE   | 207.2   |       |                    |    |     |    |  |     |     |                                       |  |
|     |        | NOTES:<br>1. Groundwater monitoring well installed to 7.19m; sealed with bentonite from 0.3 to 3.53m.                       |         |       |                    |    |     |    |  |     |     |                                       |  |

LAGWGL02 BRM00609175AO.GPJ NEW.GDT 6/24/20



| Time          | Water Level (m) | Depth to Cave (m) |
|---------------|-----------------|-------------------|
| On completion | Dry             | Borehole          |
| After 4 hours | 1.14            | Well              |
| After 5 days  | 1.09            | Well              |

# LOG OF DRILLING OPERATIONS

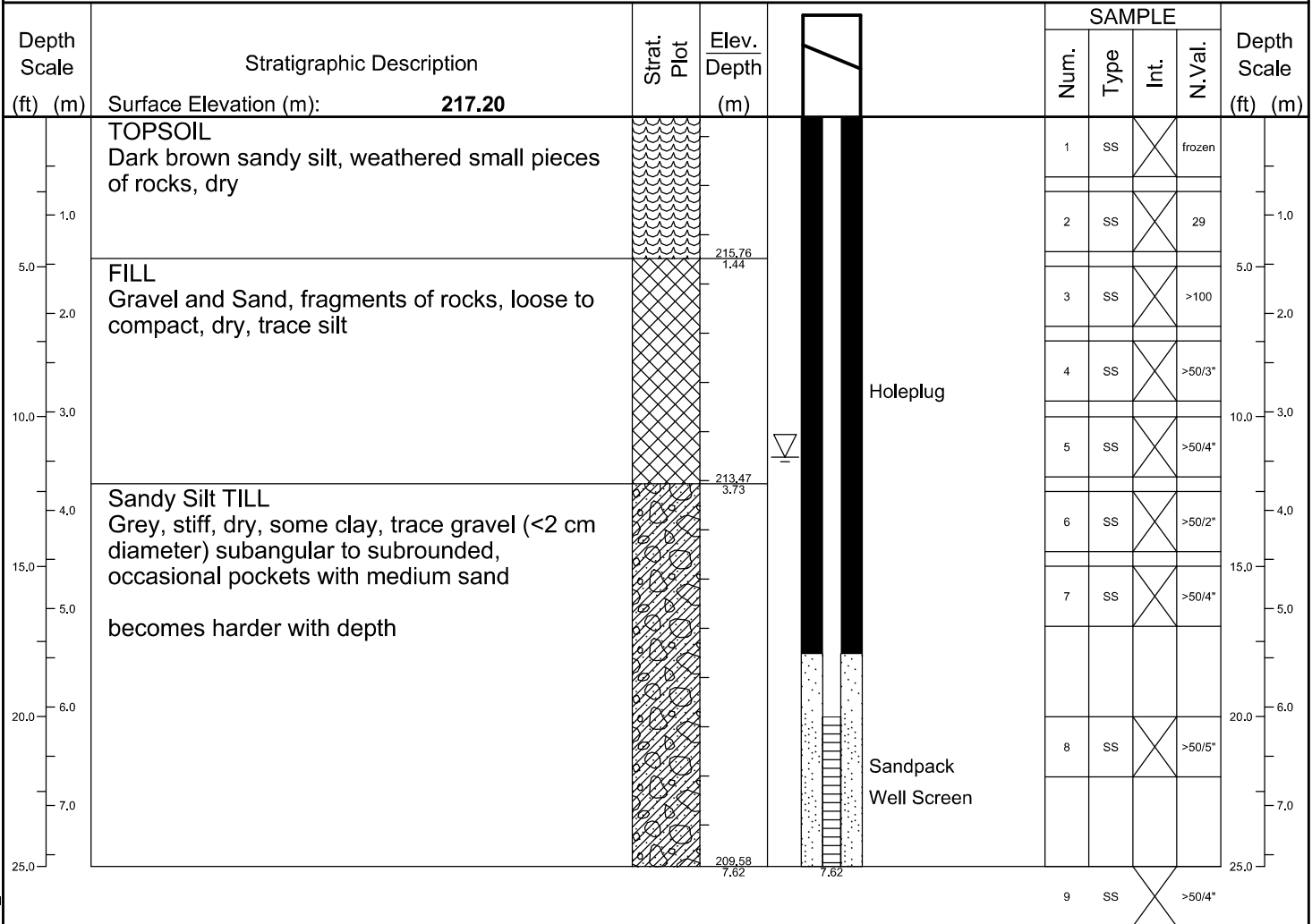
**AG-MW12**

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|   |                                      |   |
|---|--------------------------------------|---|
| Client: <b>Angus Glen Developments Inc.</b>         | Project Name: <b>Angus Glen MESP</b> | Logged by: <b>C. D.</b>                   |
| Project No.: <b>300034937</b>                       | Location: <b>Markham, ON</b>         | Ground (m amsl): <b>217.20</b>            |
| Drilling Co.: <b>Lantech Drilling Services Inc.</b> | Date Started: <b>2/25/2015</b>       | Static Water Level Depth (m): <b>3.46</b> |
| Drilling Method: <b>Hollow Stem Auger</b>           | Date Completed: <b>2/25/2015</b>     | Sand Pack Depth (m) : <b>5.46 - 7.62</b>  |



B:\LOG GUELPH\PI\GIN\TIP\PROJECTS\300034937\0000\_ANGUS GLEN\300034937\_ANGUS GLEN.GPJ TEMPLATE.GDT 1/21/16

Prepared By: **C. D.** Checked By: **J. S.** Date Prepared: **7/26/2015**  
 This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

|  |   |  |
|--|---|--|
| <b>LEGEND</b>  | <b>MONITORING WELL DATA</b>   | <b>SAMPLE TYPE</b>   |
| ▼ Water found @ time of drilling<br>▽ Static Water Level - 6/16/2015 | Pipe: <b>51 mm dia. PVC</b><br>Screen: <b>51 mm dia. PVC #10 slot</b> | AC [Auger Cutting] Auger Cutting<br>CS [Continuous] Continuous<br>RC [Rock Core] Rock Core<br>SS [Split Spoon] Split Spoon<br>AR [Air Rotary] Air Rotary<br>WC [Wash Cuttings] Wash Cuttings |

PROJECT: 14-1186-0012

# RECORD OF BOREHOLE: 14-16

SHEET 1 OF 2

LOCATION: See Figure 2

BORING DATE: May 8, 2014

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD | SOIL PROFILE  |             | SAMPLES         |        |      | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |                |  |               | HYDRAULIC CONDUCTIVITY, k, cm/s |                       |   |    | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |  |
|--------------------|---------------|---|-------------|-----------------|--------|------|--|----------------|--|---------------|---------------------------------|-----------------------|---|----|-------------------------|--------------------------------------|--|
|                    |               | DESCRIPTION   | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE | BLOWS/0.3m                                 | SHEAR STRENGTH |  |               |                                 | WATER CONTENT PERCENT |   |    |                         |                                      |  |
|                    |               |   |             |                 |        |      |  | Cu, kPa        |  | nat V. rem V. | Q - U -                         | Wp                    | W | Wi |                         |                                      |  |
| 0                  |               | GROUND SURFACE  |             | 214.70          |        |      |  |                |  |               |                                 |                       |   |    |                         |                                      |  |
|                    |               | FILL - (ML) CLAYEY SILT, some sand, organic inclusions; dark brown; cohesive, W<PL to W~PL, firm                              |             | 0.00            | 1      | SS   | 5  |                |  |               |                                 |                       |   |    |                         | Concrete                             |  |
| 1                  |               | (ML) sandy CLAYEY SILT; pale brown, with oxidation staining; cohesive, W<PL, stiff  |             | 214.01          | 2      | SS   | 9  |                |  |               |                                 |                       |   |    |                         |                                      |  |
|                    |               | (CI) SILTY CLAY, some sand; grey, with oxidation staining; cohesive, W>PL, firm to stiff                                      |             | 213.33          | 3      | SS   | 7  |                |  |               |                                 |                       |   |    |                         | PI                                   |  |
| 2                  |               | Very thinly bedded with fine sand below a depth of approximately 2.1 m below existing ground surface                          |             | 1.37            | 4      | SS   | 12   |                |  |               |                                 |                       |   |    |                         |                                      |  |
| 3                  |               | (ML) sandy SILT, some clay to clayey, trace gravel, with pockets of medium sand; grey (TILL); non-cohesive, moist, very dense |             | 211.80          | 5      | SS   | 83   |                |  |               |                                 |                       |   |    |                         |                                      |  |
| 4                  |               |   |             | 2.90            | 6      | SS   | 50/05                                      |                |  |               |                                 |                       |   |    |                         |                                      |  |
| 6                  |               |   |             |                 | 7      | SS   | 50/13                                      |                |  |               |                                 |                       |   |    |                         | Bentonite Seal                       |  |
| 8                  |               |   |             |                 | 8      | SS   | 50/08                                      |                |  |               |                                 |                       |   |    |                         |                                      |  |
| 10                 |               |   |             |                 | 9      | SS   | 50/13                                      |                |  |               |                                 |                       |   |    |                         |                                      |  |

CONTINUED NEXT PAGE

GTA-BHS 001 S:\CLIENTS\STONYBROOK\BERCZY CREEK\02\_DATA\GINT\1411860012.GPJ\_GAL-MIS.GDT 10/6/17



PROJECT: 14-1186-0012

# RECORD OF BOREHOLE: 14-16

SHEET 2 OF 2

LOCATION: See Figure 2

BORING DATE: May 8, 2014

DATUM: Geodetic

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE<br>METRES | BORING METHOD                              | SOIL PROFILE  |                 | STRATA PLOT  | SAMPLES |      | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |                |    |               | HYDRAULIC CONDUCTIVITY, k, cm/s |                       |                  |                  | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |  |  |
|-----------------------|--|---|-----------------|--|---------|------|--|----------------|----|---------------|---------------------------------|-----------------------|------------------|------------------|-------------------------|--------------------------------------|--|--|
|                       |  | DESCRIPTION   | ELEV. DEPTH (m) |  | NUMBER  | TYPE | BLOWS/0.3m                                 | SHEAR STRENGTH |    |               |                                 | WATER CONTENT PERCENT |                  |                  |                         |                                      |  |  |
|                       |  |   |                 |  |         |      |  | Cu, kPa        |    | nat V. rem V. | Q - U -                         | Wp                    | W                | Wi               |                         |                                      |  |  |
|                       |  | — CONTINUED FROM PREVIOUS PAGE —  |                 |  |         |      | 20   | 40             | 60 | 80            | 10 <sup>-8</sup>                | 10 <sup>-5</sup>      | 10 <sup>-4</sup> | 10 <sup>-3</sup> |                         |                                      |  |  |
| 10                    | TRACK MOUNTED CME 55<br>Hollow Stem Augers | (ML) sandy SILT, some clay to clayey, trace gravel, with pockets of medium sand; grey (TILL); non-cohesive, moist, very dense |                 |  |         |      |  |                |    |               |                                 |                       |                  |                  |                         |                                      |  |  |
| 11                    |  |   | 10              | SS   | 50/13   |      |  |                |    |               |                                 |                       |                  |                  |                         |                                      |  |  |
| 12                    |  |   | 11              | SS   | 50/13   |      |  |                |    |               |                                 |                       |                  |                  |                         |                                      |  |  |
| 13                    |  |   |                 | Becoming more moist below a depth of approximately 13.1 m below ground surface |         |      |  |                |    |               |                                 |                       |                  |                  |                         |                                      |  |  |
| 14                    |  |   | 12              | SS   | 99/13   |      |  |                |    |               |                                 |                       |                  |                  |                         |                                      |  |  |
| 15                    |  | Augers grinding below a depth of approximately 14.9 m below ground surface. Inferred cobble/boulder                           |                 |  |         |      |  |                |    |               |                                 |                       |                  |                  |                         |                                      |  |  |
| 16                    |  | AUGER REFUSAL ON INFERRED COBBLE/BOULDER<br>END OF BOREHOLE   | 13              | SS   | 50/13   |      |  |                |    |               |                                 |                       |                  |                  |                         |                                      |  |  |
|                       |  |   |                 |  | 199.16  |      |  |                |    |               |                                 |                       |                  |                  |                         |                                      |  |  |
|                       |  |   |                 |  | 15.54   |      |  |                |    |               |                                 |                       |                  |                  |                         |                                      |  |  |
| 18                    |  |   |                 |  |         |      |  |                |    |               |                                 |                       |                  |                  |                         |                                      |  |  |
| 19                    |  |   |                 |  |         |      |  |                |    |               |                                 |                       |                  |                  |                         |                                      |  |  |
| 20                    |  |   |                 |  |         |      |  |                |    |               |                                 |                       |                  |                  |                         |                                      |  |  |

GTA-BHS 001 S:\CLIENTS\STONYBROOK\BERCZY CREEK\02 DATA\GINT\1411860012.GPJ\_GAL.MIS.GDT\_10/6/17

DEPTH SCALE

1 : 50



LOGGED: JG

CHECKED: AM

PROJECT: 20146456  
 LOCATION: N 4861996.50; E 634983.99

# RECORD OF BOREHOLE: KP1

SHEET 1 OF 1  
 DATUM: Geodetic

BORING DATE: January 21, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD                                    | SOIL PROFILE  |             | SAMPLES         |        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |            |                        |    | HYDRAULIC CONDUCTIVITY, k, cm/s |    |                       |          | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |       |       |
|--------------------|--|---|-------------|-----------------|--------|--|------------|------------------------|----|---------------------------------|----|-----------------------|----------|-------------------------|--------------------------------------|-------|-------|
|                    |  | DESCRIPTION   | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE                                       | BLOWS/0.3m | SHEAR STRENGTH Cu, kPa |    |                                 |    | WATER CONTENT PERCENT |          |                         |                                      |       |       |
|                    |  |   |             |                 |        |  |            | 20                     | 40 | 60                              | 80 | nat V. +              | rem V. ⊕ |                         |                                      | Q - ● | U - ○ |
| 0                  | B57 Truck Mount<br>150 mm O.D. Hollow Stem Auger | GROUND SURFACE  |             | 204.50          |        |  |            |                        |    |                                 |    |                       |          |                         |                                      |       |       |
|                    |  | ASPHALT (140 mm thick)  |             | 0.00            |        |  |            |                        |    |                                 |    |                       |          |                         |                                      |       |       |
|                    |  | Crushed granular; brown   |             | 0.14            | 1A     |  |            |                        |    |                                 |    |                       |          |                         |                                      |       |       |
|                    |  | FILL - (SP-SM) SAND, trace gravel, some fines; brown; non-cohesive, moist (CI) SILTY CLAY, some sand; brown, oxidation staining; cohesive, w<PL, very stiff |             | 0.45            | 1B     |  |            |                        |    |                                 |    |                       |          |                         |                                      |       |       |
| 1                  |  |   |             | 0.70            | 2      | SS   | 15         |                        |    |                                 |    |                       |          |                         |                                      |       |       |
| 2                  |  |   |             | 202.52          | 3      | SS   | 15         |                        |    |                                 |    |                       |          |                         |                                      |       |       |
| 2                  |  | END OF BOREHOLE   |             | 1.98            |        |  |            |                        |    |                                 |    |                       |          |                         |                                      |       |       |
| 3                  |  | NOTES:<br>1. Borehole caved to a depth of 1.3 m upon completion of drilling.<br>2. Borehole was dry upon completion of drilling.                            |             |                 |        |  |            |                        |    |                                 |    |                       |          |                         |                                      |       |       |
| 4                  |  |   |             |                 |        |  |            |                        |    |                                 |    |                       |          |                         |                                      |       |       |
| 5                  |  |   |             |                 |        |  |            |                        |    |                                 |    |                       |          |                         |                                      |       |       |
| 6                  |  |   |             |                 |        |  |            |                        |    |                                 |    |                       |          |                         |                                      |       |       |
| 7                  |  |   |             |                 |        |  |            |                        |    |                                 |    |                       |          |                         |                                      |       |       |
| 8                  |  |   |             |                 |        |  |            |                        |    |                                 |    |                       |          |                         |                                      |       |       |
| 9                  |  |   |             |                 |        |  |            |                        |    |                                 |    |                       |          |                         |                                      |       |       |
| 10                 |  |   |             |                 |        |  |            |                        |    |                                 |    |                       |          |                         |                                      |       |       |

GTA-BHS 001 S:\CLIENTS\REGION OF YORK\MAJOR MACKENZIE DRIVE\02 DATA\GINT\MARKHAM\_WARDEN&KENNEDY\_RD.GPJ GAL-MIS.GDT 4/5/21



PROJECT: 20146456  
 LOCATION: N 4862126.14; E 634957.69

# RECORD OF BOREHOLE: KP2

SHEET 1 OF 1  
 DATUM: Geodetic

BORING DATE: January 21, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD                                    | SOIL PROFILE  |             | SAMPLES         |        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |            |                |  | HYDRAULIC CONDUCTIVITY, k, cm/s |  |                       |  | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |   |  |
|--------------------|--|---|-------------|-----------------|--------|--|------------|----------------|--|---------------------------------|--|-----------------------|--|-------------------------|--------------------------------------|---|--|
|                    |  | DESCRIPTION   | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE                                       | BLOWS/0.3m | SHEAR STRENGTH |  |                                 |  | WATER CONTENT PERCENT |  |                         |                                      |   |  |
|                    |  |   |             |                 |        |  |            | Cu, kPa        |  | nat V. + rem V. ⊕ ⊖             |  | Wp                    |  |                         |                                      | W |  |
| 0                  | B57 Truck Mount<br>150 mm O.D. Hollow Stem Auger | GROUND SURFACE  |             | 207.80          |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |  | ASPHALT (160 mm thick)  |             | 0.00            |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |  | Crushed granular with RAP; brown  |             | 0.18            | 1A     |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |  | FILL- (SP-SM) SAND, trace gravel, some fines; brown; non-cohesive, moist                            |             | 0.43            | 1B     | AS   | -          |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 1                  |  | FILL - (CL-ML) gravelly SILTY CLAY-CLAYEY SILT and SAND, brown; cohesive, w>PL, stiff to very stiff |             | 0.76            | 2      | SS   | 11         |                |  |                                 |  |                       |  |                         | MH                                   |   |  |
| 2                  |  | END OF BOREHOLE   |             | 205.82          | 3      | SS   | 18         |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |  | NOTES:  |             | 1.98            |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 3                  |  | 1. Borehole caved to a depth of 1.5 m upon completion of drilling.                                  |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 4                  |  | 2. Borehole was dry upon completion of drilling.  |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 5                  |  | 3. RAP = Recycled asphalt pavement  |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 6                  |  |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 7                  |  |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 8                  |  |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 9                  |  |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 10                 |  |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |

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PROJECT: 20146456  
 LOCATION: N 4862283.37; E 634927.65

# RECORD OF BOREHOLE: KP3

SHEET 1 OF 1  
 DATUM: Geodetic

BORING DATE: January 21, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD                                    | SOIL PROFILE  |             | SAMPLES         |        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |            |                |  | HYDRAULIC CONDUCTIVITY, k, cm/s |     |                       |    | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |   |    |
|--------------------|--|---|-------------|-----------------|--------|--|------------|----------------|--|---------------------------------|-----|-----------------------|----|-------------------------|--------------------------------------|---|----|
|                    |  | DESCRIPTION   | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE                                       | BLOWS/0.3m | SHEAR STRENGTH |  |                                 |     | WATER CONTENT PERCENT |    |                         |                                      |   |    |
|                    |  |   |             |                 |        |  |            | Cu, kPa        |  | nat V. rem V.                   | + ⊕ | - ⊙                   | Wp |                         |                                      | W | WI |
| 0                  | B57 Truck Mount<br>150 mm O.D. Hollow Stem Auger | GROUND SURFACE  |             | 212.00          |        |  |            |                |  |                                 |     |                       |    |                         |                                      |   |    |
|                    |  | Crushed granular; brown   |             | 0.00            | 1A     |  |            |                |  |                                 |     |                       |    |                         |                                      |   |    |
|                    |  | FILL - (SM) SILTY SAND, trace gravel; brown; non-cohesive, moist                                  |             | 0.40            | 1B     | -  |            |                |  |                                 |     |                       |    |                         |                                      |   |    |
| 1                  |  | FILL - (CL) SILTY CLAY, some sand; dark grey and black, organic inclusions; cohesive, w~PL, stiff |             | 0.76            | 2      | SS   | 11         |                |  |                                 |     |                       |    |                         |                                      |   |    |
|                    |  | (CL) SILTY CLAY and SAND, some gravel; brown; cohesive, w<PL, very stiff                          |             | 1.37            | 3      | SS   | 20         |                |  |                                 |     |                       |    |                         |                                      |   |    |
| 2                  |  | END OF BOREHOLE   |             | 210.02          |        |  |            |                |  |                                 |     |                       |    |                         |                                      |   |    |
| 3                  |  | NOTES:  |             | 1.98            |        |  |            |                |  |                                 |     |                       |    |                         |                                      |   |    |
|                    |  | 1. Borehole caved to a depth of 1.2 m upon completion of drilling.                                |             |                 |        |  |            |                |  |                                 |     |                       |    |                         |                                      |   |    |
|                    |  | 2. Borehole was dry upon completion of drilling.  |             |                 |        |  |            |                |  |                                 |     |                       |    |                         |                                      |   |    |
| 4                  |  |   |             |                 |        |  |            |                |  |                                 |     |                       |    |                         |                                      |   |    |
| 5                  |  |   |             |                 |        |  |            |                |  |                                 |     |                       |    |                         |                                      |   |    |
| 6                  |  |   |             |                 |        |  |            |                |  |                                 |     |                       |    |                         |                                      |   |    |
| 7                  |  |   |             |                 |        |  |            |                |  |                                 |     |                       |    |                         |                                      |   |    |
| 8                  |  |   |             |                 |        |  |            |                |  |                                 |     |                       |    |                         |                                      |   |    |
| 9                  |  |   |             |                 |        |  |            |                |  |                                 |     |                       |    |                         |                                      |   |    |
| 10                 |  |   |             |                 |        |  |            |                |  |                                 |     |                       |    |                         |                                      |   |    |

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PROJECT: 20146456  
 LOCATION: N 4862501.24; E 634887.30

# RECORD OF BOREHOLE: KP4

SHEET 1 OF 1  
 DATUM: Geodetic

BORING DATE: January 21, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD   | SOIL PROFILE  |             | SAMPLES         |        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |            |                |  | HYDRAULIC CONDUCTIVITY, k, cm/s |  |                       |  | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |   |  |
|--------------------|---|---|-------------|-----------------|--------|--|------------|----------------|--|---------------------------------|--|-----------------------|--|-------------------------|--------------------------------------|---|--|
|                    |   | DESCRIPTION   | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE                                       | BLOWS/0.3m | SHEAR STRENGTH |  |                                 |  | WATER CONTENT PERCENT |  |                         |                                      |   |  |
|                    |   |   |             |                 |        |  |            | Cu, kPa        |  | nat V. + rem V. ⊕ ⊙             |  | Wp                    |  |                         |                                      | W |  |
| 0                  | B57 Truck Mount<br>150 mm O.D. Hollow Stem Auger                  | GROUND SURFACE  |             | 217.50          |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |   | ASPHALT (120 mm thick)  |             | 0.00            |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |   | Crushed granular with RAP; brown  |             | 0.12            | 1A     | AS   |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |   | FILL - (SM) SILTY SAND, trace gravel; brown; non-cohesive, moist                      |             | 0.35            | 1B     |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 1                  |   | FILL - (CL-ML) gravelly SILTY CLAY-CLAYEY SILT and SAND, brown; cohesive, w>PL, stiff |             | 0.75            | 2      | SS   | 13         |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    | (SM) SILTY SAND, some gravel; brown; non-cohesive, moist, compact |   | 1.37        | 3               | SS     | 16   |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 2                  |   | END OF BOREHOLE   |             | 215.52          |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |   | NOTES:  |             | 1.98            |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 3                  |   | 1. Borehole caved to a depth of 1.5 m upon completion of drilling.                    |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 4                  |   | 2. Borehole was dry upon completion of drilling.                                      |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 5                  |   | 3. RAP = Recycled asphalt pavement  |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 6                  |   |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 7                  |   |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 8                  |   |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 9                  |   |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 10                 |   |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |

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PROJECT: 20146456  
 LOCATION: N 4862688.03; E 634846.61

# RECORD OF BOREHOLE: KP5

SHEET 1 OF 1  
 DATUM: Geodetic

BORING DATE: January 21, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD                                    | SOIL PROFILE  |             | SAMPLES         |        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |            |                |  | HYDRAULIC CONDUCTIVITY, k, cm/s |  |                       |  | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |   |  |
|--------------------|--|---|-------------|-----------------|--------|--|------------|----------------|--|---------------------------------|--|-----------------------|--|-------------------------|--------------------------------------|---|--|
|                    |  | DESCRIPTION   | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE                                       | BLOWS/0.3m | SHEAR STRENGTH |  |                                 |  | WATER CONTENT PERCENT |  |                         |                                      |   |  |
|                    |  |   |             |                 |        |  |            | Cu, kPa        |  | nat V. rem V.                   |  | Wp                    |  |                         |                                      | W |  |
| 0                  | B57 Truck Mount<br>150 mm O.D. Hollow Stem Auger | GROUND SURFACE  |             | 219.80          |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |  | Crushed granular; brown   |             | 0.00            |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |  | FILL - (SP) SAND, some gravel, trace fines: brown; non-cohesive, moist  |             | 219.41          | 1A     | AS   | -          |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |  | Recycled asphalt pavement   |             | 0.39            |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |  | FILL - (CL) SILTY CLAY, some sand; dark brown; cohesive, w>PL, stiff  |             | 219.02          | 1B     | SS   | 9          |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 1                  |  |   |             | 0.78            | 2      |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |  | (CL) SILTY CLAY and SAND, some gravel; brown; cohesive, w<PL, stiff   |             | 218.43          |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |  |   |             | 1.37            |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |  |   |             | 217.82          | 3      | SS   | 8          |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 2                  |  | END OF BOREHOLE   |             | 1.98            |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 3                  |  | NOTES:<br>1. Borehole caved to a depth of 1.2 m upon completion of drilling.<br>2. Borehole was dry upon completion of drilling |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 4                  |  |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 5                  |  |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 6                  |  |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 7                  |  |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 8                  |  |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 9                  |  |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 10                 |  |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |

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PROJECT: 20146456  
 LOCATION: N 4862905.53; E 634805.64

# RECORD OF BOREHOLE: KP6

SHEET 1 OF 1  
 DATUM: Geodetic

BORING DATE: January 21, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD                                    | SOIL PROFILE   |             | SAMPLES         |        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |            |                |  | HYDRAULIC CONDUCTIVITY, k, cm/s |  |                       |  | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |   |  |
|--------------------|--|--|-------------|-----------------|--------|--|------------|----------------|--|---------------------------------|--|-----------------------|--|-------------------------|--------------------------------------|---|--|
|                    |  | DESCRIPTION  | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE                                       | BLOWS/0.3m | SHEAR STRENGTH |  |                                 |  | WATER CONTENT PERCENT |  |                         |                                      |   |  |
|                    |  |  |             |                 |        |  |            | Cu, kPa        |  | nat V. + rem V. ⊕ ⊙             |  | Wp                    |  |                         |                                      | W |  |
| 0                  | B57 Truck Mount<br>150 mm O.D. Hollow Stem Auger | GROUND SURFACE   |             | 221.80          |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |  | ASPHALT (200 mm thick)   |             | 0.00            |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |  | Crushed granular; brown  |             | 0.20            | 1A     |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |  | FILL - (SP) SAND, some gravel, trace fines; brown; non-cohesive, moist |             | 0.40            | 1B     | AS   | -          |                |  |                                 |  |                       |  |                         |                                      | M |  |
| 1                  |  | FILL - (CL) SILTY CLAY, some sand; dark brown; cohesive, w>PL, stiff   |             | 0.82            | 2B     | SS   | 8          |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |  | (SM) gravelly SILTY SAND; brown (TILL); non-cohesive, moist, compact   |             | 1.37            |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 2                  |  | END OF BOREHOLE  |             | 219.82          |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |  | NOTES:   |             | 1.98            |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 3                  |  | 1. Borehole caved to a depth of 1.3 m upon completion of drilling.     |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |  | 2. Borehole was dry upon completion of drilling.                       |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 4                  |  |  |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 5                  |  |  |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 6                  |  |  |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 7                  |  |  |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 8                  |  |  |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 9                  |  |  |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 10                 |  |  |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |

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PROJECT: 20146456  
 LOCATION: N 4863105.31; E 634761.62

# RECORD OF BOREHOLE: KP7

SHEET 1 OF 1  
 DATUM: Geodetic

BORING DATE: January 21, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD                                    | SOIL PROFILE  |             | SAMPLES         |        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |            |                |  | HYDRAULIC CONDUCTIVITY, k, cm/s |  |                       |  | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |    |  |
|--------------------|--|---|-------------|-----------------|--------|--|------------|----------------|--|---------------------------------|--|-----------------------|--|-------------------------|--------------------------------------|----|--|
|                    |  | DESCRIPTION   | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE                                       | BLOWS/0.3m | SHEAR STRENGTH |  |                                 |  | WATER CONTENT PERCENT |  |                         |                                      |    |  |
|                    |  |   |             |                 |        |  |            | 20             |  | 40                              |  | 60                    |  |                         |                                      | 80 |  |
| 0                  | B57 Truck Mount<br>150 mm O.D. Hollow Stem Auger | GROUND SURFACE  |             | 222.80          |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |  | Crushed granular; brown   |             | 0.00            |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |  | FILL - (SP) SAND, some gravel, trace fines; brown; non-cohesive, moist          |             | 222.25          | 1A     | AS   | -          |                |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |  | FILL - (SM) SILTY SAND and GRAVEL with RAP; brown; non-cohesive, moist, compact |             | 221.83          | 2A     | SS   | 18         |                |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |  | FILL - (SM) SILTY SAND and GRAVEL; brown; non-cohesive, moist, compact          |             | 221.43          | 2B     | SS   | 18         |                |  |                                 |  |                       |  |                         |                                      |    |  |
| 1                  |  | (CI) SILTY CLAY, trace sand; brown; cohesive, w>PL, very stiff                  |             | 1.37            | 3      | SS   | 15         |                |  |                                 |  |                       |  |                         |                                      |    |  |
| 2                  |  | END OF BOREHOLE   |             | 220.82          |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |  | NOTES:  |             | 1.98            |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
| 3                  |  | 1. Borehole caved to a depth of 1.3 m upon completion of drilling.              |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
| 4                  |  | 2. Borehole was dry upon completion of drilling.                                |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
| 5                  |  | 3. RAP = Recycled asphalt pavement  |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
| 6                  |  |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
| 7                  |  |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
| 8                  |  |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
| 9                  |  |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
| 10                 |  |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |

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PROJECT: 20146456  
 LOCATION: N 4863330.56; E 634715.76

# RECORD OF BOREHOLE: KP8

SHEET 1 OF 1  
 DATUM: Geodetic

BORING DATE: January 21, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD                                    | SOIL PROFILE   |             | SAMPLES         |        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |            |                |  | HYDRAULIC CONDUCTIVITY, k, cm/s |  |                       |  | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |   |  |
|--------------------|--|--|-------------|-----------------|--------|--|------------|----------------|--|---------------------------------|--|-----------------------|--|-------------------------|--------------------------------------|---|--|
|                    |  | DESCRIPTION  | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE                                       | BLOWS/0.3m | SHEAR STRENGTH |  |                                 |  | WATER CONTENT PERCENT |  |                         |                                      |   |  |
|                    |  |  |             |                 |        |  |            | Cu, kPa        |  | nat V. + rem V. ⊕ ⊙             |  | Wp                    |  |                         |                                      | W |  |
| 0                  | B57 Truck Mount<br>150 mm O.D. Hollow Stem Auger | GROUND SURFACE   |             | 223.40          |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |  | ASPHALT (120 mm thick)   |             | 0.00            |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |  | Crushed granular; brown  |             | 0.12            | 1A     | AS   |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |  | FILL - (SP) SAND, some gravel, trace fines; brown; non-cohesive, moist   |             | 0.38            | 1B     | AS   |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |  | ASPHALT (260 mm)   |             | 0.62            | 2A     | SS   |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 1                  |  | FILL - (CL) gravelly SILTY CLAY and SAND, grey; cohesive, w>PL, hard to stiff  |             | 0.88            | 2B     | SS   | 69/0.18*   |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |  | - Auger grinding at a depth of 1.1 m   |             |                 | 3      | SS   | 11         |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 2                  |  | END OF BOREHOLE  |             | 1.98            |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 3                  |  | NOTES:<br>1. Borehole caved to a depth of 1.4 m upon completion of drilling.<br>2. Borehole was dry upon completion of drilling.<br>3. *N value may not be representative of the soil's consistency due to obstructions encountered. |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 4                  |  |  |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 5                  |  |  |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 6                  |  |  |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 7                  |  |  |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 8                  |  |  |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 9                  |  |  |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 10                 |  |  |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |

GTA-BHS 001 S:\CLIENTS\REGION OF YORK\MAJOR MACKENZIE DRIVE\02 DATA\GINT\MARKHAM\_WARDEN&KENNEDY\_RD.GPJ GAL-MIS.GDT 4/5/21

PROJECT: 20146456  
 LOCATION: N 4863498.29; E 634672.80

# RECORD OF BOREHOLE: KP9

SHEET 1 OF 1  
 DATUM: Geodetic

BORING DATE: January 21, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD                                    | SOIL PROFILE   |             | SAMPLES         |        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |            |                |  | HYDRAULIC CONDUCTIVITY, k, cm/s |         |                       |    | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |   |    |
|--------------------|--|--|-------------|-----------------|--------|--|------------|----------------|--|---------------------------------|---------|-----------------------|----|-------------------------|--------------------------------------|---|----|
|                    |  | DESCRIPTION  | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE                                       | BLOWS/0.3m | SHEAR STRENGTH |  |                                 |         | WATER CONTENT PERCENT |    |                         |                                      |   |    |
|                    |  |  |             |                 |        |  |            | Cu, kPa        |  | nat V. rem V.                   | + ⊕ - ⊙ | Q - U                 | Wp |                         |                                      | W | WI |
| 0                  | B57 Truck Mount<br>150 mm O.D. Hollow Stem Auger | GROUND SURFACE   |             | 223.20          |        |  |            |                |  |                                 |         |                       |    |                         |                                      |   |    |
|                    |  | Crushed granular; brown  |             | 0.00            | 1A     |  |            |                |  |                                 |         |                       |    |                         |                                      |   |    |
|                    |  | FILL - (SP) SAND, some gravel, trace fines: brown; non-cohesive, moist   |             | 0.40            | 1B     | AS   | -          |                |  |                                 |         |                       |    |                         |                                      |   |    |
| 1                  |  | FILL - (CL) gravelly SILTY CLAY and SAND, dark brown; cohesive, w<PL, stiff to very stiff  |             | 0.90            | 2A     | SS   | 14         |                |  |                                 |         |                       |    |                         |                                      |   |    |
|                    |  |  |             | 0.90            | 2B     |  |            |                |  |                                 |         |                       |    |                         |                                      |   |    |
| 2                  |  |  |             | 1.98            | 3      | SS   | 15         |                |  |                                 |         |                       |    |                         |                                      |   |    |
| 2                  |  | END OF BOREHOLE  |             | 1.98            |        |  |            |                |  |                                 |         |                       |    |                         |                                      |   |    |
| 3                  |  | NOTES:<br>1. Borehole caved to a depth of 1.2 m upon completion of drilling.<br>2. Borehole was dry upon completion of drilling. |             |                 |        |  |            |                |  |                                 |         |                       |    |                         |                                      |   |    |
| 4                  |  |  |             |                 |        |  |            |                |  |                                 |         |                       |    |                         |                                      |   |    |
| 5                  |  |  |             |                 |        |  |            |                |  |                                 |         |                       |    |                         |                                      |   |    |
| 6                  |  |  |             |                 |        |  |            |                |  |                                 |         |                       |    |                         |                                      |   |    |
| 7                  |  |  |             |                 |        |  |            |                |  |                                 |         |                       |    |                         |                                      |   |    |
| 8                  |  |  |             |                 |        |  |            |                |  |                                 |         |                       |    |                         |                                      |   |    |
| 9                  |  |  |             |                 |        |  |            |                |  |                                 |         |                       |    |                         |                                      |   |    |
| 10                 |  |  |             |                 |        |  |            |                |  |                                 |         |                       |    |                         |                                      |   |    |

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PROJECT: 20146456  
 LOCATION: N 4863698.71; E 634626.76

# RECORD OF BOREHOLE: KP10

SHEET 1 OF 1  
 DATUM: Geodetic

BORING DATE: January 21, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD                                    | SOIL PROFILE   |             | SAMPLES         |        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |            |                |  | HYDRAULIC CONDUCTIVITY, k, cm/s |         |                       |   | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |    |  |
|--------------------|--|--|-------------|-----------------|--------|--|------------|----------------|--|---------------------------------|---------|-----------------------|---|-------------------------|--------------------------------------|----|--|
|                    |  | DESCRIPTION  | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE                                       | BLOWS/0.3m | SHEAR STRENGTH |  |                                 |         | WATER CONTENT PERCENT |   |                         |                                      |    |  |
|                    |  |  |             |                 |        |  |            | Cu, kPa        |  | nat V. rem V.                   | + ⊕ - ⊙ | Wp                    | W |                         |                                      | WI |  |
| 0                  | B57 Truck Mount<br>150 mm O.D. Hollow Stem Auger | GROUND SURFACE   |             | 223.50          |        |  |            |                |  |                                 |         |                       |   |                         |                                      |    |  |
|                    |  | ASPHALT (180 mm thick)   |             | 223.00          |        |  |            |                |  |                                 |         |                       |   |                         |                                      |    |  |
|                    |  | Crushed granular; brown  |             | 223.32          | 1A     | AS   | -          |                |  |                                 |         |                       |   |                         |                                      |    |  |
|                    |  | FILL - (SP-SM) gravelly SAND, some fines: brown, non-cohesive, moist   |             | 223.18          | 1B     |  |            |                |  |                                 |         |                       |   |                         |                                      |    |  |
|                    |  | FILL - (CL) gravelly SILTY CLAY and SAND, dark brown, organic inclusions; cohesive, w>PL, stiff                                  |             | 222.75          | 2      | SS   | 12         |                |  |                                 |         |                       |   |                         | M                                    |    |  |
| 1                  |  |  |             | 0.36            |        |  |            |                |  |                                 |         |                       |   |                         |                                      |    |  |
|                    |  |  |             | 0.75            |        |  |            |                |  |                                 |         |                       |   |                         |                                      |    |  |
| 2                  |  | END OF BOREHOLE  |             | 221.52          | 3      | SS   | 12         |                |  |                                 |         |                       |   |                         |                                      |    |  |
|                    |  |  |             | 1.98            |        |  |            |                |  |                                 |         |                       |   |                         |                                      |    |  |
| 3                  |  | NOTES:<br>1. Borehole caved to a depth of 1.3 m upon completion of drilling.<br>2. Borehole was dry upon completion of drilling. |             |                 |        |  |            |                |  |                                 |         |                       |   |                         |                                      |    |  |
| 4                  |  |  |             |                 |        |  |            |                |  |                                 |         |                       |   |                         |                                      |    |  |
| 5                  |  |  |             |                 |        |  |            |                |  |                                 |         |                       |   |                         |                                      |    |  |
| 6                  |  |  |             |                 |        |  |            |                |  |                                 |         |                       |   |                         |                                      |    |  |
| 7                  |  |  |             |                 |        |  |            |                |  |                                 |         |                       |   |                         |                                      |    |  |
| 8                  |  |  |             |                 |        |  |            |                |  |                                 |         |                       |   |                         |                                      |    |  |
| 9                  |  |  |             |                 |        |  |            |                |  |                                 |         |                       |   |                         |                                      |    |  |
| 10                 |  |  |             |                 |        |  |            |                |  |                                 |         |                       |   |                         |                                      |    |  |

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PROJECT: 20146456  
 LOCATION: N 4863918.31; E 634575.98

# RECORD OF BOREHOLE: KP11

SHEET 1 OF 1  
 DATUM: Geodetic

BORING DATE: January 21, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD                                    | SOIL PROFILE  |             | SAMPLES         |        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |            |                |  | HYDRAULIC CONDUCTIVITY, k, cm/s |  |                       |  | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |    |  |
|--------------------|--|---|-------------|-----------------|--------|--|------------|----------------|--|---------------------------------|--|-----------------------|--|-------------------------|--------------------------------------|----|--|
|                    |  | DESCRIPTION   | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE                                       | BLOWS/0.3m | SHEAR STRENGTH |  |                                 |  | WATER CONTENT PERCENT |  |                         |                                      |    |  |
|                    |  |   |             |                 |        |  |            | 20             |  | 40                              |  | 60                    |  |                         |                                      | 80 |  |
| 0                  | B57 Truck Mount<br>150 mm O.D. Hollow Stem Auger | GROUND SURFACE  |             | 221.20          |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |  | ASPHALT (180 mm thick)  |             | 221.02          |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |  | Crushed granular; brown   |             | 0.18            | 1A     | AS   | -          |                |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |  | FILL - (SP-SM) gravelly SAND, some fines: brown; non-cohesive, moist  |             | 0.34            | 1B     | AS   | -          |                |  |                                 |  |                       |  |                         |                                      |    |  |
| 1                  |  | FILL - (CL) gravelly SILTY CLAY and SAND; dark brown, organic inclusions; cohesive, w<PL, very stiff to hard  |             | 220.62          |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |  |   |             | 0.58            |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |  |   |             |                 | 2      | SS   | 18         |                |  |                                 |  |                       |  |                         | MH                                   |    |  |
| 2                  |  | - Auger resistance between a depth of 1.8 m and 1.9 m   |             | 219.22          |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |  | END OF BOREHOLE   |             | 1.98            |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
| 3                  |  | NOTES:<br>1. Borehole caved to a depth of 1.2 m upon completion of drilling.<br>2. Borehole was dry upon completion of drilling.<br>3. *N value may not be representative of the soil's consistency due to obstructions encountered |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
| 4                  |  |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
| 5                  |  |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
| 6                  |  |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
| 7                  |  |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
| 8                  |  |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
| 9                  |  |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
| 10                 |  |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |

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PROJECT: 20146456  
 LOCATION: N 4864147.22; E 634531.61

# RECORD OF BOREHOLE: KP12

SHEET 1 OF 1  
 DATUM: Geodetic

BORING DATE: January 21, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD                                    | SOIL PROFILE  |             | SAMPLES         |        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |            |                |  | HYDRAULIC CONDUCTIVITY, k, cm/s |  |                       |  | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |   |  |
|--------------------|--|---|-------------|-----------------|--------|--|------------|----------------|--|---------------------------------|--|-----------------------|--|-------------------------|--------------------------------------|---|--|
|                    |  | DESCRIPTION   | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE                                       | BLOWS/0.3m | SHEAR STRENGTH |  |                                 |  | WATER CONTENT PERCENT |  |                         |                                      |   |  |
|                    |  |   |             |                 |        |  |            | Cu, kPa        |  | nat V. rem V.                   |  | Wp                    |  |                         |                                      | W |  |
| 0                  | B57 Truck Mount<br>150 mm O.D. Hollow Stem Auger | GROUND SURFACE  |             | 220.10          |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |  | Crushed granular; brown   |             | 0.00            | 1A     |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |  | FILL - (SP-SM) gravelly SAND, some fines: brown; non-cohesive, moist  |             | 219.65          | 1B     | AS   |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 1                  |  | (Cl) SILTY CLAY, some sand, some gravel; brown; cohesive, w>PL, stiff |             | 219.28          | 2      | SS   | 8          |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |  | (ML) sandy SILT; brown; non-cohesive, wet, compact                    |             | 218.73          |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 2                  |  | END OF BOREHOLE   |             | 218.12          | 3      | SS   | 22         |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |  | NOTES:  |             | 1.98            |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 3                  |  | 1. Borehole caved to a depth of 1.3 m upon completion of drilling.    |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 4                  |  | 2. Borehole was dry upon completion of drilling.                      |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 5                  |  |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 6                  |  |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 7                  |  |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 8                  |  |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 9                  |  |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 10                 |  |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |

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PROJECT: 20146456  
 LOCATION: N 4864251.68; E 634519.69

# RECORD OF BOREHOLE: KP13

SHEET 1 OF 1  
 DATUM: Geodetic

BORING DATE: January 21, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD  | SOIL PROFILE  |             | SAMPLES         |        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |            |                        |  | HYDRAULIC CONDUCTIVITY, k, cm/s |  |                       |  | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |    |  |
|--------------------|--|---|-------------|-----------------|--------|--|------------|------------------------|--|---------------------------------|--|-----------------------|--|-------------------------|--------------------------------------|----|--|
|                    |  | DESCRIPTION   | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE                                       | BLOWS/0.3m | SHEAR STRENGTH Cu, kPa |  |                                 |  | WATER CONTENT PERCENT |  |                         |                                      |    |  |
|                    |  |   |             |                 |        |  |            | 20                     |  | 40                              |  | 60                    |  |                         |                                      | 80 |  |
| 0                  | B57 Truck Mount<br>150 mm O.D. Hollow Stem Auger               | GROUND SURFACE  |             | 222.80          |        |  |            |                        |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |  | ASPHALT (240 mm thick)  |             | 0.00            |        |  |            |                        |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |  | Crushed granular; brown   |             | 222.56          |        |  |            |                        |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |  | FILL - (SP-SM) gravelly SAND, some fines; brown; non-cohesive, moist, compact |             | 0.24            | 1A     | AS   | -          |                        |  |                                 |  |                       |  |                         |                                      |    |  |
| 1                  |  | FILL - (SM) SILTY SAND and GRAVEL; brown; non-cohesive, moist, compact        |             | 0.40            | 1B     |  |            |                        |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |  |   |             | 221.75          | 2A     | SS   | 15         |                        |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |  | (ML) sandy SILT, some gravel, brown; non-cohesive, moist, compact             |             | 1.05            | 2B     |  |            |                        |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |  |   | 221.43      |                 |        |  |            |                        |  |                                 |  |                       |  |                         |                                      |    |  |
| 2                  |  | END OF BOREHOLE   |             | 1.37            | 3      | SS   | 19         |                        |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |  |   | 220.82      |                 |        |  |            |                        |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |  |   | 1.98        |                 |        |  |            |                        |  |                                 |  |                       |  |                         |                                      |    |  |
| 3                  | NOTE:<br>1. Borehole open and dry upon completion of drilling. |   |             |                 |        |  |            |                        |  |                                 |  |                       |  |                         |                                      |    |  |
| 4                  |  |   |             |                 |        |  |            |                        |  |                                 |  |                       |  |                         |                                      |    |  |
| 5                  |  |   |             |                 |        |  |            |                        |  |                                 |  |                       |  |                         |                                      |    |  |
| 6                  |  |   |             |                 |        |  |            |                        |  |                                 |  |                       |  |                         |                                      |    |  |
| 7                  |  |   |             |                 |        |  |            |                        |  |                                 |  |                       |  |                         |                                      |    |  |
| 8                  |  |   |             |                 |        |  |            |                        |  |                                 |  |                       |  |                         |                                      |    |  |
| 9                  |  |   |             |                 |        |  |            |                        |  |                                 |  |                       |  |                         |                                      |    |  |
| 10                 |  |   |             |                 |        |  |            |                        |  |                                 |  |                       |  |                         |                                      |    |  |

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PROJECT: 20146456  
 LOCATION: N 4861907.72; E 635019.68

# RECORD OF BOREHOLE: KS1

SHEET 2 OF 2  
 DATUM: Geodetic

BORING DATE: January 20, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD | SOIL PROFILE   |             |                 | SAMPLES |      | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |                        |   |               | HYDRAULIC CONDUCTIVITY, k, cm/s |                       |                  |    | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |   |    |
|--------------------|---------------|--|-------------|-----------------|---------|------|--|------------------------|---|---------------|---------------------------------|-----------------------|------------------|----|-------------------------|--------------------------------------|---|----|
|                    |               | DESCRIPTION  | STRATA PLOT | ELEV. DEPTH (m) | NUMBER  | TYPE | BLOWS/0.3m                                 | SHEAR STRENGTH Cu, kPa |   | nat V. rem V. |                                 | WATER CONTENT PERCENT |                  | Wp |                         |                                      | W | Wi |
|                    |               |  |             |                 |         |      |  | +                      | ⊕ | +             | ⊕                               | 10 <sup>-5</sup>      | 10 <sup>-4</sup> |    |                         |                                      |   |    |
| 10                 |               | --- CONTINUED FROM PREVIOUS PAGE ---   |             |                 |         |      |  |                        |   |               |                                 |                       |                  |    |                         |                                      |   |    |
| 11                 |               | NOTES:<br>1. Water encountered at a depth of 9.0 m during drilling.<br>2. Groundwater level was measured in monitoring well at a depth of 2.0 mbgs (El. 202m) on January 29, 2021. |             |                 |         |      |  |                        |   |               |                                 |                       |                  |    |                         |                                      |   |    |
| 12                 |               |  |             |                 |         |      |  |                        |   |               |                                 |                       |                  |    |                         |                                      |   |    |
| 13                 |               |  |             |                 |         |      |  |                        |   |               |                                 |                       |                  |    |                         |                                      |   |    |
| 14                 |               |  |             |                 |         |      |  |                        |   |               |                                 |                       |                  |    |                         |                                      |   |    |
| 15                 |               |  |             |                 |         |      |  |                        |   |               |                                 |                       |                  |    |                         |                                      |   |    |
| 16                 |               |  |             |                 |         |      |  |                        |   |               |                                 |                       |                  |    |                         |                                      |   |    |
| 17                 |               |  |             |                 |         |      |  |                        |   |               |                                 |                       |                  |    |                         |                                      |   |    |
| 18                 |               |  |             |                 |         |      |  |                        |   |               |                                 |                       |                  |    |                         |                                      |   |    |
| 19                 |               |  |             |                 |         |      |  |                        |   |               |                                 |                       |                  |    |                         |                                      |   |    |
| 20                 |               |  |             |                 |         |      |  |                        |   |               |                                 |                       |                  |    |                         |                                      |   |    |

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PROJECT: 20146456  
 LOCATION: N 4862189.80; E 634962.05

# RECORD OF BOREHOLE: KS2

SHEET 1 OF 2  
 DATUM: Geodetic

BORING DATE: January 4, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD | SOIL PROFILE  |             | SAMPLES         |        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |         |    |    | HYDRAULIC CONDUCTIVITY, k, cm/s |                  |                  |                  | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |
|--------------------|---------------|---|-------------|-----------------|--------|--|---------|----|----|---------------------------------|------------------|------------------|------------------|-------------------------|--------------------------------------|
|                    |               | DESCRIPTION   | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE                                       | 20      | 40 | 60 | 80                              | 10 <sup>-5</sup> | 10 <sup>-4</sup> | 10 <sup>-3</sup> |                         |                                      |
| 0                  |               | GROUND SURFACE  |             | 209.30          |        |  |         |    |    |                                 |                  |                  |                  |                         |                                      |
|                    |               | Crushed granular; brown   |             | 0.00            | 1A     |  |         |    |    |                                 |                  |                  |                  |                         |                                      |
|                    |               | FILL - (SM) SILTY SAND, trace gravel; brown; non-cohesive, moist                      |             | 208.95          | AS     | -  |         |    |    |                                 |                  |                  |                  |                         |                                      |
|                    |               |   |             | 0.35            | 1B     |  |         |    |    |                                 |                  |                  |                  |                         |                                      |
| 1                  |               | FILL - (CL-ML) gravelly SILTY CLAY-CLAYEY SILT and SAND; brown; cohesive, w<PL, stiff |             | 208.54          | 2      | SS   | 8       |    |    |                                 |                  |                  |                  |                         |                                      |
|                    |               |   |             | 207.93          |        |  |         |    |    |                                 |                  |                  |                  |                         |                                      |
|                    |               | FILL - (ML) sandy SILT; brown; non-cohesive, wet, compact                             |             | 1.37            | 3      | SS   | 14      |    |    |                                 |                  |                  |                  |                         |                                      |
| 2                  |               |   |             | 207.17          |        |  |         |    |    |                                 |                  |                  |                  |                         |                                      |
|                    |               | (ML) SILT and SAND, trace gravel; brown (TILL); non-cohesive, moist, very dense       |             | 2.13            | 4      | SS   | 65      |    |    |                                 |                  |                  |                  |                         |                                      |
| 3                  |               |   |             |                 |        |  |         |    |    |                                 |                  |                  |                  |                         |                                      |
|                    |               |   |             |                 |        |  |         |    |    |                                 |                  |                  |                  |                         |                                      |
| 4                  |               |   |             |                 |        |  |         |    |    |                                 |                  |                  |                  |                         |                                      |
|                    |               | (CL) SILTY CLAY and SAND, some gravel; grey (TILL); cohesive, w<PL, hard              |             | 205.26          | 5      | SS   | 85      |    |    |                                 |                  |                  |                  |                         |                                      |
| 5                  |               |   |             |                 |        |  |         |    |    |                                 |                  |                  |                  |                         |                                      |
|                    |               |   |             |                 |        |  |         |    |    |                                 |                  |                  |                  |                         |                                      |
| 6                  |               |   |             |                 |        |  |         |    |    |                                 |                  |                  |                  |                         |                                      |
|                    |               |   |             |                 |        |  |         |    |    |                                 |                  |                  |                  |                         |                                      |
| 7                  |               |   |             |                 |        |  |         |    |    |                                 |                  |                  |                  |                         |                                      |
|                    |               |   |             |                 |        |  |         |    |    |                                 |                  |                  |                  |                         |                                      |
| 8                  |               |   |             |                 |        |  |         |    |    |                                 |                  |                  |                  |                         |                                      |
|                    |               |   |             |                 |        |  |         |    |    |                                 |                  |                  |                  |                         |                                      |
| 9                  |               |   |             |                 |        |  |         |    |    |                                 |                  |                  |                  |                         |                                      |
|                    |               |   |             |                 |        |  |         |    |    |                                 |                  |                  |                  |                         |                                      |
| 10                 |               | END OF BOREHOLE   |             | 200.03          | 9      | SS   | 50/0.13 |    |    |                                 |                  |                  |                  |                         |                                      |
|                    |               | NOTES:<br>1. Borehole was open and dry upon completion of drilling.                   |             | 9.27            |        |  |         |    |    |                                 |                  |                  |                  |                         |                                      |
|                    |               | CONTINUED NEXT PAGE   |             |                 |        |  |         |    |    |                                 |                  |                  |                  |                         |                                      |

GTA-BHS 001 S:\CLIENTS\REGION OF YORK\MAJOR MACKENZIE DRIVE\02 DATA\GINT\MARKHAM\_WARDEN&KENNEDY\_RD.GPJ GAL-MIS.GDT 4/5/21

DEPTH SCALE  
1 : 50



LOGGED: YS  
CHECKED: TO

PROJECT: 20146456  
 LOCATION: N 4862189.80; E 634962.05

# RECORD OF BOREHOLE: KS2

SHEET 2 OF 2  
 DATUM: Geodetic

BORING DATE: January 4, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD | SOIL PROFILE  |             |                 | SAMPLES |      | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |                |                   |                       | HYDRAULIC CONDUCTIVITY, k, cm/s |                       |    |  | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |
|--------------------|---------------|---|-------------|-----------------|---------|------|--|----------------|-------------------|-----------------------|---------------------------------|-----------------------|----|--|-------------------------|--------------------------------------|
|                    |               | DESCRIPTION   | STRATA PLOT | ELEV. DEPTH (m) | NUMBER  | TYPE | BLOWS/0.3m                                 | SHEAR STRENGTH |                   | WATER CONTENT PERCENT |                                 | WATER CONTENT PERCENT |    |  |                         |                                      |
|                    |               |   |             |                 |         |      |  | Cu, kPa        | nat V. + rem V. ⊕ | Q - U - ⊙             | Wp                              | W                     | Wi |  |                         |                                      |
| 10                 |               | --- CONTINUED FROM PREVIOUS PAGE ---  |             |                 |         |      |  |                |                   |                       |                                 |                       |    |  |                         |                                      |
| 11                 |               | 2. Groundwater level was measured in monitoring well at a depth of 1.7 mbgs (El. 207.6m) on January 29, 2021. |             |                 |         |      |  |                |                   |                       |                                 |                       |    |  |                         |                                      |
| 12                 |               |   |             |                 |         |      |  |                |                   |                       |                                 |                       |    |  |                         |                                      |
| 13                 |               |   |             |                 |         |      |  |                |                   |                       |                                 |                       |    |  |                         |                                      |
| 14                 |               |   |             |                 |         |      |  |                |                   |                       |                                 |                       |    |  |                         |                                      |
| 15                 |               |   |             |                 |         |      |  |                |                   |                       |                                 |                       |    |  |                         |                                      |
| 16                 |               |   |             |                 |         |      |  |                |                   |                       |                                 |                       |    |  |                         |                                      |
| 17                 |               |   |             |                 |         |      |  |                |                   |                       |                                 |                       |    |  |                         |                                      |
| 18                 |               |   |             |                 |         |      |  |                |                   |                       |                                 |                       |    |  |                         |                                      |
| 19                 |               |   |             |                 |         |      |  |                |                   |                       |                                 |                       |    |  |                         |                                      |
| 20                 |               |   |             |                 |         |      |  |                |                   |                       |                                 |                       |    |  |                         |                                      |

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PROJECT: 20146456  
 LOCATION: N 4862601.12; E 634875.39

# RECORD OF BOREHOLE: KS4

SHEET 1 OF 2  
 DATUM: Geodetic

BORING DATE: January 18, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD | SOIL PROFILE  |             | SAMPLES         |        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |            |                |  | HYDRAULIC CONDUCTIVITY, k, cm/s |  |                       |  | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |    |  |
|--------------------|---------------|---|-------------|-----------------|--------|--|------------|----------------|--|---------------------------------|--|-----------------------|--|-------------------------|--------------------------------------|----|--|
|                    |               | DESCRIPTION   | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE                                       | BLOWS/0.3m | SHEAR STRENGTH |  |                                 |  | WATER CONTENT PERCENT |  |                         |                                      |    |  |
|                    |               |   |             |                 |        |  |            | Cu, kPa        |  | nat V. rem V.                   |  | Wp                    |  |                         |                                      | WI |  |
| 0                  |               | GROUND SURFACE  |             | 218.70          |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |               | Crushed granular; brown   |             | 0.00            | 1      | AS   | -          |                |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |               | FILL - (SM) SILTY SAND, trace gravel; brown; non-cohesive, moist, loose |             | 218.28          | 2      | SS   | 6          |                |  |                                 |  |                       |  |                         |                                      |    |  |
| 1                  |               |   |             | 0.42            |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |               | FILL - (CI) SILTY CLAY, some sand; brown; cohesive, w>PL, firm          |             | 217.33          | 3      | SS   | 7          |                |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |               |   |             | 1.37            |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
| 2                  |               |   |             | 216.57          | 4      | SS   | 6          |                |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |               | FILL - (SM) SILTY SAND, trace gravel; brown; non-cohesive, moist, loose |             | 2.13            |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |               |   |             | 2.90            |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
| 3                  |               | (SM) SILTY SAND, fine; brown; non-cohesive, moist to wet, very dense    |             | 2.90            | 5      | SS   | 61         |                |  |                                 |  |                       |  | MH                      |                                      |    |  |
|                    |               |   |             |                 | 6      | SS   | 50/0.15    |                |  |                                 |  |                       |  |                         |                                      |    |  |
| 5                  |               |   |             |                 |        |  |            |                |  |                                 |  |                       |  | Bentonite               |                                      |    |  |
|                    |               |   |             |                 | 7      | SS   | 73         |                |  |                                 |  |                       |  |                         |                                      |    |  |
| 7                  |               |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |               |   |             |                 | 8      | SS   | 50         |                |  |                                 |  |                       |  |                         |                                      |    |  |
| 8                  |               | - 0.3m thick sand blowout was observed at 7.6 m                         |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |               |   |             |                 | 9      | SS   | 50/0.13    |                |  |                                 |  |                       |  |                         |                                      |    |  |
| 9                  |               | - 0.9m thick sand blowout was observed at 9.1 m                         |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
| 10                 |               |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |

CONTINUED NEXT PAGE

GTA-BHS 001 S:\CLIENTS\REGION OF YORK\MAJOR MACKENZIE DRIVE\02 DATA\GINT\MARKHAM WARDEN&KENNEDY\_RD.GPJ GAL-MIS.GDT 4/5/21

DEPTH SCALE  
 1 : 50



LOGGED: YS  
 CHECKED: TO

PROJECT: 20146456  
 LOCATION: N 4862601.12; E 634875.39

# RECORD OF BOREHOLE: KS4

SHEET 2 OF 2  
 DATUM: Geodetic

BORING DATE: January 18, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD                                    | SOIL PROFILE  |             | SAMPLES         |        |             | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |                |  |               | HYDRAULIC CONDUCTIVITY, k, cm/s |                       |  |         | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |    |
|--------------------|--|---|-------------|-----------------|--------|-------------|--|----------------|--|---------------|---------------------------------|-----------------------|--|---------|-------------------------|--------------------------------------|----|
|                    |  | DESCRIPTION   | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE        | BLOWS/0.3m                                 | SHEAR STRENGTH |  |               |                                 | WATER CONTENT PERCENT |  |         |                         |                                      |    |
|                    |  |   |             |                 |        |             |  | Cu, kPa        |  | nat V. rem V. |                                 | +                     |  | Q - U - |                         |                                      | Wp |
| 10                 | BS7 Truck Mount<br>200 mm O.D. Hollow Stem Auger | --- CONTINUED FROM PREVIOUS PAGE ---<br>(SM) SILTY SAND, fine; brown; non-cohesive, moist to wet, very dense                                  |             |                 |        |             |  |                |  |               |                                 |                       |  |         |                         |                                      |    |
| 11                 |  | - 1.5m thick sand blowout was observed at 10.7 m  |             | 10              | SS     | 50          |  |                |  |               |                                 |                       |  |         |                         |                                      |    |
| 12                 |  |   |             |                 |        |             |  |                |  |               |                                 |                       |  |         |                         |                                      |    |
| 13                 |  |   |             |                 |        |             |  |                |  |               |                                 |                       |  |         |                         |                                      |    |
| 14                 |  |   |             | 11              | SS     | 65          |  |                |  |               |                                 |                       |  |         |                         | Bentonite                            |    |
| 15                 |  |   |             |                 |        |             |  |                |  |               |                                 |                       |  |         |                         |                                      |    |
| 16                 |  |   |             | 12              | SS     | 50/<br>0.13 |  |                |  |               |                                 |                       |  |         |                         |                                      |    |
| 17                 |  |   |             |                 |        |             |  |                |  |               |                                 |                       |  |         |                         |                                      |    |
| 18                 |  |   |             |                 |        |             |  |                |  |               |                                 |                       |  |         |                         |                                      |    |
| 19                 |  |   |             |                 |        |             |  |                |  |               |                                 |                       |  |         |                         |                                      |    |
| 20                 |  |   |             |                 |        |             |  |                |  |               |                                 |                       |  |         |                         |                                      |    |
| 17                 |  | END OF BOREHOLE   |             |                 |        |             | 201.94                                     |                |  |               |                                 |                       |  |         |                         |                                      |    |
| 17                 |  | NOTES:  |             |                 |        |             | 16.76                                      |                |  |               |                                 |                       |  |         |                         |                                      |    |
| 17                 |  | 1. Water was encountered at a depth of 4.6 m during drilling.   |             |                 |        |             |  |                |  |               |                                 |                       |  |         |                         |                                      |    |
| 17                 |  | 2. Sand blowout was cleaned out using water prior to advancing augers.  |             |                 |        |             |  |                |  |               |                                 |                       |  |         |                         |                                      |    |
| 17                 |  | 3. Groundwater level was measured in monitoring well at a depth of 6.6 mbgs (El. 211.6m) on January 29, 2021.                                 |             |                 |        |             |  |                |  |               |                                 |                       |  |         |                         |                                      |    |
| 17                 |  | 4. SPT N-value could not be carried out at 16.7mbgs due to a 1.5m sand blowout. The sand could not be completely cleaned out during drilling. |             |                 |        |             |  |                |  |               |                                 |                       |  |         |                         |                                      |    |

GTA-BHS 001 S:\CLIENTS\REGION OF YORK\MAJOR MACKENZIE DRIVE\02 DATA\GINT\MARKHAM WARDEN&KENNEDY\_RD.GPJ GAL-MIS.GDT 4/5/21

PROJECT: 20146456  
 LOCATION: N 4862815.63; E 634829.53

# RECORD OF BOREHOLE: KS5

SHEET 1 OF 1  
 DATUM: Geodetic

BORING DATE: January 15, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD | SOIL PROFILE   |             | SAMPLES         |        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |                |  |    | HYDRAULIC CONDUCTIVITY, k, cm/s |                       |  |    | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |                  |
|--------------------|---------------|--|-------------|-----------------|--------|--|----------------|--|----|---------------------------------|-----------------------|--|----|-------------------------|--------------------------------------|------------------|
|                    |               | DESCRIPTION  | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE                                       | SHEAR STRENGTH |  |    |                                 | WATER CONTENT PERCENT |  |    |                         |                                      |                  |
|                    |               |  |             |                 |        |  | 20             |  | 40 |                                 | 60                    |  | 80 |                         |                                      | 10 <sup>-5</sup> |
| 0                  |               | GROUND SURFACE   |             | 221.30          |        |  |                |  |    |                                 |                       |  |    |                         |                                      |                  |
|                    |               | ASPHALT (280 mm thick)   |             | 0.00            |        |  |                |  |    |                                 |                       |  |    |                         |                                      |                  |
|                    |               |  |             | 221.02          |        |  |                |  |    |                                 |                       |  |    |                         |                                      |                  |
|                    |               | Crushed granular; brown  |             | 0.28            | 1A     | AS   | -              |  |    |                                 |                       |  |    |                         |                                      |                  |
|                    |               | FILL - (SP) SAND, some gravel, trace fines; brown; non-cohesive, moist |             | 0.41            | 1B     | AS   | -              |  |    |                                 |                       |  |    |                         |                                      |                  |
| 1                  |               | (C) SILTY CLAY, some sand; brown; cohesive, w>PL, stiff to very stiff  |             | 220.54          | 2      | SS   | 9              |  |    |                                 |                       |  |    |                         |                                      |                  |
|                    |               |  |             | 0.76            |        |  |                |  |    |                                 |                       |  |    |                         |                                      |                  |
| 2                  |               |  |             | 219.17          | 3      | SS   | 24             |  |    |                                 |                       |  |    |                         |                                      |                  |
|                    |               |  |             | 2.13            |        |  |                |  |    |                                 |                       |  |    |                         |                                      |                  |
|                    |               | (SP) SAND, trace fines; brown; non-cohesive, moist to wet, very dense  |             | 2.13            | 4      | SS   | 65             |  |    |                                 |                       |  |    |                         |                                      |                  |
| 3                  |               |  |             |                 | 5      | SS   | 56             |  |    |                                 |                       |  |    |                         |                                      |                  |
| 4                  |               |  |             |                 | 6      | SS   | 83             |  |    |                                 |                       |  |    |                         |                                      |                  |
| 5                  |               |  |             |                 | 7      | SS   | 50/0.13        |  |    |                                 |                       |  |    |                         |                                      |                  |
| 6                  |               |  |             |                 | 8      | SS   | 50/0.10        |  |    |                                 |                       |  |    |                         |                                      |                  |
| 7                  |               |  |             |                 |        |  |                |  |    |                                 |                       |  |    |                         |                                      |                  |
| 8                  |               | END OF BOREHOLE  |             | 213.43          |        |  |                |  |    |                                 |                       |  |    |                         |                                      |                  |
|                    |               |  |             | 7.87            |        |  |                |  |    |                                 |                       |  |    |                         |                                      |                  |
| 9                  |               | NOTE:<br>1. Borehole was open and dry upon completion of drilling.     |             |                 |        |  |                |  |    |                                 |                       |  |    |                         |                                      |                  |
| 10                 |               |  |             |                 |        |  |                |  |    |                                 |                       |  |    |                         |                                      |                  |

GTA-BHS 001 S:\CLIENTS\REGION OF YORK\MAJOR MACKENZIE DRIVE\02 DATA\GINT\MARKHAM WARDEN&KENNEDY\_RD.GPJ GAL-MIS.GDT 4/5/21

B57 Truck Mount  
150 mm O.D. Hollow Stem Auger

PROJECT: 20146456  
 LOCATION: N 4863022.33; E 634786.84

# RECORD OF BOREHOLE: KS6

SHEET 1 OF 1  
 DATUM: Geodetic

BORING DATE: January 22, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD | SOIL PROFILE   |             | SAMPLES         |        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |            |                |  | HYDRAULIC CONDUCTIVITY, k, cm/s |  |                       |  | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |    |  |
|--------------------|---------------|--|-------------|-----------------|--------|--|------------|----------------|--|---------------------------------|--|-----------------------|--|-------------------------|--------------------------------------|----|--|
|                    |               | DESCRIPTION  | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE                                       | BLOWS/0.3m | SHEAR STRENGTH |  |                                 |  | WATER CONTENT PERCENT |  |                         |                                      |    |  |
|                    |               |  |             |                 |        |  |            | Cu, kPa        |  | nat V. + rem V. ⊕ ⊖             |  | Q - U - ⊙             |  |                         |                                      | Wp |  |
| 0                  |               | GROUND SURFACE   |             | 222.30          |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |               | ASPHALT (140 mm thick)   |             | 0.00            |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |               | Crushed granular with RAP; brown   |             | 0.14            |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |               |  |             | 221.88          | 1A     |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |               | FILL - (SP) SAND, some gravel, trace fines: brown; non-cohesive, moist               |             | 0.42            | 1B     | AS   | -          |                |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |               |  |             | 221.45          | 2A     | SS   | 13         |                |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |               | FILL - (CL) SILTY CLAY, some sand; brown; cohesive, w>PL, stiff                      |             | 0.85            | 2B     |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
| 1                  |               |  |             | 220.93          |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |               | (ML) SILT and SAND, some gravel; brown (TILL); non-cohesive, moist, compact to dense |             | 1.37            | 3      | SS   | 19         |                |  |                                 |  |                       |  |                         |                                      |    |  |
| 2                  |               |  |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |               |  |             |                 | 4      | SS   | 37         |                |  |                                 |  |                       |  |                         |                                      |    |  |
| 3                  |               |  |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |               |  |             |                 | 5      | SS   | 37         |                |  |                                 |  |                       |  |                         |                                      |    |  |
| 4                  |               |  |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |               | (SM) SILTY SAND, some gravel; brown; non-cohesive, moist, very dense                 |             | 218.26          |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |               |  |             | 4.04            | 6      | SS   | 84         |                |  |                                 |  |                       |  |                         |                                      |    |  |
| 5                  |               |  |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |               |  |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
| 6                  |               |  |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |               |  |             |                 | 7      | SS   | 70         |                |  |                                 |  |                       |  |                         |                                      |    |  |
| 7                  |               |  |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |               |  |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
| 8                  |               | END OF BOREHOLE  |             | 214.40          | 8      | SS   | 50/0.13    |                |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |               | NOTE:  |             | 7.90            |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
| 9                  |               | 1. Borehole was open and dry upon completion fo drilling.                            |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
|                    |               | 2. RAP = Recycled asphalt pavement   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |
| 10                 |               |  |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |    |  |

GTA-BHS 001 S:\CLIENTS\REGION OF YORK\MAJOR MACKENZIE DRIVE\02 DATA\GINT\MARKHAM\_WARDEN&KENNEDY\_RD.GPJ GAL-MIS.GDT 4/5/21

PROJECT: 20146456  
 LOCATION: N 4863216.48; E 634749.77

# RECORD OF BOREHOLE: KS7

SHEET 1 OF 1  
 DATUM: Geodetic

BORING DATE: January 19, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD | SOIL PROFILE   |             | SAMPLES         |        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |             |                        |    | HYDRAULIC CONDUCTIVITY, k, cm/s |    |                       |          | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |     |     |
|--------------------|---------------|--|-------------|-----------------|--------|--|-------------|------------------------|----|---------------------------------|----|-----------------------|----------|-------------------------|--------------------------------------|-----|-----|
|                    |               | DESCRIPTION  | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE                                       | BLOWS/0.3m  | SHEAR STRENGTH Cu, kPa |    |                                 |    | WATER CONTENT PERCENT |          |                         |                                      |     |     |
|                    |               |  |             |                 |        |  |             | 20                     | 40 | 60                              | 80 | nat V. +              | rem V. ⊕ |                         |                                      | Q - | U - |
| 0                  |               | GROUND SURFACE   |             | 223.00          |        |  |             |                        |    |                                 |    |                       |          |                         |                                      |     |     |
|                    |               | Crushed granular; brown  |             | 0.00            | 1      | AS   | -           |                        |    |                                 |    |                       |          |                         |                                      |     |     |
|                    |               | FILL - (SP) SAND, some gravel, trace fines: brown; non-cohesive, moist, dense  |             | 222.43<br>0.57  | 2      | SS   | 32          |                        |    |                                 |    |                       |          |                         |                                      |     |     |
|                    |               | FILL - (CL) gravelly SILTY CLAY and SAND; dark grey and brown, organic inclusions; cohesive, w>PL, stiff   |             | 221.63<br>1.37  | 3      | SS   | 11          |                        |    |                                 |    |                       |          |                         |                                      |     |     |
|                    |               | (CL) SILTY CLAY and SAND, some gravel; brown; cohesive, w>PL, stiff  |             | 220.87<br>2.13  | 4      | SS   | 10          |                        |    |                                 |    |                       |          |                         |                                      |     |     |
|                    |               | (SM) SILTY SAND; brown; non-cohesive, wet, very dense  |             | 218.96<br>4.04  | 5      | SS   | 11          |                        |    |                                 |    |                       |          |                         |                                      |     |     |
|                    |               |  |             | 218.96<br>4.04  | 6      | SS   | 58          |                        |    |                                 |    |                       |          |                         |                                      |     |     |
|                    |               |  |             | 218.96<br>4.04  | 7      | SS   | 89          |                        |    |                                 |    |                       |          |                         |                                      |     |     |
|                    |               |  |             | 218.96<br>4.04  | 8      | SS   | 50/<br>0.13 |                        |    |                                 |    |                       |          |                         |                                      |     |     |
| 8                  |               | END OF BOREHOLE  |             | 215.10<br>7.90  |        |  |             |                        |    |                                 |    |                       |          |                         |                                      |     |     |
| 9                  |               | NOTES:<br>1. Water was encountered at a depth of 4.6 m during drilling.<br>2. Groundwater level was measured in monitoring well at a depth of 2.2 mbgs (El. 220.8m) on January 29, 2021. |             |                 |        |  |             |                        |    |                                 |    |                       |          |                         |                                      |     |     |

GTA-BHS 001 S:\CLIENTS\REGION OF YORK\MAJOR MACKENZIE DRIVE\02 DATA\GINT\MARKHAM\_WARDEN&KENNEDY\_RD.GPJ GAL-MIS.GDT 4/5/21

PROJECT: 20146456  
 LOCATION: N 4863405.94; E 634706.26

# RECORD OF BOREHOLE: KS8

SHEET 1 OF 2  
 DATUM: Geodetic

BORING DATE: January 22, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD | SOIL PROFILE  |             | SAMPLES         |        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |            |                |  | HYDRAULIC CONDUCTIVITY, k, cm/s |           |                       |   | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |    |  |
|--------------------|---------------|---|-------------|-----------------|--------|--|------------|----------------|--|---------------------------------|-----------|-----------------------|---|-------------------------|--------------------------------------|----|--|
|                    |               | DESCRIPTION   | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE                                       | BLOWS/0.3m | SHEAR STRENGTH |  |                                 |           | WATER CONTENT PERCENT |   |                         |                                      |    |  |
|                    |               |   |             |                 |        |  |            | Cu, kPa        |  | nat V. + rem V. ⊕               | Q - U - ⊙ | Wp                    | W |                         |                                      | Wl |  |
| 0                  |               | GROUND SURFACE  |             | 223.50          |        |  |            |                |  |                                 |           |                       |   |                         |                                      |    |  |
|                    |               | Crushed granular; brown   |             | 0.00            | 1A     |  |            |                |  |                                 |           |                       |   |                         | Sand                                 |    |  |
|                    |               | FILL - (SP) SAND, some gravel, trace fines; brown; non-cohesive, moist  |             | 223.02          | AS     | -  |            |                |  |                                 |           |                       |   |                         |                                      |    |  |
|                    |               |   |             | 0.48            | 1B     |  |            |                |  |                                 |           |                       |   |                         |                                      |    |  |
|                    |               |   |             | 222.65          | 2A     |  |            |                |  |                                 |           |                       |   |                         |                                      |    |  |
| 1                  |               | FILL - (CI) SILTY CLAY, some sand, trace gravel; dark grey and brown, organic inclusions; cohesive, w>PL, stiff to firm |             | 0.85            | 2B     | SS   | 13         |                |  |                                 |           |                       |   |                         |                                      |    |  |
|                    |               |   |             |                 |        |  |            |                |  |                                 |           |                       |   |                         |                                      |    |  |
|                    |               |   |             |                 | 3      | SS   | 9          |                |  |                                 |           |                       |   |                         |                                      |    |  |
|                    |               |   |             |                 | 4      | SS   | 7          |                |  |                                 |           |                       |   |                         |                                      |    |  |
| 2                  |               |   |             |                 |        |  |            |                |  |                                 |           |                       |   |                         |                                      |    |  |
|                    |               |   |             |                 |        |  |            |                |  |                                 |           |                       |   |                         |                                      |    |  |
|                    |               |   |             |                 |        |  |            |                |  |                                 |           |                       |   |                         |                                      |    |  |
| 3                  |               | (CL) SILTY CLAY and SAND, trace gravel; brown; cohesive, w>PL, firm   |             | 220.60          |        |  |            |                |  |                                 |           |                       |   |                         |                                      |    |  |
|                    |               |   |             | 2.90            | 5      | SS   | 7          |                |  |                                 |           |                       |   |                         | MH                                   |    |  |
|                    |               |   |             |                 |        |  |            |                |  |                                 |           |                       |   |                         |                                      |    |  |
| 4                  |               | (CL) SILTY CLAY and SAND, some gravel; brown to grey (TILL); cohesive, w<PL, hard                                       |             | 219.46          |        |  |            |                |  |                                 |           |                       |   |                         |                                      |    |  |
|                    |               |   |             | 4.04            | 6      | SS   | 40         |                |  |                                 |           |                       |   |                         |                                      |    |  |
| 5                  |               |   |             |                 |        |  |            |                |  |                                 |           |                       |   |                         |                                      |    |  |
|                    |               |   |             |                 |        |  |            |                |  |                                 |           |                       |   |                         |                                      |    |  |
|                    |               |   |             |                 |        |  |            |                |  |                                 |           |                       |   |                         |                                      |    |  |
| 6                  |               |   |             |                 |        |  |            |                |  |                                 |           |                       |   |                         |                                      |    |  |
|                    |               |   |             |                 |        |  |            |                |  |                                 |           |                       |   |                         |                                      |    |  |
|                    |               |   |             |                 |        |  |            |                |  |                                 |           |                       |   |                         |                                      |    |  |
| 7                  |               |   |             |                 |        |  |            |                |  |                                 |           |                       |   |                         |                                      |    |  |
|                    |               |   |             |                 |        |  |            |                |  |                                 |           |                       |   |                         |                                      |    |  |
|                    |               |   |             |                 |        |  |            |                |  |                                 |           |                       |   |                         |                                      |    |  |
| 8                  |               |   |             |                 |        |  |            |                |  |                                 |           |                       |   |                         |                                      |    |  |
|                    |               |   |             |                 |        |  |            |                |  |                                 |           |                       |   |                         |                                      |    |  |
|                    |               |   |             |                 |        |  |            |                |  |                                 |           |                       |   |                         |                                      |    |  |
| 9                  |               |   |             |                 |        |  |            |                |  |                                 |           |                       |   |                         |                                      |    |  |
|                    |               |   |             |                 |        |  |            |                |  |                                 |           |                       |   |                         |                                      |    |  |
|                    |               |   |             |                 |        |  |            |                |  |                                 |           |                       |   |                         |                                      |    |  |
| 10                 |               |   |             |                 |        |  |            |                |  |                                 |           |                       |   |                         |                                      |    |  |
|                    |               |   |             |                 |        |  |            |                |  |                                 |           |                       |   |                         |                                      |    |  |

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PROJECT: 20146456  
 LOCATION: N 4863405.94; E 634706.26

# RECORD OF BOREHOLE: KS8

SHEET 2 OF 2  
 DATUM: Geodetic

BORING DATE: January 22, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD                                    | SOIL PROFILE   |             | SAMPLES         |        |      | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |                        |    |    | HYDRAULIC CONDUCTIVITY, k, cm/s |                       |     |          | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |     |
|--------------------|--|--|-------------|-----------------|--------|------|--|------------------------|----|----|---------------------------------|-----------------------|-----|----------|-------------------------|--------------------------------------|-----|
|                    |  | DESCRIPTION  | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE | BLOWS/0.3m                                 | SHEAR STRENGTH Cu, kPa |    |    |                                 | WATER CONTENT PERCENT |     |          |                         |                                      |     |
|                    |  |  |             |                 |        |      |  | 20                     | 40 | 60 | 80                              | nat V. +              | Q - | rem V. ⊕ |                         |                                      | U - |
| 10                 |  | --- CONTINUED FROM PREVIOUS PAGE ---<br>(CL) SILTY CLAY and SAND, some gravel; brown to grey (TILL); cohesive, w<PL, hard  |             |                 |        |      |  |                        |    |    |                                 |                       |     |          |                         |                                      |     |
| 11                 |  |  |             |                 | 10     | SS   | 80/0.28                                    |                        |    |    |                                 |                       |     |          |                         | Grout                                |     |
| 12                 |  |  |             |                 | 11     | SS   | 50/0.07                                    |                        |    |    |                                 |                       |     |          |                         |                                      |     |
| 13                 | B57 Truck Mount<br>200 mm O.D. Hollow Stem Auger |  |             |                 | 12     | SS   | 50/0.07                                    |                        |    |    |                                 |                       |     |          |                         | Bentonite                            |     |
| 14                 |  |  |             |                 | 13     | SS   | 75   |                        |    |    |                                 |                       |     |          |                         | Sand                                 |     |
| 15                 |  |  |             |                 | 14     | SS   | 130/0.18                                   |                        |    |    |                                 |                       |     |          |                         | Screen                               |     |
| 16                 |  |  |             |                 |        |      |  |                        |    |    |                                 |                       |     |          |                         | Sand                                 |     |
| 17                 |  | END OF BOREHOLE  |             | 206.41          |        |      |  |                        |    |    |                                 |                       |     |          |                         |                                      |     |
| 18                 |  | NOTES:<br>1. Water was encountered at a depth of 7.0 m during drilling.<br>2. Groundwater level was measured in monitoring well at a depth of 4.1 mbgs (El. 219.4m) on January 29, 2021. |             | 17.09           |        |      |  |                        |    |    |                                 |                       |     |          |                         |                                      |     |
| 19                 |  |  |             |                 |        |      |  |                        |    |    |                                 |                       |     |          |                         |                                      |     |
| 20                 |  |  |             |                 |        |      |  |                        |    |    |                                 |                       |     |          |                         |                                      |     |

GTA-BHS 001 S:\CLIENTS\REGION OF YORK\MAJOR MACKENZIE DRIVE\02 DATA\INT\MARKHAM WARDEN&KENNEDY RD.GPJ GAL-MIS.GDT 4/5/21

PROJECT: 20146456  
 LOCATION: N 4863597.66; E 634660.05

# RECORD OF BOREHOLE: KS9

SHEET 1 OF 2  
 DATUM: Geodetic

BORING DATE: January 28, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD | SOIL PROFILE   |                          | SAMPLES         |        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |    |    |    | HYDRAULIC CONDUCTIVITY, k, cm/s |                  |                  |                  | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |
|--------------------|---------------|--|--------------------------|-----------------|--------|--|----|----|----|---------------------------------|------------------|------------------|------------------|-------------------------|--------------------------------------|
|                    |               | DESCRIPTION  | STRATA PLOT              | ELEV. DEPTH (m) | NUMBER | TYPE                                       | 20 | 40 | 60 | 80                              | 10 <sup>-5</sup> | 10 <sup>-4</sup> | 10 <sup>-3</sup> |                         |                                      |
| 0                  |               | GROUND SURFACE   |                          | 222.90          |        |  |    |    |    |                                 |                  |                  |                  |                         |                                      |
|                    |               | Crushed granular; brown  | [Cross-hatch pattern]    | 0.00            | 1A     |  |    |    |    |                                 |                  |                  |                  |                         |                                      |
|                    |               | FILL - (SP) SAND, some gravel, trace fines; brown; non-cohesive, moist   | [Cross-hatch pattern]    | 222.48          | AS     | -  |    |    |    |                                 |                  |                  |                  |                         |                                      |
|                    |               |  | [Cross-hatch pattern]    | 0.42            | 1B     |  |    |    |    |                                 |                  |                  |                  |                         |                                      |
|                    |               | FILL - (CL) gravelly SILTY CLAY and SAND; brown and black, organic inclusions; cohesive, w<PL, stiff to very stiff | [Cross-hatch pattern]    | 222.17          | 2      | SS   | 28 |    |    |                                 |                  |                  |                  |                         |                                      |
|                    |               |  | [Cross-hatch pattern]    | 0.73            |        |  |    |    |    |                                 |                  |                  |                  |                         |                                      |
|                    |               |  | [Cross-hatch pattern]    | 220.77          | 3      | SS   | 10 |    |    |                                 |                  |                  |                  |                         |                                      |
|                    |               | (SM) SILTY SAND; brown; non-cohesive, moist to wet, compact to dense   | [Dotted pattern]         | 2.13            | 4      | SS   | 19 |    |    |                                 |                  |                  |                  |                         |                                      |
|                    |               |  | [Dotted pattern]         |                 | 5      | SS   | 29 |    |    |                                 |                  |                  |                  |                         |                                      |
|                    |               |  | [Dotted pattern]         |                 | 6      | SS   | 42 |    |    |                                 |                  |                  |                  |                         |                                      |
|                    |               |  | [Dotted pattern]         |                 | 7      | SS   | 35 |    |    |                                 |                  |                  |                  |                         |                                      |
|                    |               |  | [Dotted pattern]         |                 | 8      | SS   | 31 |    |    |                                 |                  |                  |                  |                         |                                      |
|                    |               |  | [Dotted pattern]         |                 | 9      | SS   | 19 |    |    |                                 |                  |                  |                  |                         |                                      |
|                    |               | (CL) SILTY CLAY and SAND, some gravel; grey (TILL); cohesive, w>PL, very stiff                                     | [Diagonal lines pattern] | 214.29          |        |  |    |    |    |                                 |                  |                  |                  |                         |                                      |
|                    |               |  | [Diagonal lines pattern] | 8.61            |        |  |    |    |    |                                 |                  |                  |                  |                         |                                      |

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Bentonite

January 29, 2021

GTA-BHS 001 S:\CLIENTS\REGION OF YORK\MAJOR MACKENZIE DRIVE\02 DATA\GINT\MARKHAM\_WARDEN&KENNEDY\_RD.GPJ GAL-MIS.GDT 4/5/21



PROJECT: 20146456  
 LOCATION: N 4863597.66; E 634660.05

# RECORD OF BOREHOLE: KS9

SHEET 2 OF 2  
 DATUM: Geodetic

BORING DATE: January 28, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD                                    | SOIL PROFILE   |             | SAMPLES         |        |      | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |                        |    |    | HYDRAULIC CONDUCTIVITY, k, cm/s |                       |     |          | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |           |
|--------------------|--|--|-------------|-----------------|--------|------|--|------------------------|----|----|---------------------------------|-----------------------|-----|----------|-------------------------|--------------------------------------|-----------|
|                    |  | DESCRIPTION  | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE | BLOWS/0.3m                                 | SHEAR STRENGTH Cu, kPa |    |    |                                 | WATER CONTENT PERCENT |     |          |                         |                                      |           |
|                    |  |  |             |                 |        |      |  | 20                     | 40 | 60 | 80                              | nat V. +              | Q - | rem V. ⊕ |                         |                                      | U -       |
| 10                 | BS7 Truck Mount<br>200 mm O.D. Hollow Stem Auger | --- CONTINUED FROM PREVIOUS PAGE ---<br>(CL) SILTY CLAY and SAND, some gravel; grey (TILL); cohesive, w>PL, very stiff   | [Hatched]   |                 |        |      |  |                        |    |    |                                 |                       |     |          |                         |                                      |           |
| 11                 |  |  |             | 10              | SS     | 18   |  |                        |    |    |                                 |                       |     |          |                         |                                      |           |
| 12                 |  | (ML) SILT and SAND, some gravel; grey (TILL); non-cohesive, moist, compact   | [Dotted]    | 211.24<br>11.66 |        |      |  |                        |    |    |                                 |                       |     |          |                         |                                      | Bentonite |
| 13                 |  | (SM) SILTY SAND and GRAVEL; grey; non-cohesive, wet, very dense  | [Dotted]    | 209.72<br>13.18 |        |      |  |                        |    |    |                                 |                       |     |          |                         |                                      |           |
| 14                 |  |  |             |                 | 12     | SS   | 52   |                        |    |    |                                 |                       |     |          |                         |                                      |           |
| 15                 |  | (CL) SILTY CLAY and SAND, some gravel; grey (TILL); cohesive, w<PL, hard   | [Hatched]   | 208.19<br>14.71 |        |      |  |                        |    |    |                                 |                       |     |          |                         |                                      |           |
| 16                 |  | END OF BOREHOLE  |             | 207.38<br>15.52 | 13     | SS   | 50/<br>0.13                                |                        |    |    |                                 |                       |     |          |                         |                                      |           |
| 17                 |  | NOTES:<br>1. Water was encountered at a depth of 6.1 m during drilling<br>2. Groundwater level was measured in monitoring well at a depth of 7.0 mbgs (El. 215.9m) on January 29, 2021 |             |                 |        |      |  |                        |    |    |                                 |                       |     |          |                         |                                      |           |
| 18                 |  |  |             |                 |        |      |  |                        |    |    |                                 |                       |     |          |                         |                                      |           |
| 19                 |  |  |             |                 |        |      |  |                        |    |    |                                 |                       |     |          |                         |                                      |           |
| 20                 |  |  |             |                 |        |      |  |                        |    |    |                                 |                       |     |          |                         |                                      |           |

GTA-BHS 001 S:\CLIENTS\REGION OF YORK\MAJOR MACKENZIE DRIVE\02 DATA\GINT\MARKHAM\_WARDEN&KENNEDY\_RD.GPJ GAL-MIS.GDT 4/5/21

PROJECT: 20146456  
 LOCATION: N 4863803.25; E 634615.91

# RECORD OF BOREHOLE: KS10

SHEET 1 OF 2  
 DATUM: Geodetic

BORING DATE: January 20, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD | SOIL PROFILE  |             | SAMPLES         |        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |            |                |  | HYDRAULIC CONDUCTIVITY, k, cm/s |  |                       |  | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |   |  |
|--------------------|---------------|---|-------------|-----------------|--------|--|------------|----------------|--|---------------------------------|--|-----------------------|--|-------------------------|--------------------------------------|---|--|
|                    |               | DESCRIPTION   | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE                                       | BLOWS/0.3m | SHEAR STRENGTH |  |                                 |  | WATER CONTENT PERCENT |  |                         |                                      |   |  |
|                    |               |   |             |                 |        |  |            | Cu, kPa        |  | nat V. rem V.                   |  | Wp                    |  |                         |                                      | W |  |
| 0                  |               | GROUND SURFACE  |             | 223.20          |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |               | ASPHALT (265 mm thick)  |             | 0.00            |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |               |   |             | 222.94          |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |               | Crushed granular; brown   |             | 0.28            | 1      | AS   | -          |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |               |   |             | 222.75          |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |               | FILL - (SP) SAND, some gravel, trace fines; brown; non-cohesive, moist, compact |             | 0.45            |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 1                  |               |   |             |                 | 2      | SS   | 11         |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |               |   |             | 221.94          |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |               | FILL - (CL) gravelly SILTY CLAY and SAND, brown; cohesive, w>PL, firm           |             | 1.26            |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 2                  |               |   |             |                 | 3      | SS   | 5          |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |               |   |             | 220.30          |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |               |   |             | 220.30          |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 3                  |               | (SM) SILTY SAND, fine; brown; non-cohesive, moist to wet, compact to dense      |             | 2.90            |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |               |   |             |                 | 5      | SS   | 25         |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 4                  |               |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |               |   |             |                 | 6      | SS   | 47         |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 5                  |               |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |               |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 6                  |               |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |               |   |             |                 | 7      | SS   | 32         |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 7                  |               |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |               |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 8                  |               |   |             |                 | 8      | SS   | 26         |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |               |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 9                  |               |   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |               |   |             |                 | 9      | SS   | 21         |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |               |   |             | 213.60          |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |               |   |             | 9.60            |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
| 10                 |               | END OF BOREHOLE   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |               | NOTES:  |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |
|                    |               | CONTINUED NEXT PAGE   |             |                 |        |  |            |                |  |                                 |  |                       |  |                         |                                      |   |  |

GTA-BHS 001 S:\CLIENTS\REGION OF YORK\MAJOR MACKENZIE DRIVE\02 DATA\GINT\MARKHAM\_WARDEN&KENNEDY\_RD.GPJ GAL-MIS.GDT 4/5/21

B57 Truck Mount  
200 mm O.D. Hollow Stem Auger

Bentonite

MH

Sand

January 29, 2021

Screen

Sand

DEPTH SCALE

1 : 50



LOGGED: YS

CHECKED: TO

PROJECT: 20146456  
 LOCATION: N 4863803.25; E 634615.91

# RECORD OF BOREHOLE: KS10

SHEET 2 OF 2  
 DATUM: Geodetic

BORING DATE: January 20, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD | SOIL PROFILE   |             |                 | SAMPLES |      | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |                |  |               | HYDRAULIC CONDUCTIVITY, k, cm/s |                       |  |         | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |    |
|--------------------|---------------|--|-------------|-----------------|---------|------|--|----------------|--|---------------|---------------------------------|-----------------------|--|---------|-------------------------|--------------------------------------|----|
|                    |               | DESCRIPTION  | STRATA PLOT | ELEV. DEPTH (m) | NUMBER  | TYPE | BLOWS/0.3m                                 | SHEAR STRENGTH |  |               |                                 | WATER CONTENT PERCENT |  |         |                         |                                      |    |
|                    |               |  |             |                 |         |      |  | Cu, kPa        |  | nat V. rem V. |                                 | +                     |  | Q - U - |                         |                                      | Wp |
| 10                 |               | --- CONTINUED FROM PREVIOUS PAGE ---   |             |                 |         |      |  |                |  |               |                                 |                       |  |         |                         |                                      |    |
| 11                 |               | 1. Water was encountered at a depth of 7.6 m during drilling.  |             |                 |         |      |  |                |  |               |                                 |                       |  |         |                         |                                      |    |
| 12                 |               | 2. Groundwater level was measured in monitoring well at a depth of 7.8 mbgs (El. 215.4m) on January 29, 2021 |             |                 |         |      |  |                |  |               |                                 |                       |  |         |                         |                                      |    |
| 13                 |               |  |             |                 |         |      |  |                |  |               |                                 |                       |  |         |                         |                                      |    |
| 14                 |               |  |             |                 |         |      |  |                |  |               |                                 |                       |  |         |                         |                                      |    |
| 15                 |               |  |             |                 |         |      |  |                |  |               |                                 |                       |  |         |                         |                                      |    |
| 16                 |               |  |             |                 |         |      |  |                |  |               |                                 |                       |  |         |                         |                                      |    |
| 17                 |               |  |             |                 |         |      |  |                |  |               |                                 |                       |  |         |                         |                                      |    |
| 18                 |               |  |             |                 |         |      |  |                |  |               |                                 |                       |  |         |                         |                                      |    |
| 19                 |               |  |             |                 |         |      |  |                |  |               |                                 |                       |  |         |                         |                                      |    |
| 20                 |               |  |             |                 |         |      |  |                |  |               |                                 |                       |  |         |                         |                                      |    |

GTA-BHS 001 S:\CLIENTS\REGION OF YORK\MAJOR MACKENZIE DRIVE\02 DATA\GINT\MARKHAM\_WARDEN&KENNEDY\_RD.GPJ GAL-MIS.GDT 4/5/21



PROJECT: 20146456  
 LOCATION: N 4864045.36; E 634563.11

# RECORD OF BOREHOLE: KS11

SHEET 1 OF 1  
 DATUM: Geodetic

BORING DATE: January 20, 2021

SPT/DCPT HAMMER: MASS, 64kg; DROP, 760mm

HAMMER TYPE: AUTOMATIC

| DEPTH SCALE METRES | BORING METHOD | SOIL PROFILE   |             | SAMPLES         |        | DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m |             |                        |    | HYDRAULIC CONDUCTIVITY, k, cm/s |    |                       |                  | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION |                  |                  |
|--------------------|---------------|--|-------------|-----------------|--------|--|-------------|------------------------|----|---------------------------------|----|-----------------------|------------------|-------------------------|--------------------------------------|------------------|------------------|
|                    |               | DESCRIPTION  | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE                                       | BLOWS/0.3m  | SHEAR STRENGTH Cu, kPa |    |                                 |    | WATER CONTENT PERCENT |                  |                         |                                      |                  |                  |
|                    |               |  |             |                 |        |  |             | 20                     | 40 | 60                              | 80 | 10 <sup>-5</sup>      | 10 <sup>-5</sup> |                         |                                      | 10 <sup>-4</sup> | 10 <sup>-3</sup> |
| 0                  |               | GROUND SURFACE   |             | 218.70          |        |  |             |                        |    |                                 |    |                       |                  |                         |                                      |                  |                  |
|                    |               | Crushed granular; brown  |             | 0.00            | 1A     |  |             |                        |    |                                 |    |                       |                  |                         |                                      |                  |                  |
|                    |               | FILL - (SP) SAND, some gravel, trace fines; brown; non-cohesive, moist   |             | 218.40          | 1B     | AS   | -           |                        |    |                                 |    |                       |                  |                         | M                                    |                  |                  |
|                    |               | ASPHALT (240 mm thick)   |             | 0.30            |        |  |             |                        |    |                                 |    |                       |                  |                         |                                      |                  |                  |
|                    |               |  |             | 218.19          |        |  |             |                        |    |                                 |    |                       |                  |                         |                                      |                  |                  |
|                    |               |  |             | 0.51            |        |  |             |                        |    |                                 |    |                       |                  |                         |                                      |                  |                  |
|                    |               |  |             | 217.95          |        |  |             |                        |    |                                 |    |                       |                  |                         |                                      |                  |                  |
| 1                  |               | FILL - (CL) gravelly SILTY CLAY and SAND, black and brown, containing rootlets and organic inclusions; cohesive, w-PL to w>PL, stiff to soft |             | 0.75            | 2      | SS   | 12          |                        |    |                                 |    |                       |                  |                         |                                      |                  |                  |
|                    |               |  |             |                 |        |  |             |                        |    |                                 |    |                       |                  |                         |                                      |                  |                  |
|                    |               |  |             |                 | 3      | SS   | 13          |                        |    |                                 |    |                       |                  |                         |                                      |                  |                  |
| 2                  |               |  |             |                 |        |  |             |                        |    |                                 |    |                       |                  |                         |                                      |                  |                  |
|                    |               |  |             |                 | 4      | SS   | 3           |                        |    |                                 |    |                       |                  |                         |                                      |                  |                  |
| 3                  |               |  |             |                 |        |  |             |                        |    |                                 |    |                       |                  |                         |                                      |                  |                  |
|                    |               |  |             |                 | 5      | SS   | 4           |                        |    |                                 |    |                       |                  |                         |                                      |                  |                  |
| 4                  |               |  |             |                 |        |  |             |                        |    |                                 |    |                       |                  |                         |                                      |                  |                  |
|                    |               |  |             | 214.66          |        |  |             |                        |    |                                 |    |                       |                  |                         |                                      |                  |                  |
|                    |               | (CL) SILTY CLAY and SAND, some gravel; grey (TILL); cohesive, w<PL, hard   |             | 4.04            | 6      | SS   | 39          |                        |    |                                 |    |                       |                  |                         |                                      |                  |                  |
| 5                  |               |  |             |                 |        |  |             |                        |    |                                 |    |                       |                  |                         |                                      |                  |                  |
|                    |               |  |             |                 |        |  |             |                        |    |                                 |    |                       |                  |                         |                                      |                  |                  |
| 6                  |               |  |             |                 |        |  |             |                        |    |                                 |    |                       |                  |                         |                                      |                  |                  |
|                    |               |  |             |                 | 7      | SS   | 50/<br>0.07 |                        |    |                                 |    |                       |                  |                         |                                      |                  |                  |
| 7                  |               |  |             |                 |        |  |             |                        |    |                                 |    |                       |                  |                         |                                      |                  |                  |
|                    |               |  |             |                 |        |  |             |                        |    |                                 |    |                       |                  |                         |                                      |                  |                  |
| 8                  |               | END OF BOREHOLE  |             | 210.98          | 8      | SS   | 50/<br>0.16 |                        |    |                                 |    |                       |                  |                         |                                      |                  |                  |
|                    |               | NOTES:   |             | 7.72            |        |  |             |                        |    |                                 |    |                       |                  |                         |                                      |                  |                  |
| 9                  |               | 1. Water was encountered at a depth of 2.3 m during drilling.  |             |                 |        |  |             |                        |    |                                 |    |                       |                  |                         |                                      |                  |                  |
|                    |               | 2. Groundwater level was measured in monitoring well at a depth of 2.5mbgs (El. 216.2m) on January 29, 2021                                  |             |                 |        |  |             |                        |    |                                 |    |                       |                  |                         |                                      |                  |                  |
| 10                 |               |  |             |                 |        |  |             |                        |    |                                 |    |                       |                  |                         |                                      |                  |                  |

GTA-BHS 001 S:\CLIENTS\REGION OF YORK\MAJOR MACKENZIE DRIVE\02 DATA\INT\MARKHAM\_WARDEN&KENNEDY\_RD.GPJ GAL-MIS.GDT 4/5/21

# LOG OF DRILLING OPERATIONS

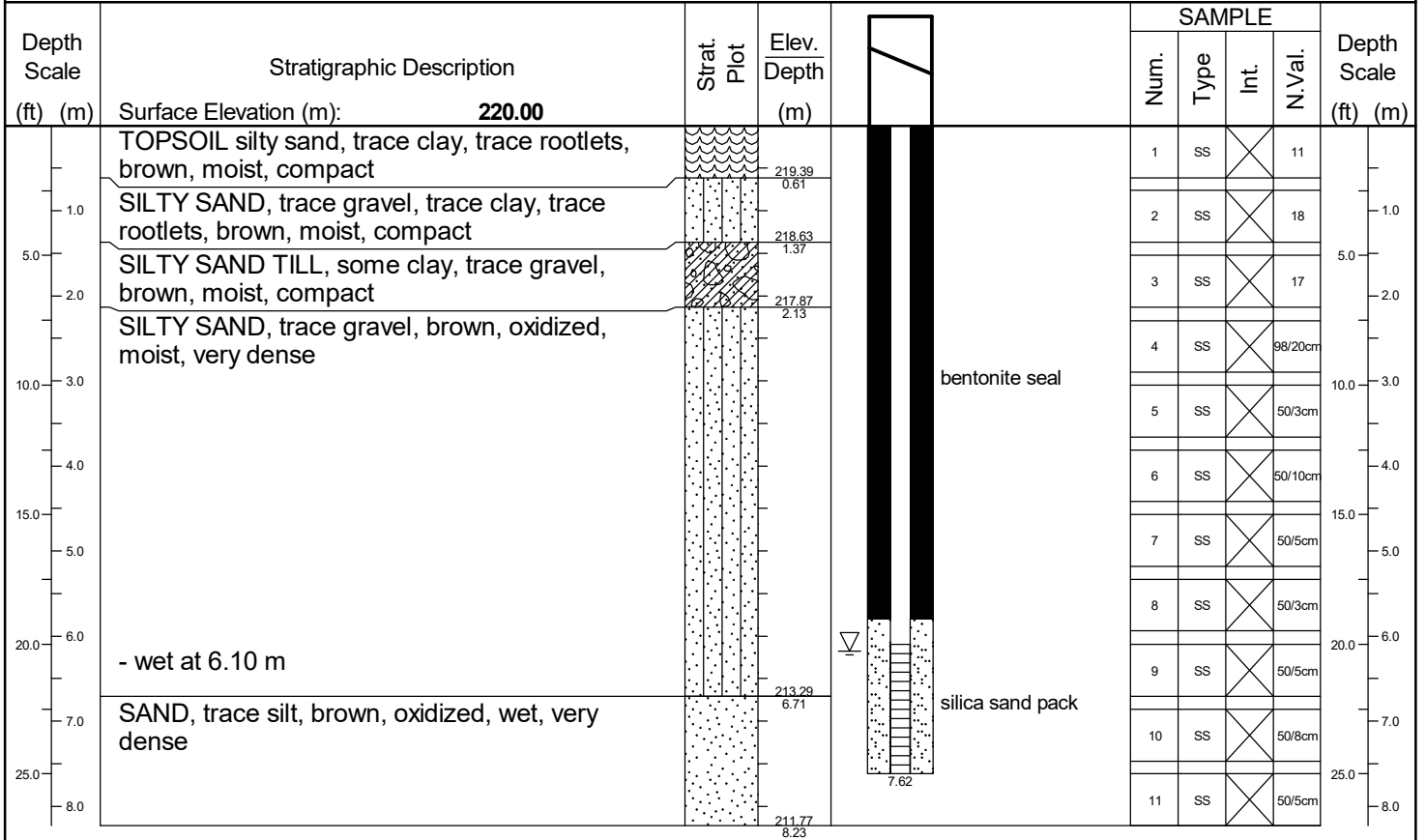


R. J. Burnside & Associates Limited  
 15 Townline, Orangeville, Ontario L9W 3P4  
 telephone (519) 841-5331 fax (519) 841-8120

**RJB9**

Page 1 of 1

|   |                                    |  |
|---|------------------------------------|--|
| Client: <b>North Markham Landowners Group</b>       | Project Name: <b>North Markham</b> | Logged by: <b>D. Weir</b>                  |
| Project No.: <b>PTN14385.0</b>                      | Location: <b>Markham</b>           | Ground (m amsl): <b>220.00</b>             |
| Drilling Co.: <b>Lantech Drilling Services Inc.</b> | Date Started: <b>6/5/2008</b>      | Static Water Level (m amsl): <b>213.82</b> |
| Drilling Method: <b>Hollow Stem Auger</b>           | Date Completed: <b>6/5/2008</b>    | Sand Pack (m amsl): <b>214.21 - 212.38</b> |



BHLOG ORANGEVILLE F:\STAFF\JACKIE\PROJECTS\PTN14385 NORTH MARKHAM LANDS\BOREHOLE LOGS.GPJ TEMPLATE.GDT 5/25/09

Prepared By: **J. Shaw** Checked By: **J. Thompson** Date Prepared: **11/5/2008**  
 This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

|                                |  |                    |
|--------------------------------|--|--------------------|
| <b>LEGEND</b>                  | <b>MONITORING WELL DATA</b>            | <b>SAMPLE TYPE</b> |
| Water found @ time of drilling | Pipe: <b>51 mm dia. PVC</b>            | AC  Auger Cutting  |
| Static Water Level - 7/7/2008  | Screen: <b>51 mm dia. PVC #10 slot</b> | CS  Continuous     |
|                                |  | RC  Rock Core      |
|                                |  | SS  Split Spoon    |
|                                |  | AR  Air Rotary     |
|                                |  | WC  Wash Cuttings  |

**JOB NO:** 1308-S161

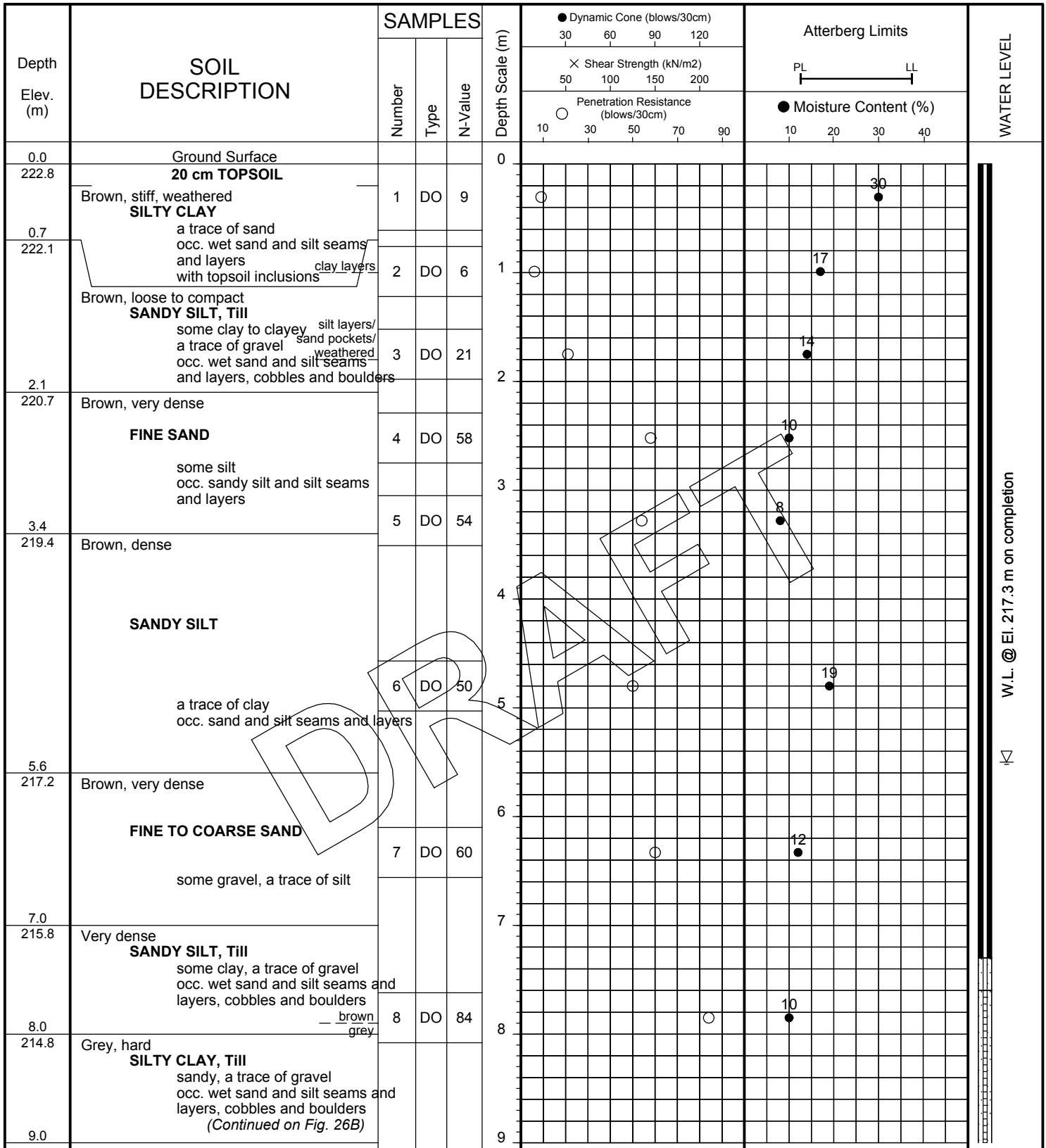
# LOG OF BOREHOLE NO: 224

**FIGURE NO:** 26A

**JOB DESCRIPTION:** Proposed Residential Development

**JOB LOCATION:** Area Bounded by Major Mackenzie Drive East, Kennedy Road, Elgin Mills Road East and McCowan Road  
 City of Markham

**METHOD OF BORING:** Hollow-Stem  
**DATE:** October 17, 2013



**Soil Engineers Ltd.**



**JOB NO:** 1308-S161

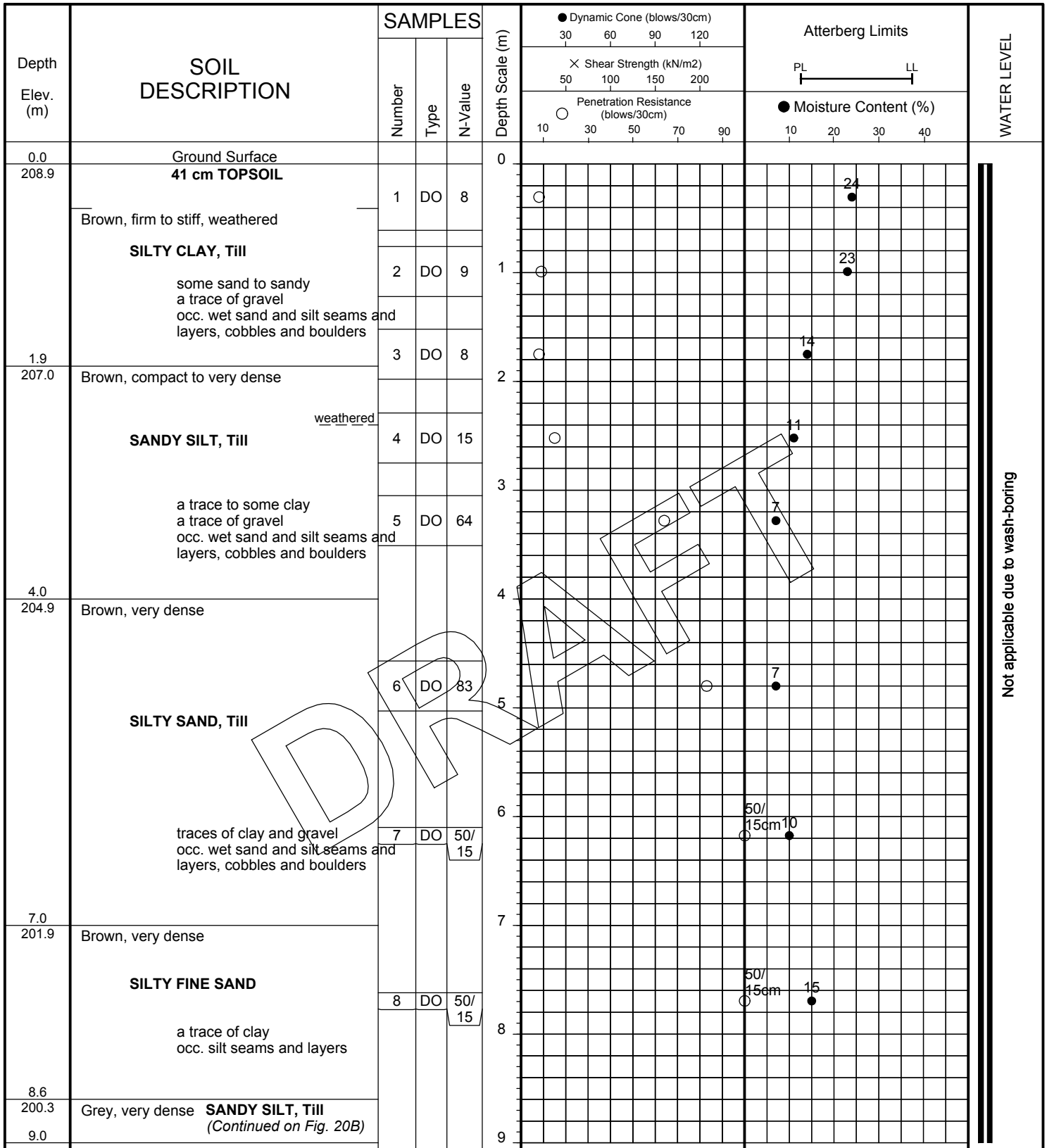
# LOG OF BOREHOLE NO: 220

**FIGURE NO:** 20A

**JOB DESCRIPTION:** Proposed Residential Development

**JOB LOCATION:** Area Bounded by Major Mackenzie Drive East, Kennedy Road, Elgin Mills Road East and McCowan Road  
 City of Markham

**METHOD OF BORING:** Hollow-Stem/Wash-Bore  
**DATE:** October 23 & 24, 2013



**Soil Engineers Ltd.**



**JOB NO:** 1308-S161

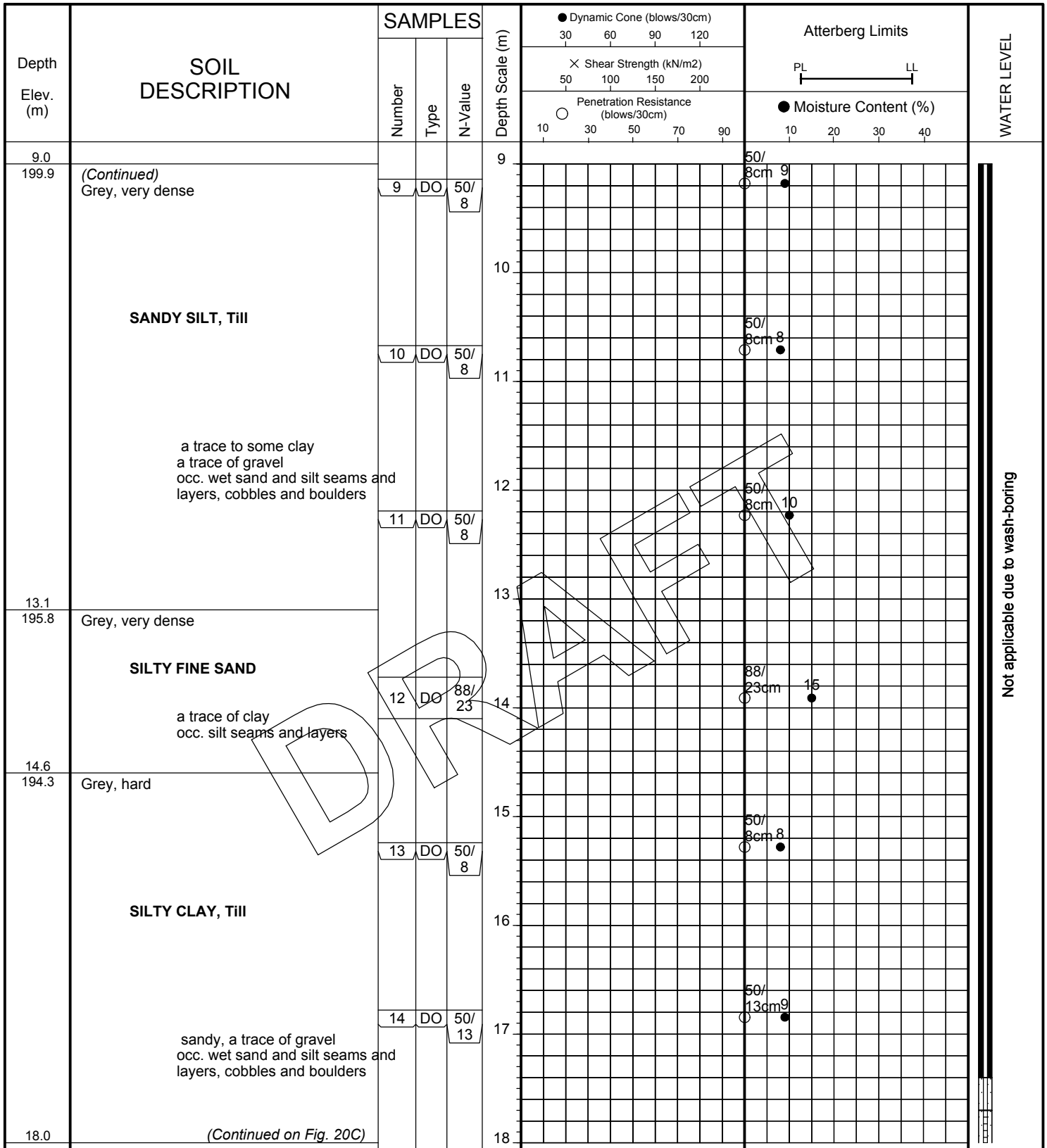
# LOG OF BOREHOLE NO: 220

**FIGURE NO:** 20B

**JOB DESCRIPTION:** Proposed Residential Development

**JOB LOCATION:** Area Bounded by Major Mackenzie Drive East, Kennedy Road, Elgin Mills Road East and McCowan Road  
 City of Markham

**METHOD OF BORING:** Hollow-Stem/Wash-Bore  
**DATE:** October 23 & 24, 2013



**Soil Engineers Ltd.**

**JOB NO:** 1308-S161

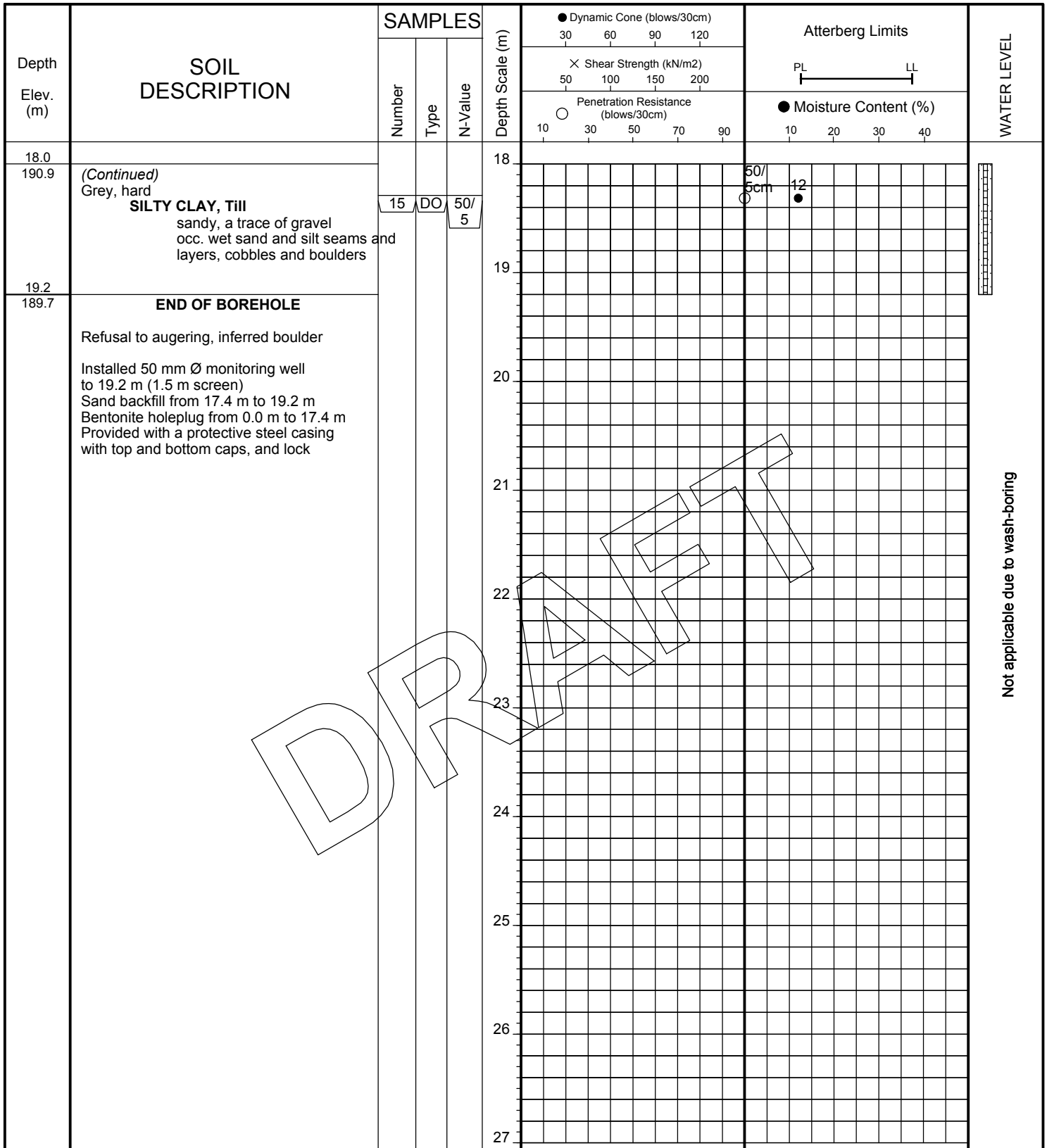
# LOG OF BOREHOLE NO: 220

**FIGURE NO:** 20C

**JOB DESCRIPTION:** Proposed Residential Development

**JOB LOCATION:** Area Bounded by Major Mackenzie Drive East, Kennedy Road, Elgin Mills Road East and McCowan Road  
City of Markham

**METHOD OF BORING:** Hollow-Stem/Wash-Bore  
**DATE:** October 23 & 24, 2013



DRAFT

Not applicable due to wash-boring

JOB NO: 1308-S161

# LOG OF BOREHOLE NO: 220N FIGURE NO: 21

JOB DESCRIPTION: Proposed Residential Development

JOB LOCATION: Area Bounded by Major Mackenzie Drive East, Kennedy Road, Elgin Mills Road East and McCowan Road  
City of Markham

METHOD OF BORING: Hollow-Stem  
DATE: October 24, 2013

| Depth<br>Elev.<br>(m) | SOIL<br>DESCRIPTION   | SAMPLES |      |         | Depth Scale (m) | Dynamic Cone (blows/30cm)             | Atterberg Limits       | WATER LEVEL |
|-----------------------|---|---------|------|---------|-----------------|---------------------------------------|------------------------|-------------|
|                       |   | Number  | Type | N-Value |                 | 30 60 90 120                          | PL LL                  |             |
|                       |   |         |      |         |                 | × Shear Strength (kN/m <sup>2</sup> ) |                        |             |
|                       |   |         |      |         |                 | 50 100 150 200                        |                        |             |
|                       |   |         |      |         |                 | ○ Penetration Resistance (blows/30cm) | ● Moisture Content (%) |             |
|                       |   |         |      |         |                 | 10 30 50 70 90                        | 10 20 30 40            |             |
| 0.0<br>208.9          | Ground Surface  |         |      |         | 0               |                                       |                        |             |
|                       | 50 mm NESTED PVC WELL   |         |      |         | 1               |                                       |                        |             |
|                       |   |         |      |         | 2               |                                       |                        |             |
|                       |   |         |      |         | 3               |                                       |                        |             |
|                       |   |         |      |         | 4               |                                       |                        |             |
| 4.6<br>204.3          | END OF BOREHOLE<br><br>Installed 50 mm Ø monitoring well to 4.6 m (1.5 m screen)<br>Sand backfill from 2.7 m to 4.6 m<br>Bentonite holeplug from 0.0 m to 2.7 m<br>Provided with a protective steel casing with top and bottom caps, and lock |         |      |         | 5               |                                       |                        |             |
|                       |   |         |      |         | 6               |                                       |                        |             |
|                       |   |         |      |         | 7               |                                       |                        |             |
|                       |   |         |      |         | 8               |                                       |                        |             |
|                       |   |         |      |         | 9               |                                       |                        |             |



Soil Engineers Ltd.

# LOG OF DRILLING OPERATIONS

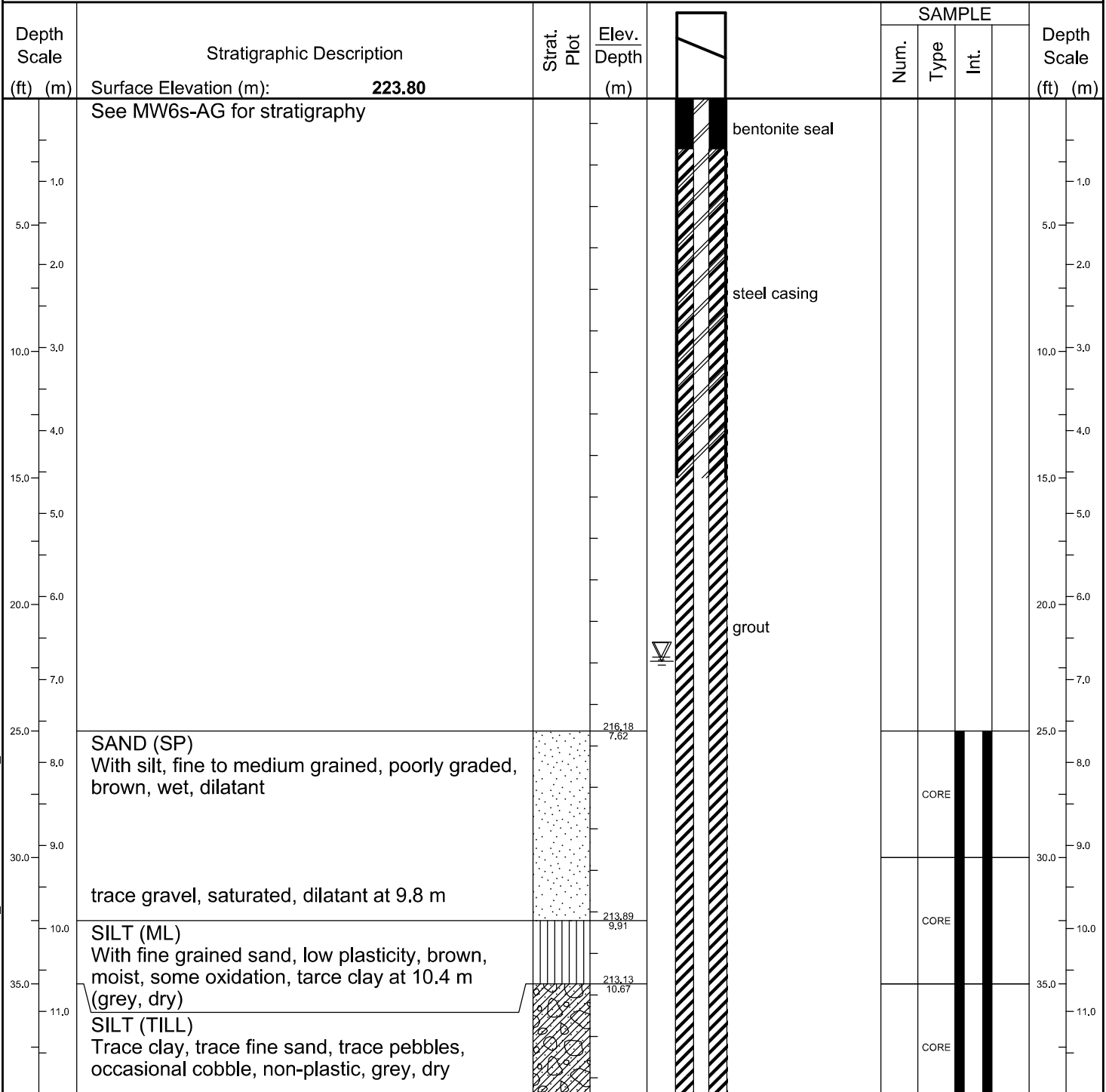
**AG-MW6D**

Page 1 of 2



R.J. Burnside & Associates Limited  
 292 Speedvale Avenue West, Guelph, Ontario N1H 1C4  
 telephone (519) 823-4995 fax (519) 836-5477

|   |                                      |  |
|---|--------------------------------------|--|
| Client: <b>Angus Glen Developments Inc.</b>         | Project Name: <b>Angus Glen MESP</b> | Logged by: <b>I. Murphy</b>                |
| Project No.: <b>300034937</b>                       | Location: <b>Markham, ON</b>         | Ground (m amsl): <b>223.80</b>             |
| Drilling Co.: <b>Lantech Drilling Services Inc.</b> | Date Started: <b>3/18/2015</b>       | Static Water Level Depth (m): <b>6.78</b>  |
| Drilling Method: <b>PQ Coring</b>                   | Date Completed: <b>3/18/2015</b>     | Sand Pack Depth (m) : <b>14.32 - 17.98</b> |



BHL08 GUELPH P:\GINT\PROJECTS\300034937\0000\_ANGUS GLEN\300034937\_Angus Glen.GPJ TEMPLATE.GDT 1/21/16

Prepared By: **C. D.**      Checked By: **J. S.**      Date Prepared: **7/26/2015**

This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

|                                  |  |                    |
|----------------------------------|--|--------------------|
| <b>LEGEND</b>                    | <b>MONITORING WELL DATA</b>            | <b>SAMPLE TYPE</b> |
| ▽ Water found @ time of drilling | Pipe: <b>51 mm dia. PVC</b>            | AC  Auger Cutting  |
| ▽ Static Water Level - 6/16/2015 | Screen: <b>51 mm dia. PVC #10 slot</b> | CS  Continuous     |
|                                  |  | RC  Rock Core      |
|                                  |  | SS  Split Spoon    |
|                                  |  | AR  Air Rotary     |
|                                  |  | WC  Wash Cuttings  |

# LOG OF DRILLING OPERATIONS

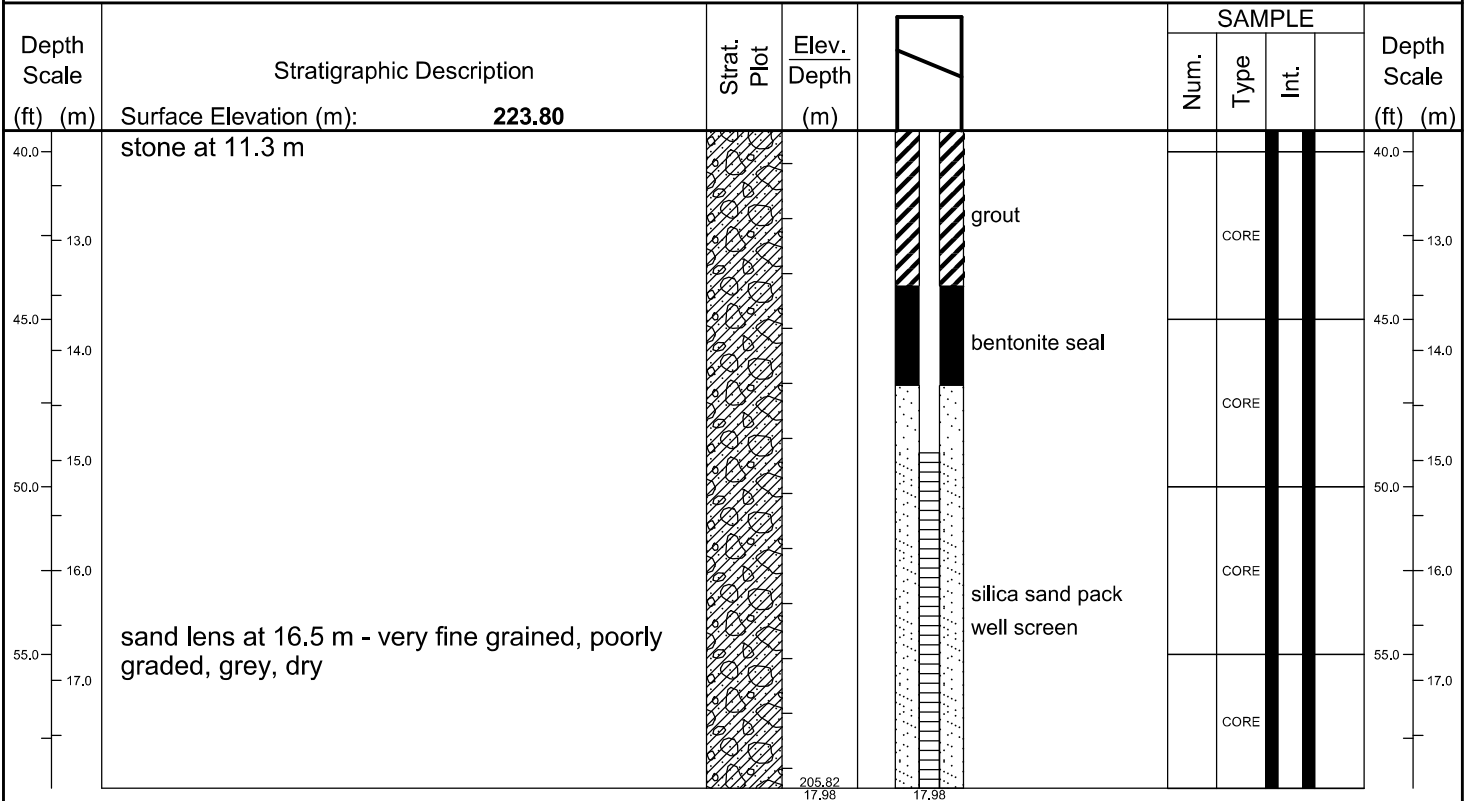
**AG-MW6D**

Page 2 of 2



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|   |                                      |  |
|---|--------------------------------------|--|
| Client: <b>Angus Glen Developments Inc.</b>         | Project Name: <b>Angus Glen MESP</b> | Logged by: <b>I. Murphy</b>                |
| Project No.: <b>300034937</b>                       | Location: <b>Markham, ON</b>         | Ground (m amsl): <b>223.80</b>             |
| Drilling Co.: <b>Lantech Drilling Services Inc.</b> | Date Started: <b>3/18/2015</b>       | Static Water Level Depth (m): <b>6.78</b>  |
| Drilling Method: <b>PQ Coring</b>                   | Date Completed: <b>3/18/2015</b>     | Sand Pack Depth (m) : <b>14.32 - 17.98</b> |



BHLOG GUELPH P:\GINT\PROJECTS\3000\_ANGUS GLEN\300034937\_0000\_ANGUS GLEN\300034937\_AUGUS GLEN.GPJ TEMPLATE.GDT 1/21/16

Prepared By: **C. D.**                                      Checked By: **J. S.**                                      Date Prepared: **7/26/2015**

This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

|   |  |  |
|---|--|--|
| <b>LEGEND</b><br>▼ Water found @ time of drilling<br>▽ Static Water Level - 6/16/2015 | <b>MONITORING WELL DATA</b><br>Pipe: <b>51 mm dia. PVC</b><br>Screen: <b>51 mm dia. PVC #10 slot</b> | <b>SAMPLE TYPE</b><br>AC  Auger Cutting    SS  Split Spoon<br>CS  Continuous        AR  Air Rotary<br>RC  Rock Core            WC  Wash Cuttings |
|---|--|--|

# LOG OF DRILLING OPERATIONS

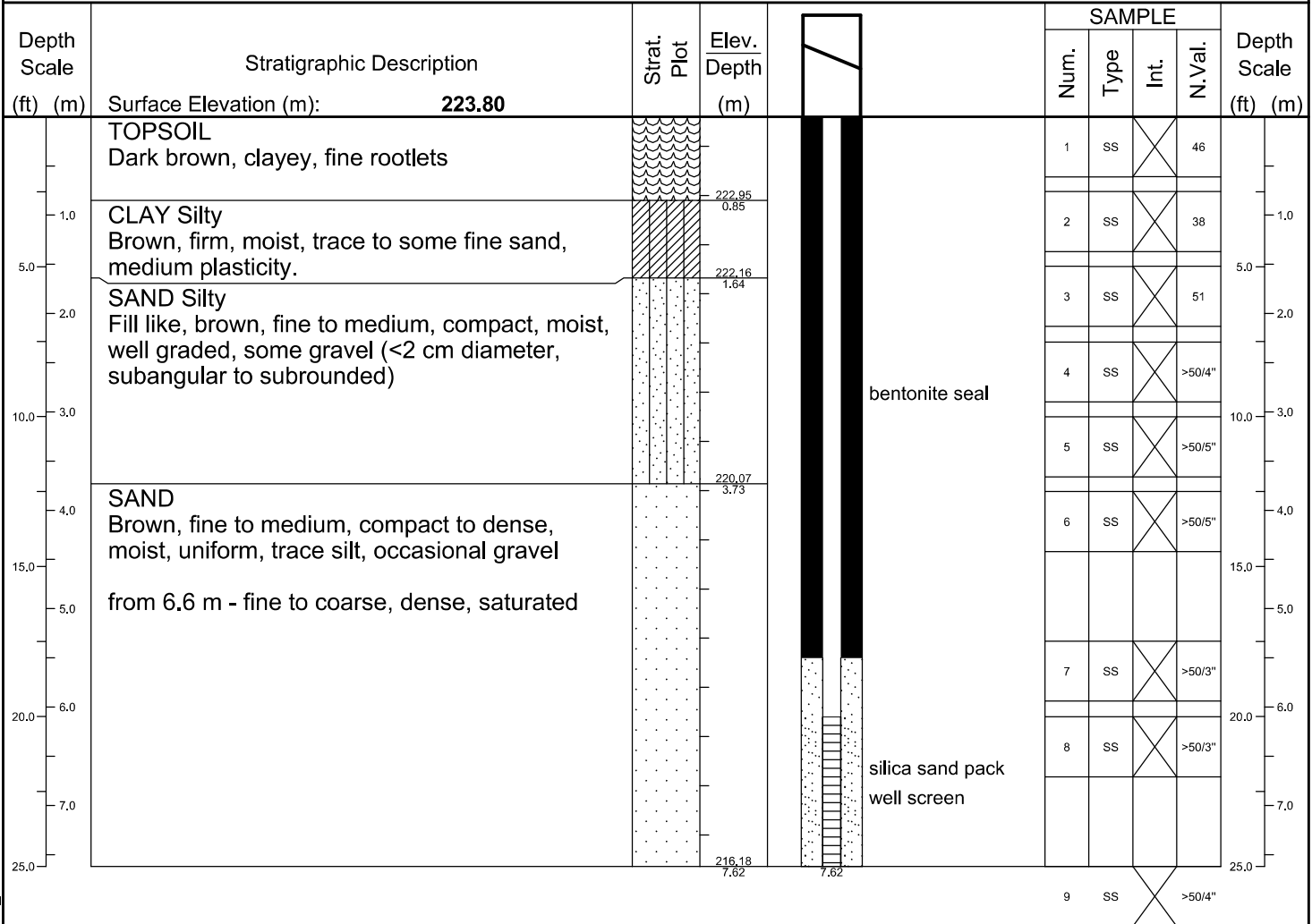
**AG-MW6S**

Page 1 of 1



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 telephone (519) 823-4995 fax (519) 836-5477

|   |                                      |  |
|---|--------------------------------------|--|
| Client: <b>Angus Glen Developments Inc.</b>         | Project Name: <b>Angus Glen MESP</b> | Logged by: <b>C.D.</b>                   |
| Project No.: <b>300034937</b>                       | Location: <b>Markham, ON</b>         | Ground (m amsl): <b>223.80</b>           |
| Drilling Co.: <b>Lantech Drilling Services Inc.</b> | Date Started: <b>3/17/2015</b>       | Static Water Level Depth (m): <b>dry</b> |
| Drilling Method: <b>Hollow Stem Auger</b>           | Date Completed: <b>3/17/2015</b>     | Sand Pack Depth (m) : <b>5.5 - 7.62</b>  |



B:\LOG GUELPH\PI\GINT\PROJECTS\300034937\0000\_ANGUS GLEN\300034937\_AUGUS GLEN.GPJ TEMPLATE.GDT 1/21/16

Prepared By: **C.D.** Checked By: **J.S.** Date Prepared: **7/26/2015**  
 This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

|                                |  |                    |
|--------------------------------|--|--------------------|
| <b>LEGEND</b>                  | <b>MONITORING WELL DATA</b>            | <b>SAMPLE TYPE</b> |
| Water found @ time of drilling | Pipe: <b>51 mm dia. PVC</b>            | AC  Auger Cutting  |
| Static Water Level - 6/16/2015 | Screen: <b>51 mm dia. PVC #10 slot</b> | CS  Continuous     |
|                                |  | RC  Rock Core      |
|                                |  | SS  Split Spoon    |
|                                |  | AR  Air Rotary     |
|                                |  | WC  Wash Cuttings  |

# LOG OF DRILLING OPERATIONS

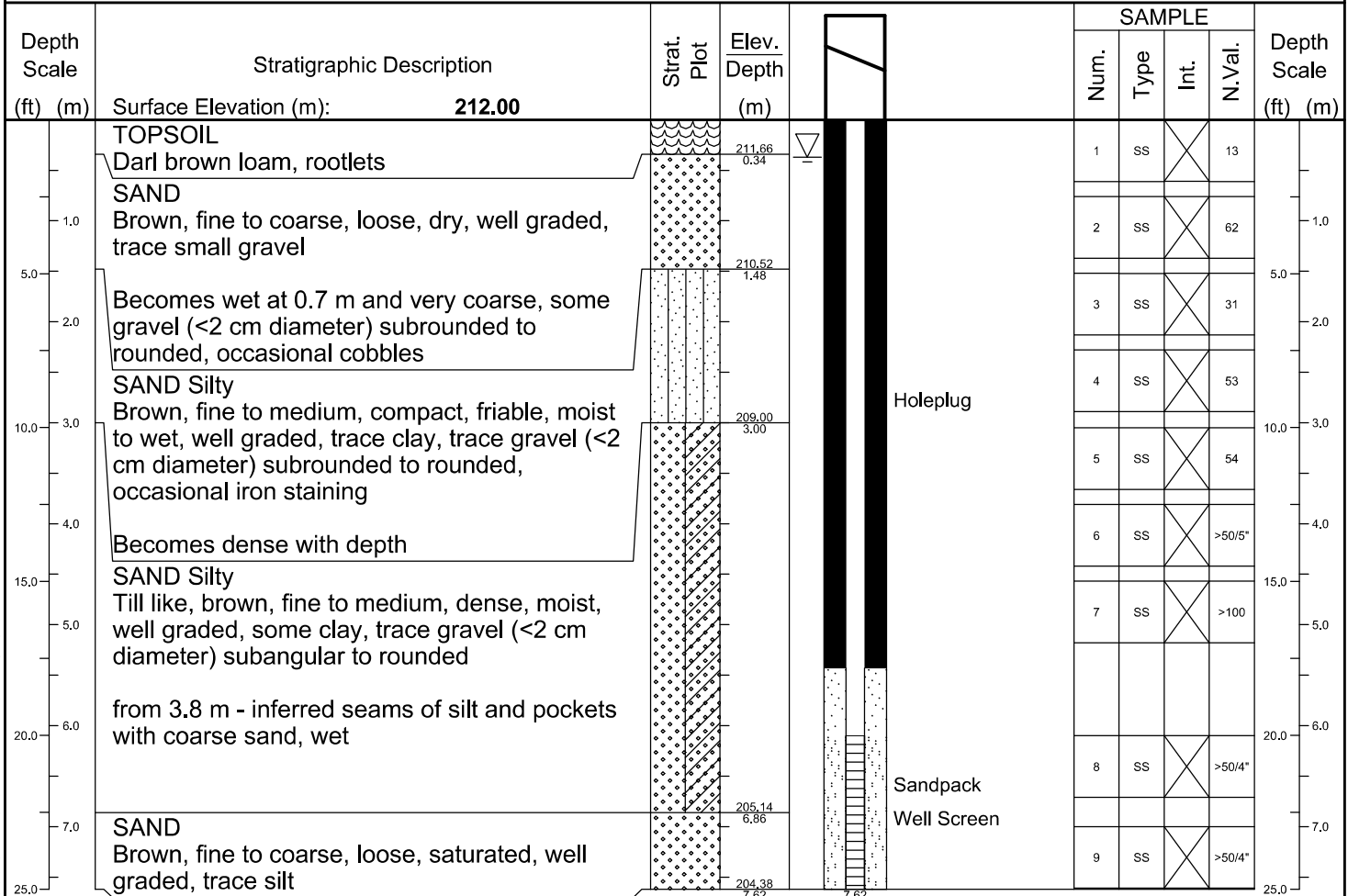
**AG-MW7**

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R.J. Burnside & Associates Limited  
 292 Speedvale Avenue West, Guelph, Ontario N1H 1C4  
 telephone (519) 823-4995 fax (519) 836-5477

|   |                                      |   |
|---|--------------------------------------|---|
| Client: <b>Angus Glen Developments Inc.</b>         | Project Name: <b>Angus Glen MESP</b> | Logged by: <b>C. D.</b>                   |
| Project No.: <b>300034937</b>                       | Location: <b>Markham, ON</b>         | Ground (m amsl): <b>212.00</b>            |
| Drilling Co.: <b>Lantech Drilling Services Inc.</b> | Date Started: <b>2/24/2015</b>       | Static Water Level Depth (m): <b>0.37</b> |
| Drilling Method: <b>Hollow Stem Auger</b>           | Date Completed: <b>2/24/2015</b>     | Sand Pack Depth (m) : <b>5.43 - 7.62</b>  |



B:\LOG GUELPH\PI\GINT\PROJECTS\300 JOBS\300034937.0000\_ANGUS GLEN\300034937\_Angus Glen.GPJ TEMPLATE.GDT 1/21/16

Prepared By: **C. D.** Checked By: **J. S.** Date Prepared: **7/26/2015**

This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

**LEGEND**

Water found @ time of drilling  
 Static Water Level - 6/16/2015

**MONITORING WELL DATA**

Pipe: **51 mm dia. PVC**  
 Screen: **51 mm dia. PVC #10 slot**

**SAMPLE TYPE**

|    |               |    |               |
|----|---------------|----|---------------|
| AC | Auger Cutting | SS | Split Spoon   |
| CS | Continuous    | AR | Air Rotary    |
| RC | Rock Core     | WC | Wash Cuttings |

# LOG OF DRILLING OPERATIONS

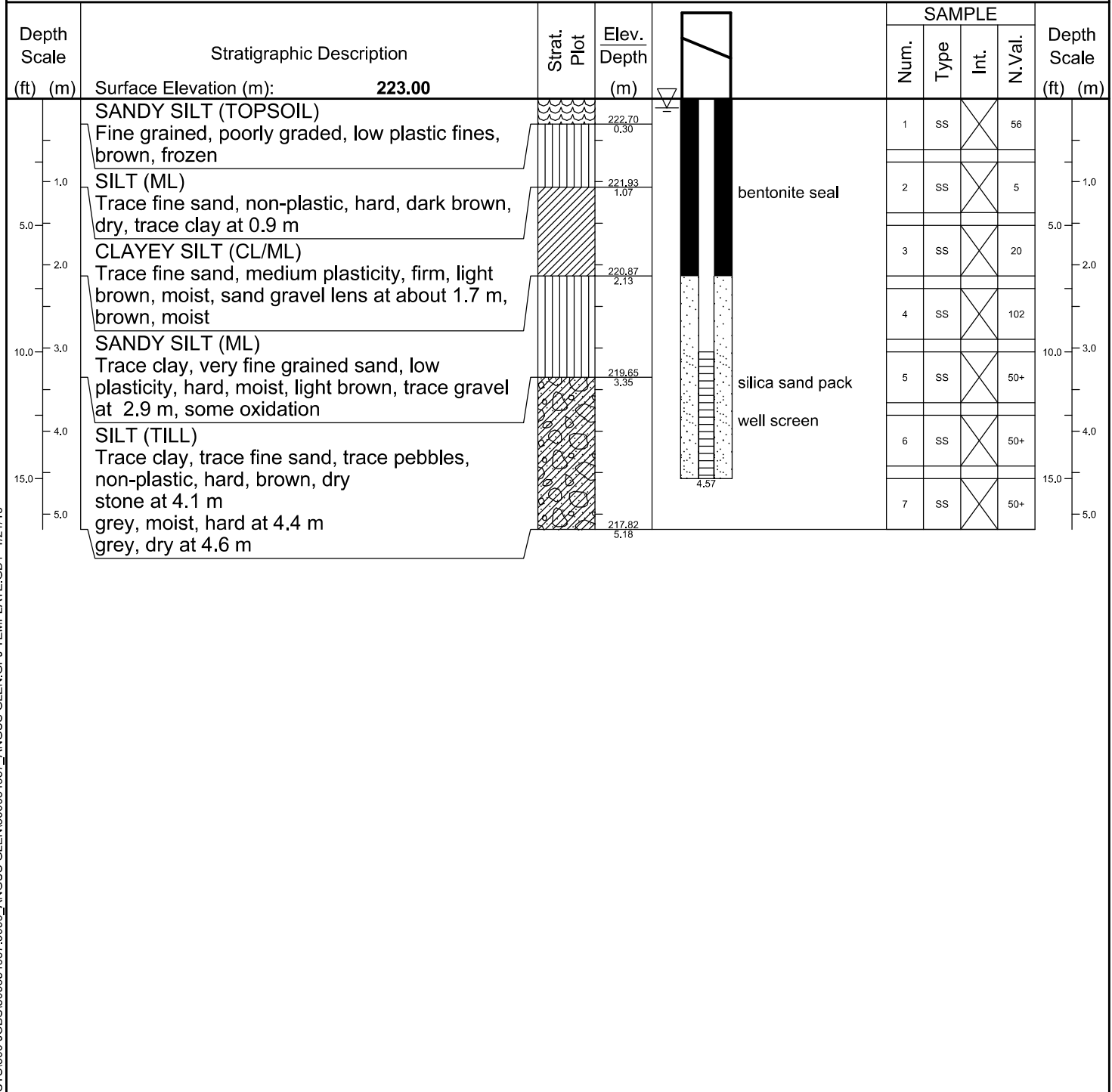
**AG-MW4**

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telephone (519) 823-4995 fax (519) 836-5477

|   |                                      |   |
|---|--------------------------------------|---|
| Client: <b>Angus Glen Developments Inc.</b>         | Project Name: <b>Angus Glen MESP</b> | Logged by: <b>I. Murphy</b>               |
| Project No.: <b>300034937</b>                       | Location: <b>Markham, ON</b>         | Ground (m amsl): <b>223.00</b>            |
| Drilling Co.: <b>Lantech Drilling Services Inc.</b> | Date Started: <b>3/2/2015</b>        | Static Water Level Depth (m): <b>0.11</b> |
| Drilling Method: <b>Hollow Stem Auger</b>           | Date Completed: <b>3/2/2015</b>      | Sand Pack Depth (m) : <b>2.14 - 4.57</b>  |



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|   |  |                             |               |                                 |               |
|---|--|-----------------------------|---------------|---------------------------------|---------------|
| Prepared By: <b>C. D.</b>   |  | Checked By: <b>J. S.</b>    |               | Date Prepared: <b>7/26/2015</b> |               |
| This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others. |  |                             |               |                                 |               |
| <b>LEGEND</b>   |  | <b>MONITORING WELL DATA</b> |               | <b>SAMPLE TYPE</b>              |               |
| Water found @ time of drilling  | Pipe: <b>51 mm dia. PVC</b>            | AC                          | Auger Cutting | SS                              | Split Spoon   |
| Static Water Level - 6/16/2015  | Screen: <b>51 mm dia. PVC #10 slot</b> | CS                          | Continuous    | AR                              | Air Rotary    |
|   |  | RC                          | Rock Core     | WC                              | Wash Cuttings |