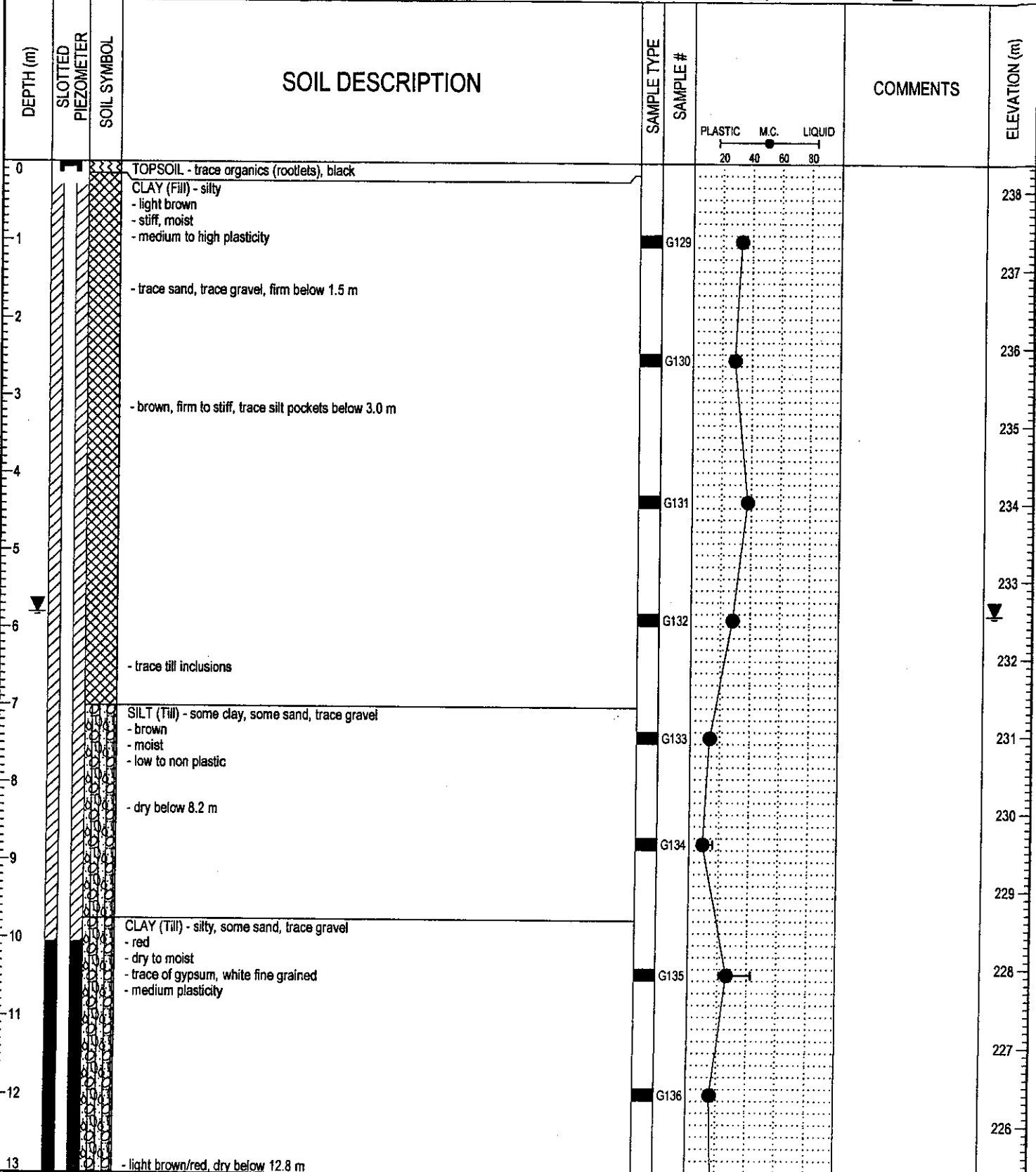


APPENDIX C
Geotechnical Test Hole Logs

| | | | | | |
|--|---|--------------------------------------|---|--------------------------------|--------------------------------------|
| PROJECT: PRPS Reliability - PRPS Upgrades | | CLIENT: City of Winnipeg | | TESTHOLE NO: TH07-1 | |
| LOCATION: South Side of Wilkes Pumping Station N 5,522,058.9 E 620,794.5 | | | | PROJECT NO.: D265 202 02 | |
| CONTRACTOR: Paddock Drilling Ltd. | | METHOD: Acker SS2, 125 mm dia. SSA | | ELEVATION (m): 238.353 | |
| SAMPLE TYPE | <input checked="" type="checkbox"/> GRAB | <input type="checkbox"/> SHELBY TUBE | <input checked="" type="checkbox"/> SPLIT SPOON | <input type="checkbox"/> BULK | <input type="checkbox"/> NO RECOVERY |
| BACKFILL TYPE | <input checked="" type="checkbox"/> BENTONITE | <input type="checkbox"/> GRAVEL | <input type="checkbox"/> SLOUGH | <input type="checkbox"/> GROUT | <input type="checkbox"/> CUTTINGS |
| | | | | | <input type="checkbox"/> CORE |
| | | | | | <input type="checkbox"/> SAND |



LOG OF TESTHOLE (OLD) 2007 04 02 WILKES AVE AND PERIMETER TH LOGS.GPJ UMA.GDT 12/9/07

UMA | AECOM

| | |
|--------------------------------|---------------------------|
| LOGGED BY: S. Peters | COMPLETION DEPTH: 15.24 m |
| REVIEWED BY: | COMPLETION DATE: 18/4/07 |
| PROJECT ENGINEER: Faris Khalil | |

| | | | |
|--|--|--|------------------------|
| PROJECT: PRPS Reliability - PRPS Upgrades | | CLIENT: City of Winnipeg | TESTHOLE NO: TH07-1 |
| LOCATION: South Side of Wilkes Pumping Station N 5,522,058.9 E 620,794.5 | | PROJECT NO.: D265 202 02 | |
| CONTRACTOR: Paddock Drilling Ltd. | | METHOD: Acker SS2, 125 mm dia. SSA | ELEVATION (m): 238.353 |
| SAMPLE TYPE | <input checked="" type="checkbox"/> GRAB <input type="checkbox"/> SHELBY TUBE <input type="checkbox"/> SPLIT SPOON <input type="checkbox"/> BULK | <input type="checkbox"/> NO RECOVERY <input type="checkbox"/> CORE | |
| BACKFILL TYPE | <input checked="" type="checkbox"/> BENTONITE <input type="checkbox"/> GRAVEL <input type="checkbox"/> SLOUGH <input type="checkbox"/> GROUT | <input checked="" type="checkbox"/> CUTTINGS <input type="checkbox"/> SAND | |

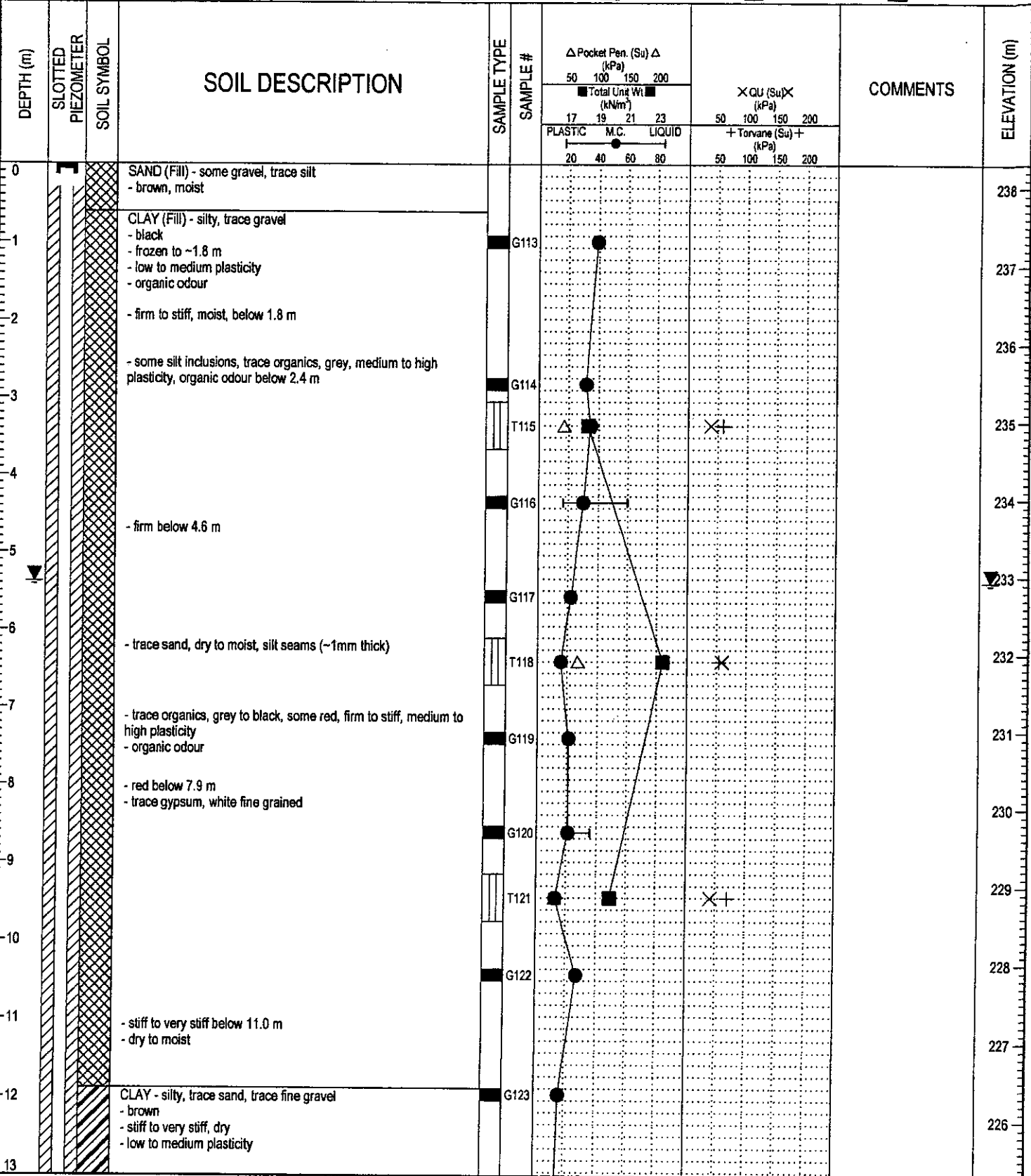
| DEPTH (m) | SLOTTED PIEZOMETER | SOIL SYMBOL | SOIL DESCRIPTION | SAMPLE TYPE | SAMPLE # | PLASTIC | M.C. | LIQUID | COMMENTS | ELEVATION (m) |
|-----------|--------------------|-------------|--|-------------|----------|---------|------|--------|----------|---------------|
| 13 | | | | | | | | | | 225 |
| 14 | | | - dry to moist below 13.7 m | | G137 | | | | | 224 |
| 15 | | | | | G138 | | | | | 223 |
| 16 | | | END OF TEST HOLE AT 15.2 m | | | | | | | 222 |
| 17 | | | Notes: 1. Sloughing at 14.6m. 2. No seepage observed. 3. Installed standpipe at 15.2 m, with flush mount cover. 4. Backfilled test hole with sand to 13.1 m, bentonite chips to 10.1 m and auger cuttings to surface. 5. Water level at 5.80 m below ground surface on May 1, 2007. | | | | | | | 221 |
| 18 | | | | | | | | | | 220 |
| 19 | | | | | | | | | | 219 |
| 20 | | | | | | | | | | 218 |
| 21 | | | | | | | | | | 217 |
| 22 | | | | | | | | | | 216 |
| 23 | | | | | | | | | | 215 |
| 24 | | | | | | | | | | 214 |
| 25 | | | | | | | | | | 213 |
| 26 | | | | | | | | | | 213 |

LOG OF TESTHOLE (OLD) 2007 04 02 WILKES AVE AND PERIMETER TH LOGS.GPJ UMA GDT 12/9/07

UMA | AECOM

| | |
|--------------------------------|---------------------------|
| LOGGED BY: S. Peters | COMPLETION DEPTH: 15.24 m |
| REVIEWED BY: | COMPLETION DATE: 18/4/07 |
| PROJECT ENGINEER: Faris Khalil | |

| | | | | | | |
|---|-----------|--------------------------------------|-------------|--------------------------|-------------|------|
| PROJECT: PRPS Reliability - PRPS Upgrades | | CLIENT: City of Winnipeg | | TESTHOLE NO: TH07-2 | | |
| LOCATION: North East corner of Wilkes Pumping Station N 5,522,087.2 E 620,804.7 | | | | PROJECT NO.: D265 202 02 | | |
| CONTRACTOR: Paddock Drilling Ltd. | | METHOD: Acker MP5-T, 125 mm dia. SSA | | ELEVATION (m): 238.305 | | |
| SAMPLE TYPE | GRAB | SHELBY TUBE | SPLIT SPOON | BULK | NO RECOVERY | CORE |
| BACKFILL TYPE | BENTONITE | GRAVEL | SLOUGH | GROUT | CUTTINGS | SAND |

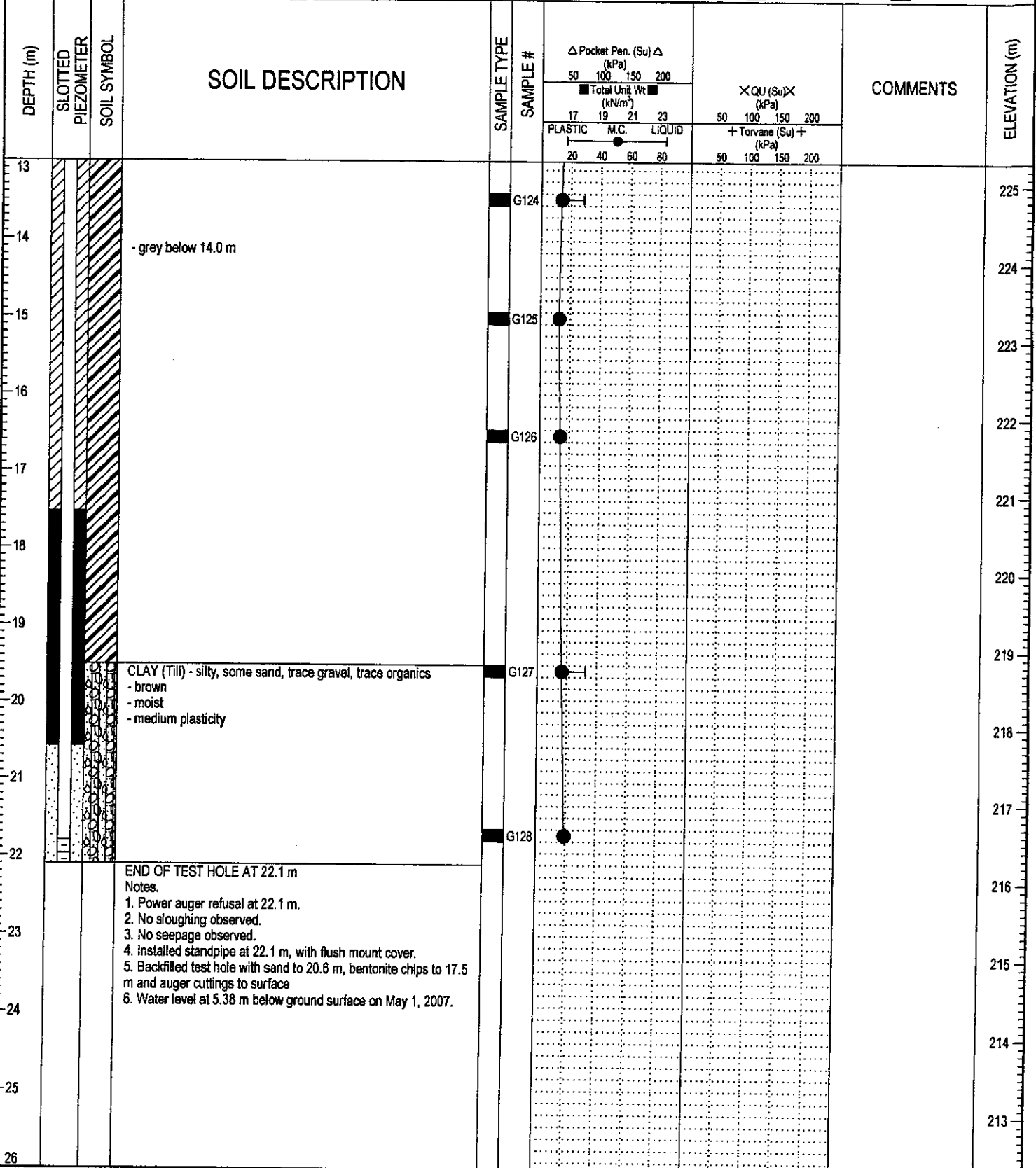


LOG OF TESTHOLE (OLD) 2007 04 02 WILKES AVE AND PERIMETER TH LOGS.GPJ, UMA.GDT 12/9/07

UMA | AECOM

| | |
|--------------------------------|---------------------------|
| LOGGED BY: S. Peters | COMPLETION DEPTH: 22.10 m |
| REVIEWED BY: | COMPLETION DATE: 16/4/07 |
| PROJECT ENGINEER: Faris Khalil | |

| | | | | | | |
|---|-----------|--------------------------|--------------------------------------|--------------------------|------------------------|------|
| PROJECT: PRPS Reliability - PRPS Upgrades | | CLIENT: City of Winnipeg | | TESTHOLE NO: TH07-2 | | |
| LOCATION: North East corner of Wilkes Pumping Station N 5,522,087.2 E 620,804.7 | | | | PROJECT NO.: D265 202 02 | | |
| CONTRACTOR: Paddock Drilling Ltd. | | | METHOD: Acker MP5-T, 125 mm dia. SSA | | ELEVATION (m): 238.305 | |
| SAMPLE TYPE | GRAB | SHELBY TUBE | SPLIT SPOON | BULK | NO RECOVERY | CORE |
| BACKFILL TYPE | BENTONITE | GRAVEL | SLOUGH | GROUT | CUTTINGS | SAND |

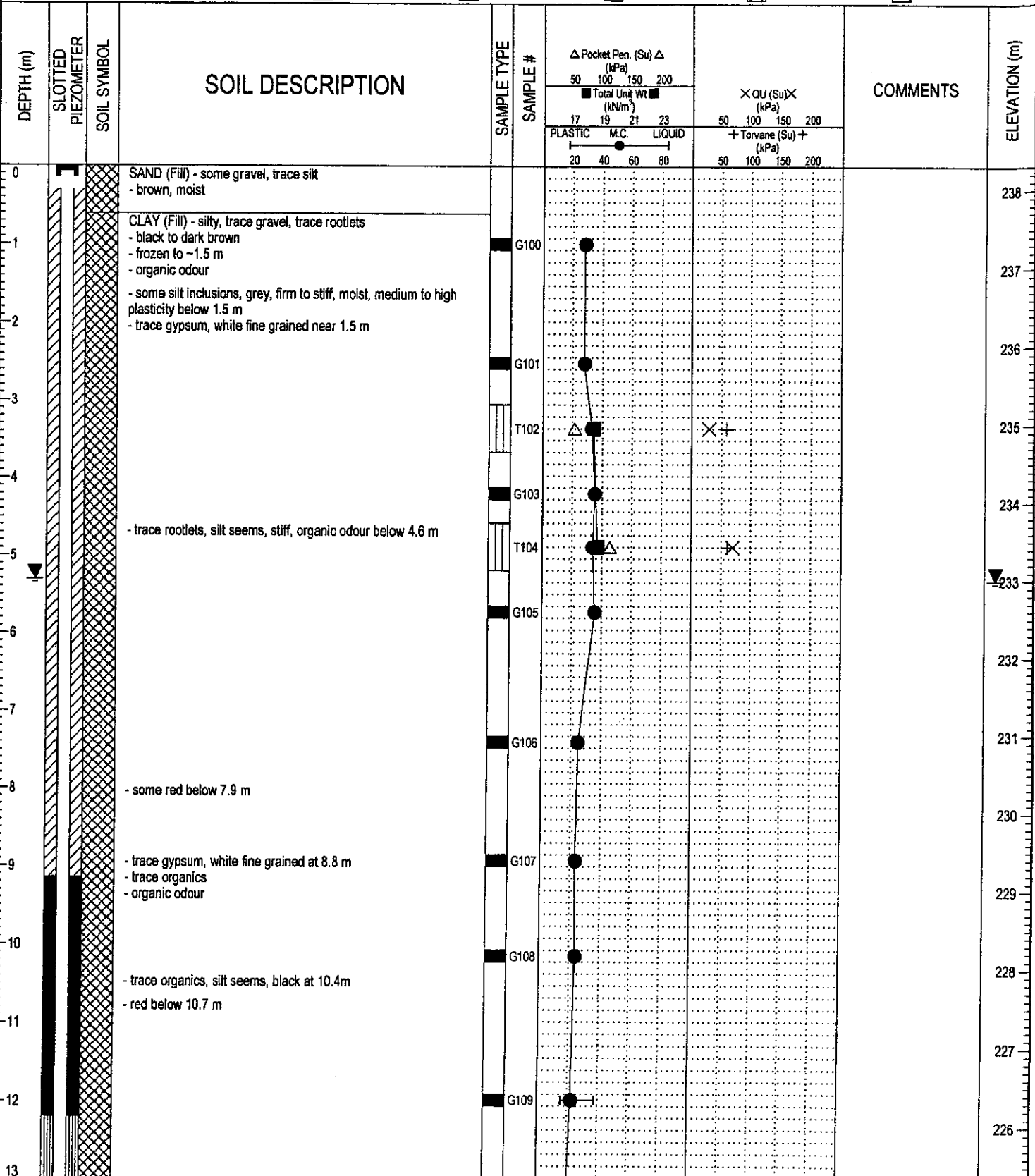


LOG OF TESTHOLE (OLD) 2007 04 02 WILKES AVE AND PERIMETER TH LOGS.GPJ UMA.GDT 12/9/07

UMA | AECOM

| | |
|--------------------------------|---------------------------|
| LOGGED BY: S. Peters | COMPLETION DEPTH: 22.10 m |
| REVIEWED BY: | COMPLETION DATE: 16/4/07 |
| PROJECT ENGINEER: Faris Khalil | |

| | | | |
|---|-----------|--------------------------------------|------------------------|
| PROJECT: PRPS Reliability - PRPS Upgrades | | CLIENT: City of Winnipeg | TESTHOLE NO: TH07-3 |
| LOCATION: North West corner of Wilkes Pumping Station N 5,522,085.4 E 620,783.2 | | PROJECT NO.: D265 202 02 | |
| CONTRACTOR: Paddock Drilling Ltd. | | METHOD: Acker MP5-T, 125 mm dia. SSA | ELEVATION (m): 238.304 |
| SAMPLE TYPE | GRAB | SHELBY TUBE | SPLIT SPOON |
| BACKFILL TYPE | BENTONITE | GRAVEL | SLOUGH |
| | | | BULK |
| | | | NO RECOVERY |
| | | | CORE |
| | | | GROUT |
| | | | CUTTINGS |
| | | | SAND |

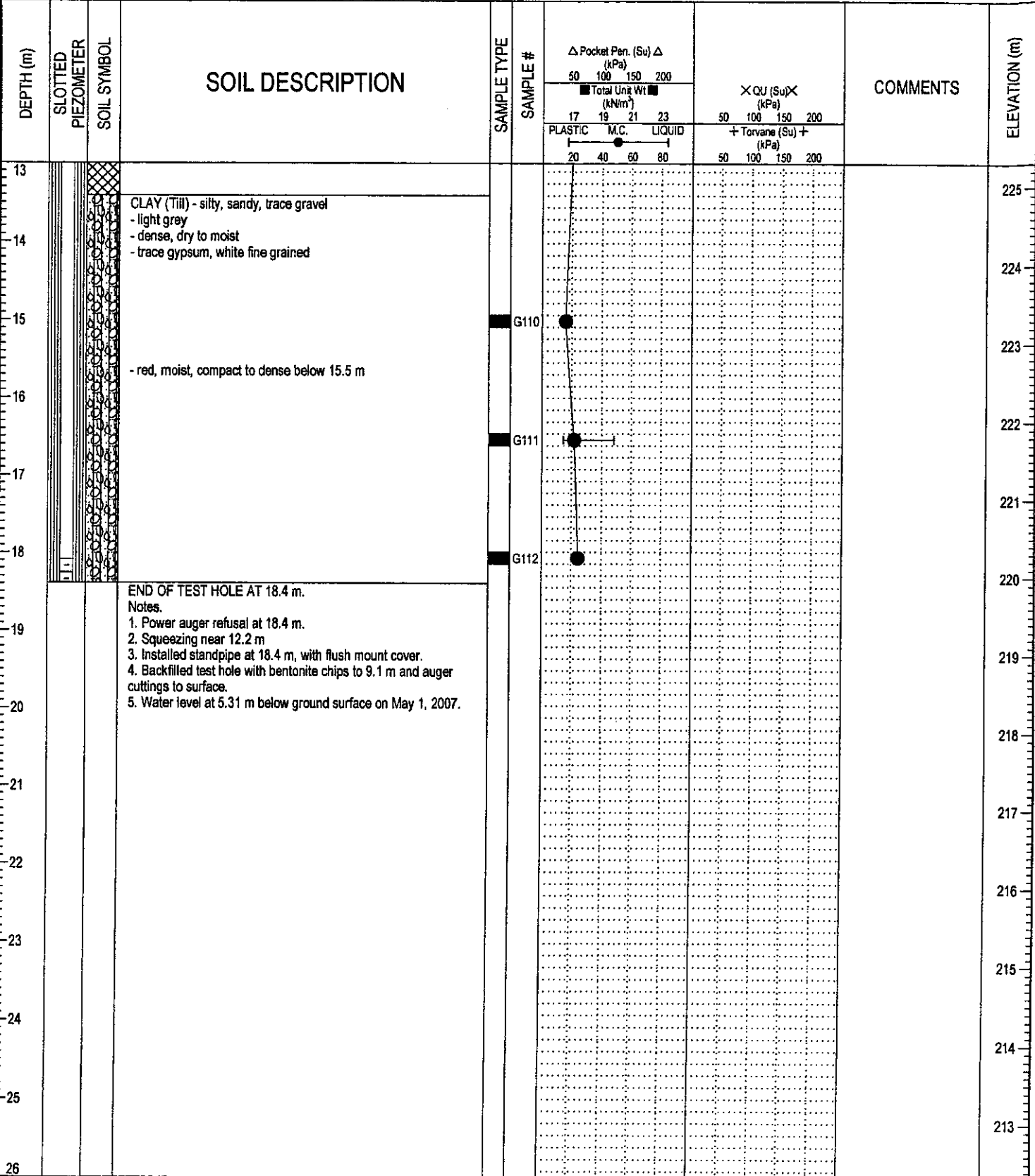


LOG OF TESTHOLE (OLD), 2007 04 02 WILKES AVE AND PERIMETER TH LOGS.GPJ UMA.GDT 12/9/07

UMA | AECOM

| | |
|--------------------------------|---------------------------|
| LOGGED BY: S. Peters | COMPLETION DEPTH: 18.39 m |
| REVIEWED BY: | COMPLETION DATE: 16/4/07 |
| PROJECT ENGINEER: Faris Khalil | |

| | | | | | | |
|---|-----------|--------------------------|--------------------------------------|--------------------------|------------------------|------|
| PROJECT: PRPS Reliability - PRPS Upgrades | | CLIENT: City of Winnipeg | | TESTHOLE NO: TH07-3 | | |
| LOCATION: North West corner of Wilkes Pumping Station N 5,522,085.4 E 620,783.2 | | | | PROJECT NO.: D265 202 02 | | |
| CONTRACTOR: Paddock Drilling Ltd. | | | METHOD: Acker MP5-T, 125 mm dia. SSA | | ELEVATION (m): 238.304 | |
| SAMPLE TYPE | GRAB | SHELBY TUBE | SPLIT SPOON | BULK | NO RECOVERY | CORE |
| BACKFILL TYPE | BENTONITE | GRAVEL | SLOUGH | GROUT | CUTTINGS | SAND |

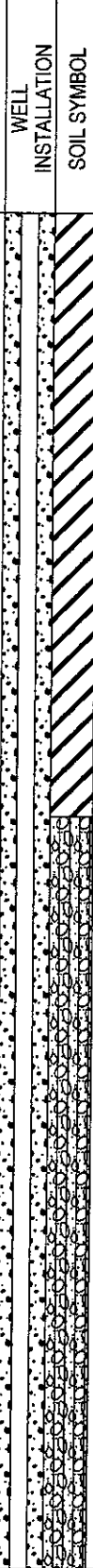


LOG OF TESTHOLE (OLD): 2007 04 02 WILKES AVE AND PERIMETER TH LOGS.GPJ, UMA.GDT, 12/16/07

UMA | AECOM

| | |
|--------------------------------|---------------------------|
| LOGGED BY: S. Peters | COMPLETION DEPTH: 18.39 m |
| REVIEWED BY: | COMPLETION DATE: 16/4/07 |
| PROJECT ENGINEER: Faris Khalil | Page 2 of 2 |

| | | |
|--|-----------------------------------|--------------------------|
| PROJECT: PRPS Reliability - PRPS Upgrades | CLIENT: City of Winnipeg | TESTHOLE NO: TH07-4 |
| LOCATION: 25 m west of north-west corner of PRPS building, 6821 Wilkes Ave. | | PROJECT NO.: D265 202 02 |
| CONTRACTOR: Friesen Drillers Ltd. | METHOD: DR-24, 150 mm dia. Casing | ELEVATION (m): |
| SAMPLE TYPE <input checked="" type="checkbox"/> GRAB <input type="checkbox"/> SHELBY TUBE <input checked="" type="checkbox"/> SPLIT SPOON <input type="checkbox"/> BULK <input type="checkbox"/> NO RECOVERY <input type="checkbox"/> CORE | | |
| BACKFILL TYPE <input checked="" type="checkbox"/> BENTONITE <input type="checkbox"/> GRAVEL <input type="checkbox"/> SLOUGH <input type="checkbox"/> GROUT <input type="checkbox"/> CUTTINGS <input type="checkbox"/> SAND | | |

| DEPTH (m) | WELL INSTALLATION SOIL SYMBOL | SOIL DESCRIPTION | SAMPLE TYPE | SAMPLE # | COMMENTS | DEPTH (m) |
|-----------|--|------------------|-------------|----------|----------|-----------|
| 0 |  | CLAY - silty | | | | 0 |
| 1 | | | | | | 1 |
| 2 | | | | | | 2 |
| 3 | | | | | | 3 |
| 4 | | | | | | 4 |
| 5 | | | | | | 5 |
| 6 | | SILT (Till) | | | | 6 |
| 7 | | | | | | 7 |
| 8 | | | | | | 8 |
| 9 | | | | | | 9 |
| 10 | | | | | | 10 |
| 11 | | | | | | 11 |
| 12 | | | | | | 12 |
| 13 | | | | | | 13 |

LOG OF TESTHOLE (OLD) 2007 06 05 WILKES AVE AND PERIMETER WELL LOG.GPJ UMA.GDT 13/9/07

UMA | AECOM

| | |
|--------------------------------|---------------------------|
| LOGGED BY: Steve Wiecek | COMPLETION DEPTH: 42.67 m |
| REVIEWED BY: | COMPLETION DATE: 5/6/07 |
| PROJECT ENGINEER: Steve Wiecek | |

| | | | |
|---|---|--------------------------------------|---|
| PROJECT: PRPS Reliability - PRPS Upgrades | | CLIENT: City of Winnipeg | TESTHOLE NO: TH07-4 |
| LOCATION: 25 m west of north-west corner of PRPS building, 6821 Wilkes Ave. | | PROJECT NO.: D265 202 02 | |
| CONTRACTOR: Friesen Drillers Ltd. | | METHOD: DR-24, 150 mm dia. Casing | ELEVATION (m): |
| SAMPLE TYPE | <input checked="" type="checkbox"/> GRAB | <input type="checkbox"/> SHELBY TUBE | <input checked="" type="checkbox"/> SPLIT SPOON |
| | | <input type="checkbox"/> BULK | <input type="checkbox"/> NO RECOVERY |
| | | | <input type="checkbox"/> CORE |
| BACKFILL TYPE | <input checked="" type="checkbox"/> BENTONITE | <input type="checkbox"/> GRAVEL | <input type="checkbox"/> SLOUGH |
| | | <input type="checkbox"/> GROUT | <input type="checkbox"/> CUTTINGS |
| | | | <input type="checkbox"/> SAND |

| DEPTH (m) | WELL INSTALLATION SOIL SYMBOL | SOIL DESCRIPTION | SAMPLE TYPE | SAMPLE # | COMMENTS | DEPTH (m) | |
|-----------|-------------------------------|------------------|-------------|----------|----------|-----------|----|
| 13 | | | | | | 13 | |
| 14 | | | | | | | 14 |
| 15 | | | | | | | 15 |
| 16 | | | | | | | 16 |
| 17 | | | | | | | 17 |
| 18 | | | | | | | 18 |
| 19 | | | | | | | 19 |
| 20 | | | | | | | 20 |
| 21 | | | | | | | 21 |
| 22 | | | | | | | 22 |
| 23 | | | | | | | 23 |
| 24 | | | | | | | 24 |
| 25 | | | | | | | 25 |
| 26 | | | | | | 26 | |

ANARANTH FORMATION
- siltstones and sandstones
- white to light brown to 88'
- red from 88' to 120'

LOG OF TESTHOLE (OLD) 2007 08 05 WILKES AVE AND PERIMETER WELL LOG.GPJ UMA.GDT 13/9/07

UMA | AECOM

| | |
|--------------------------------|---------------------------|
| LOGGED BY: Steve Wiecek | COMPLETION DEPTH: 42.67 m |
| REVIEWED BY: | COMPLETION DATE: 5/6/07 |
| PROJECT ENGINEER: Steve Wiecek | |

| | | | | | | |
|---|---|--------------------------------------|---|---|---|-------------------------------|
| PROJECT: PRPS Reliability - PRPS Upgrades | | CLIENT: City of Winnipeg | | TESTHOLE NO: TH07-4 | | |
| LOCATION: 25 m west of north-west corner of PRPS building, 6821 Wilkes Ave. | | | | PROJECT NO.: D265 202 02 | | |
| CONTRACTOR: Friesen Drillers Ltd. | | METHOD: DR-24, 150 mm dia. Casing | | ELEVATION (m): | | |
| SAMPLE TYPE | <input checked="" type="checkbox"/> GRAB | <input type="checkbox"/> SHELBY TUBE | <input checked="" type="checkbox"/> SPLIT SPOON | <input type="checkbox"/> BULK | <input checked="" type="checkbox"/> NO RECOVERY | <input type="checkbox"/> CORE |
| BACKFILL TYPE | <input checked="" type="checkbox"/> BENTONITE | <input type="checkbox"/> GRAVEL | <input type="checkbox"/> SLOUGH | <input checked="" type="checkbox"/> GROUT | <input checked="" type="checkbox"/> CUTTINGS | <input type="checkbox"/> SAND |

| DEPTH (m) | WELL INSTALLATION SOIL SYMBOL | SOIL DESCRIPTION | SAMPLE TYPE | SAMPLE # | COMMENTS | DEPTH (m) | |
|-----------|-------------------------------|------------------|--|----------|----------|-----------|----|
| 26 | | | | | | 26 | |
| 27 | | | | | | 27 | |
| 28 | | | | | | 28 | |
| 29 | | | | | | 29 | |
| 30 | | | | | | 30 | |
| 31 | | | | | | 31 | |
| 32 | | | | | | 32 | |
| 33 | | | | | | 33 | |
| 34 | | | | | | 34 | |
| 35 | | | | | | 35 | |
| 36 | | | | | | 36 | |
| 37 | | | DOLORITE LIMESTONE - fractures below 125' | | | | 37 |
| 38 | | | | | | | 38 |
| 39 | | | | | | 39 | |

LOG OF TESTHOLE (OLD) 2007 06 05 WILKES AVE AND PERIMETER WELL LOG.GPJ UMA.GDT 13/9/07

UMA | AECOM

| | |
|--------------------------------|---------------------------|
| LOGGED BY: Steve Wiecek | COMPLETION DEPTH: 42.67 m |
| REVIEWED BY: | COMPLETION DATE: 5/6/07 |
| PROJECT ENGINEER: Steve Wiecek | Page 3 of 4 |

| | | | | | | |
|---|---|--------------------------------------|---|---|---|-------------------------------|
| PROJECT: PRPS Reliability - PRPS Upgrades | CLIENT: City of Winnipeg | TESTHOLE NO: TH07-4 | | | | |
| LOCATION: 25 m west of north-west corner of PRPS building, 6821 Wilkes Ave. | | PROJECT NO.: D265 202 02 | | | | |
| CONTRACTOR: Friesen Drillers Ltd. | METHOD: DR-24, 150 mm dia. Casing | ELEVATION (m): | | | | |
| SAMPLE TYPE | <input checked="" type="checkbox"/> GRAB | <input type="checkbox"/> SHELBY TUBE | <input checked="" type="checkbox"/> SPLIT SPOON | <input type="checkbox"/> BULK | <input checked="" type="checkbox"/> NO RECOVERY | <input type="checkbox"/> CORE |
| BACKFILL TYPE | <input checked="" type="checkbox"/> BENTONITE | <input type="checkbox"/> GRAVEL | <input type="checkbox"/> SLOUGH | <input checked="" type="checkbox"/> GROUT | <input checked="" type="checkbox"/> CUTTINGS | <input type="checkbox"/> SAND |

| DEPTH (m) | WELL INSTALLATION | SOIL SYMBOL | SOIL DESCRIPTION | SAMPLE TYPE | SAMPLE # | COMMENTS | DEPTH (m) | |
|-----------|-------------------|-------------|------------------|-------------|----------|----------|-----------|----|
| 39 | | | | | | | 39 | |
| 40 | | | | | | | 40 | |
| 41 | | | | | | | | 41 |
| 42 | | | | | | | | 42 |
| 43 | | | END FO TEST HOLE | | | | 43 | |
| 44 | | | | | | | 44 | |
| 45 | | | | | | | 45 | |
| 46 | | | | | | | 46 | |
| 47 | | | | | | | 47 | |
| 48 | | | | | | | 48 | |
| 49 | | | | | | | 49 | |
| 50 | | | | | | | 50 | |
| 51 | | | | | | | 51 | |
| 52 | | | | | | | 52 | |

LOG OF TESTHOLE (OLD) 2007 06 05 WILKES AVE AND PERIMETER WELL LOG.GPJ UMA.GDT 13/9/07

UMA | AECOM

| | |
|--------------------------------|---------------------------|
| LOGGED BY: Steve Wiecek | COMPLETION DEPTH: 42.67 m |
| REVIEWED BY: | COMPLETION DATE: 5/6/07 |
| PROJECT ENGINEER: Steve Wiecek | Page 4 of 4 |