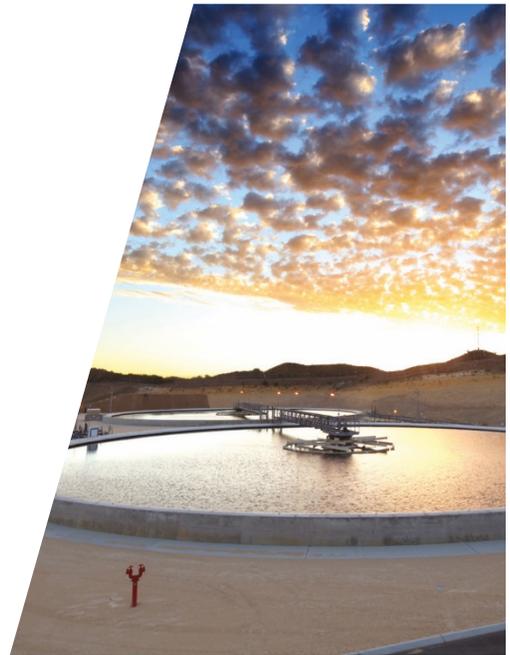




2020 Quarterly Site Inspections

Clean Harbors Lambton Facility
4090 Telfer Road, Corunna, Ontario

Clean Harbors Canada, Inc.





Executive Summary

In accordance with requirements outlined in Section 8.1 of the Design and Operations Report and Environmental Compliance Approval No. A031806, GHD conducted quarterly Site Inspections of the Clean Harbors Canada, Inc. (Clean Harbors) Lambton Facility (Site) in Corunna, Ontario during 2020. The individual 2020 inspection reports are provided in Appendices A through D.

Appendix Index

- Appendix A: 2020 First Quarter Site Inspection
- Appendix B: 2020 Second Quarter Site Inspection
- Appendix C: 2020 Third Quarter Site Inspection
- Appendix D: 2020 Fourth Quarter Site Inspection

Appendices

Appendix A

2020 First Quarter Site Inspection



Memorandum

March 27, 2020

To: Erica Carabott/Clean Harbors
Mike Parker/Clean Harbors

Ref. No.: 044985

From: Jim Yardley/Kal Dhaliwal/mg/63

Tel: 519-340-4265

Subject: 2020 First Quarter Site Inspection

1. Introduction

In accordance with requirements outlined in Section 8.1 of the Design and Operations Report, GHD conducted the 2020 First Quarter Site Inspection (Inspection) of the Clean Harbors Canada, Inc. (Clean Harbors) Lambton Facility (Site) in Corunna, Ontario. The Inspection was conducted on March 16, 2020 by Kal Dhaliwal.

The Inspection consisted of a walk around the Site. The Inspection focused primarily on the active landfill and waste disposal operations, including an inspection of each of the surface water, leachate, and process water ponds.

1.1 Weather and Site Conditions

At the time of the Inspection, the temperature was 2°C. Weather conditions at the Site were generally sunny with minimal wind blowing in a northwest direction during the Inspection. During the week preceding the Inspection, the Site experienced 3.2 mm of total precipitation, and a mean temperature of 3.3°C. During the Inspection, the Site was damp. Standing water was noted in low, flat areas and high water levels were noted in the majority of ditches and ponds. Figure 1 provides a Site plan showing features referenced herein, as well as any notes related to specific issues noted in this memorandum. Figure 2 provides the Landfill Expansion Subcell Fill Progression Plan, identifying the cell locations, as presented in the "*Design and Operations Report - Lambton Landfill Expansion, Clean Harbors Canada, Inc.*", as prepared by Tetra Tech WEI Inc., dated October 8, 2015.

2. Landfill Operations

The Inspection was focused on landfill and waste disposal operations including Cell development, active disposal, waste hauling, and landfill capping efforts.



2.1 Landfill Cell Development

The following provides a description of the status of the Landfill Cell Development, including active waste disposal operations and internal waste transport routes:

- The active waste tipping face is located in the south western portion of Cell 19-2. Waste placement is generally occurring from south to north, as shown in Photo 1. At the time of the inspection the fill operations were located along the southeastern limit of waste disposal.
- The eastern portion of Cell 19-2 construction has been completed, as shown in Photos 2 through 5.
- Waste Transport Route: Site waste haulers are directed around the east side of the Process Area and enter Cell 19-2 from the north side, located centrally within the active landfilling area, on a dedicated haul road from the Waste Receiving Area.

2.2 Landfill Cover

The following provides a description of the status of the Landfill Cover, including cover placement during the first quarter, and the condition of the interim and final cover. With the recent approval of the vertical expansion, the previously covered areas are considered to be interim, since a portion of the existing cover will be removed and additional waste placed in these areas.

2.2.1 Interim and Final Cover Placement in Quarter

- The majority of the Site has received an interim cover, with the exception of the active landfilling area (Cell 19-2).
- Installation of final cover over Cell 19-1 commenced in the third quarter of 2019. The final cover consists of a Geosynthetic Clay Liner, HDPE Geomembrane, drainage layer, and protective soil cover. The status of the final cover installation is shown in Photo 6.
- The protective soil cover portion of the final cover is being installed as weather conditions permit.

2.2.2 Interim Cover Conditions

- The interim cover was noted to be in good condition, with minor erosion channels observed.
- Interim cover was being hauled and placed from the soil borrow area north of the east pond, shown on Figure 1. Interim cover material is also available for placement on Cell 19-2, currently stockpiled on the filled western portion of Cell 19-2.
- Large areas of standing water were identified in several areas as described in Section 4. The interim cover requires minor grading to promote drainage to the perimeter ditches from these areas.
- Erosion channels should be addressed through additional clay placement and grading, as weather permits.

2.2.3 Final Cover Conditions

- Final cover installation has continued in Cell 19-1, with the protective soil cover being placed west to east along the south portion of 19-1, as shown in photo 7.



- Per Environmental Compliance Approval No. A031806, Notice No. 9 (dated October 19, 2015), no previously covered areas of the Site are considered to have received final cover. Per approval of the landfill expansion, all areas, as noted in Section 2.2.1, are considered to have received interim cover.
- No areas have received topsoil. Natural vegetation is present in the northeast and southern (non-active) portions of the Site.

3. Perimeter Screening Berms

The following provides a description of the status of the Perimeter Screening Berms:

- Significant berm erosion was identified immediately west of proposed Cell 21-1. The erosion occurred on the landfill side of the berm, as identified on Figure 1 (previously identified in quarterly reports).
- Multiple larger erosion channels were identified on the landfill side of the north perimeter screening berm and at the north end of the east berm, as identified on Figure 1 (previously identified in quarterly reports).
- Minor erosion channels were noted throughout the Perimeter Screening Berms. These channels are prevalent throughout the un-vegetated internal sidewalls of the western and eastern perimeter screening berms.
- Several large erosion channels were noted on the elevated areas immediately northwest and southeast of the northern portion of the landfill. The erosion channels are located on plateaus/ramps within the screening berm. The erosion channels in the southeast corner extend into the east perimeter ditch.
- Note that all erosion channels within the Perimeter Screening Berms are on the internal sidewalls. The external sidewalls are in good condition and vegetated. As such, erosion channels do not create any external issues. The issue related to internal erosion is potential sedimentation of the perimeter ditches.

4. Surface Water Management System

The following provides a description of the status of the Surface Water Management System, including the ditches, swales, and surface water ponds.

4.1 Ditches and Swales

The following provides a description of the status of the surface water ditches and swales:

- Shallow standing water was identified within the southwest corner of the Original Landfill Area (OLA).
- Water levels were very high within the southern perimeter ditch of the OLA. Pumping was not active during the Inspection.
- A large area of standing water was identified within the northwest corner of the OLA, as shown on Figure 1 and Photo 8. The area has been graded to drain to the north ditch with an internal swale. The internal swale was full, with no observed flow during the Inspection.



- A large area of standing water was noted in the northwest portion of proposed Cell 21-3 (i.e., located centrally in the northern portion of the Site), as shown in Photo 9. The two drainage paths were under water during the Inspection, with no observed flow.
- Water levels continue to be high in the central portion of the north ditch, as shown in Photo 10. High water levels in the north ditch have the potential to prohibit surface drainage from the OLA during wetter periods.
- Vegetation and sedimentation was previously removed from the northeastern ditch. However, standing water was observed in the perimeter ditch in the northeast corner of the Site (i.e., at the location of the former perimeter screening berm access road) with no notable flow, as shown in Photo 11 and Figure 1.
- Sedimentation is occurring in the east ditch as a result of erosion of the perimeter screening berm, along the entire length of the OLA, resulting in fluctuations in grade and flow breaks. Erosion channels range from minor to large.
- Significant erosion was identified in the southeast corner of the OLA, resulting in sedimentation of the perimeter ditch and limited water flow, as shown in Photo 12 and Figure 1. This portion of ditch was wet, with standing water noted and dense wetland vegetation. Standing water was observed in the internal swale and low-lying area to the north, as shown in Photo 13 and Figure 1.
- It was noted during previous Inspections that there was limited elevation difference available within the northeast corner of the perimeter ditch. As such, there is minimal ability to lower the base of ditch and maintain flow to the East Surface Water Pond.
- Damp conditions were observed in the east perimeter ditch between the OLA and the East Surface Water Pond.
- The area of the completed south ditch remediation is generally dry with minimal standing water south of cell 19-1 and cell 19-2, as shown in Photo 14
- One of two culverts running under the access ramp to the soil borrow area is partially buried, as shown in Photo 15 and Figure 1.

4.2 East Surface Water Pond

The following provides a description of the status of the East Surface Water Pond (Photo 16):

- Water levels within the East Surface Water Pond were moderate, below the baseline of vegetation.
- No flow was observed entering the East Surface Water Pond from the south.
- Stormwater from the inactive 19-2 sub-cells was being pumped into a ditch discharging into the west side of the East Surface Water Pond.
- The pump at the East Surface Water Pond was in operation at the time of Inspection. Water is pumped directly from the East Surface Water Pond to the West Surface Water Pond via piping.



- Excavation, clearing, and grubbing works were being conducted to the north and west of the East Surface Water Pond in preparation for the surface water improvement works scheduled for the summer of 2020.

4.3 West Surface Water Pond

The following provides a description of the status of the West Surface Water Pond (Photo 17):

- Water levels within the West Surface Water Pond were low, below the baseline of vegetation.
- The pump at the West Surface Water Pond was in operation at the time of Inspection.

4.4 Equalization Pond

The following provides a description of the status of the Equalization Pond (Photo 18):

- Water levels within the Equalization Pond were moderate. Flow was not observed entering the Equalization Pond at the time of Inspection.
- Cracking and sloughing of the concrete side walls of the Equalization Pond was observed during the Inspection.
- No fish were observed within the Equalization Pond.

5. Process Water Management System

The Process Water Management System consists of three ponds and a series of ditches and swales. The North Process Water Pond is located immediately west of the TDU area, the South Process Water Pond is located immediately south of the Incinerator, and the West Process Water Pond is located adjacent to the West Surface Water Pond. Water retained in the Process Water Management System is used as quench water for Site incineration operations.

5.1 Process Water Ditches and Swales

The following provides a description of the status of the process water ditches and swales:

- The process water ditch adjacent to the TDU area exhibited a moderate water level at the time of Inspection. This ditch was not being pumped at the time of Inspection.
- The ditches adjacent to the Household Hazardous Waste Depot were nearly full, with standing water noted in the ditch immediately east, as shown in Photo 19. The ditch feeding the North Process Water Pond directly exhibited significant standing water. Prior inspections identified sedimentation and culvert damage in these ditches, impeding flow and resulting in standing water within the ditches. It is recommended that sediment be removed and culvert(s) be repaired as necessary to promote drainage.

5.2 North Process Water Pond

The following provides a description of the status of the North Process Water Pond (Photo 20):

- The water level within the North Process Water Pond was low, well below the base of the inlet ditch.



- The pump at the North Process Water Pond was not accessible due to large groups of Canadian geese.
- During previous inspections, a significant washout was observed in the southeast corner of the North Process Water Pond. Large rip rap was observed in the washout, placed to stabilize the slope.

5.3 South Process Water Pond

The following provides a description of the status of the South Process Water Pond:

- The water level within the South Process Water Pond was moderate.
- During previous inspections it was noted that surface water flow from Cell 19-1 was blocked by interim cover works. These blockages have been removed.

5.4 West Process Water Pond

The following provides a description of the status of the West Process Water Pond, which is used for process water storage:

- Low water levels were observed in the West Process Water Pond.

6. Leachate Management System

The leachate reservoirs are designed to receive leachate from the active fill area and process areas. Leachate transferred from the active fill area is detained within the leachate reservoirs prior to transfer to the incinerator for disposal.

6.1 South Leachate Reservoir

The following provides a description of the status of the South Leachate Reservoir (Photo 21):

- The South Leachate Reservoir is equipped with a permanent floating cover. The South Reservoir is currently being used for leachate storage, with leachate pumped from the New Leachate Reservoir. The South Leachate Reservoir was full.
- Clean Harbors maintains a record of the volume of leachate within the South Leachate Reservoir.

6.2 East Leachate Reservoir

The following provides a description of the status of the East Leachate Reservoir (Photo 22):

- The East Leachate Reservoir is equipped with a permanent floating cover. The East Reservoir is currently being used for leachate storage, but is not currently actively receiving leachate. The East Reservoir was full.
- Clean Harbors maintains a record of the volume of leachate within the East Leachate Reservoir.



6.3 New Leachate Reservoir

The following provides a description of the status of the New Leachate Reservoir (Photo 23):

- The new Leachate Reservoir has been constructed immediately east of the East Leachate Reservoir and is equipped with a permanent floating cover. The new Leachate Reservoir is currently operational and is being used for leachate storage. Leachate is being pumped from this Reservoir to the South Leachate Reservoir as required. The new Leachate Reservoir is full.
- Clean Harbors maintains a record of the volume of leachate within the New Leachate Reservoir.
- The pump at adjacent Leachate Building No. 3 was not in operation at the time of the inspection.

6.4 Leachate Storage Tank and Pumping System

The following provides a description of the status of the Leachate Storage Tank and Pumping System:

- The Leachate Storage Tank is in operation, serving as the feed tank to the incinerator.

7. Waste Processing Operations

The following provides a description of the Waste Processing Operations:

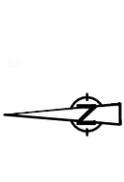
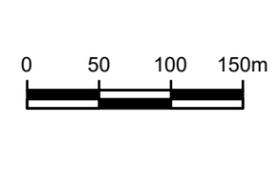
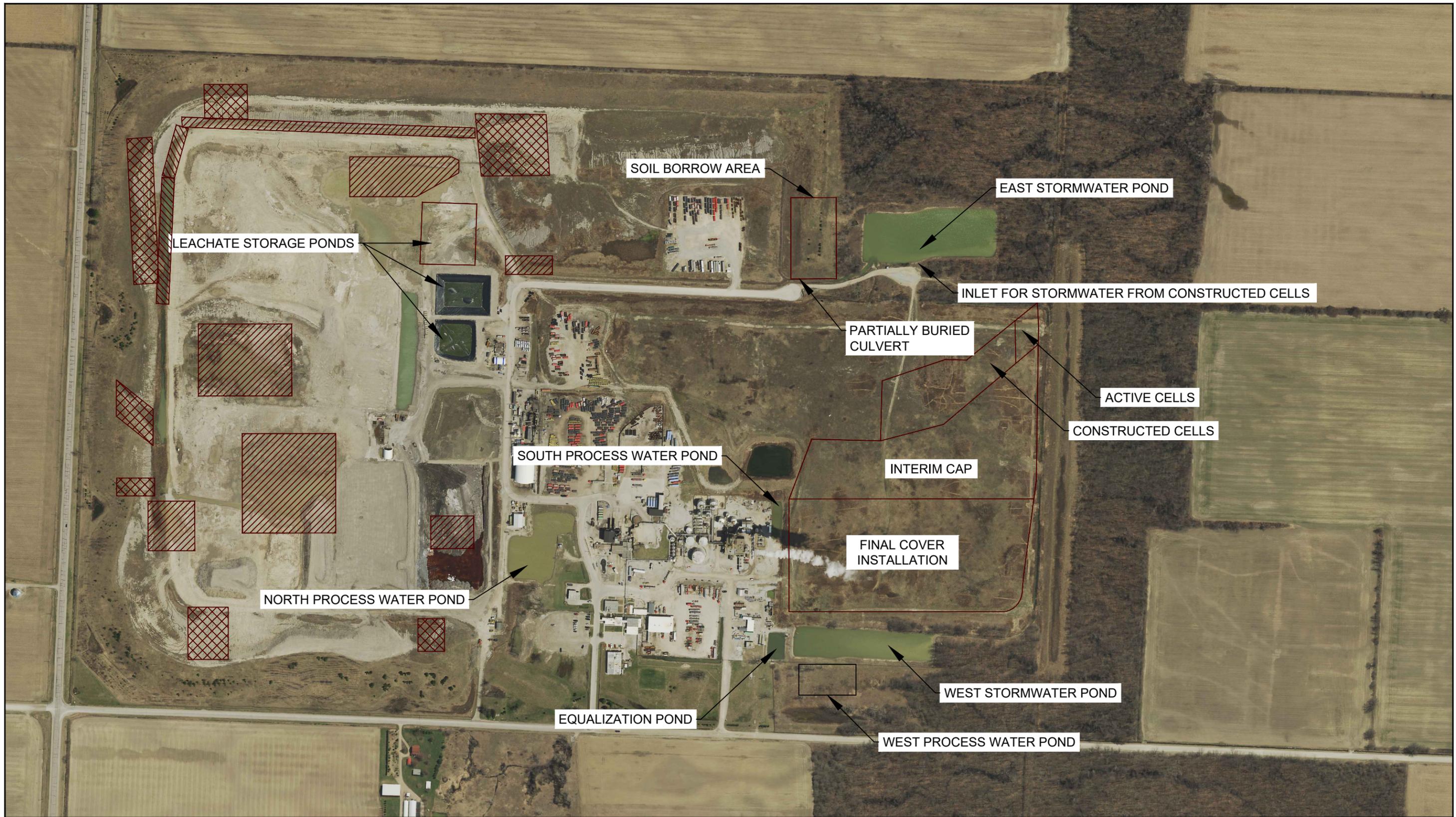
- Odour was noted in the vicinity of the North Process Water Pond, the leachate reservoirs, the West Surface Water Pond, and the northwest portion of the perimeter screening berm.
- Identified odours were not identified beyond Site boundaries.

8. Conclusions and Recommendations

Interim cover work has been completed in the northern area of the Site. As such, the former stockpile area and other areas in the north that have periodic standing water are scheduled to be assessed and re-graded to promote drainage.

Maintenance of the perimeter ditches is required to remove areas where sediment has accumulated and is restricting flow of water. Maintenance of the perimeter ditches is a key component to minimize standing water on the interim cover and promote transfer of water to surface water ponds. It is recommended that perimeter ditch maintenance be undertaken to remove blockages as noted. The maintenance work should minimize the potential for flooding during storm events.

Portions of the interior side of the perimeter screening berms have significant erosion. These areas should be assessed and corrected to minimize erosion into the perimeter ditches. Installation of reinforced ditches from the top of berm to the perimeter ditches may be a solution for these areas, as well as vegetation of the internal berm slopes.



LEGEND:

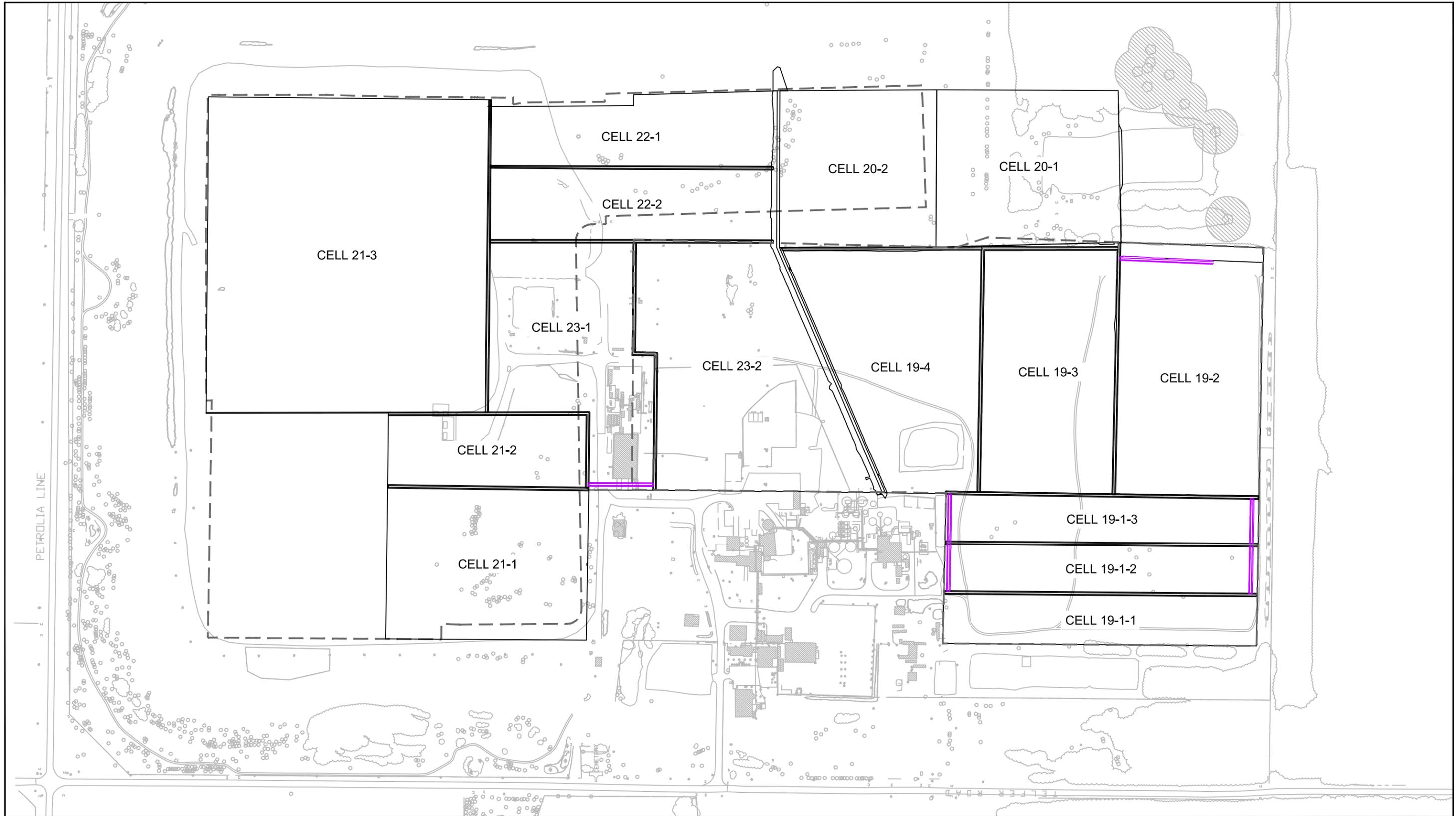
	LARGE EROSION CHANNELS
	LARGE AREAS OF STANDING WATER



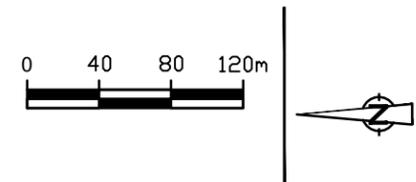
LAMBTON FACILITY
 CLEAN HARBORS CANADA INC.
 2020 FIRST QUARTER SITE INSPECTION
 SITE PLAN

44985-16
 MARCH 26, 2020

FIGURE 1



Source: DESIGN AND OPERATIONS REPORT - LAMBTON LANDFILL EXPANSION, CLEAN HARBORS CANADA, INC. PREPARED BY TETRA TECH WEI INC. DATED OCTOBER 8, 2015



LAMBTON FACILITY
 CLEAN HARBORS CANADA INC.
 2020 FIRST QUARTER SITE INSPECTION
 LANDFILL EXPANSION SUBCELL FILL EXPANSION PLAN

44985-16
 MARCH 26, 2020

FIGURE 2

Attachment 1

Photographic Log



Photo 1 - Active landfilling cell, Cell 19-2



Photo 2 – Completed sub-cells, Cell 19-2





Photo 3 - Completed sub-cells, Cell 19-2



Photo 4 - Completed sub-cells, Cell 19-2





Photo 5 - Completed sub-cells, Cell 19-2



Photo 6 - Final landfill cover placement, Cell 19-1





Photo 7 - Protective soil cover on Cell 19-1 final cover



Photo 8 - Standing water in northwest corner of Site





Photo 9 – Standing water in northern, central portion of site



Photo 10 - High water levels in central portion of north perimeter ditch





Photo 11 - North ditch, standing water



Photo 12 - Original Landfill Area, east ditch, standing water





Photo 13 – Standing water in southeast corner of Original Landfill Area



Photo 14 – Standing water south of Cells 19-1 and 19-2





Photo 15 – Partially buried culvert at borrow area entrance



Photo 16 – East Surface Water Pond





Photo 17 - West Surface Water Pond



Photo 18 - Equalization Pond





Photo 199 - North Process Water Pond inlet ditches



Photo 20 - North Process Water Pond





Photo 21 - South Leachate Reservoir



Photo 22 - East Leachate Reservoir





Photo 23 - New Leachate Reservoir



Appendix B

2020 Second Quarter Site Inspection



Memorandum

June 29, 2020

To: Erica Carabott/Clean Harbors
Mike Parker/Clean Harbors

Ref. No.: 044985

From: Jim Yardley/Kal Dhaliwal/mg/66

Tel: 519-340-4265

Subject: **2020 Second Quarter Site Inspection**

1. Introduction

In accordance with requirements outlined in Section 8.1 of the Design and Operations Report, GHD conducted the 2020 Second Quarter Site Inspection (Inspection) of the Clean Harbors Canada, Inc. (Clean Harbors) Lambton Facility (Site) in Corunna, Ontario. The Inspection was conducted on June 5, 2020 by Kal Dhaliwal.

The Inspection consisted of a walk around the Site. The Inspection focused primarily on the active landfill and waste disposal operations, including an inspection of each of the surface water, leachate, and process water ponds. The inspection notes are provided in bullet format in the respective sections. The capital work projects that relate to the waste disposal operations are provided in Section 1.2.

1.1 Weather and Site Conditions

At the time of the Inspection, the temperature was 25°C. Weather conditions at the Site were generally sunny with minimal wind blowing in a southwest direction during the Inspection. During the week preceding the Inspection, the Site experienced 7 mm of total precipitation, and a mean temperature of 17.5°C. The Site was dry, with some standing water observed in low, flat areas and ditches along the North section of the site. Odour was noted in the vicinity of the leachate reservoirs, odours were not identified beyond site boundaries. Figure 1 provides a Site plan showing existing site conditions and features. The air photo is from June 2020.

1.2 2020 Capital Work Projects Related to Waste Disposal Operations

The following are the key capital work projects that are to be conducted in relation to waste disposal operations during 2020:

- Construction of the surface water management ponds and related operation components approved September 9, 2019 by the Ministry of Environment, Conservation and Parks, per Environmental Compliance Approval number 2985-B9KKP2.
- Construction of Waste Disposal Cell 19-3 and extension of the leachate collection trench.
- Completion of the final cover system on Cell 19-1 that was commenced in August of 2019.

Figure 2 provides the location and status of the aforementioned capital works.



2. Landfill Operations

2.1 Landfill Cell Development and Active Waste Disposal

- Figure 3 provides the configuration and status of the vertical landfill expansion cells that have been constructed and filled, the active waste disposal cell(s), and the 2020 landfill cells, as well as outlining the future landfill cells. Cell reference numbers are provided on the figure, with subcell references provided for active or constructed cells.
- Active waste face is located in cell 19-2F. Waste placement is occurring from South to North.
- Cell 19-3B construction has commenced.
- Waste Transport Route is shown on Figures 3.

2.2 Landfill Cover

Per Environmental Compliance Approval No. A031806, Notice No. 9 (dated October 19, 2015), no previously covered areas of the site are considered to have received final cover, since a portion of the existing cover will be removed and additional waste placed in these areas.

Figure 3 provides the configuration and status of final and interim cover placement.

2.2.1 Interim Cover

- Interim cover for cell 19-2 is being hauled from 2020 capital works excavation locations.
- The majority of Cell 19-2 has received interim cover, with the exception of the active landfilling area (Cell 19-2F).
- The interim cover was noted to be in good condition, with minor erosion channels observed
- Erosion channels should be addressed through additional clay placement and grading, as weather permits.

2.2.2 Final Cover

- Installation of final cover over cell 19-1 commenced in the third quarter of 2019. Final cover consists of a Geosynthetic Clay Liner, HDPE Geomembrane, Geocomposite drainage layer, protective soil cover and topsoil.
- The installation of Geosynthetic Clay Liner, HDPE Geomembrane and Geocomposite drainage layer over cell 19-1 was completed in the fourth quarter of 2019.
- The protective soil layer above the geocomposite drainage layer was being installed during this inspection.
- The protective soil layer, topsoil placement, and seeding is scheduled to occur in the third quarter of 2020.
- Placement of protective soil cover has commenced on cell 19-1. Top soil and seeding will be completed as part of the 2020 capital works.



3. Site Features

3.1 Perimeter Screening Berm

- Several major and minor erosion channels were noted throughout the internal slopes of the perimeter screening berm. These channels have been described and identified on Figure 4
- Several large erosion channels were noted along the top plateaus of the perimeter screening berm. These channels have been described and identified on Figure 4.
- Erosion channels are generally in un-vegetated areas.
- Erosion along the internal slopes increases the sedimentation of the perimeter ditches.
- The external sidewalls are in good condition and vegetated.

3.2 Process Water Management System

- The Process Water Management System consists of three ponds and a series of ditches and swales, as shown on Figure 1.
- The current status of the Process Water Management System is described on Figure 4.
- Water retained in the Process Water Management System is used as quench water for Site incineration operations.

3.3 Leachate Storage

The site contains three leachate reservoirs that are designed to receive leachate from the active fill area and process areas. Leachate transferred from the active fill area is detained within the leachate reservoirs prior to transfer to the incinerator for disposal.

- The three leachate reservoirs are shown on Figure 1, current status of the leachate reservoirs is described on Figure 4.
- The leachate reservoirs are equipped with a permanent floating cover.
- Clean Harbors maintains a record of the volume of leachate within the leachate reservoirs.
- Tank T12 located in the tank farm is the leachate storage tank that provides leachate to the incinerator for destruction.
- Surface Water Management System

The 2020 capital works are largely focused on the reconfiguration of the surface water management system located on the south end of the site.

3.4 Ditches and Swales

- Figure 4 provides the location and status of surface water ditching, swales and standing water.
- Due to vegetation overgrowth some surface water features could not be inspected.



- An elevation difference between the northeast and southeast surface water ditching was noted during the inspection, approximate area is shown on Figure 4. The noted elevation difference is preventing the northeast ditching to drain down slope efficiently. Restoration of the ditching is due to take place during 2020 Capital Works.

3.5 East Surface Water Pond

- Figure 4 provides the location and status of the East Surface Water Pond.
- Extensive modifications to the East Surface Water Pond will take place in the third quarter due to the 2020 Capital Works.

3.6 West Surface Water Pond

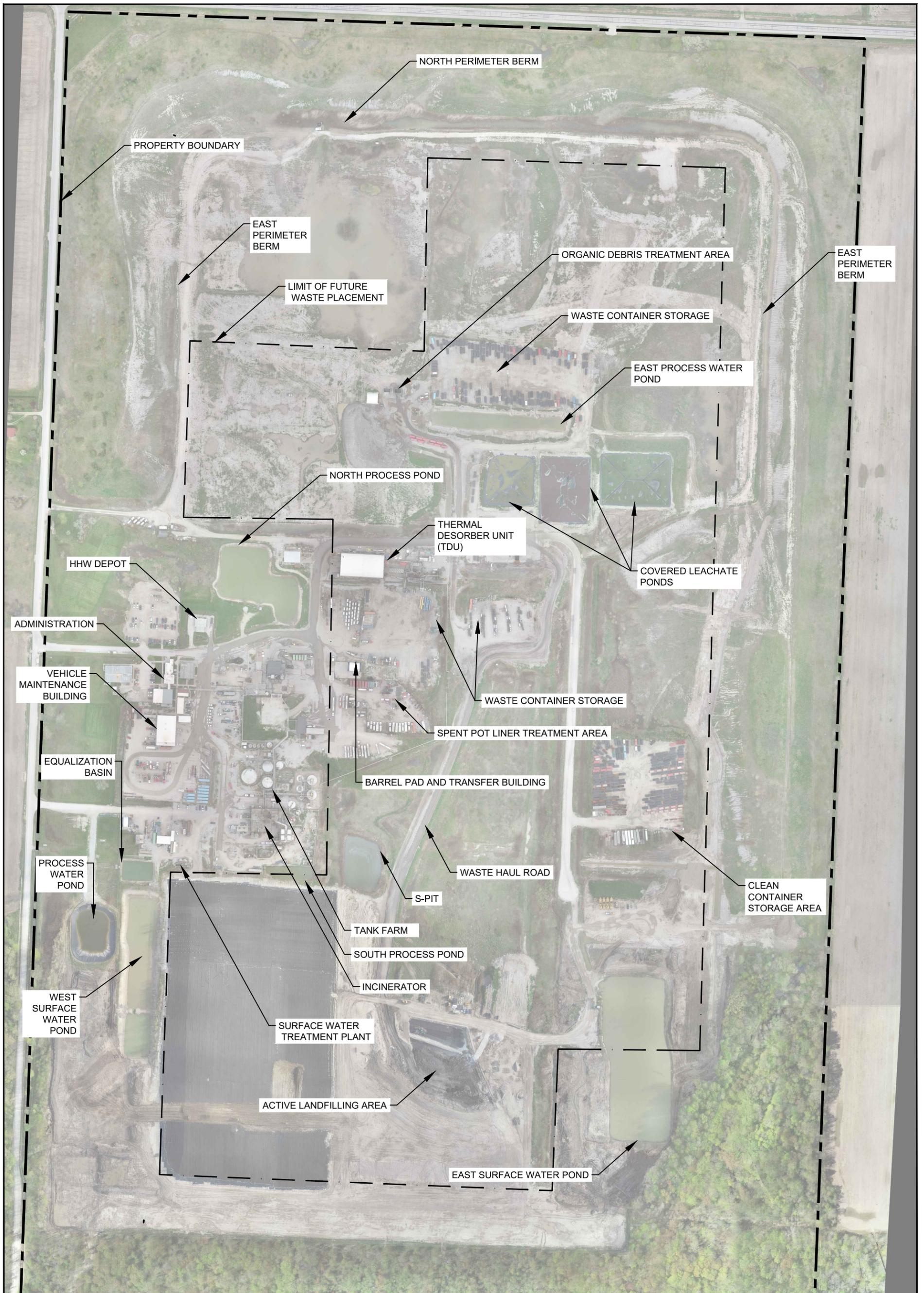
- Figure 4 provides the location and status of the West Surface Water Pond.
- As a part of the 2020 capital works the West Surface Water Pond has been drained and is being used as a storm water management location during construction works.
- Extensive modifications to the West Surface Water Pond will take place during the second and third quarter due to the 2020 Capital Works.

3.7 Equalization Pond

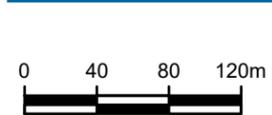
- Figure 4 provides the location and status of the Equalization Pond.
- Fish were observed within the Equalization Pond.

4. Conclusions and Recommendations

- Low/depressed areas in the north of the site to be assessed and the interim cover regraded to promote drainage. These areas are proposed to be addressed during 2020 as part of the capital works and the availability of excess soils.
- As active site works progress from south to north it is recommended that the perimeter berm is regraded, covered in topsoil and seeded to prevent future erosion in to the surface water system.
- Regular maintenance of the perimeter ditches is recommended until the perimeter berm erosion channels can be regraded, covered in topsoil and seeded. Maintenance of the perimeter ditches is a key component to minimizing standing water on the site. Maintenance includes removing silt, cutting back vegetation and removing blockages.



Source: AERIAL IMAGERY CAPTURED BY GHD MAY 22, 2020

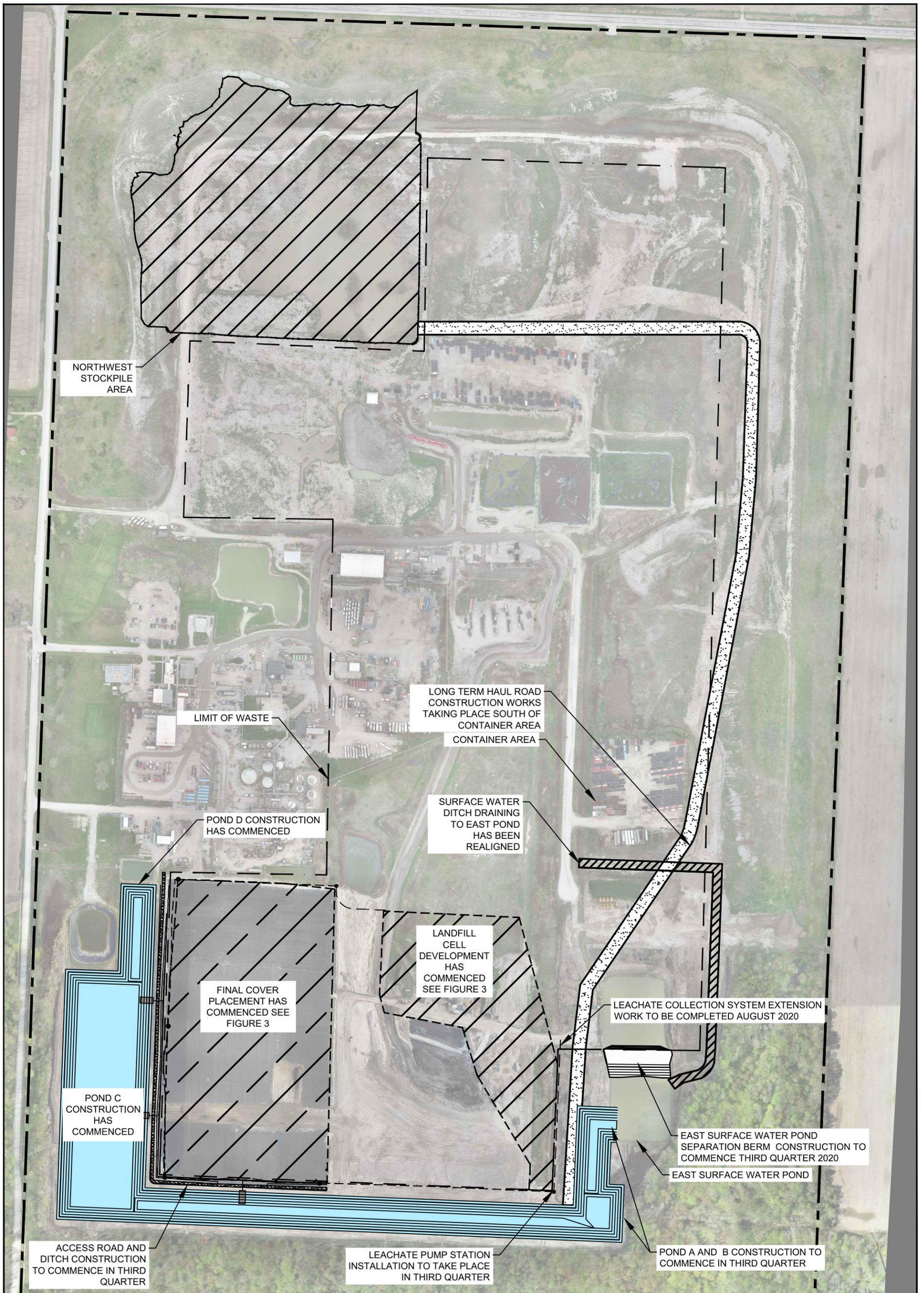


CLEAN HARBORS CANADA, INC.
 LAMBTON COUNTY, ONTARIO
 2020 SECOND QUARTER SITE INSPECTION

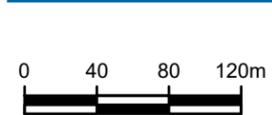
44985-16
 Jun 26, 2020

SITE PLAN

Figure 1



Source: AERIAL IMAGERY CAPTURED BY GHD MAY 22, 2020

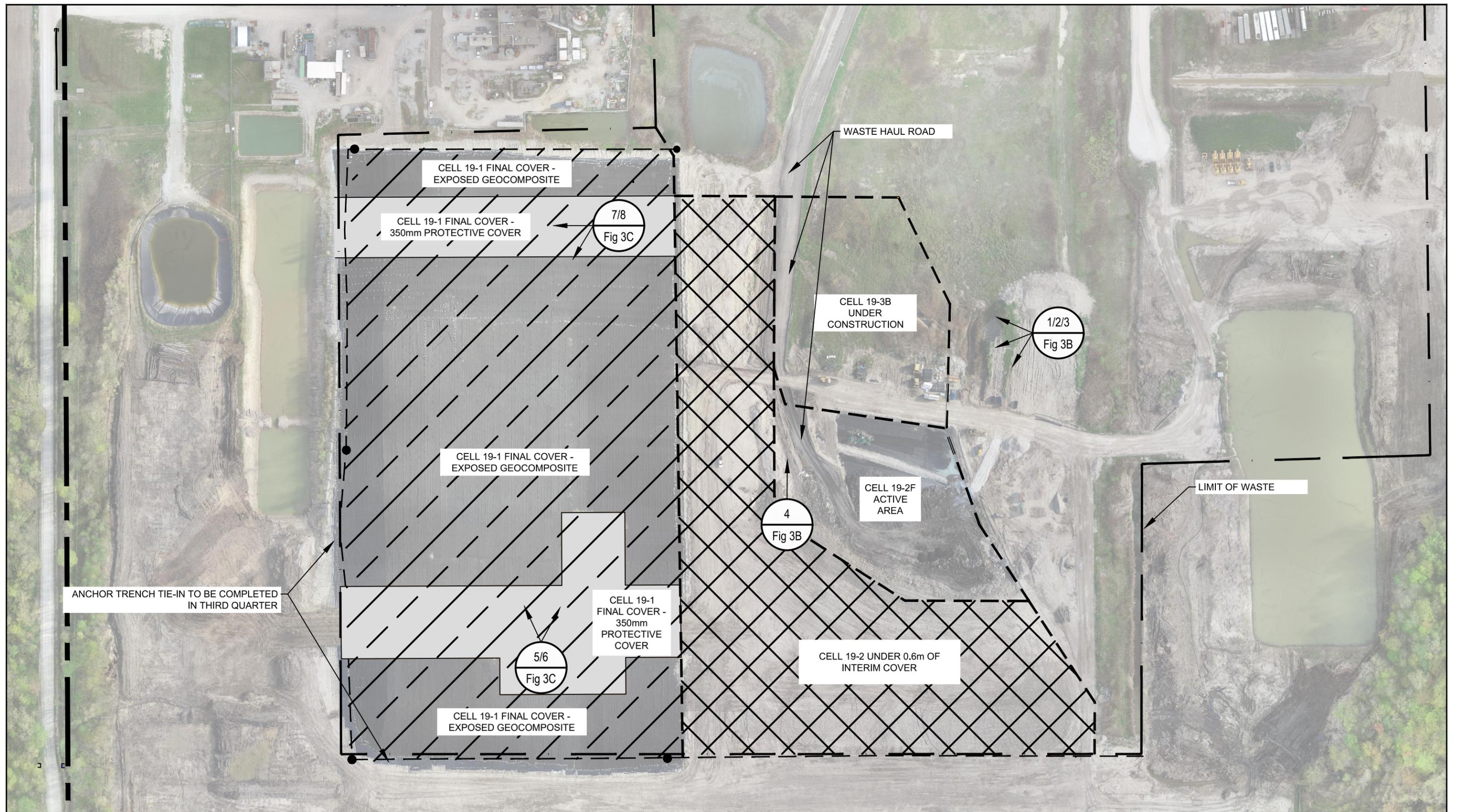


CLEAN HARBORS CANADA, INC.
 LAMBTON COUNTY, ONTARIO
 2020 SECOND QUARTER SITE INSPECTION

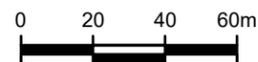
44985-16
 Jun 26, 2020

2020 CAPITAL WORKS PLAN

Figure 2



Source: AERIAL IMAGERY CAPTURED BY GHD MAY 22, 2020



CLEAN HARBORS CANADA, INC.
 LAMBTON COUNTY, ONTARIO
 2020 SECOND QUARTER SITE INSPECTION

44985-16
 Jun 26, 2020

VERTICAL LANDFILL EXPANSION (ACTIVE AREA)

Figure 3A



1 ACTIVE WASTE FACE (CELL 19-2F)
Fig 3A



2 CELL 19-3B CONSTRUCTION
Fig 3A



3 CELL 19-3B CONSTRUCTION
Fig 3A



4 WASTE HAUL ROAD AND CELL 19-3F CONSTRUCTION
Fig 3A

Source: IMAGES CAPTURED BY GHD STAFF DURING JUNE 5, 2020 SITE INSPECTION



CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2020 SECOND QUARTER SITE INSPECTION
VERTICAL LANDFILL EXPANSION (ACTIVE AREA)
PHOTOS 1

44985-16
Jun 26, 2020

Figure 3B



5 FINAL COVER - PROTECTIVE COVER PLACEMENT CELL 19-1
Fig 3A



6 FINAL COVER - PROTECTIVE COVER PLACEMENT CELL 19-1
Fig 3A



7 FINAL COVER - PROTECTIVE COVER PLACEMENT CELL 19-1
Fig 3A



8 FINAL COVER - PROTECTIVE COVER PLACEMENT CELL 19-1
Fig 3A

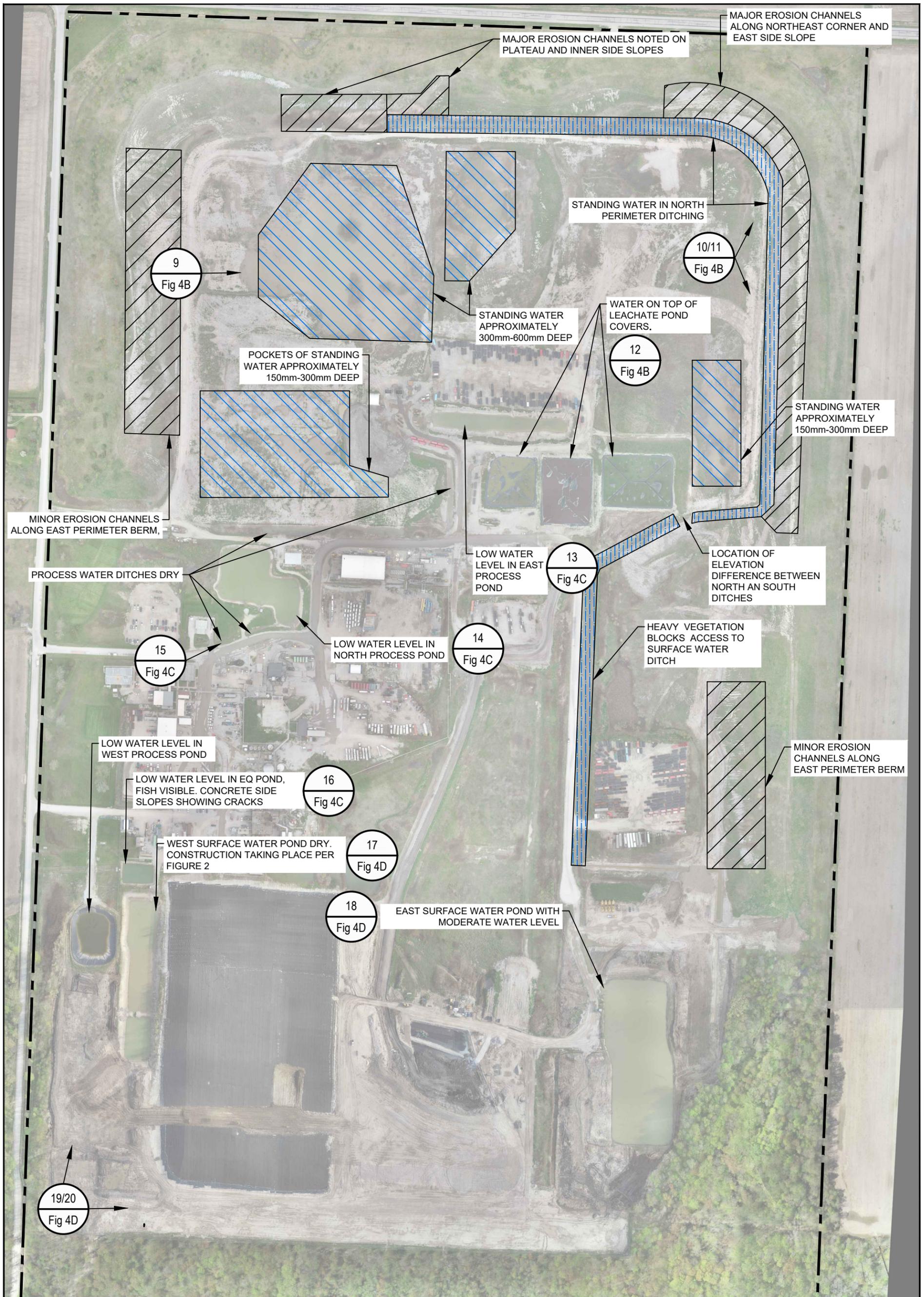
Source: IMAGES CAPTURED BY GHD STAFF DURING JUNE 5, 2020 SITE INSPECTION



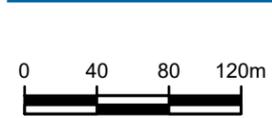
CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2020 SECOND QUARTER SITE INSPECTION
VERTICAL LANDFILL EXPANSION (ACTIVE AREA)
PHOTOS 2

44985-16
Jun 26, 2020

Figure 3C



Source: AERIAL IMAGERY CAPTURED BY GHD MAY 22, 2020



CLEAN HARBORS CANADA, INC.
 LAMBTON COUNTY, ONTARIO
 2020 SECOND QUARTER SITE INSPECTION

44985-16
 Jun 26, 2020

SITE FEATURES

Figure 4A



9 NORTH WEST AREA WITH PONDED WATER
Fig 4A



10 EROSION CHANNELS ALONG PERIMETER BERM AND STANDING WATER IN NORTH EAST DITCH
Fig 4A



11 EROSION CHANNELS ALONG PERIMETER BERM AND STANDING WATER IN NORTH EAST DITCH
Fig 4A



12 PONDED WATER ON LEACHATE POND COVERS
Fig 4A

Source: IMAGES CAPTURED BY GHD STAFF DURING JUNE 5, 2020 SITE INSPECTION



CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2020 SECOND QUARTER SITE INSPECTION
SITE FEATURES
PHOTOS 1

44985-16
Jun 26, 2020

Figure 4B



13 EAST PROCESS POND
Fig 4A



14 NORTH PROCESS POND
Fig 4A



15 PROCESS DITCH
Fig 4A



16 EQ POND
Fig 4A

Source: IMAGES CAPTURED BY GHD STAFF DURING JUNE 5, 2020 SITE INSPECTION



CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2020 SECOND QUARTER SITE INSPECTION
SITE FEATURES
PHOTOS 2

44985-16
Jun 26, 2020

Figure 4C



17 WEST SURFACE WATER POND
Fig 4A



18 EAST SURFACE WATER POND
Fig 4A



19 2020 CAPITAL WORKS POND C AREA
Fig 4A



20 2020 CAPITAL WORKS POND C AREA
Fig 4A

Source: IMAGES CAPTURED BY GHD STAFF DURING JUNE5, 2020 SITE INSPECTION



CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2020 SECOND QUARTER SITE INSPECTION
SITE FEATURES
PHOTOS 3

44985-16
Jun 26, 2020

Figure 4D

Appendix C

2020 Third Quarter Site Inspection



Memorandum

October 26, 2020

To: Erica Carabott/Clean Harbors
Mike Parker/Clean Harbors

Ref. No.: 044985

From: Jim Yardley/Kal Dhaliwal/mg/67

Tel: 519-340-4265

Subject: **2020 Third Quarter Site Inspection**

1. Introduction

In accordance with requirements outlined in Section 8.1 of the Design and Operations Report, GHD conducted the 2020 Second Quarter Site Inspection (Inspection) of the Clean Harbors Canada, Inc. (Clean Harbors) Lambton Facility (Site) in Corunna, Ontario. The Inspection was conducted on September 16, 2020 by Kal Dhaliwal.

The Inspection consisted of a walk around the Site. The Inspection focused primarily on the active landfill and waste disposal operations, including an inspection of each of the surface water, leachate, and process water ponds. The inspection notes are provided in bullet format in the respective sections. The capital work projects that relate to the waste disposal operations are provided in Section 1.2.

1.1 Weather and Site Conditions

At the time of the Inspection, the temperature was 20°C. Weather conditions at the Site were overcast with minimal sun, wind blowing in a northeast direction during the Inspection. During the week preceding the Inspection, the Site experienced 1.5mm of total precipitation, and a mean temperature of 15.6°C. The Site was dry, with some standing water observed in low, flat areas and ditches along the North section of the site. Odour was noted in the northeast quadrant of the site odours were not identified beyond site boundaries. Figure 1 provides a Site plan showing existing site conditions and features. The air photo is from June 2020.

1.2 2020 Capital Work Projects Related to Waste Disposal Operations

The following are the key capital work projects that are to be conducted in relation to waste disposal operations during 2020:

- Construction of the surface water management ponds and related operation components approved September 9, 2019 by the Ministry of Environment, Conservation and Parks, per Environmental Compliance Approval number 2985-B9KKP2.
- Construction of Waste Disposal Cell 19-3 and extension of the leachate collection trench.
- Completion of the final cover system on Cell 19-1 that was commenced in August of 2019.



Figure 2 provides the location and status of the aforementioned capital works.

2. Landfill Operations

2.1 Landfill Cell Development and Active Waste Disposal

- Figure 3A provides the configuration and status of the vertical landfill expansion cells that have been constructed and filled, the active waste disposal cell(s), and the 2020 landfill cells, as well as outlining the future landfill cells. Cell reference numbers are provided on the figure, with subcell references provided for active or constructed cells.
- Active waste face is located in cell 19-2F. Waste placement is occurring from South to North.
- Cell 19-3B construction has commenced.
- Waste Transport Route is shown on Figures 3A.

2.2 Landfill Cover

Per Environmental Compliance Approval No. A031806, Notice No. 9 (dated October 19, 2015), no previously covered areas of the site are considered to have received final cover, since a portion of the existing cover will be removed and additional waste placed in these areas.

Figure 3A provides the configuration and status of final and interim cover placement.

2.2.1 Interim Cover

- Interim cover for cell 19-2 was hauled from 2020 capital works excavation locations, interim cover stockpile location can be viewed on figure 3A.
- The majority of Cell 19-2 has received interim cover, with the exception of the active landfilling area (Cell 19-2F).
- The interim cover was noted to be in good condition, with minor erosion channels observed
- Erosion channels should be addressed through additional clay placement and grading, as weather permits.

2.2.2 Final Cover

- Installation of final cover over cell 19-1 commenced in the third quarter of 2019. Final cover consists of a Geosynthetic Clay Liner, HDPE Geomembrane, Geocomposite drainage layer, protective soil cover and topsoil.
- The installation of Geosynthetic Clay Liner, HDPE Geomembrane and Geocomposite drainage layer over cell 19-1 was completed in the fourth quarter of 2019.
- The protective soil layer above the geocomposite drainage layer was being installed during this inspection.



- Placement of protective soil cover has commenced on cell 19-1. Top soil and seeding will be completed as part of the 2020 capital works.

3. Site Features

3.1 Perimeter Screening Berm

- Several major and minor erosion channels were noted throughout the internal slopes of the perimeter screening berm. These channels have been described and identified on Figure 4A
- Several large erosion channels were noted along the top plateaus of the perimeter screening berm. These channels have been described and identified on Figure 4A.
- Erosion channels are generally in un-vegetated areas.
- Erosion along the internal slopes increases the sedimentation of the perimeter ditches.
- The external sidewalls are in good condition and vegetated.

3.2 Process Water Management System

- The Process Water Management System consists of three ponds and a series of ditches and swales, as shown on Figure 1.
- The current status of the Process Water Management System is described on Figure 4A.
- Water retained in the Process Water Management System is used as quench water for Site incineration operations.

3.3 Leachate Storage

The site contains three leachate reservoirs that are designed to receive leachate from the active fill area and process areas. Leachate transferred from the active fill area is detained within the leachate reservoirs prior to transfer to the incinerator for disposal.

- The three leachate reservoirs are shown on Figure 1, current status of the leachate reservoirs is described on Figure 4A.
- The leachate reservoirs are equipped with a permanent floating cover.
- Clean Harbors maintains a record of the volume of leachate within the leachate reservoirs.
- Tank T12 located in the tank farm is the leachate storage tank that provides leachate to the incinerator for destruction.

3.4 Surface Water Management System

The 2020 capital works are largely focused on the reconfiguration of the surface water management system located on the south end of the site.



3.4.1 Ditches and Swales

- Figure 4A provides the location and status of surface water ditching, swales and standing water.
- Due to vegetation overgrowth some surface water features could not be inspected.
- An elevation difference between the northeast and southeast surface water ditching was noted during the inspection, approximate area is shown on Figure 4A. The noted elevation difference is preventing the northeast ditching to drain down slope efficiently. Restoration of the ditching is due to take place during 2020 Capital Works.

3.4.2 East Surface Water Pond

- Figure 4A provides the location and status of the East Surface Water Pond.
- Extensive modifications to the East Surface Water Pond are currently taking place as part of the 2020 Capital Works.
- The East Surface Water Pond has been drained, sediment is being excavated and a separation berm is being constructed as shown on figure 2.
- The reduced East Surface Water Pond area will be combined with the new pond network and referred to as Pond A.

3.4.3 West Surface Water Pond

- Figure 4A provides the former location of the West Surface Water Pond.
- As a part of the 2020 capital works the West Surface Water Pond has been expanded in to a larger pond network shown on Figure 1.
- The area in which the West Surface Water Pond was located will now be referred to as Pond D.

3.4.4 Equalization Pond

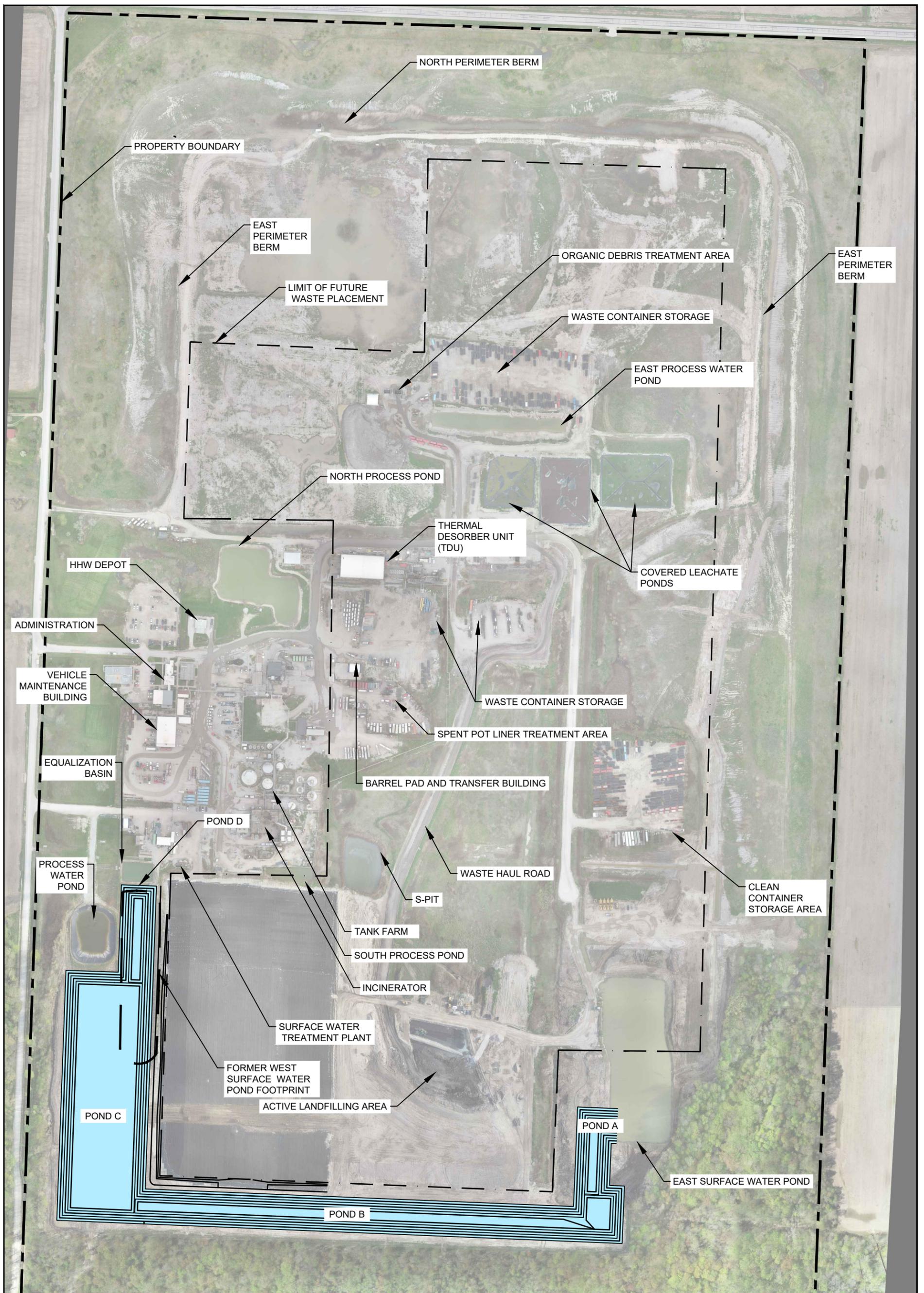
- Figure 4A provides the location and status of the Equalization Pond.
- Fish were observed within the Equalization Pond.

4. Conclusions and Recommendations

- Low/depressed areas in the north of the site to be assessed and the interim cover regraded to promote drainage. These areas are proposed to be addressed during 2020 as part of the capital works and the availability of excess soils.
- As active site works progress from south to north it is recommended that the perimeter berm is regraded, covered in topsoil and seeded to prevent future erosion in to the surface water system.
- Regular maintenance of the perimeter ditches is recommended until the perimeter berm erosion channels can be regraded, covered in topsoil and seeded. Maintenance of the perimeter ditches is a key



component to minimizing standing water on the site. Maintenance includes removing silt, cutting back vegetation and removing blockages.



Source: AERIAL IMAGERY CAPTURED BY GHD MAY 22, 2020

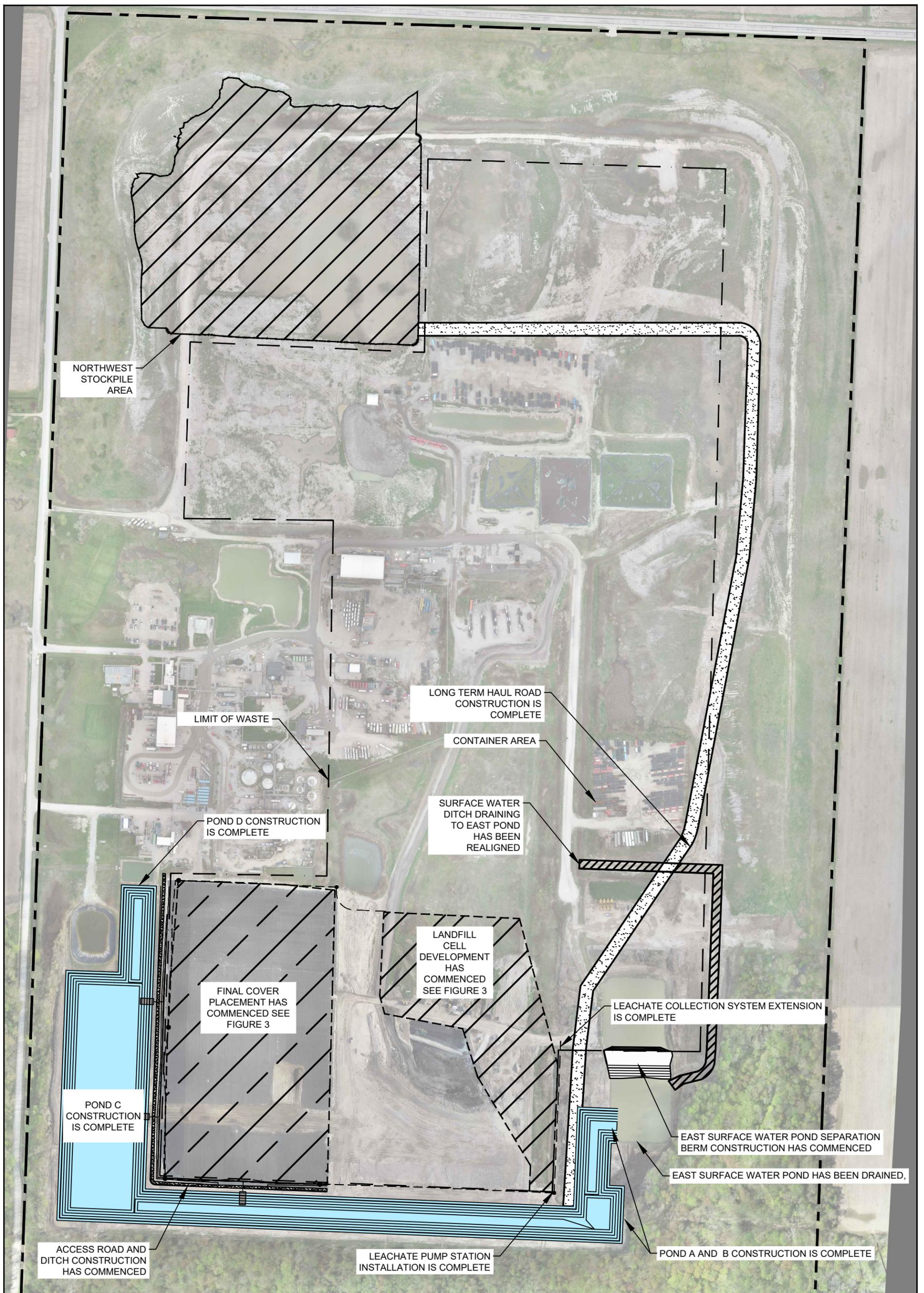


CLEAN HARBORS CANADA, INC.
 LAMBTON COUNTY, ONTARIO
 2020 THIRD QUARTER SITE INSPECTION

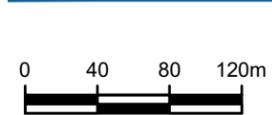
SITE PLAN

44985-16
 Sep 23, 2020

Figure 1



Source: AERIAL IMAGERY CAPTURED BY GHD MAY 22, 2020

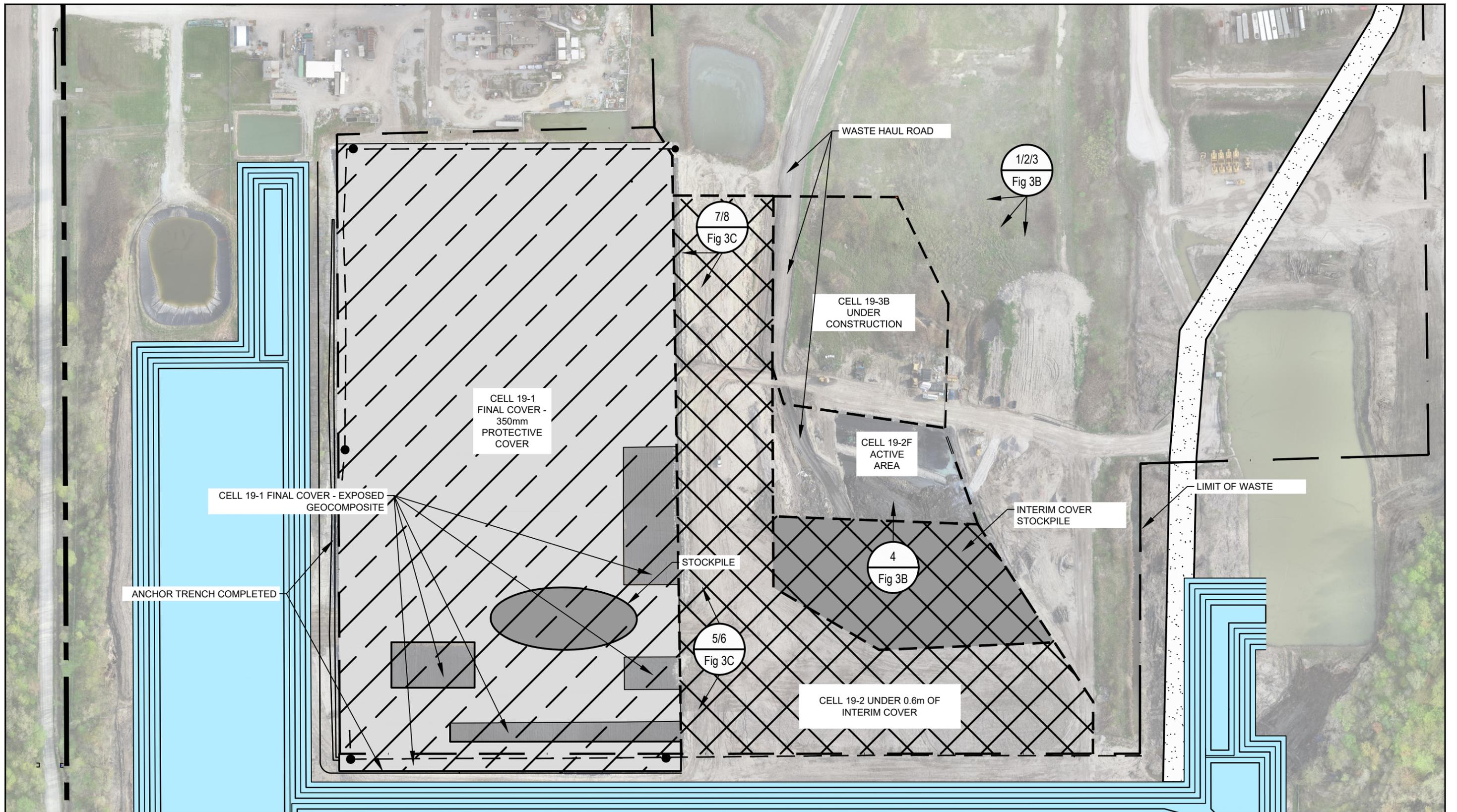


CLEAN HARBORS CANADA, INC.
 LAMBTON COUNTY, ONTARIO
 2020 THIRD QUARTER SITE INSPECTION

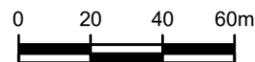
2020 CAPITAL WORKS PLAN

44985-16
 Sep 22, 2020

Figure 2



Source: AERIAL IMAGERY CAPTURED BY GHD MAY 22, 2020



CLEAN HARBORS CANADA, INC.
 LAMBTON COUNTY, ONTARIO
 2020 THIRD QUARTER SITE INSPECTION

44985-16
 Sep 23, 2020

VERTICAL LANDFILL EXPANSION (ACTIVE AREA)

Figure 3A



1 CELL 19-3B CONSTRUCTION
Fig 3A



2 CELL 19-3B CONSTRUCTION
Fig 3A



3 CELL 19-3B CONSTRUCTION
Fig 3A



4 CELL 19-2F WASTE FACE
Fig 3A

Source: IMAGES CAPTURED BY GHD STAFF DURING SEPT 16, 2020 SITE INSPECTION



CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2020 THIRD QUARTER SITE INSPECTION
VERTICAL LANDFILL EXPANSION (ACTIVE AREA)
PHOTOS 1

44985-16
Sep 23, 2020

Figure 3B



5 FINAL COVER - PROTECTIVE COVER PLACEMENT CELL 19-1
Fig 3A



6 FINAL COVER - PROTECTIVE COVER PLACEMENT CELL 19-1
Fig 3A



7 FINAL COVER - PROTECTIVE COVER PLACEMENT CELL 19-1
Fig 3A



8 FINAL COVER - PROTECTIVE COVER PLACEMENT CELL 19-1
Fig 3A

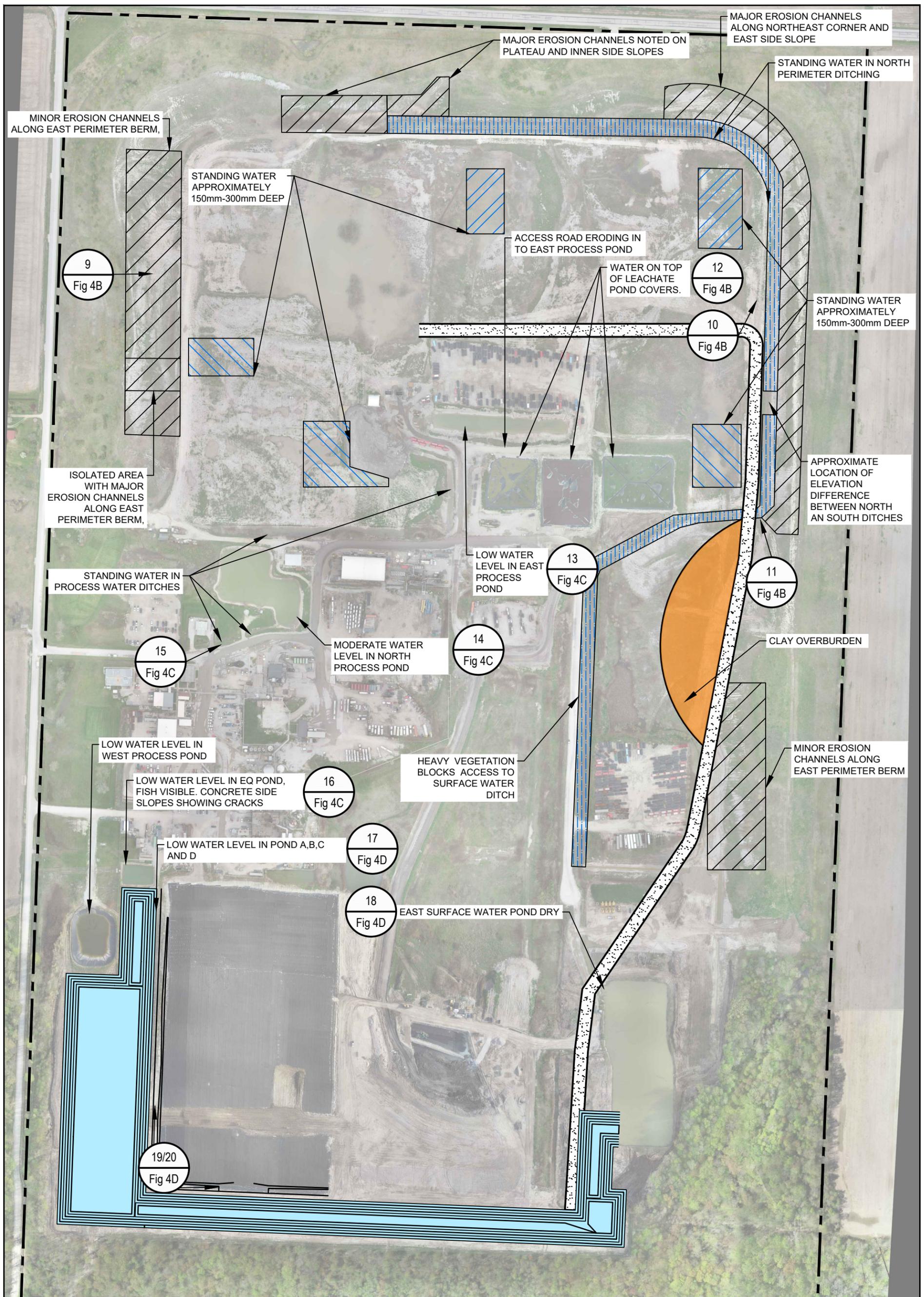
Source: IMAGES CAPTURED BY GHD STAFF DURING SEPT 16, 2020 SITE INSPECTION



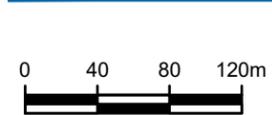
CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2020 THIRD QUARTER SITE INSPECTION
VERTICAL LANDFILL EXPANSION (ACTIVE AREA)
PHOTOS 2

44985-16
Sep 23, 2020

Figure 3C



Source: AERIAL IMAGERY CAPTURED BY GHD MAY 22, 2020



CLEAN HARBORS CANADA, INC.
 LAMBTON COUNTY, ONTARIO
 2020 THIRD QUARTER SITE INSPECTION

44985-16
 Sep 23, 2020

SITE FEATURES

Figure 4A



9 REGRADED NORTH AREA
Fig 4A



10 EROSION CHANNELS ALONG PERIMETER BERM
Fig 4A



11 NORTH EAST AREA WITH HAUL ROAD
Fig 4A



12 PONDED WATER ON LEACHATE POND COVERS
Fig 4A

Source: IMAGES CAPTURED BY GHD STAFF DURING SEPT 16, 2020 SITE INSPECTION



CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2020 THIRD QUARTER SITE INSPECTION
SITE FEATURES
PHOTOS 1

44985-16
Sep 23, 2020

Figure 4B



13 EAST PROCESS POND
Fig 4A



14 NORTH PROCESS POND
Fig 4A



15 PROCESS DITCH
Fig 4A



16 EQ POND
Fig 4A

Source: IMAGES CAPTURED BY GHD STAFF DURING SEPT 16, 2020 SITE INSPECTION



CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2020 THIRD QUARTER SITE INSPECTION
SITE FEATURES
PHOTOS 2

44985-16
Sep 23, 2020

Figure 4C



19 SURFACE WATER POND B
Fig 4A



18 EAST SURFACE WATER POND
Fig 4A



20 SURFACE WATER POND C
Fig 4A



17 SURFACE WATER POND D
Fig 4A

Source: IMAGES CAPTURED BY GHD STAFF DURING SEPT 16, 2020 SITE INSPECTION



CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2020 THIRD QUARTER SITE INSPECTION
SITE FEATURES
PHOTOS 3

44985-16
Sep 23, 2020

Figure 4D

Appendix D

2020 Fourth Quarter Site Inspection



Memorandum

December 4, 2020

To: Erica Carabott/Clean Harbors
Mike Parker/Clean Harbors

Ref. No.: 044985

From: Jim Yardley/Kal Dhaliwal/mg/69

Tel: 519-340-4265

Subject: 2020 Fourth Quarter Site Inspection

1. Introduction

In accordance with requirements outlined in Section 8.1 of the Design and Operations Report, GHD conducted the 2020 Second Quarter Site Inspection (Inspection) of the Clean Harbors Canada, Inc. (Clean Harbors) Lambton Facility (Site) in Corunna, Ontario. The Inspection was conducted on November 23, 2020 by Kal Dhaliwal.

The Inspection consisted of a walk around the Site. The Inspection focused primarily on the active landfill and waste disposal operations, including an inspection of each of the surface water, leachate, and process water ponds. The inspection notes are provided in bullet format in the respective sections. The capital work projects that relate to the waste disposal operations are provided in Section 1.2.

1.1 Weather and Site Conditions

At the time of the Inspection, the temperature was 4.0°C. Weather conditions at the Site were overcast with minimal sun, with a light breeze blowing in a northeast direction during the Inspection. During the week preceding the Inspection, the Site experienced 10mm of total precipitation, and a mean temperature of 4.0°C. The Site was dry, with some standing water observed in low, flat areas and ditches along the North section of the Site. Odour was noted in the northeast quadrant of the Site. Odours were not identified beyond Site boundaries. Figure 1 provides a Site plan showing existing site conditions and features. The air photo is from June 2020.

1.2 2020 Capital Work Projects Related to Waste Disposal Operations

The following are the key capital work projects that have been conducted in relation to waste disposal operations during 2020:

- Construction of the surface water management ponds and related operation components approved September 9, 2019 by the Ministry of Environment, Conservation and Parks, per Environmental Compliance Approval number 2985-B9KKP2.



- Construction of Waste Disposal Cell 19-3 and extension of the leachate collection trench.
- Completion of the final cover system on Cell 19-1 that was commenced in August of 2019.

Figure 2 provides the location and status of the aforementioned capital works.

2. Landfill Operations

2.1 Landfill Cell Development and Active Waste Disposal

- Figure 3A provides the configuration and status of the vertical landfill expansion cells that have been constructed and filled, the active waste disposal cell(s), and the 2020 landfill cells, as well as outlining the future landfill cells. Cell reference numbers are provided on the figure, with subcell references provided for active or constructed cells.
- Active waste face is located in cell 19-3B. Waste placement is occurring from south to north.
- Cell 19-2D, 19-2G and 19-3A construction has commenced.
- Waste Transport Route is shown on Figures 3A.

2.2 Landfill Cover

Per Environmental Compliance Approval No. A031806, Notice No. 9 (dated October 19, 2015), no previously covered areas of the site are considered to have received final cover, since a portion of the existing cover will be removed and additional waste placed in these areas.

Figure 3A provides the configuration and status of final and interim cover placement.

2.2.1 Interim Cover

- Interim cover for cell 19-2 was hauled from 2020 capital works excavation locations, interim cover stockpile location can be viewed on figure 3A.
- The majority of Cell 19-2 has received interim cover, with the exception of the active landfilling area (Cell 19-3B).
- The interim cover was noted to be in good condition, with minor erosion channels observed
- Erosion channels should be addressed through additional clay placement and grading, as weather permits.

2.2.2 Final Cover

- Installation of final cover over cell 19-1 commenced in the third quarter of 2019. Final cover consists of a Geosynthetic Clay Liner, HDPE Geomembrane, Geocomposite drainage layer, protective soil cover and topsoil.
- The installation of Geosynthetic Clay Liner, HDPE Geomembrane and Geocomposite drainage layer over cell 19-1 was completed in the fourth quarter of 2019.



- The installation of protective soil layer above the geocomposite drainage layer was completed in the third quarter of 2020.
- The installation of topsoil was completed in the third quarter of 2020.
- Seeding of the topsoil was completed in October of 2020.

3. Site Features

3.1 Perimeter Screening Berm

- Several major and minor erosion channels were noted throughout the internal slopes of the perimeter screening berm. These channels have been described and identified on Figure 4A
- Several large erosion channels were noted along the top plateaus of the perimeter screening berm. These channels have been described and identified on Figure 4A.
- Erosion channels are generally in un-vegetated areas.
- Erosion along the internal slopes increases the sedimentation of the perimeter ditches.
- The external sidewalls are in good condition and vegetated.

3.2 Process Water Management System

- The Process Water Management System consists of three ponds and a series of ditches and swales, as shown on Figure 1.
- The current status of the Process Water Management System is described on Figure 4A.
- Water retained in the Process Water Management System is used as quench water for Site incineration operations.

3.3 Leachate Storage

The site contains three leachate reservoirs that are designed to receive leachate from the active fill area and process areas. Leachate transferred from the active fill area is detained within the leachate reservoirs prior to transfer to the incinerator for disposal.

- The three leachate reservoirs are shown on Figure 1, current status of the leachate reservoirs is described on Figure 4A.
- The leachate reservoirs are equipped with a permanent floating cover.
- Clean Harbors maintains a record of the volume of leachate within the leachate reservoirs.
- Tank T12 located in the tank farm is the leachate storage tank that provides leachate to the incinerator for destruction.



3.4 Surface Water Management System

The 2020 capital works are largely focused on the reconfiguration of the surface water management system located on the south end of the site.

3.4.1 Ditches and Swales

- Figure 4A provides the location and status of surface water ditching, swales and standing water.
- Due to vegetation overgrowth some surface water features could not be inspected.
- An elevation difference between the northeast and southeast surface water ditching was noted during the inspection, approximate area is shown on Figure 4A. The noted elevation difference is preventing the northeast ditching to drain down slope efficiently.
- Restoration of the ditching is planned to be conducted as part of the 2021 Capital Works.

3.4.2 East Surface Water Pond

- Figure 4A provides the former location the East Surface Water Pond.
- As part of the 2020 capital works the East Surface Water Pond has been reduced in size. The southern portion of the East Surface Water pond has been combined with the new pond network and is now referred to as Pond A.
- The Northern portion of the East Surface Water Pond is actively being dewatered, in preparation for excavation of Cell 20-1 in 2021.

3.4.3 Surface Water Pond Network

- Figure 4A provides the location and status of the Surface Water Pond Network.
- As a part of the 2020 capital works the Surface Water Pond Network was completed in the third quarter of 2020.

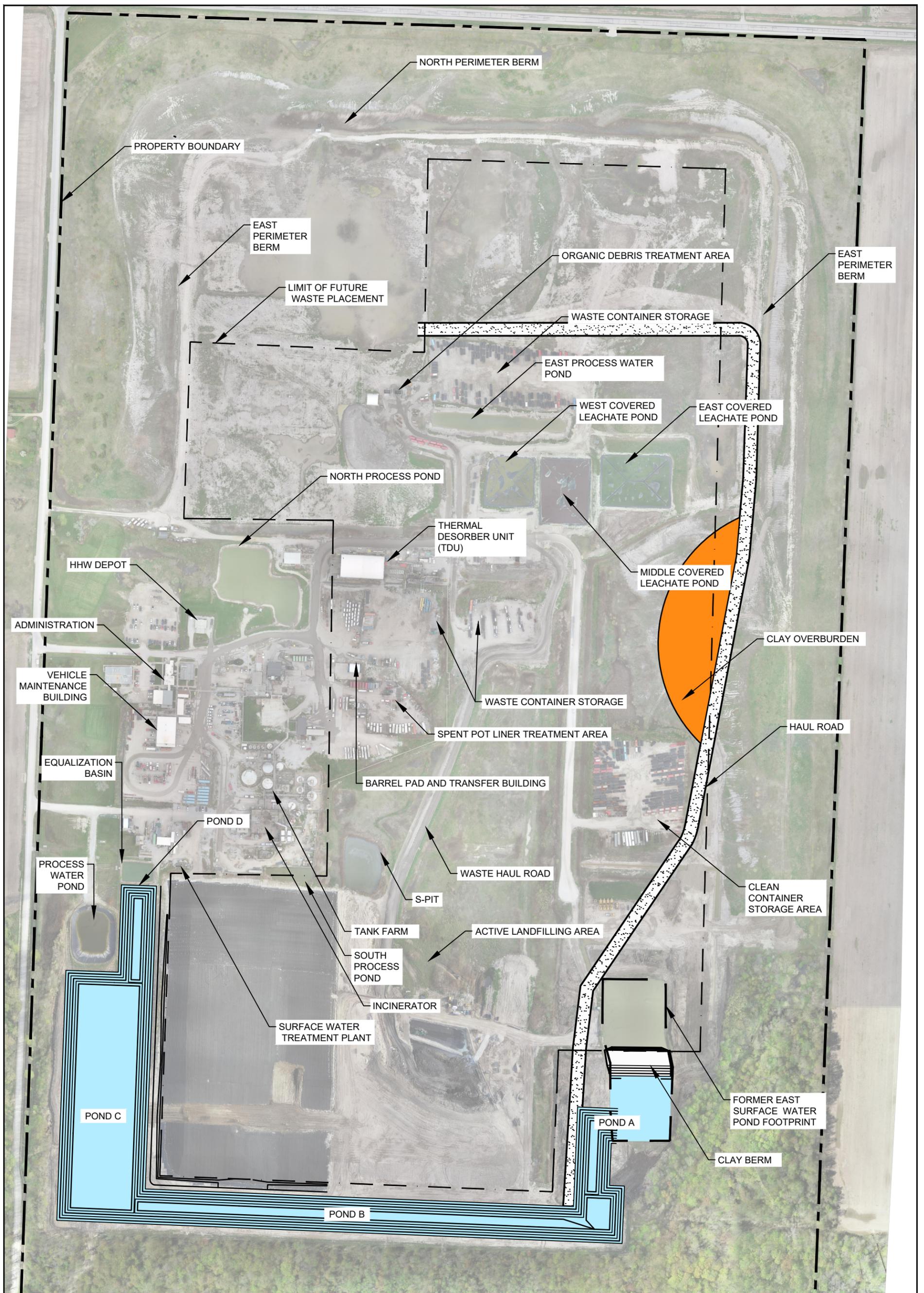
3.4.4 Equalization Pond

- Figure 4A provides the location and status of the Equalization Pond.
- Fish were not observed within the Equalization Pond.

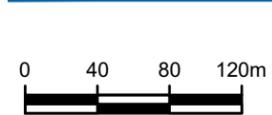


4. Conclusions and Recommendations

- It is recommended that low/depressed areas in the northeast portion of the Site to are assessed and the interim cover regraded to promote drainage.
- As active site works progress from south to north it is recommended that the perimeter berm is regraded, topsoiled, and seeded to prevent future erosion in to the surface water system.
- A preventative maintenance program is recommended for the perimeter ditches and culverts. Preventative maintenance completed in the spring and fall will insure adequate surface water drainage from the north portion of the site. Maintenance includes removing silt, cutting back vegetation and removing blockages.



Source: AERIAL IMAGERY CAPTURED BY GHD MAY 22, 2020

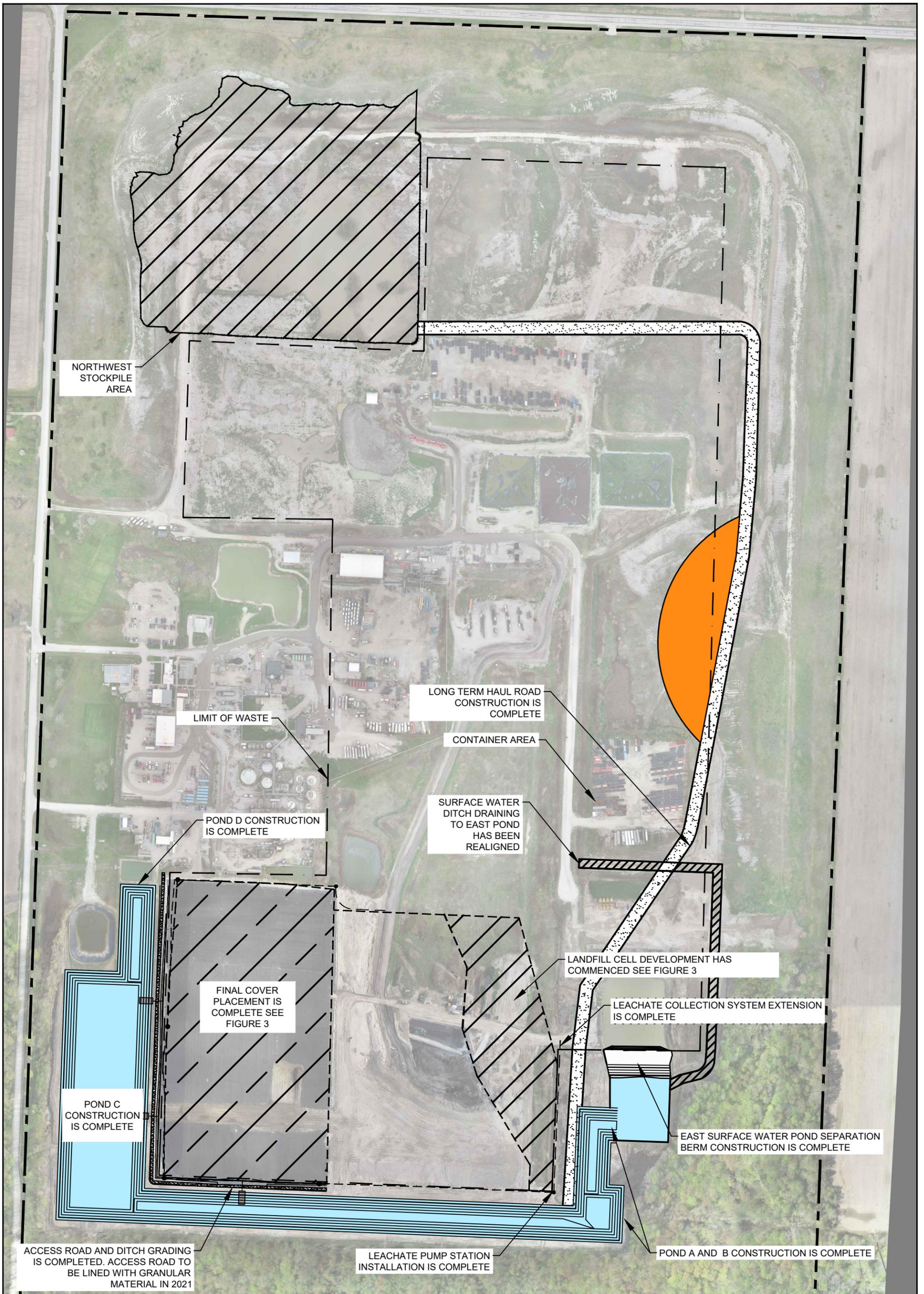


CLEAN HARBORS CANADA, INC.
 LAMBTON COUNTY, ONTARIO
 2020 FOURTH QUARTER SITE INSPECTION

44985-16
 Dec 3, 2020

SITE PLAN

Figure 1



Source: AERIAL IMAGERY CAPTURED BY GHD MAY 22, 2020

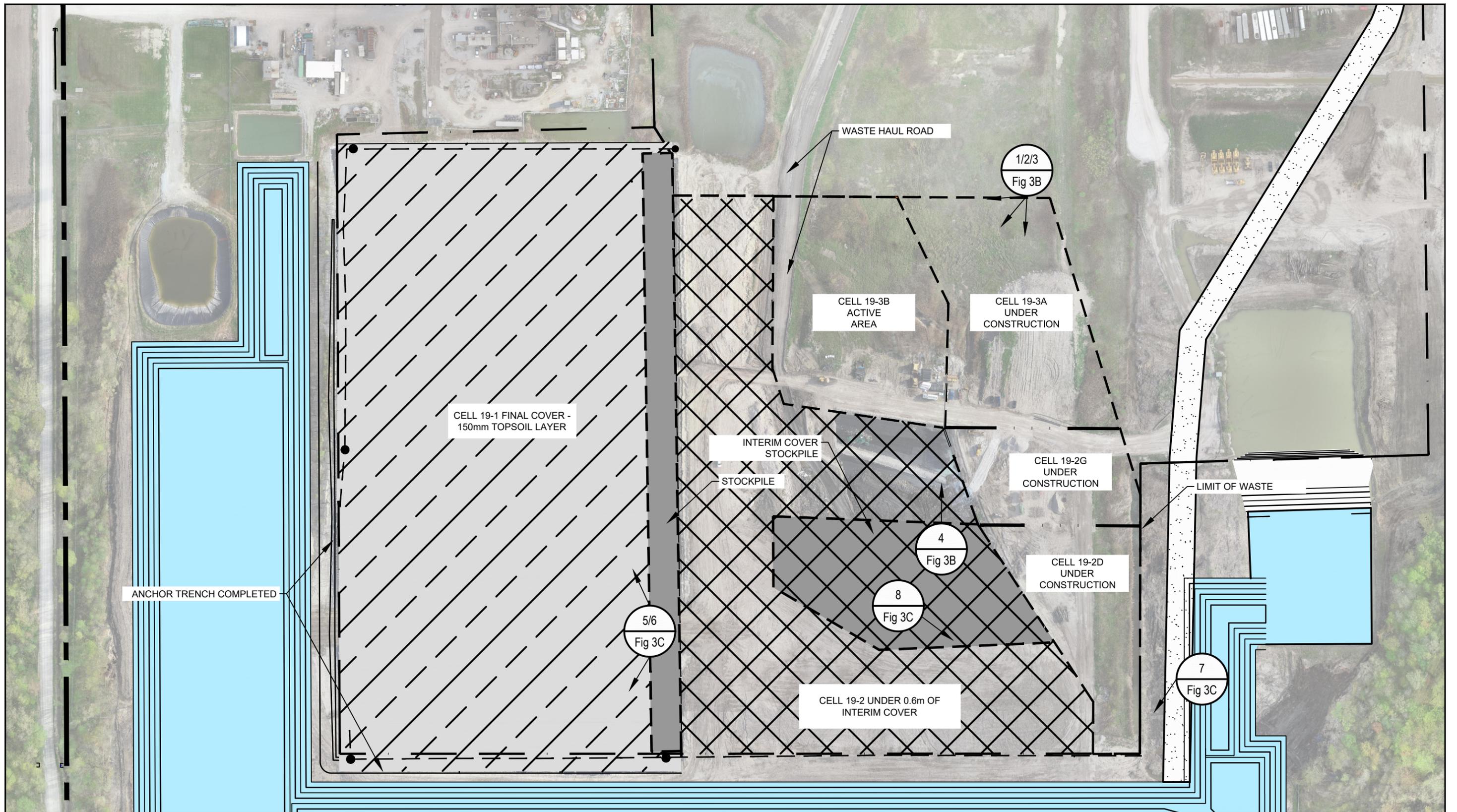


CLEAN HARBORS CANADA, INC.
 LAMBTON COUNTY, ONTARIO
 2020 FOURTH QUARTER SITE INSPECTION

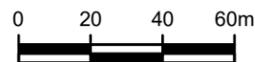
44985-16
 Dec 3, 2020

2020 CAPITAL WORKS PLAN

Figure 2



Source: AERIAL IMAGERY CAPTURED BY GHD MAY 22, 2020



CLEAN HARBORS CANADA, INC.
 LAMBTON COUNTY, ONTARIO
 2020 FOURTH QUARTER SITE INSPECTION

44985-16
 Dec 3, 2020

VERTICAL LANDFILL EXPANSION (ACTIVE AREA)

Figure 3A



1 CELL 19-3A CONSTRUCTION
Fig 3A



2 CELL 19-3B ACTIVE WASTE FACE
Fig 3A



3 CELL 19-3B ACTIVE WASTE FACE
Fig 3A



4 CELL 19-3B ACTIVE WASTE FACE
Fig 3A

Source: IMAGES CAPTURED BY GHD STAFF DURING NOV 23, 2020 SITE INSPECTION



CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2020 FOURTH QUARTER SITE INSPECTION
VERTICAL LANDFILL EXPANSION (ACTIVE AREA)
PHOTOS 1

44985-16
Dec 3, 2020

Figure 3B



5 FINAL COVER - TOPSOIL PLACEMENT CELL 19-1
Fig 3A



6 FINAL COVER - TOPSOIL PLACEMENT CELL 19-1
Fig 3A



7 CELL 19-2D CONSTRUCTION
Fig 3A



8 CELL 19-2 CLAY STOCKPILE AND INTERIM COVER
Fig 3A

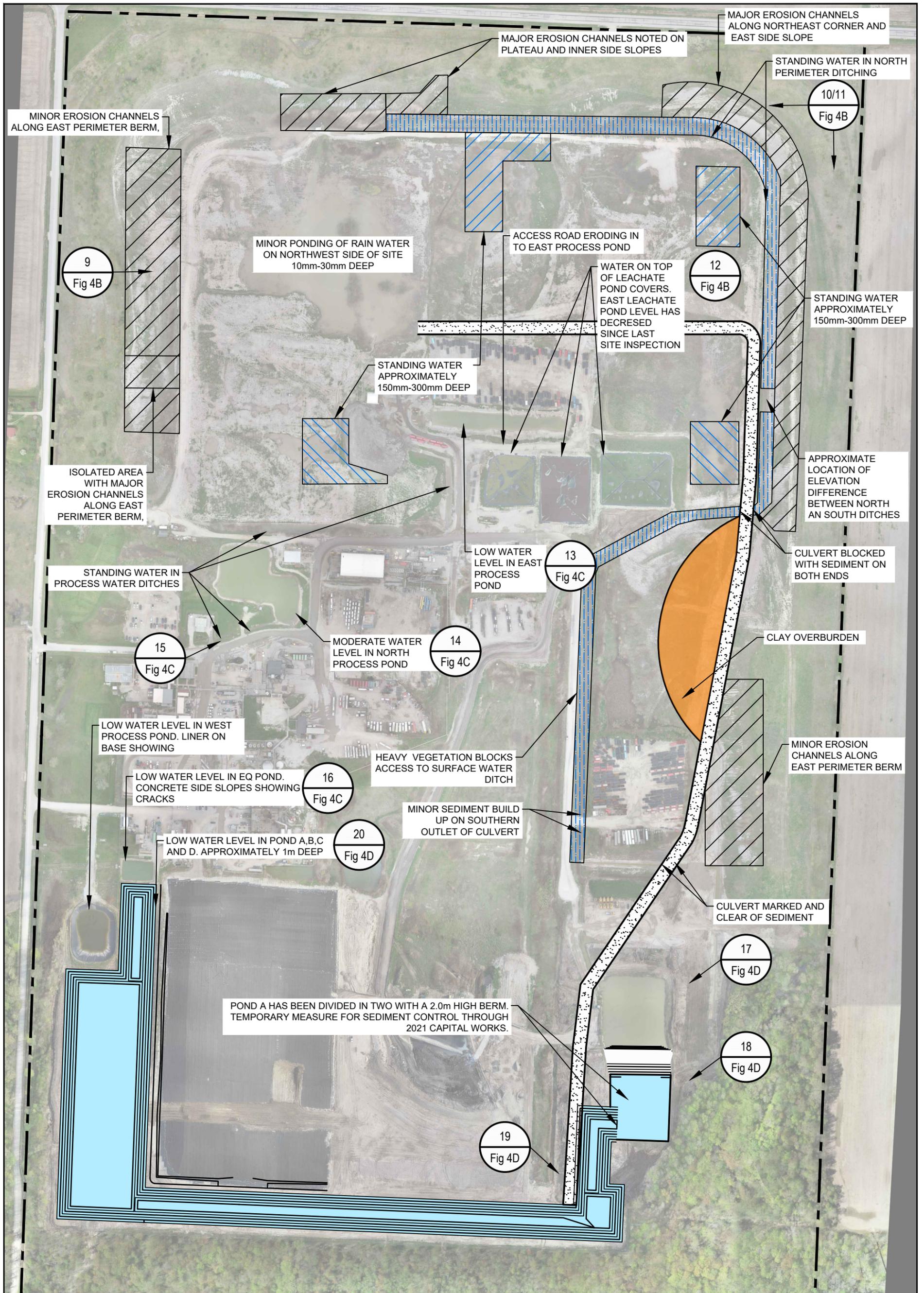
Source: IMAGES CAPTURED BY GHD STAFF DURING NOV 23, 2020 SITE INSPECTION



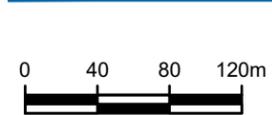
CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2020 FOURTH QUARTER SITE INSPECTION
VERTICAL LANDFILL EXPANSION (ACTIVE AREA)
PHOTOS 2

44985-16
Dec 3, 2020

Figure 3C



Source: AERIAL IMAGERY CAPTURED BY GHD MAY 22, 2020



CLEAN HARBORS CANADA, INC.
 LAMBTON COUNTY, ONTARIO
 2020 FOURTH QUARTER SITE INSPECTION

44985-16
 Dec 3, 2020

SITE FEATURES

Figure 4A



9 REGRADED NORTH AREA
Fig 4A



10 EROSION CHANNELS ALONG NORTH PERIMETER BERM
Fig 4A



11 EROSION CHANNELS ALONG EAST PERIMETER BERM
Fig 4A



12 PONDED WATER ON EAST LEACHATE POND COVER
Fig 4A

Source: IMAGES CAPTURED BY GHD STAFF DURING NOV 23, 2020 SITE INSPECTION



CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2020 FOURTH QUARTER SITE INSPECTION
SITE FEATURES
PHOTOS 1

44985-16
Dec 3, 2020

Figure 4B



13 EAST PROCESS POND
Fig 4A



14 NORTH PROCESS POND
Fig 4A



15 PROCESS DITCH
Fig 4A



16 EQ POND
Fig 4A

Source: IMAGES CAPTURED BY GHD STAFF DURING NOV 23, 2020 SITE INSPECTION



CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2020 FOURTH QUARTER SITE INSPECTION
SITE FEATURES
PHOTOS 2

44985-16
Dec 3, 2020

Figure 4C



17 FORMER EAST SURFACE WATER POND ACTIVE DEWATERING
Fig 4A



18 SURFACE WATER POND A
Fig 4A



19 SURFACE WATER POND B
Fig 4A



20 SURFACE WATER POND D
Fig 4A

Source: IMAGES CAPTURED BY GHD STAFF DURING NOV 23, 2020 SITE INSPECTION



CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2020 FOURTH QUARTER SITE INSPECTION
SITE FEATURES
PHOTOS 3

44985-16
Dec 3, 2020

Figure 4D



about GHD

GHD is one of the world's leading professional services companies operating in the global markets of water, energy and resources, environment, property and buildings, and transportation. We provide engineering, environmental, and construction services to private and public sector clients.

James R. Yardley
jim.yardley@ghd.com
519-884-0510

www.ghd.com