2021 Quarterly Site Inspections

Clean Harbors Lambton Facility

Clean Harbors Canada Inc.

February 22, 2022

→ The Power of Commitment

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 2021. The individual 2021 inspection reports are provided in Appendices A through D.

Appendices index

Appendices

Appendix A

2021 First Quarter Site Inspection

Technical Memorandum

03 May 2021

To	Erica Carabott/Mike Parker - Clean Harbors		
From	Jim Yardley/Kal Dhaliwal	**Tel**	519-340-4265
Subject	2021 First Quarter Site Inspection	**Project no.**	044985

1. Introduction

In accordance with requirements outlined in Section 8.1 of the Design and Operations Report, GHD conducted the 2021 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 17, 2021 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 2021 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 -2°C. Weather conditions at the Site were sunny, wind blowing in a southwest direction during the Inspection. During the week preceding the Inspection, the Site experienced 0.2 mm of total precipitation, and a mean temperature of 4.5°C. The Site was dry, with some standing water observed in low, flat areas and ditches along the North section of the site. Figure 1 provides a Site plan showing existing site conditions and features. The air photo is from June 2020.

1.2 2021 Capital Work Projects Related to Waste Disposal Operations

Figure 2 provides the location and status of the proposed 2021 capital works associated with the landfill operations.

The following describes the key 2021 landfill related capital work:

– Construction of Waste Disposal Cell 20-1.
– Grading in the northwest corner of the site, using material excavated from the construction of Waste Disposal Cell 20-1. Grades to match those approved September 9, 2019 by the Ministry of Environment, Conservation and Parks, per Environmental Compliance Approval number 2985-B9KKP2
– Wells located in the northwest corner of the site and associated with Subcell 3 will be extended to accommodate the proposed grades in the area.

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 outlining of future landfill cell 20-1. Cell reference numbers are provided on the figure, with subcell references provided for active or constructed cells.

– Active waste face is located in cell 19-2D. Waste placement is occurring from South to North.
– Cell 19-2G and 19-3A, have been constructed and will be used later in 2020.
– Waste haul route noted on Figure 3A is adjusted as need to provide access to the active cell.

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 19-2D) and future Cell 19-2G.
– The interim cover was noted to be in good condition, with minor surface erosion channels. In the erosion areas, waste was not 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 completed in the fourth quarter of 2020.
– Topsoil placement and seeding was completed in the fourth quarter of 2020.
– Germination of the seed has not occurred. Confirm seed uptake during the next quarterly inspection.

3. Site Features

3.1 Perimeter Screening Berm

The perimeter screening berms are located on portions of the west, north, and east limits of the Site. The perimeter screening berm consists of a vegetated and landscaped outer component and non-vegetated

interior slope. The interior portion of the screening berm will be vegetated as the interior surface water ditch system is completed based on the final design. The following relates to the screening berms conditions:

– Several major and minor erosion channels were noted throughout the internal slopes of the perimeter screening berm. These channels are described and identified on Figure 4A. The erosion channels are located in the interior section of the screening berm in areas that are in low to un-vegetated areas.
– 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 along the internal slopes increases the sedimentation in the perimeter ditches and requires routine maintenance.
– The external sidewalls of the screening berm are in good condition and vegetated.
– The interior perimeter screening berm adjacent to Cell 20-1 configuration should be confirmed, graded to reflect final configuration, topsoiled, 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.
– The leachate ponds are in general full. Clean Harbors is currently drawing down the ponds as leachate disposal capacity is available.

3.4 Surface Water Management System

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.
– The elevational difference should be addressed in the annual maintenance program for the perimeter ditches.

3.4.2 East Surface Water Pond

– Figure 1 provides the former location the East Surface Water Pond.
– As a part of the 2020 capital works the East Surface Water Pond was reduced in size.
– The reduced East Surface Water Pond area was combined with the new Surface Water Pond Network and is now referred to as Pond A.

3.4.3 Surface Water Pond Network (SWPN)

– Figure 4A provides the location and status of the SWPN.
– The Water level within the SWMP was low.
– South West pump station was active and pumping water from the SWPN.

3.4.4 Equalization Pond

– Figure 4A provides the location and status of the Equalization Pond.
– No Fish were observed within the Equalization Pond.

4. Conclusions and Recommendations

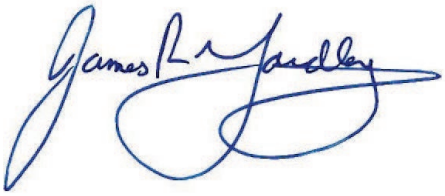
General

– Low/depressed areas in the north-east section of the site to be assessed in 2021 to provide surface water drainage and improve overall operation of the perimeter ditches.
– As active site works progress from south to north the perimeter berm will be graded, topsoiled and vegetated. Overall intent is to complete the Site from south to north.
– Based on Site performance, routine maintenance is required to be completed after large rain events or after the spring thaw. As the Site is completed, the amount of routine maintenance should reduce as the vegetation of the site increases.

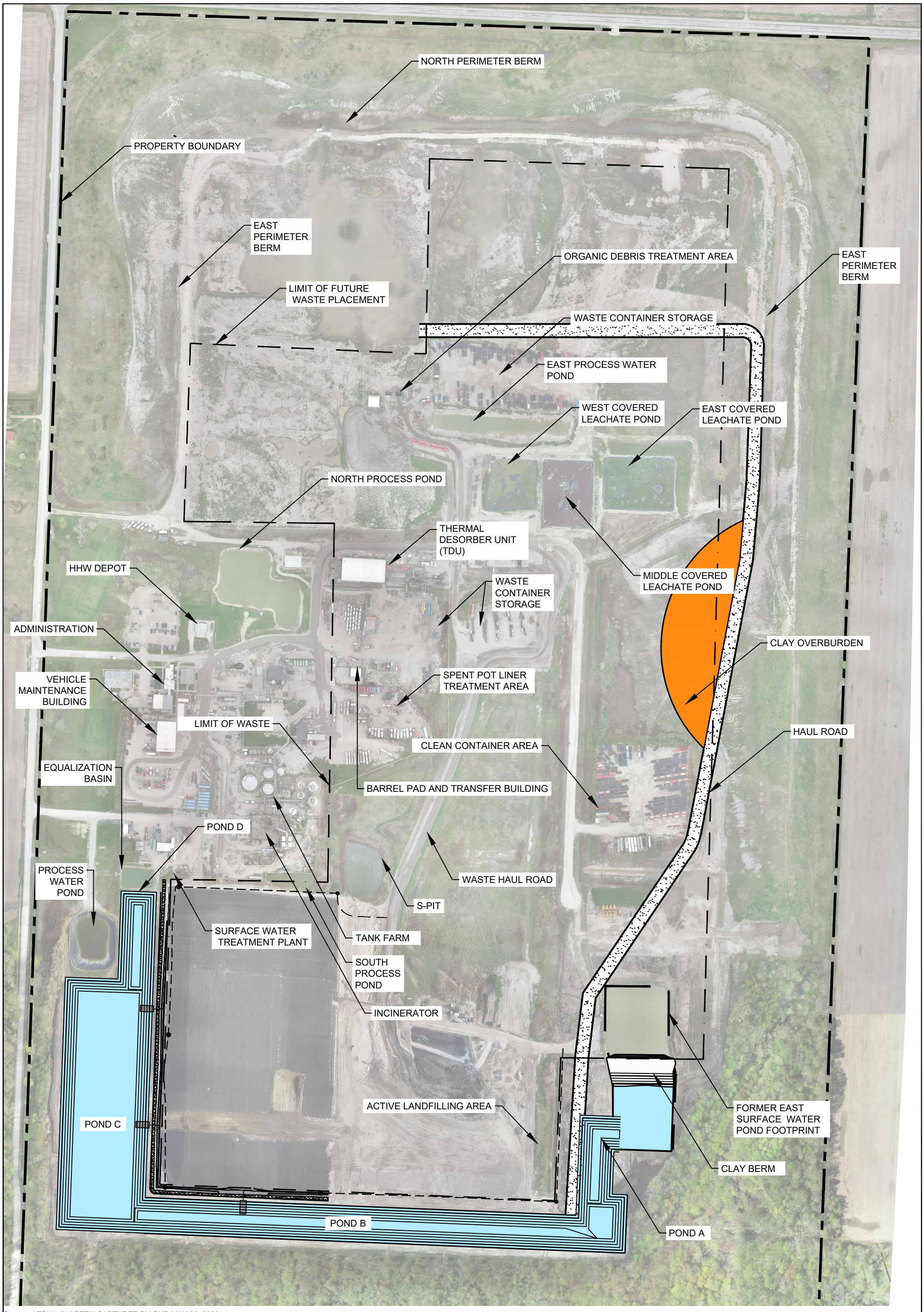
The following are the key recommendations, corrective actions and proposed periods for the work and the date/period completed.

Recommendation	Corrective Action Requirement	Proposed/ Completion Date
Interim cover surface erosion channel maintenance	Grading of interim cover surface to remove erosion channels.	Proposed – 2nd quarter 2021 Completed - TBD
Confirm final cover seed germination in next inspection	Assess seed germination status	Proposed – 2nd quarter 2021 Completed -TBD
Interior screening adjacent to Cell 20-1	Confirm final configuration, grade according, topsoil, and vegetate.	Proposed – confirm configuration 2nd quarter 2021, include in 2022 capital works budget Completed - TBD
Maintenance of perimeter temporary ditches in areas of surface erosion	Removal of sediment and re-establish surface water flow.	Proposed – 2nd or 3rd quarter of 2021 Completed - TBD
Removal of elevational difference/blockage in eastern perimeter ditch.	Removal sediment buildup and re-establish water flow in eastern ditch.	Proposed – 2nd or 3rd quarter of 2021 Completed - TBD

Regards



Jim Yardley
Senior Engineer



Source: AERIAL IMAGERY CAPTURED BY GHD MAY 22, 2020

0 40 80 120m

GHD

CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2021 FIRST QUARTER SITE INSPECTION

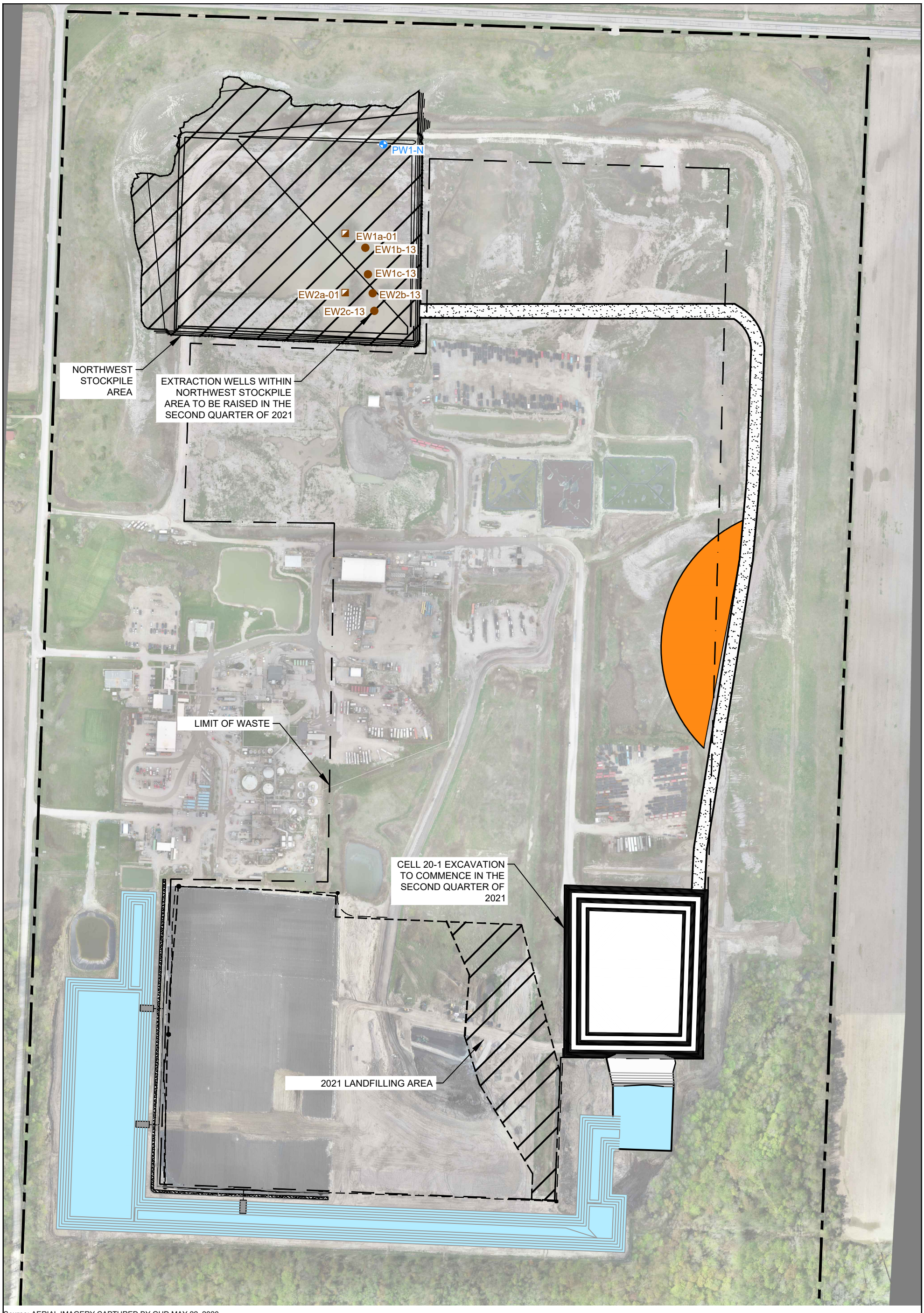
SITE PLAN

Project No. **44985**
Date **May 3, 2021**

Figure 1

Filename: P:\drawings\44000s\44985\44985-MEMO\44985-16(MEMO072)\44985-16(MEM0072)GN\44985-16(MEM0072)GN-WA001.DWG
Plot Date: 03 May 2021 12:06 PM

Data Source



Source: AERIAL IMAGERY CAPTURED BY GHD MAY 22, 2020

0 40 80 120m

GHD

CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2021 FIRST QUARTER SITE INSPECTION

2021 CAPITAL WORKS PLAN

Project No. **44985**
Date **May 3, 2021**

Figure 2

Filename: P:\drawings\44000s\44985\44985-MEMO\44985-16(MEMO072)\44985-16(MEM0072)GN\44985-16(MEM0072)GN-WA002.DWG
Plot Date: 03 May 2021 12:01 PM

Source: AERIAL IMAGERY CAPTURED BY GHD MAY 22, 2020

0 20 40 60m

GHD

CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2021 FIRST QUARTER SITE INSPECTION

VERTICAL LANDFILL EXPANSION
(ACTIVE AREA)

Project No. **44985**
Date **May 3, 2021**

Figure 3A

Filename: P:\drawings\44000s\44985\44985-MEMO\44985-16(MEMO072)\44985-16(MEM0072)GN\44985-16(MEM0072)GN-WA003.DWG
Plot Date: 03 May 2021 12:00 PM

1 Fig 3A **CELL 19-3A AND 19-3B**

2 Fig 3A **CELL 19-3B INTERIM COVER**

3 Fig 3A **CELL 19-3A**

4 Fig 3A **CELL 19-2D AND 19-2G**

CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2021 FIRST QUARTER SITE INSPECTION

VERTICAL LANDFILL EXPANSION
PHOTOS 1

Project No. **44985**
Date **May 3, 2021**

Figure 3B

Filename: P:\drawings\44000s\44985\44985-MEMO\44985-16(MEMO072)\44985-16(MEM0072)GN\44985-16(MEM0072)GN-WA003.DWG
Plot Date: 03 May 2021 1:50 PM

DATA SOURCE: SOURCE: IMAGES CAPTURED BY GHD STAFF DURING MARCH 17, 2021 SITE INSPECTION

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

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

7 Fig 3A **CELL 19-2D WASTE FACE**

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

GHD

CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2021 FIRST QUARTER SITE INSPECTION

VERTICAL LANDFILL EXPANSION
PHOTOS 2

Project No. **44985**
Date **May 3, 2021**

Figure 3C

Filename: P:\drawings\44000s\44985\44985-MEMO\44985-16(MEMO072)\44985-16(MEM0072)GN\44985-16(MEM0072)GN-WA003.DWG
Plot Date: 03 May 2021 1:49 PM

DATA SOURCE: SOURCE: IMAGES CAPTURED BY GHD STAFF DURING MARCH 17, 2021 SITE INSPECTION

MAJOR EROSION CHANNELS NOTED ON PLATEAU AND INNER SIDE SLOPES

MAJOR EROSION CHANNELS ALONG NORTHEAST CORNER AND EAST SIDE SLOPE

STANDING WATER IN NORTH PERIMETER DITCHING

10/11 Fig 4B

MINOR EROSION CHANNELS ALONG EAST PERIMETER BERM,

9 Fig 4B

ACCESS ROAD ERODING IN TO EAST PROCESS POND

STANDING WATER APPROXIMATELY 150mm-300mm DEEP

WATER ON TOP OF LEACHATE POND COVERS.

12 Fig 4B

STANDING WATER APPROXIMATELY 150mm-300mm DEEP

ERODED SEDIMENT IN EAST PERIMETER DITCH

ISOLATED AREA WITH MAJOR EROSION CHANNELS ALONG EAST PERIMETER BERM,

APPROXIMATE LOCATION OF ELEVATION DIFFERENCE BETWEEN NORTH AN SOUTH DITCHES

LOW WATER LEVEL IN EAST PROCESS POND

13 Fig 4C

CULVERT BLOCKED WITH SEDIMENT ON BOTH ENDS

STANDING WATER IN PROCESS WATER DITCHES

15 Fig 4C

LOW WATER LEVEL IN NORTH PROCESS POND

14 Fig 4C

CLAY OVERBURDEN

LOW WATER LEVEL IN WEST PROCESS POND. LINER ON BASE SHOWING

HEAVY VEGETATION BLOCKS ACCESS TO SURFACE WATER DITCH

MINOR EROSION CHANNELS ALONG EAST PERIMETER BERM

LOW WATER LEVEL IN EQ POND. CONCRETE SIDE SLOPES SHOWING CRACKS

16 Fig 4C

MINOR SEDIMENT BUILD UP ON SOUTHERN OUTLET OF CULVERT

20 Fig 4D

LOW WATER LEVEL IN POND A,B,C AND D. APPROXIMATELY 1m DEEP

CULVERT MARKED AND CLEAR OF SEDIMENT

17 Fig 4D

POND A HAS BEEN DIVIDED IN TWO WITH A 2.0m HIGH BERM. TEMPORARY MEASURE FOR SEDIMENT CONTROL THROUGH 2021 CAPITAL WORKS.

18 Fig 4D

19 Fig 4D

LEGEND

- EROSION CHANNELS
- STANDING WATER
- STORMWATER PONDS
- CLAY STOCKPILE
- PICTURE NUMBER — 1/2/3
- FIGURE NUMBER — Fig 3B
- DIRECTION OF PICTURE

Source: AERIAL IMAGERY CAPTURED BY GHD MAY 22, 2020

0 40 80 120m

GHD

CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2021 FIRST QUARTER SITE INSPECTION

SITE FEATURES

Project No. 44985
Date May 3, 2021

Figure 4A

Filename: P:\drawings\44000s\44985\44985-MEMO\44985-16(MEMO072)\44985-16(MEM0072)GN\44985-16(MEM0072)GN-WA004.DWG
Plot Date: 03 May 2021 12:06 PM

Data Source

9 Fig 4A **REGRADED NORTH AREA**

10 Fig 4A **EROSION CHANNELS ALONG NORTH PERIMETER BERM**

11 Fig 4A **EROSION CHANNELS ALONG EAST PERIMETER BERM**

12 Fig 4A **PONDED WATER ON EAST LEACHATE POND COVER**

GHD

CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2021 FIRST QUARTER SITE INSPECTION

SITE FEATURES
PHOTOS 1

Project No. **44985**
Date **May 3, 2021**

Figure 4B

Filename: P:\drawings\44000s\44985\44985-MEMO\44985-16(MEMO072)\44985-16(MEM0072)GN\44985-16(MEM0072)GN-WA004.DWG
Plot Date: 03 May 2021 12:06 PM

Data Source: SOURCE: IMAGES CAPTURED BY GHD STAFF DURING MARCH 17, 2021 SITE INSPECTION

13 Fig 4A **EAST PROCESS POND**

14 Fig 4A **NORTH PROCESS POND**

15 Fig 4A **PROCESS DITCH**

16 Fig 4A **EQ POND**

GHD

CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2021 FIRST QUARTER SITE INSPECTION

SITE FEATURES
PHOTOS 2

Project No. **44985**
Date **May 3, 2021**

Figure 4C

Filename: P:\drawings\44000s\44985\44985-MEMO\44985-16(MEMO072)\44985-16(MEM0072)GN\44985-16(MEM0072)GN-WA004.DWG
Plot Date: 03 May 2021 12:05 PM

DATA SOURCE: SOURCE: IMAGES CAPTURED BY GHD STAFF DURING MARCH 17, 2021 SITE INSPECTION

17 Fig 4A **FORMER EAST SURFACE WATER POND - ACTIVE DEWATERING FOR CELL 20-1**

18 Fig 4A **SURFACE WATER POND A**

19 Fig 4A **SURFACE WATER POND B**

20 Fig 4A **SURFACE WATER POND D**

CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2021 FIRST QUARTER SITE INSPECTION

SITE FEATURES
PHOTOS 3

Project No. **44985**
Date **May 3, 2021**

Figure 4D

Filename: P:\drawings\44000s\44985\44985-MEMO\44985-16(MEMO072)\44985-16(MEM0072)GN\44985-16(MEM0072)GN-WA004.DWG
Plot Date: 03 May 2021 1:48 PM

DATA SOURCE: SOURCE: IMAGES CAPTURED BY GHD STAFF DURING MARCH 17, 2021 SITE INSPECTION

Appendix B

2021 Second Quarter Site Inspection

Technical Memorandum

July 14, 2021

To	Erica Carabott/Mike Parker - Clean Harbors		
From	Jim Yardley/Kal Dhaliwal	**Tel**	+1 519 884 0510
Subject	2021 Second Quarter Site Inspection	**Project no.**	044985

1. Introduction

In accordance with requirements outlined in Section 8.1 of the Design and Operations Report, GHD conducted the 2021 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 7, 2021 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 2021 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 26°C. Weather conditions at the Site were sunny, wind blowing in a northhwest direction during the Inspection. During the week preceding the Inspection, the Site experienced 10.2 mm of total precipitation, and a mean temperature of 21.7°C. The Site was dry, with some standing water observed in low, flat areas and ditches along the North section of the site. Figure 1 provides a Site plan showing existing site conditions and features. The air photo is from June 2020.

1.2 2021 Capital Work Projects Related to Waste Disposal Operations

Figure 2 provides the location and status of the proposed 2021 capital works associated with the landfill operations.

The following describes the key 2021 landfill related capital work:

– Construction of Waste Disposal Cell 20-1.
– Grading in the northwest corner of the site, using material excavated from the construction of Waste Disposal Cell 20-1. Grades to match those approved September 9, 2019 by the Ministry of Environment, Conservation and Parks, per Environmental Compliance Approval number 2985-B9KKP2
– Wells located in the northwest corner of the site and associated with Subcell 3 will be extended to accommodate the proposed grades in the area.

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 outlining of future landfill cell 20-1. Cell reference numbers are provided on the figure, with subcell references provided for active or constructed cells.

– Active waste face is located in cell 19-2D. Waste placement is occurring from South to North.
– Cell 19-2G and 19-3A, have been constructed and will be used later in 2020.
– Waste haul route noted on Figure 3A is adjusted as need to provide access to the active cell. The current road is constructed on top of the interim cover.

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 19-2D) and future Cell 19-2G.
– The interim cover was noted to be in good condition, with minor surface erosion channels. In the erosion areas, waste was not 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 completed in the fourth quarter of 2020.
– Topsoil placement and seeding was completed in the fourth quarter of 2020.
– Germination of the seed has begun. Verify sufficient seed uptake during the next quarterly inspection. The seed mixture consists of native grasses and will require about 2 to 3 years to be fully established.

3. Site Features

3.1 Perimeter Screening Berm

The perimeter screening berms are located on portions of the west, north, and east limits of the Site. The perimeter screening berm consists of a vegetated and landscaped outer component and non-vegetated interior slope. The interior portion of the screening berm will be vegetated as the interior surface water ditch system is completed based on the final design. The following relates to the screening berms conditions:

– Several major and minor erosion channels are present throughout the internal slopes of the perimeter screening berm. These channels are described and identified on Figure 4A. The erosion channels are located along the interior section of the screening berm in areas that are in low to un-vegetated areas.
– Several large erosion channels are present along the top plateaus of the perimeter screening berm. These channels are described and identified on Figure 4A.
– Erosion along the internal slopes increases the sedimentation in the perimeter ditches and require routine maintenance.
– The external sidewalls of the screening berm are in good condition and vegetated.
– The interior perimeter screening berm adjacent to Cell 20-1 configuration should be confirmed, graded to reflect final configuration, topsoiled, and vegetated.
– Some erosion channels previously noted in the northwest corner of the screening berm have been filled in due to stockpiling from 2021 capital works.
– The inspection did not identify any significant changes to the erosion channels on the interior side slopes since the previous inspection.

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 leachate collection system is normally discharged to Tank T12 in the tank farm. If Tank T12 is fully, leachate is directed to the leachate reservoirs for temporary storage. Leachate is withdrawn from the leachate reservoirs when leachate disposal exceeds leachate generation rates.

– 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.
– The leachate ponds are in general full. Clean Harbors is drawing down the ponds as leachate disposal capacity is available.

3.4 Surface Water Management System

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.
– The elevational difference should be addressed in the annual maintenance program for the perimeter ditches.

3.4.2 Surface Water Pond Network (SWPN)

– Figure 4A provides the location and status of the SWPN.
– The water level within the SWPN was low.
– A new water truck filling station has been constructed in the vicinity of the surface water treatment plant and is used to fill the on-site water truck that provides water for cleaning of roads and dust control as required.
– Water trucks for 2021 capital works haul road maintenance were being filled directly from Pond A

3.4.3 Equalization Pond

– Figure 4A provides the location and status of the Equalization Pond.
– No fish were observed within the Equalization Pond.

4. Conclusions and Recommendations

General

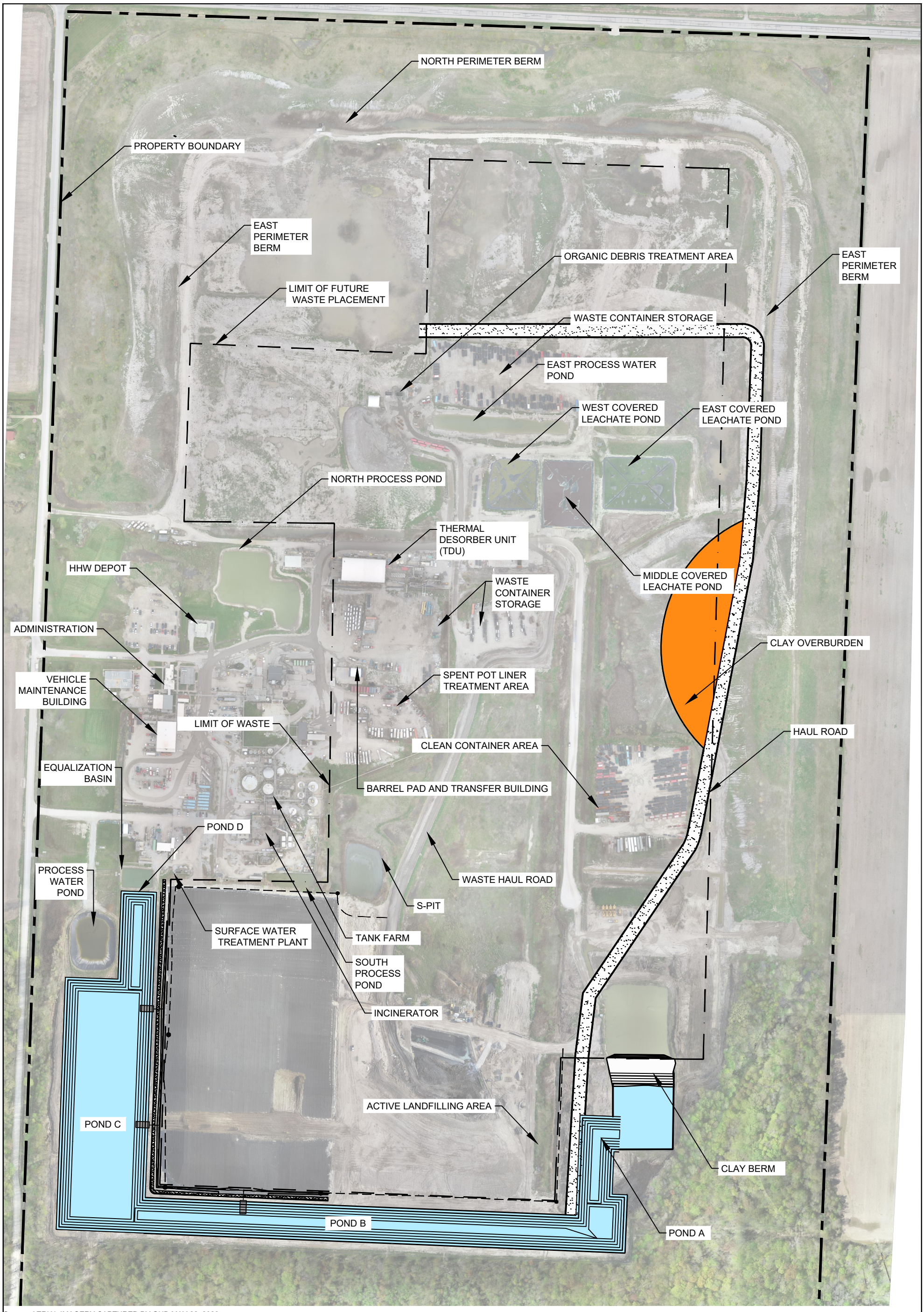
– Low/depressed areas in the north-east section of the site to be assessed in 2021 to provide surface water drainage and improve overall operation of the perimeter ditches.
– As active site works progress from south to north the perimeter berm will be graded, topsoiled and vegetated. Overall intent is to complete the Site from south to north.
– Based on Site performance, routine maintenance is required to be completed after large rain events or after the spring thaw. As the Site is completed, the amount of routine maintenance should reduce as the vegetation of the site increases.

The following are the key recommendations, corrective actions and proposed periods for the work and the date/period completed.

Recommendation	Corrective Action Requirement	Proposed/ Completion Date
Interim cover surface erosion channel maintenance	Grading of interim cover surface to remove erosion channels.	Proposed – on-going Interim result – June 7th – Placed additional interim cover, correct any significant erosion channels Completed - TBD
Confirm final cover seed germination in next inspection	Assess seed germination status during each inspection.	Proposed – on-going Interim result – June 7th - seed germination has occurred. Grass is growing. Dry spring has impacted growth. Completed – TBD
Interior screening berm adjacent to Cell 20-1	Confirm final configuration, grade according, topsoil, and vegetate.	Proposed – confirm configuration 3rd quarter 2021, include in 2022 capital works budget Completed - TBD
Maintenance of perimeter temporary ditches in areas of surface erosion	Removal of sediment and re-establish surface water flow.	Proposed –3rd quarter of 2021 Completed - TBD
Removal of elevational difference/blockage in eastern perimeter ditch.	Removal sediment buildup and re-establish water flow in eastern ditch.	Proposed –3rd quarter of 2021 Completed - TBD

Regards

Jim Yardley
Senior Engineer



Source: AERIAL IMAGERY CAPTURED BY GHD MAY 22, 2020

0 40 80 120m

GHD

CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2021 SECOND QUARTER SITE INSPECTION

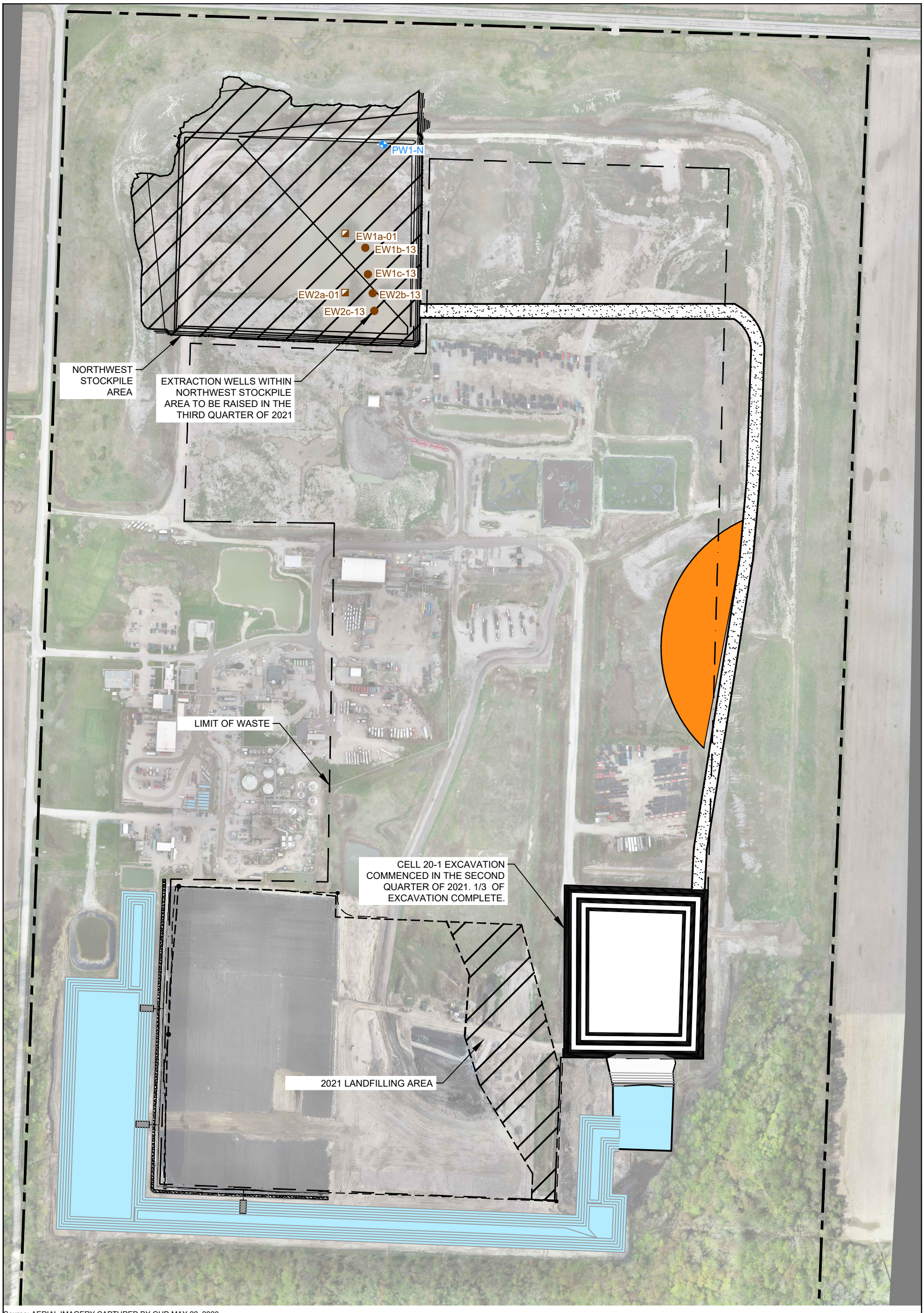
SITE PLAN

Project No. **44985**
Date **May 3, 2021**

Figure 1

Filename: P:\drawings\44000s\44985\44985-MEMO\44985-16(MEMO073)\44985-16(MEM0073)GN\44985-16(MEM0073)GN-WA001.DWG
Plot Date: 25 June 2021 8:14 AM

Data Source



Source: AERIAL IMAGERY CAPTURED BY GHD MAY 22, 2020

0 40 80 120m

GHD

CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2021 SECOND QUARTER SITE INSPECTION

2021 CAPITAL WORKS PLAN

Project No. **44985**
Date **May 3, 2021**

Figure 2

Filename: P:\drawings\44000s\44985\44985-MEMO\44985-16(MEMO073)\44985-16(MEM0073)GN\44985-16(MEM0073)GN-WA002.DWG
Plot Date: 25 June 2021 8:14 AM

Source: AERIAL IMAGERY CAPTURED BY GHD MAY 22, 2020

0 20 40 60m

GHD

CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2021 SECOND QUARTER SITE INSPECTION

VERTICAL LANDFILL EXPANSION
(ACTIVE AREA)

Project No. **44985**
Date **May 3, 2021**

Figure 3A

Filename: P:\drawings\44000s\44985\44985-MEMO\44985-16(MEMO073)\44985-16(MEM0073)GN\44985-16(MEM0073)GN-WA003.DWG
Plot Date: 25 June 2021 10:30 AM

1 Fig 3A **CELL 19-3A AND 19-3B**

2 Fig 3A **CELL 19-3B INTERIM COVER**

3 Fig 3A **CELL 19-3A,19-2G AND WASTE FACE**

4 Fig 3A **SOUTH ACCESS ROAD AND DITCH**

GHD

CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2021 SECOND QUARTER SITE INSPECTION

VERTICAL LANDFILL EXPANSION
PHOTOS 1

Project No. **44985**
Date **May 3, 2021**

Figure 3B

Filename: P:\drawings\44000s\44985\44985-MEMO\44985-16(MEMO073)\44985-16(MEM0073)GN\44985-16(MEM0073)GN-WA003.DWG
Plot Date: 25 June 2021 8:15 AM

DATA SOURCE: SOURCE: IMAGES CAPTURED BY GHD STAFF DURING MARCH 17, 2021 SITE INSPECTION

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

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

7 Fig 3A **CELL 19-2D WASTE FACE**

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

GHD

CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2021 SECOND QUARTER SITE INSPECTION

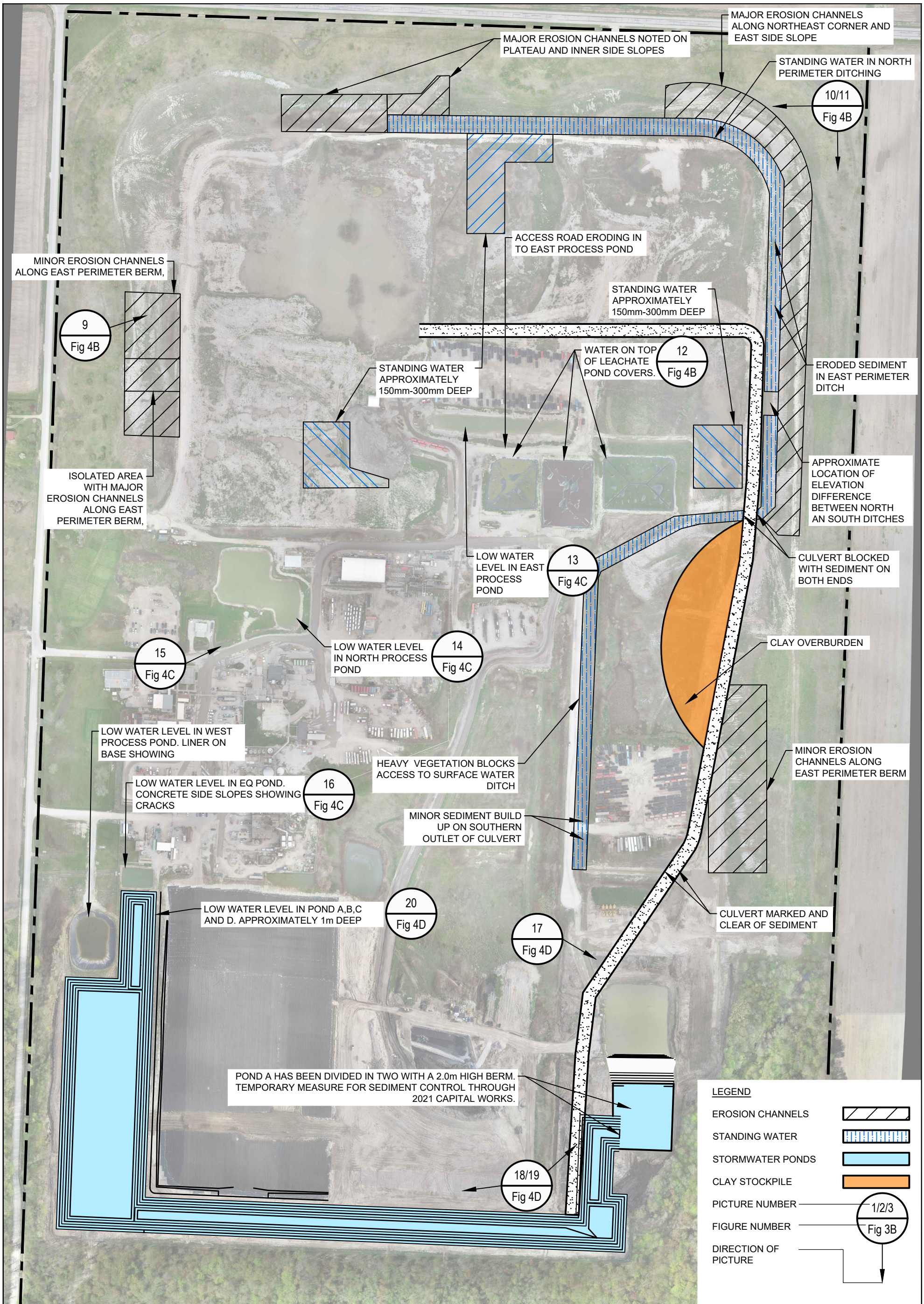
VERTICAL LANDFILL EXPANSION
PHOTOS 2

Project No. **44985**
Date **May 3, 2021**

Figure 3C

Filename: P:\drawings\44000s\44985\44985-MEMO\44985-16(MEMO073)\44985-16(MEM0073)GN\44985-16(MEM0073)GN-WA003.DWG
Plot Date: 25 June 2021 8:15 AM

DATA SOURCE: SOURCE: IMAGES CAPTURED BY GHD STAFF DURING MARCH 17, 2021 SITE INSPECTION



Source: AERIAL IMAGERY CAPTURED BY GHD MAY 22, 2020

0 40 80 120m

GHD

CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2021 SECOND QUARTER SITE INSPECTION

Project No. **44985**
Date **May 3, 2021**

SITE FEATURES

Figure 4A

Filename: P:\drawings\44000s\44985\44985-MEMO\44985-16(MEMO073)\44985-16(MEM0073)GN\44985-16(MEM0073)GN-WA004.DWG
Plot Date: 25 June 2021 8:25 AM

Data Source

9 Fig 4A **NORTH AREA STOCKPILING**

10 Fig 4A **EROSION CHANNELS ALONG NORTH PERIMETER BERM**

11 Fig 4A **EROSION CHANNELS ALONG EAST PERIMETER BERM**

12 Fig 4A **PONDED WATER ON EAST LEACHATE POND COVER**

CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2021 SECOND QUARTER SITE INSPECTION

SITE FEATURES
PHOTOS 1

Project No. **44985**
Date **May 3, 2021**

Figure 4B

Filename: P:\drawings\44000s\44985\44985-MEMO\44985-16(MEMO073)\44985-16(MEM0073)GN\44985-16(MEM0073)GN-WA004.DWG
Plot Date: 25 June 2021 8:15 AM

Data Source: SOURCE: IMAGES CAPTURED BY GHD STAFF DURING MARCH 17, 2021 SITE INSPECTION

13 Fig 4A **EAST PROCESS POND**

14 Fig 4A **NORTH PROCESS POND**

15 Fig 4A **PROCESS DITCH**

16 Fig 4A **EQ POND**

GHD

CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2021 SECOND QUARTER SITE INSPECTION

SITE FEATURES
PHOTOS 2

Project No. **44985**
Date **May 3, 2021**

Figure 4C

DATA SOURCE: SOURCE: IMAGES CAPTURED BY GHD STAFF DURING MARCH 17, 2021 SITE INSPECTION

Filename: P:\drawings\44000s\44985\44985-MEMO\44985-16(MEMO073)\44985-16(MEM0073)GN\44985-16(MEM0073)GN-WA004.DWG
Plot Date: 25 June 2021 8:16 AM

17 Fig 4A **FORMER EAST SURFACE WATER POND - CELL 20-1 EXCAVATION**

18 Fig 4A **SURFACE WATER POND A**

19 Fig 4A **SURFACE WATER POND B**

20 Fig 4A **SURFACE WATER POND D**

CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2021 SECOND QUARTER SITE INSPECTION

SITE FEATURES
PHOTOS 3

Project No. **44985**
Date **May 3, 2021**

Figure 4D

Filename: P:\drawings\44000s\44985\44985-MEMO\44985-16(MEMO073)\44985-16(MEM0073)GN\44985-16(MEM0073)GN-WA004.DWG
Plot Date: 25 June 2021 8:16 AM

DATA SOURCE: SOURCE: IMAGES CAPTURED BY GHD STAFF DURING MARCH 17, 2021 SITE INSPECTION

Appendix C

2021 Third Quarter Site Inspection

Technical Memorandum

October 29, 2021

To	Frank Wagner/Mike Parker - Clean Harbors		
From	Jim Yardley/Kal Dhaliwal	**Tel**	+1 519 884 0510
Subject	2021 Third Quarter Site Inspection	**Project no.**	044985

1. Introduction

In accordance with requirements outlined in Section 8.1 of the Design and Operations Report, GHD conducted the 2021 Third Quarter Site Inspection (Inspection) of the Clean Harbors Canada, Inc. (Clean Harbors) Lambton Facility (Site) in Corunna, Ontario. The Inspection was conducted on October 5, 2021 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 2021 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 19°C. Weather conditions at the Site were overcast, wind blowing in a northwest direction during the Inspection. During the week preceding the Inspection, the Site experienced 43.5 mm of total precipitation, and a mean temperature of 16.6°C. The Site was wet, with standing water observed in low, flat areas and ditches along the North section of the site. Figure 1 provides a Site plan showing existing site conditions and features. The air photo is from June 2020.

1.2 2021 Capital Work Projects Related to Waste Disposal Operations

Figure 2 provides the location and status of the proposed 2021 capital works associated with the landfill operations.

The following describes the key 2021 landfill related capital work:

– Construction of Waste Disposal Cell 20-1.
– Grading in the northwest corner of the site, using material excavated from the construction of Waste Disposal Cell 20-1. Grades to match those approved September 9, 2019 by the Ministry of Environment, Conservation and Parks, per Environmental Compliance Approval number 2985-B9KKP2
– Wells located in the northwest corner of the site and associated with Subcell 3 will be extended to accommodate the proposed grades in the area.

1.3 Waste Disposal Cell 20-1 West Side Slope Failure

On August 18, 2021 at 11:30 AM, during the construction of Cell 20-1 at the Clean Harbors Lambton Landfill, deep surface cracks were noted by contractor staff in the clay material on the upper interior side slope (slope along the Pre-1986/Cell 19-3 area). Within a two-hour period, the interior side slope rotated approximately 7 metres. The rotation consisted of approximately a 7 m drop on the upper portion and a 7-metre rise in part of the base.

The rotation event impacted Cell 20-1 and a small portion on the eastern side of the active landfill area of Cell 19-3. The immediate response that occurred shortly after 11:30 AM was to remove Clean Harbors and contractor staff and equipment from the area. As a result of the immediate actions, no staff or equipment was lost, and no waste or leachate was discharged to the natural environment. Clean Harbors informed the Ministry of Environment, Conservation and Parks (MECP) on the afternoon of August 18th of the event.

A meeting was held on the morning of August 19th to discuss short-term, mid-term, and long-term remediation plans for Cell 20-1 and the immediate area. The short-term plan was to construct containment berms to control leachate that was entering Cell 20-1 in the south-west corner from the end of the leachate collection system, to install a temporary leachate pumping system, and to assess methods to seal the end of the leachate collection system south of the rotation event area. A drone topography survey was conducted of the Cell 20-1 area to assess the current conditions and the changes from pre-event topography. This work was conducted within the few days after the event.

The mid-term plan was to assess the event and determine the stability status and methods to stabilize the rotated slope. The event was a rotation and as such, the rotated side slope was intact. The decision was to install a buttress of compacted clay at the toe of the impacted area and on top of the material that rotated into the cell. The location and amount of clay to be placed would be determined by geotechnical modelling of the event.

The long-term plan was to assess the post-rotation conditions, stabilize the slope, and revise the waste disposal plans for the Cell 20-1 and Cell 19-3. At this point the buttress and other work in Cell 20-1 has been completed and currently the company is re-grading the portion of Cell 19-3 that has been affected. Once the re-grading of Cell 19-3 is completed, the exposed waste will be covered with interim clay cover.

Clean Harbors has regular discussions with MECP representatives with regard to the progress of the remedial and assessment programs for Cell 20-1 and the interim landfill disposal program.

Figure 2 shows the impacted area of the sidewall rotation event.

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 outlining of future landfill cell 20-1. Cell reference numbers are provided on the figure, with subcell references provided for active or constructed cells.

– Due to the impact from the Waste Disposal Cell 20-1 slope failure, a temporary waste disposal area was constructed on the Pre-1986 area. The waste placed in this temporary disposal area will be transferred to a permanent waste disposal area in the future.
– Partial filling of Cell 19-3 will recommence once the interior side slope has been stabilized and the fill plans developed.
– Waste haul route noted on Figure 3A is adjusted as need to provide access to the active cell. The current road is constructed on top of the interim cover.

– Additional waste disposal cells are currently being designed to accommodate the short-term waste needs of the facility.

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 cells 19-2 and 19-3 have received interim cover, with the exception of the active landfilling area and small sections of Cell 19-2G and 19-3A. All landfilling work on Cell 19-2G and 19-3A was temporarily halted due to the Waste Disposal Cell 20-1 side slope failure.
– The interim cover was noted to be in good condition, with minor surface erosion channels. In the erosion areas, waste was not 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 completed in the fourth quarter of 2020.
– Topsoil placement and seeding was completed in the fourth quarter of 2020.
– Sufficient seed uptake has occurred. The seed mixture consists of native grasses and will require about 2 to 3 years to be fully established.
– Interior ditches along Cell 19-1 final cover show some sediment build up and erosion channels. Interior ditches to receive maintenance and have rip-rap placed in 2022.

3. Site Features

3.1 Perimeter Screening Berm

The perimeter screening berms are located on portions of the west, north, and east limits of the Site. The perimeter screening berm consists of a vegetated and landscaped outer component and non-vegetated interior slope. The interior portion of the screening berm will be vegetated as the interior surface water ditch system is completed based on the final design. The following relates to the screening berms conditions:

– Several major and minor erosion channels are present throughout the internal slopes of the perimeter screening berm. These channels are described and identified on Figure 4A. The erosion channels are located along the interior section of the screening berm in areas that are in low to un-vegetated areas.

– Several large erosion channels are present along the top plateaus of the perimeter screening berm. These channels are described and identified on Figure 4A.
– Erosion along the internal slopes increases the sedimentation in the perimeter ditches and require routine maintenance.
– The external sidewalls of the screening berm are in good condition and vegetated.
– The interior perimeter screening berm adjacent to Cell 20-1 configuration should be confirmed, graded to reflect final configuration, topsoiled, and vegetated.
– Some erosion channels previously noted in the northwest corner of the screening berm have been filled in due to stockpiling from 2021 capital works.
– The inspection did not identify any significant changes to the erosion channels on the interior side slopes since the previous inspection.

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 leachate collection system is normally discharged to Tank T12 in the tank farm. If Tank T12 is fully, leachate is directed to the leachate reservoirs for temporary storage. Leachate is withdrawn from the leachate reservoirs when leachate disposal exceeds leachate generation rates.

– 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.
– The leachate ponds are in general full. Clean Harbors is drawing down the ponds as leachate disposal capacity is available.

3.4 Surface Water Management System

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.
– The elevational difference should be addressed in the annual maintenance program for the perimeter ditches.

3.4.2 Surface Water Pond Network (SWPN)

– Figure 4A provides the location and status of the SWPN.
– The water level within the SWPN was low.
– A new water truck filling station has been constructed in the vicinity of the surface water treatment plant and is used to fill the on-site water truck that provides water for cleaning of roads and dust control as required.
– Water trucks for 2021 capital works haul road maintenance were being filled directly from Pond A

3.4.3 Equalization Pond

– Figure 4A provides the location and status of the Equalization Pond.
– No fish were observed within the Equalization Pond.

4. Conclusions and Recommendations

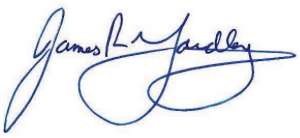
General

– Low/depressed areas in the north-east section of the site to be assessed in 2022 to provide surface water drainage and improve overall operation of the perimeter ditches.
– As active site works progress from south to north the perimeter berm will be graded, topsoiled and vegetated. Overall intent is to complete the Site from south to north.
– Based on Site performance, routine maintenance is required to be completed after large rain events or after the spring thaw. As the Site is completed, the amount of routine maintenance should reduce as the vegetation of the site increases.

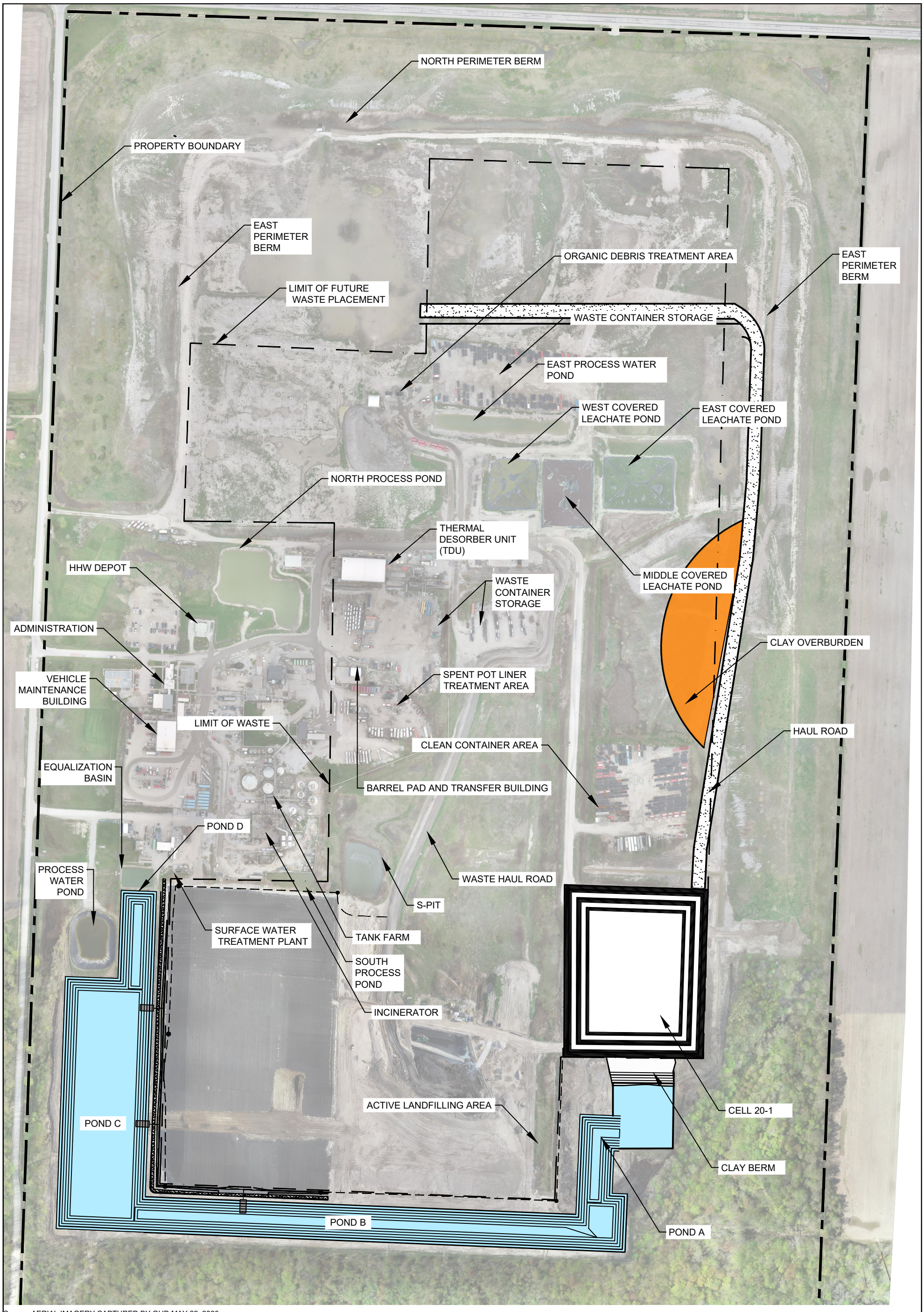
The following are the key recommendations, corrective actions and proposed periods for the work and the date/period completed.

Recommendation	Corrective Action Requirement	Proposed/ Completion Date
Interim cover surface erosion channel maintenance	Grading of interim cover surface to remove erosion channels.	Proposed – on-going Interim result – June 7th – Placed additional interim cover, correct any significant erosion channels Completed - TBD
Confirm final cover seed germination in next inspection	Assess seed germination status during each inspection.	Proposed – on-going Interim result – October 5th - seed germination has occurred. Grass is growing. Completed – TBD
Interior screening berm adjacent to Cell 20-1	Confirm final configuration, grade according, topsoil, and vegetate.	Proposed – confirm configuration 4th quarter 2021, include in future capital works budget Completed - TBD
Maintenance of perimeter temporary ditches in areas of surface erosion	Removal of sediment and re-establish surface water flow.	Proposed –2nd quarter of 2022 Completed - TBD
Removal of elevational difference/blockage in eastern perimeter ditch.	Removal sediment buildup and re-establish water flow in eastern ditch.	Proposed –2nd quarter of 2022 Completed - TBD
Maintenance of Cell 19-1 interior slope.	Removal of sediment and placement of rip-rap.	Proposed – confirm configuration 4th quarter 2021, include in 2022 capital works budget Completed - TBD
General surface water drainage across the northern portion of the Site	Continue to identify areas that collect water and develop area specific drainage works to move water to existing ditches	Proposed – on-going Interim – identify locations of pond water in 4th quarter 2021, include in general site works in 2nd quarter of 2022

Regards



Jim Yardley
Senior Engineer



Source: AERIAL IMAGERY CAPTURED BY GHD MAY 22, 2020

0 40 80 120m

GHD

CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2021 THIRD QUARTER SITE INSPECTION

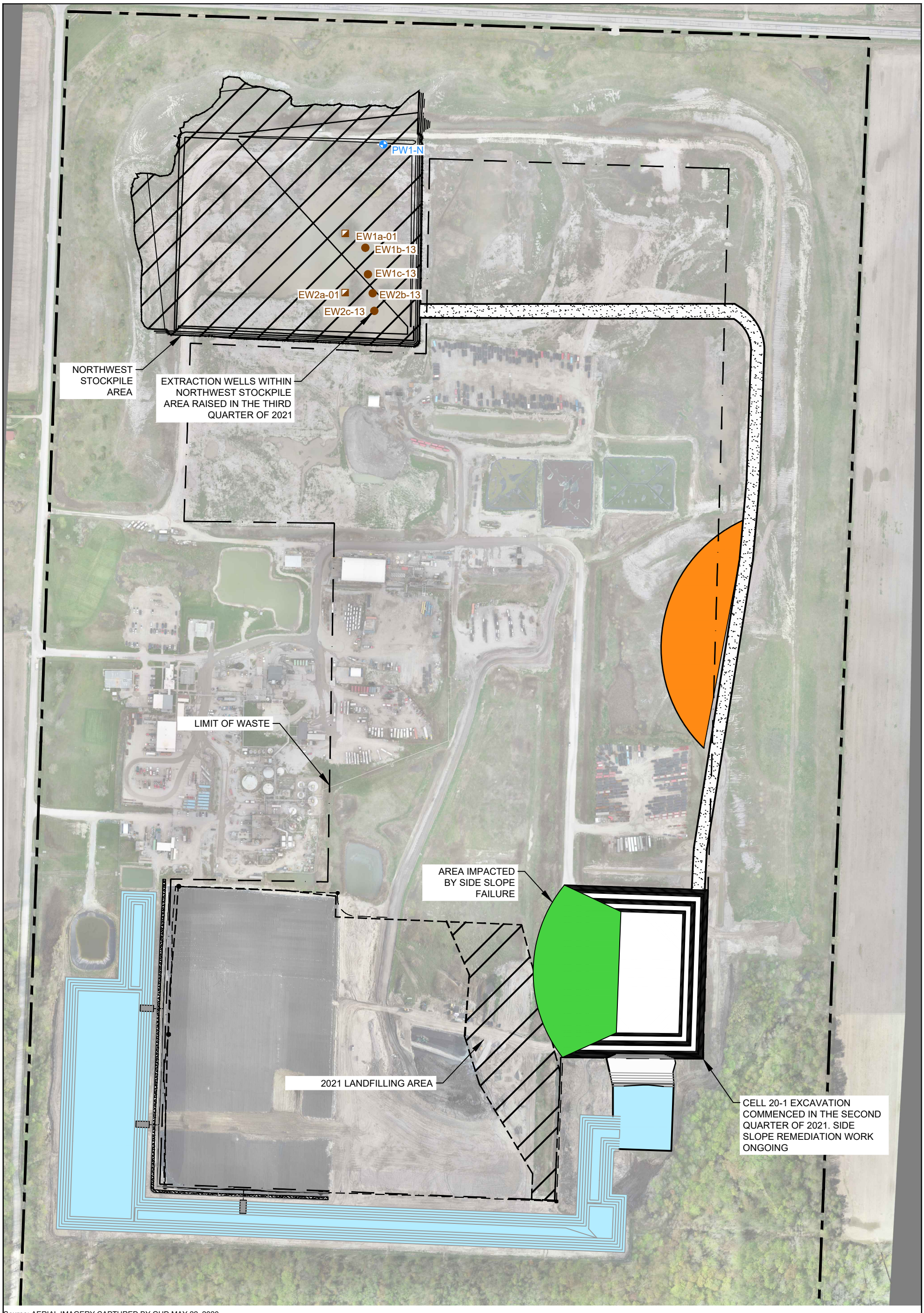
SITE PLAN

Project No. **44985**
Date **October 29, 2021**

Figure 1

Filename: P:\drawings\44000s\44985\44985-MEMO\44985-16(MEMO074)\44985-16(MEM0074)GN\44985-16(MEM0074)GN-WA001.DWG
Plot Date: 29 October 2021 3:23 PM

Data Source



Source: AERIAL IMAGERY CAPTURED BY GHD MAY 22, 2020

0 40 80 120m

GHD

CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2021 THIRD QUARTER SITE INSPECTION

2021 CAPITAL WORKS PLAN

Project No. **44985**
Date **October 29, 2021**

Figure 2

Filename: P:\drawings\44000s\44985\44985-MEMO\44985-16(MEMO074)\44985-16(MEM0074)GN\44985-16(MEM0074)GN-WA002.DWG
Plot Date: 29 October 2021 3:26 PM

LEGEND

FINAL COVER

INTERIM COVER

STORMWATER PONDS

STOCKPILE

PICTURE NUMBER — 1/2/3

FIGURE NUMBER — Fig 3B

DIRECTION OF PICTURE

ACTIVE AREA

7 Fig 3C

1/2/3 Fig 3B

WASTE HAUL ROAD

CELL 19-3B UNDER 0.6m OF INTERIM COVER

CELL 19-3A PARTIALLY UNDER 0.6m OF INTERIM COVER

CELL 20-1 CONSTRUCTION COMMENCED SECOND QUARTER OF 2021

CELL 19-1 FINAL COVER - 150mm TOPSOIL LAYER

STOCKPILE

CELL 19-2G PARTIALLY UNDER 0.6m OF INTERIM COVER

CELL 19-2D UNDER 0.6m OF INTERIM COVER

LIMIT OF WASTE

ANCHOR TRENCH COMPLETED

5/6 Fig 3C

8 Fig 3C

INTERIM COVER STOCKPILE

CELL 19-2 UNDER 0.6m OF INTERIM COVER

4 Fig 3B

Source: AERIAL IMAGERY CAPTURED BY GHD MAY 22, 2020

0 25 50 75m

N

GHD

CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2021 THIRD QUARTER SITE INSPECTION

VERTICAL LANDFILL EXPANSION (ACTIVE AREA)

Project No. **44985**
Date **October 29, 2021**

Figure 3A

Filename: P:\drawings\44000s\44985\44985-MEMO\44985-16(MEMO074)\44985-16(MEM0074)GN\44985-16(MEM0074)GN-WA003.DWG
Plot Date: 29 October 2021 3:25 PM

1 Fig 3A **CELL 19-3B AND 19-1**

2 Fig 3A **CELL 19-3B AND 19-3A INTERIM COVER**

3 Fig 3A **CELL 19-3A AREA WITHOUT COVER**

4 Fig 3A **SOUTH ACCESS ROAD AND DITCH**

GHD

CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2021 THIRD QUARTER SITE INSPECTION

VERTICAL LANDFILL EXPANSION
PHOTOS 1

Project No. **44985**
Date **October 29, 2021**

Figure 3B

Filename: P:\drawings\44000s\44985\44985-MEMO\44985-16(MEMO074)\44985-16(MEM0074)GN\44985-16(MEM0074)GN-WA003.DWG
Plot Date: 29 October 2021 3:25 PM

DATA SOURCE: SOURCE: IMAGES CAPTURED BY GHD STAFF DURING MARCH 17, 2021 SITE INSPECTION

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

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

7 Fig 3A **ACTIVE WASTE FACE**

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

CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2021 THIRD QUARTER SITE INSPECTION

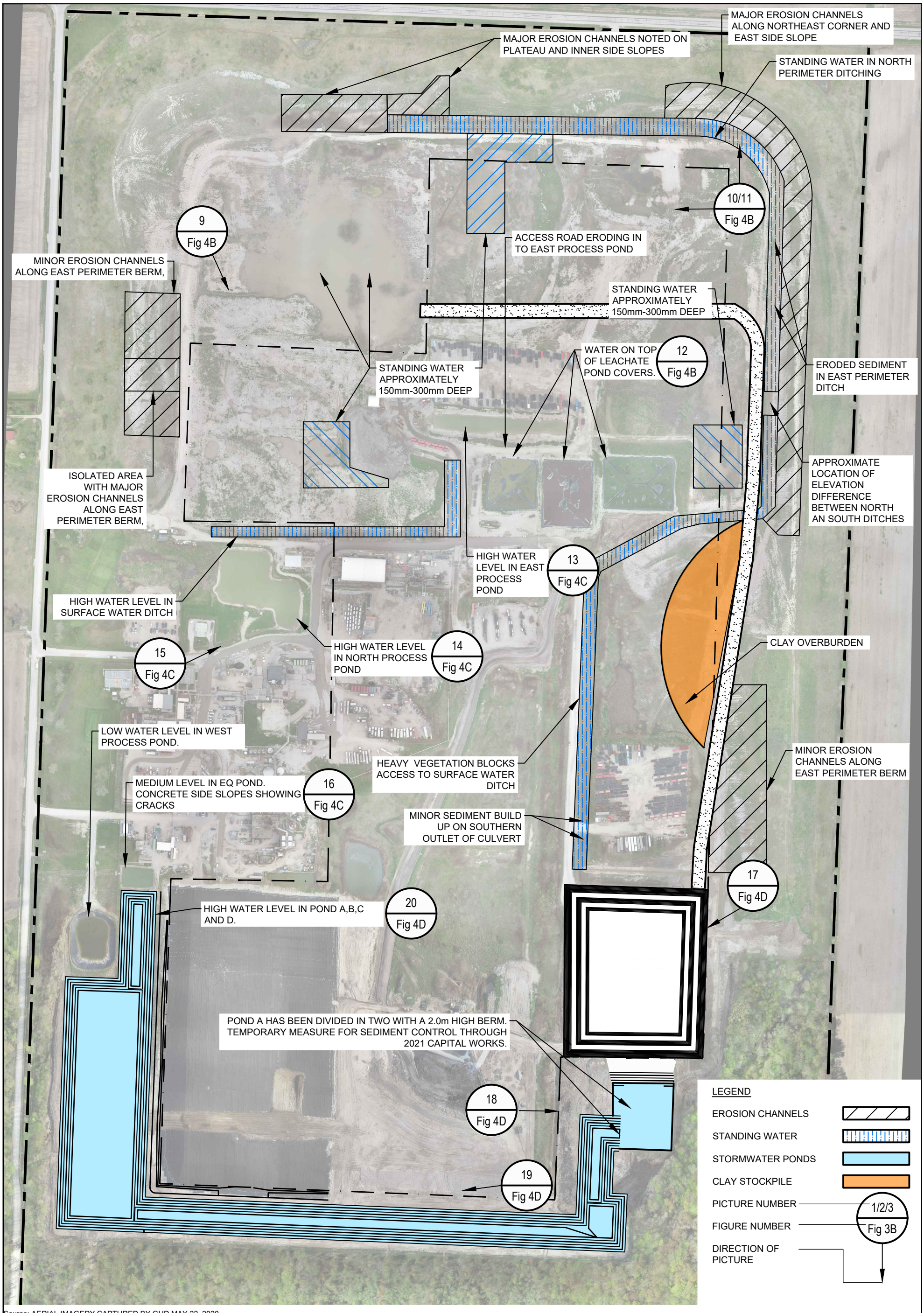
VERTICAL LANDFILL EXPANSION
PHOTOS 2

Project No. **44985**
Date **October 29, 2021**

Figure 3C

DATA SOURCE: SOURCE: IMAGES CAPTURED BY GHD STAFF DURING MARCH 17, 2021 SITE INSPECTION

Filename: P:\drawings\44000s\44985\44985-MEMO\44985-16(MEMO074)\44985-16(MEM0074)GN\44985-16(MEM0074)GN-WA003.DWG
Plot Date: 29 October 2021 3:25 PM



Source: AERIAL IMAGERY CAPTURED BY GHD MAY 22, 2020

0 40 80 120m

GHD

CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2021 THIRD QUARTER SITE INSPECTION

SITE FEATURES

Project No. **44985**
Date **October 29, 2021**

Figure 4A

Filename: P:\drawings\44000s\44985\44985-MEMO\44985-16(MEMO074)\44985-16(MEM0074)GN\44985-16(MEM0074)GN-WA004.DWG
Plot Date: 29 October 2021 3:24 PM

Data Source

9 Fig 4A **NORTH STOCKPILING AREA**

10 Fig 4A **NORTHEAST CORNER OF THE SITE LOOKING WEST**

11 Fig 4A **EROSION CHANNELS ALONG EAST PERIMETER BERM**

12 Fig 4A **PONDED WATER ON WEST LEACHATE POND COVER**

GHD

CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2021 THIRD QUARTER SITE INSPECTION

SITE FEATURES
PHOTOS 1

Project No. **44985**
Date **October 29, 2021**

Figure 4B

Filename: P:\drawings\44000s\44985\44985-MEMO\44985-16(MEMO074)\44985-16(MEM0074)GN\44985-16(MEM0074)GN-WA004.DWG
Plot Date: 29 October 2021 3:24 PM

Data Source: SOURCE: IMAGES CAPTURED BY GHD STAFF DURING MARCH 17, 2021 SITE INSPECTION

13 Fig 4A **EAST PROCESS POND**

14 Fig 4A **NORTH PROCESS POND**

15 Fig 4A **PROCESS DITCH**

16 Fig 4A **EQ POND**

GHD

CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2021 THIRD QUARTER SITE INSPECTION

SITE FEATURES
PHOTOS 2

Project No. **44985**
Date **October 29, 2021**

Figure 4C

Filename: P:\drawings\44000s\44985\44985-MEMO\44985-16(MEMO074)\44985-16(MEM0074)GN\44985-16(MEM0074)GN-WA004.DWG
Plot Date: 29 October 2021 3:24 PM

DATA SOURCE: SOURCE: IMAGES CAPTURED BY GHD STAFF DURING MARCH 17, 2021 SITE INSPECTION

17 Fig 4A **FORMER EAST SURFACE WATER POND - CELL 20-1 EXCAVATION**

18 Fig 4A **SURFACE WATER POND A**

19 Fig 4A **SURFACE WATER POND B**

20 Fig 4A **SURFACE WATER POND D**

CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2021 THIRD QUARTER SITE INSPECTION

SITE FEATURES
PHOTOS 3

Project No. **44985**
Date **October 29, 2021**

Figure 4D

Filename: P:\drawings\44000s\44985\44985-MEMO\44985-16(MEMO074)\44985-16(MEM0074)GN\44985-16(MEM0074)GN-WA004.DWG
Plot Date: 29 October 2021 3:25 PM

DATA SOURCE: SOURCE: IMAGES CAPTURED BY GHD STAFF DURING MARCH 17, 2021 SITE INSPECTION

Appendix D

2021 Fourth Quarter Site Inspection

Technical Memorandum

February 22, 2022

To	Mackenzie Costello/Mike Parker - Clean Harbors		
From	Jim Yardley/Kal Dhaliwal	**Tel**	+1 519 884 0510
Subject	2021 Fourth Quarter Site Inspection	**Project no.**	044985

1. Introduction

In accordance with requirements outlined in Section 8.1 of the Design and Operations Report, GHD conducted the 2021 Fourth Quarter Site Inspection (Inspection) of the Clean Harbors Canada, Inc. (Clean Harbors) Lambton Facility (Site) in Corunna, Ontario. The Inspection was conducted on December 16, 2021 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 2021 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 1°C. Weather conditions at the Site were sunny, wind blowing in a southeast direction during the Inspection. During the week preceding the Inspection, the Site experienced 0.4 mm of total precipitation, and a mean temperature of 5°C. The Site was wet, with standing water observed in low, flat areas and ditches along the North section of the site. Figure 1 provides a Site plan showing existing site conditions and features. The air photo is from June 2020.

1.2 2021 Capital Work Projects Related to Waste Disposal Operations

Figure 2 provides the location and status of the proposed 2021 capital works associated with the landfill operations.

The following describes the key 2021 landfill related capital work:

– Construction of Waste Disposal Cell 20-1.
– Grading in the northwest corner of the site, using material excavated from the construction of Waste Disposal Cell 20-1. Grades to match those approved September 9, 2019 by the Ministry of Environment, Conservation and Parks, per Environmental Compliance Approval number 2985-B9KKP2
– Wells located in the northwest corner of the site and associated with Subcell 3 will be extended to accommodate the proposed grades in the area.

1.3 Waste Disposal Cell 20-1 West Side Slope Failure

On August 18, 2021 at 11:30 AM, during the construction of Cell 20-1 at the Clean Harbors Lambton Landfill, deep surface cracks were noted by contractor staff in the clay material on the upper interior side slope (slope along the Pre-1986/Cell 19-3 area). Within a two-hour period, the interior side slope rotated approximately 7 metres. The rotation consisted of approximately a 7 m drop on the upper portion and a 7 metre rise in part of the base. The rotation event impacted Cell 20-1 and a small portion on the eastern side of the active landfill area of Cell 19-3.

A meeting was held on the morning of August 19 to discuss short-term, mid-term, and long-term remediation plans for Cell 20-1 and the immediate area. The short-term plan was to construct containment berms to control leachate that was entering Cell 20-1 in the south-west corner from the end of the leachate collection system, to install a temporary leachate pumping system. A drone topography survey was conducted of the Cell 20-1 area to assess the current conditions and the changes from pre-event topography. The mid-term plan was to assess the event and determine the stability status and methods to stabilize the rotated slope. The event was a rotation and as such, the rotated side slope was intact. The decision was to install a buttress of compacted clay at the toe of the impacted area and on top of the material that rotated into the cell. The long-term plan was to the post-rotation conditions, stabilize the slope, and revise the waste disposal plans for Cell 20-1 and Cell 19-3.

The short and mid-term plans were completed and the long-term remedial measure has been constructed. Cell 19-3 is being filled and Cell 20-1 is ready for filling subject to submission of documentation to MECP.

Clean Harbors has regular discussions with MECP representatives with regard to the progress of the remedial and assessment programs for Cell 20-1 and the interim landfill disposal program.

Figure 2 shows the impacted area of the sidewall rotation event.

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 outlining of future landfill cell 20-1. Cell reference numbers are provided on the figure, with subcell references provided for active or constructed cells.

– Due to the impact from the Waste Disposal Cell 20-1 slope failure, a temporary waste disposal area was constructed on the Pre-1986 area. The waste placed in this temporary disposal area will be transferred to a permanent waste disposal area in the future. (proposed process water storage pond)
– One sub-cell of cell 19-4 has been constructed west of the temporary disposal area as a contingency waste disposal area.
– Partial filling of Cell 19-3 has re-commenced once the interior side slope had been stabilized and the intermediate fill plans developed.
– Waste haul route noted on Figure 3A is adjusted as need to provide access to the waste disposal are and the waste haul road has been completed to service Cell 20-1.

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 cells 19-2 and 19-3 have received interim cover, with the exception of the active landfilling area and small sections of Cell 19-2G and 19-3A. All landfilling work on Cell 19-2G and 19-3A was temporarily halted due to the Waste Disposal Cell 20-1 side slope failure.
- The interim cover was noted to be in good condition, with minor surface erosion channels. In the erosion areas, waste was not 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 completed in the fourth quarter of 2020.
- Topsoil placement and seeding was completed in the fourth quarter of 2020.
- Sufficient seed uptake has occurred. The seed mixture consists of native grasses and will require about 2 to 3 years to be fully established.
- Interior ditches along Cell 19-1 final cover show sediment build up and erosion channels. Interior ditches to receive maintenance and have rip-rap placed in 2022.

3. Site Features

3.1 Perimeter Screening Berm

The perimeter screening berms are located on portions of the west, north, and east limits of the Site. The perimeter screening berm consists of a vegetated and landscaped outer component and non-vegetated interior slope. The interior portion of the screening berm will be vegetated as the interior surface water ditch system is completed based on the final design. The following relates to the screening berms conditions:

- Several major and minor erosion channels are present throughout the internal slopes of the perimeter screening berm. These channels are described and identified on Figure 4A. The erosion channels are located along the interior section of the screening berm in areas that are in low to un-vegetated areas.
- Several large erosion channels are present along the top plateaus of the perimeter screening berm. These channels are described and identified on Figure 4A.
- Erosion along the internal slopes increases the sedimentation in the perimeter ditches and require routine maintenance.
- The external sidewalls of the screening berm are in good condition and vegetated.
- The interior perimeter screening berm adjacent to Cell 20-1 configuration should be confirmed, graded to reflect final configuration, topsoiled, and vegetated.
- Some erosion channels previously noted in the northwest corner of the screening berm have been filled in due to stockpiling from 2021 capital works.

– The inspection did not identify any significant changes to the erosion channels on the interior side slopes since the previous inspection.

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 leachate collection system is normally discharged to Tank T12 in the tank farm. If Tank T12 is fully, leachate is directed to the leachate reservoirs for temporary storage. Leachate is withdrawn from the leachate reservoirs when leachate disposal exceeds leachate generation rates.

– 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.
– The leachate ponds are in general full. Clean Harbors is drawing down the ponds as leachate disposal capacity is available.

3.4 Surface Water Management System

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.
– The elevational difference should be addressed in the annual maintenance program for the perimeter ditches.
– Grading works to promote surface water drainage were completed North of the leachate ponds in the fourth quarter.

3.4.2 Surface Water Pond Network (SWPN)

– Figure 4A provides the location and status of the SWPN.
– The water level within the SWPN was low.
– A new water truck filling station has been constructed in the vicinity of the surface water treatment plant and is used to fill the on-site water truck that provides water for cleaning of roads and dust control as required.
– Water trucks for 2021 capital works haul road maintenance were being filled directly from Pond A

3.4.3 Equalization Pond

– Figure 4A provides the location and status of the Equalization Pond.
– No fish were observed within the Equalization Pond.

4. Conclusions

General

– The Site has undergone significant changes in 2021 with the construction of Cell 20-1 and the addition of approximately 3 metres of clay on top of Cell 18, subcell 1, and 3.
– Un-suitable clay materials were placed in the north-east section (Cell 18) for future use

Regular Maintenance

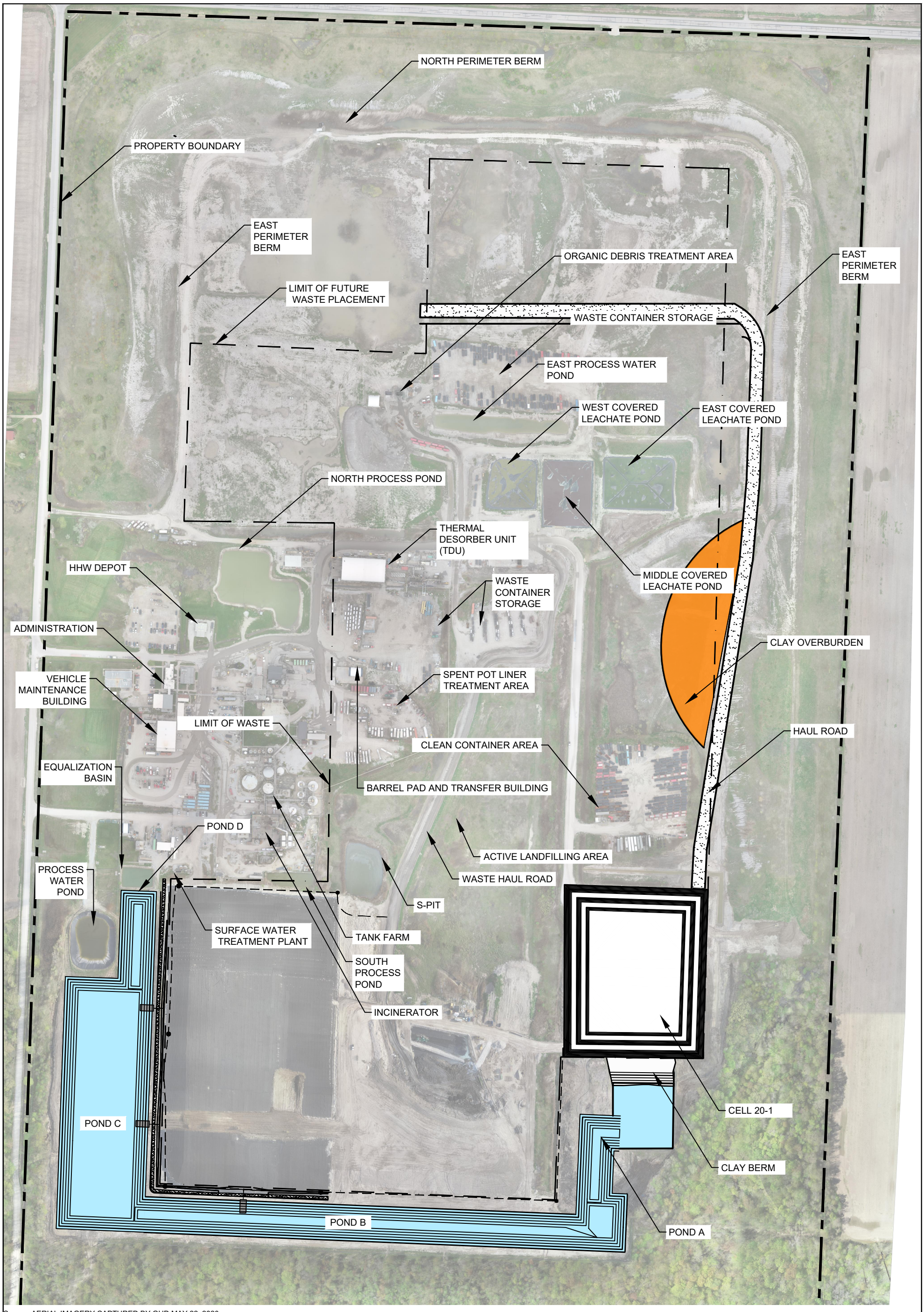
– Regular inspections are conducted at the Site to identify items that require maintenance during the summer. The following is a list of regular areas that inspected and the corrective actions that conducted
  - Areas that have received interim cover are inspected semi-annually. Areas that exhibit erosion of the interim cover are re-graded/ repaired by the earthworks contractor after each inspection
  - Internal and perimeter ditching is inspected by site staff during normal site inspections. Ditches that indicate a blockage and ponding of water are corrected through excavation of the blockage by the earthworks contractor.
  - Final cover vegetation – The final cover vegetation planted requires 3 years to fully establish and mature. The vegetation was installed in the fall of 2020. The final cover has a significant vegetation catch. The final cover vegetation should be inspected in late spring of 2022 and zones that require repair/ reseeding identified at that time.

The following are the larger capital or operational items that are currently proposed or being considered by Clean Harbors.

Future Capital/ Operational Work Item	Work Item	Proposed/ Completion
Interior screening berm adjacent to Cell 20-1	Confirm final configuration, grade according, topsoil, and vegetate.	Proposed – to be included in 2023 capital works budget. confirm Completed - NA
Assessment of temporary grades and ditch adjustments in the northern and eastern section of the site.	Area is relatively flat and as such ponding occurs due to poor drainage. In 2021, the area was used to store unsuitable fill material, as well as stockpile material.	Proposed –Assessment to be conduct 2nd quarter of 2022 Work to be Completed in 3rd quarter of 2022
Maintenance of Cell 19-1 interior ditch and perimeter road crossings.	This work was scheduled for fall of 2021 and delayed due to issues at Cell 20-1.	Proposed – Work to be conducted in 2nd and 3rd quarter of 2022

Regards

Jim Yardley
Senior Engineer



Source: AERIAL IMAGERY CAPTURED BY GHD MAY 22, 2020

0 40 80 120m

GHD

CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2021 FOURTH QUARTER SITE INSPECTION

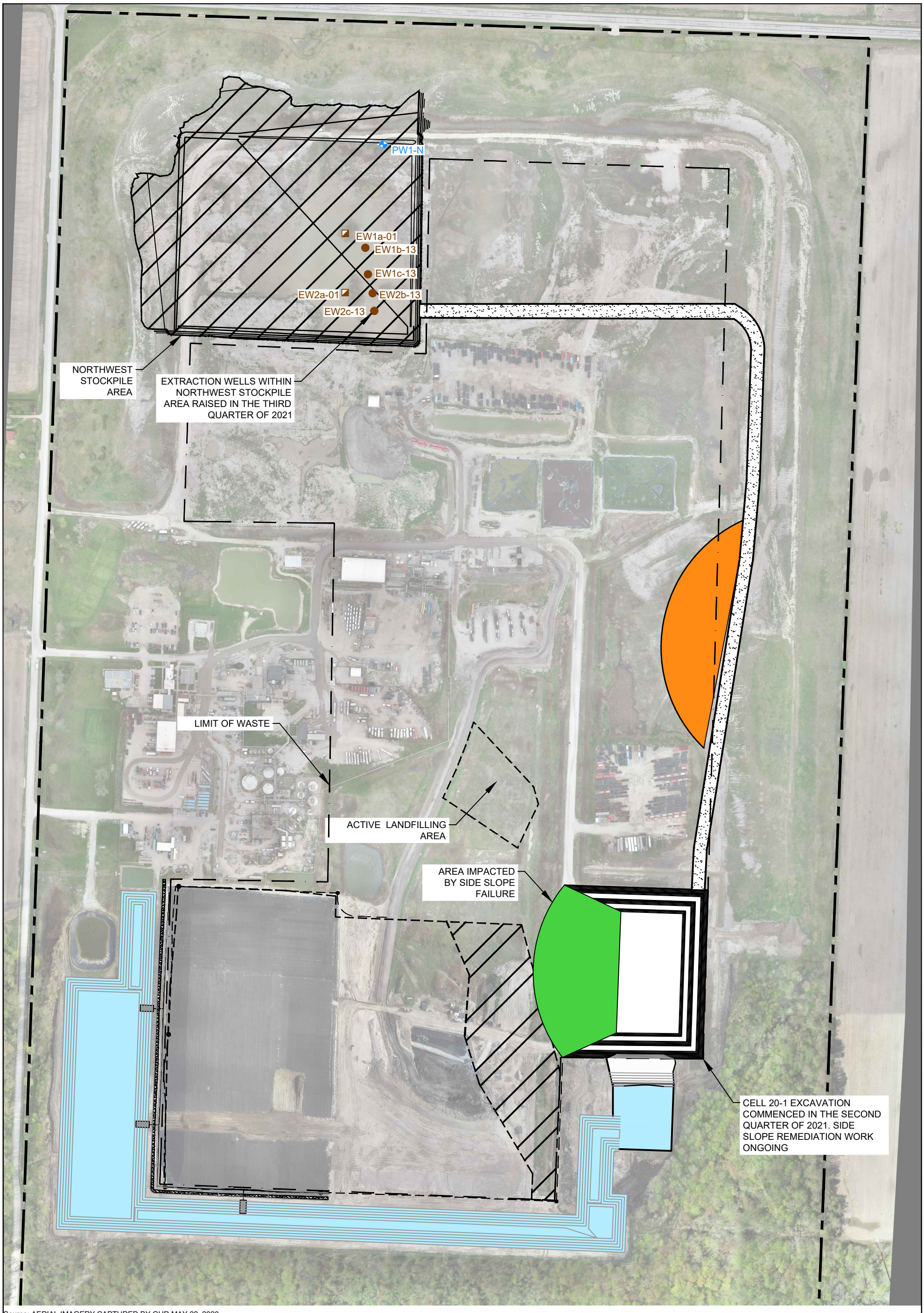
SITE PLAN

Project No. **44985**
Date **January 19, 2022**

Figure 1

Filename: P:\drawings\44000s\44985\44985-MEMO\44985-16(MEMO076)\44985-16(MEM0076)GN\44985-16(MEM0076)GN-WA001.DWG
Plot Date: 19 January 2022 3:37 PM

Data Source



Source: AERIAL IMAGERY CAPTURED BY GHD MAY 22, 2020

0 40 80 120m

CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2021 FOURTH QUARTER SITE INSPECTION

2021 CAPITAL WORKS PLAN

Project No. **44985**
Date **January 19, 2022**

Figure 2

Filename: P:\drawings\44000s\44985\44985-MEMO\44985-16(MEMO076)\44985-16(MEM0076)GN\44985-16(MEM0076)GN-WA002.DWG
Plot Date: 19 January 2022 3:39 PM

LEGEND

FINAL COVER

INTERIM COVER

STORMWATER PONDS

STOCKPILE

PICTURE NUMBER — 1/2/3

FIGURE NUMBER — Fig 3B

DIRECTION OF PICTURE

CELL 19--4A

ACTIVE AREA

WASTE HAUL ROAD

8 Fig 3C

7 Fig 3C

1/2/3 Fig 3B

CELL 19-1 FINAL COVER - 150mm TOPSOIL LAYER

CELL 19-3B UNDER 0.6m OF INTERIM COVER

CELL 19-3A PARTIALLY UNDER 0.6m OF INTERIM COVER

CELL 20-1 CONSTRUCTION COMMENCED SECOND QUARTER OF 2021

CELL 19-2G PARTIALLY UNDER 0.6m OF INTERIM COVER

STOCKPILE

CELL 19-2D UNDER 0.6m OF INTERIM COVER

LIMIT OF WASTE

ANCHOR TRENCH COMPLETED

5/6 Fig 3C

INTERIM COVER STOCKPILE

CELL 19-2 UNDER 0.6m OF INTERIM COVER

4 Fig 3B

Source: AERIAL IMAGERY CAPTURED BY GHD MAY 22, 2020

0 25 50 75m

N

GHD

CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2021 FOURTH QUARTER SITE INSPECTION

VERTICAL LANDFILL EXPANSION
(ACTIVE AREA)

Project No. **44985**
Date **January 19, 2022**

Figure 3A

Filename: P:\drawings\44000s\44985\44985-MEMO\44985-16(MEMO076)\44985-16(MEM0076)GN\44985-16(MEM0076)GN-WA003.DWG
Plot Date: 19 January 2022 3:21 PM

1 Fig 3A **CELL 19-3B AND 19-1**

2 Fig 3A **CELL 19-3B AND 19-3A INTERIM COVER**

3 Fig 3A **CELL 19-3A AREA INTERIM COVER**

4 Fig 3A **SOUTH ACCESS ROAD EROSION CHANNEL**

GHD

CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2021 FOURTH QUARTER SITE INSPECTION

VERTICAL LANDFILL EXPANSION
PHOTOS 1

Project No. **44985**
Date **January 19, 2022**

Figure 3B

DATA SOURCE: SOURCE: IMAGES CAPTURED BY GHD STAFF DURING MARCH 17, 2021 SITE INSPECTION

Filename: P:\drawings\44000s\44985\44985-MEMO\44985-16(MEMO076)\44985-16(MEM0076)GN\44985-16(MEM0076)GN-WA003.DWG
Plot Date: 19 January 2022 3:21 PM

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

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

7 Fig 3A **ACTIVE WASTE FACE**

8 Fig 3A **CELL 19-4**

CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2021 FOURTH QUARTER SITE INSPECTION

VERTICAL LANDFILL EXPANSION
PHOTOS 2

Project No. **44985**
Date **January 19, 2022**

Figure 3C

DATA SOURCE: SOURCE: IMAGES CAPTURED BY GHD STAFF DURING MARCH 17, 2021 SITE INSPECTION

Filename: P:\drawings\44000s\44985\44985-MEMO\44985-16(MEMO076)\44985-16(MEM0076)GN\44985-16(MEM0076)GN-WA003.DWG
Plot Date: 19 January 2022 3:22 PM

MAJOR EROSION CHANNELS NOTED ON PLATEAU AND INNER SIDE SLOPES

MAJOR EROSION CHANNELS ALONG NORTHEAST CORNER AND EAST SIDE SLOPE

STANDING WATER IN NORTH PERIMETER DITCHING

10/11 Fig 4B

ACCESS ROAD ERODING IN TO EAST PROCESS POND

MINOR EROSION CHANNELS ALONG EAST PERIMETER BERM,

9 Fig 4B

AREA GRADED IN THE FOURTH QUARTER TO PROMOTE DRAINAGE

WATER ON TOP OF LEACHATE POND COVERS.

12 Fig 4B

STANDING WATER APPROXIMATELY 150mm-300mm DEEP

ERODED SEDIMENT IN EAST PERIMETER DITCH

ISOLATED AREA WITH MAJOR EROSION CHANNELS ALONG EAST PERIMETER BERM,

APPROXIMATE LOCATION OF ELEVATION DIFFERENCE BETWEEN NORTH AN SOUTH DITCHES

HIGH WATER LEVEL IN EAST PROCESS POND

13 Fig 4C

STANDING WATER APPROXIMATELY 150mm-300mm DEEP

HIGH WATER LEVEL IN SURFACE WATER DITCH

15 Fig 4C

HIGH WATER LEVEL IN NORTH PROCESS POND

14 Fig 4C

CLAY OVERBURDEN STOCKPILE EXCAVATED FOR CELL 20-1 BUTTRESS

MEDIUM WATER LEVEL IN WEST PROCESS POND.

HEAVY VEGETATION BLOCKS ACCESS TO SURFACE WATER DITCH

MINOR EROSION CHANNELS ALONG EAST PERIMETER BERM

MEDIUM LEVEL IN EQ POND. CONCRETE SIDE SLOPES SHOWING CRACKS

16 Fig 4C

MINOR SEDIMENT BUILD UP ON SOUTHERN OUTLET OF CULVERT

17 Fig 4D

HIGH WATER LEVEL IN POND A,B,C AND D.

20 Fig 4D

POND A HAS BEEN DIVIDED IN TWO WITH A 2.0m HIGH BERM. TEMPORARY MEASURE FOR SEDIMENT CONTROL THROUGH 2021 CAPITAL WORKS.

18 Fig 4D

19 Fig 4D

LEGEND

- EROSION CHANNELS
- STANDING WATER
- STORMWATER PONDS
- CLAY STOCKPILE
- PICTURE NUMBER — 1/2/3
- FIGURE NUMBER — Fig 3B
- DIRECTION OF PICTURE

Source: AERIAL IMAGERY CAPTURED BY GHD MAY 22, 2020

0 40 80 120m

GHD

CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2021 FOURTH QUARTER SITE INSPECTION

SITE FEATURES

Project No. 44985
Date January 19, 2022

Figure 4A

Filename: P:\drawings\44000s\44985\44985-MEMO\44985-16(MEMO076)\44985-16(MEM0076)GN\44985-16(MEM0076)GN-WA004.DWG
Plot Date: 19 January 2022 3:22 PM

Data Source

9 Fig 4A **NORTH STOCKPILING AREA**

10 Fig 4A **NORTHEAST CORNER OF THE SITE LOOKING WEST**

11 Fig 4A **EROSION CHANNELS AND SEDIMENTATION ALONG EAST PERIMETER DITCH**

12 Fig 4A **PONDED WATER ON WEST LEACHATE POND COVER**

GHD

CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2021 FOURTH QUARTER SITE INSPECTION

SITE FEATURES
PHOTOS 1

Project No. **44985**
Date **January 19, 2022**

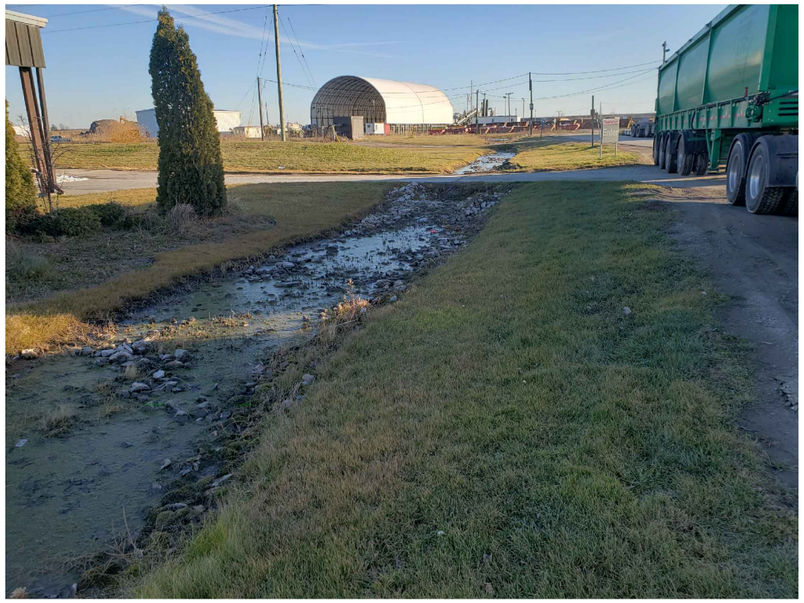
Figure 4B

Filename: P:\drawings\44000s\44985\44985-MEMO\44985-16(MEMO076)\44985-16(MEM0076)GN\44985-16(MEM0076)GN-WA004.DWG
Plot Date: 19 January 2022 3:22 PM

Data Source: SOURCE: IMAGES CAPTURED BY GHD STAFF DURING MARCH 17, 2021 SITE INSPECTION

13 Fig 4A **EAST PROCESS POND**

14 Fig 4A **NORTH PROCESS POND**



15 Fig 4A **PROCESS DITCH**

16 Fig 4A **EQ POND**

CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2021 FOURTH QUARTER SITE INSPECTION

SITE FEATURES
PHOTOS 2

Project No. **44985**
Date **January 19, 2022**

Figure 4C

Filename: P:\drawings\44000s\44985\44985-MEMO\44985-16(MEMO076)\44985-16(MEM0076)GN\44985-16(MEM0076)GN-WA004.DWG
Plot Date: 19 January 2022 3:26 PM

DATA SOURCE: SOURCE: IMAGES CAPTURED BY GHD STAFF DURING MARCH 17, 2021 SITE INSPECTION

17 Fig 4A **FORMER EAST SURFACE WATER POND - CELL 20-1 EXCAVATION**

18 Fig 4A **SURFACE WATER POND A**

19 Fig 4A **SURFACE WATER POND B**

20 Fig 4A **SURFACE WATER POND D**

GHD

CLEAN HARBORS CANADA, INC.
LAMBTON COUNTY, ONTARIO
2021 FOURTH QUARTER SITE INSPECTION

SITE FEATURES
PHOTOS 3

Project No. **44985**
Date **January 19, 2022**

Figure 4D

Filename: P:\drawings\44000s\44985\44985-MEMO\44985-16(MEMO076)\44985-16(MEM0076)GN\44985-16(MEM0076)GN-WA004.DWG
Plot Date: 19 January 2022 3:26 PM

DATA SOURCE: SOURCE: IMAGES CAPTURED BY GHD STAFF DURING MARCH 17, 2021 SITE INSPECTION


GHD