2020 Operations Report, Appendix H - 2020 Leachate Collection System, Purge Well Gravity Drain and Groundwater Gallery Cleaning and Inspection Report

Submitted to:

City of Barrie
272 Ferndale Drive North
Barrie, Ontario
L4M 4T5

Submitted by:

Golder Associates Ltd.
121 Commerce Park Drive, Unit L, Barrie, Ontario, L4N 8X1, Canada

+1 705 722 4492

18107598

June 2021

Distribution List

2 copies - City of Barrie

E-copy - Golder Associates Ltd.

Table of Contents

1.0 INTRODUCTION 1

1.1 Background 1

2.0 LEACHATE AND GROUNDWATER COLLECTION SYSTEMS OVERVIEW 2

2.1 Leachate Collection System 2

2.2 Purge Well System 3

2.3 Groundwater Collection Gallery 3

3.0 2020 CLEANING PROGRAM 5

3.1 Cells 2A and 3A Leachate Collection System 5

3.2 Cells 2B and 3B Leachate Collection System 6

3.3 Cells 2C and 3C Leachate Collection System 7

3.4 Purge Well Gravity Drain 7

3.5 Groundwater Gallery 8

4.0 2020 VIDEO INSPECTION PROGRAM 9

4.1 Cells 2A and 3A 9

4.2 Cells 2B and 3B 12

4.3 Cells 2C and 3C 13

4.4 Purge Well Gravity Drain and LCS/PW Gravity Drain 14

4.5 Groundwater Collection Gallery and Toe-Drain 15

5.0 SUMMARY AND CONCLUSIONS 20

6.0 RECOMMENDATIONS 21

8.0 REFERENCES 23

LIMITATIONS 24

TABLES (IN TEXT)

Table 3.1: 2020 Flushing and Inspection Summary for Cells 2A and 3A 6

Table 3.2: 2020 Flushing and Inspection Summary for Cells 2B and 3B 7

Table 3.3: 2020 Flushing and Inspection Summary for Cells 2C and 3C 7

Table 3.4: 2020 Flushing and Inspection Summary for the Purge Well Gravity Drain and LCS/PW Gravity Drain 8

Table 3.5: 2020 Flushing and Inspection Summary for the Groundwater Gallery 8

FIGURES (APPENDED)

Figure H-1: Regional Location Plan

Figure H-2: Site Location Plan

Figure H-3: Leachate Collection System Layout

Figure H-4: Groundwater Collection Gallery

APPENDICES

Appendix H-1
Figures

Appendix H-2
Inspection Records

1.0 INTRODUCTION

1.1 Background

The City of Barrie (City) owns and operates the Barrie Landfill (Site) located within the limits of the City (see Figure H-1) under Environmental Compliance Approval No. A250101 (ECA), most recently amended on October 5, 2020. The total approved design footprint of the landfill is 18.6 Ha.

The City is required to complete annual cleaning and video inspections of the Leachate Collection System, including all leachate collection system piping, as outlined in Conditions 5.15 and 5.19 of the ECA. This report has been prepared on behalf of the City by Golder Associates Ltd. (Golder) to document the 2020 cleaning and video inspection of the Leachate Collection System (LCS), Groundwater Collection Gallery (Gallery) and the Purge Well (PW) conveyance piping at the Site.

The design of the landfill includes a liner and LCS under the western portion (i.e., Cells 2 and 3), which was completed as part of the landfill reclamation project described in the Design and Operations Plan (Golder, 2019). The eastern portion of the landfill (i.e., Cell 1) is unlined, and environmental controls for this area consist of the groundwater collection gallery and Toe-Drain (Gallery) and purge well system (see Figures H-3 and H-4). The detailed designs of these systems are contained in the documents referred to in the current ECA.

The LCS collects leachate draining from the waste placed over the lined portions of the landfill. The purge wells (PW) capture leachate impacted groundwater immediately downgradient of the west and central portions of the landfill. The Gallery captures the impacted groundwater on the southeastern side of the landfill (i.e., largely from the area under Cells 1 and eastern part of Cell 2) that is not captured by the purge wells.

Inspection of all perforated collection and solid conveyance lines of the LCS is undertaken annually to determine if the perforations are draining as designed and to confirm that the piping is not blocked with precipitate or damaged. The 2020 LCS, Gallery and PW gravity drainage cleaning program involved cleaning and inspection of the entire LCS, PW Gravity Drain and Gallery.

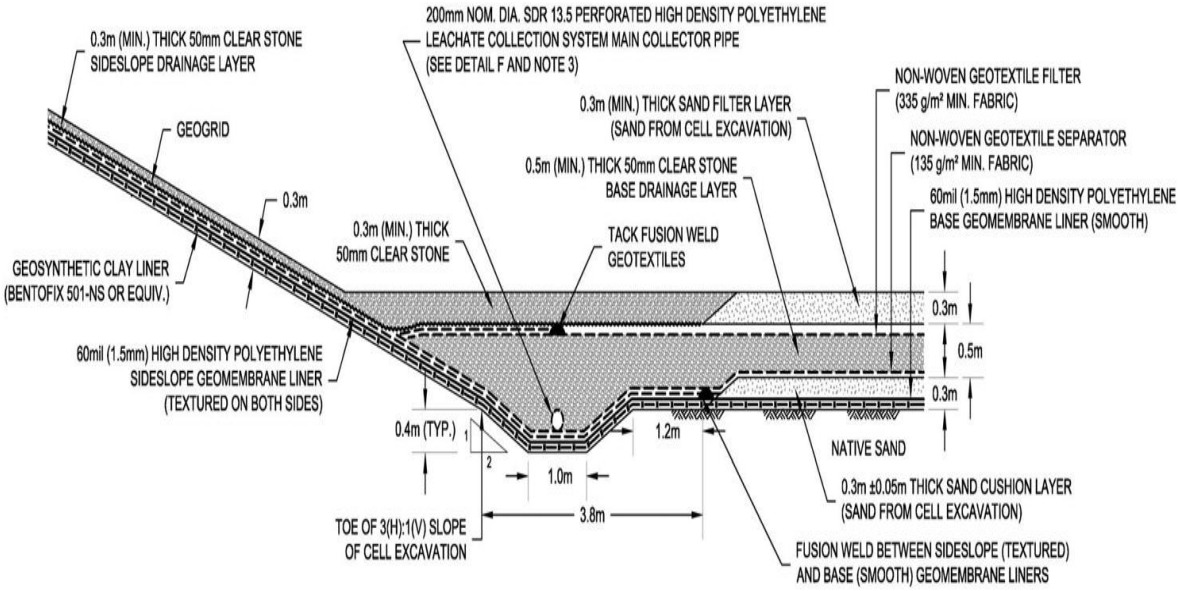
2.0 LEACHATE AND GROUNDWATER COLLECTION SYSTEMS OVERVIEW

2.1 Leachate Collection System

The overall LCS layout shown on Figure H-3, which includes the gravity drain connection from MH4 to the sanitary sewer line. A detailed description of the LCS and PW systems can be found in the main body of the 2020 City of Barrie Solid Waste Report (Golder, 2021).

The engineered landfill cells include a LCS underlain by a single composite geosynthetic liner, generally installed as shown in the figure below (depicted design for the southern 1/3 of Cells 2 and 3). The leachate collection systems consist of a series of 200 mm diameter collection pipes within a 0.5 m thick, 50 mm clear stone drainage layer over the base area of the landfill cells. The cell sideslopes consist of a 0.3 m thick, 50 mm diameter stone drainage layer. The single composite liner is comprised of a 1.5 mm (60 mil) thick HDPE geomembrane liner and an underlying geosynthetic clay liner (GCL). The LCS in the northern part of the landfill differs slightly from those of Cells 2A and 3A, as the leachate collection pipes in the northern area of the cells are not placed in “trenches” but are instead placed along the low point of the liner.

Barrie Landfill LCS Design



The Waste Reclamation and Re-engineering project was completed between 2009 and 2015 and included the re-engineering and construction of Cells 2C and 3C including the LCS. The leachate collection systems in Cell 2A and Cell 3A are connected by a header pipeline along the southern limits of the cells, leading to a maintenance chamber on the southwest corner of Cell 3A. Discharge from this manhole is directed to MH4, which also receives flow from the Purge Well System and Cells 2B, 3B, 2C and 3C. Flow to this maintenance chamber discharges to the City’s sanitary sewer located on Edgehill Drive. Similar to Cells 2A and 3A, the leachate collection systems in Cells 2B and 3B are connected by a single header pipeline along the southwestern limits of the cells, which flows to a maintenance chamber located within the southwest corner of Cell 3B. This maintenance chamber is in turn

connected to a second external chamber located outside the landfill and west of the western landfill perimeter road. The LCS in Cells 2C and 3C is connected by a single header pipeline along the southern limits of the cells, which flows to a maintenance chamber located within the northwest corner of Cell 3B. This maintenance chamber is in turn connected to that located within the southwest corner of Cell 3B. Leachate from Cells 2B, 3B, 2C and 3C flows through these structures along a conveyance pipeline located parallel to the western perimeter road and connects to the existing external maintenance chamber MH4 and gravity drain, which also connects the PW System to the City sanitary sewer along Edgehill Drive.

Access to the leachate collection system is possible at maintenance chambers in Cells 3A, 3B and 3C, the exterior leachate maintenance chamber adjacent to Cell 3A, and at MH4. Six cleanouts are located along the south edge of Cells 2A and 3A, and one cleanout access on the west side of Cell 3A.

2.2 Purge Well System

The PW system was commissioned at the Site in October 2007. The first purge well (PW1) was installed in late 2004, whereas the second and third purge wells (PW2 and PW3) were installed in late 2005. PW4 was constructed in 2014 and construction of the associated infrastructure was completed in 2015. PW4 has been operational since July 2016, as allowed under Permit to Take Water (PTTW) No. 1315-6W3QAS.

The conveyance piping (gravity drain) between the southern edge of Cell 3A and Edgehill Drive was installed in December 2006. Under a covering letter dated January 26, 2007, a Permit to Take Water (Number 1315-6W3QAS) was granted by the Ministry (i.e., MECP or precursors) to allow installation and operation of gravity drainage sewers from the purge wells to the City sewer system along Edgehill Drive. A new PTTW, No. 4785-AJTNQ2, was issued on March 16, 2017 and expires on February 28, 2027.

Each purge well discharges though a valve chamber, connected to a common gravity drain commencing at PW4 and extending to MH4. This gravity drain runs for a total distance of approximately 360 metres, discharging to MH4, which in turn discharges to a gravity drain leading to the sanitary sewer at Edgehill Drive.

Access to the PW gravity drain is through manholes located south of PW1 through PW3 and north of PW4, downstream of the valve chambers. Access to the LCS/PW gravity drain downstream of MH4 is through three manholes (MHA, MHB and MHC) located south of MH4 and leading to the City sewer at Edgehill Drive. The LCS/PW gravity drain is comprised of three intervals of conveyance pipe, accessible at each interval through a manhole.

2.3 Groundwater Collection Gallery

A groundwater collection gallery and an associated Toe-Drain (Gallery) are located east and southeast of Cell 1 (Figures H-2 and H-4). These systems were installed during the summer/fall of 2002 to intercept leachate-impacted groundwater migrating in a southeast direction towards Dyment's Creek. The systems replaced an older Gallery that had operated since 1977. The portion from GC7 to GC4 was reconstructed in 2009; the portion from GC4 to GC2, including the toe drain, was reconstructed in 2017; it is noted that there has been minimal flow from the Toe-Drain at GC2 since reconstruction in 2017. Approximately 150 m of the southern portion of the gallery, between GC2 and GC4, including the Toe-Drain, was replaced in 2017 to address partial clogging of the system and reduced performance. The replacement of the Gallery pipe also included the installation of two new manholes (GC-4N and GC-3N).

Gallery flow is monitored at a Parshall Flume at GC1. The City cleans the flume at GC1 on an as needed basis, as the iron contained within the intercepted water deposits on the measurement structure, affecting flow readings.

The Gallery consists of a nominal 200 mm to 300 mm diameter HDPE pipe within a granular filled trench. The depth of the trench ranges from about 2.5 m to 6.0 m below ground surface. The Gallery extends in an approximately north-south direction (immediately west of Dyment's Creek) over a total distance of about 450 m and includes six maintenance hole access points (i.e., GC1 through GC-5N, and GC-7N). The invert elevation of the perforated pipe is, at a minimum, 0.5 m below the invert elevation of the adjacent creek. The terminus of the Gallery is connected to a sanitary sewer leading to Edgehill Drive.

The Toe-Drain is located along the toe of the natural slope immediately west of the Gallery and intercepts leachate impacted seepage along the toe of the slope, which would otherwise flow overland to Dyment's Creek. It has a total length of about 160 m, two maintenance chambers (i.e., TDMH-1 and TDMH-2) and consists of a nominal 300 mm diameter perforated HDPE drainpipe within a granular filled trench. The depth of the trench ranges from about 1.5 m to 2.5 m below ground surface. The Toe-Drain can also be accessed where it connects to the Gallery at GC-2.

3.0 2020 CLEANING PROGRAM

The 2020 annual cleaning and video inspection was carried out between September 14 and 18, 2020. The work was completed by Sewer Technologies Inc., who were retained by the City. Golder provided full-time oversight during the cleaning and inspection program and documented the extent of the work completed.

Sewer Technologies used the following equipment:

- Vacuum and flusher truck equipped with various sizes and types of flushing heads
- A mobile video inspection unit equipped with truck-mounted video cameras

The cleaning procedure is performed by inserting the cleaning head into the downstream access point of the pipe. If possible, the mobile video camera unit is inserted at the upstream end of the pipe to allow the camera to inspect the pipe soon after cleaning. If no upstream access point is available, the flushing head and hose are removed, and the camera is inserted at the downstream location. This procedure is not ideal since the camera is required to travel up a positive grade, which limits the travel distance due to the weight of the camera cable.

A summary of flushing and video inspection distances in the leachate collection system, purge well gravity drain Cells 2A and 3A is provided in Tables 3.1 through 3.5. Unless noted in the comments, all sections of pipe were flushed and inspected to their full length. Sections of pipe where the 2020 inspected length listed in the tables differ by 1 m to 2 m from the as-built length were inspected to the full length; these small differences are considered largely due to discrepancies of the camera distance tracking system.

3.1 Cells 2A and 3A Leachate Collection System

The 2020 Cells 2A and 3A LCS cleaning consisted of flushing all headers and laterals to the capability of the flusher truck. Several locations could not be inspected, due to either the difficulty in entering access points within the system (i.e., sharp bends creating a retrieval risk) or the camera losing traction. A summary of flushing and inspection in Cells 2A and 3A is provided in Table 3.1.

Flushing was typically started at the most upstream location and progressed downstream such that sediment, precipitate and blockages could be continually flushed downstream and ultimately out of the system. The starting point within Cells 2A and 3A was at 2A Lateral 1, thereafter progressing downstream to the south and west.

Flushing of the Cell 2A LCS was successful - all were flushed to their full extent, as shown in Table 3.1. Flushing of the Cell 3A LCS was also successful - all were flushed to their full extent. In 2011, 3A Lateral 1 could not be flushed beyond approximately 30 m due to a sediment blockage caused by sumping. Sumping refers to a low-point in the LCS lines where sediment is likely to build up. In subsequent years, a full flusher tank of water was jetted into the 3A western cleanout, which removed this blockage. This procedure was repeated in 2020 and flushing of 3A Lateral 1 to the full length of approximately 171 m was successful.

Table 3.1: 2020 Flushing and Inspection Summary for Cells 2A and 3A

Cell 2A	Length (m)	Flushed Length (m)	Inspected Length (m)	Comment
2A Lateral 4	78	78	34	Camera could not pass cleanout joint
2A Lateral 3	82	82	37	Camera could not pass cleanout joint
2A Lateral 1 & 2	180	180	36	Camera could not pass cleanout joint
2A South Header	165	165	33	Camera could not pass cleanout joint
Cell 3A	**Length (m)**	**Flushed Length (m)**	**Inspected Length (m)**	**Comment**
3A Lateral 4	84	84	31	Camera could not pass cleanout joint
3A Lateral 3	86	86	30	Camera could not pass cleanout joint
3A Lateral 2	88	88	28	Camera could not pass cleanout joint
3A Lateral 1	171	171	171	
3A West Header	61	61	59	Sumping at end of line at junction of 3A Lateral 1
3A South Header	175	175	146	Camera lost traction
3AMH to MH4	61	61	60	

3.2 Cells 2B and 3B Leachate Collection System

Access to the LCS in Cell 3B was through the maintenance chamber located in the southwest corner of Cell 3B. A maximum methane concentration of 0.5% (v/v) methane (CH_4) by volume (i.e., 10% of the Lower Explosive Limit "LEL" of 5% v/v) was required for works in and around the Cell 3B maintenance chamber to be allowed to proceed.

The 3B / 3C West Header and the solid leachate conveyance line between the Cell 3B maintenance chamber and the 3B external maintenance chamber were successfully cleaned from the Cell 3B maintenance chamber to their constructed extents, as indicated in Table 3.2 and visible on Figure H-3. Approximately 183 m of the 2B / 3B lateral was successfully cleaned, which was limited by the length of the hose.

The leachate conveyance pipeline between the Cell 3B external maintenance chamber was successfully cleaned from MH4. A summary of flushing and inspection in Cells 2B and 3B is provided in Table 3.2.

Table 3.2: 2020 Flushing and Inspection Summary for Cells 2B and 3B

Cell 2B / 3B	Length (m)	Flushed Length (m)	Inspected Length (m)	Comment
2B / 3B Lateral	265	183	205	Maximum flushing hose length was 183 m; the camera lost traction at 205 m
3B / 3C West Header	79	79	79	
3B MH to 3B EXT	88	88	84	
3B EXT to MH4	120	120	88	Camera lost traction at 88 m

3.3 Cells 2C and 3C Leachate Collection System

The western portion of the Cells 2C and 3C LCS system includes the 2C / 3C Lateral 1 (274 m), 2C / 3C Lateral 2 (256 m) and 2C / 3C Lateral 3 (233 m). Two cleanouts, NCleanout 1 and NCleanout 2, were also flushed and inspected in 2020. A summary of flushing and inspection in Cells 2C and 3C is provided in Table 3.3.

Table 3.3: 2020 Flushing and Inspection Summary for Cells 2C and 3C

Cell 3C	Length (m)	Flushed Length (m)	Inspected Length (m)	Comment
2C3C Lateral 1	274	170	182	Maximum hose length was 170 m; camera lost traction at 182 m
2C3C Lateral 2	256	146	159	Hose unable to continue; camera lost traction at 172 m
2C3C Lateral 3	233	149	171	Hose unable to continue; camera lost traction at 171 m
NCleanout 1	76	76	76	
NCleanout 2	75	75	75	

3.4 Purge Well Gravity Drain

The PW gravity drain was cleaned sequentially from the most upstream PW4 to the LCS/PW gravity drain at MH4. Access points are provided adjacent to each of the purge wells, allowing cleaning and inspection in four separate intervals. Cleaning was completed successfully, and a large amount of iron and magnesium precipitate was washed out during the cleaning. This is consistent with past conditions observed during the cleaning of the purge well gravity drain.

The LCS/PW gravity drain was cleaned sequentially from MH4 to the southernmost maintenance chamber located upstream of the connection to the sanitary sewer on Edgehill Drive located within landfill property. A summary of flushing and inspection in the purge well system LCS/PW gravity drain is provided in Table 3.4.

Table 3.4: 2020 Flushing and Inspection Summary for the Purge Well Gravity Drain and LCS/PW Gravity Drain

Drain Section	Length (m)	Flushed Length (m)	Inspected Length (m)	Comment
PW4 to PW3	88	88	88	
PW3 to PW2	85	85	85	
PW2 to PW1	75	75	75	
PW1 to MH4	126	126	126	
MH4 to MHA	27	27	24	
MHA to MHB	20	20	18	
MHB to MHC	85	85	84	

Notes:
MHA to MHC are referred as MH3 to MH1, respectively in the inspection records provided in Appendix H-2

3.5 Groundwater Gallery

On September 17 and 18, 2020, the Gallery and Toe-Drain were cleaned sequentially from the northernmost upstream access at maintenance chamber GC7N to the sanitary sewer connection at GC1. The entirety of the Gallery and Toe-Drain was able to be flushed. A summary of flushing and inspection in the Groundwater Gallery is provided in Table 3.5.

Table 3.5: 2020 Flushing and Inspection Summary for the Groundwater Gallery

	Length (m)	Flushed Length (m)	Inspected Length (m)	Comment
GC7N to GC5N	118	118	118	
GC5N to GC4	100	100	100	
GC4 to GC4N	10	10	10	
GC4N to GC3N	80	80	79	
GC3N to GC2	58	58	58	
GC2 to GC1	79	79	79	
TDMH2 – TDMH1	82	82	81	
TDMH1 – GC2	80	80	79	

4.0 2020 VIDEO INSPECTION PROGRAM

Video inspections were carried out on each pipe segment following completion of the flushing in two directions. In some cases, the video inspection revealed remaining sediment deposits or other obstructions and, as a result, flushing and video inspection was conducted a second time to confirm the pipe sections had been satisfactorily cleaned. Records of all inspections (date, length of inspected interval, conditions, etc.) are included in Appendix H-2 of this report.

4.1 Cells 2A and 3A

Inspection of the LCS in Cells 2A and 3A was carried out between September 15, 16 and 17, 2020. Video inspection was only partially completed in Cells 2A and 3A as a result of the alignment of the connections between the southern cleanout accesses and the associated laterals. This connection joins the solid cleanout access to the perforated lateral from above, resulting in a drop-off that would make the camera potentially irretrievable, should it pass the joint. As a result, inspections originating from the cleanout access points could only inspect up to this joint. Photo 1 shows a typical connection between each south cleanout access and the associated lateral. The following section summarizes the notable findings of these inspections.

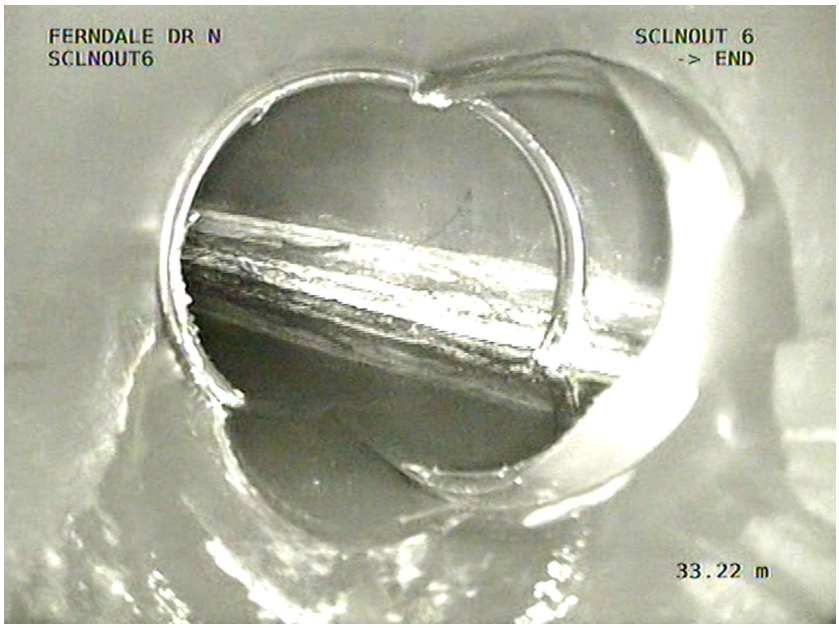


Photo 1: Typical cleanout connection to LCS laterals in Cells 2A and 3A.

Photo 2 shows the condition within the west cleanout access to 3A Lateral 1 at approximately 47 m from the cleanout entrance. Sumping observed in this area is further supported by the video inspection of the 3A West Header, which also indicates a sump condition, as shown in Photo 3. During the inspection, the camera was able to navigate beyond the sump in the 3A Lateral 1 pipe and the entire length of the lateral was inspected. The inspection indicates that the 3A Lateral 1 is clear and is draining towards the maintenance chamber in Cell 3A; typical 3A Lateral 1 conditions are shown in Photo 4.

Photo 2: Sumping (as observed in 2020) within west cleanout access to 3A Lateral 1 at approximately 47 m.

Photo 3: Sumping (as observed in 2020) within 3A West Header at approximately 57 m.

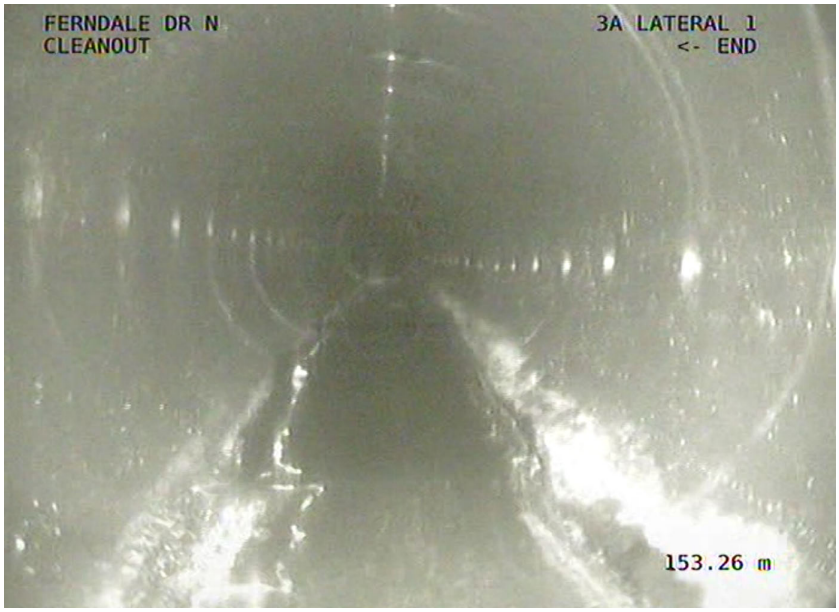


Photo 4: Typical conditions within the 3A Lateral 1.

Inspection of the leachate conveyance line between the 3A Maintenance Chamber and MH4 identified small amounts of accumulated sediment / precipitate, which was similarly noted in previous inspection programs (Photo 5).

Photo 5: Leachate conveyance line between 3A maintenance chamber and MH4.

4.2 Cells 2B and 3B

Following cleaning of the 2B / 3B Lateral from the Cell 3B internal maintenance chamber, video inspection was conducted. The lateral was inspected to a length of 205 m, short of the 265 m length of this lateral, as the camera lost traction. Inspection of the lateral indicated that it was in good condition, as shown in Photo 6.

The 3B / 3C West Header was also video inspected and the inspection indicated that the pipe was in good condition (Photo 7). The leachate conveyance pipeline between the Cell 3B internal maintenance chamber and the 3B exterior maintenance chamber was inspected starting at the Cell 3B location and indicated that the LCS was in good condition.

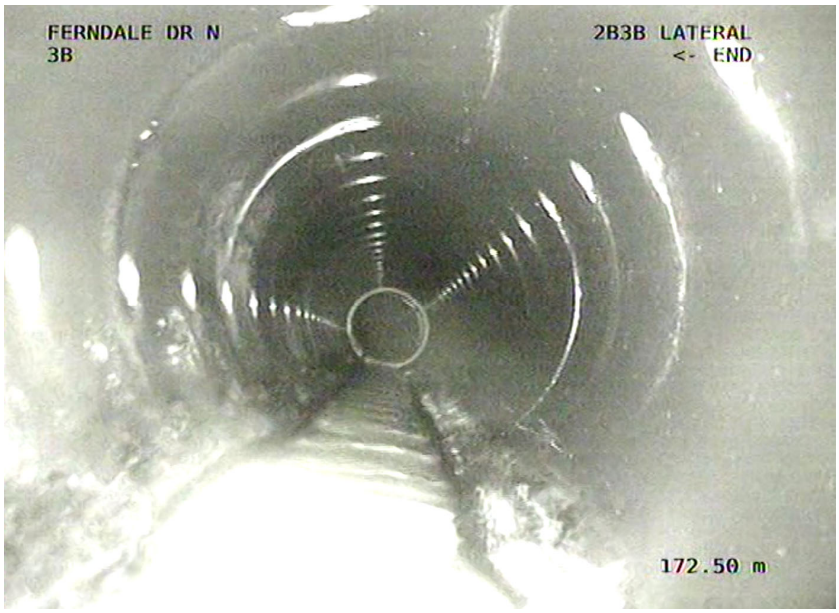


Photo 6: Typical conditions within the 2B / 3B Lateral.

Photo 7: Typical conditions within the 3B / 3C West Header.

4.3 Cells 2C and 3C

Following cleaning of the 2C / 3C Lateral 1, 2C / 3C Lateral 2 and 2C / 3C Lateral 3, video inspection was conducted. Inspection of the laterals revealed good conditions, as shown in Photos 8 and 9.

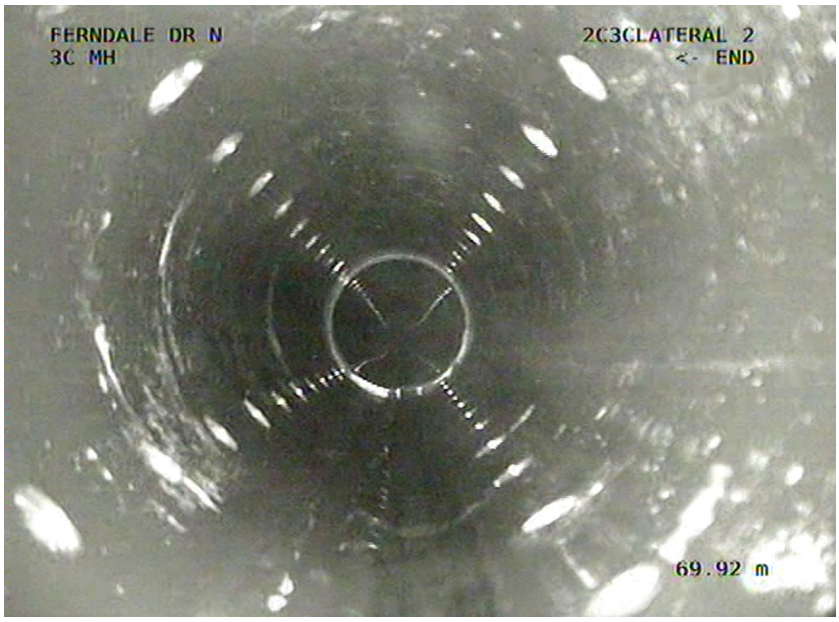


Photo 8: Typical conditions within 2C / 3C Lateral 2

Photo 9: Typical conditions within 2C / 3C Lateral 3

Following cleaning of two cleanouts, NCleanout 1 and NCleanout 2, video inspection was conducted. Inspection of the cleanouts revealed good conditions, as shown in Photo 10.

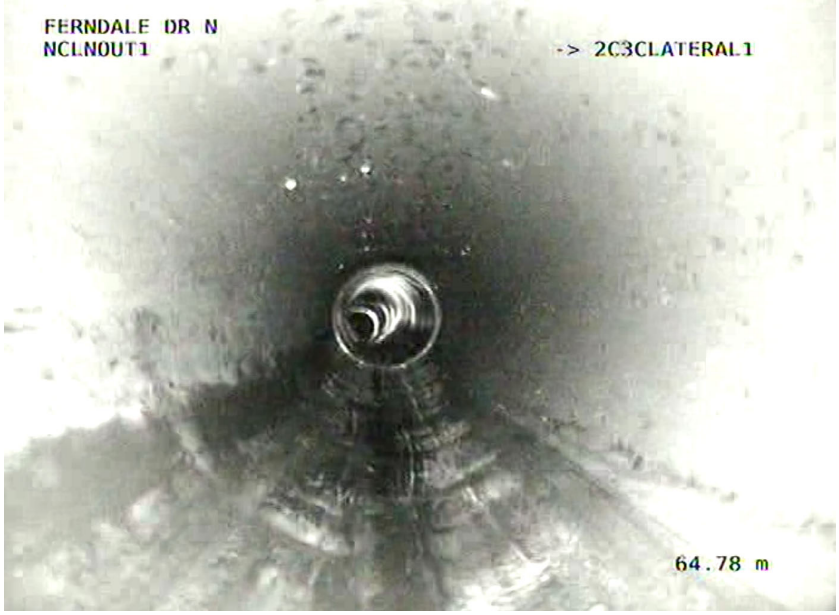


Photo 10: Typical conditions within NCleanout 1.

4.4 Purge Well Gravity Drain and LCS/PW Gravity Drain

The purge well gravity drain was inspected following the flushing of the pipeline from PW4 to MH4. The purge wells discharging to the system were shut off during inspection of the PW gravity drain. Each section exhibited sidewall staining consistent with high water levels in the pipe during operation. The flushing operation successfully cleaned the pipes of accumulated silt and precipitate. Typical conditions in the purge well gravity drain can be seen in Photo 11.

The LCS/PW gravity drain was video inspected sequentially, from MH4 through to MHA, MHB and MHC, and indicated that the pipe was in good condition (Photo 12).

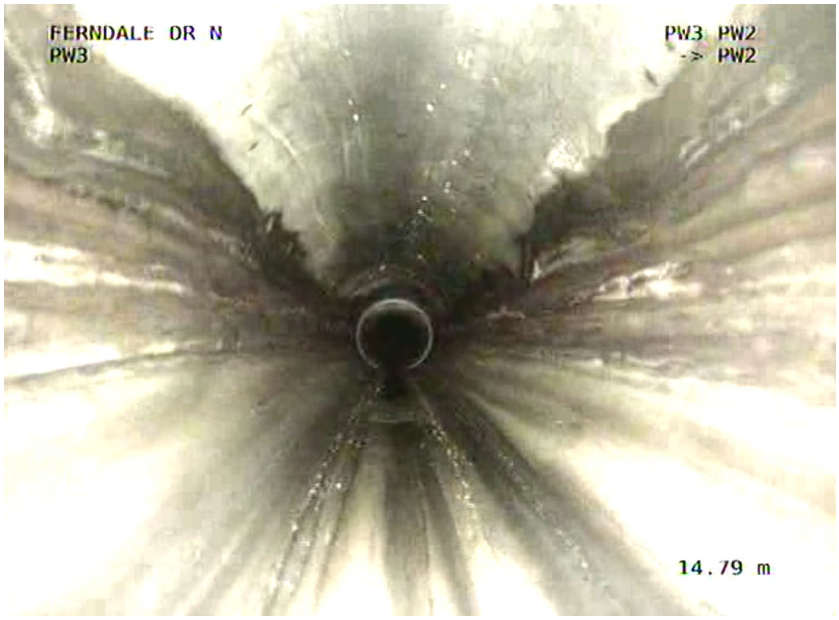


Photo 11: Purge well main condition, approximately 15 m downstream of PW3.

Photo 12: LCS/PW gravity drain condition after flushing, approximately 12 m downstream of MH4.

4.5 Groundwater Collection Gallery and Toe-Drain

In 2020, the Gallery was inspected following flushing of the Gallery from GC7N to GC1. Based on previous inspection programs, it was anticipated the thickest accumulation of precipitate would be observed in the section between GC7N and GC5N. Although the precipitation in this section was thick, it was soft and appeared to have been completely removed following flushing, as shown in Photo 13.

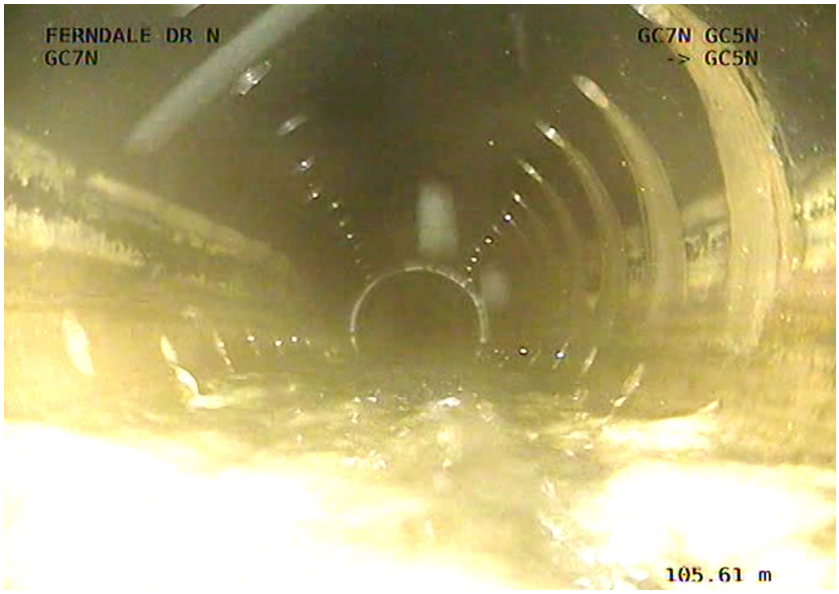


Photo 13: Typical conditions within Gallery between manholes GC7N and GC5N following flushing.

The Gallery section between GC5N and GC4 was inspected following flushing and indicated that this pipe section was in good condition, as shown in Photo 14. A video still of a perforation in the Gallery collection pipe is shown in Photo 15. This photo indicates that there was no visible clogging. This condition is considered to represent typical conditions in the Gallery between manholes GC7N and GC4.

Photo 14: Typical conditions within Gallery between manholes GC5N and GC4 following flushing.

Photo 15: Perforations in the sidewall of the Gallery collector pipe between GC5N and GC4.

Inspection of the southern half of the groundwater collection gallery between GC4 and GC2 indicated that the pipe is in good condition and no deficiencies were noted; typical conditions were observed, as indicated in Photo 16.

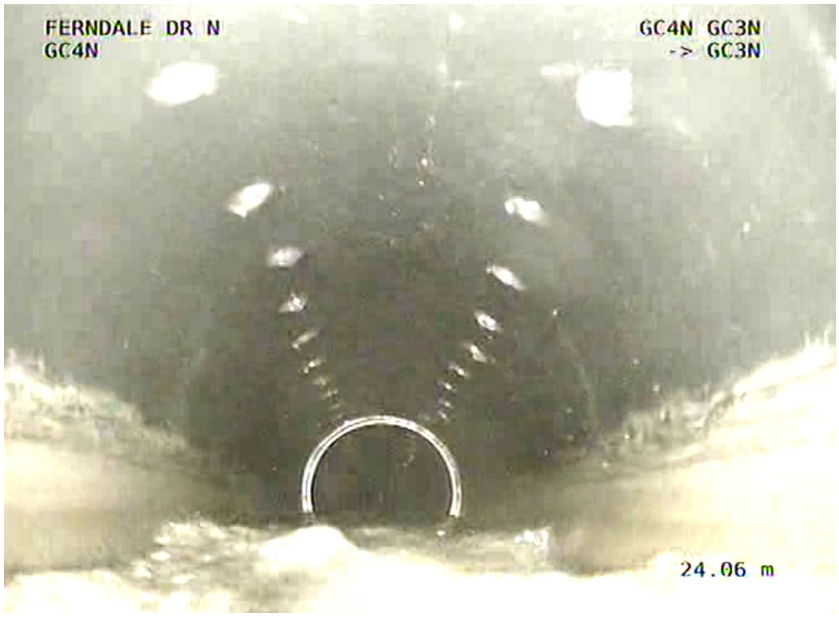


Photo 16: Typical conditions within Gallery between manholes GC4N and GC3N.

Gallery sections between GC2 and GC1 represent the older section of the Gallery that was constructed in 2002. The inspection along these pipe sections indicates unobstructed flows within the pipe. Clogged perforations at several locations within the first 12 m of this section were observed as shown in Photo 17, similar to the clogging observed between GC4 and GC2 prior to reconstruction. The extent of clogging in this section of the Gallery appears relatively unchanged in recent years. Minimal clogging was observed for the remaining section of the Gallery between GC2 and

GC1; typical conditions are represented in Photo 18. This section of the Gallery is furthest from the landfill and progressive clogging is expected to have minimal effect on the operation of the Gallery. Future replacement of the Gallery section between GC2 and GC1 is not considered to be required at this time. Furthermore, it is noted that reconstruction of this part of the Gallery would be problematic as a result of the proximity to the adjacent creek and building housing the flow recording equipment. In previous years, gravel and other debris was noted to have built-up at the base of GC1 following flushing of the Gallery; this build-up material was removed in previous years but was not present in 2020. It is recommended the potential build-up of material at GC1 as a result of flushing operations be evaluated each year, and this material should be removed as required using the vacuum truck.

Photo 17: Typical conditions within Gallery approximately 12m downgradient of GC2 showing clogged perforations

Photo 18: Typical conditions within Gallery between manholes GC2 and GC1 following flushing.

The Gallery Toe-Drain sections between TDMH2 and TDMH1 and between TDMH1 and GC2 were inspected prior to and following flushing. Inspection of the Toe-Drain connection to the Gallery indicated no visible clogging, and typical conditions are represented in Photo 19. Following reconstruction of the Gallery in 2017, minimal flow is observed in the Toe-Drain due to the increased effectiveness of the Gallery.

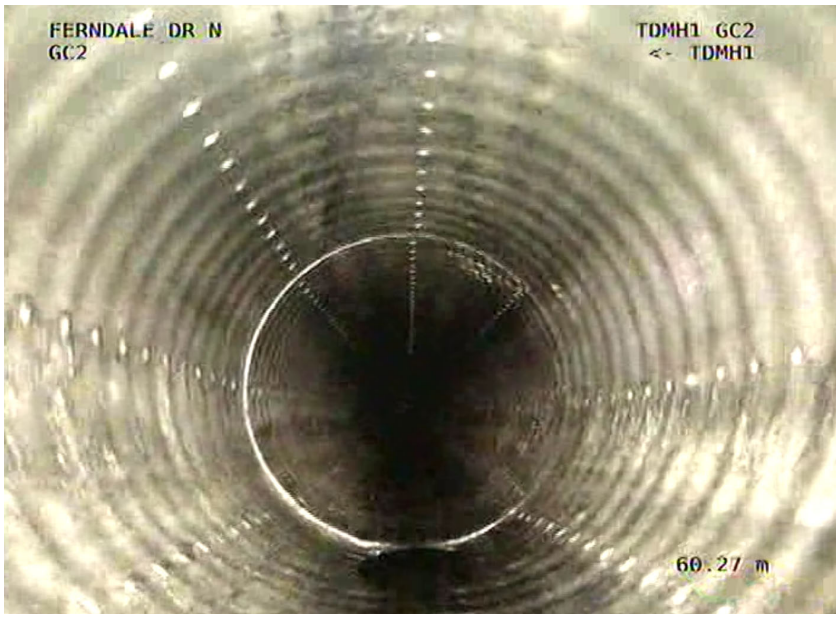


Photo 19: Typical conditions within Gallery between manholes TDMH1 and GC2 following flushing.

5.0 SUMMARY AND CONCLUSIONS

The following summary and conclusions are provided based on observations from the 2020 video inspection:

- The portion of Cells 2A and 3A LCS that can be inspected appears to be in a good condition. Leachate flows appear unobstructed, with the exception of the northern extent of the 3A West Header, where some sumping (a low point in the pipe) is observed causing locally high leachate levels within the LCS;
- The Cells 2B and 3B LCS appeared to be in a good condition and leachate flows appear to be unobstructed;
- The Cells 2C and 3C LCS appeared to be in a good condition and leachate flows appear to be unobstructed;
- Cleaning of the PW Gravity Drain removed most of the accumulated deposits. All conveyance piping and manhole access points were observed to be in good condition;
- The entire length of the Gallery was cleaned and inspected. The Gallery was noted to be in good condition and unobstructed flows were observed;
- Clogged perforations were observed at several locations within the first 12 m of the Gallery immediately downstream of GC2. The extent of clogging appears relatively unchanged in recent years and is not expected to materially affect the performance of the Gallery;
- Minimal clogging was observed for the remaining section of the Gallery between GC2 and GC1; and
- The Gallery Toe-Drain section between TDMH2 and GC2 appeared to be in good condition and is essentially dry following reconstruction of the Gallery in 2017.

6.0 RECOMMENDATIONS

- Continued annual flushing and inspection of the LCS, Gallery, PW Gravity drain and landfill Gravity drain should be conducted.
- It is recommended the potential build-up of material at GC1 as a result of flushing operations be evaluated each year and removed as required using the vacuum truck.

Signature Page

Golder Associates Ltd.

Jamie Bonany, MA.Sc.
Project Scientist

Paul Dewaele, M.Sc., P.Eng.
Principal

JEB/PJD/cdr

Golder and the G logo are trademarks of Golder Associates Corporation

https://golderassociates.sharepoint.com/sites/31835g/deliverables/2020 lcs cleaning report/18107598 rep 2021'06'17 lcs cleaning and inspection_final.docx

8.0 REFERENCES

CH2M Hill Canada and Golder Associates Ltd., 2002. Sandy Hollow Landfill Site, Replacement/Extension of Groundwater Collection Gallery. May 2002.

Golder Associates Ltd., 2005. Revised Design and Operations Plan, Sandy Hollow Landfill, City of Barrie. File No. 021-1365, August 2005.

Golder Associates Ltd., 2009. Groundwater Collection Gallery Investigation Report. Barrie, Ontario. File No. 08-1170-0520, June 2009.

Golder Associates Ltd., 2015. Gallery Performance Investigation Report. City of Barrie Landfill. File No. 08-1170-0519, December 2015.

Golder Associates Ltd., 2019. Design and Operations Plan, City of Barrie Landfill, City of Barrie. File No. 1773343, March 2019.

Golder Associates Ltd., 2021. 2020 Annual Operations Report. City of Barrie Landfill. File No. 1773343, June 2021.

LIMITATIONS

This report was prepared by Golder Associates Ltd. (Golder) for the exclusive use of The City of Barrie (City) in accordance with the scope and conditions agreed upon between these parties, acknowledging that this report is intended for submission to applicable regulatory agencies for their review.

The report is based on data and information collected in the current monitoring year referred to in the report, as well as historical information and data obtained by Golder and that provided to Golder by the City. Golder Associates has relied in good faith on all information provided by others and does not accept responsibility for any deficiency, misstatements, or inaccuracies contained in these reports as a result of omissions, misinterpretation, or fraudulent acts of the persons contacted or errors or omissions in the reviewed documentation.

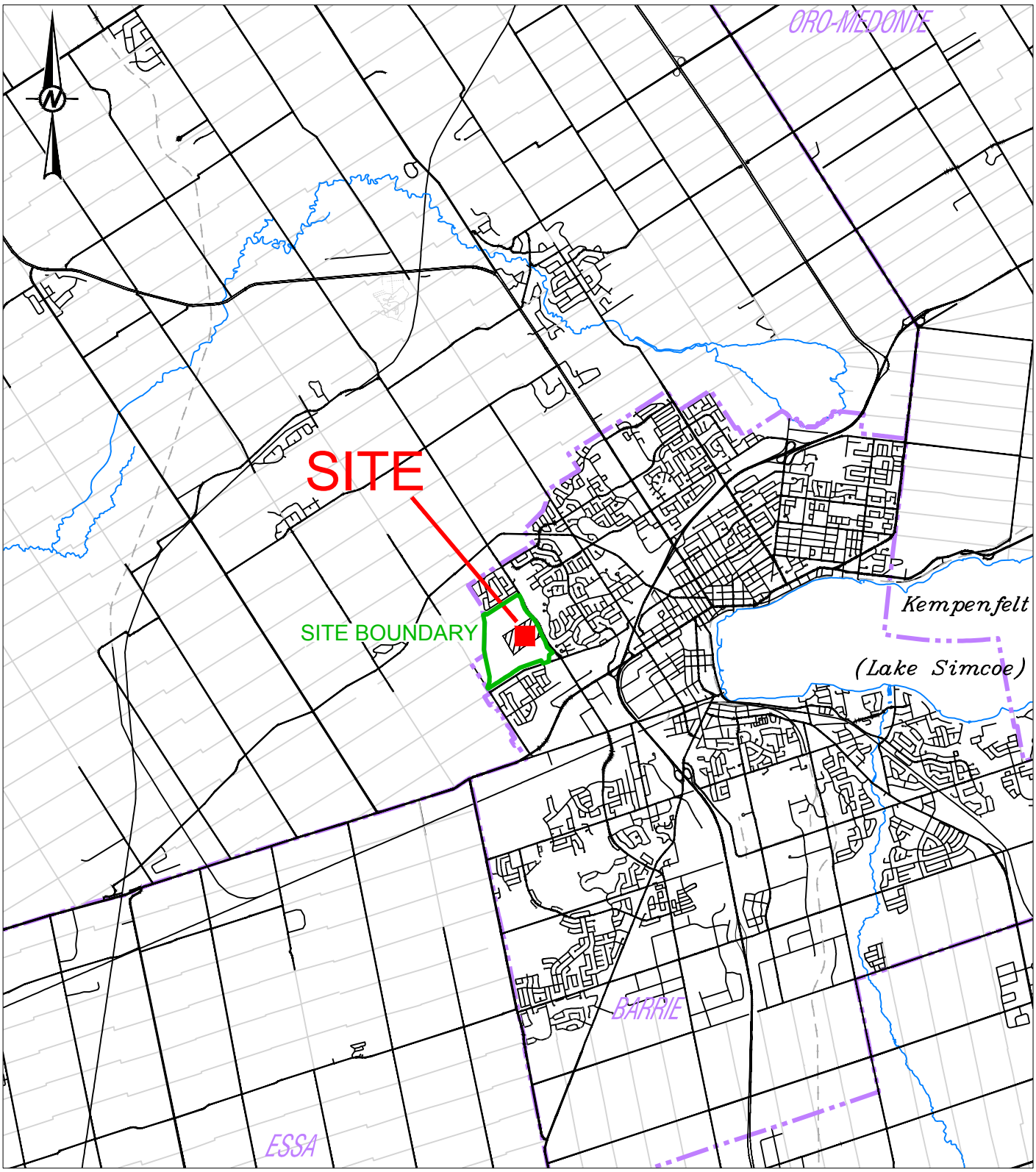
The services performed as described in this report were conducted in a manner consistent with that level of care and skill normally exercised by other members of the engineering and science professions currently practicing under similar conditions, subject to the time limits and financial and physical constraints applicable to the services.

Any use which a third party makes of this report, or any reliance on, or decisions to be made based on it, are the responsibilities of such third parties. Golder Associates Ltd. accepts no responsibility for damages, if any, suffered by any third party (other than as noted above) as a result of decisions made or actions based on this report. The findings and conclusions of this report are valid only as of the date of this report. If new information is discovered in future work, including excavations, borings, or other studies, Golder Associates should be requested to re-evaluate the conclusions of this report, and to provide amendments as required.

Electronic media is susceptible to modification, deterioration and incompatibility. In the event that data or reports provided by Golder are distributed and/or electronically posted, Golder does not warrant, guarantee, or make any representations regarding the use of, or results in terms of correctness, accuracy, reliability or current conditions. No express or implied warranty or fitness for a particular use is made. Any use of the electronic information will be at the sole risk of the party making use of this information.

APPENDIX H-1

Figures



0 2,500 5,000
1:100,000 METRES

CLIENT
THE CITY OF BARRIE

PROJECT
2020 LEACHATE COLLECTION SYSTEM, PURGE WELL, AND GROUNDWATER GALLERY CLEANING AND INSPECTION REPORT, BARRIE LANDFILL, BARRIE, ONTARIO

CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2020-12-14
DESIGNED	
PREPARED	STB
REVIEWED	JEB
APPROVED	PJD

TITLE
REGIONAL LOCATION PLAN

PROJECT NO.	CONTROL	REV.	FIGURE
18107598	0008	A	H-1

Last Edited By: sbowerman Date: 2021-06-14 Time:9:42:37 AM | Printed By: SBowerman Date: 2021-06-14 Time:9:44:25 AM
Path: \\golder.gds\complexdata\office\mississauga\SIM\Clients\City_of_Barrie\Barrie_Landfill\99_PROJ\18107598_Engineering_Services\40_PROD\0008_Annual_LCS_Report_2020\ | File Name: 18107598-0008-CW-0001.dwg
25 mm IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A

LEGEND

- LANDFILL SITE PROPERTY LIMIT
- LANDFILL COMPLIANCE BOUNDARY
- APPROXIMATE LIMIT OF LANDFILL
- GROUNDWATER COLLECTION GALLERY & MANHOLE
- LINED LANDFILL CELL AREA
- PURGE WELL / LEACHATE GRAVITY MAIN
- LEACHATE COLLECTION PIPE
- LEACHATE COLLECTION PIPE CLEANOUT
- TOE-DRAIN & MANHOLE
- SHEET PILE CUT-OFF WALL
- STREAM (DASHED WHERE INTERMITTENT)
- 270 LANDFILL GRADE CONTOUR masl (1m INTERVAL)
- CONTAMINANT ATTENUATION ZONE (CAZ)

REFERENCES

1. CITY OF BARRIE MUNICIPAL MAPPING
2. LEGAL SURVEY RUDY MAK S-6510-C (2003); UPDATED ANNUALLY VARIOUS
3. TOPOGRAPHY SURVEY PLAN DATED NOVEMBER 26, 2019 BY SMC GEOMATICS INC.

0 100 200
1:4,000 METRES

CLIENT
THE CITY OF BARRIE

PROJECT
2020 LEACHATE COLLECTION SYSTEM, PURGE WELL, AND GROUNDWATER GALLERY CLEANING AND INSPECTION REPORT, BARRIE LANDFILL, BARRIE, ONTARIO

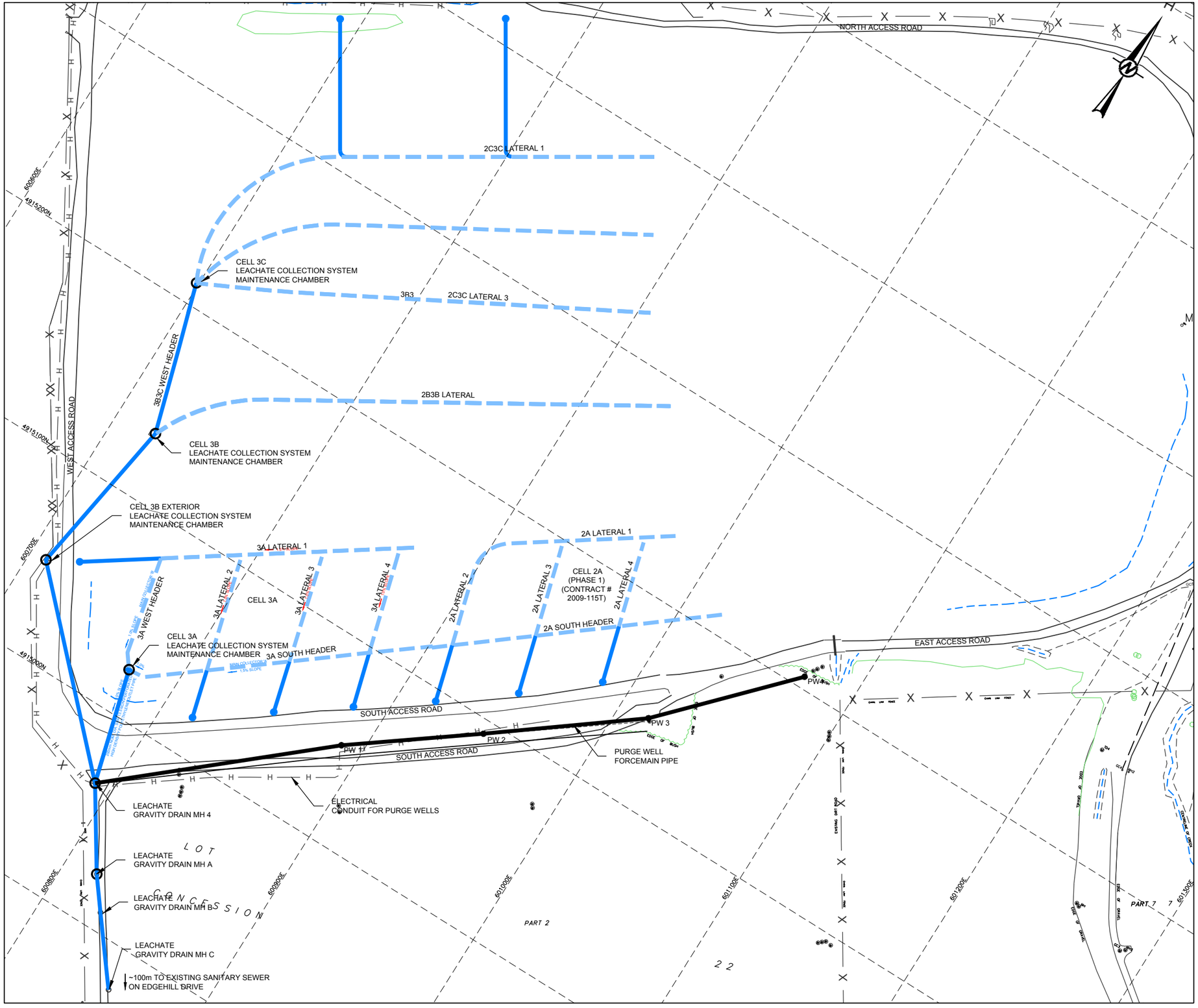
TITLE
SITE LOCATION PLAN

CONSULTANT
GOLDER MEMBER OF WSP

YYYY-MM-DD	2020-12-14
DESIGNED	
PREPARED	STB
REVIEWED	JEB
APPROVED	PJD

PROJECT NO.	CONTROL	REV.	FIGURE
18107598	0008	A	H-2

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B
25 mm
Path: \\golder.gds\complexdata\office\mississauga\SIM\Clients\City_of_Barrie\Barrie_Landfill\99_PROJ\18107598_Engineering_Services\40_PROD\0008_Annual_LCS_Report_2020_ | File Name: 18107598-0008-CW-0002.dwg | Last Edited By: sbowerman Date: 2020-12-14 Time:2:11:20 PM | Printed By: SBowerman Date: 2021-06-14 Time:9:45:05 AM



LEGEND

- ACCESS ROAD
- FENCE LINE
- LEACHATE GRAVITY DRAIN PIPELINE
- ELECTRICAL CONDUIT FOR PURGE WELLS
- 200mm NOM. DIA. SDR 13.5 PERFORATED HDPE LEACHATE COLLECTOR PIPE
- 200mm NOM. DIA. SDR 13.5 NON-PERFORATED HDPE CLEAN-OUT RISER PIPE

NOTE(S)

1. PROJECTION IS UTM NAD83-17.

REFERENCE(S)

1. EXISTING TOPOGRAPHIC CONTOURS WITHIN LANDFILL AREA ARE BASED ON TOPOGRAPHIC SURVEY DATED MARCH 9, 2011 BY J.D. BARNES LIMITED.
2. LANDFILL BASE GRADE CONTOURS AND LEACHATE COLLECTION SYSTEM LAYOUT ARE BASED ON DESIGN DRAWINGS FOR PHASES 0 TO 3, BY GOLDER ASSOCIATES LTD.

0 50 100
1:2,000 METRES

CLIENT
THE CITY OF BARRIE

PROJECT
2020 LEACHATE COLLECTION SYSTEM, PURGE WELL, AND GROUNDWATER GALLERY CLEANING AND INSPECTION REPORT, BARRIE LANDFILL, BARRIE, ONTARIO

TITLE
LEACHATE COLLECTION SYSTEM LAYOUT

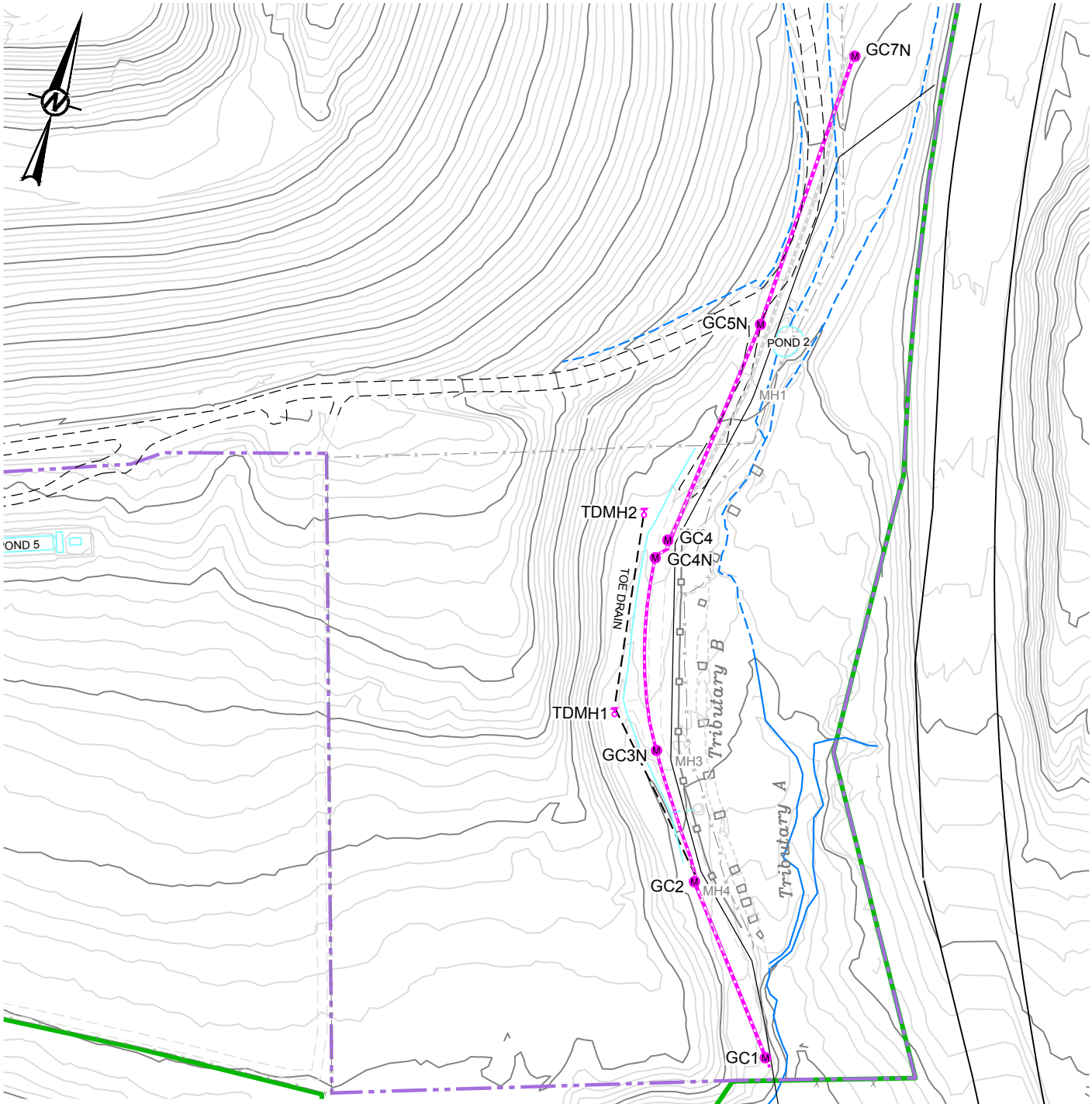
CONSULTANT
GOLDER MEMBER OF WSP

YYYY-MM-DD	2020-12-14
DESIGNED	
PREPARED	STB
REVIEWED	JEB
APPROVED	PJD

PROJECT NO.	CONTROL	REV.	FIGURE
18107598	0008	A	H-3

Path: \\golder.gds\comp\ea\data\office\mississauga\SIM\Clients\City_of_Barrie\Barrie_Landfill\99_PROJ\18107598_Engineering_Services\40_PROD\0008_Annual_LCS_Report_2020\ | File Name: 18107598-0008-CW-0003.dwg | Last Edited By: sbowerman Date: 2021-06-14 Time:9:37:08 AM | Printed By: SBowerman Date: 2021-06-14 Time:9:48:32 AM

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B
25 mm
0



LEGEND

- LANDFILL SITE PROPERTY LIMIT
- LANDFILL COMPLIANCE BOUNDARY
- GROUNDWATER COLLECTION GALLERY & MANHOLE
- TOE-DRAIN & MANHOLE
- SHEET PILE CUT-OFF WALL
- STREAM (DASHED WHERE INTERMITTENT)
- 270 LANDFILL GRADE CONTOUR masl (1m INTERVAL)*

0 50 100
1:2,500 METRES

PROJECTION UTM NAD 83 ZONE 17
*REFER TO FIGURE H-2 FOR FULL LEGEND

CLIENT
THE CITY OF BARRIE

PROJECT
2020 LEACHATE COLLECTION SYSTEM, PURGE WELL, AND GROUNDWATER GALLERY CLEANING AND INSPECTION REPORT, BARRIE LANDFILL, BARRIE, ONTARIO

CONSULTANT
GOLDER MEMBER OF WSP

YYYY-MM-DD	2020-12-14
DESIGNED	
PREPARED	STB
REVIEWED	JEB
APPROVED	PJD

TITLE
GROUNDWATER COLLECTION GALLERY

PROJECT NO.	CONTROL	REV.	FIGURE
18107598	0008	A	H-4

Last Edited By: sbowerman Date: 2021-06-14 Time:10:48:32 AM | Printed By: SBowerman Date: 2021-06-14 Time:10:49:02 AM
Path: \\golder.gds\complexdata\office\mississauga\SIM\Clients\City_of_Barrie\Barrie_Landfill\99_PROJ\18107598_Engineering_Services\40_PROD\0008_Annual_LCS_Report_2020\ | File Name: 18107598-0008-CW-0004.dwg
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A
25 mm
0

APPENDIX H-2

Inspection Records

Section Profile

Project
BARRIE LANDFILL 2020

2020-09-14

Nr.	Upstream MH	Downstream MH	Date	Street	Media Label	Material	Total Length	Length Surveyed
7	SCLNOUT6	END	2020-09-15	FERNDALE DR N	002	Polypropylene	33.69	33.69
8	SCLNOUT5	END	2020-09-15	FERNDALE DR N	002	Polypropylene	37.00	37.00
9	2A SOUTH HEADER CLEAN OUT	END	2020-09-15	FERNDALE DR N	002	Polypropylene	32.93	32.93
10	SCLNOUT4	END	2020-09-15	FERNDALE DR N	002	Polypropylene	36.00	36.00
11	SCLNOUT3	END	2020-09-15	FERNDALE DR N	002	Polypropylene	31.15	31.15
12	SCLNOUT2	END	2020-09-15	FERNDALE DR N	002	Polypropylene	29.55	29.55
13	SCLNOUT1	END	2020-09-15	FERNDALE DR N	002	Polypropylene	27.57	27.57
17	END	3A MH	2020-09-16	FERNDALE DR N	003	Polypropylene	58.88	58.88
18	END	3A MH	2020-09-16	FERNDALE DR N	003	Polypropylene	146.43	146.43

9 x Circular 150 = 433.20 Total Length (433.20 Length Surveyed)

Nr.	Upstream MH	Downstream MH	Date	Street	Media Label	Material	Total Length	Length Surveyed
1	NCLNOUT2	2C3CLATERAL1	2020-09-14	FERNDALE DR N	001	Polypropylene	74.59	74.59
2	NCLNOUT1	2C3CLATERAL1	2020-09-14	FERNDALE DR N	001	Polypropylene	75.77	75.77
3	END	3C MH	2020-09-14	FERNDALE DR N	001	Polypropylene	170.92	170.92
4	END	3C MH	2020-09-14	FERNDALE DR N	001	Polypropylene	159.36	159.36
5	END	3C MH	2020-09-14	FERNDALE DR N	001	Polypropylene	181.94	181.94
6	3CMH	3BMH	2020-09-14	FERNDALE DR N	001	Polypropylene	78.76	78.76

6 x Circular 175 = 741.34 Total Length (741.34 Length Surveyed)

Nr.	Upstream MH	Downstream MH	Date	Street	Media Label	Material	Total Length	Length Surveyed
14	3BMH	3B EXTERIOR MH	2020-09-15	FERNDALE DR N	002	Polypropylene	84.48	84.48
15	END	3B	2020-09-15	FERNDALE DR N	002	Polypropylene	204.95	204.95
16	END	CLEANOUT	2020-09-15	FERNDALE DR N	002	Polypropylene	171.03	171.03
19	PW4	PW3	2020-09-16	FERNDALE DR N	003	Polypropylene	72.63	**61.96**
19	PW4	PW3	2020-09-16	FERNDALE DR N	003	Polypropylene	72.63	72.63
20	PW3	PW2	2020-09-16	FERNDALE DR N	003	Polypropylene	85.00	85.00
21	PW2	PW1	2020-09-16	FERNDALE DR N	003	Polypropylene	74.84	74.84
22	PW1	MH 4	2020-09-16	FERNDALE DR N	003	Polypropylene	128.98	128.98
23	3B EXTERIOR	MH 4	2020-09-16	FERNDALE DR N	004	Polypropylene	87.53	87.53
24	3A MH	MH 4	2020-09-17	FERNDALE DR N	004	Polypropylene	60.33	60.33
25	MH 4	MH 3	2020-09-17	FERNDALE DR N	004	Polypropylene	24.28	24.28
26	MH 3	MH 2	2020-09-17	FERNDALE DR N	004	Polypropylene	18.39	18.39
27	MH 2	MH 1	2020-09-17	FERNDALE DR N	004	Polypropylene	83.70	83.70
28	GC7N	GC5N	2020-09-17	FERNDALE DR N	004	Polypropylene	117.99	117.99
29	GC5N	GC4	2020-09-17	FERNDALE DR N	004	Polypropylene	101.44	101.44
30	GC4	GC4N	2020-09-17	FERNDALE DR N	004	Polypropylene	10.36	10.36
31	GC4N	GC3N	2020-09-17	FERNDALE DR N	004	Polypropylene	78.79	78.79
33	GC3N	GC2	2020-09-18	FERNDALE DR N	005	Polypropylene	58.05	58.05

18 x Circular 200 = 1462.76 Total Length (1524.72 Length Surveyed)

Nr.	Upstream MH	Downstream MH	Date	Street	Media Label	Material	Total Length	Length Surveyed
32	TDMH2	TDMH1	2020-09-17	FERNDALE DR N	004	Polypropylene	80.77	80.77

Section Profile

Project	
BARRIE LANDFILL 2020	**2020-09-14**

34	TDMH1	GC2	2020-09-18	FERNDALE DR N	005	Polypropylene	78.95	78.95
35	GC2	GC1	2020-09-18	FERNDALE DR N	005	Polypropylene	79.49	79.49

3 x Circular 300 = 239.21 Total Length (239.21 Length Surveyed)

Total: 36 = 2876.51 Total Length (2938.47 Length Surveyed)

Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
2020-09-14	**62036**	**Saturated**	**SEWER TECH_PM**	**U-1215-07000693**	**NCLNOUT2**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Downstream**	**4.0**	**74.6**	**74.6**

City :	**BARRIE**	Drainage Area :		Upstream MH :	**NCLNOUT2**
Street :	**FERNDALE DR N**	Media Label :	**001**	Up Rim to Invert :	**0.0**
Location Code :	**Yard**	Flow Control :		Downstream MH :	**2C3CLATERAL1**
Location Details :		Sheet Number :		Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Other**
Pipe size:	**175**	Sewer Category :	**SEC**
Pipe material:	**Polypropylene**	Purpose:	**Routine Assessment**
Lining Method :		Owner :	

Additional Info :

1:563	Distance	Code	Observation	Counter	Photo	Grade
NCLNOUT2						
	0.00	AEP	End of Pipe / NCLNOUT	00:00:09		
	0.00	MWL	Water Level, 0% of cross sectional area	00:00:10		
	74.59	ADP	Discharge Point	00:07:46		
2C3CLATERAL1						

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	0000	0.0	0.0	0.0	0.0	0.0	0.0

Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
2020-09-14	**62036**	**Saturated**	**SEWER TECH_PM**	**U-1215-07000693**	**NCLNOUT1**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Downstream**	**4.0**	**75.8**	**75.8**

City :	**BARRIE**	Drainage Area :		Upstream MH :	**NCLNOUT1**
Street :	**FERNDALE DR N**	Media Label :	**001**	Up Rim to Invert :	**0.0**
Location Code :	**Yard**	Flow Control :		Downstream MH :	**2C3CLATERAL1**
Location Details :		Sheet Number :		Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Other**
Pipe size:	**175**	Sewer Category :	**SEC**
Pipe material:	**Polypropylene**	Purpose:	**Routine Assessment**
Lining Method :		Owner :	

Additional Info :

1:572	Distance	Code	Observation	Counter	Photo	Grade
NCLNOUT1						
	0.00	AEP	End of Pipe / NCLNOUT1	00:00:08		
	0.00	MWL	Water Level, 5% of cross sectional area	00:00:09		
	75.77	ADP	Discharge Point / 2C3CLATERAL1	00:06:19		
2C3CLATERAL1						

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	0000	0.0	0.0	0.0	0.0	0.0	0.0

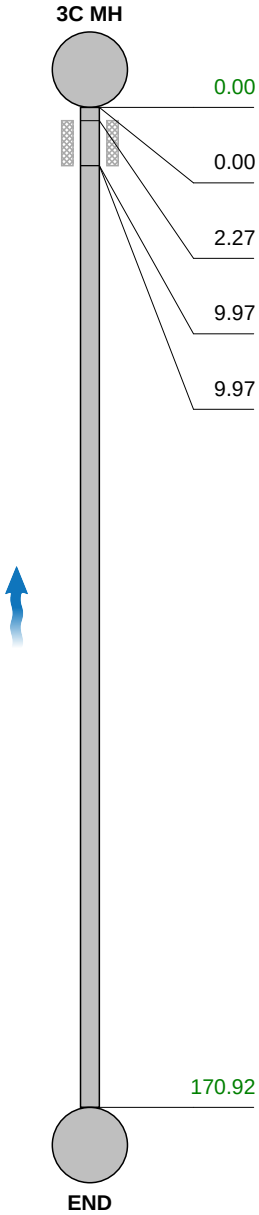
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
2020-09-14	**62036**	**Saturated**	**SEWER TECH_PM**	**U-1215-07000693**	**2C3C LATERAL 3**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Upstream**	**4.0**	**170.9**	**170.9**

City :	**BARRIE**	Drainage Area :		Upstream MH :	**END**
Street :	**FERNDALE DR N**	Media Label :	**001**	Up Rim to Invert :	**0.0**
Location Code :	**Yard**	Flow Control :		Downstream MH :	**3C MH**
Location Details :		Sheet Number :		Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Other**
Pipe size:	**175**	Sewer Category :	**SEC**
Pipe material:	**Polypropylene**	Purpose:	**Routine Assessment**
Lining Method :		Owner :	

Additional Info :



1:1290	Distance		Code	Observation	Counter	Photo	Grade
	0.00		AMH	Manhole / 3C MH	00:00:09		
	0.00		MWL	Water Level, 100% of cross sectional area	00:00:10		
	2.27	S01	MCU	Camera Underwater, Start	00:00:22		
	9.97	F01	MCU	Camera Underwater, Finish	00:01:01		M4
	9.97		MWL	Water Level, 25% of cross sectional area	00:01:02		
	170.92		AEP	End of Pipe / END	00:20:16		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	4200	0.0	8.0	8.0	0.0	4.0	4.0

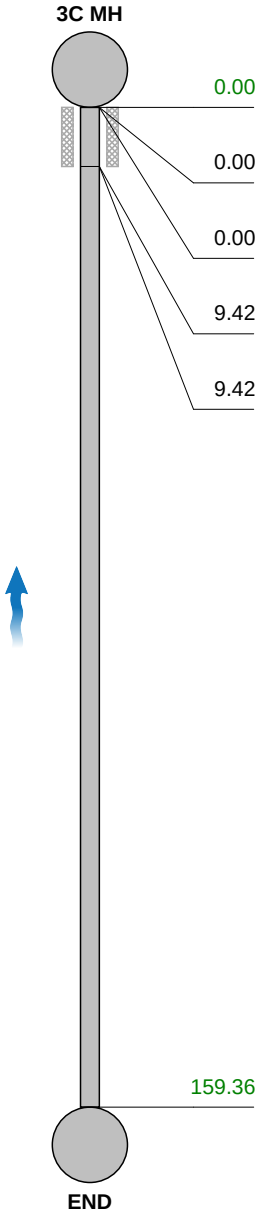
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
2020-09-14	**62036**	**Saturated**	**SEWER TECH_PM**	**U-1215-07000693**	**2C3CLATERAL 2**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Upstream**	**4.0**	**159.4**	**159.4**

City :	**BARRIE**	Drainage Area :		Upstream MH :	**END**
Street :	**FERNDALE DR N**	Media Label :	**001**	Up Rim to Invert :	**0.0**
Location Code :	**Yard**	Flow Control :		Downstream MH :	**3C MH**
Location Details :		Sheet Number :		Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Other**
Pipe size:	**175**	Sewer Category :	**SEC**
Pipe material:	**Polypropylene**	Purpose:	**Routine Assessment**
Lining Method :		Owner :	

Additional Info :



1:1203	Distance		Code	Observation	Counter	Photo	Grade
	0.00		AMH	Manhole / 3CMH	00:00:08		
	0.00		MWL	Water Level, 100% of cross sectional area	00:00:09		
	0.00	S01	MCU	Camera Underwater, Start	00:00:09		
	9.42	F01	MCU	Camera Underwater, Finish	00:01:09		M4
	9.42		MWL	Water Level, 25% of cross sectional area	00:01:10		
	159.36		AEP	End of Pipe / CAN'T PULL ANY FURTHER	00:32:54		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	4200	0.0	8.0	8.0	0.0	4.0	4.0

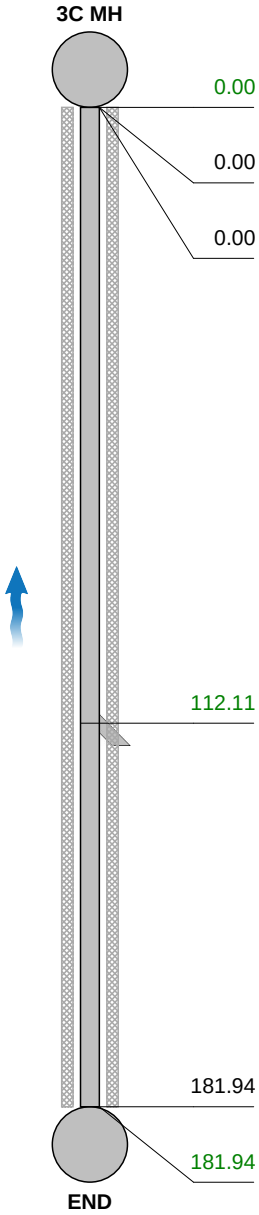
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
2020-09-14	**62036**	**Saturated**	**SEWER TECH_PM**	**U-1215-07000693**	**2C3C LATERAL1**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Upstream**	**4.0**	**181.9**	**181.9**

City :	**BARRIE**	Drainage Area :		Upstream MH :	**END**
Street :	**FERNDALE DR N**	Media Label :	**001**	Up Rim to Invert :	**0.0**
Location Code :	**Yard**	Flow Control :		Downstream MH :	**3C MH**
Location Details :		Sheet Number :		Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Other**
Pipe size:	**175**	Sewer Category :	**SEC**
Pipe material:	**Polypropylene**	Purpose:	**Routine Assessment**
Lining Method :		Owner :	

Additional Info :



1:1374	Distance		Code	Observation	Counter	Photo	Grade
	0.00		AMH	Manhole / 3CMH	00:00:12		
	0.00		MWL	Water Level, 100% of cross sectional area	00:00:12		
	0.00	S01	MCU	Camera Underwater, Start	00:00:15		
	112.11		TF	Tap Factory Made at 9 o'clock, 175mm dim	00:19:58		
	181.94	F01	MCU	Camera Underwater, Finish	00:43:10		M4
	181.94		AEP	End of Pipe / END	00:43:11		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	4F00	0.0	144.0	144.0	0.0	4.0	4.0

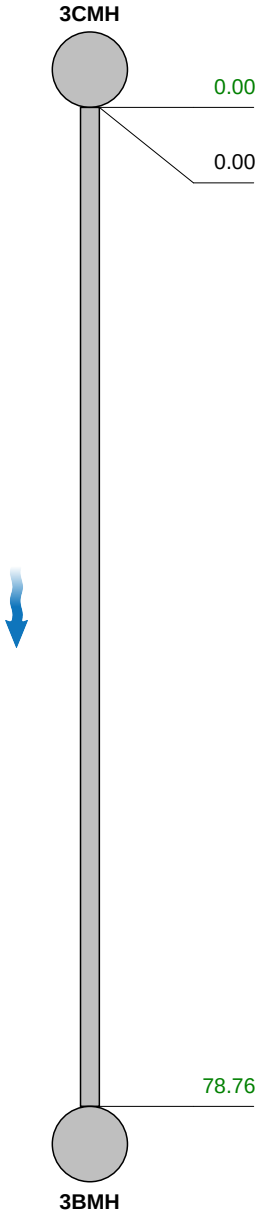
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
2020-09-14	**62036**	**Saturated**	**SEWER TECH_PM**	**U-1215-07000693**	**3CMH 3BMH**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Downstream**	**4.0**	**78.8**	**78.8**

City :	**BARRIE**	Drainage Area :		Upstream MH :	**3CMH**
Street :	**FERNDALE DR N**	Media Label :	**001**	Up Rim to Invert :	**0.0**
Location Code :	**Yard**	Flow Control :		Downstream MH :	**3BMH**
Location Details :		Sheet Number :		Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Other**
Pipe size:	**175**	Sewer Category :	**SEC**
Pipe material:	**Polypropylene**	Purpose:	**Routine Assessment**
Lining Method :		Owner :	

Additional Info :



1:595	Distance	Code	Observation	Counter	Photo	Grade
	0.00	AMH	Manhole / 3CMH	00:00:11		
	0.00	MWL	Water Level, 30% of cross sectional area	00:00:12		
	78.76	AMH	Manhole / 3BMH	00:06:56		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	0000	0.0	0.0	0.0	0.0	0.0	0.0

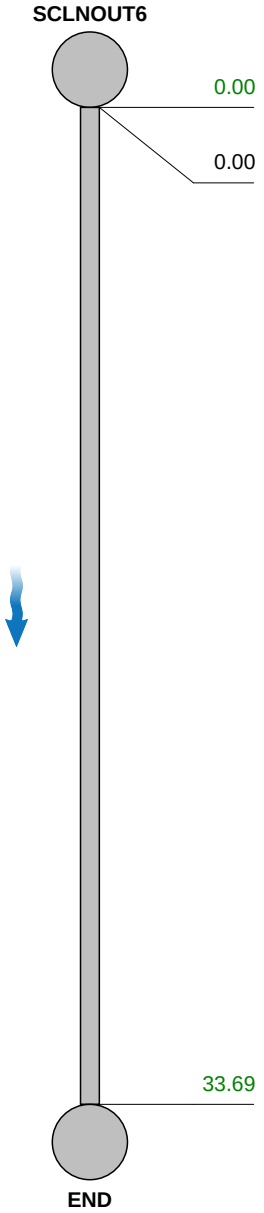
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
2020-09-15	**62037**	**Saturated**	**SEWER TECH_PM**	**U-1215-07000693**	**SCLNOUT 6**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Downstream**	**4.0**	**33.7**	**33.7**

City :	**BARRIE**	Drainage Area :		Upstream MH :	**SCLNOUT6**
Street :	**FERNDALE DR N**	Media Label :	**002**	Up Rim to Invert :	**0.0**
Location Code :	**Yard**	Flow Control :		Downstream MH :	**END**
Location Details :		Sheet Number :		Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Other**
Pipe size:	**150**	Sewer Category :	**SEC**
Pipe material:	**Polypropylene**	Purpose:	**Routine Assessment**
Lining Method :		Owner :	

Additional Info :



1:255	Distance	Code	Observation	Counter	Photo	Grade
	0.00	ACOM	Cleanout Mainline / SCLNOUT6	00:00:07		
	0.00	MWL	Water Level, 5% of cross sectional area	00:00:09		
	33.69	AEP	End of Pipe	00:04:21		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	0000	0.0	0.0	0.0	0.0	0.0	0.0

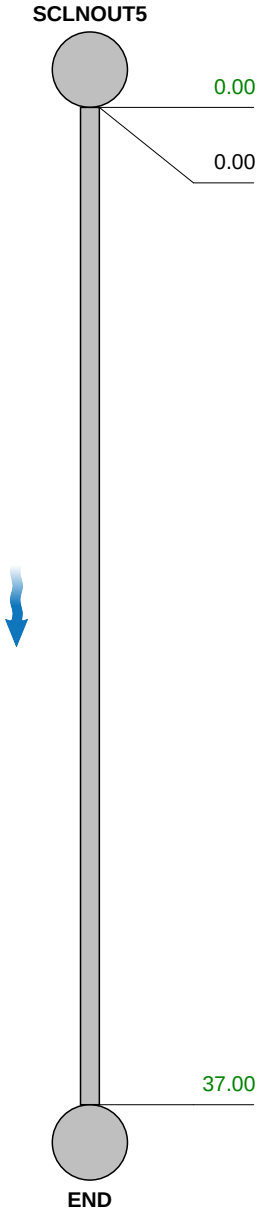
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
2020-09-15	**62037**	**Saturated**	**SEWER TECH_PM**	**U-1215-07000693**	**SCLNOUT5**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Downstream**	**4.0**	**37.0**	**37.0**

City :	**BARRIE**	Drainage Area :		Upstream MH :	**SCLNOUT5**
Street :	**FERNDALE DR N**	Media Label :	**002**	Up Rim to Invert :	**0.0**
Location Code :	**Yard**	Flow Control :		Downstream MH :	**END**
Location Details :		Sheet Number :		Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Other**
Pipe size:	**150**	Sewer Category :	**SEC**
Pipe material:	**Polypropylene**	Purpose:	**Routine Assessment**
Lining Method :		Owner :	

Additional Info :



1:280	Distance	Code	Observation	Counter	Photo	Grade
	0.00	ACOM	Cleanout Mainline / SCLNOUT5	00:00:12		
	0.00	MWL	Water Level, 5% of cross sectional area	00:00:13		
	37.00	AEP	End of Pipe	00:03:20		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	0000	0.0	0.0	0.0	0.0	0.0	0.0

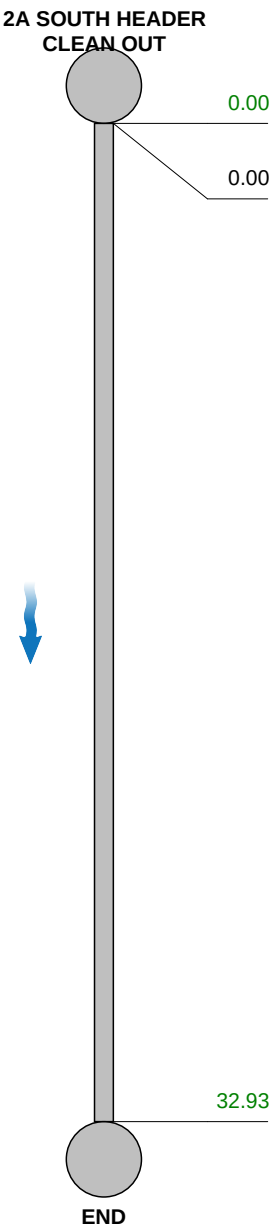
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
2020-09-15	**62037**	**Saturated**	**SEWER TECH_PM**	**U-1215-07000693**	**2A SOUTH HEADER CLEANOUT**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Downstream**	**4.0**	**32.9**	**32.9**

City :	**BARRIE**	Drainage Area :		Upstream MH :	**2A SOUTH HEADER CLEAN OUT**
Street :	**FERNDALE DR N**	Media Label :	**002**	Up Rim to Invert :	**0.0**
Location Code :	**Yard**	Flow Control :		Downstream MH :	**END**
Location Details :		Sheet Number :		Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Other**
Pipe size:	**150**	Sewer Category :	**SEC**
Pipe material:	**Polypropylene**	Purpose:	**Routine Assessment**
Lining Method :		Owner :	

Additional Info :



1:249 Distance	Code	Observation	Counter	Photo	Grade
0.00	ACOM	Cleanout Mainline / 2A SOUTH HEADER	00:00:11		
0.00	MWL	Water Level, 5% of cross sectional area	00:00:11		
32.93	AEP	End of Pipe	00:03:04		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	0000	0.0	0.0	0.0	0.0	0.0	0.0

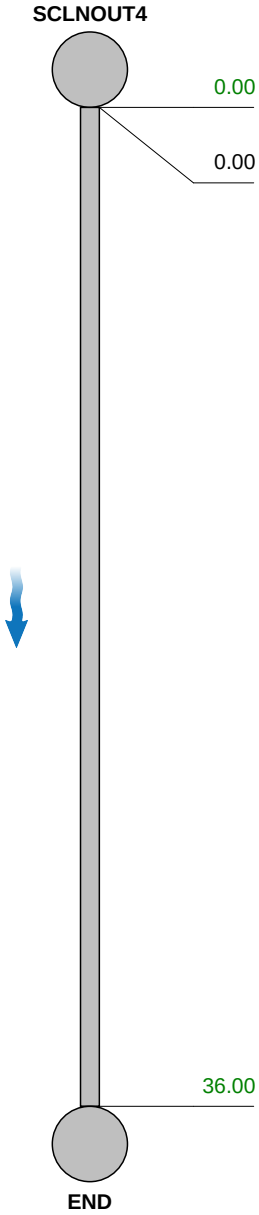
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
2020-09-15	**62037**	**Saturated**	**SEWER TECH_PM**	**U-1215-07000693**	**SCLNOUT4**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Downstream**	**4.0**	**36.0**	**36.0**

City :	**BARRIE**	Drainage Area :		Upstream MH :	**SCLNOUT4**
Street :	**FERNDALE DR N**	Media Label :	**002**	Up Rim to Invert :	**0.0**
Location Code :	**Yard**	Flow Control :		Downstream MH :	**END**
Location Details :		Sheet Number :		Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Other**
Pipe size:	**150**	Sewer Category :	**SEC**
Pipe material:	**Polypropylene**	Purpose:	**Routine Assessment**
Lining Method :		Owner :	

Additional Info :



1:272	Distance	Code	Observation	Counter	Photo	Grade
	0.00	ACOM	Cleanout Mainline / SCLNOUT4	00:00:12		
	0.00	MWL	Water Level, 5% of cross sectional area	00:00:12		
	36.00	AEP	End of Pipe	00:03:03		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	0000	0.0	0.0	0.0	0.0	0.0	0.0

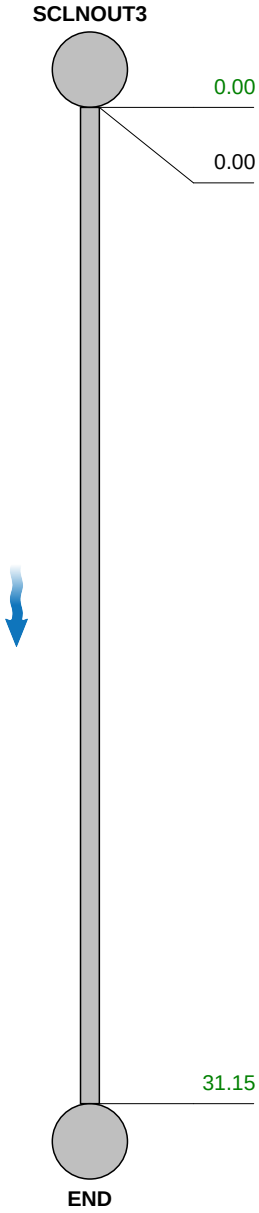
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
2020-09-15	**62037**	**Saturated**	**SEWER TECH_PM**	**U-1215-07000693**	**SCLNOUT3**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Downstream**	**4.0**	**31.2**	**31.2**

City :	**BARRIE**	Drainage Area :		Upstream MH :	**SCLNOUT3**
Street :	**FERNDALE DR N**	Media Label :	**002**	Up Rim to Invert :	**0.0**
Location Code :	**Yard**	Flow Control :		Downstream MH :	**END**
Location Details :		Sheet Number :		Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Other**
Pipe size:	**150**	Sewer Category :	**SEC**
Pipe material:	**Polypropylene**	Purpose:	**Routine Assessment**
Lining Method :		Owner :	

Additional Info :



1:236	Distance	Code	Observation	Counter	Photo	Grade
	0.00	ACOM	Cleanout Mainline / SCLNOUT3	00:00:11		
	0.00	MWL	Water Level, 0% of cross sectional area	00:00:12		
	31.15	AEP	End of Pipe	00:02:42		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	0000	0.0	0.0	0.0	0.0	0.0	0.0

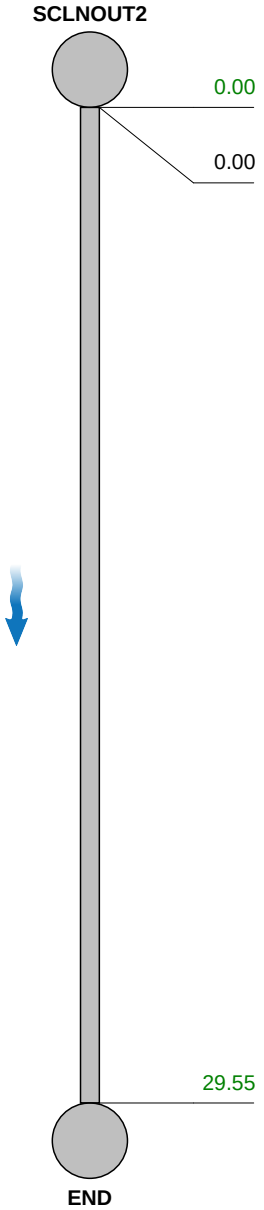
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
2020-09-15	**62037**	**Saturated**	**SEWER TECH_PM**	**U-1215-07000693**	**SCLNOUT2**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Downstream**	**4.0**	**29.5**	**29.5**

City :	**BARRIE**	Drainage Area :		Upstream MH :	**SCLNOUT2**
Street :	**FERNDALE DR N**	Media Label :	**002**	Up Rim to Invert :	**0.0**
Location Code :	**Yard**	Flow Control :		Downstream MH :	**END**
Location Details :		Sheet Number :		Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Other**
Pipe size:	**150**	Sewer Category :	**SEC**
Pipe material:	**Polypropylene**	Purpose:	**Routine Assessment**
Lining Method :		Owner :	

Additional Info :



1:224	Distance	Code	Observation	Counter	Photo	Grade
	0.00	ACOM	Cleanout Mainline / SCLNOUT2	00:00:12		
	0.00	MWL	Water Level, 5% of cross sectional area	00:00:13		
	29.55	AEP	End of Pipe	00:02:57		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	0000	0.0	0.0	0.0	0.0	0.0	0.0

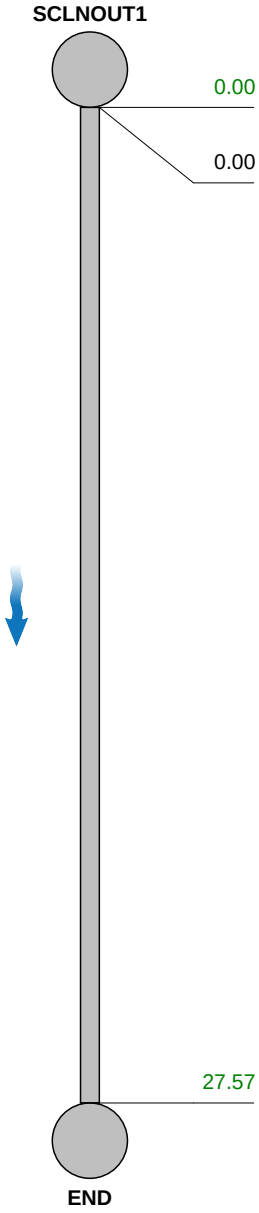
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
2020-09-15	**62037**	**Saturated**	**SEWER TECH_PM**	**U-1215-07000693**	**SCLNOUT1**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Downstream**	**4.0**	**27.6**	**27.6**

City :	**BARRIE**	Drainage Area :		Upstream MH :	**SCLNOUT1**
Street :	**FERNDALE DR N**	Media Label :	**002**	Up Rim to Invert :	**0.0**
Location Code :	**Yard**	Flow Control :		Downstream MH :	**END**
Location Details :		Sheet Number :		Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Other**
Pipe size:	**150**	Sewer Category :	**SEC**
Pipe material:	**Polypropylene**	Purpose:	**Routine Assessment**
Lining Method :		Owner :	

Additional Info :



1:209	Distance	Code	Observation	Counter	Photo	Grade
	0.00	AMH	Manhole / SCLNOUT1	00:00:09		
	0.00	MWL	Water Level, 5% of cross sectional area	00:00:10		
	27.57	AEP	End of Pipe	00:02:27		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	0000	0.0	0.0	0.0	0.0	0.0	0.0

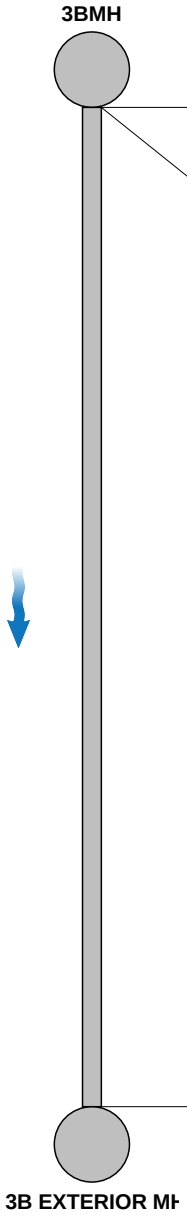
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
2020-09-15	**62037**	**Saturated**	**SEWER TECH_PM**	**U-1215-07000693**	**3B 3BEXTERIOR**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Downstream**	**4.0**	**84.5**	**84.5**

City :	**BARRIE**	Drainage Area :		Upstream MH :	**3BMH**
Street :	**FERNDALE DR N**	Media Label :	**002**	Up Rim to Invert :	**0.0**
Location Code :	**Yard**	Flow Control :		Downstream MH :	**3B EXTERIOR MH**
Location Details :		Sheet Number :		Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Other**
Pipe size:	**200**	Sewer Category :	**SEC**
Pipe material:	**Polypropylene**	Purpose:	**Routine Assessment**
Lining Method :		Owner :	

Additional Info :



1:638	Distance	Code	Observation	Counter	Photo	Grade
	0.00	AMH	Manhole / 3BMH	00:00:09		
	0.00	MWL	Water Level, 10% of cross sectional area	00:00:10		
	84.48	AMH	Manhole / 3B EXTERIOR	00:06:57		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	0000	0.0	0.0	0.0	0.0	0.0	0.0

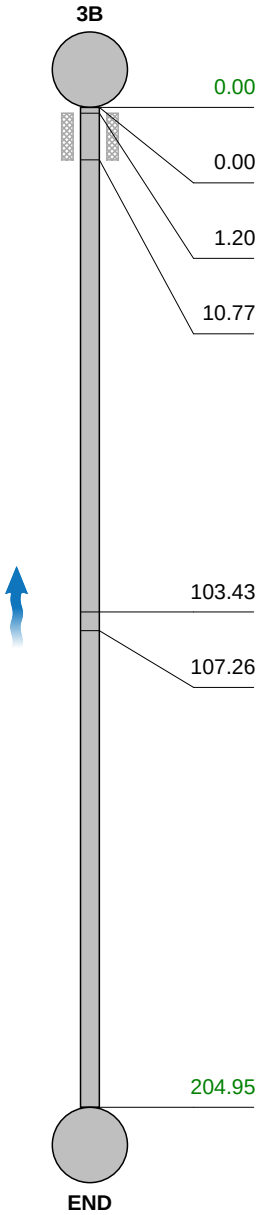
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
2020-09-15	**62037**	**Saturated**	**SEWER TECH_PM**	**U-1215-07000693**	**2B3B LATERAL**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Upstream**	**4.0**	**204.9**	**204.9**

City :	**BARRIE**	Drainage Area :		Upstream MH :	**END**
Street :	**FERNDALE DR N**	Media Label :	**002**	Up Rim to Invert :	**0.0**
Location Code :	**Yard**	Flow Control :		Downstream MH :	**3B**
Location Details :		Sheet Number :		Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Other**
Pipe size:	**200**	Sewer Category :	**SEC**
Pipe material:	**Polypropylene**	Purpose:	**Routine Assessment**
Lining Method :		Owner :	

Additional Info :



1:1547	Distance		Code	Observation	Counter	Photo	Grade
	0.00		AMH	Manhole / 3B	00:00:11		
	0.00		MWL	Water Level, 40% of cross sectional area	00:00:11		
	1.20	S01	MCU	Camera Underwater, Start	00:00:26		
	10.77	F01	MCU	Camera Underwater, Finish	00:01:19		M4
	103.43		MWL	Water Level, 40% of cross sectional area	00:12:28		
	107.26		MWL	Water Level, 5% of cross sectional area	00:12:54		
	204.95		AEP	End of Pipe	00:33:15		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	4200	0.0	8.0	8.0	0.0	4.0	4.0

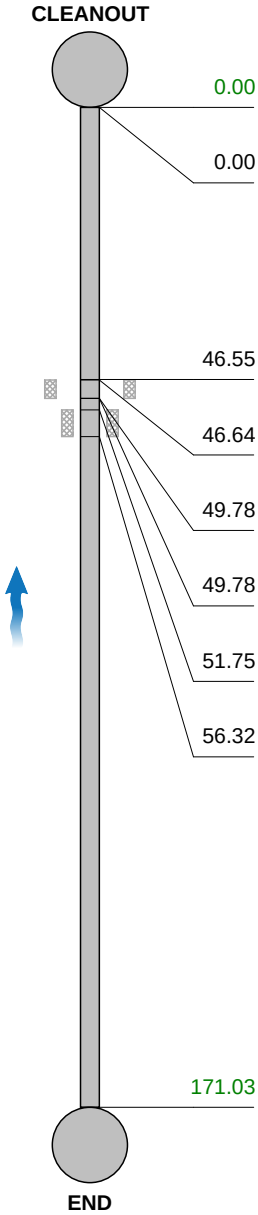
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
2020-09-15	**62037**	**Saturated**	**SEWER TECH_PM**	**U-1215-07000693**	**3A LATERAL 1**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Upstream**	**4.0**	**171.0**	**171.0**

City :	**BARRIE**	Drainage Area :		Upstream MH :	**END**
Street :	**FERNDALE DR N**	Media Label :	**002**	Up Rim to Invert :	**0.0**
Location Code :	**Yard**	Flow Control :		Downstream MH :	**CLEANOUT**
Location Details :		Sheet Number :		Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Other**
Pipe size:	**200**	Sewer Category :	**SEC**
Pipe material:	**Polypropylene**	Purpose:	**Routine Assessment**
Lining Method :		Owner :	

Additional Info :



1:1291	Distance		Code	Observation	Counter	Photo	Grade
	0.00		ACOM	Cleanout Mainline / CLEAN OU	00:00:18		
	0.00		MWL	Water Level, 5% of cross sectional area	00:00:18		
	46.55		MWLS	Water Level, Sag in pipe, 85% of cross sectional area	00:03:41		S4
	46.64	S01	MCU	Camera Underwater, Start	00:03:44		
	49.78	F01	MCU	Camera Underwater, Finish	00:04:04		M4
	49.78		MWL	Water Level, 40% of cross sectional area	00:04:05		
	51.75	S02	MCU	Camera Underwater, Start	00:04:24		
	56.32	F02	MCU	Camera Underwater, Finish	00:04:58		M4
	171.03		AEP	End of Pipe / CAMERA LOST TRACTION'	00:36:36		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
4100	4200	4.0	8.0	12.0	4.0	4.0	4.0

Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
2020-09-16	**62038**	**Saturated**	**SEWER TECH_PM**	**U-1215-07000693**	**3A WEST HEADER**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Upstream**	**4.0**	**58.9**	**58.9**

City :	**BARRIE**	Drainage Area :		Upstream MH :	**END**
Street :	**FERNDALE DR N**	Media Label :	**003**	Up Rim to Invert :	**0.0**
Location Code :	**Yard**	Flow Control :		Downstream MH :	**3A MH**
Location Details :		Sheet Number :		Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Other**
Pipe size:	**150**	Sewer Category :	**SEC**
Pipe material:	**Polypropylene**	Purpose:	**Routine Assessment**
Lining Method :		Owner :	

Additional Info :

1:445	Distance	Code	Observation	Counter	Photo	Grade
3A MH						
	0.00	AMH	Manhole / 3A	00:00:14		
	0.00	MWL	Water Level, 10% of cross sectional area	00:00:15		
	58.88	AEP	End of Pipe	00:07:26		
END						

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	0000	0.0	0.0	0.0	0.0	0.0	0.0

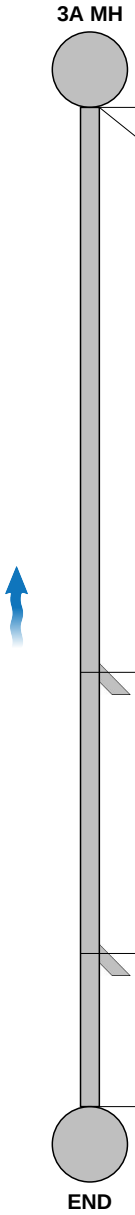
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
2020-09-16	**62038**	**Saturated**	**SEWER TECH_PM**	**U-1215-07000693**	**3A SOUTH HEADER**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Upstream**	**4.0**	**146.4**	**146.4**

City :	**BARRIE**	Drainage Area :		Upstream MH :	**END**
Street :	**FERNDALE DR N**	Media Label :	**003**	Up Rim to Invert :	**0.0**
Location Code :	**Yard**	Flow Control :		Downstream MH :	**3A MH**
Location Details :		Sheet Number :		Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Other**
Pipe size:	**150**	Sewer Category :	**SEC**
Pipe material:	**Polypropylene**	Purpose:	**Routine Assessment**
Lining Method :		Owner :	

Additional Info :



1:1106	Distance	Code	Observation	Counter	Photo	Grade
	0.00	AMH	Manhole / 3A	00:00:13		
	0.00	MWL	Water Level, 10% of cross sectional area	00:00:14		
	82.79	TF	Tap Factory Made at 9 o'clock, 200mm dim	00:10:34		
	123.99	TF	Tap Factory Made at 9 o'clock, 200mm dim	00:21:28		
	146.43	AEP	End of Pipe / LOST TRACTION	00:43:03		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	0000	0.0	0.0	0.0	0.0	0.0	0.0

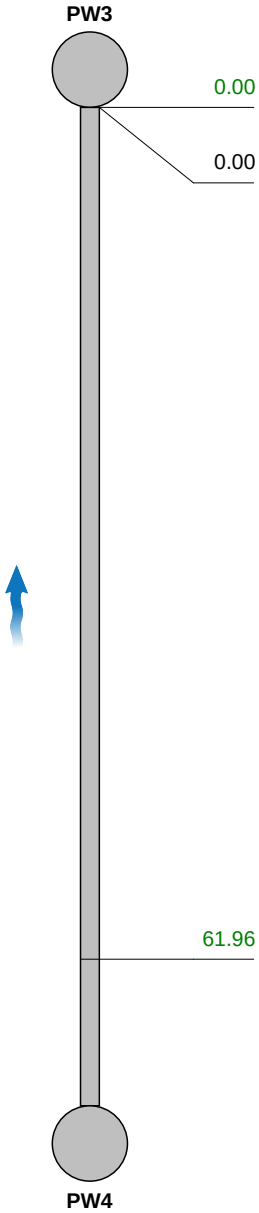
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
2020-09-16	**62038**	**Saturated**	**SEWER TECH_PM**	**U-1215-07000693**	**PW4 PW3**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Upstream**	**4.0**	**72.6**	**62.0**

City :	**BARRIE**	Drainage Area :		Upstream MH :	**PW4**
Street :	**FERNDALE DR N**	Media Label :	**003**	Up Rim to Invert :	**0.0**
Location Code :	**Yard**	Flow Control :		Downstream MH :	**PW3**
Location Details :		Sheet Number :		Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Other**
Pipe size:	**200**	Sewer Category :	**SEC**
Pipe material:	**Polypropylene**	Purpose:	**Routine Assessment**
Lining Method :		Owner :	

Additional Info :



1:549	Distance	Code	Observation	Counter	Photo	Grade
	0.00	AMH	Manhole / PW3	00:00:24		
	0.00	MWL	Water Level, 5% of cross sectional area	00:00:25		
	61.96	AEP	End of Pipe / CAN NOT PASS JOINT	00:12:04		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	0000	0.0	0.0	0.0	0.0	0.0	0.0

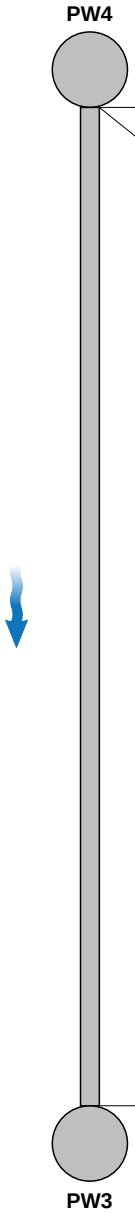
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
2020-09-16	**62038**	**Saturated**	**SEWER TECH_PM**	**U-1215-07000693**	**PW4 PW3**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Downstream**	**4.0**	**72.6**	**72.6**

City :	**BARRIE**	Drainage Area :		Upstream MH :	**PW4**
Street :	**FERNDALE DR N**	Media Label :	**003**	Up Rim to Invert :	**0.0**
Location Code :	**Yard**	Flow Control :		Downstream MH :	**PW3**
Location Details :		Sheet Number :		Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Other**
Pipe size:	**200**	Sewer Category :	**SEC**
Pipe material:	**Polypropylene**	Purpose:	**Routine Assessment**
Lining Method :		Owner :	

Additional Info :



1:549	Distance	Code	Observation	Counter	Photo	Grade
	0.00	AMH	Manhole / PW4	00:00:13		
	0.00	MWL	Water Level, 5% of cross sectional area	00:00:15		
	72.63	AEP	End of Pipe / REVERSAL COMPLETYE	00:06:23		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	0000	0.0	0.0	0.0	0.0	0.0	0.0

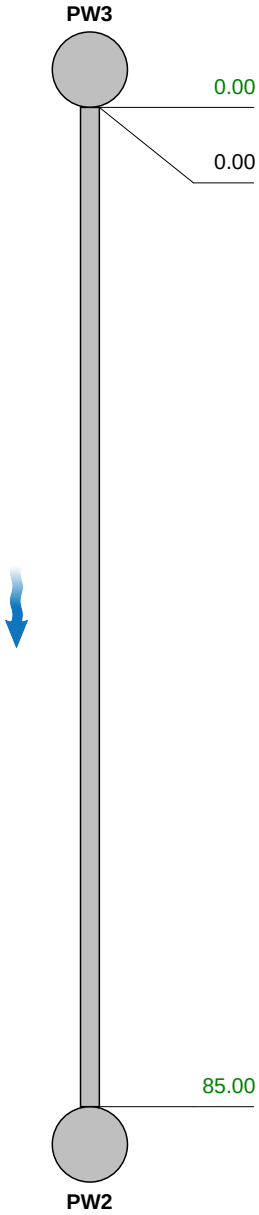
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
2020-09-16	**62038**	**Saturated**	**SEWER TECH_PM**	**U-1215-07000693**	**PW3 PW2**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Downstream**	**4.0**	**85.0**	**85.0**

City :	**BARRIE**	Drainage Area :		Upstream MH :	**PW3**
Street :	**FERNDALE DR N**	Media Label :	**003**	Up Rim to Invert :	**0.0**
Location Code :	**Yard**	Flow Control :		Downstream MH :	**PW2**
Location Details :		Sheet Number :		Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Other**
Pipe size:	**200**	Sewer Category :	**SEC**
Pipe material:	**Polypropylene**	Purpose:	**Routine Assessment**
Lining Method :		Owner :	

Additional Info :



1:642	Distance	Code	Observation	Counter	Photo	Grade
	0.00	AMH	Manhole / PW3	00:00:07		
	0.00	MWL	Water Level, 5% of cross sectional area	00:00:08		
	85.00	AMH	Manhole / PW2	00:06:24		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	0000	0.0	0.0	0.0	0.0	0.0	0.0

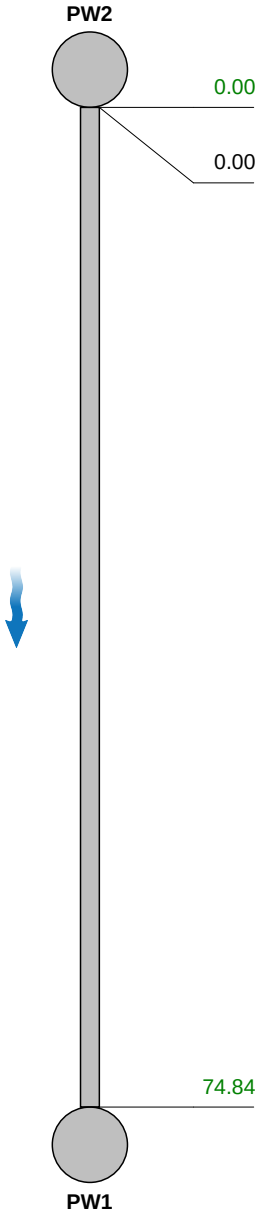
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
2020-09-16	**62038**	**Saturated**	**SEWER TECH_PM**	**U-1215-07000693**	**PW2 PW1**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Downstream**	**4.0**	**74.8**	**74.8**

City :	**BARRIE**	Drainage Area :		Upstream MH :	**PW2**
Street :	**FERNDALE DR N**	Media Label :	**003**	Up Rim to Invert :	**0.0**
Location Code :	**Yard**	Flow Control :		Downstream MH :	**PW1**
Location Details :		Sheet Number :		Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Other**
Pipe size:	**200**	Sewer Category :	**SEC**
Pipe material:	**Polypropylene**	Purpose:	**Routine Assessment**
Lining Method :		Owner :	

Additional Info :



1:565	Distance	Code	Observation	Counter	Photo	Grade
	0.00	AMH	Manhole / PW2	00:00:24		
	0.00	MWL	Water Level, 5% of cross sectional area	00:00:25		
	74.84	AMH	Manhole / PW1	00:06:18		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	0000	0.0	0.0	0.0	0.0	0.0	0.0

Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
2020-09-16	**62038**	**Saturated**	**SEWER TECH_PM**	**U-1215-07000693**	**PW1 4**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Downstream**	**4.0**	**129.0**	**129.0**

City :	**BARRIE**	Drainage Area :		Upstream MH :	**PW1**
Street :	**FERNDALE DR N**	Media Label :	**003**	Up Rim to Invert :	**0.0**
Location Code :	**Yard**	Flow Control :		Downstream MH :	**MH 4**
Location Details :		Sheet Number :		Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Other**
Pipe size:	**200**	Sewer Category :	**SEC**
Pipe material:	**Polypropylene**	Purpose:	**Routine Assessment**
Lining Method :		Owner :	

Additional Info :

1:974	Distance	Code	Observation	Counter	Photo	Grade
PW1						
	0.00	AMH	Manhole / PW1	00:00:10		
	0.00	MWL	Water Level, 5% of cross sectional area	00:00:11		
	128.98	AMH	Manhole / 4	00:20:28		
MH 4						

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	0000	0.0	0.0	0.0	0.0	0.0	0.0

Inspection report

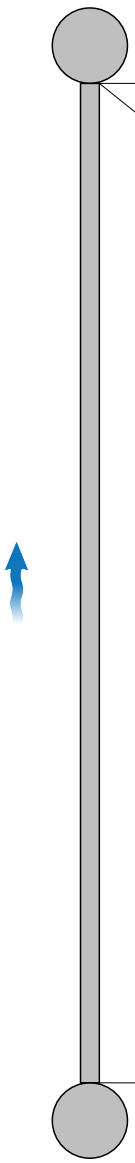
Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
2020-09-16	**62039**	**Saturated**	**SEWER TECH_PM**	**U-1215-07000693**	**3B EXTERIOR 4**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Upstream**	**4.0**	**87.5**	**87.5**

City :	**BARRIE**	Drainage Area :		Upstream MH :	**3B EXTERIOR**
Street :	**FERNDALE DR N**	Media Label :	**004**	Up Rim to Invert :	**0.0**
Location Code :	**Yard**	Flow Control :		Downstream MH :	**MH 4**
Location Details :		Sheet Number :		Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Other**
Pipe size:	**200**	Sewer Category :	**SEC**
Pipe material:	**Polypropylene**	Purpose:	**Routine Assessment**
Lining Method :		Owner :	

Additional Info :

1:661	Distance	Code	Observation	Counter	Photo	Grade
MH 4						
	0.00	AMH	Manhole / 4	00:00:11		
	0.00	MWL	Water Level, 5% of cross sectional area	00:00:12		
	87.53	AEP	End of Pipe / CAN NOT PASS JOINT	00:15:09		
3B EXTERIOR						



QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	0000	0.0	0.0	0.0	0.0	0.0	0.0

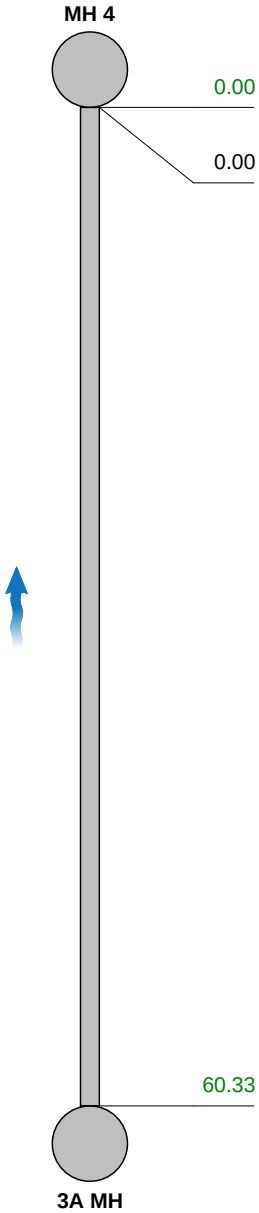
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
2020-09-17	**62039**	**Saturated**	**SEWER TECH_PM**	**U-1215-07000693**	**3A 4**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Upstream**	**4.0**	**60.3**	**60.3**

City :	**BARRIE**	Drainage Area :		Upstream MH :	**3A MH**
Street :	**FERNDALE DR N**	Media Label :	**004**	Up Rim to Invert :	**0.0**
Location Code :	**Yard**	Flow Control :		Downstream MH :	**MH 4**
Location Details :		Sheet Number :		Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Other**
Pipe size:	**200**	Sewer Category :	**SEC**
Pipe material:	**Polypropylene**	Purpose:	**Routine Assessment**
Lining Method :		Owner :	

Additional Info :



1:456	Distance	Code	Observation	Counter	Photo	Grade
	0.00	AMH	Manhole / 4	00:00:11		
	0.00	MWL	Water Level, 15% of cross sectional area	00:00:11		
	60.33	AMH	Manhole / 3A	00:04:42		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	0000	0.0	0.0	0.0	0.0	0.0	0.0

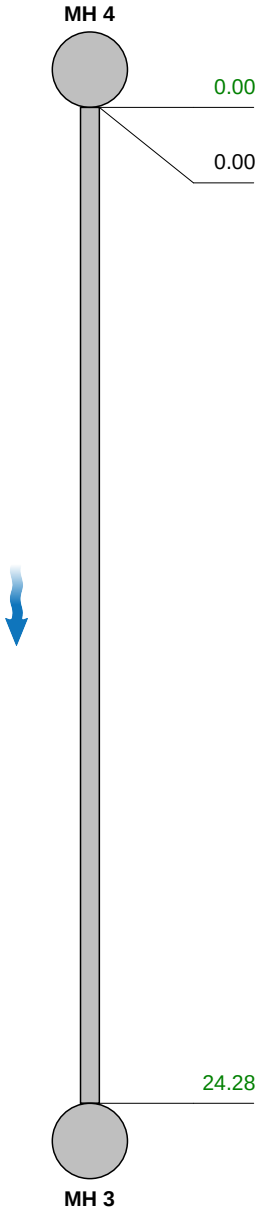
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
2020-09-17	**62039**	**Saturated**	**SEWER TECH_PM**	**U-1215-07000693**	**4 3**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Downstream**	**4.0**	**24.3**	**24.3**

City :	**BARRIE**	Drainage Area :		Upstream MH :	**MH 4**
Street :	**FERNDALE DR N**	Media Label :	**004**	Up Rim to Invert :	**0.0**
Location Code :	**Yard**	Flow Control :		Downstream MH :	**MH 3**
Location Details :		Sheet Number :		Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Other**
Pipe size:	**200**	Sewer Category :	**SEC**
Pipe material:	**Polypropylene**	Purpose:	**Routine Assessment**
Lining Method :		Owner :	

Additional Info :



1:184	Distance	Code	Observation	Counter	Photo	Grade
	0.00	AMH	Manhole / 4	00:00:10		
	0.00	MWL	Water Level, 5% of cross sectional area	00:00:11		
	24.28	AMH	Manhole / 3	00:02:52		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	0000	0.0	0.0	0.0	0.0	0.0	0.0

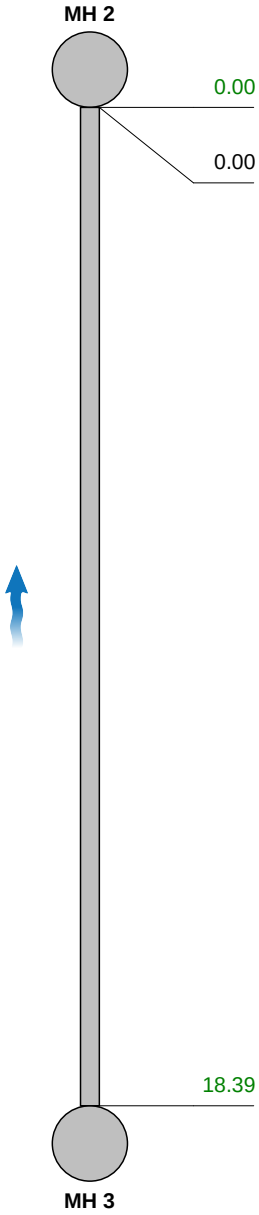
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
2020-09-17	**62039**	**Saturated**	**SEWER TECH_PM**	**U-1215-07000693**	**3 2**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Upstream**	**4.0**	**18.4**	**18.4**

City :	**BARRIE**	Drainage Area :		Upstream MH :	**MH 3**
Street :	**FERNDALE DR N**	Media Label :	**004**	Up Rim to Invert :	**0.0**
Location Code :	**Yard**	Flow Control :		Downstream MH :	**MH 2**
Location Details :		Sheet Number :		Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Other**
Pipe size:	**200**	Sewer Category :	**SEC**
Pipe material:	**Polypropylene**	Purpose:	**Routine Assessment**
Lining Method :		Owner :	

Additional Info :



1:139	Distance	Code	Observation	Counter	Photo	Grade
	0.00	AMH	Manhole / 2	00:00:09		
	0.00	MWL	Water Level, 5% of cross sectional area	00:00:10		
	18.39	AMH	Manhole / 3	00:01:50		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	0000	0.0	0.0	0.0	0.0	0.0	0.0

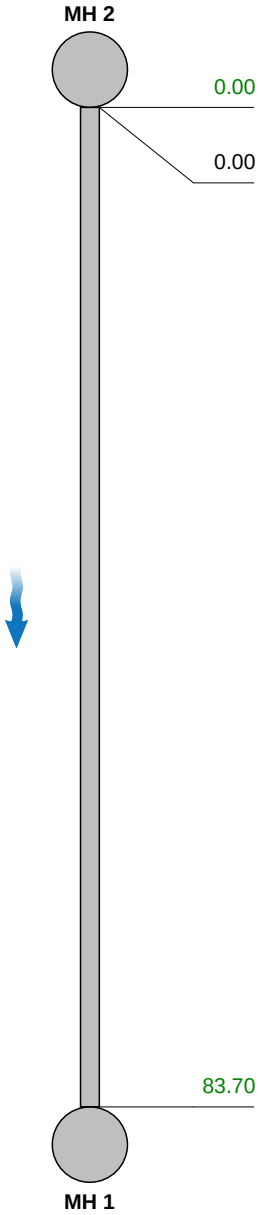
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
2020-09-17	**62039**	**Saturated**	**SEWER TECH_PM**	**U-1215-07000693**	**2 1**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Downstream**	**4.0**	**83.7**	**83.7**

City :	**BARRIE**	Drainage Area :		Upstream MH :	**MH 2**
Street :	**FERNDALE DR N**	Media Label :	**004**	Up Rim to Invert :	**0.0**
Location Code :	**Yard**	Flow Control :		Downstream MH :	**MH 1**
Location Details :		Sheet Number :		Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Other**
Pipe size:	**200**	Sewer Category :	**SEC**
Pipe material:	**Polypropylene**	Purpose:	**Routine Assessment**
Lining Method :		Owner :	

Additional Info :



1:632	Distance	Code	Observation	Counter	Photo	Grade
	0.00	AMH	Manhole / 1	00:00:09		
	0.00	MWL	Water Level, 5% of cross sectional area	00:00:10		
	83.70	AMH	Manhole / 1	00:07:07		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	0000	0.0	0.0	0.0	0.0	0.0	0.0

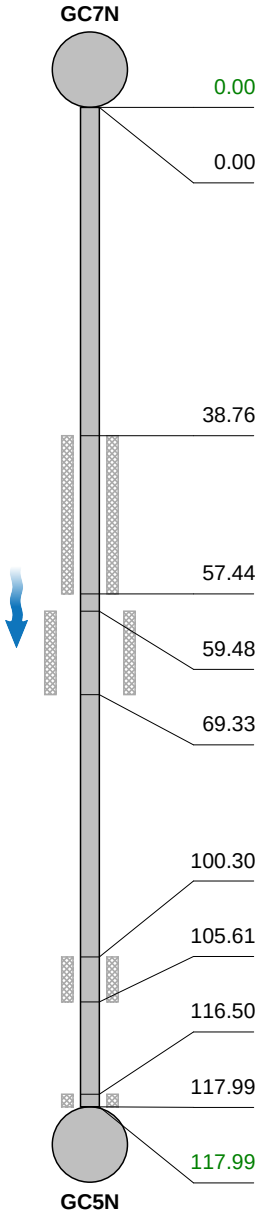
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
2020-09-17	**62039**	**Saturated**	**SEWER TECH_PM**	**U-1215-07000693**	**GC7N GC5N**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Downstream**	**4.0**	**118.0**	**118.0**

City :	**BARRIE**	Drainage Area :		Upstream MH :	**GC7N**
Street :	**FERNDALE DR N**	Media Label :	**004**	Up Rim to Invert :	**0.0**
Location Code :	**Yard**	Flow Control :		Downstream MH :	**GC5N**
Location Details :		Sheet Number :		Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Other**
Pipe size:	**200**	Sewer Category :	**SEC**
Pipe material:	**Polypropylene**	Purpose:	**Routine Assessment**
Lining Method :		Owner :	

Additional Info :



1:891	Distance		Code	Observation	Counter	Photo	Grade
	0.00		AMH	Manhole / GCN7	00:00:14		
	0.00		MWL	Water Level, 5% of cross sectional area	00:00:14		
	38.76	S01	MCU	Camera Underwater, Start	00:04:07		
	57.44	F01	MCU	Camera Underwater, Finish	00:05:59		M4
	59.48	S02	MCU	Camera Underwater, Start	00:06:23		
	69.33	F02	MCU	Camera Underwater, Finish	00:07:16		M4
	100.30	S03	MCU	Camera Underwater, Start	00:10:46		
	105.61	F03	MCU	Camera Underwater, Finish	00:11:11		M4
	116.50	S04	MCU	Camera Underwater, Start	00:12:12		
	117.99	F04	MCU	Camera Underwater, Finish	00:12:27		M4
	117.99		AMH	Manhole / GC5N	00:12:29		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	4700	0.0	28.0	28.0	0.0	4.0	4.0

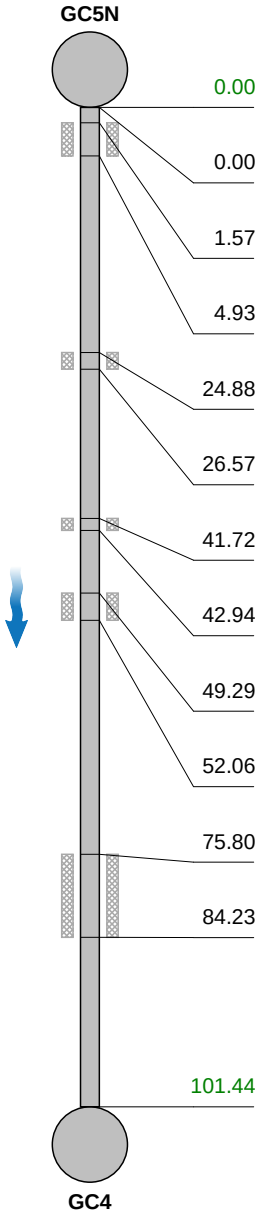
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
2020-09-17	**62039**	**Saturated**	**SEWER TECH_PM**	**U-1215-07000693**	**GC5N GC4**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Downstream**	**4.0**	**101.4**	**101.4**

City :	**BARRIE**	Drainage Area :		Upstream MH :	**GC5N**
Street :	**FERNDALE DR N**	Media Label :	**004**	Up Rim to Invert :	**0.0**
Location Code :	**Yard**	Flow Control :		Downstream MH :	**GC4**
Location Details :		Sheet Number :		Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Other**
Pipe size:	**200**	Sewer Category :	**SEC**
Pipe material:	**Polypropylene**	Purpose:	**Routine Assessment**
Lining Method :		Owner :	

Additional Info :



1:766	Distance		Code	Observation	Counter	Photo	Grade
	0.00		AMH	Manhole / GC5N	00:00:20		
	0.00		MWL	Water Level, 45% of cross sectional area	00:00:21		
	1.57	S01	MCU	Camera Underwater, Start	00:00:30		
	4.93	F01	MCU	Camera Underwater, Finish	00:01:26		M4
	24.88	S02	MCU	Camera Underwater, Start	00:06:10		
	26.57	F02	MCU	Camera Underwater, Finish	00:06:32		M4
	41.72	S03	MCU	Camera Underwater, Start	00:09:26		
	42.94	F03	MCU	Camera Underwater, Finish	00:09:43		M4
	49.29	S04	MCU	Camera Underwater, Start	00:11:16		
	52.06	F04	MCU	Camera Underwater, Finish	00:11:41		M4
	75.80	S05	MCU	Camera Underwater, Start	00:16:37		
	84.23	F05	MCU	Camera Underwater, Finish	00:18:39		M4
	101.44		AMH	Manhole / GC4	00:21:07		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	4400	0.0	16.0	16.0	0.0	4.0	4.0

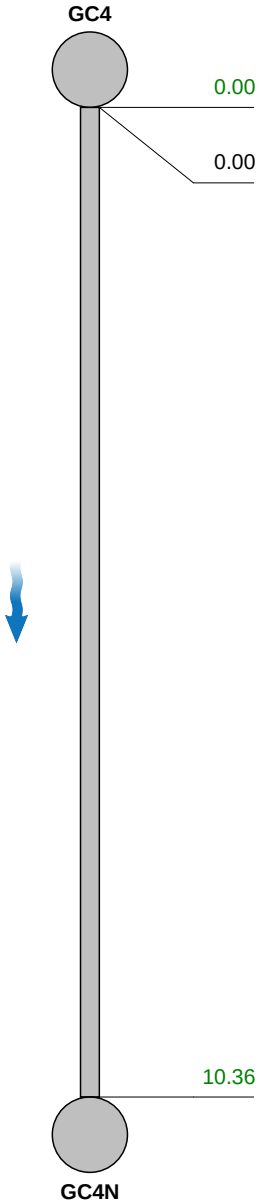
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
2020-09-17	**62039**	**Saturated**	**SEWER TECH_PM**	**U-1215-07000693**	**GC4 GC4N**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Downstream**	**4.0**	**10.4**	**10.4**

City :	**BARRIE**	Drainage Area :		Upstream MH :	**GC4**
Street :	**FERNDALE DR N**	Media Label :	**004**	Up Rim to Invert :	**0.0**
Location Code :	**Yard**	Flow Control :		Downstream MH :	**GC4N**
Location Details :		Sheet Number :		Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Other**
Pipe size:	**200**	Sewer Category :	**SEC**
Pipe material:	**Polypropylene**	Purpose:	**Routine Assessment**
Lining Method :		Owner :	

Additional Info :



1:79	Distance	Code	Observation	Counter	Photo	Grade
	0.00	AMH	Manhole / GC4	00:00:10		
	0.00	MWL	Water Level, 30% of cross sectional area	00:00:11		
	10.36	AMH	Manhole / GC4N	00:01:55		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	0000	0.0	0.0	0.0	0.0	0.0	0.0

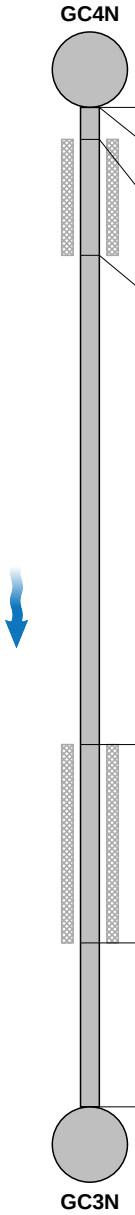
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
2020-09-17	**62039**	**Saturated**	**SEWER TECH_PM**	**U-1215-07000693**	**GC4N GC3N**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Downstream**	**4.0**	**78.8**	**78.8**

City :	**BARRIE**	Drainage Area :		Upstream MH :	**GC4N**
Street :	**FERNDALE DR N**	Media Label :	**004**	Up Rim to Invert :	**0.0**
Location Code :	**Yard**	Flow Control :		Downstream MH :	**GC3N**
Location Details :		Sheet Number :		Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Other**
Pipe size:	**200**	Sewer Category :	**SEC**
Pipe material:	**Polypropylene**	Purpose:	**Routine Assessment**
Lining Method :		Owner :	

Additional Info :



1:595	Distance		Code	Observation	Counter	Photo	Grade
	0.00		AMH	Manhole / GC4N	00:00:12		
	0.00		MWL	Water Level, 5% of cross sectional area	00:00:14		
	2.52	S01	MCU	Camera Underwater, Start	00:00:38		
	11.67	F01	MCU	Camera Underwater, Finish	00:02:09		M4
	50.23	S02	MCU	Camera Underwater, Start	00:09:33		
	65.87	F02	MCU	Camera Underwater, Finish	00:12:24		M4
	78.79		AMH	Manhole / GC3N	00:15:30		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	4500	0.0	20.0	20.0	0.0	4.0	4.0

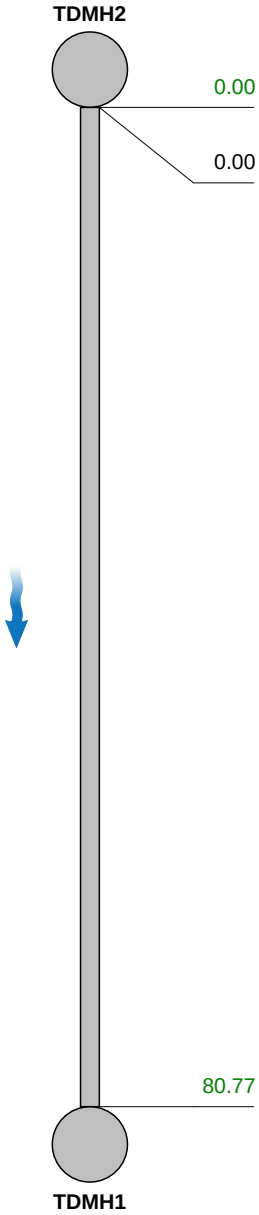
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
2020-09-17	**62039**	**Saturated**	**SEWER TECH_PM**	**U-1215-07000693**	**TDMH2 TDMH1**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Downstream**	**4.0**	**80.8**	**80.8**

City :	**BARRIE**	Drainage Area :		Upstream MH :	**TDMH2**
Street :	**FERNDALE DR N**	Media Label :	**004**	Up Rim to Invert :	**0.0**
Location Code :	**Yard**	Flow Control :		Downstream MH :	**TDMH1**
Location Details :		Sheet Number :		Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Other**
Pipe size:	**300**	Sewer Category :	**SEC**
Pipe material:	**Polypropylene**	Purpose:	**Routine Assessment**
Lining Method :		Owner :	

Additional Info :



1:610	Distance	Code	Observation	Counter	Photo	Grade
	0.00	AMH	Manhole / TDMH2	00:00:09		
	0.00	MWL	Water Level, 5% of cross sectional area	00:00:10		
	80.77	AMH	Manhole / TDMH1	00:07:37		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	0000	0.0	0.0	0.0	0.0	0.0	0.0

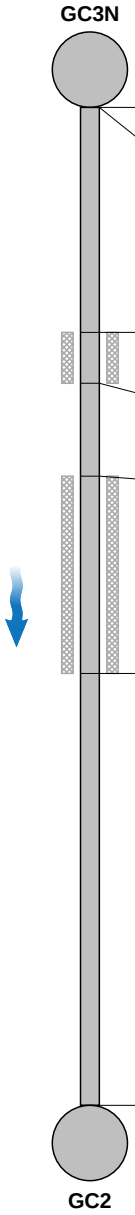
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
2020-09-18	**62040**	**Saturated**	**SEWER TECH_PM**	**U-1215-07000693**	**GC3N GC2**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Downstream**	**4.0**	**58.0**	**58.0**

City :	**BARRIE**	Drainage Area :		Upstream MH :	**GC3N**
Street :	**FERNDALE DR N**	Media Label :	**005**	Up Rim to Invert :	**0.0**
Location Code :	**Yard**	Flow Control :		Downstream MH :	**GC2**
Location Details :		Sheet Number :		Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Other**
Pipe size:	**200**	Sewer Category :	**SEC**
Pipe material:	**Polypropylene**	Purpose:	**Routine Assessment**
Lining Method :		Owner :	

Additional Info :



1:439	Distance		Code	Observation	Counter	Photo	Grade
	0.00		AMH	Manhole / GC3N	00:00:09		
	0.00		MWL	Water Level, 50% of cross sectional area	00:00:10		
	13.09	S01	MCU	Camera Underwater, Start	00:02:11		
	16.05	F01	MCU	Camera Underwater, Finish	00:02:46		M4
	21.45	S02	MCU	Camera Underwater, Start	00:04:00		
	32.93	F02	MCU	Camera Underwater, Finish	00:05:27		M4
	58.05		ATC	Tee Connection at 6 o'clock, 200mm vertical / DRO PIPE	00:10:58		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	4300	0.0	12.0	12.0	0.0	4.0	4.0

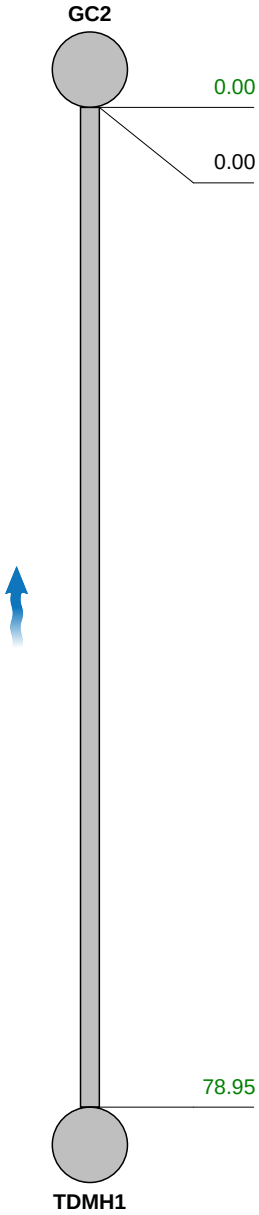
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
2020-09-18	**62040**	**Saturated**	**SEWER TECH_PM**	**U-1215-07000693**	**TDMH1 GC2**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Upstream**	**4.0**	**78.9**	**78.9**

City :	**BARRIE**	Drainage Area :		Upstream MH :	**TDMH1**
Street :	**FERNDALE DR N**	Media Label :	**005**	Up Rim to Invert :	**0.0**
Location Code :	**Yard**	Flow Control :		Downstream MH :	**GC2**
Location Details :		Sheet Number :		Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Other**
Pipe size:	**300**	Sewer Category :	**SEC**
Pipe material:	**Polypropylene**	Purpose:	**Routine Assessment**
Lining Method :		Owner :	

Additional Info :



1:596	Distance	Code	Observation	Counter	Photo	Grade
	0.00	AMH	Manhole / GC2	00:00:11		
	0.00	MWL	Water Level, 5% of cross sectional area	00:00:12		
	78.95	AMH	Manhole / TDMH1	00:07:55		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	0000	0.0	0.0	0.0	0.0	0.0	0.0

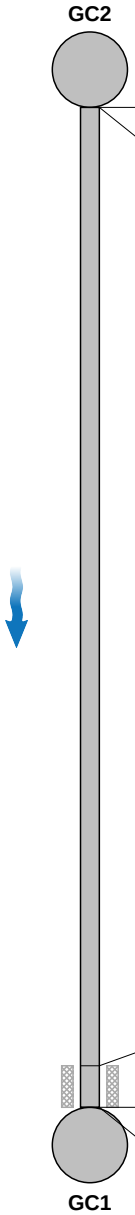
Inspection report

Date :	Work Order :	Weather :	Surveyed By :	Certificate Number :	Pipe Segment Ref. :
2020-09-18	**62040**	**Saturated**	**SEWER TECH_PM**	**U-1215-07000693**	**GC2 GC1**
Year laid :	Pre-cleaning :	Direction :	Pipe Joint Length :	Total Length :	Length Surveyed :
	Jetting	**Downstream**	**4.0**	**79.5**	**79.5**

City :	**BARRIE**	Drainage Area :		Upstream MH :	**GC2**
Street :	**FERNDALE DR N**	Media Label :	**005**	Up Rim to Invert :	**0.0**
Location Code :	**Yard**	Flow Control :		Downstream MH :	**GC1**
Location Details :		Sheet Number :		Down Rim to Invert :	**0.0**

Pipe shape:	**Circular**	Sewer Use:	**Other**
Pipe size:	**300**	Sewer Category :	**SEC**
Pipe material:	**Polypropylene**	Purpose:	**Routine Assessment**
Lining Method :		Owner :	

Additional Info :



1:600	Distance		Code	Observation	Counter	Photo	Grade
	0.00		AMH	Manhole / GC2	00:00:14		
	0.00		MWL	Water Level, 15% of cross sectional area	00:00:15		
	76.19	S01	MCU	Camera Underwater, Start	00:07:35		
	79.49	F01	MCU	Camera Underwater, Finish	00:08:28		M4
	79.49		AMH	Manhole / GC1	00:08:29		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	4100	0.0	4.0	4.0	0.0	4.0	4.0

GOLDER
MEMBER OF WSP

golder.com