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Hydrogeological Investigation

Southampton Landfill Site: Town of Saugeen Shores Waste Management Plan EA for Landfill Expansion Environmental Compliance Approvals No. A273101 (Waste Management) & No. 0849-8L7JN9 (Stormwater Management)

GEI Project No.: 2401298

March 2026 (V1)

Saugeen Shores

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SOUTHAMPTON LANDFILL SITE: TOWN OF SAUGEEN SHORES
HYDROGEOLOGICAL INVESTIGATION
WASTE MANAGEMENT PLAN EA FOR LANDFILL EXPANSION

MARCH 2026 (V1)

GEI PROJECT NO.: 2401298

1. INTRODUCTION

1.1 Background

The Town of Saugeen Shores waste disposal site is located at 126 Concession 14, approximately three kilometres southeast of Southampton. The Site is generally situated within Part of Lots 10, 11 and 12, Concession 15, in the former Township of Saugeen, where shown on Figure 1. The waste disposal site is owned and operated by the Town of Saugeen Shores (hereafter referred to as the Town). Additional contaminant attenuation zone (CAZ) lands have been established to the east and southeast of the approved waste disposal/transfer area, where shown on Figure 2.

It is estimated that the Town of Saugeen Shores has approved capacity at the existing Southampton Landfill Site to provide landfill services until about 2032. In the interest of increasing the waste placement capacity of the landfill and extending the life of the landfill beyond 2032, it has been proposed that an additional waste placement area be approved on the westerly adjacent lands that are currently owned by the Town and currently act as buffer lands (refer to Figure 3). Development of new capacity is expected to be completed as an engineered landfill system, with constructed liner and a leachate collection system.

Operations at the Site reportedly began in 1965. Operations are governed by Environmental Compliance Approval (ECA) No. A273101, as amended, which was originally issued on December 17, 1980. To support the ECA and Ministry of Environment Conservation and Parks (MECP) requirements, a Plan of Development and Operation (PDO) and Hydrogeological Assessment (1994) were completed and submitted to the MECP in March 1997. The PDO, which was ultimately approved on November 25th, 1997, approved a volume of 493,000 m^3 within a landfill footprint with an area of 20.2 hectares and total site area of 64.97 hectares.

In January 1998, the Township of Saugeen amalgamated with the Town of Southampton and the Town of Port Elgin to form the Town of Saugeen Shores. Following amalgamation, the ECA was amended to accurately reflect the Town's name change to the Town of Saugeen Shores and in August 2005 the ECA was amended to permit the acceptance of municipal waste from the entire Town. Following the closure of the Port Elgin landfill site in 2007, all municipal waste from the Town has been directed to the Southampton Landfill.

In July 2011, a Plan of Development and Operations (PDO) was completed by GM BluePlan Engineering (GMBP; formerly Gamsby and Mannerow) and was submitted to support landfill development within Phases II and III. The ECA was subsequently updated to recognize the PDO (2011) for the entire site. In 2021 an application to amend the ECA to recognize the construction of an improved waste receiving and transfer area was submitted to the MECP, and is recognized in the ECA, as amended on March 5, 2022. A copy of the ECA for the Southampton Landfill Site, as amended, is provided in Appendix A.

The current ECA recognizes the use and operation of a 20.2-hectare (50 acre) waste disposal/transfer site within a total site area of 80.43 hectares (160 acres). As shown on Figure 2, the total site area includes approximately 60 hectares (150 acres) of buffer lands to the north and west of the waste disposal area. In addition, 4.37 hectares (10.8 acres) of CAZ lands has been registered for the lands immediately to the south and east of the area approved for waste disposal and transfer. Further, the Municipality has also acquired an additional 20.2 hectares (50 acres) to the north of the buffer lands (refer to Figure 2).

Currently, a Stormwater Management Plan supports landfill development within the existing approved landfill area. The stormwater management features were designed to provide quality and quantity control of stormwater runoff by attenuating runoff from storm events. Stormwater management for the Site currently operates under MECP ECA No. 0849-8L7JN9, included in Appendix A.

1.2 Purpose and Scope of Work

As part of the increased landfill capacity, an Environmental Assessment (EA) is required. As part of the EA, a Terms of Reference (ToR) has been circulated and approved. Should the EA allow increased landfill capacity at the Site, an amended or new Environmental Compliance Approval (ECA) would also be required. This Investigation is being prepared to support both the EA process, as well as provide recommendations regarding the overall development and design of the landfill. Pending approval of the EA and selection of the preferred method of landfill development, the Hydrogeologic Investigation may require updates to support the ECA process.

The goal of the Investigation is to assess the hydrogeologic conditions and determine suitability for the development of the increased landfill capacity at the Site. This Hydrogeological Investigation builds on the information and findings from previous hydrogeologic investigations, and over four decades of groundwater level and groundwater quality monitoring. The historic information has been supplemented by the completion of investigative drilling in new locations and additional hydrogeologic testing.

This Investigation includes a combination of historic groundwater monitoring data updated with the most recent groundwater quality results from the 2025 monitoring year as well as background groundwater quality data obtained from twelve (12) supplemental monitoring wells installed in 2021.

As part of this Investigation, the potential for environmental impact is being assessed based on a review of:

1. Historical Hydrogeological Investigations completed by Gamsby and Mannerow Limited in support of the historical Plans of Development and Operations, dated June 1987, February 1991, and July 1993.
2. The *Town of Southampton Waste Disposal Site Plan of Development and Operation* (Paragon Engineering Limited, Marcy 1997) and *Town of Southampton Waste Disposal Site Hydrogeologic Assessment* (Paragon Engineering Limited, August 1994).
3. Historical hydrogeological and analytical data from the existing network of monitoring wells and surface water sampling location on the Site,
4. An analysis of water levels, hydraulic conductivity testing (i.e. slug testing), and analytical data from the supplemental wells installed in 2021,
5. A door-to-door domestic well survey,
6. An assessment of the potential for impact to the groundwater system on-site and the potential for migration of the impacts to off-site properties and/or sensitive or ecological receptors,
7. Development of mitigative measures and landfill design considerations that would protect off-site receptors.

2. DEVELOPMENT OF EXISTING LANDFILL

The current Southampton Landfill has been developed and used for approximately 60 years. Landfill operations at the Southampton Landfill site reportedly began in 1965. The site received waste from Township of Saugeen and Town of Southampton, until 2007, when the Port Elgin Landfill closed. Table 2-1 provides a general timeline highlighting key changes to, and approvals for, the municipal landfill sites since operations were documented. All of the Town's landfill operations now occur at its Southampton Landfill Site, with the site now forming a key component of the Town's waste management infrastructure.

TABLE 2-1: Landfill Operations and Approvals Timeline for the Town of Saugeen Shores

Year	Type	Description
Southampton Landfill Site		
1965	Operations	Landfilling at the Southampton Landfill Site commences
1980	Approval	ECA No. 273101 issued for the Southampton Landfill Site
1994	Operations	Contaminant Attenuation Zone (CAZ) lands established to the east and south of the landfill property as part of the Hydrogeological Investigations.
1997	Approval	1. ECA amended to recognize the Plan of Development and Operation (PDO) for Phase I of landfill development. 2. ECA for Stormwater Management issued for the Southampton Landfill Site
2000	Operations	All waste collected from within the Town transported to the Port Elgin Landfill. Waste accepted at the Southampton Landfill limited to deliveries of municipal waste.
2002	Operations	A Stormwater Management Wetland (SWM-A) and an Infiltration Basin (IB1) was constructed.
2003	Approval	Approval for Sewage Works issued and Infiltration Basins 2&3 (IB2 & IB3) subsequently constructed between 2006 and 2011.
2005	Approval	ECA amended to reflect the Town's name change to the Town of Saugeen Shores and to permit the acceptance of municipal waste from the entire Town.
2007	Operations	Port Elgin Landfill Site filled to its approved capacity and closed. Capping of the landfill was completed in September 2007. All municipal waste from the Town directed to the Southampton Landfill.
2011	Approval	Amended ECA No. 0849-8L7JN9 issued for stormwater management at the Southampton landfill.
2012	Approval	ECA amended to recognize the Plan of Development and Operation (PDO) for Phases II and III of landfill development.
2016	Approval	ECA amended to permit the construction and operation of a parking lot used to alleviate traffic and parking constraints at the Southampton Landfill Site.
2020	*Planning*	*A Waste Management Master Plan is completed for the Town. Plan identifies optimization of the Southampton Landfill Site as a preliminary preferred long-term solid waste management alternative.*
2022	Approval	ECA Amended to recognize the construction of an improved waste receiving and transfer area.

The site is located at a former municipally-owned and operated aggregate pit operation, along a former geologic beach ridge formation. Typical of this scenario and historical practices, it is inferred that the exhausted aggregate pit was then transformed into a landfill site. The site is a 'natural attenuation' site that relies on the attenuation of contaminants in the natural environment to prevent unacceptable off-site impacts. Operational controls include the use of interim and final cover material, waste placement above the water table, and shaping to reduce leachate production. Stormwater run-off is generally collected around the perimeter of the landfill areas and infiltrated into the subsurface.

Prior to the 1997 PDO, landfilling primarily occurred in the southerly portion of the site. As part of the development process through the early 1990's, this area was closed and capped, with no further waste placement generally within this area (with the exception of tying into existing Phases for shaping purposes). As part of the 1997 PDO, the Site was divided into three (3) Phases. Figure 4 shows the existing landfill phasing.

Since the 1990's, development has occurred from the south area of Phase I, and progressed to the north and east into Phase II, with the remaining area to be filled in the easterly portion of Phase III. Based on current landfill volume projections, approximately five (5) years of site life remain (refer to Table 2-2). At the end of 2025, it is estimated that approximately 86,650 m^3 of capacity remains at the existing site.

TABLE 2-2: Landfill Volume Capacity (Waste and Interim Cover) and Remaining Site Life

YEAR	Units	2019	2020	2021	2022	2023	2024	2025
Total Approved Capacity	(m^3)	390,250						
Capacity Used During Year	(m^3)	19,250	11,300	13,700	12,800	11,700	10,500	8,350
Capacity Used*	(m^3)	235,250	246,550	260,250	273,050	284,750	295,250	303,600
Remaining Capacity*	(m^3)	155,000	143,700	130,000	117,200	105,500	95,000	86,650
Remaining site life (±) at 7-year average fill rate								
7-year average (12,500 m^3)	years	12.4	11.5	10.4	9.4	8.4	7.6	6.9

Notes:
1. A survey of the entire landfill area was completed in March 2024. Based on the comprehensive survey, as of the end of February 2024, a total capacity of approximately 106,000 m^3 remained for waste and interim cover. This was similar to the remaining capacity estimated using the annual surveys limited to the active area of landfilling.
2. The reported landfill capacity used is estimated annually through routine surveys limited to the active area(s) of the landfill, typically completed in the late fall.
3. The level of accuracy for the annual landfill volume estimates is about ±5% to 10%.
4. * Denotes the capacity at the end of the reporting year.

3. PROPOSED SITE DEVELOPMENT & DESIGN

Based on the approved ToR, the Town will need a capacity of approximately 725,000 m^3 for waste and interim cover to provide approximately 40-years of waste capacity for the municipality. Based on previous studies completed as part of a feasibility assessment for this project, a potential landfill expansion area of 26.3 hectares has been delineated to the west of the existing approved landfill area (Figure 3). Through the review of 'Alternative Methods' to be completed as part of the EA, the landfill expansion area and design details (i.e., size, height, etc.) will be further refined.

At a conceptual level, alternative landfill development methods that could be used to expand the landfill capacity at the existing Southampton Landfill Site include the following:

Horizontal Expansion: Expansion that ties into the existing landfill footprint
Horizontal expansion would consider expansion from the existing approved landfill area to the west. Sufficient landfill capacity could be realized by extending operations into a portion of the area delineated for potential landfill expansion. Design details would be developed as part of a preliminary design that would be advanced as part of the development of the EA to support the comparative evaluation of 'Alternative Methods'.

Combined Vertical and Horizontal Expansion
The height of the existing landfill could be increased. However, vertical expansion of the existing site would not provide sufficient capacity for the 40-year planning horizon being considered. Therefore, vertical expansion would need to be combined with horizontal expansion to the west. Design details would be developed as part of a preliminary design that would be advanced as part of the development of the EA to support the comparative evaluation of 'Alternative Methods'.

Construction of a Separate Landfill Cell within the Optimization Area

The construction of a separate and distinct landfill area (or cell), that does not tie into the existing landfill footprint, but remains within the area delineated for potential landfill expansion at the existing Southampton Landfill Site, could be considered. Sufficient landfill capacity could be realized through the creation of a separate landfill footprint. Design details would be developed as part of a preliminary design that would be advanced as part of the development of the EA to support the comparative evaluation of 'Alternative Methods'.

Landfill site designs and configurations will meet the requirements of O.Reg.232/98. Design details that may be considered in the development of the preliminary landfill designs to be advanced to support the evaluation of alternatives may include the following:

Landfill Design Considerations:

A landfill liner and leachate collection will be required. There are several options available for landfill liner design options, including the following:

- Generic Design Option I: Single liner and leachate collection system (per. Landfill Standards Guideline, 2012)
- Generic Design Option II: Double liner and leachate collection system (per Landfill Standards Guideline, 2012)
- Site specific engineering design for liner and leachate collection system

Leachate Collection and Treatment:

As per the requirements of O.Reg.232/98, development of the landfill beyond the existing approved area would require leachate collection and treatment. There are several options available for leachate collections systems, including the following:

- Management and treatment of leachate on-site
- Offsite disposal of leachate, hauled (or trucked) to the Town's Wastewater Treatment Plant in Southampton
- Off-site disposal of leachate via extension of municipal wastewater services to the Site

For the landfill optimization alternative, off-site disposal of leachate via the extension of municipal wastewater services from the Town's Wastewater Treatment Plant in Southampton to the Southampton Landfill would likely be supported due to the relatively proximal location of the site to servicing. The ability to manage leachate in this manner is advantageous in terms of the ease of operation and long-term costs. This service connection was identified in the Saugeen Shores Water and Sewage Master Plan and, as such, connection to the existing sanitary sewer system is anticipated.

4. EXISTING INFORMATION AND PREVIOUS INVESTIGATIONS

This Investigation builds on the significant amount of existing information regarding the site hydrogeologic conditions obtained from historical investigations (required to support the PDOs and approval processes over the last several decades), as well as over 40 years of annual monitoring (completed to support Annual Monitoring requirements).

4.1 Previous Hydrogeologic Investigations

The main component of historical information is derived from the *Town of Southampton Waste Disposal Site Hydrogeologic Assessment* (Paragon Engineering Limited, August 1994). The Hydrogeologic Assessment built on the report entitled *Hydrogeologic Investigation and Plan of Development and Operation Town of Southampton Landfill Site* (Gamsby and Mannerow Limited, July 1993). The work to support these studies was completed over the 1980's and early part of the 1990's and in consultation with the Ministry of Environment (now MECP).

The 1994 Hydrogeological Assessment and supporting studies are considered to be relatively comprehensive. As part of the original landfill development and to support the 1994 Hydrogeological Assessment, 24 monitoring wells had been installed, including two locations with nested monitoring wells (refer to Table 1). The wells were located around the landfill to:

- Characterize the site-specific hydrogeologic conditions including:
  - Groundwater elevations,
  - Groundwater flow direction/patterns (horizontal and vertical),
  - Estimate groundwater flow velocity,
  - Geologic conditions and hydrogeologic units (aquifers, aquitards),
- Assess the potential impacts from the existing landfilling,
- Estimate the potential impacts from future landfilling.

The 1994 Hydrogeologic Assessment included:

- Regional review of geologic and hydrogeologic conditions from mapping,
- Local area review of hydrogeologic conditions including:
  - Well record search,
  - Door-to-door water well survey,
  - Topographic, air photo, and field survey information,
  - Chemical analysis of select domestic wells.
- Site-specific review of hydrogeologic conditions through:
  - Chemical analysis of groundwater and surface water,
  - Water budget and surface water considerations,
  - Impact assessment of existing landfill,
  - Predictive impact assessment of future landfilling.

The 1994 Hydrogeological Assessment provides a comprehensive background of regional and local hydrogeologic conditions and forms a basis for the work completed since that time, including the annual monitoring data and supplemental work completed for the potential expanded landfill operations. The findings from these components are provided in Sections 6 of this report.

4.2 Existing Annual Monitoring Data

Groundwater and surface water monitoring has been occurring at the site since the 1980's providing over 40 years of data regarding landfill performance. This information is of considerable value since it provides actual performance data from the historic and existing landfill operations. In contrast, predictive assessments often rely on many variables that can vary by orders of magnitude and require assumptions that may not reflect actual site conditions. In essence, the existing landfill provides a "proof of concept", or pilot study, for the proposed landfill activities; the most reliable way to estimate how the groundwater system will respond.

As part of the annual monitoring program, ten (10) monitoring wells have been added to the program: six (6) in 1997 (TW-23 to TW-28) and four (4) in 2013 (TW-29 to TW-32). These wells were generally added to expand the monitoring program as landfilling progressed to the north and east and to provide additional certainty of water quality at a distance from the landfill and towards the points of compliance, particularly to the west of the landfill footprint, in a downgradient direction.

The groundwater and surface water monitoring program is conducted twice a year in the Spring and Fall and provides for a suite of analytical parameters that are typically influenced by landfill leachate (i.e., leachate indicator parameters). The spring monitoring reflects the 'wet' period, and the fall reflects the 'dry' period of the year. As part of the program, water levels are measured to assess groundwater flow direction over time and to account for seasonal variability.

5. 2021/2022 SUPPLEMENTAL HYDROGEOLOGICAL INVESTIGATION

Although significant information for the site exists, supplemental information was obtained to provide more certainty regarding the site conditions in the proposed development area and to increase the amount of information in the proposed development area and downgradient (west) of the existing landfill. Details regarding the supplemental investigations are discussed below.

5.1 Monitoring Well Installation

In 2021, GMBP personnel were onsite with London Soil Test Ltd. (LST) to install several additional monitoring wells to north and west of the approved landfill footprint in the buffer lands owned by the Town. In total, twelve (12) monitoring wells were installed at eight (8) locations, with four (4) locations consisting of a monitoring well nest (i.e. two wells). The newly installed wells continued with the established nomenclature at the site and are identified as the well series TW-33 to TW-40. At the well nest locations, the shallowest wells screened in the upper sand unit are identified with an "S" (shallow), the deeper of the wells are identified with an "I" (intermediate).

The supplemental drilling program was completed by London Soil Test Ltd. using a CME 55 track-mounted hollow stem auger drill rig. Following advancement of each borehole to the target depth, the boreholes were completed as 0.05 m (2-inch nominal) diameter PVC monitoring wells extending above ground surface and fitted with lockable steel monument casings.

The monitoring wells installed on the subject Property were constructed with a sand filter pack placed around the screened interval and extending approximately 0.3 m above the top of the well screen. A bentonite seal was installed above the filter pack to approximately 0.3 m below ground surface, above which a concrete surface seal was installed. Details of the well installations are provided on the borehole logs included in Appendix G.

The purpose of these monitoring wells was to assess the hydrogeological characteristics of the lands to the north and west of the existing approved landfill footprint and to provide water quality information in these areas.

5.2 Groundwater Quality Sampling

Groundwater quality samples were collected from each of the newly installed wells between 2022 and 2025, and included both the spring and fall sampling periods. These samples were collected and analysed in order to determine the groundwater quality in the upper sand unit and the underlying shallow silt till in the proposed development area, which is also downgradient of the existing landfill.

Groundwater sampling was conducted using dedicated low-density polyethylene (LDPE) tubing and inertial foot valves. Prior to sample collection, the static water level was measured and the height of the water column used to calculate the volume requiring purging. A minimum of three (3) well volumes of groundwater was then purged from each monitoring well. Groundwater was pumped directly into laboratory-supplied sample containers and submitted for analysis under standard chain-of-custody procedures. Samples collected for analysis of volatile organic compound (VOC) vials filled to eliminate headspace. Where required (e.g., metals), samples were filtered in the field using an inline 0.45 micron filter. The samples were submitted to an accredited laboratory within the specified holding times, packed in coolers and accompanied by standard chain-of-custody documentation.

The water quality was analysed for a suite of parameters on separate events as follows:

- Southampton Established Groundwater Indicator Parameters
  - December 31, 2021
  - April 24, 2024
  - September 9, 2025
- Schedule 5 Comprehensive List including VOCs
  - May 2, 2022
  - September 13, 2022
- Schedule 5 Comprehensive List excluding VOCs
  - April 13, 2025
  - November 16, 2025

A summary of the analytical results of the supplemental wells is provided in Table 2 and the associated Laboratory Certificates of Analysis are provided in Appendix F for reference.

5.3 Hydraulic Conductivity Testing

Between November 2 and 4, 2022, GMBP personnel were on site to measure hydraulic conductivity in eight (8) of the above-noted wells (i.e. TW-35S, TW-35I, TW-36S, TW-36I, TW-38S, TW-38I, TW-39S, and TW-39I). This work was completed to determine the hydraulic conductivity of the Upper Sand and shallow Silt Till hydrologic units in the proposed area of development.

Slug tests were conducted on these eight wells, which involved the lowering of a displacement slug to raise the water level in the well, followed by the measurement of the rate of change in the water level back to near static using both a pressure transducer, as well as manual measurements. The slug was then removed from the well, and the rising head was measured until a near-static water level was achieved. Hydraulic conductivities were derived using the AquiferTest Pro program developed by Schlumberger Water Services using both the Bouwer & Rice method and the Hvorslev method. The results of the hydraulic conductivity testing are provided in Appendix B.

5.4 Updated Area Domestic Well Survey

In addition, the historic information and water well database search, GEI completed a door-to-door water well survey in the areas surrounding the landfill. The 1994 Hydrogeological Assessment completed a similar survey, however, based on the age of the original survey (i.e., about 30 years), an additional survey was completed.

The survey area included all developed properties to the west, south, and east of the property within approximately 500 m. The properties included in the survey can generally be descried as; on the east side of Carlisle Street (west of the site), both the north and south side of Concession Road 14 (west, east and south of site), and both the east and west side of Doll Sideroad (east of site). No developed properties are known to exist to the North of the site, between the site and Saugeen River.

The survey included hand delivery of a well survey form to 18 properties. Of the 18 surveys delivered, six (6) forms were returned, and five (5) follow-up visits were completed. Where permission was granted, information regarding the supply source(s) at each property were collected and groundwater samples were collected if possible. A total of six (6) groundwater samples were collected from five (5) properties, all of which consisted of shallow dug wells (i.e., wells installed into the upper unconfined sand unit).

Groundwater samples were collected either as ‘raw water’ from the water supply system or bailer samples collected directly from the shallow wells. In either case, the wells were utilized, or ‘run’, prior to sampling to ensure water samples reflective ambient groundwater from the aquifer system. Samples were placed directly into laboratory supplied containers and sent to an accredited laboratory for analysis. Groundwater results were shared with the respective property owners.

As part of the well survey, information regarding the well construction and water supply characteristics were collected, as possible. This information is used to support the assessment of potential off-site receptors and impacts as well as to support an assessment of background conditions.

A summary of the local domestic wells is provided in Table 3 and the findings of the area groundwater supply well survey are provided in Figure 5. Details of the well survey are provided in Appendix H.

6. SUMMARY OF GEOLOGIC AND HYDROGEOLOGIC SETTING

The landfill site is located within the physiographic region known as the Huron Fringe. The region is characterized by wave-cut terraces that are typically comprised of gravel bars and sand dunes.

The Site is situated on a raised beach ridge atop a sand plain that extends westerly towards Lake Huron, approximately 3.5 km away from the landfill site location. Figure 6A shows the physiographic mapping for the area. Figure 6B shows the surficial geology, with the occurrence of two series of coarse textured glaciolacustrine deposits that consist generally of sand, gravel, minor silt and clay:

- 9b, littoral deposits, in the proposed area of development (i.e., west of the beach ridge), identified as the sand plain physiographic feature, and
- 9c, foreshore and basinal deposits, in the area of the existing development (and former aggregate pit) along the beach ridge physriographic feature.

The overburden in the vicinity of the landfill is approximately 70 m thick and overlies the dolostone of the Bass Island Formation. The upper hydrostratigraphic unit consists of primarily fine sands up to approximately 6 m deep, associated with the sand plain physiographic region and littoral (i.e., near shore) deposits. The upper sands are a post-glacial landform (i.e., not subject to glacial loading) associated with the historic receding levels of Lake Huron. Based on the nature of formation (littoral deposits) and broad occurrence of the sand plain, and on results the drilling program, the upper sand unit appears to be relatively homogeneous with consistent occurrence in the Study Area. The upper sands form an unconfined hydrostratigraphic unit.

The sands are underlain by a lower permeability massive, compact and dense silt till that is estimated to be approximately 45 m thick. The shallowest part of the silt till is identified as grey silt till with a mixture of silt sand and gravel and occasional cobble. Based on area well records, clay is identified from approximately 50 mbgs to 70 mbgs, the top of bedrock. The thickness of lower permeability soils (i.e., the silt till and clay), act to prohibit the downward migration of leachate influenced groundwater and provide natural protection for the bedrock aquifer.

Based on the hydrogeologic evaluations completed to date, groundwater migration in the shallow unit is inferred to be predominantly horizontal and leachate impacts are most likely to be observed in the shallow, more permeable sand unit. A summary of the hydrostratigraphic units present in the Study Area are summarized in Table 6-1.

TABLE 6-1: Summary of Hydrostratigraphic Units

Hydrostratigraphic Unit	Nature of Formation/Occurrence	Approximate Maximum Depth Range (mbgs)	Interpreted Relative Groundwater Velocity
Upper Sand Unit	Sand plain formation. Sand with silt and some gravel, littoral (near shore deposits)	Ground Surface to 7.3	Medium to Slow
Silt Till Unit	Glacial till, compact dense, silt with some sand gravel and cobble	3 mbgs to approx. 50	Very Slow
Deep Clay Till	Glacial till, clay	50 mbgs to 70 mbgs	Extremely Slow Diffusion Dominated
Bedrock Unit	limestone/dolostone/shales (sedimentary-carbonate)	> 70 mbgs	Medium to Slow (Fracture flow)

Regional cross-sections have been prepared using select wells and information provided in the 1993 Hydrogeological Investigation, and are provided on Figure 7B, and are where shown on Figure 7A. The regional cross-sections provide a summary of the major till units identified in well records. The sand unit, not shown, due to scale, can be inferred to exist in the upper 3 to 8 m.

Local cross-sections, limited to the upper profile within the Study Area, and their corresponding locations, are shown on Figures 8A and 8B.

The municipal water supply for Saugeen Shores is located in the geographic Town of Southampton with the intakes obtaining water from Lake Huron through both a primary and back-up intake. The intakes form intake protection zones (IPZs) under the Clean Water Act. The Landfill Site is not within an IPZ as defined within the Saugeen Valley Source Protection Area Approved Assessment Report (October 2015), and as further discussed in Section 6.8.

Other than Lake Huron, the most prominent surface water feature in the area is the Saugeen River. The Saugeen River generally flows from east to west in this area in a meandering pattern. The northerly portion of the subject lands extend to the shore of the Saugeen River, where steep cut banks have been formed. The area currently being landfilled is approximately 550 m south of the Saugeen River, at its closest point. The proposed area for development would be more than 600 m away.

Limited surface water features exist at the site. This is likely due to the relatively permeable soils (i.e., sandy) and the relatively flat topography beyond the former beach ridge where the landfill is located. No permanent surface water features, such as creeks, are present in Study Area. As identified in the Natural Environment Assessment that was advanced by NRSI, surface water drainage within the site is limited to largely undefined ephemeral flows within topographically low areas and a historically dug drainage channel. Small wetland features have arisen within these topographically lower areas. Multiple wetlands and wet areas within the Study Area have directly resulted from landfill site alterations (e.g., earth berming and impoundment of water). These localized, seasonally wet areas are located to the north of the existing and proposed landfill areas.

Stormwater is managed on-site through the use of three (3) infiltration basins and a stormwater management (SWM) wetland that are regulated under Environmental Compliance Approval 0849-8L7JN9. These features are located around the perimeter of the landfill and are designed to capture and infiltrate both contact (i.e., water that has come into contact with waste) and non-contact stormwater. Based on the permeable soils (i.e., high infiltration factors), the infiltration basins are typically dry (i.e., not observed to contain water), even after storm events.

6.1 Groundwater Flow and Water Level Patterns

Water levels indicate that a shallow groundwater flow divide is coincident with the former beach ridge and 'centre-line' of the landfill mound in a south-north direction. In the developed areas of the landfill, groundwater flow on the easterly side, flows to the east to northeast, and on the westerly side of the existing landfill mound, flows generally to the west. The groundwater flow patterns are consistent with the topographic patterns in the area. A summary of the historical water level data is provided in Appendix C and Figures 9A through 9F illustrate the groundwater flow directions in the Spring and Fall for the last three years of monitoring (i.e., 2023 to 2025).

At the northerly part of the existing landfill, closer to the Saugeen River, a more radial groundwater flow pattern is observed, with northerly flows in this area of the site. This is coincident with the terminus of the former beach ridge.

Seasonally, the flow patterns remain consistent.

The proposed area of development would be restricted to the west of the existing landfill mound and occurs within the "sand plain". The flow patterns in this area are relatively uniform and are inferred to be westerly, towards Lake Huron. Topographically, this area is generally flat with a slight slope to the west. The relatively uniform gradients (and thus flow patterns) are consistent with the relatively uniform geologic conditions and uniform topography.

The spring groundwater levels are approximately 0.9 to 2.5 meters below ground surface (mbgs), or an elevation of about 215 to 211 meters above sea level (masl). In the fall, the groundwater elevations are approximately 1.9 to 3.5 mbgs, or approximately 240 to 210 masl. The water levels in the proposed development area typically fluctuate by approximately 0.8 to 1.3 m between spring and fall.

The more regional and deeper groundwater flow patterns are inferred to be westerly across the area, and towards Lake Huron.

6.2 Horizontal Gradients

Horizontal hydraulic gradients in the shallow aquifer can be estimated from the contour mapping in the proposed area of development, generally from the toe of the existing landfill towards the westerly property limit. The gradient calculation correlates with monitoring locations TW-28 to TW-31, which are about 540 m apart.

TABLE 6-2: Calculated Horizontal Gradients (TW-28 to TW-31)

Year	Season	Change in Head (m)	Horizontal Gradient
2022	Spring	5.87	0.011
	Fall	5.60	0.010
2023	Spring	5.99	0.011
	Fall	5.36	0.0099
2024	Spring	5.90	0.0109
	Fall	5.24	0.0097
2025	Spring	5.91	0.0109
	Fall	5.53	0.0102
Average Annual		**5.68**	**0.010**
Average Spring		**5.92**	**0.011**
Average Fall		**5.43**	**0.010**

The horizontal gradients in the proposed development area are generally consistent and in the range of 0.01. The gradients are also observed to be relatively consistent from year to year. On a seasonal basis, the gradients are marginally lower (about 8%) in the fall, which is consistent with typical patterns under dry conditions.

6.3 Vertical Gradients

Vertical hydraulic gradients between the shallow and intermediate wells were calculated for several locations in the lands west of the existing landfill. Table 6-3 summarizes the calculated gradients using the water level data between 2022 and 2025. A positive value indicates a downward gradient, and a negative value indicates an upward gradient.

TABLE 6-3: Calculated Vertical Gradients at Well Nests

Test Well Couplet	Mid-Point Screen Elevation (masl)	Mid-Point Screen Differential (m)	2022		2023		2024		2025	
			Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall
TW-35S	211.88	4.98	0.094	0.1044	0.100	0.1024	0.0201	0.1165	0.1145	0.1044
TW-35I	206.90									
TW-36S	212.21	6.18	0.044	0.0518	0.0485	0.0550	0.0485	0.0566	0.0485	0.0583
TW-36I	206.03									
TW-38S	208.95	9.58	-0.010	-0.0104	-0.0136	-0.0104	-0.0157	-0.0104	-0.0167	-0.0157
TW-38I	199.37									
TW-39S	208.57	9.55	-0.003	0	-0.0052	-0.0052	-NM-	0	-0.0052	-0.0010
TW-39I	199.02									

The information indicates downward gradients at well couplets at TW-35 and TW-36, located proximal and northwesterly of the landfill mound. The downwards gradients were consistent across each of the monitoring events. These well couplets have a well screen mid-point separation of about 5 to 6 m. The downward gradients are in the range of 0.05 to 0.1.

Further to the west at well couplets TW-38 and TW-39, upwards to neutral gradients of about 0.01 to 0 are observed. Upwards to neutral gradients were consistently measured at these locations across each of the monitoring events. These well couplets have a well screen mid-point separation of about 10 m.

Locally, it is inferred that downwards gradients are predominant from the upper sand unit into the shallow silt till. In the area, downwards gradients are observed from the Upper Sand to the Bedrock Unit (i.e., across the Silt and Clay Till Units) based on the significantly deeper water levels reported in the drilled wells in the area. More regionally and at depth, it is expected that upwards gradients would be exhibited in proximity to the Saugeen River and Lake Huron.

6.4 Hydraulic Conductivity

The supporting 1993 Hydrogeological Investigation (Gamsby and Mannerow Limited) for the landfill site assessed the hydraulic conductivity values in the shallow sand and silty sand overburden soils. These values were estimated using the Hazen Method from soil grain size analyses and interpretation.

The hydraulic conductivity (K) of the overburden soils obtained from these initial soil samples are reported to be between 4.0×10^{-5} m/s to 6.0×10^{-7} m/s, with an average of 1.1×10^{-5} m/s. This is expected to generally reflect the shallow sandy soils on the Site, and not the underlying silt till. None of the samples analysed as part of the 1993 Hydrogeological Investigation are reported to have consisted of silt till. It is also noted that the wells that were assessed using the Hazen method in 1993 were all located in the southern and central portions of the existing landfill area, outside the proposed development area.

The K values of both the upper sand soils and the underlying silt till were obtained by GEI via slug testing. The results of hydraulic conductivity testing completed at the site in 2022 are outlined below in Table 6-4.

TABLE 6-4: Summary of Hydraulic Conductivity Testing Results

Location	Screened Formation	Depth* (mbgs)	Hydraulic Conductivity (m/s)	Method of Testing
Existing Landfill Development Area – Beach Ridge				
TW-12	Sandy Gravel	4.3 - 4.7	5×10^{-4}	Grain Size - Hazen (G&M;1993)
TW-16	Sand / Gravel	0.8 – 2.3	7×10^{-4}	
		Geometric Mean	**5.9×10^{-4}**	
Existing Landfill Development Area – Upper Sand Unit				
TW-1	Silty Sand	2.7 – 3.2	1×10^{-6}	Grain Size - Hazen (G&M;1993)
TW-4	Medium Sand	0.4 – 0.8	3×10^{-5}	
TW-5	Silty Sand	5.8 – 6.3	1×10^{-6}	
TW-6	Silty Sand	2.7 - 3.7	6×10^{-7}	
TW-9	Fine Sand	4.3 – 4.8	4×10^{-5}	
TW-10	Silty Sand	4.3 – 4.7	2×10^{-5}	
TW-12	Silty Sand	7.2 – 7.7	1×10^{-6}	
		Geometric Mean	**3.9×10^{-6}**	
Proposed Landfill Development Area - Upper Sand Unit				
TW-35S	Fine to Medium Sand and Gravel / Sandy Silt with Trace Gravel	1.1 – 4.2	1.13×10^{-6}	Slug Test (GM BluePlan; Nov 2022)
TW-36S	Sand / Sandy Silt	1.1 – 4.2	3.05×10^{-6}	
TW-38S	Sand with Trace Silt, Gravel and Cobbles	1.1 – 4.2	1.85×10^{-6}	
TW-39S	Sand with some Silt	1.1 – 4.2	7.24×10^{-5}	
		Geometric Mean	**4.6×10^{-6}**	
Proposed Landfill Development Area - Shallow Silt Till				
TW-35I	Sandy Silt with Trace Gravel	6.1 – 9.1	3.44×10^{-7}	Slug Test (GM BluePlan; Nov 2022)
TW-36I	Silt Till with Sand and Gravel	7.2 – 10.3	1.21×10^{-6}	
TW-38I	Silt Till	10.6 – 13.7	8.50×10^{-8}	
TW-39I	Silt Till with Sand and some Gravel and Clay	10.6 – 13.7	5.03×10^{-8}	
		Geometric Mean	**2.1×10^{-7}**	

The K values from the Upper Sand vary between 1.13×10^{-6} m/s and 7.25×10^{-5} m/s, with a geometric mean of 4.6×10^{-6} m/s. The results are considered to be relative consistent with limited variability. These results are consistent with those from the 1993 Hydrogeological Investigation that had a geometric mean of 3.9×10^{-6} m/s.

The K values from the shallowest Silt Till unit vary from 1.21×10^{-8} m/s to 1.21×10^{-6} m/s, with a geometric mean of 2.1×10^{-7} m/s.

6.5 Groundwater Flow Velocity

To support site characterization, the groundwater velocities for the shallow and intermediate units were estimated by using Darcy's Law.

$$v = \frac{Ki}{n}$$

Estimates were completed by using the geometric mean hydraulic conductivity values from the 2022 slug tests conducted in the proposed development area well nests, measured hydraulic gradients between wells installed in the same or similar hydrologic units, and from estimates of soil porosity based on published values. These values are summarized in the Table 6-5.

TABLE 6-5: Horizontal Groundwater Flow Velocity Estimate

Flow System	Hydraulic Conductivity [K] (m/s)	Average Hydraulic Gradient [i] (m/m)	Estimated Formation Porosity [n]	Horizontal Groundwater Flow Velocity [v] (m/year)
Upper Sand (Geo mean)	4.6×10^{-6}	0.01	0.30	**4.9**
Upper Sand (High)	7.2×10^{-5}			**76**
Shallow Silt Till (Geo mean)	2.1×10^{-7}		0.35	**0.2**

The velocity of horizontal groundwater flow is expected to vary somewhat due to spatial variations in hydraulic conductivity and gradients across the Site. However, the groundwater flow velocity is expected to be relatively consistent across the site based on the consistent geology across the area (determined through boreholes and mapping) and spatially consistent gradient.

The horizontal groundwater flow velocities in the upper sand unit is expected to be in the range of 5 m/year. In contrast, the horizontal groundwater flow velocities in the silt till unit is expected to be in the range of 0.2 m/year. With landfilling at the property for about 50 years, that corresponds to a travel distance of 250 m in the upper sands for a parameter that behaves conservatively, such as chloride.

Based on the occurrence of fining downwards progression, or decreasing hydraulic conductivity with depth, it is evident that lateral groundwater flow is the predominant migration pathway of shallow groundwater.

To demonstrate the potential vertical groundwater migration in the silt unit, velocities have been estimated using a generic range of gradients from zero (neutral) to 0.1, measured in monitoring well nests. It is noted that the lowest K unit would control vertical migration, and thus the K for the silt till unit has been used for the calculation (Table 6-6).

TABLE 6-6: Vertical Groundwater Flow Velocity Estimate

Flow System	Hydraulic Conductivity [K] (m/s)	Average Hydraulic Gradient [i] (m/m)	Estimated Formation Porosity [n]	Horizontal Groundwater Flow Velocity [v] (m/year)
Shallow Silt Till (Geo mean)	2.1×10^{-7}	0.05	0.35	**0.93**
		0.1	0.35	**1.85**

In the case of the migration of groundwater influenced by leachate, density flow may also contribute to vertical migration. It is known that as leachate strength increases within groundwater, the “plume” may be subject to a component downward migration through density flow.

6.6 Surface Water Conditions

The Town of Saugeen Shores is entirely within a watershed area that is under the planning authority of the Saugeen Valley Conservation Authority (SVCA). The Saugeen River meanders through the Town in a north to northwesterly direction towards its outlet at Lake Huron. The drainage area within the Saugeen Watershed primarily lies within Grey and Bruce Counties. The Saugeen River alone drains an area of greater than 4,000 km^2. It originates in the Osprey Wetland Conservation Lands, located approximately 20 kilometres south of Flesherton. The Saugeen River maintains a continuous flow of water throughout the year and has several tributaries including, but not limited to, Mill Creek, North Saugeen River, South Saugeen River, Teeswater River, Beatty Saugeen River, Camp Creek, Styx River, and the Rocky Saugeen River.

No permanent surface water features, such as creeks, are present in Study Area. Limited surface water features exist at the site. This is likely due to the permeable soils and the relatively flat topography beyond the former beach ridge where the landfill is located. As identified in the Natural Environment Assessment that was advanced by NRSI, surface water drainage within the site is limited to largely undefined ephemeral flows within topographically low areas and a historically dug drainage channel.

In the northerly portion of the site, beyond the existing and proposed development areas, low lying, seasonally wet areas are evident where hummocky topography is evident. These seasonal surface water features appear to correlate with spring conditions whereby surface water accumulations in low-lying areas with mucky soils and high groundwater likely influence these features. These features have directly resulted from landfill site alterations (e.g., earth berming and impoundment of water). This is consistent with the sand plain landforms throughout the region, with sandy soils at surface and generally flat topography promoting infiltration with limited run-off.

NRSI recommended that the effects of landfill expansion on the adjacent retained wetlands, including potential changes in site drainage and water balance, be assessed as part of future supplemental work to inform mitigation strategies or SVCA regulatory approvals.

Two small ponds (i.e., SW-3 and SW-4) are located south of the landfill within the Contaminant Attenuation Zone (CAZ) lands located south of Concession Road 14 (refer to Figure 4). These are excavated ponds (i.e., man made) and confirmed to intersect the shallow water table. Based on the previous Hydrogeological Assessment and water quality, both ponds appear to be groundwater fed and do not have any inflow or outflow surface water features These ponds have been part of the monitoring program since the 1980's.

In the area of the existing landfill development, stormwater is managed through a series of stormwater infiltration basins and stormwater wetland area at the northwest corner of the existing landfill. Based on the permeable soils (i.e., high infiltration factors), the infiltration basins are typically dry (i.e., not observed to contain water), even after storm events.

The SWM Wetland historically had standing water and aquatic vegetation when landfilling was occurring directly adjacent to the southeast. Since that area has been closed and capped, the SWM wetland is only seasonally inundated and is typically dry through the summer and fall months. The occurrence of surface water in the SWM Wetland was inferred to be due to localized run-off from the landfill.

6.7 Stormwater Management

The ECA for stormwater management includes four (4) primary stormwater management features: three (3) infiltration basins and one stormwater management (SWM) wetland. Figure 4 shows the location of these SWM features.

Infiltration Basin 1 (IB1) is located southwest of the landfill and was designed to receive run-off from a 2.5-hectare area, which includes the solid waste recycling area, topsoil stockpiles, and a portion of the landfill. The outflow from IB1 is the location of water quality sample SW-6. This sample location is typically dry, and no samples were obtained during the reporting period.

Infiltration Basin 2 (IB2) is located at the southeast corner of the landfill site and was designed to receive run-off from a 2.0-hectare area, which includes a closed portion of the landfill.

Infiltration Basin IB3 is located at the northeast corner of the landfill site and was also designed to receive run-off from a 2.0-hectare area, which was intended to accommodate future landfill development – currently the active area of the site. The overflow outflow from IB2 and IB3 is to be into an adjacent low-lying sandy plain, the locations of water quality samples SW-7 and SW-8, respectively. During recent monitoring, basin bottoms consisted of sandy soils at surface with no evident accumulations of sediment or debris and are dry. Consequently, no surface water

samples have been collected.

The basins were designed to infiltrate surface water, they are expected to be dry, when functioning properly. The basins act to prevent surface water from leaving the site by forcing it to infiltrate. Potentially leachate impacted surface water entering the subsurface is subject to natural attenuation and is monitored as part of the groundwater monitoring program.

The surface water collected along the northerly area of the property is directed north toward the SWM Wetland situated to the northwest of the approved landfill footprint. The SWM Wetland water quality is monitored by SW-5 located within the SWM Wetland and at SW-1, located in a low-lying stagnant area in the northwest corner. The SWM wetland regularly had standing water when landfilling was being conducted directly adjacent to this feature. However, since closure and capping of this area, the SWM wetland is typically dry in the summer and fall.

6.8 Source Water Protection

As part of the development of the ToR, the project has been reviewed with respect to the requirements under the Clean Water Act. The Study Area is located within the Saugeen Valley Source Protection Area and falls under the Saugeen-Grey Sauble-Northern Bruce Peninsula Source Protection Plan. A review of the Source Protection Areas within the Town is provided below.

The undertaking (i.e., waste management project) and associated activities were reviewed in relation to the *Tables for Drinking Water Threats*. According to the tables, the establishment, operation or maintenance of a waste disposal site, which is greater than 10 hectares in size, and used for the disposal of solid non-hazardous waste generated by municipalities could be considered a significant drinking water threat in an area that falls within an Intake Protection Zone (IPZ), including IPZ-1, IPZ-2 and IPZ-3. The IPZ delineates where activities further away from the intake of drinking water for the Town could have an impact on the water quality around the source (i.e., Lake Huron). It is noted that a vulnerability score of 9 to 10 is needed for restrictions.

The Town relies on water from Lake Huron as a drinking water supply. Based on the Source Protection Information Atlas and a review of the Source Water Protection Area, a part of the inland area to the west of Highway 21, extending from Port Elgin north to where the Saugeen River discharges to Lake Huron, is situated within an Intake Protection Zone IPZ-1 (120 meter shoreline buffer) or IPZ-2 (i.e., a 2-hour time of travel capture zone) and has an intake vulnerability score in the range of 4 to 6. In addition, an IPZ-3 zone with a vulnerability score of 4 extends further to the east. It is noted that the Intake Protection Zone 3 (IPZ-3) intersects the southwest corner of the existing Southampton Landfill Site, encompassing an area of approximately 2 hectares. Given that the IPZ-3 area does not extend greater than 100 meters to the north of the property boundary, it is not expected that any waste disposal will occur within the IPZ-3 area as this area falls within the proposed minimum buffer area of 100 meters between the waste fill area and the site boundaries.

Some areas within the Town of Saugeen Shores are also mapped as Event-Based Areas (EBA). Event-Based Areas related to the Southampton Drinking Water System where the storage of fuel greater than 13,000L (i.e., EBA-13000) and greater than 22,500 (EBA-22500) are identified. These areas require that a Risk Management Plan be established if the circumstances are met in the EBA. It is noted that it is not anticipated that fuel storage would be associated with this project, therefore there are no anticipated EBA-related concerns or source protection policies that may apply to this undertaking.

As a portion of the existing Southampton Landfill property falls within the Source Water Protection Area, consultation with the SVCA Risk Management Office was completed as part of the planning process for the ToR. The SVCA Risk Management Office was consulted via the Notice of Draft Proposed Terms of Reference and Public Information Centre No.2, issued on October 15th, 2024. Based on the *Notice of Restricted Land Use – Clean Water Act – ss.59(2)(a)* issued by the SVCA Risk Management Office it was determined that neither Section 57 (Prohibited Activities) nor Section 58 (Regulated Activities) applies. Therefore, no policies apply to the activities identified.

6.9 Local Groundwater Use

No municipal water supply is provided to properties in the direct vicinity of the landfill. Consequently, it is reasonable to expect that neighbouring properties with a residence would have some form of a water supply. Based on the absence of surface water features, it also follows that the properties would use groundwater.

A review of area water wells within 500 m of the Site boundary was completed by reviewing MECP well records and updating the door-to-door well survey. Through this process, it was determined that most properties in the vicinity of the landfill site use the shallow groundwater system (i.e., the upper sand unit) as a water supply. A few drilled wells into the bedrock aquifer were found to exist.

Refer to Figure 5, which shows the results of updated well survey. Figure 5 is a compilation of information from the 1993 Hydrogeological Investigation, review of MECP records, and the door-to-door survey. Where no information regarding supply well was obtained for a property that appears to be occupied by an inhabitable structure, the occurrence of domestic well has been inferred (demarcated by a well symbol with a "?").

Wells to the east are considered to be upgradient of the proposed development area. The closest wells cross- to down-gradient are along Concession Road 14. These wells are known to be shallow (dug) wells that rely on the Upper Sand Unit for supply. With to respect to a proposed development area setback from Concession 14 of 100 m and including the right-of-way for Concession 14 plus setbacks from the road, the domestic wells may be as close as 150 m from the proposed development area in a cross-gradient direction.

In the downgradient direction, the wells along Carlisle Street would be the next closest. These wells would be in the range of 650 m, or more, from the proposed area of development.

7. IMPACT ASSESSMENT

The purpose of the impact assessment is to assess whether the proposed landfill development activities will impact off-site properties or have impacts to local water resources, such as surface water features.

For the purposes of this impact assessment, the focus is in the area of proposed development, on west side of existing landfill. Although historic information also exists to the east of the landfill (east of the shallow groundwater flow divide), differences in the topographic, geologic, and hydrogeologic setting make comparisons less applicable compared to site conditions in the area of interest.

The first step is to understand the potential migration pathways of the contamination (i.e., landfill leachate) and what receptors may be impacted this migration. This Investigation will look at the migration of water-based migration through groundwater and surface water.

To evaluate the potential for impacts to the area water resources due to the proposed landfill development, an impact assessment has been conducted based on an analysis of:

1. The performance of the existing landfill, and
2. Evaluating attenuation capacity of the shallow overburden with leakage through the base of landfill mound under maximum development.

7.1 Pathway Analysis

7.1.1 Groundwater

A detailed review of the groundwater flow characteristics, including the groundwater flow directions, and the vertical and horizontal hydraulic gradients, was conducted to assess the groundwater flow regime at the site. This information can be used to evaluate the characteristics of each of the hydrostratigraphic units and whether they are likely to act as pathways for leachate migration.

TABLE 7-1: Summary of Hydrostratigraphic Unit Characteristics

Relative Groundwater Flow Velocity	Groundwater Flow Direction	Approximate Maximum Depth Range	Groundwater Quality Influencing Factors
Upper Sand Unit			
Medium to Slow	Horizontal (westerly) with minor downward component	Ground Surface to ±3 to 7.3 mbgs	Precipitation, surface water run-off, stormwater management systems, and ambient groundwater quality within upper sandy soils. Relatively young/new groundwater.
Silt Till Unit			
Slow	Vertical (downwards) overall Horizontal (westerly) in the shallowest portion	±3 to 7.3 mbgs to approximately 50 mbgs	Ambient groundwater quality, in the shallowest portion, downward migration of groundwater from the Upper Sand Unit.
Deep Clay Unit			
Extremely Slow Diffusion Dominated	Inferred to be vertical (downward)	Approximately 50 to 70 mbgs	Ambient groundwater quality. Limited influence from external sources - considered an aquitard.
Bedrock Unit			
Medium to Slow (Fracture flow)	Inferred to be Horizontal (westerly)	Greater than 70 mbgs	Ambient groundwater quality within bedrock. Influenced more regionally by upgradient sources 10's of km to the east.

Based on the hydrogeologic setting, it is clear that the Upper Sand Unit is the primary receiver and pathway for the migration of potential impacts from the proposed landfill operations.

The shallowest portion of the Silt Till Unit is considered to have the potential for migration through advective downward migration from the Upper Sand Unit as well as density-driven migration. The localized influence is not considered sufficient to form a pathway through the till unit. While diffusion of impacts will occur in the Till Units, it is expected that it will be on the scale centimetres per year, and not relevant relative to advective transport.

There are no evident groundwater to surface water discharge zones to significant surface water features on-site or near the site. Consequently, the groundwater to surface water pathway is not considered further. Although it is reasonable to expect that the groundwater eventually discharges to surface water at Lake Huron or the Saugeen River, the evaluation of the potential for impacts to groundwater at the property boundaries is considered sufficient to be protective of these significantly more distant receptors.

The primary migration pathway is therefore considered to be advective migration in the Upper Sand Unit, and to a lesser degree, the shallowest portion of the Silt Till, about 5 to 10 mbgs.

7.1.2 Surface Water

There are no permanent surface water features on-site. Stormwater is currently managed on-site by a series of infiltration basins and a SWM wetland. Based on the proposed development area within the sand plain formation and at a similar size to the existing landfill, it is reasonable to expect that the proposed development will have the capability to infiltrate stormwater generated from the landfill. The development of the landfill using stormwater collection and infiltration is recommended.

Based on the use of a system of stormwater collection and infiltration, the shallow groundwater will also be the primary pathway for surface water impacts that may be realized (i.e., surface water to shallow groundwater). Consequently, the primary pathway remains advective transport in the shallow groundwater system.

Based on the nature of development, the Study Area water budget is not expected to be impacted. The development of less permeable areas can contribute to changes in water balance by the re-direction of run-off to different catchment areas. However, based on the flat topography in the proposed development area and the planned stormwater collection and infiltration, it is expected that any increase in run-off, would be countered by infiltration directly downstream of these areas, and within the same catchment area. Consequently, more detailed analysis are not considered to be warranted at this time. More detailed analysis is recommended once the landfill method has been established and during the stormwater management design process.

7.2 Receptor Analysis

The primary pathway for impacts is considered to be groundwater in the shallow overburden, i.e., the Upper Sand Unit and shallowest portion of the Silt Till Unit. The primary receptors of these potential impacts are users of groundwater in the vicinity, and in particular, downgradient of the proposed landfill development area.

The closest potential receptors in a downgradient direction are located along Concession 14 and the east side of Carlisle Street, approximately 150 to 650 m away from the proposed area of development. Based on the proximity and use of the Upper Sand Unit, it is clear that the proposed landfill will need to be protective of the shallow groundwater.

7.3 Review of Current Landfill Performance

The pre-existing history of the landfill operation provides site-specific information regarding the actual performance of leachate attenuation and can be considered a “pilot study” for future operation of the landfill. The extensive monitoring network and abundance of water quality data collected during this period of operation time provides for a high level of certainty regarding the landfill performance.

It is important to note that the current landfill operates as a ‘natural attenuation’ site. Landfilling is completed by:

- waste placement on the native underlying soils (i.e., the landfill has not been constructed with a base liner),
- waste is placed and compacted in localized areas and then covered with soils (daily cover),
- Once an area reaches top contours, 0.6 m of final clay cover is applied to reduce infiltration,
- The landfill is progressively closed as operations progress.
- Both contact (i.e., surface water that has contacted waste) and non-contact stormwater is infiltrated into the groundwater system.

Landfilling at the existing site has generally progressed from the South (oldest area of the landfill), then from the southwest, along the westerly area to the north (described as Phase I), then easterly along the north portion of the landfill (described as Phase II).

The site is most subject to leachate generation during filling and prior to final cover placement. Once final cover is placed, the infiltration of water through the waste is reduced, and subsequently, leachate production is reduced.

Although the current performance is an indicator of the attenuation capacity of the existing hydrogeologic system, it will not provide a direct comparison to the proposed landfill development. The proposed landfill development will be "engineered", meaning it will have a bottom liner and leachate collection system. This will dramatically reduce the potential for impacts to groundwater.

Under the proposed development, leachate and contact stormwater generated within the landfill footprint will be directed off-site for treatment. Consequently, the potential for impacts to the groundwater are limited to leakage through the base liner or from the system more generally.

7.3.1 Reasonable Use Concept

The MECPs Reasonable Use Concept (Guideline B-7) provides a framework for assessing what constitutes an impact to groundwater, or conversely, the level of parameter concentration increases that are acceptable without impairing current of future groundwater use.

The known use of groundwater on properties adjacent to the landfill site is domestic use in the Upper Sand Unit (i.e., use for human consumption). MECP Procedure B-7-1 provides technical details for the application of the reasonable use approach. A change in quality of groundwater on an adjacent property, where the reasonable use is determined to be for drinking water, will be acceptable only where:

i. Quality is not degraded by more than 50% of the difference between background concentrations and the Ontario Drinking Water Standards for non-health related parameters, and
ii. Quality is not degraded by more than 25% of the difference between background concentrations and the Ontario Drinking Water Standards for health-related parameters.

Background concentrations are considered to be the quality of the groundwater prior to any contamination from landfill activities. The RUC limits have been calculated for the standard suite of leachate indicator parameters and as shown on Tables 4A and 4B.

7.3.2 General Background Groundwater Quality

Background concentrations are considered to be the groundwater quality prior to any contamination from landfill activities and are site-specific to each landfill. Based on a re-evaluation of the background conditions completed as part of the recent Annual Reports, monitoring wells TW-1, TW-29, and TW-30 have been selected to represent background conditions for the Site. These shallow overburden monitoring locations monitor groundwater quality to the east of the Site. Monitoring wells TW-29 and TW-30 are situated within the CAZ lands on Lot 13, Concession 15 and TW-1 is located further east of the CAZ boundary. Water quality results indicate that these monitoring locations typically have the lowest indicator parameter concentrations.

Historical results, provided in Appendix D, were used to calculate the background concentrations of indicator parameters for the subsequent calculation of the RUC values. RUC values were calculated using the 95th percentile background concentrations from historic sampling events. Table 4A and 4B identifies the concentrations of groundwater quality indicator parameters used for evaluating the acceptable level of contaminant concentrations at the site boundary. Background concentrations (Cb) are the site-specific values. The provincial maximum concentrations (Cr) are identified in the Ontario Drinking Water Quality Standards (ODWS). Acceptable concentrations at the site boundary (Cm) are calculated from MECP Procedure B-7-1.

Overall, the background water quality is typical of a carbonate system and is generally highly mineralized with an average background hardness of approximately 250 mg/L. Typically, the background chloride concentration is less

than 5 mg/L, and the average background specific conductance is approximately 400 uS/cm. It is noted that the hardness typically exceeds the RUC at all monitored locations. Therefore, elevated hardness concentrations alone do not appear to be related to impacts from landfill leachate and can be attributed to natural background conditions.

7.3.3 Chloride As Primary Indicator

For the purposes of this assessment, chloride has been selected as the primary indicator parameter for the assessment of impacts. The rationale for this approach is as follows:

- Chloride behaves conservatively (i.e., is not subject to retardation or transformations) in the groundwater,
- Chloride is known as a key indicator parameter for landfill monitoring,
- At the Site and in the area of the proposed landfill development, the background chloride concentrations have been shown to be less than 10 mg/L, which means that existing data is representative of impacts only derived from landfilling or activities associated with the landfill. In some cases, road salt (de-icing) activities are known to contribute to chloride concentrations in groundwater. While this may be the case in proximity to Concession 14, chloride interference is not observed in the proposed development area and where analysis of landfill performance has been conducted.
- Groundwater monitoring to date has shown that chloride is the most common indicator parameter to exceed RUC values when leachate influence is present. Impacts are not evident in the absence of chloride. It is a reliable proxy of when other parameters may exceed RUC values.
- The 1994 Hydrogeological Assessment used chloride as the basis for impact projection, allowing direct comparison and correlation with estimates herein.
- Based on comprehensive analysis, there is no evidence impacts associated with VOCs or other health based anthropogenic (industrial) chemical parameters that would exceed the RUC.

7.3.4 Groundwater Quality

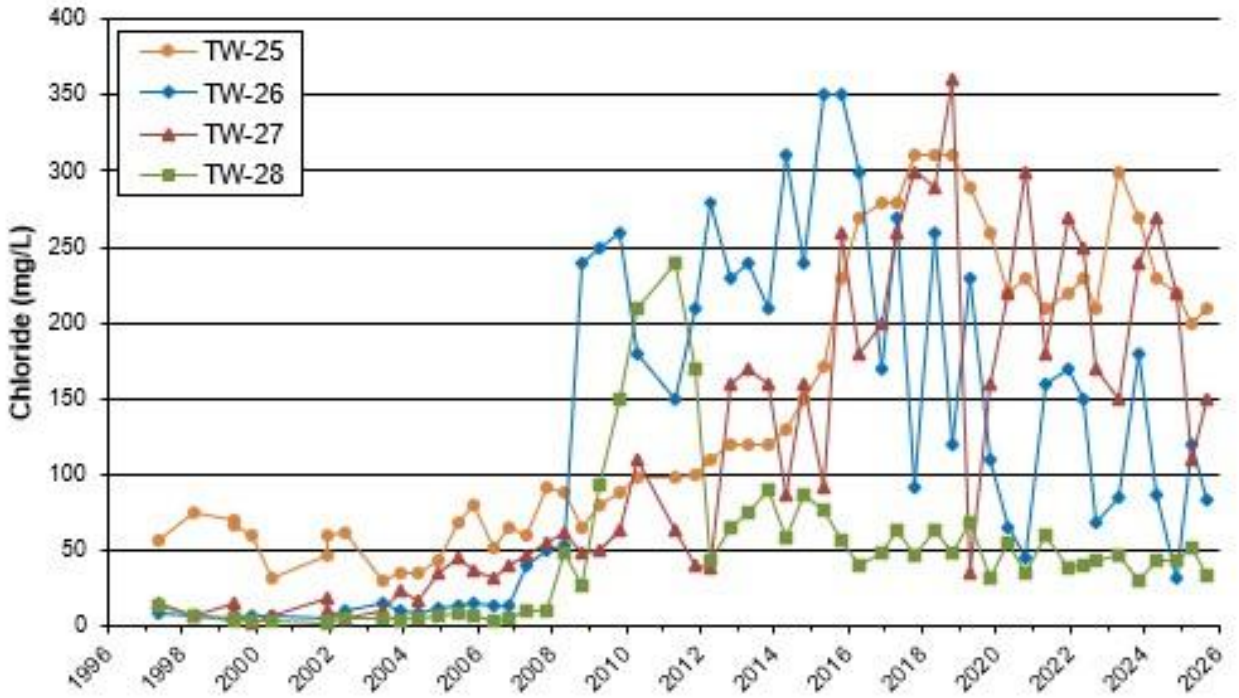
In general, on-site monitoring wells indicate influence from landfill leachate in the direct vicinity of the landfill within the Upper Sand Unit. The lateral distribution of leachate indicator parameters is consistent with the local radial groundwater flow patterns. Based on the comparison of indicator parameters, attenuation of the leachate impacts is observed both laterally within the sand unit and with depth. As expected under the observed hydrogeologic conditions, on-site wells, located directly adjacent to the landfill but screened within the shallow Till Unit (directly below the sands) exhibit more minor influence from landfill activities.

Leachate impacts are most evident directly west of the fill area, with leachate influence noted at TW-25, TW-26, TW-27, and TW-28. The concentration trends at TW-26 show a significant increase of leachate indicator parameters in 2008, with some variability since that time. The sharp increase in concentrations at that time was consistent with landfilling in the northwest portion (Phase II) of the approved landfill footprint. Refer to Figure 7-1, below, showing the chloride concentrations overtime at TW-25, TW-26, TW-27, and TW-28.

As landfilling progressed through the Phase II area, corresponding increases in leachate indicator parameter concentrations are evident on the trend graphs. In 2016/2017, an evident increase was associated with the active area of the landfill that was situated upgradient of TW-25 and TW-27. Continued elevated leachate indicator parameters are also evident at TW-26 and TW-28, which have stabilized as the development of the landfill has progressed to the east, within the northerly portion of the approved fill area, and the westerly portions of Phase II have been capped.

A review of the analytical data at these locations suggests that a combination of chloride, alkalinity, hardness, DOC, TKN, and sodium are useful as indicator parameters. The more recent comprehensive leachate indicator parameter analysis, including VOCs, indicates anthropogenic compounds that have health-based criteria are not found downgradient of the landfill. Likewise, minor metal compounds, do not appear to be present above the RUC in the absence of other leachate parameters, including chloride.

FIGURE 7-1: Chloride Concentration versus Time Downgradient of the Existing Landfill



After waste placement, either interim cover or final clay cover (in the northwest portion of the landfill) has been applied along the most westerly portion of the landfill. Closer to the central portion of the landfill, where filling has not reached final contours, the site is covered predominantly by interim cover. Concentration trends appear to have responded to the cessation of waste placement and the covering/capping. After the initial peak, concentration trends have decreased or stabilized and generally remain stable in this area.

Landfill operations have more recently progressed to the northeast portion of the approved fill area (Phase II/III). This area of the landfill is east of the groundwater flow divide.

With the addition of the monitoring wells in 2022, increased resolution of the potential leachate influenced groundwater has been provided. Based on the distribution of chloride concentrations, attenuation is evident (i.e., the decrease in chloride concentrations with distance). The RUC is met within approximately 145 m of the landfill at MW-35S and MW-35I, directly down gradient of the central portion of the landfill.

Based on these concentration trends, that include consistent chloride values overtime, it is reasonable to expect the current chloride plume is relative stable (or in stasis). Ultimately, it is expected that the established plume will decrease with time. Some minor increases may be realized once landfilling resumes in the central portion of Phase II, in order to finish filling to top contours.

Based on a review of the chloride trends and distribution, it appears the chloride is relatively evenly distributed downgradient of the existing landfill. This is consistent with geologic and hydrogeologic setting and suggests bulk groundwater flow is relatively uniform and consistent and that there is no evidence of areas of preferential flow.

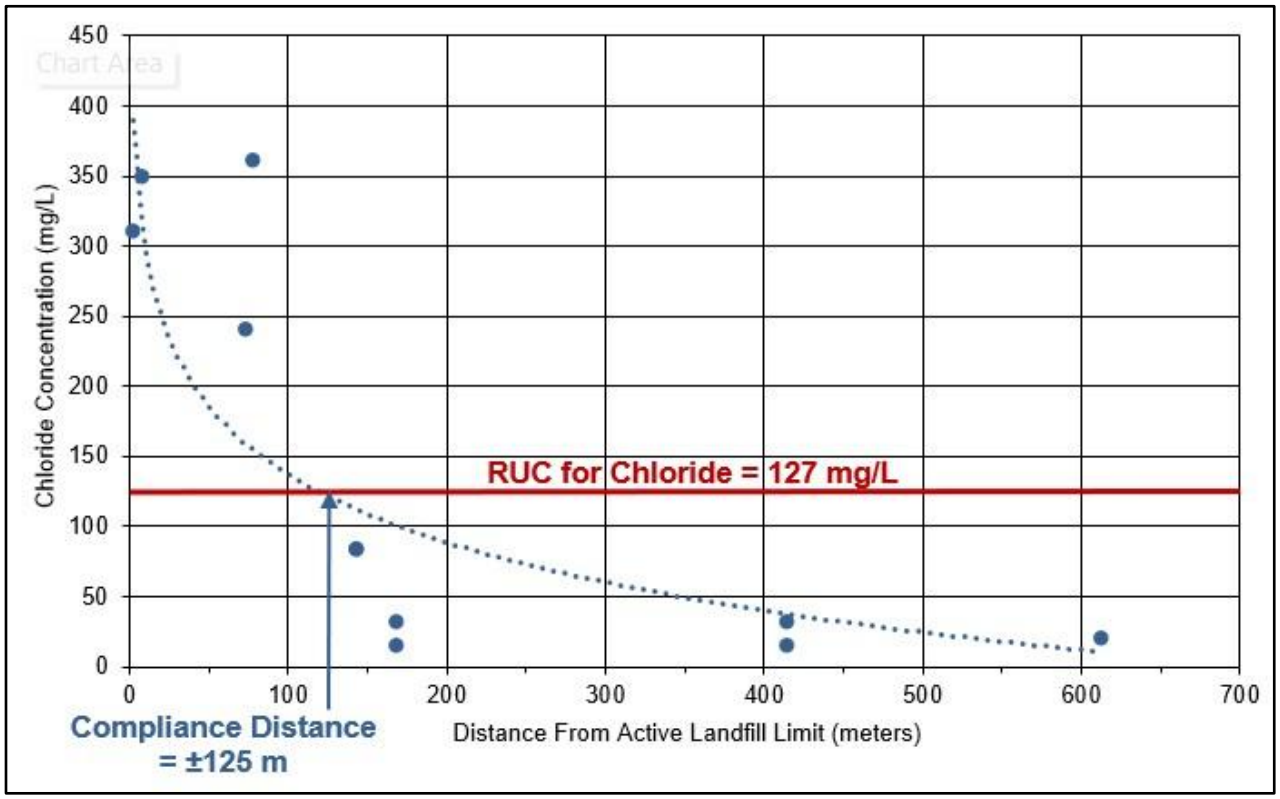
To estimate the distance at which compliance with the RUC is being achieved, peak chloride concentrations versus distance from the landfill are summarized on Table 7-2 and have been plotted on the Chart below. For wells installed in 2022 (i.e., MW-33 to TW-40 series), the peak concentration is determined from data from 2023 to 2025. For all other wells, the peak concentration is the single highest concentration measured over the monitoring period.

A “best fit” trendline has been added and demonstrates logarithmic relationship. Based on this approach, it appears that the current landfill performance indicates that compliance with the RUC for chloride would occur within about 125 m of the landfill footprint.

TABLE 7-2 Peak Chloride versus Distance from Existing Landfill

Monitoring Well ID	Distance From Landfill (m)	Peak Chloride Conc.* (mg/L)
TW-25	2.7	310
TW-26	7.5	350
TW-27	79	360
TW-28	73	240
TW-35S	144	82
TW-35I	144	82
TW-38S	168	13
TW-38I	168	30
TW-39S	416	13
TW-39I	416	31
TW-31	613	19

FIGURE 7-2: Chloride Concentration versus Distance from the Landfill



7.3.5 Performance Projection – Proposed Development

Based on the differing development approaches, it is clear that the proposed engineered landfill will outperform the existing natural attenuation landfill. Since landfill leachate is the leading cause for impacts to groundwater, leachate collection and off-site disposal will significantly reduce the potential for impacts.

In the simplest analysis, and worst case scenario, it is clear that the existing distance to achieving the RUC would be matched by the proposed engineered landfill. That is, based on the analysis in the previous Section, it is clear that it would be a distance of 125 meters or less, to achieve the RUC.

A comparison of existing leachate generation estimates versus proposed leachate generation estimates provides a method to directly correlate expected performance for the proposed landfill area to the existing performance. In particular, given the same hydrogeologic setting, similar nature of leachate, and infiltration factors, it is reasonable to expect that the attenuation would be directly correlated with leachate generation rates.

The estimated distance to achieve attenuation to the RUC for the proposed landfill can therefore be estimated by:

$$\textbf{Existing } D_{RUC} \div M_{Cl} = \textbf{Proposed } D_{RUC} \div M_{Cl}$$

Where: D_{RUC} = is the distance to RUC
M_{Cl} = Mass of Chloride

The chloride mass being generated through the bottom of the existing landfill can be estimated by:

$$M_{Cl} = Q \times [Cl^-_{leachate}]$$

Where: Q = the flow volume through the bottom of the landfill
$[Cl^-_{leachate}]$ = the concentration of chloride in leachate, assumed to be 750 mg/L (1994 Hydrogeological Assessment)

Existing Phase I Landfill Area

For the existing landfill, we will assume conditions that result in lower chloride mass generation, as this will make this result in higher estimates of the distance required to achieve compliance for the proposed landfill (i.e., is a more conservative approach). To this end, we are assuming that capping material has been applied to the landfill. The approved 1994 Hydrogeological Assessment used an infiltration rate through cover material (with a K of 10^{-8} m/s or less) of 0.12 m/year. The area contributing to the downgradient lands was estimated to be 6.5 ha, or 65,000 m^2.

The resultant Q = 65,000 m^2 x 0.12 m = 7,800 m^3/year

The resultant M_{Cl} = 7,800 m^3/year x 750 mg/L = 5.85 kg/year

Proposed Landfill Area

For the proposed landfill, the landfill base is expected to be designed with a liner that will achieve a K of 10^{-10} m/s, or less. Based on a review of published values [Rowe, 2012], leakage rates of about 0.03 m/year (820 litres per hectare per day [lphd]) have been applied.

Given the entire proposed landfill area will be contributing to the landfill waste:

The resultant Q = 140,000 m^2 x 0.03 m = 4,200 m^3/year

The resultant M_{Cl} = 7,800 m^3/year x 750 mg/L = 3.15 kg/year

The resultant estimated distance to meet the RUC for the proposed landfill is expected to be:

Proposed D_{RUC} = (125 m ÷ 5.85) x 3.15 = 67 m

7.3.6 1994 Hydrogeologic Assessment

As part of the 1994 Hydrogeologic Assessment, calculations for the west side of the existing landfill were completed to estimate the potential for downgradient impacts. To assess efficacy of the mass-dilution approach used at the site and confirm its applicability, the estimated downgradient concentrations versus those measured on-site have been compared.

The approach used in the 1994 Hydrogeological Assessment calculated the resultant chloride concentration in groundwater downgradient from the site by using the annual mass flux of chloride entering the system divided by the amount of infiltrated water over the area of dilution (i.e., the distance between the landfill and compliance limit). The calculation was as follows:

$$[Cl^-] = M_{Cl^-} \div Q_d,$$

Where: $[Cl^-]$ = Chloride concentration
M_{Cl^-} = Mass of chloride being produced
Q_d = Total Volume of Dilution available

The mass of chloride was calculated under two scenarios, with the landfill open (uncapped) and capped. For each case, the concentration of chloride in leachate was assumed to be 750 mg/L. The mass of chloride being produced was calculated using:

$$M_{Cl} = Q \times [Cl^-_{leachate}]$$

Where: Q = the flow volume through the bottom of the landfill
$[Cl^-_{leachate}]$ = the concentration of chloride in leachate, assumed to be 750 mg/L

Q was calculated by using an infiltration rate through the bottom of the landfill of 0.15 m/year when active, and 0.12 m/year once capped and inactive. The estimated area of Phase I landfilling was 65,000 m^2 (6.5 ha), the area to the west of the flow divide.

The corresponding M_{Cl} for each scenario was calculated as follows:

1. Active Landfill: 65,000 m^2 x 0.15 m x 750 mg/L = 7.31 kg/year
2. Closed Landfill: 65,000 m^2 x 0.12 m x 750 mg/L = 5.85 kg/year

The 1994 Hydrogeological Assessment assumed the dilution area to be the entire adjacent westerly property owned at that time (i.e., 40 ha, or 400,000 m^2) and an infiltration rate of 320 mm/year.

The resultant estimate of chloride concentration for each scenario was calculated to be:

1. Active Landfill: $[Cl^-] = M_{Cl^-}/Q_d$ = 7.31/(400,000 m^2 x 0.32 m/year) = 54 mg/L*
   (note when calculated using converted units specified here and rounding, resultant is 57 mg/L)
2. Closed Landfill: $[Cl^-] = M_{Cl^-}/Q_d$ = 7.31/(400,000 m^2 x 0.32 m/year) = 46 mg/L

In comparing these estimates to the observed outcomes, we can relate a distance to the estimated calculations. Based on the westerly property limit that includes for the 40 ha (i.e., the former property limit at the Lot 10 and Lot 11 boundary), this corresponds to a distance of about 165 meters. This corresponds with the approximate well nest locations of TW-38 and TW-39.

The approach used in the 1994 Hydrogeological Assessment used the entire 40 hectare lot area to the west and did not take into account the areas that are only directly downgradient from Phase I. This potentially results in an over-estimate of the amount of dilution available, and a results in a lower chloride concentration. Therefore, the 1994

estimates have been refined, accounting for dilution in the lands only directly downgradient of the landfill. The 40 ha area corresponds to an area with a width of approximately 440 m (the length of the filled areas transverse to groundwater flow, approximately south to north) and length (i.e., distance downgradient, or the west) of 900 m (i.e., 900 x 440 = 400,000 m^2). This corresponds to the distance 300 m past the current property boundary. The closest monitoring location would be considered TW-31 and TW-32 located approximately 620 m downgradient of the active area.

The following Table 7-3 summarizes a comparison of calculated versus observed.

TABLE 7-3: Review of 1994 Chloride Concentration Estimation versus Observed Concentrations

1994 Calculated Chloride Concentration for Landfill Development (Phase I)		Observed Peak Chloride Concentrations *			
		At Former Property Limit used in 1994 (`165 m)		Refined to Account Solely for Dilution Area Downgradient (` 620 m)	
Active Landfill Condition: Entire Area Open	Closed Landfill Condition: Entire Area	Location	[Chloride]	Location	[Chloride]
54 mg/L	45 mg/L	TW-38S	28 mg/L	TW-31	19 mg/L
		TW-38I	30 mg/L	TW-32	16 mg/L
		TW-39S	13 mg/L	TW-40	5 mg/L
		TW-39I	31 mg/L		

** For wells installed in 2022 (i.e., TW-33 to TW-40 series), the peak concentration is determined from available data collected between 2023 to 2025.*

Based on the observed concentrations versus calculated, the mass-dilution model appears to over-estimate the observed groundwater concentration by a factor of about 2, when assuming the entire westerly property is available for dilution. When only the area of dilution downgradient of the landfill is accounted for and the monitoring distance conservatively reduced, the model appears to over-estimate the observed groundwater concentration by a factor of about 3 or 4.

These observations are consistent with what is expected since the mass-dilution model is known to be conservative. The mass-dilution model only accounts for the dilution (attenuation) of chloride with incoming rainfall. It is known that other parameters, such as dispersion and dilution with ambient groundwater will occur, acting to further reduce actual chloride concentrations in groundwater. Based on this review it appears that the approach taken in the 1994 Hydrogeological Assessment is valid as a conservative estimate of compliance at the compliance limit.

7.3.7 Proposed Engineered Landfill

The mass-dilution approach can also be applied to the proposed landfill. Four (4) scenarios have been contemplated to estimate the potential impacts from the proposed landfill on the groundwater system with the concentration of chloride estimated by:

$$[Cl^-] = M_{Cl^-} \div Q_d$$

Where: M_{Cl^-} = Mass of chloride being produced
Q_d = Total Volume of Dilution available.

A similar analysis as the 1994 Hydrogeological Assessment has been completed with revised select input parameters, as follows.

- Landfill Area Contributing to Leachate: The proposed landfill area has been assumed to be 14 ha (140,000 m^2). Based on a 40-year volume of waste of 725,000 m^3, depending on the shape and sloping, this correlates with a landfill mound of approximately 7 to 10 m high (resulting in an elevation lower than the existing landfill).
- Dilution Area: The dilution area has been estimated as the area of the landfill and the area between the landfill limit and the downgradient property. Based on the fact that non-contact stormwater run-off from the landfill is to be managed on-site and by infiltration, it is reasonable to expect that this will contribute to dilution. The area of open space downgradient of the landfill is estimated to be 9 ha. The total Dilution Area has been determined to be 23 ha (9 ha + 23 ha).
- Mass of Chloride (M_{Cl}): The mass of chloride calculation has been updated to include for the increased performance of a lined landfill. It has been assumed that chloride would leach through the landfill at a rate of 0.03 m (30 mm) / year. This rate assumes a compacted clay-liner with a K of 1 x 10^{-10} m/s, 5 m of head above the liner, and correlates with a leakage rate of 820 litres per hectare per day (lphd) [Rowe, 2012].

The following parameters remain the same as the 1994 Hydrogeological Assessment model:

- Concentration of chloride in leachate $[Cl^-]_{leachate}$ = 750 mg/L
- Infiltration Rate = 320 mm/year: Based the sandy soils, flat and undeveloped (absence of impervious areas) this value is consistent with our own experience and published values.

Figure 10A illustrates the approach used in Scenario 1. Using the updated parameters, the resultant chloride concentration can be calculated as follows:

$$\mathbf{M_{cl} = Q \times [Cl^-_{leachate}]}$$

Where: $\mathbf{Q}$ = 140,000 m^2 x 0.03 m/year = 4,200 m^3/year

$\mathbf{M_{cl}}$ = 4,200 m^3/year x 750 mg/L = 3.15 kg/year

And,

$$\mathbf{[Cl^-] = M_{Cl^-}/Q_d}$$

Where: $\mathbf{Q_d}$ = 230,000 m^2 x 0.32 m/year = 73,600 m^3/year

$\mathbf{[Cl^-]}$ = 3.15 kg/year ÷ 73,600 m^3/year = 43 mg/L

Using this conservative approach, it appears that the RUC will be met for the proposed landfill. This analysis is consistent with the previous analysis completed in 1994 and demonstrates that in the proposed area of development, it is reasonable to expect that the RUC will be met with the full build out (worst case scenario) of the proposed landfill.

More detailed analyses have also been completed to ensure sufficient attenuation of leachate will occur. Three additional scenarios have been considered:

Scenario 2: Using only the downgradient undeveloped area (open space) for dilution (Figure 10B), and
Scenario 3: Including for the existing Phase I landfill for mass contributions of chloride (Figure 10C).
Scenario 4: The same approach as Scenario 1, but with the open space area evaluated to determine the distance at which RUC would be met, assuming a plume width similar to the width of the landfill.

Scenario 2: Limited Dilution Area

As a comparison, an area of only 90,000 m^2, (the open area that would occur downgradient and west of the proposed landfill), has also been used in the calculation (Figure 10B). This assumes that any run-off from the landfill area would not be added to the groundwater system. The resultant chloride concentration is calculated to be 109 mg/L, which remains below the RUC. With the use of this more conservative approach and conservative model, the site is still projected to meet the RUC.

Scenario 3: Addition of Existing Landfill Chloride Mass

It is known that the leachate production at a landfill will peak soon after closure then wane over a period of decades. More accurately, and based on the timelines for development (approximately 5 years to fill the existing landfill and about 40 for to fill the new landfill), it is reasonable to expect that the leachate through the system would continue to weaken. However, to provide another conservation mass-dilution estimation, it is assumed that the chloride generation from the Phase I Landfill area would be occurring at the same time as the entire proposed landfill (refer to Figure 10C).

Under this approach the dilution area is considered the 23 ha associated with proposed landfill and dilution area, plus the existing landfill (and associated run-off) area of 6.5 ha, which results in a total dilution area of 29.5 ha. The chloride mass in each scenario, 3.15 kg + 7.31 kg, respectively, for a total of 10.46 kg. The resultant chloride concentration is estimated to be:

$$[Cl\text{-}] = M_{Cl\text{-}} \div Q_d,$$

Where: Q_d = 295,000 m2 x 0.32 m/year = 88,500 m^3/year

[Cl-] = 10.45 kg/year ÷ 88,500 m^3/year = 118 mg/L

This “worst-case” estimate continues to be below the RUC, providing additional certainty regarding compliance of the RUC for the proposed landfill.

Scenario 4: Distance to Achieve RUC

Scenario 4 uses the same approach as Scenario 1 but sets the resultant groundwater concentration to 127 mg/L (i.e., the RUC) to determine the distance required to achieve the RUC. The landfill area remains at 14 ha, and the downgradient open land is determined by the overall area required to achieve the RUC.

$[Cl^-]$ = 3.15 kg/year/Q_d m^3/year = 126 mg/L

Q_d = 25,000 m^3/year = dilution area x 0.32 m/year (infiltration)

Dilution Area = 25,000 m^3/year ÷ 0.32 m/year = 7.8 ha

The required area contributing to dilution is less than the landfill itself, meaning that the RUC would be met for all conditions where the landfill liner is utilized and precipitation is infiltrated.

Regardless of the results of this analysis, it is recommended to provide a minimum of 100 m setback from the landfill in the downgradient and cross-gradient directions to the point of compliance (i.e., property boundary). As with any landfill development, optimizing setbacks from property limits will provide additional certainty with respect to meeting compliance and reducing the potential for impacts.

7.4 Potential for Impacts

7.4.1 Impact Analysis

Based on this review, the potential for impacts (i.e., off-site impacts to groundwater) can be mitigated using the following design parameters:

1. The landfill is designed as an engineered landfill, with a liner, leachate collection, and with off-site treatment of leachate.
2. The landfill liner is designed to meet a hydraulic conductivity of $1x10^{-10}$ m/s.
3. Stormwater from the site is managed by collection and infiltration.

A summary of the Impact Analysis method and outcomes are provided in Table 7-4

TABLE 7-4: Summary of Impact Assessment Results

Method	Description	Compliance with RUC for Chloride (127 mg/L)
Current Landfill Performance	Using data from the existing landfill to assess the distance for compliance with the RUC. Considered the simplest approach and worst-case scenario since it assumes the engineered landfill will perform the same as the existing natural attenuation landfill.	**Yes** 127 mg/L at distance of 125 m
Direct Correlation to Existing Landfill Performance	The data from the existing landfill is used assuming a direct correlation to mass contributions from the existing versus new landfill.	**Yes** 127 mg/L at a distance of 67 m
Mass-Dilution Approach	**Scenario 1:** Assumes that a new landfill of 14 hectares contributes chloride and the landfill and downgradient area of 9 hectares would contribute to infiltration available for dilution.	**Yes** Resultant chloride concentration at property boundary of 43 mg/L
	Scenario 2: Limited Dilution Area Assumes only a dilution area of 9 hectares is available to dilute the chloride mass from the proposed landfill. Considered to be very conservative since run-off from landfill area is planned for infiltration.	**Yes** Resultant chloride concentration at property boundary of 109 mg/L
	Scenario 3: Addition of Existing Landfill Chloride Mass Assumes chloride mass from existing landfill and the proposed landfill will be contributing chloride mass to the system with the combined area available for dilution. Considered to be very conservative since it is realistic to expect that chloride concentrations will have significantly decreased by the time the proposed landfill is constructed.	**Yes** Resultant chloride concentration at property boundary of 118 mg/L
	Scenario 4: Distance to Achieve RUC Using the approach for Scenario 1, this scenario calculates a distance downgradient of the landfill by setting the chloride concentration at 127 mg/L and back calculated a distance.	**Yes** RUC met within landfill footprint

The analysis, while simplistic, is considered to be both proven and applicable for this scenario. In particular, a relatively high level of certainty exists based on the historic landfilling and over four decades of annual monitoring data. The monitoring results provide direct measurement with respect to expected behaviour of groundwater under the proposed development. The mass-dilution approach is considered a conservative approach to assessing the potential for impacts since it only accounts for dilution with precipitation.

Regardless of the results of this analysis, it is recommended to provide a minimum of 100 m setback from the landfill in the downgradient and cross-gradient directions to the point of compliance (i.e., property boundary). As with any landfill development, optimizing setbacks from property limits will provide additional certainty with respect to meeting compliance and reducing the potential for off-site impacts.

It is recommended that standard annual landfill monitoring and reporting program be conducted to confirm the actual groundwater conditions that result from landfill development at the property. Based on the relatively slow timeframe for filling (40 years), and a waste progression from east to west, it is expected that the monitoring program would be able to assess compliance and detect the likelihood for adverse off-site measures before they occur. Based on the results of the monitoring, mitigative and contingency measures could be implemented, if needed.

7.4.2 Contingency Measures

As part of the Development Plan and ECA process, it is expected that Trigger Mechanisms and Contingency Plan would be prepared. While such a Plan is premature at this stage, this section contemplates the what, if any, options would be available with respect to off-site impacts to the Upper Sand Unit.

A mitigative measure that could be implemented prior to impacts leaving the site is a groundwater “pump-and-treat” system at the perimeter of the landfill. Such a system would consist of a pumping system that would extract groundwater for treatment (at the site or at the municipal plant). Such systems have been implemented at many landfill sites in Ontario. The Upper Sand Unit is conducive to the collection of shallow groundwater.

In the event impacts evade detection and/or are not viable for remediation, two evident mitigative measures are available:

1. Replace shallow wells with bedrock wells: The deep bedrock system is a proven and utilized aquifer system in the area. it is reasonable to expect that the bedrock system would remain protected given a thickness of at least 50 of silt and clay till overburden in the area. While the groundwater in the bedrock is known to be highly mineralized, commercial water treatment systems are readily available.
2. The area of potential impacts is relatively close to the terminus of the current water system servicing. It could be possible to extend municipal servicing to impacted properties.

These options suggest that in the event of unforeseen conditions and impact to the Upper Sand Unit, mitigative measures are available both on- and off-site.

8. CONCLUSIONS

The Town is seeking additional landfill capacity at the Southampton Landfill property. As part of the approval process an EA is required. This Hydrogeological Investigation has been prepared to support the EA process, as well as provide recommendations regarding the overall development and design of the landfill.

The Hydrogeological Investigation has been developed through:

- information and findings from previous Hydrogeologic Assessments/Investigations for the existing natural attenuation landfill site,
- over four decades of groundwater level and groundwater quality monitoring at the existing landfill site, and
- supplemental investigations, including a door-to-door water well survey, well drilling, slug testing, and groundwater quality testing.

An impact analysis has been completed to assess the potential for impacts from the proposed landfill, and whether landfill development could proceed without causing impacts to water resources, and if so, what design parameters or mitigative measures would be required. The proposed landfill would be constructed as an engineered landfill, with a liner system and leachate collection. The leachate is anticipated to be disposed of off-site.

Through the completion of this Investigation, it has been determined that the proposed development area, as presented in the ToR and herein, would support development of an engineered landfill without causing off-site impacts to water resources subject to the recommendations provided in the following Section.

The hydrogeologic setting in the area provides for relatively uniform conditions in the upper overburden, the units that would most likely be impacted by landfill leachate. The relative uniform conditions and existence of long-term water quality monitoring at the site provides for a high level of certainty regarding the potential for impacts in the future. This information, coupled with an annual performance monitoring program will provide for long-term protection to the area water resources.

9. RECOMMENDATIONS

To support the findings herein, we provide the following recommendations prior to landfill approval and development:

1. That the monitoring wells downgradient of the Phase I Area continue to be monitoring with the annual program to confirm leachate indicator patterns observed to date.
2. To support the design, development and ECA process for the landfill (if approved through the EA), we recommend the following
    a. A minimum of 100 m setbacks from proposed development area and the property limit are maintained.
    b. Development of the base of the landfill should account for the seasonally high water table in the proposed landfill development area. Depending on the landfill design, the design may include the importation of fill to ensure an appropriate separation from the high water table.
    c. That the landfill be designed as an engineered landfill with leachate collection and disposal off-site.
    d. That the landfill liner system be designed with a performance of 1 x 10^{-10} m/s or better.
    e. That as part of the landfill design, a Stormwater Management Plan be developed that includes the collection and infiltration of stormwater.
    f. Prior to landfill development, that two monitoring wells in the Upper Sand Unit (±0 to 5 mbgs) and shallow Till Unit (±5 to 10 mbgs) between the proposed landfill footprint and property boundary on the south and southwest area to provide monitoring locations between the proposed development and off-site domestic wells to the southwest.
    g. That an annual monitoring and reporting program be implemented to assesses the potential for off-site impacts and that reviews the efficacy of the monitoring network, including the need for new monitoring locations.
    h. That a Trigger Mechanisms and Contingency Plan be developed to support performance monitoring during operation of the landfill and the corresponding monitoring program.

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TABLES

TABLE 1
SUMMARY OF BOREHOLE LOGS AND MONITORING WELL INSTALLATION DETAILS

Well ID	Year Installed	WELL LOCATION		ELEVATION					WELL SCREEN DETAILS								UNIT	
		Easting	Northing	Ground	TOC	BH Btm			Top			Bottom			Diameter	Length		
				masl	masl	ftbgs	mbgs	masl	ft	m	masl	ft	m	masl	inches	ft		
TW-1	1981	473700	4925157	216.32	217.15	14.1	4.3	212.0	7.4	2.3	214.1	14.1	4.3	212.0	1.5"	6.7	Upper/Shallow OB	SAND, silty, minor gravel
TW-3	1981	473516	4925155	216.32	216.93	10.5	3.2	213.1	4.9	1.5	214.8	9.0	2.8	213.6	1.5"	4.1	Upper/Shallow OB	SILT, clayey
TW-4	1981	473516	4925155	216.32	216.94	3.9	1.2	215.1	1.0	0.3	216.0	3.9	1.2	215.1	1.5"	3.0	Upper OB (<1.5m)	SAND
TW-5	1981	473437	4925247	224.08	224.62	25.6	7.8	216.3	15.6	4.8	219.3	23.0	7.0	217.1	1.5"	7.4	Upper OB	SAND, silty
TW-6	1981	----	----	220.94	220.46	14.4	4.4	216.5	9.8	3.0	217.9	13.9	4.3	216.7	1.5"	4.1	Upper OB	SAND, silty
TW-14	1982	473474	4925134	218.47	218.90	12.3	3.8	214.7	8.9	2.7	215.8	12.3	3.8	214.7	1.5"	3.4	Upper OB	SAND, minor gravel
TW-15	1982	473434	4925119	217.56	218.12	8.2	2.5	215.1	4.9	1.5	216.1	8.2	2.5	215.1	1.5"	3.3	Upper OB	SAND, minor gravel
TW-17	1982	473804	4925562	215.85	216.68	9.8	3.0	212.9	4.1	1.3	214.6	8.2	2.5	213.4	1.5"	4.1	Upper OB	SAND, minor gravel
TW-18	1986	----	----	215.38	216.14	19.4	5.9	209.5	4.3	1.3	214.1	18.0	5.5	209.9	2"	13.8	Upper/Shallow OB	SAND, silty
TW-18A	1986	----	----	215.38	216.14	4.3	1.3	214.1	0.3	0.1	215.3	4.3	1.3	214.1	2"	3.9	Upper OB	SAND and GRAVEL
TW-20	1986	473583	4925664	217.97	218.64	32.0	9.8	208.2	18.0	5.5	212.5	32.0	9.8	208.2	2"	13.9	Upper/Shallow OB	SILT and SAND
TW-21	1986	473661	4925247	220.73	221.59	40.0	12.2	208.5	26.2	8.0	212.7	40.0	12.2	208.5	2"	13.8	Upper/Shallow OB	fine SAND
TW-22	1986	473638	4925307	220.72	221.09	37.1	11.3	209.4	23.0	7.0	213.7	37.1	11.3	209.4	2"	14.1	Upper/Shallow OB	SAND
TW-22A	1986	----	----	220.31	221.11	20.0	6.1	214.2	6.6	2.0	218.3	20.0	6.1	214.2	2"	13.5	Upper OB	SAND
TW-23	1997	473597	4925148	215.18	216.02	*14.8*	*4.5*	*210.7*	*4.8*	*1.5*	*213.7*	*14.8*	*4.5*	*210.7*	*2"*	*10.0*		n/a
TW-24	1997	473557	4925050	214.52	215.36	*17.7*	*5.4*	*209.1*	*7.7*	*2.4*	*212.2*	*17.7*	*5.4*	*209.1*	*2"*	*10.0*		n/a
TW-25	1997	473388	4925566	215.85	216.52	*12.3*	*3.8*	*212.1*	*4.8*	*1.5*	*214.4*	*12.3*	*3.8*	*212.1*	*2"*	*7.5*		n/a
TW-26	1997	473479	4925735	216.14	216.97	*14.8*	*4.5*	*211.6*	*4.8*	*1.5*	*214.7*	*14.8*	*4.5*	*211.6*	*2"*	*10.0*		n/a
TW-27	1997	473317	4925598	215.51	216.39	*12.5*	*3.8*	*211.7*	*4.9*	*1.5*	*214.0*	*12.5*	*3.8*	*211.7*	*2"*	*7.5*		n/a
TW-28	1997	473410	4925747	214.91	215.74	*15.9*	*4.9*	*210.1*	*5.9*	*1.8*	*213.1*	*15.9*	*4.9*	*210.1*	*2"*	*10.0*		n/a
TW-29	2013	473831	4925437	214.01	214.85	22.0	6.7	207.3	11.6	3.6	210.5	21.7	6.6	207.4	2"	10.0	Upper OB	Sandy SILT
TW-30	2013	473732	4925273	218.38	219.27	22.0	6.7	211.7	11.6	3.6	214.8	21.7	6.6	211.8	2"	10.0	Upper/Shallow OB	Silty CLAY
TW-31	2013	472952	4926034	208.98	209.87	17.0	5.2	203.8	3.9	1.2	207.8	13.9	4.3	204.7	2"	10.0	Upper OB	SAND, minor gravel
TW-32	2013	473180	4926424	209.42	210.18	15.0	4.6	204.9	4.8	1.5	208.0	14.8	4.5	204.9	2"	10.0	Upper OB	SAND
TW-33	2021	473722	4925764	221.27	222.14	20.0	6.1	215.2	9.7	3.0	218.3	19.7	6.0	215.3	2"	10.0	Upper OB	SAND, clayey
TW-34	2021	473950	4925929	217.21	218.01	20.0	6.1	211.1	9.7	3.0	214.3	19.7	6.0	211.2	2"	10.0	Upper OB	SAND, clayey
TW-35S	2021	473319	4925731	214.50	215.32	14.0	4.3	210.2	3.6	1.1	213.4	13.6	4.2	210.4	2"	10.0	Upper OB	SAND, silty, with gravel
TW-35I	2021	473320	4925732	214.47	215.32	30.0	9.1	205.3	19.8	6.1	208.4	29.9	9.1	205.4	2"	10.0	Shallow OB	SILT, sandy
TW-36S	2021	473440	4925920	214.83	215.71	14.0	4.3	210.6	3.6	1.1	213.7	13.6	4.2	210.7	2"	10.0	Upper OB	SAND, silty, with gravel
TW-36I	2021	473438	4925920	214.75	215.52	34.0	10.4	204.4	23.6	7.2	207.6	33.6	10.3	204.5	2"	10.0	Shallow OB	SILT, sandy
TW-37	2021	473690	4925923	215.57	216.03	14.0	4.3	211.3	3.6	1.1	214.5	13.6	4.2	211.4	2"	10.0	Upper/Shallow OB	SAND to silty CLAY
TW-38S	2021	473029	4925674	211.57	212.31	14.0	4.3	207.3	3.6	1.1	210.5	13.6	4.2	207.4	2"	10.0	Upper OB	SAND, trace silt
TW-38I	2021	473025	4925676	211.49	212.24	45.0	13.7	197.8	34.8	10.6	200.9	44.8	13.7	197.8	2"	10.0	Shallow OB	SILT till
TW-39S	2021	473101	4925898	211.19	212.03	14.0	4.3	206.9	3.6	1.1	210.1	13.6	4.2	207.0	2"	10.0	Upper OB	SAND, silty
TW-39I	2021	473103	4925900	211.14	211.99	45.0	13.7	197.4	34.8	10.6	200.5	44.8	13.7	197.5	2"	10.0	Shallow OB	SILT till
TW-40	2021	473298	4926251	210.61	211.41	14.0	4.3	206.4	3.6	1.1	209.5	13.6	4.2	206.5	2"	10.0	Upper/Shallow OB	SAND to SILT till

Notes:
1. masl = meters above sea level; mbgs = meters below ground surface.
2. TOC = top of PVC pipe (i.e. measuring point); BH btm = Bottom of Borehole.
3. TOC and ground surface elevations were re-surveyed in May 2023. Measuring points were updated to reflect the elevations measured.
4. Information summarized herein obtained from the borehole logs and well construction details.
5. Borehole logs and well construction details for TW-23 to TW-28 are missing, despite efforts to located these records. Well details presented are based on the measured depth to bottom of the well and an assumed screen length.

TABLE 2
SUMMARY OF ANALYTICAL RESULTS
MONITORING WELLS TW-33 to TW-40

Parameter		Alkalinity	Ammonia	Calcium	Chloride	Conductivity	DOC	Hardness	Magnesium	Nitrate	Nitrite	pH	Phosphorus (dissolved)	Potassium	Sodium	Sulphate	TKN	Phosphorus (total)
Units		(mg/L)	(mg/L)	(mg/L)	(mg/L)	(uS/cm)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	
Background (Cb)		334	0.20	137	4.90	561	3.18	369	24.6	2.00	0.030	8.30	1.37	2.03	7.13	23.0	0.78	N/A
ODWS (Cr)		500 (OG)	NV	NV	250 (AO)	NV	5 (AO)	80-100 (OG)	NV	10 (MAC)	1.0 (MAC)	6.5 - 8.5	NV	NV	200 (AO)	500 (AO)	NV	NV
RUC (Cm)		**417**	**NV**	**NV**	**127**	**NV**	**4.1**	**254**	**NV**	**4.0**	**0.27**	**6.5 - 8.5**	**NV**	**NV**	**104**	**262**	**NV**	**N/A**
NORTH - NORTHWEST OF APPROVED LANDFILL FOOTPRINT																		
TW-33	13-Dec-21	295	<0.1	87.7	<1	524	<1	**331**	27.1	<0.06	<0.03	7.79	<0.003	0.26	2.00	<2	<0.5	--
	2-May-22	417	<0.1	94.0	<1	572	<1	**352**	28.6	0.06	<0.03	7.80	<0.003	0.17	1.17	3	<0.5	0.94
	13-Apr-23	290	<0.1	78.7	<1	486	2	**294**	23.6	0.10	<0.03	8.10	<0.003	0.11	2.74	3	<0.5	0.25
	16-Nov-23	321	<0.1	86.9	1	582	<1	**330**	27.4	0.13	<0.03	8.02	<0.003	0.23	1.49	3	<0.5	0.91
	24-Apr-24	200	<0.1	80.8	<1	517	<1	**293**	22.1	0.07	<0.03	8.38	<0.003	0.11	2.05	<2	<0.5	--
	22-Apr-25	280	<0.1	71.0	<1	475	1	**266**	21.5	0.07	<0.03	7.70	<0.003	0.11	1.78	<2	<0.5	--
	9-Sep-25	377	<0.1	82.0	<1	578	1	**323**	28.6	0.15	<0.03	7.77	<0.003	0.40	1.50	<2	<0.5	--
TW-34	13-Dec-21	320	0.1	82.5	<1	508	1	**313**	25.9	0.08	<0.03	7.58	<0.003	0.46	2.36	8	<0.5	--
	2-May-22	255	<0.1	66.7	<1	436	<1	**252**	20.8	0.32	<0.03	8.10	<0.003	0.22	1.72	2	<0.5	0.19
	14-Sep-22	261	<0.1	73.4	<1	499	<1	**268**	20.5	0.14	<0.03	7.88	<0.003	0.31	1.67	4	<0.5	0.32
	13-Apr-23	227	<0.1	60.5	<1	410	<1	**228**	18.8	0.15	<0.03	8.23	0.005	0.19	2.01	4	<0.5	0.09
	16-Nov-23	292	<0.1	75.7	<1	528	1	**287**	23.7	0.33	<0.03	8.08	<0.003	0.36	4.20	4	<0.5	0.48
	24-Apr-24	212	<0.1	54.6	<1	396	1	**199**	15.3	0.07	<0.03	8.38	<0.003	0.14	1.55	<2	0.8	--
	9-Sep-25	267	<0.1	62.8	1	471	<1	**243**	21.0	0.18	<0.03	7.86	0.004	0.36	1.73	2	<0.5	--
TW-35S	13-Dec-21	401	0.2	119	140	1060	2	**468**	41.1	<0.06	<0.03	7.64	3	3.07	86.9	110	<0.5	--
	2-May-22	437	<0.1	129	85	477*	3	**481**	38.8	0.13	<0.03	8.15	<0.003	1.88	56.3	82	<0.5	0.05
	14-Sep-22	376	0.1	125	82	1100	3	**464**	37.1	0.10	<0.03	7.86	<0.003	2.16	52.1	91	0.9	<0.03
	13-Apr-23	351	<0.1	120	72	924	2	**451**	36.7	<0.06	<0.03	8.00	<0.003	1.90	41.0	78	<0.5	<0.03
	16-Nov-23	338	<0.1	120	73	958	2	**431**	32.3	<0.06	<0.03	7.96	<0.003	2.40	33.0	85	<0.5	0.16
	24-Apr-24	211	<0.1	115	66	909	2	**410**	30.1	<0.06	<0.03	8.28	<0.003	1.92	33.2	93	0.6	--
	9-Sep-25	343	<0.1	97.5	50	823	2	**347**	25.2	<0.06	<0.03	7.81	0.003	3.14	27.3	53	<0.5	--
TW-35I	13-Dec-21	340	0.1	126	88	824	2	**534**	53.0	<0.06	<0.03	7.70	112	6.70	26.4	41	<0.5	--
	2-May-22	69*	<0.1	126	73	338*	2	**490**	42.6	<0.06	<0.03	7.26	0.009	1.99	23.0	83	<0.5	0.04
	14-Sep-22	344	<0.1	126	71	1010	2	**474**	38.5	<0.06	<0.03	7.85	0.016	2.18	20.7	77	<0.5	<0.03
	13-Apr-23	345	<0.1	121	82	980	2	**473**	41.8	<0.06	<0.03	8.05	<0.003	1.85	25.8	82	<0.5	<0.03
	16-Nov-23	315	<0.1	117	78	966	2	**461**	40.9	0.07	<0.03	7.97	0.004	1.99	22.1	86	<0.5	0.04
	24-Apr-24	346	<0.1	120	79	1020	2	**452**	37.4	<0.06	<0.03	7.94	<0.003	1.92	24.8	91	<0.5	--
	9-Sep-25	354	<0.1	107	77	968	2	**434**	40.6	<0.06	<0.03	7.82	0.004	2.17	28.0	74	<0.5	--
TW-36S	13-Dec-21	407	0.2	152	20	659	**7**	**554**	42.4	<0.06	<0.03	7.71	191	2.31	12.3	23	<0.5	--
	2-May-22	354	<0.1	114	21	676	**9**	**394**	26.6	0.09	<0.03	8.24	<0.003	1.28	12.4	24	<0.5	0.53
	14-Sep-22	331	0.2	103	18	680	**6**	**344**	21.4	0.15	<0.03	8.01	<0.003	0.98	8.57	26	<0.5	1.58
	13-Apr-23	297	<0.1	95.5	16	612	**9**	**324**	20.8	0.12	<0.03	8.19	<0.003	0.92	9.32	61	<0.5	0.44
	16-Nov-23	308	0.2	83.9	17	637	**5**	**285**	18.4	<0.06	<0.03	8.04	<0.003	0.72	6.87	55	0.8	0.72
	24-Apr-24	283	<0.1	94.2	14	626	**8**	**314**	19.1	0.07	<0.03	8.14	0.005	1.03	7.88	47	0.9	--
	9-Sep-25	281	<0.1	72.9	12	581	**5**	**261**	19.3	<0.06	<0.03	7.77	0.003	1.09	6.67	40	<0.5	--
TW-36I	13-Dec-21	229	0.2	51.2	6	419	1	**228**	24.4	<0.06	<0.03	7.84	<0.003	3.09	4.66	39	<0.5	--
	2-May-22	1040*	0.1	68.3	6	440	2	**258**	21.2	0.16	<0.03	7.99	<0.003	0.78	3.89	47	<0.5	1.46
	14-Sep-22	206	0.1	65.1	5	473	2	**245**	20.1	0.25	<0.03	7.96	<0.003	0.83	3.65	43	<0.5	<0.03
	13-Apr-23	214	<0.1	64.1	9	468	2	**245**	20.6	0.38	0.16	8.19	0.007	0.70	4.40	49	<0.5	0.62
	16-Nov-23	209	0.2	63.7	6	467	1	**244**	20.6	<0.06	0.04	7.98	0.015	0.64	3.61	46	<0.5	1.16
	24-Apr-24	210	<0.1	63.4	5	470	2	**233**	18.1	0.14	<0.03	8.20	<0.003	0.69	3.34	49	<0.5	--
	9-Sep-25	230	0.1	61.4	5	492	2	**240**	21.0	<0.06	<0.03	7.86	0.004	0.65	3.60	44	<0.5	--
TW-37	13-Dec-21	335	0.1	84.7	66	747	**8**	**424**	51.6	<0.06	<0.03	7.65	<0.003	6.74	18.0	14	<0.5	--
	2-May-22	464	<0.1	74.9	31	395*	**6**	**375**	45.8	<0.06	<0.03	8.11	<0.003	4.33	9.80	29	<0.5	0.05
	14-Sep-22	342	0.2	70.3	25	695	**8**	**349**	42.1	0.13	<0.03	7.89	<0.003	4.63	8.56	16	0.6	0.32
	13-Apr-23	332	<0.1	68.2	16	649	**5**	**348**	43.2	<0.06	<0.03	8.21	0.004	3.88	7.79	24	<0.5	<0.03
	16-Nov-23	333	0.2	65.7	17	638	**5**	**345**	43.9	<0.06	<0.03	8.04	<0.003	4.20	7.17	12	<0.5	0.08
	24-Apr-24	200	<0.1	68.9	5	645	3	**326**	37.5	<0.06	<0.03	8.22	0.004	3.39	4.75	35	<0.5	--
	9-Sep-25	361	0.2	61.9	5	645	**6**	**326**	41.7	<0.06	<0.03	7.99	0.004	3.67	5.32	17	<0.5	--

TABLE 2
SUMMARY OF ANALYTICAL RESULTS
MONITORING WELLS TW-33 to TW-40

Parameter		Alkalinity	Ammonia	Calcium	Chloride	Conductivity	DOC	Hardness	Magnesium	Nitrate	Nitrite	pH	Phosphorus (dissolved)	Potassium	Sodium	Sulphate	TKN	Phosphorus (total)
Units		(mg/L)	(mg/L)	(mg/L)	(mg/L)	(uS/cm)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	
Background (Cb)		334	0.20	137	4.90	561	3.18	369	24.6	2.00	0.030	8.30	1.37	2.03	7.13	23.0	0.78	N/A
ODWS (Cr)		500 (OG)	NV	NV	250 (AO)	NV	5 (AO)	80-100 (OG)	NV	10 (MAC)	1.0 (MAC)	6.5 - 8.5	NV	NV	200 (AO)	500 (AO)	NV	NV
RUC (Cm)		**417**	**NV**	**NV**	**127**	**NV**	**4.1**	**254**	**NV**	**4.0**	**0.27**	**6.5 - 8.5**	**NV**	**NV**	**104**	**262**	**NV**	**N/A**
TW-38S	13-Dec-21	316	0.1	84.3	50	655	**5**	**340**	31.4	0.28	**<0.03**	7.85	4	7.87	23.9	46	<0.5	--
	2-May-22	567*	<0.1	66.1	29	530	4	**280**	27.9	0.26	**<0.03**	8.13	<0.003	4.75	13.4	58	<0.5	0.05
	14-Sep-22	213	<0.1	64.4	23	544	3	**256**	23.0	0.10	**<0.03**	7.85	<0.003	4.33	10.4	51	<0.5	0.12
	13-Apr-23	190	<0.1	57.6	19	503	3	**243**	24.0	**<0.06**	**<0.03**	8.21	0.003	3.34	10.2	63	<0.5	0.68
	16-Nov-23	196	<0.1	70.2	20	486	2	**282**	25.8	**<0.06**	**<0.03**	7.97	<0.003	3.35	10.4	53	0.5	1.28
	24-Apr-24	219	<0.1	63.9	28	576	3	**249**	21.6	**<0.06**	**<0.03**	8.56	0.021	3.13	8.10	70	0.5	--
	9-Sep-25	193	<0.1	52.8	12	469	2	**214**	20.0	0.07	**<0.03**	7.86	<0.003	2.38	6.37	52	<0.5	--
TW-38I	13-Dec-21	179	0.2	27.2	45	406	2	**174**	25.7	**<0.06**	**<0.03**	8.11	6	13.8	21.8	17	<0.5	--
	2-May-22	380*	<0.1	32.8	34	647*	1	**188**	25.8	0.06	**<0.03**	8.17	0.032	10.2	19.5	12	1.2	<0.03
	14-Sep-22	172	0.1	24.0	27	423	2	**142**	20.0	**<0.06**	**<0.03**	8.09	<0.003	8.24	17.1	9	<0.5	<0.03
	13-Apr-23	170	<0.1	22.6	30	364	<1	**139**	20.1	**<0.06**	**<0.03**	8.25	<0.003	6.78	19.9	6	<0.5	1.00
	16-Nov-23	164	<0.1	22.8	23	353	<1	**141**	20.5	**<0.06**	**<0.03**	7.95	0.004	5.61	18.1	4	<0.5	0.16
	24-Apr-24	194	<0.1	26.3	18	359	1	**142**	18.5	**<0.06**	**<0.03**	8.63	0.007	5.20	17.2	4	<0.5	--
	9-Sep-25	182	<0.1	22.0	12	348	1	**134**	19.2	**<0.06**	**<0.03**	8.05	0.006	4.19	17.8	<2	<0.5	--
TW-39S	13-Dec-21	306	<0.1	78.9	11	499	1	**287**	21.8	0.06	**<0.03**	7.60	1	0.73	5.79	10	<0.5	--
	14-Sep-22	266	<0.1	77.8	5	521	2	**277**	20.2	**<0.06**	**<0.03**	7.89	<0.003	0.62	4.09	6	<0.5	0.82
	13-Apr-23	271	<0.1	78.4	6	500	1	**284**	21.3	**<0.06**	**<0.03**	8.12	0.003	0.53	3.20	9	<0.5	0.42
	16-Nov-23	268	<0.1	81.3	13	524	1	**293**	22.0	**<0.06**	**<0.03**	7.97	<0.003	0.61	2.66	6	<0.5	0.30
	24-Apr-24	208	<0.1	71.8	3	475	2	**251**	17.5	**<0.06**	**<0.03**	8.36	0.004	0.47	2.01	4	0.5	--
	9-Sep-25	280	<0.1	69.7	13	534	2	**261**	21.1	**<0.06**	**<0.03**	7.97	<0.003	0.63	3.40	6	<0.5	--
TW-39I	13-Dec-21	189	0.2	24.5	54	465	2	**180**	28.7	**<0.06**	**<0.03**	8.07	<0.003	8.88	28.8	5	<0.5	--
	2-May-22	139	<0.1	32.0	42	1460*	1	**197**	28.5	**<0.06**	**<0.03**	7.06	0.034	7.33	29.0	4	<0.5	0.75
	14-Sep-22	168	<0.1	19.3	31	407	1	**131**	20.1	**<0.06**	**<0.03**	8.12	<0.003	5.50	26.9	<2	<0.5	0.55
	13-Apr-23	167	<0.1	19.1	30	368	<1	**125**	18.8	0.07	**<0.03**	8.26	<0.003	4.58	29.6	4	<0.5	1.64
	16-Nov-23	169	<0.1	19.8	21	361	<1	**124**	18.2	**<0.06**	**<0.03**	8.05	0.013	3.97	28.4	<2	<0.5	1.07
	24-Apr-24	176	0.1	16.6	13	330	<1	**104**	15.1	**<0.06**	**<0.03**	8.36	<0.003	3.65	26.6	2	<0.5	--
	9-Sep-25	171	<0.1	16.3	8	323	1	**104**	15.4	**<0.06**	**<0.03**	7.96	0.01	2.99	26.0	4	<0.5	--
TW-40	13-Dec-21	256	<0.1	64.0	<1	392	<1	**221**	14.9	**<0.06**	**<0.03**	7.81	4	0.49	0.72	5	<0.5	--
	2-May-22	100*	<0.1	66.0	<1	352	<1	**230**	15.7	**<0.06**	**<0.03**	7.15	<0.003	0.40	0.61	3	<0.5	0.04
	14-Sep-22	213	<0.1	6.78	<1	403	1	**225**	1.35	**<0.06**	**<0.03**	7.92	<0.003	0.67	1.17	3	<0.5	1.19
	13-Apr-23	231	<0.1	69.2	5	389	1	**241**	16.7	**<0.06**	**<0.03**	8.17	0.003	0.40	0.75	5	<0.5	1.07
	16-Nov-23	235	<0.1	69.8	2	442	<1	**248**	17.9	**<0.06**	**<0.03**	8.03	<0.003	0.49	0.85	5	<0.5	0.40
	24-Apr-24	210	<0.1	66.6	<1	397	<1	**229**	15.2	**<0.06**	**<0.03**	8.31	<0.003	0.36	0.63	2	0.6	--
	9-Sep-25	311	<0.1	62.9	1	449	1	**227**	17.1	**<0.06**	**<0.03**	7.94	<0.003	0.40	0.69	2	<0.5	--

TABLE 2
SUMMARY OF ANALYTICAL RESULTS
MONITORING WELLS TW-33 to TW-40

Parameter		Phenolics	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron	Lead	Manganese	Zinc	Mercury	Benzene	1,4-Dichloro benzene	Dichloro methane	Toluene	Vinyl Chloride
Units		(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Background (Cb)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ODWS (Cr)		NV	0.01 (MAC)	1 (MAC)	0.01 (MAC)	0.005 (MAC)	0.05 (MAC)	1 (AO)	0.3 (AO)	0.01 (MAC)	0.12 (MAC)	5.0 (AO)	0.001 (MAC)	5 (MAC)	5 (MAC)	50 (MAC)	60 (MAC)	2 (MAC)
RUC (Cm)		**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
NORTH - NORTHWEST OF APPROVED LANDFILL FOOTPRINT																		
TW-33	2-May-22	<0.002	<0.0002	0.0043	0.015	<0.000003	0.00075	0.0013	<0.007	<0.00009	0.00028	0.004	<0.00001	<0.5	<0.5	<0.5	<0.5	<0.2
	13-Apr-23	<0.002	<0.0002	0.0036	0.015	<0.000003	0.00073	0.0032	<0.007	0.00010	0.00033	<0.002	<0.00001	--	--	--	--	--
	16-Nov-23	<0.002	<0.0002	0.0057	0.008	0.000003	0.00090	0.0006	0.009	<0.00009	0.00021	<0.002	<0.00001	--	--	--	--	--
TW-34	2-May-22	<0.002	<0.0002	0.0047	0.014	0.000004	0.00053	0.0012	<0.007	<0.00009	0.00123	0.002	<0.00001	<0.5	<0.5	<0.5	<0.5	<0.2
	14-Sep-22	<0.002	0.0002	0.0103	0.011	<0.000003	0.00044	0.0004	<0.007	<0.00009	0.00062	<0.002	<0.00001	<0.5	<0.5	<0.5	<0.5	<0.2
	13-Apr-23	<0.002	<0.0002	0.0042	0.011	0.000005	0.00037	0.0003	<0.007	<0.00009	0.00056	<0.002	<0.00001	--	--	--	--	--
	16-Nov-23	<0.002	<0.0002	0.0077	0.011	0.000007	0.00060	0.0035	<0.007	<0.00009	0.00050	0.002	<0.00001	--	--	--	--	--
TW-35S	2-May-22	<0.002	0.0002	0.0261	0.252	0.000004	0.00031	0.0014	0.028	<0.00009	0.107	0.003	<0.00001	<0.5	<0.5	<0.5	<0.5	<0.2
	14-Sep-22	<0.002	0.0011	0.0384	0.163	0.000009	0.00020	0.0004	0.026	<0.00009	0.925	<0.002	<0.00001	<0.5	<0.5	<0.5	<0.5	<0.2
	13-Apr-23	<0.002	0.0003	0.0270	0.210	0.000014	0.00021	0.0035	<0.007	0.00012	0.0684	0.003	<0.00001	--	--	--	--	--
	16-Nov-23	<0.002	0.0002	0.0273	0.209	0.000035	0.00028	0.0036	<0.007	<0.00009	0.0608	0.004	<0.00001	--	--	--	--	--
TW-35I	2-May-22	0.003	0.0006	0.0274	0.064	0.000003	0.00025	0.0012	0.187	<0.00009	0.177	0.003	<0.00001	<0.5	<0.5	<0.5	<0.5	<0.2
	14-Sep-22	<0.002	0.0017	0.0283	0.042	0.000003	0.00052	<0.0002	1.18	<0.00009	0.156	<0.002	<0.00001	<0.5	<0.5	<0.5	<0.5	<0.2
	13-Apr-23	<0.002	<0.0002	0.0281	0.060	<0.000003	0.00012	0.0007	0.091	<0.00009	0.121	<0.002	<0.00001	--	--	--	--	--
	16-Nov-23	<0.002	0.0009	0.0280	0.049	0.000012	0.00021	0.0010	0.176	<0.00009	0.0545	<0.002	<0.00001	--	--	--	--	--
TW-36S	2-May-22	<0.002	0.0004	0.0116	0.093	0.000013	0.00040	0.0043	0.024	<0.00009	0.218	0.005	<0.00001	<0.5	<0.5	<0.5	<0.5	<0.2
	14-Sep-22	<0.002	0.0006	0.0194	0.081	0.000003	0.00023	0.0008	0.290	0.00010	0.863	<0.002	<0.00001	<0.5	<0.5	<0.5	<0.5	<0.2
	13-Apr-23	<0.002	0.0004	0.0109	0.088	0.000003	0.00031	0.0053	0.034	0.00009	0.0698	<0.002	<0.00001	--	--	--	--	--
	16-Nov-23	<0.002	0.0003	0.0096	0.078	0.000008	0.00034	0.0036	0.102	<0.00009	0.234	<0.002	<0.00001	--	--	--	--	--
TW-36I	2-May-22	<0.002	<0.0002	0.0149	0.022	<0.000003	0.00024	0.0004	0.142	<0.00009	0.0156	0.002	<0.00001	<0.5	<0.5	<0.5	<0.5	<0.2
	14-Sep-22	<0.002	0.0005	0.0164	0.018	<0.000003	0.00014	<0.0002	0.611	<0.00009	0.0258	<0.002	<0.00001	<0.5	<0.5	<0.5	<0.5	<0.2
	13-Apr-23	<0.002	0.0002	0.0145	0.022	<0.000003	0.00017	0.0064	0.246	0.00018	0.0151	0.005	<0.00001	--	--	--	--	--
	16-Nov-23	<0.002	0.0003	0.0144	0.018	0.000022	0.00018	0.0007	0.836	<0.00009	0.0113	<0.002	<0.00001	--	--	--	--	--
TW-37	2-May-22	<0.002	0.0011	0.0375	0.037	0.000006	0.00029	0.0011	0.994	<0.00009	0.739	0.003	<0.00001	<0.5	<0.5	<0.5	<0.5	<0.2
	14-Sep-22	<0.002	0.0033	0.0365	0.041	<0.000003	0.00031	<0.0002	3.48	<0.00009	0.452	<0.002	<0.00001	<0.5	<0.5	<0.5	<0.5	<0.2
	13-Apr-23	<0.002	0.0003	0.0241	0.040	0.000005	0.00018	0.0077	0.094	0.00018	0.347	0.004	<0.00001	--	--	--	--	--
	16-Nov-23	<0.002	0.0005	0.0245	0.043	0.000004	0.00032	0.0016	0.197	<0.00009	0.433	<0.002	<0.00001	--	--	--	--	--
TW-38S	2-May-22	<0.002	0.0006	0.0194	0.056	0.000004	0.00044	0.0019	0.070	<0.00009	0.0325	0.003	<0.00001	<0.5	<0.5	<0.5	<0.5	<0.2
	14-Sep-22	<0.002	0.0010	0.0255	0.054	0.000012	0.00019	0.0036	0.031	<0.00009	0.216	<0.002	<0.00001	<0.5	<0.5	<0.5	<0.5	<0.2
	13-Apr-23	<0.002	0.0008	0.0151	0.054	0.000005	0.00016	0.0029	0.016	<0.00009	0.0120	<0.002	<0.00001	--	--	--	--	--
	16-Nov-23	<0.002	0.0018	0.0176	0.053	0.000010	0.00026	0.0035	0.014	0.00034	0.0524	0.004	<0.00001	--	--	--	--	--
TW-38I	2-May-22	<0.002	0.0046	0.0388	0.177	0.000006	0.00089	0.0013	0.480	0.00017	0.0365	0.003	<0.00001	<0.5	<0.5	<0.5	<0.5	<0.2
	14-Sep-22	<0.002	0.0029	0.0317	0.160	0.000012	0.00011	0.0004	0.087	<0.00009	0.00701	<0.002	<0.00001	<0.5	<0.5	<0.5	<0.5	<0.2
	13-Apr-23	<0.002	0.0026	0.0301	0.188	0.000006	0.00019	0.0056	0.058	0.00018	0.00616	0.005	<0.00001	--	--	--	--	--
	16-Nov-23	<0.002	0.0029	0.0275	0.193	0.000006	0.00016	0.0008	0.040	<0.00009	0.0103	<0.002	<0.00001	--	--	--	--	--
TW-39S	14-Sep-22	<0.002	<0.0002	0.0125	0.010	0.000003	0.00010	0.0007	0.015	<0.00009	0.0112	0.002	<0.00001	<0.5	<0.5	<0.5	<0.5	<0.2
	13-Apr-23	<0.002	<0.0002	0.0064	0.020	<0.000003	0.00018	0.0013	0.007	<0.00009	0.00341	<0.002	<0.00001	--	--	--	--	--
	16-Nov-23	<0.002	<0.0002	0.0078	0.013	<0.000003	0.00010	0.0006	0.014	<0.00009	0.0114	<0.002	<0.00001	--	--	--	--	--
TW-39I	2-May-22	<0.002	0.0019	0.0169	0.244	0.000005	0.00085	0.0016	0.300	0.00015	0.0348	0.003	<0.00001	<0.5	<0.5	<0.5	<0.5	<0.2
	14-Sep-22	<0.002	0.0013	0.0174	0.223	0.000015	0.00025	0.0005	0.046	<0.00009	0.00752	<0.002	<0.00001	<0.5	<0.5	<0.5	<0.5	<0.2
	13-Apr-23	<0.002	0.0010	0.0113	0.256	0.000012	0.00028	0.0057	0.019	0.00017	0.00509	0.005	<0.00001	--	--	--	--	--
	16-Nov-23	<0.002	0.0012	0.0100	0.281	0.000003	0.00016	<0.0002	0.029	<0.00009	0.00913	<0.002	<0.00001	--	--	--	--	--
TW-40	2-May-22	<0.002	<0.0002	0.0047	0.015	<0.000003	0.00039	0.0011	0.068	<0.00009	0.0101	0.003	<0.00001	<0.5	<0.5	<0.5	<0.5	<0.2
	14-Sep-22	<0.002	<0.0002	0.0051	0.006	0.000239	0.00037	0.0025	0.010	<0.00009	0.00128	0.004	<0.00001	<0.5	<0.5	<0.5	<0.5	<0.2
	13-Apr-23	<0.002	<0.0002	0.0040	0.013	<0.000003	0.00028	0.0013	<0.007	<0.00009	0.00078	<0.002	<0.00001	--	--	--	--	--
	16-Nov-23	<0.002	<0.0002	0.0046	0.010	<0.000003	0.00027	0.0004	<0.007	<0.00009	0.00462	<0.002	<0.00001	--	--	--	--	--

NOTES:

1. Concentrations that are shown in **BOLD** exceed the Ontario Drinking Water Quality Standards (ODWS).
2. Concentrations that are shaded exceed the Reasonable Use Criteria (RUC) for the property.
3. AO = Aesthetic Objective; OG = Operational Guideline; MAC = Maximum Acceptable Concentration
4. Cb, Cr, and Cm as described by MECP Procedure B-7-1.
5. * Results interpreted to be erroneous.
6. N/A - not applicable

TABLE 3: Summary of Private Water Well Survey (2025)
Southampton Landfill Site and Surrounding Area

Civic Address(es)	Legal Address	Well Type *[MECP Well No. or Well Tag #]*	Contractor (Date Constructed)	Water Use[1]	Approximate Water Level (mbgs)	Depth to Bottom (mbtoc)
Concession 14						
21 Concession 14 [2]	Range River Lot 10	Drilled *[----]*	Davidson Well Drilling (1967)	ST DO	15.24	75.29
74 Concession 14	Lot 13, Concession 15 RP-3R6098	Dug (2 wells) *[----]*	Unknown	DO	**Shallow Well:** 0.97 **Deeper Well:** 1.07	**Shallow Well:** 2.19 **Deeper Well:** 4.75
101 Concession 14 [2] (308 Links Sideroad)	Part of Lot 12, Concession 14	Dug *[----]*	Unknown (1971)	DO	1.1	4.57
126 Concession 14 On-Site Well (BASWR Facility)	Part of Lot 12, Concession 15	Drilled *[----]*	Unknown (1992)	DO	10.97	80.8
163 Concession 14 171 Concession 14	Lot 11 Concession 14 & Part of Lot 10, Concession 14 specifically Part of Lots 1 and 3 to 9, Plan 19, Cayley Street E	Dug (2 wells) *[----]*	Unknown	DO	**East Well**: 2.2 **West Well:** Not Used	**East Well**: 4.96 **West Well:** Not Used
181 Concession 14	Part of Lot 10, Concession 14 specifically Part of Lot 2, Plan 19, Cayley Street East	Dug *[----]*	Faust Construction (2016)	DO	----	----
201 Concession 14	West Part Lot 10, Concession 14, specifically Lots 1 to 10, Plan 19, Cayley Street West	Dug *[A07444]*	Unknown	DO	**Old Well:** 0.76 **New Well:** 2.05	**Old Well:** 1.99 **New Well:** 3.02
223 Concession 14 [2]	Lot 9, Concession 14	Dug *[----]*	Unknown (1970)	ST DO	1.52	6.1
Doll Sideroad						
444 Doll Sideroad	Range River A, Lot 11	Drilled *[1402164]*	Davidson Well Drilling (1968)	DO	15.24	89
460 Doll Sideroad [2]	Range River A, Part Lot 12	Drilled *[A091742]*	GL Davidson (1968)	ST DO	12.50	64
Carlisle Street						
292 Carlisle Street	Part of Lot 9, Concession 15	Dug *[----]*	Kaake Construction (1986)	DO	----	----
Beyond Study Area - Regional Information						
5278 Bruce Road 3 [2] (Saugeen Golf Club)	Part Lots 10 to 12, Concession 13 RP-3R-6235, Parts 1 and 3 to 8; RP-3R-5462, Part 2	Drilled *[----]*	GL Davidson (1966)	PS	24.4	96
564 Clarendon Street	Part Park Lot 12N Clarendon; Plan 3R-6440 Part 1	Drilled *[A066381]*	WM Wright (2008)	DO	13.1	95
552 High Street (Holiday Park Resort and Campground)	Lake Range, Lot 071	Drilled *[1404563]*	Davidson Well Drilling (1977)	PS	15.2	89

Notes:

[1] DO - domestic; ST - stock; PS - public supply

[2] Information on this property has been sourced from the *Hydrogeologic Investigation* report prepared by Gamsby and Mannerow Limited (March 1993).

mbgs = meters below ground surface; mbTOC = meters below top of casing

TABLE 4A
SUMMARY OF BACKGROUND GROUNDWATER QUALITY

Parameter	TW-1				TW-29				TW-30				TW-1, TW-29 and TW-30			
	Count	Range Min - Max	Average	95th Percentile	Count	Range Min - Max	Average	95th Percentile	Count	Range Min - Max	Average	95th Percentile	Count	Range Min - Max	Average	95th Percentile
Alkalinity	60	108 - 287	180	217	17	186 - 441	246	353	14	236 - 521	294	409	91	108 - 521	210	334
Ammonia	55	ND - 0.40	0.080	0.21	17	ND - 9.90	0.641	2.14	14	ND - 0.20	0.061	0.10	86	ND - 9.90	0.19	0.20
Calcium	63	31.6 - 220	59.7	142	17	50.9 - 169	69.0	117	14	62.7 - 129	92.3	123	94	31.6 - 220	66.2	137
Chloride	59	ND - 10.0	1.33	6.00	17	0.50 - 3.0	1.41	3.00	14	0.50 - 6.0	1.78	4.70	90	ND - 10.0	1.41	4.90
Conductivity	62	220 - 1003	340	413	17	360 - 1380	481	734	14	440 - 592	493	569	93	220 - 1380	388	561
DOC	59	ND - 11.0	1.42	3.50	17	ND - 2.6	0.98	2.12	14	ND - 3.4	1.89	3.14	90	ND - 11.0	1.41	3.18
Hardness	63	122 - 690	200	460	17	201 - 326	237	285	14	232 - 389	291	371	94	122 - 690	220	369
Magnesium	63	6.50 - 35.1	12.2	25.0	17	8.77 - 24.7	19.3	24.6	14	11.60 - 23.9	15.8	23.0	94	6.50 - 35.1	14.0	24.6
Nitrate	54	ND - 3.24	0.51	2.43	17	ND - 0.5	0.17	0.36	14	ND - 0.45	0.12	0.45	85	ND - 3.24	0.38	2.00
Nitrite	44	ND - 0.69	0.037	0.030	16	ND - 0.015	0.015	0.015	14	ND - 0.015	0.015	0.015	74	ND - 0.69	0.028	0.030
pH	61	7.11 - 8.41	7.99	8.31	17	7.84 - 8.34	8.11	8.29	14	7.57 - 8.19	7.97	8.18	92	7.11 - 8.41	8.01	8.30
Phosphorus	52	ND - 2.04	0.21	1.54	17	ND - 0.219	0.022	0.083	14	ND - 12	0.97	5.06	83	ND - 12	0.30	1.37
Potassium	47	ND - 4.90	1.21	2.62	16	0.55 - 1.24	0.94	1.19	13	0.56 - 1.23	0.86	1.18	76	ND - 4.90	1.09	2.03
Sodium	57	0.27 - 14.5	1.22	3.84	17	0.42 - 11.1	3.67	8.63	14	0.71 - 6.06	2.83	5.24	88	0.27 - 14.5	1.95	7.13
Sulphate	55	ND - 49.0	5.94	19.4	17	0.24 - 23.0	13.8	23.0	14	ND - 22.0	7.16	20.1	86	0.24 - 49.0	7.70	23.0
TKN	58	ND - 3.76	0.36	0.84	17	ND - 0.25	0.25	0.25	14	ND - 0.7	0.28	0.41	89	ND - 3.76	0.33	0.78

Notes:

1. Half of the reported detection limit was used for calculation of average when values were reported as less than sample detection limits.
2. All available data from up to, and including, 2021 was used to calculate background concentrations.
3. All data presented in mg/L = milligrams per liter unless otherwise noted.
4. Conductivity = μmho/cm = micromho per centimeter

TABLE 4B
SITE SPECIFIC BACKGROUND CONCENTRATIONS AND GUIDELINE B-7-1 RUC DETERMINATION

GROUNDWATER INDICATOR PARAMETERS SOUTHAMPTON LANDFILL SITE					
Parameter (mg/L)	**Maximum Concentration (Cr) - ODWS**	**ODWS Classification**	**Background Concentration Range [n]**	**Background Concentration (Cb)**	**Objective Level (Cm)**
Alkalinity	500	OG	108 - 521 [91]	334	417
Ammonia	NV		<0.02 - 9.90 [86]	0.20	NV
Calcium	NV		31.6 - 220 [94]	137	NV
Chloride	250	AO	<0.10 - 10.0 [90]	4.90	127
Conductivity	NV		220 - 1,380 [93]	561	NV
Dissolved Organic Carbon	5	AO	<0.4 - 11.0 [90]	3.18	4.1
Hardness (as CaCO3)	80 - 100	OG	122- 690 [94]	369	**369**
Magnesium	NV		6.5 - 35.1 [94]	24.6	NV
Nitrate	10	MAC	<0.005 - 3.24 [85]	2.00	4.0
Nitrite	1	MAC	<0.01 - 0.69 [74]	0.030	0.27
pH	6.5 - 8.5	OG	7.11 - 8.41 [92]	8.30	6.5 - 8.5
Phosphorus (Total)	NV		<0.003 - 12 [83]	1.37	NV
Potassium	NV		<1.0 - 4.9 [76]	2.03	NV
Sodium	200	AO	0.27 - 14.5 [88]	7.13	104
Sulphate	500	AO	0.24 - 49 [86]	23.0	262
TKN	NV		<0.09 - 3.76 [89]	0.78	NV

Notes:

1. [n] = number of data points used to determine the average background concentration.
2. Available data from TW-1, TW-29 & TW-30 collected up to, and including, December 2021 was used to calculate background concentrations.
3. mg/L = milligrams per litre; uS/cm = microsiemens per centimetre; NV = No Value.

4. AO = Aesthetic Objective; OG = Operational Guideline
   MAC = Maximum Acceptable Concentration, Parameters Related to Health
   IMAC = Interim Maximum Acceptable Concentration, Parameters Related to Health

MOE Procedure B-7-1

$Cm = Cb + x(Cr - Cb)$

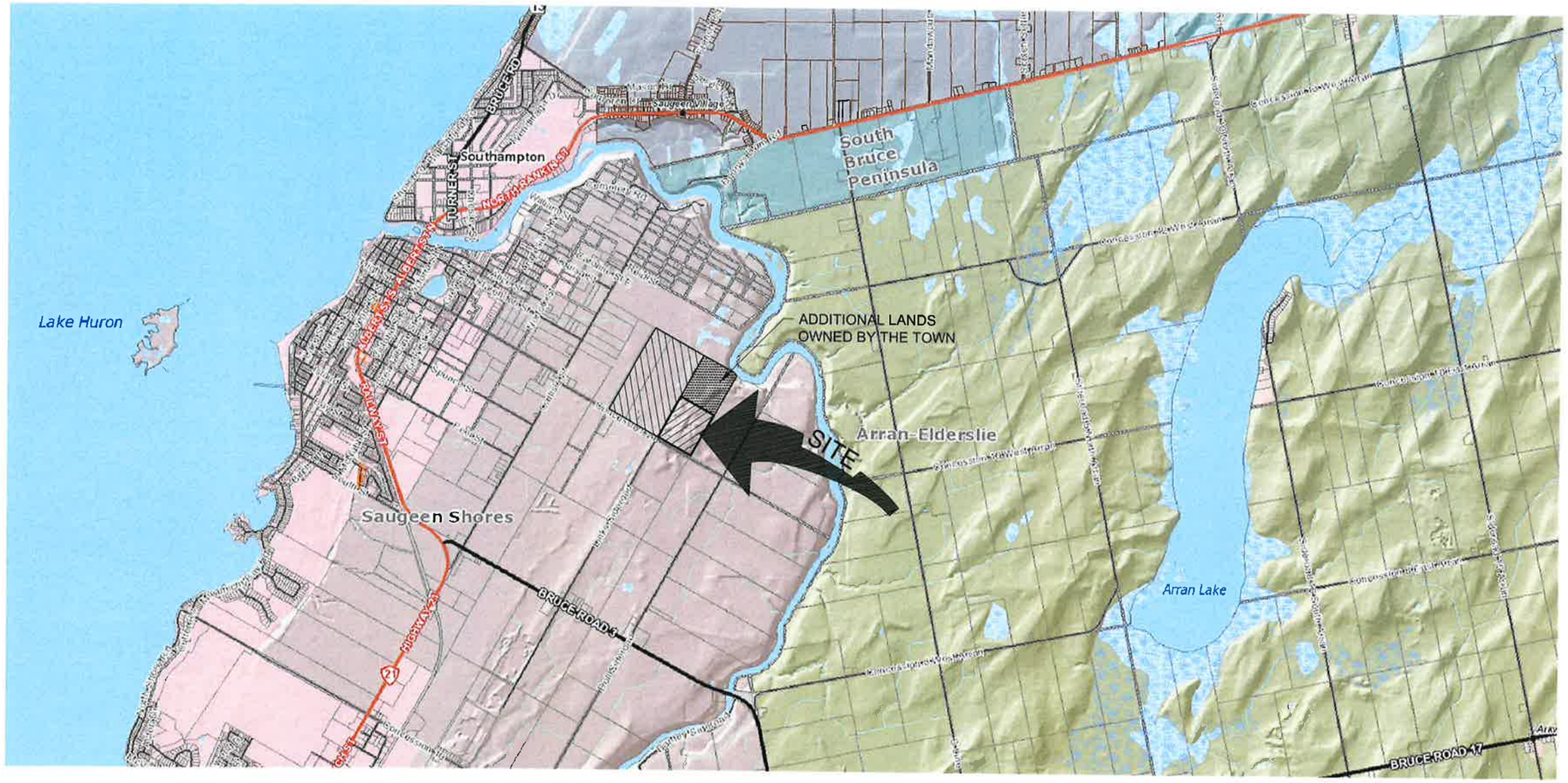
Where:

Cm = Maximum concentration acceptable in groundwater beneath an adjacent property.
Cb = Background concentration (As per Condition 40 of the ECA, defined as the 95th percentile of the historic groundwater quality at TW-1, TW-29 and TW-30).
Cr = Maximum concentration that should be present in groundwater for domestic consumption according to the Ontario Drinking Water Standards (ODWS).
x = 0.5 for non-health related parameters and 0.25 for health related parameters.

5. Where the background concentration exceeds the ODWS, the 95-th percentile concentration (i.e. background) measured is used as the objective level. These are shown in Bold.

FIGURES

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Southampton Landfill Site



SCALE : N.T.S.
MARCH 2026

SITE LOCATION MAP

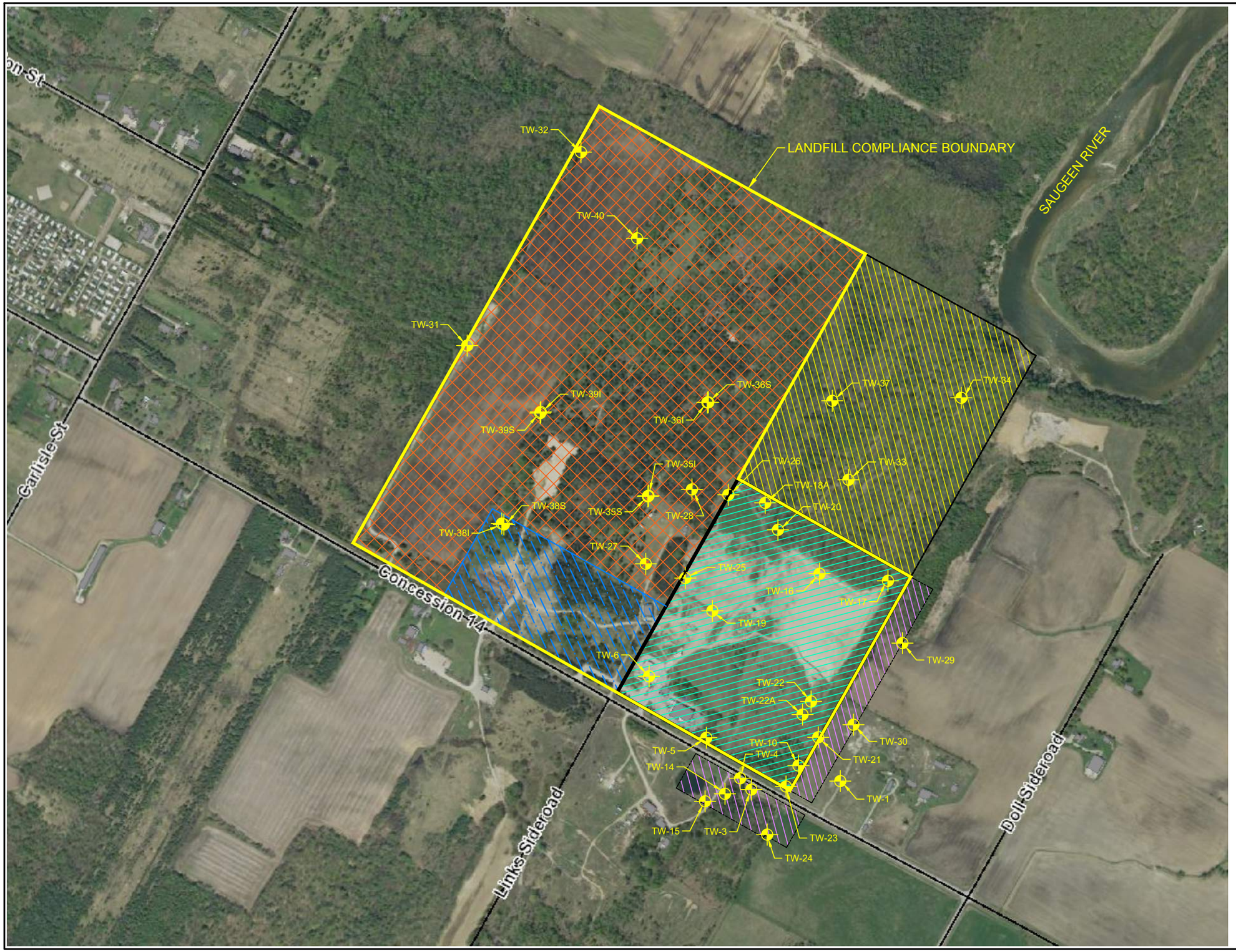
Part Lot 12, Concession 15
Town of Saugeen Shores
County of Bruce

Figure No. 1

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Southampton Landfill Site



LEGEND

- TW-20 — MONITORING WELL LOCATION
- LANDS CURRENTLY ASSOCIATED WITH LANDFILL OPERATIONS
- ADDITIONAL LANDS OWNED BY THE MUNICIPALITY
- CONTAMINATION ATTENUATION ZONE (CAZ) LANDS
- BUFFER LANDS
- TRANSFER AREA

SCALE : 1:7,500
MARCH 2026

OVERALL SITE PLAN

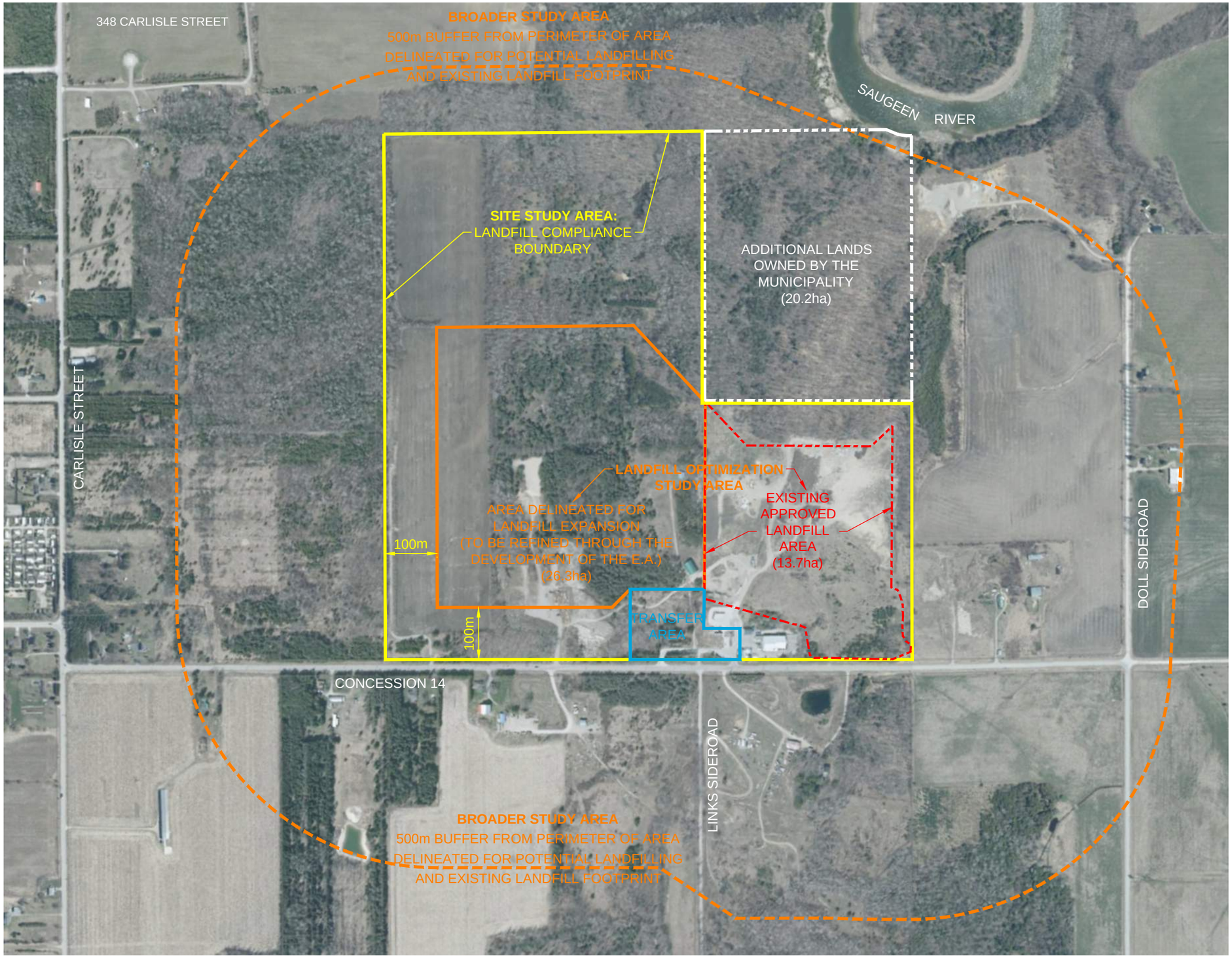
Part Lot 12, Concession 15
Town of Saugeen Shores
County of Bruce

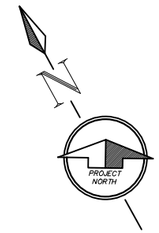
Figure No. 2

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Town of Saugeen Shores
Waste Management EA





SCALE : 1:7,500
OCTOBER 2024

SOUTHAMPTON LANDFILL SITE PLAN SHOWING STUDY AREAS

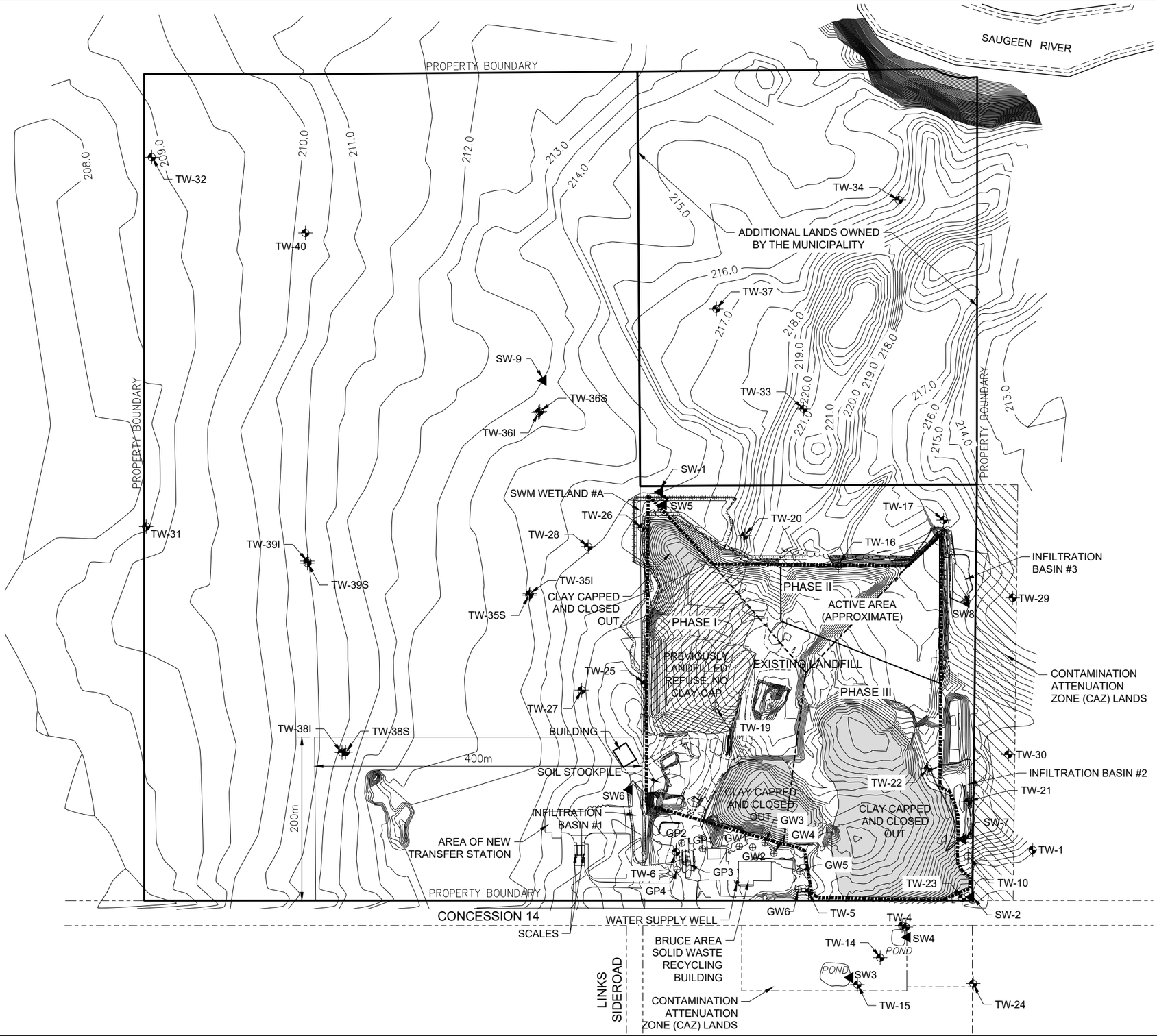
Part Lots 10-12, Concession 15
Town of Saugeen Shores
County of Bruce

Figure No. 3

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FILE:C:\AutoCAD Drawings\2401298 AMR Figures 2.dwg LAYOUT:Expansion Figure 6-1
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Hydrogeological Investigation
Southampton Landfill Site



LEGEND

TW-1 ⊕	GROUNDWATER MONITORING WELL
TW-10 ⊕	FORMER GROUNDWATER MONITORING WELL LOCATION
SW-1 ◀	SURFACE WATER SAMPLING LOCATION
GP1/GW1 ⊕	GAS PROBE
	APPROVED LANDFILL FOOTPRINT
210	EXISTING GROUND CONTOUR (masl)
MP	MEASURING POINT ELEVATION (masl)
GS	GROUND SURFACE ELEVATION (masl)
	CONTAMINANT ATTENUATION ZONE (CAZ)

NOTES

1. MONITORING WELLS WERE RE-SURVEYED ON MAY 4, 2023. MEASURING POINTS (MP) WERE UPDATED TO REFLECT THE ELEVATIONS MEASURED.
2. WELL No's TW-10, TW-16 AND TW-19 WERE DECOMMISSIONED OR REMOVED.

SCALE = 1:5,000

MARCH 2026

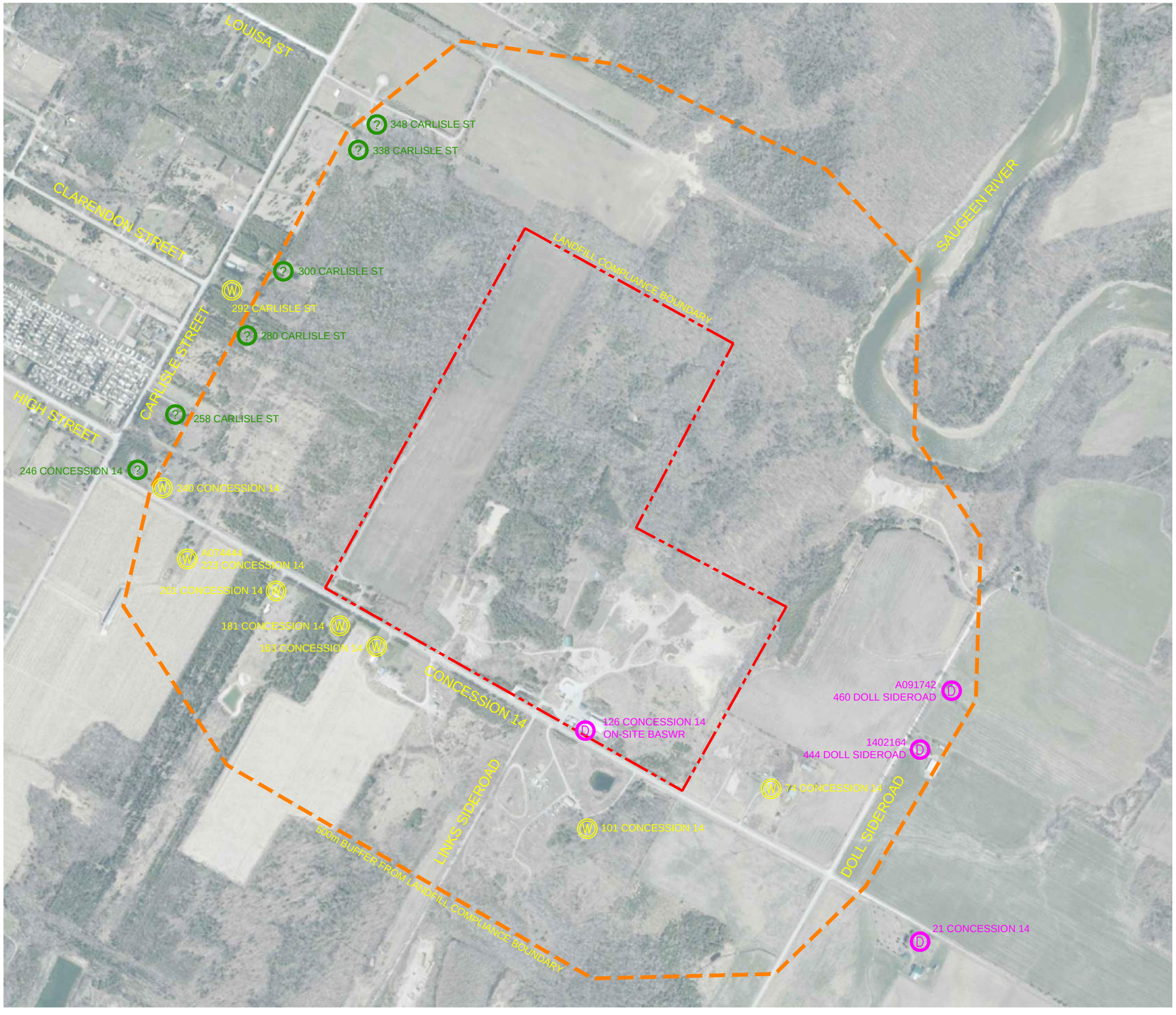
EXISTING CONDITIONS

126 Concession 14
Town of Saugeen Shores
County of Bruce

Figure No. 4

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Southampton Landfill Site

LEGEND

W 74 CONCESSION 14	SHALLOW/DUG DOMESTIC GROUNDWATER SUPPLY WELL LOCATION AND ADDRESS
D 126 CONCESSION 14	DRILLED DOMESTIC GROUNDWATER SUPPLY WELL LOCATION AND ADDRESS
? 126 CONCESSION 14	INFERRED WELL LOCATION BASED ON PROPERTY USE
	500m BUFFER FROM LANDFILL COMPLIANCE BOUNDARY
	LANDFILL COMPLIANCE BOUNDARY

SCALE = 1:10,000

MARCH 2026

AREA GROUNDWATER SUPPLY WELLS

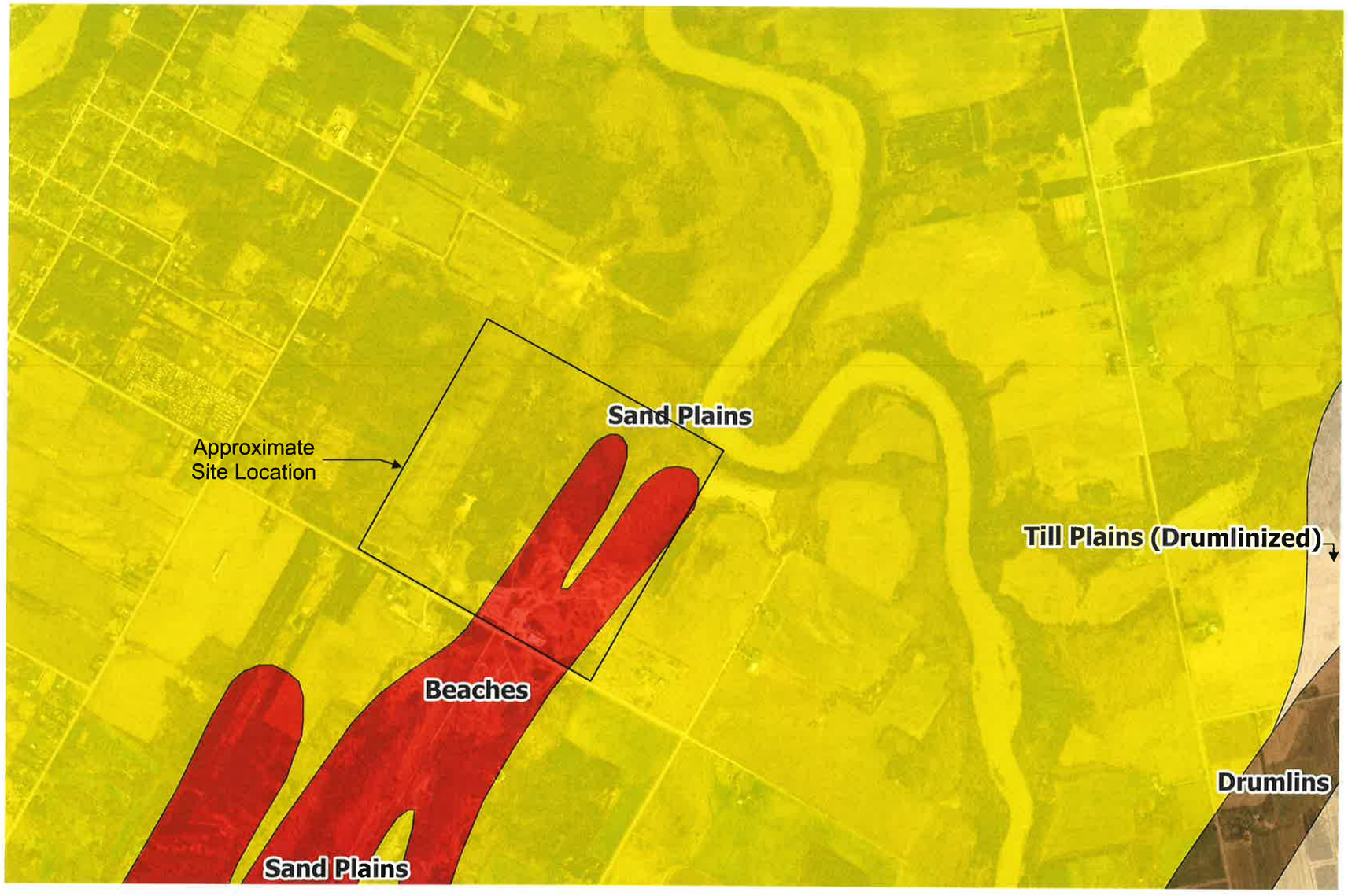
126 Concession 14
Town of Saugeen Shores
County of Bruce

Figure No. 5

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Town of Saugeen Shores
Waste Management EA



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MARCH 2026

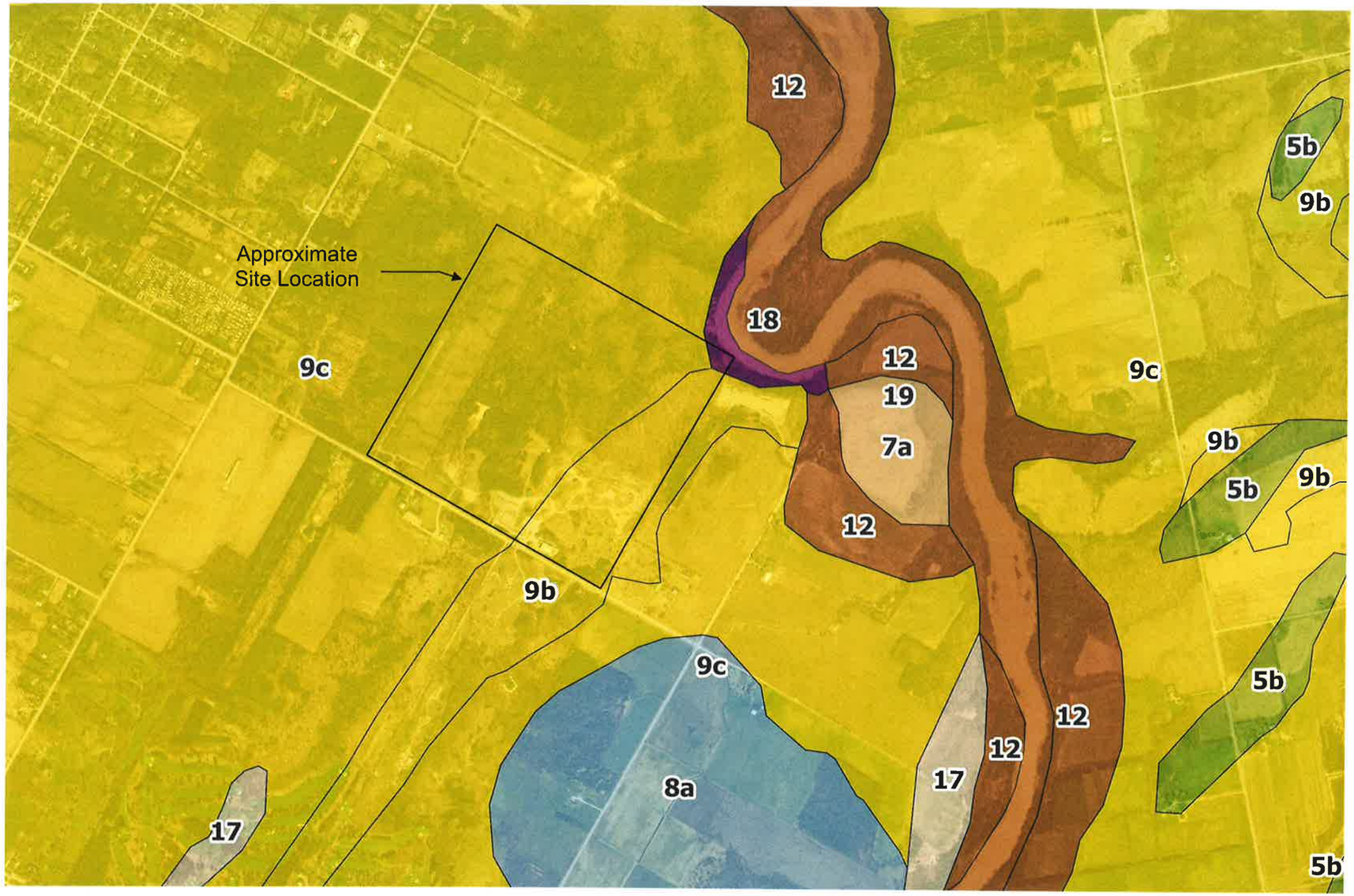
PHYSIOGRAPHY

Part Lots 10-12, Concession 15
Town of Saugeen Shores
County of Bruce

Figure No. 6A

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Town of Saugeen Shores
Waste Management EA



12 - Older Aluvial Deposits
17 - Eolian Deposits
18 - Colluvial Deposits
19 - Modern Alluvial Deposits
5b - Till
7a - Glaciofluvial Deposits
8a - Fine-textured Glaciolacustrine Deposits
9b - Littoral Deposits: Coarse-textured Glaciolacustrine Deposits (sand, gravel, minor silt and clay)
9c - Foreshore and Basinal Deposits: Coarse-textured Glaciolacustrine Deposits (sand, gravel, minor silt and clay)

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MARCH 2026

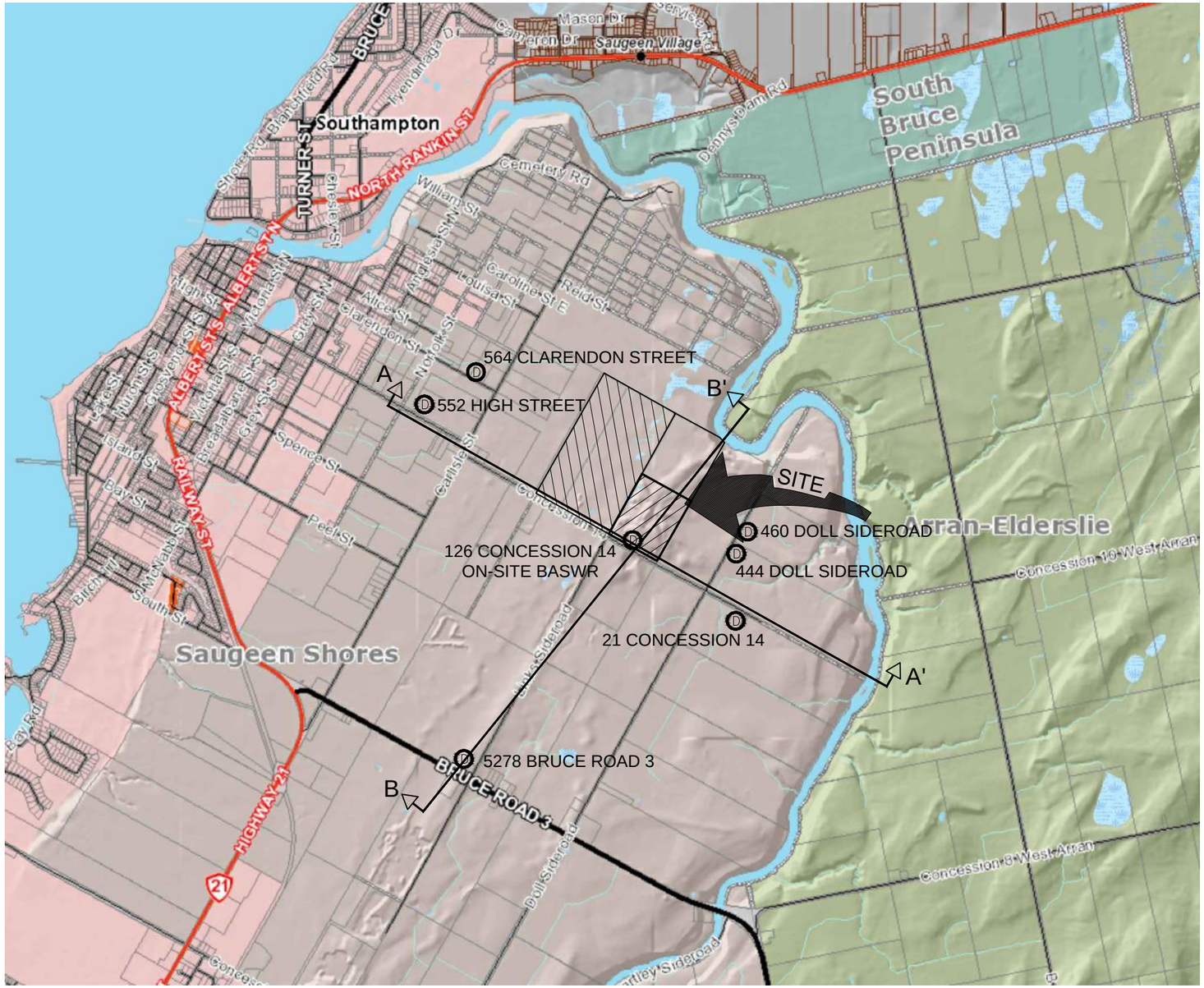
SURFICIAL GEOLOGY

Part Lots 10-12, Concession 15
Town of Saugeen Shores
County of Bruce

Figure No. 6B

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Southampton Landfill Site



LEGEND

D 126 CONCESSION 14 — DRILLED DOMESTIC GROUNDWATER SUPPLY WELL LOCATION AND ADDRESS

SCALE = N.T.S.
MARCH 2026

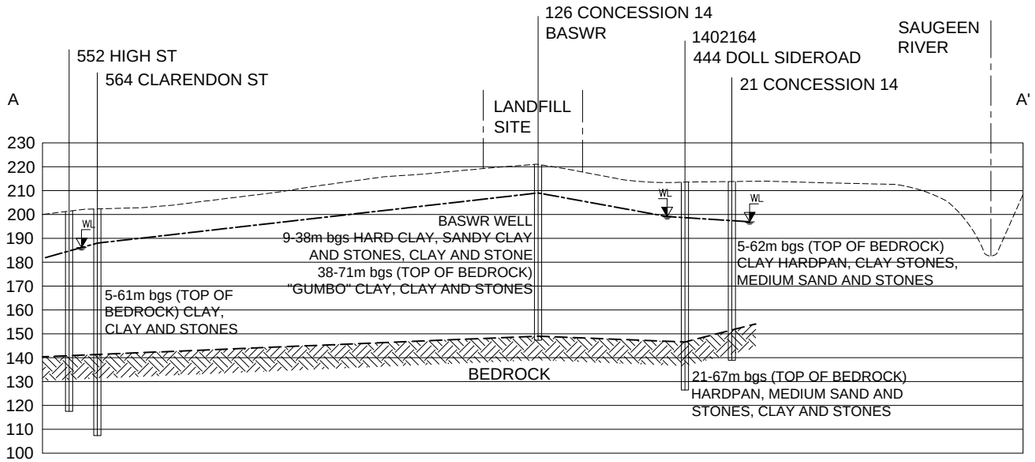
REGIONAL CROSS SECTIONS

126 Concession 14
Town of Saugeen Shores
County of Bruce

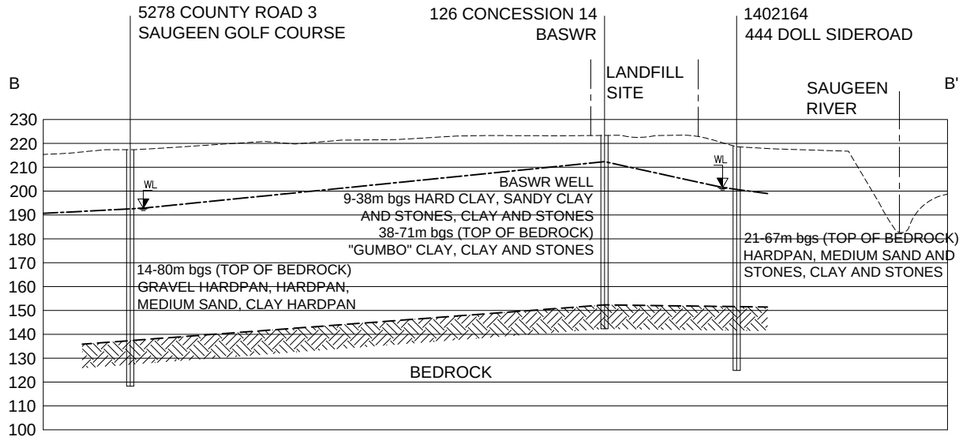
Figure No. 7A

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VERT. - 1:2,500



CROSS SECTION B-B'
SCALE = HOR. - 1:25,000
VERT. - 1:2,500

2401298
Hydrogeological Investigation
Southampton Landfill Site

LEGEND

NOTES

1. MONITORING WELLS WERE RE-SURVEYED ON MAY 4, 2023. MEASURING POINTS (MP) WERE UPDATED TO REFLECT THE ELEVATIONS MEASURED.
2. WELL No's TW-10, TW-16 AND TW-19 WERE DECOMMISSIONED OR REMOVED.

MARCH 2026

REGIONAL CROSS SECTIONS

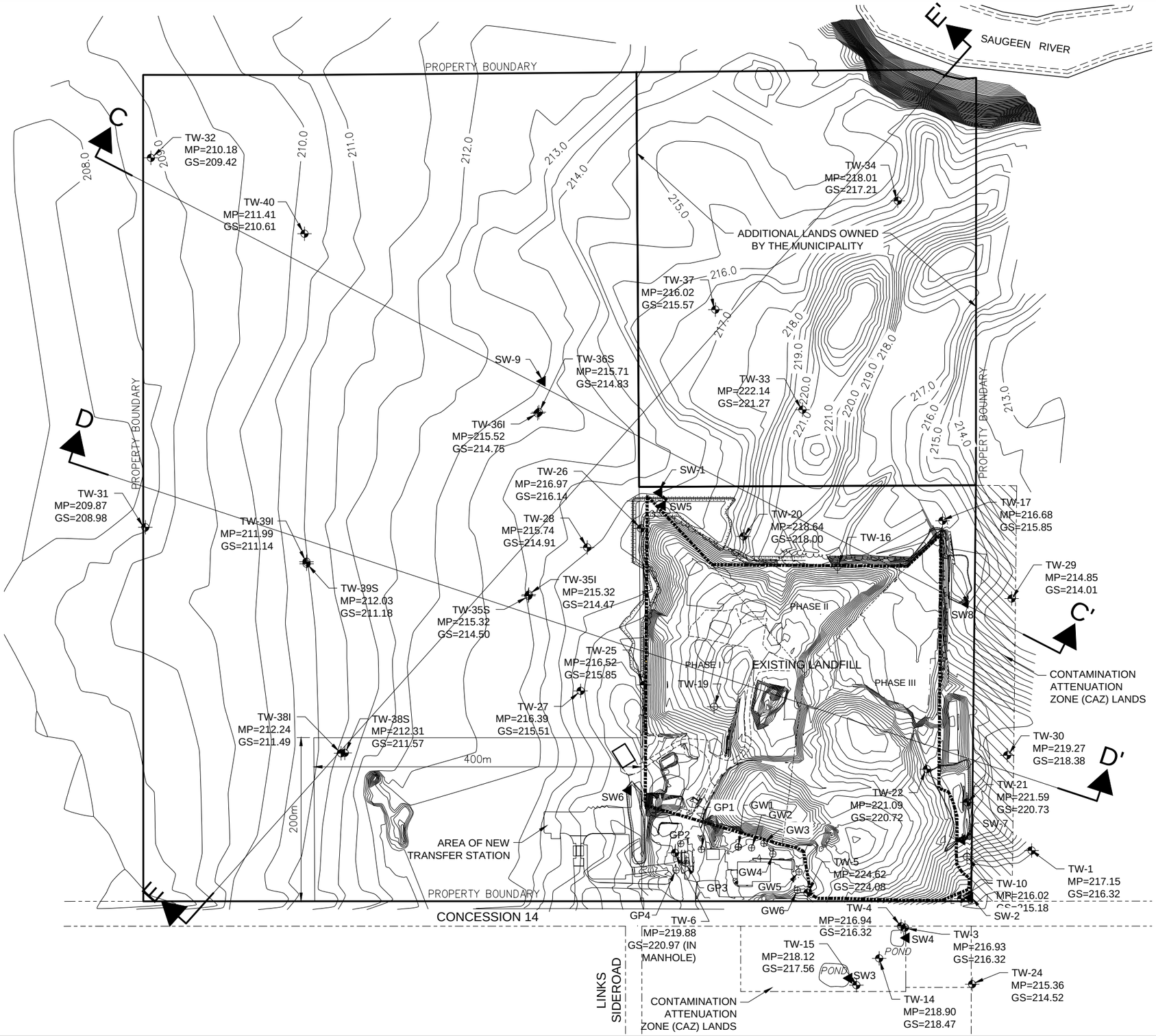
126 Concession 14
Town of Saugeen Shores
County of Bruce

Figure No. 7B

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Southampton Landfill Site



LEGEND

TW-1 ⊕	GROUNDWATER MONITORING WELL
TW-10 ⊕	FORMER GROUNDWATER MONITORING WELL LOCATION
SW-1 ◀	SURFACE WATER SAMPLING LOCATION
GP1/GW1 ⊕	GAS PROBE
	APPROVED LANDFILL FOOTPRINT
210	EXISTING GROUND CONTOUR (masl)
MP	MEASURING POINT ELEVATION (masl)
GS	GROUND SURFACE ELEVATION (masl)
	CONTAMINANT ATTENUATION ZONE (CAZ)

NOTES

1. MONITORING WELLS WERE RE-SURVEYED ON MAY 4, 2023. MEASURING POINTS (MP) WERE UPDATED TO REFLECT THE ELEVATIONS MEASURED.
2. WELL No's TW-10, TW-16 AND TW-19 WERE DECOMMISSIONED OR REMOVED.

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MARCH 2026

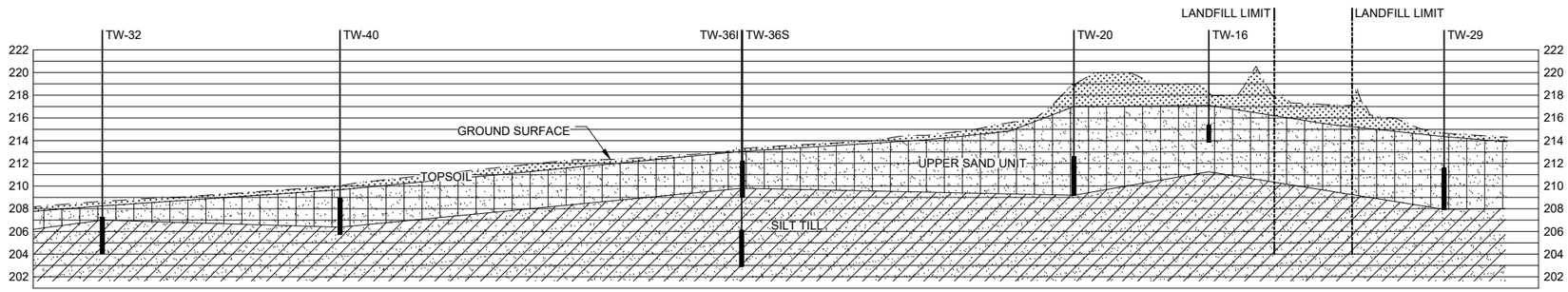
LOCAL CROSS-SECTION PLAN

126 Concession 14
Town of Saugeen Shores
County of Bruce

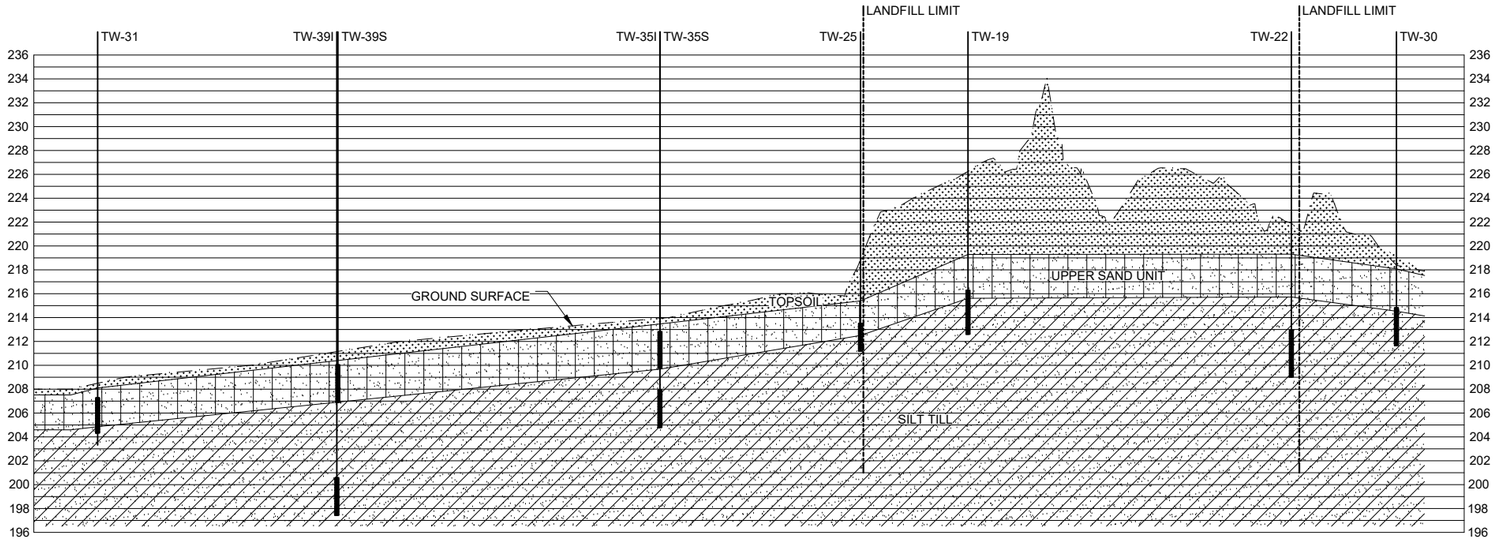
Figure No. 8A

GEI Consultants Canada

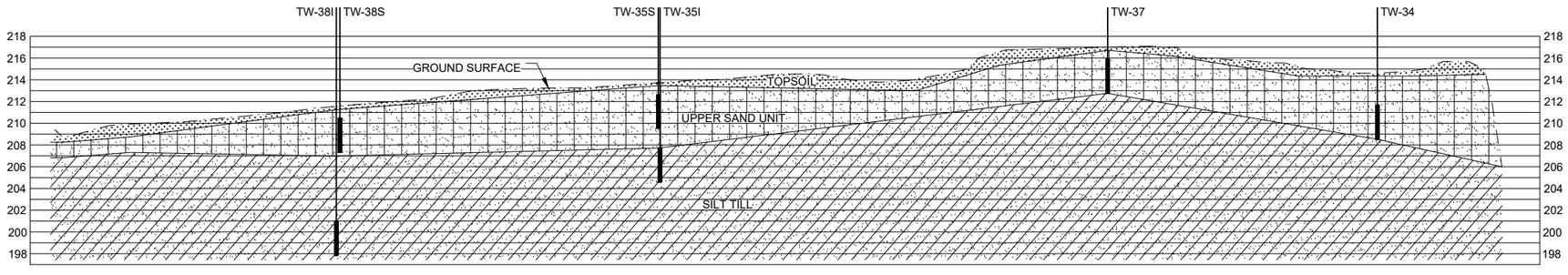
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CROSS SECTION D-D'
SCALE = HOR. - 1:5,000
VERT. - 1:500



CROSS SECTION E-E'
SCALE = HOR. - 1:5,000
VERT. - 1:500

2401298
Hydrogeological Investigation
Southampton Landfill Site

LEGEND

TW-1 ⊕	GROUNDWATER MONITORING WELL
TW-10 ⊕	FORMER GROUNDWATER MONITORING WELL LOCATION
SW-1 ◀	SURFACE WATER SAMPLING LOCATION
GP1/GW1 ⊕	GAS PROBE
	APPROVED LANDFILL FOOTPRINT
210	EXISTING GROUND CONTOUR (masl)
MP	MEASURING POINT ELEVATION (masl)
GS	GROUND SURFACE ELEVATION (masl)
	CONTAMINANT ATTENUATION ZONE (CAZ)

NOTES

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2. WELL No's TW-10, TW-16 AND TW-19 WERE DECOMMISSIONED OR REMOVED.

SCALE = 1:5,000
MARCH 2026

LOCAL CROSS SECTIONS

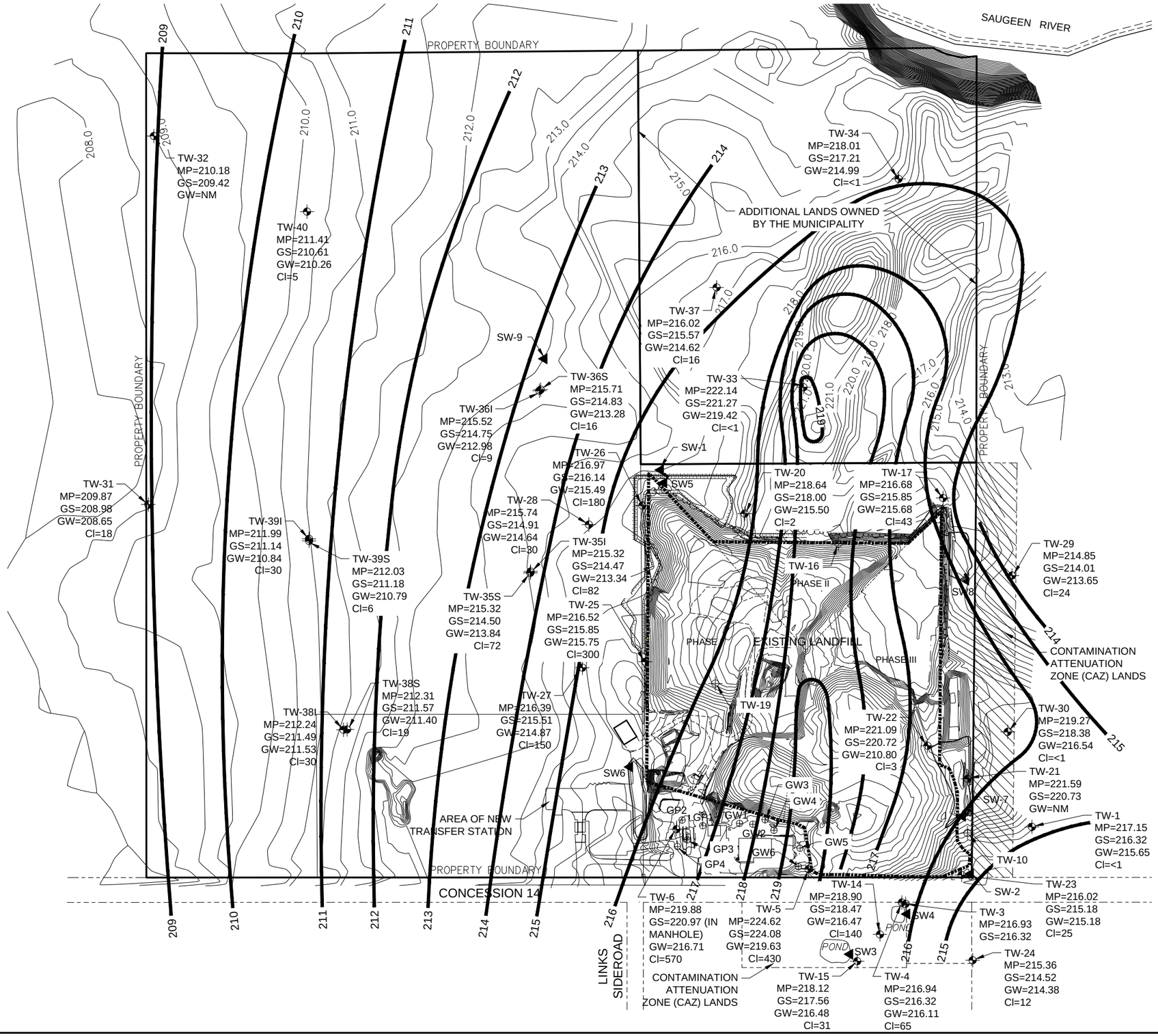
126 Concession 14
Town of Saugeen Shores
County of Bruce

Figure No. 8B

GEI Consultants Canada

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2401298
Hydrogeological Investigation
Southampton Landfill Site



LEGEND

TW-1	GROUNDWATER MONITORING WELL
TW-10	FORMER GROUNDWATER MONITORING WELL LOCATION
SW-1	SURFACE WATER SAMPLING LOCATION
GP1/GW1	GAS PROBE
	APPROVED LANDFILL FOOTPRINT
210	EXISTING GROUND CONTOUR (masl)
MP	MEASURING POINT ELEVATION (masl)
GS	GROUND SURFACE ELEVATION (masl)
	CONTAMINANT ATTENUATION ZONE (CAZ)
NM	NOT MEASURED
GW	GROUNDWATER ELEVATION (masl)
Cl	CHLORIDE CONCENTRATION (mg/L)
214	INTERPRETED GROUNDWATER CONTOUR

NOTES

1. MONITORING WELLS WERE RE-SURVEYED ON MAY 4, 2023. MEASURING POINTS (MP) WERE UPDATED TO REFLECT THE ELEVATIONS MEASURED.
2. WELL No's TW-10, TW-16 AND TW-19 WERE DECOMMISSIONED OR REMOVED.

SCALE = 1:5,000

MARCH 2026

GROUNDWATER FLOW AND CHLORIDE CONCENTRATIONS SPRING 2023

126 Concession 14
Town of Saugeen Shores
County of Bruce

Figure No. 9A

GEI Consultants Canada

FILE:C:\AutoCAD Drawings\2401298 Southampton LF Hydro G Figures.dwg LAYOUT:FIG 9A
LAST SAVED BY:Kenboe3954, 3/5/2026 5:13:56 PM PLOTTED BY:Boers, Ken 3/5/2026 5:34:40 PM

2401298
Hydrogeological Investigation
Southampton Landfill Site



LEGEND

TW-1 ⊕	GROUNDWATER MONITORING WELL
TW-10 ⊕	FORMER GROUNDWATER MONITORING WELL LOCATION
SW-1 ◀	SURFACE WATER SAMPLING LOCATION
GP1/GW1 ⊕	GAS PROBE
	APPROVED LANDFILL FOOTPRINT
210	EXISTING GROUND CONTOUR (masl)
MP	MEASURING POINT ELEVATION (masl)
GS	GROUND SURFACE ELEVATION (masl)
	CONTAMINANT ATTENUATION ZONE (CAZ)
NM	NOT MEASURED
GW	GROUNDWATER ELEVATION (masl)
Cl	CHLORIDE CONCENTRATION (mg/L)
214	INTERPRETED GROUNDWATER CONTOUR

NOTES

1. MONITORING WELLS WERE RE-SURVEYED ON MAY 4, 2023. MEASURING POINTS (MP) WERE UPDATED TO REFLECT THE ELEVATIONS MEASURED.
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SCALE = 1:5,000

MARCH 2026

GROUNDWATER FLOW AND CHLORIDE CONCENTRATIONS FALL 2023

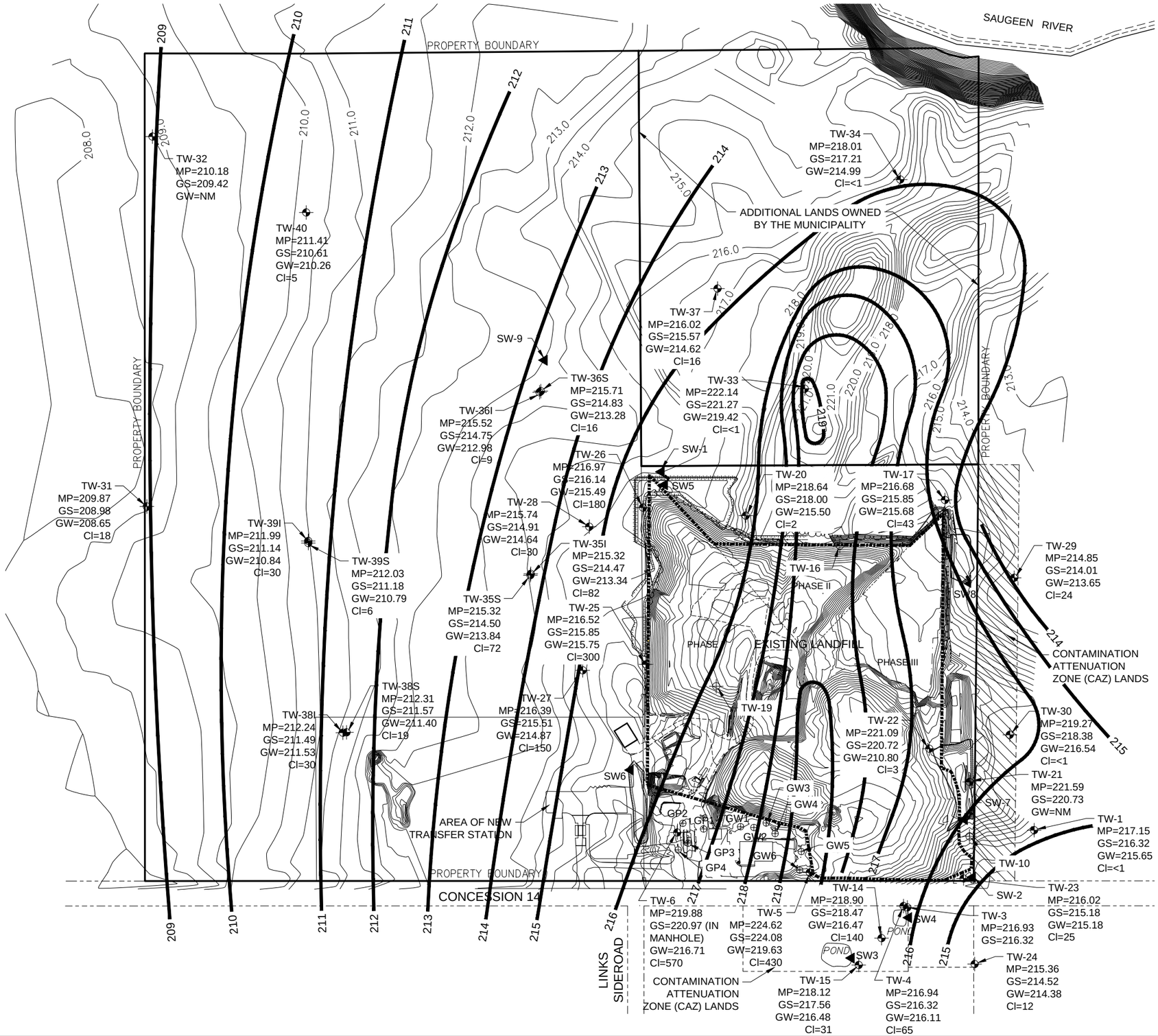
126 Concession 14
Town of Saugeen Shores
County of Bruce

Figure No. 9B

GEI Consultants Canada

FILE:C:\AutoCAD Drawings\2401298 Southampton LF Hydro G Figures.dwg LAYOUT:FIG 9B
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2401298
Hydrogeological Investigation
Southampton Landfill Site



LEGEND

TW-1	GROUNDWATER MONITORING WELL
TW-10	FORMER GROUNDWATER MONITORING WELL LOCATION
SW-1	SURFACE WATER SAMPLING LOCATION
GP1/GW1	GAS PROBE
	APPROVED LANDFILL FOOTPRINT
210	EXISTING GROUND CONTOUR (masl)
MP	MEASURING POINT ELEVATION (masl)
GS	GROUND SURFACE ELEVATION (masl)
	CONTAMINANT ATTENUATION ZONE (CAZ)
NM	NOT MEASURED
GW	GROUNDWATER ELEVATION (masl)
Cl	CHLORIDE CONCENTRATION (mg/L)
214	INTERPRETED GROUNDWATER CONTOUR

NOTES

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SCALE = 1:5,000

MARCH 2026

GROUNDWATER FLOW AND CHLORIDE CONCENTRATIONS SPRING 2024

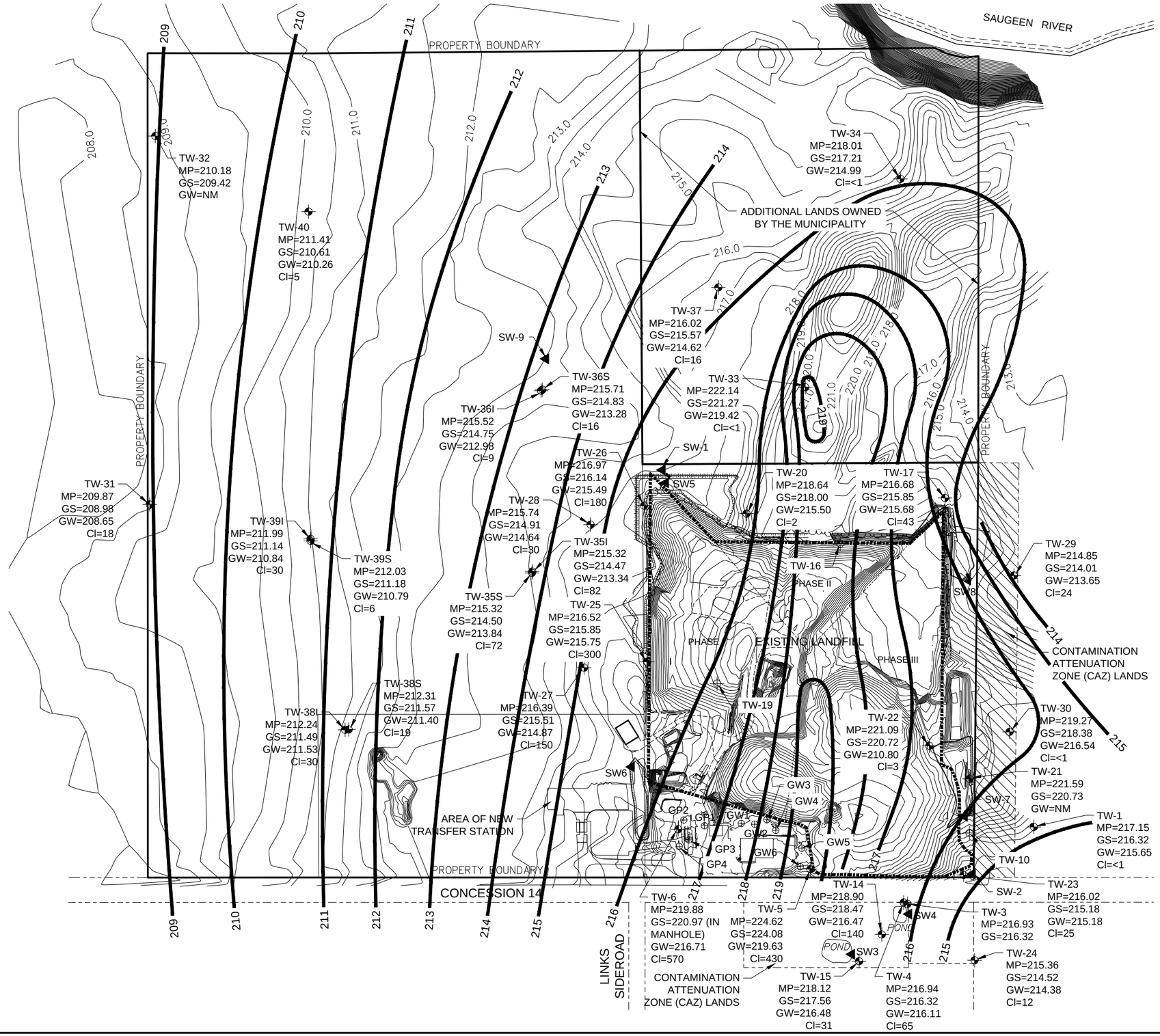
126 Concession 14
Town of Saugeen Shores
County of Bruce

Figure No. 9C

GEI Consultants Canada

FILE:C:\AutoCAD Drawings\2401298 Southampton LF Hydro G Figures.dwg LAYOUT:FIG 9C
LAST SAVED BY:Kenboe3954, 3/5/2026 5:13:56 PM PLOTTED BY:Boers, Ken 3/5/2026 5:34:45 PM

2401298
Hydrogeological Investigation
Southampton Landfill Site



LEGEND

TW-1	GROUNDWATER MONITORING WELL
TW-10	FORMER GROUNDWATER MONITORING WELL LOCATION
SW-1	SURFACE WATER SAMPLING LOCATION
GP1/GW1	GAS PROBE
	APPROVED LANDFILL FOOTPRINT
210	EXISTING GROUND CONTOUR (masl)
MP	MEASURING POINT ELEVATION (masl)
GS	GROUND SURFACE ELEVATION (masl)
	CONTAMINANT ATTENUATION ZONE (CAZ)
NM	NOT MEASURED
GW	GROUNDWATER ELEVATION (masl)
Cl	CHLORIDE CONCENTRATION (mg/L)
214	INTERPRETED GROUNDWATER CONTOUR

NOTES

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SCALE = 1:5,000

MARCH 2026

GROUNDWATER FLOW AND CHLORIDE CONCENTRATIONS FALL 2024

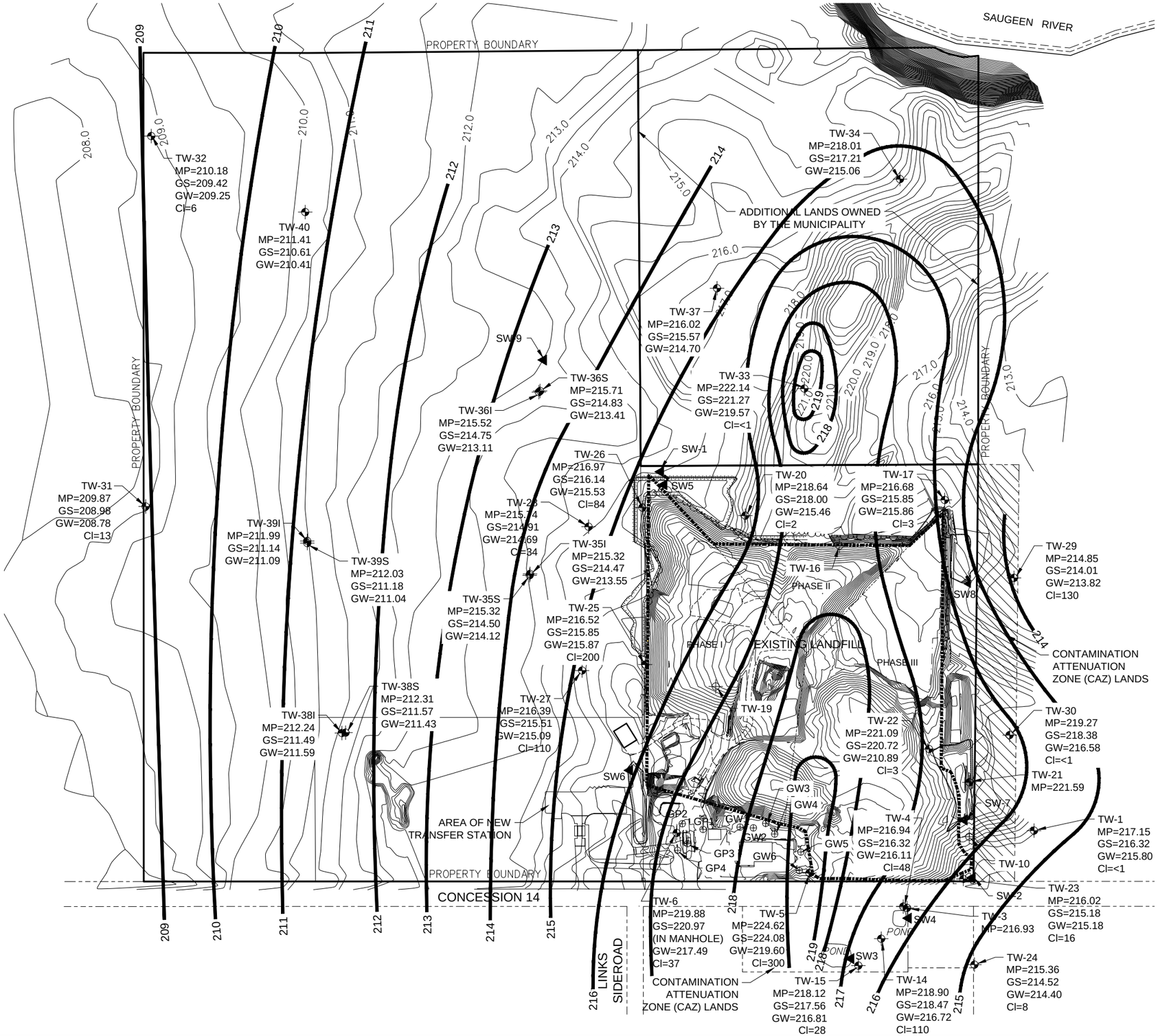
126 Concession 14
Town of Saugeen Shores
County of Bruce

Figure No. 9D

GEI Consultants Canada

FILE:C:\AutoCAD Drawings\2401298 Southampton LF Hydro G Figures.dwg LAYOUT:FIG 9D
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2401298
Hydrogeological Investigation
Southampton Landfill Site



LEGEND

TW-1 ⊕	GROUNDWATER MONITORING WELL
TW-10 ⊕	FORMER GROUNDWATER MONITORING WELL LOCATION
SW-1 ◀	SURFACE WATER SAMPLING LOCATION
GP1/GW1 ⊕	GAS PROBE
▬▬▬	APPROVED LANDFILL FOOTPRINT
210	EXISTING GROUND CONTOUR (masl)
MP	MEASURING POINT ELEVATION (masl)
GS	GROUND SURFACE ELEVATION (masl)
▨	CONTAMINANT ATTENUATION ZONE (CAZ)
NM	NOT MEASURED
GW	GROUNDWATER ELEVATION (masl)
Cl	CHLORIDE CONCENTRATION (mg/L)
214	INTERPRETED GROUNDWATER CONTOUR

NOTES

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SCALE = 1:5,000

MARCH 2026

GROUNDWATER FLOW AND CHLORIDE CONCENTRATIONS SPRING 2025

126 Concession 14
Town of Saugeen Shores
County of Bruce

Figure No. 9E

GEI Consultants Canada

FILE:C:\AutoCAD Drawings\2401298 Southampton LF Hydro G Figures.dwg LAYOUT:FIG 9E
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2401298
Hydrogeological Investigation
Southampton Landfill Site

SAUGEEN RIVER

PROPERTY BOUNDARY

ADDITIONAL LANDS OWNED BY THE MUNICIPALITY

EXISTING LANDFILL

PHASE I

PHASE II

PHASE III

AREA OF NEW TRANSFER STATION

CONTAMINATION ATTENUATION ZONE (CAZ) LANDS

LINKS SIDEROAD

CONCESSION 14

POND

TW-32
MP=210.18
GS=209.42
GW=208.22
Cl=5

TW-40
MP=211.41
GS=210.61
GW=209.38
Cl=1

TW-31
MP=209.87
GS=208.98
GW=207.98
Cl=10

TW-39I
MP=211.99
GS=211.14
GW=209.73
Cl=8

TW-39S
MP=212.03
GS=211.18
GW=209.72
Cl=13

TW-38S
MP=212.31
GS=211.57
GW=210.35
Cl=12

TW-38I
MP=212.24
GS=211.49
GW=210.05
Cl=12

SW-9

TW-36S
MP=215.71
GS=214.83
GW=212.26
Cl=12

TW-36I
MP=215.52
GS=214.75
GW=211.90
Cl=5

TW-35S
MP=215.32
GS=214.50
GW=212.76
Cl=50

TW-35I
MP=215.32
GS=214.47
GW=212.24
Cl=77

TW-28
MP=215.74
GS=214.91
GW=213.51
Cl=48

TW-26
MP=216.97
GS=216.14
GW=214.17
Cl=120

TW-27
MP=216.39
GS=213.51
GW=213.83
Cl=150

TW-25
MP=216.52
GS=215.85
GW=214.95
Cl=210

TW-37
MP=216.02
GS=215.57
GW=213.54
Cl=5

TW-33
MP=222.14
GS=221.27
GW=215.99
Cl=<1.0

TW-20
MP=218.64
GS=218.00
GW=214.32
Cl=NM

TW-16
PHASE II

TW-19

TW-22
MP=221.09
GS=220.72
GW=210.22
Cl=<1.0

TW-17
MP=216.68
GS=215.85
GW=NM
Cl=NM

TW-29
MP=214.85
GS=214.01
GW=213.32
Cl=170

TW-30
MP=219.27
GS=218.38
GW=DRY

TW-21
MP=221.59
GS=220.73
GW=NM

TW-1
MP=217.15
GS=216.32
GW=215.37
Cl=<1

TW-10

TW-23
MP=216.02
GS=215.18
GW=212.87
Cl=19

TW-2

TW-3
MP=216.93
GS=216.32

TW-24
MP=215.36
GS=214.52
GW=213.52
Cl=5

TW-4
MP=216.94
GS=216.32
GW=215.79

TW-15
MP=218.12
GS=217.56
GW=215.36

TW-14
MP=218.90
GS=218.47
GW=215.59
Cl=56

TW-5
MP=224.62
GS=224.08
GW=218.79
Cl=350

TW-6
MP=219.88
GS=220.97
(IN MANHOLE)
GW=216.01
Cl=180

SW1
SW2
SW3
SW4
SW5
SW6
SW7
SW8

GP1
GP2
GP3
GP4
GW1
GW2
GW3
GW4
GW5
GW6

LEGEND

TW-1 ⊕	GROUNDWATER MONITORING WELL
TW-10 ⊕	FORMER GROUNDWATER MONITORING WELL LOCATION
SW-1 ◀	SURFACE WATER SAMPLING LOCATION
GP1/GW1 ⊕	GAS PROBE
▬▬▬	APPROVED LANDFILL FOOTPRINT
210	EXISTING GROUND CONTOUR (masl)
MP	MEASURING POINT ELEVATION (masl)
GS	GROUND SURFACE ELEVATION (masl)
▨	CONTAMINANT ATTENUATION ZONE (CAZ)
NM	NOT MEASURED
GW	GROUNDWATER ELEVATION (masl)
Cl	CHLORIDE CONCENTRATION (mg/L)
214	INTERPRETED GROUNDWATER CONTOUR

NOTES

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SCALE = 1:5,000

MARCH 2026

GROUNDWATER FLOW AND CHLORIDE CONCENTRATIONS FALL 2025

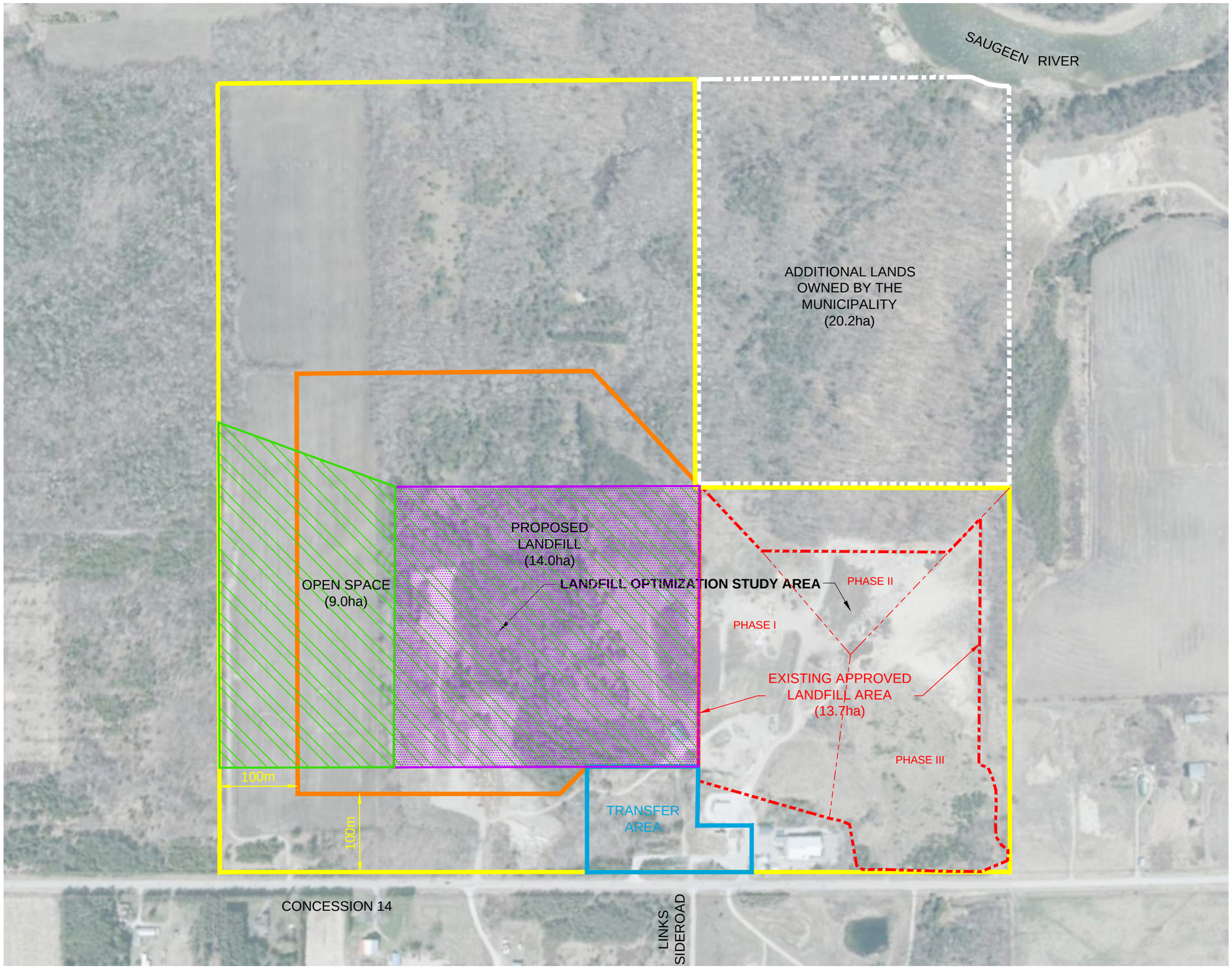
126 Concession 14
Town of Saugeen Shores
County of Bruce

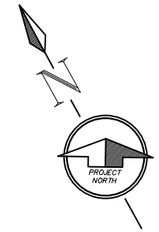
Figure No. 9F

GEI Consultants Canada

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2401298
Hydrogeological Investigation
Southampton Landfill Site





LEGEND

AREA CONTRIBUTING
LEACHATE

AREA CONTRIBUTING
INFILTRATION

SCALE : 1:5,000
MARCH 2026

ATTENUATION CALCULATION SCENARIO 1

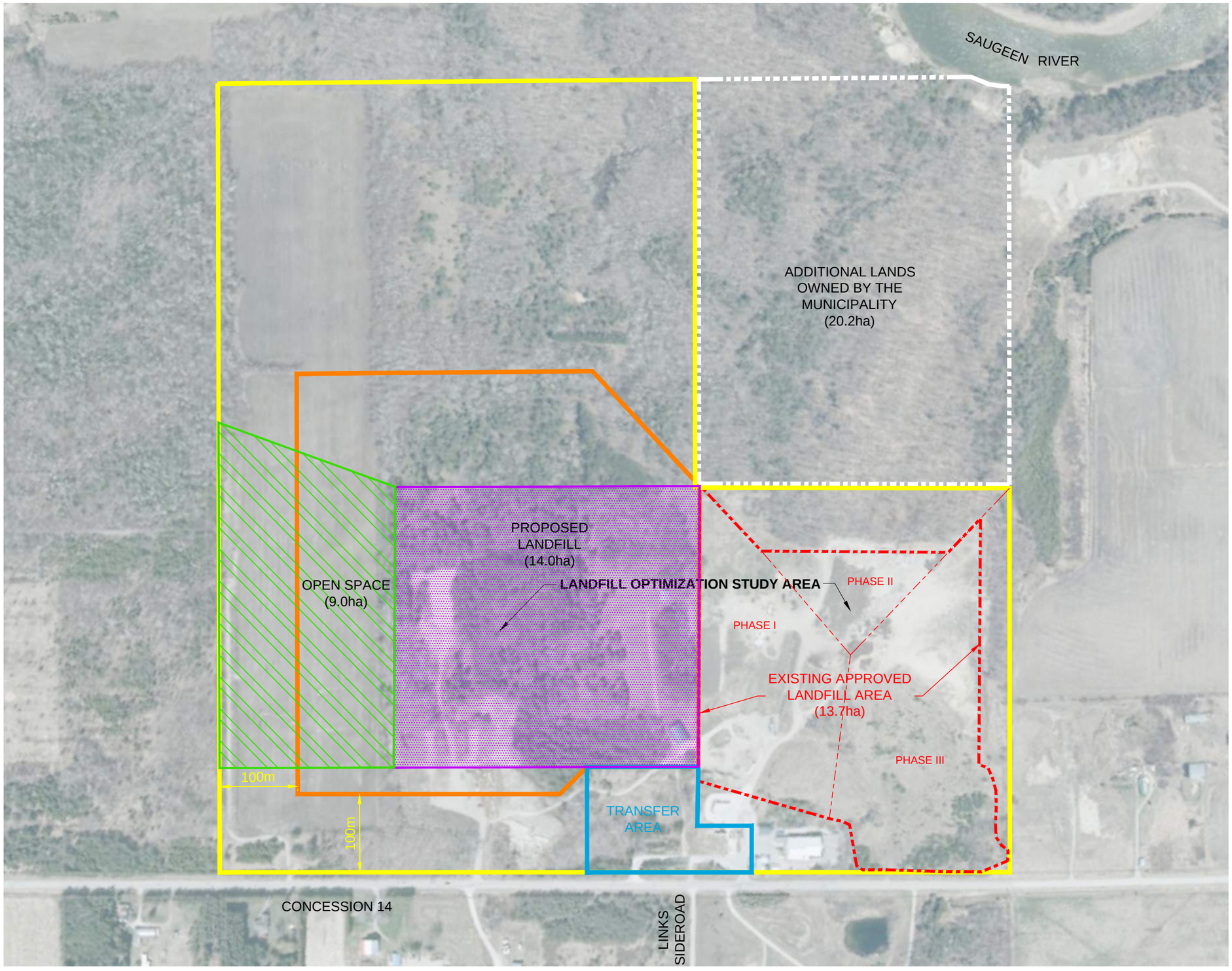
Part Lots 10-12, Concession 15
Town of Saugeen Shores
County of Bruce

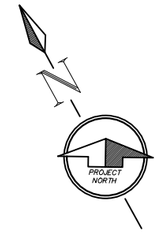
Figure No. 10A

GEI Consultants Canada

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2401298
Hydrogeological Investigation
Southampton Landfill Site





LEGEND

AREA CONTRIBUTING
LEACHATE

AREA CONTRIBUTING
INFILTRATION

SCALE : 1:5,000
MARCH 2026

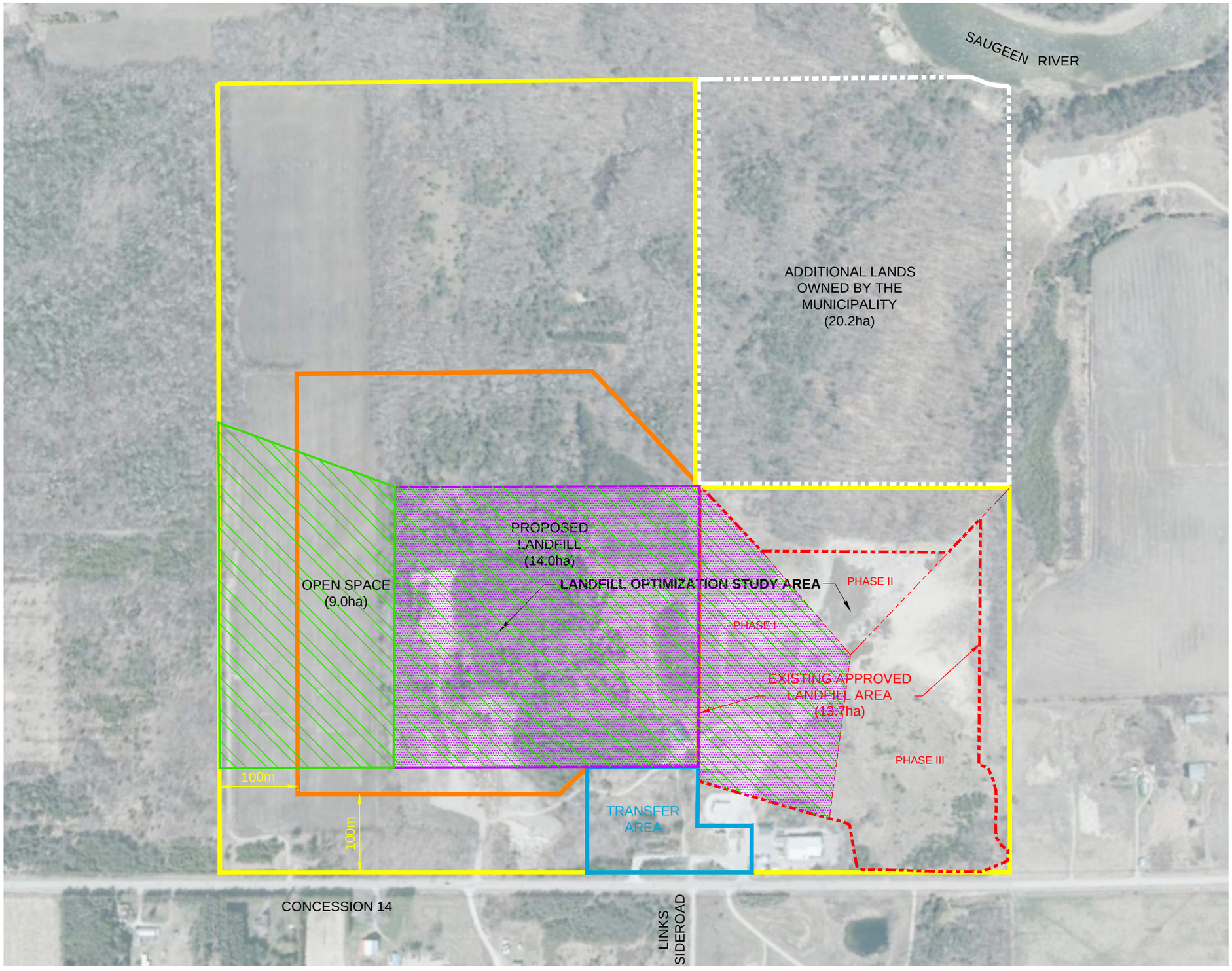
ATTENUATION CALCULATION SCENARIO 2

Part Lots 10-12, Concession 15
Town of Saugeen Shores
County of Bruce

Figure No. 10B

GEI Consultants Canada

FILE:C:\AutoCAD Drawings\2401298 AMR Figures 2.dwg LAYOUT:Attenuation-2
LAST SAVED BY:Kenboe3954, 3/5/2026 5:40:22 PM PLOTTED BY:Boers, Ken 3/9/2026 11:04:21 AM



2401298
Hydrogeological Investigation
Southampton Landfill Site

PROJECT NORTH

LEGEND

AREA CONTRIBUTING LEACHATE

AREA CONTRIBUTING INFILTRATION

SCALE : 1:5,000
MARCH 2026

ATTENUATION CALCULATION SCENARIO 3

Part Lots 10-12, Concession 15
Town of Saugeen Shores
County of Bruce

Figure No. 10C

GEI Consultants Canada

FILE:C:\AutoCAD Drawings\2401298 AMR Figures 2.dwg LAYOUT:Attenuation-3
LAST SAVED BY:Kenboe3954, 3/5/2026 5:40:22 PM PLOTTED BY:Boers, Ken 3/9/2026 11:04:23 AM

APPENDIX A
ENVIRONMENTAL COMPLIANCE APPROVAL

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL
NUMBER A273101
Issue Date: March 5, 2022

The Corporation of the Town of Saugeen Shores
600 Tomlinson Dr
Saugeen Shores, Ontario
N0H 2C0

Site Location: Southampton Landfill Site
126 Concession 14
Part Lots 10, 11 and 12, Concession 15
Saugeen Shores Town, County of Bruce
N0H 2L0

You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:

the use and operation of 20.2 hectare waste disposal/transfer site within a total site area of 80.43 hectares.

For the purpose of this environmental compliance approval, the following definitions apply:

"Approval" means this Environmental Compliance Approval and any Schedules to it, including the application and supporting documentation listed in Schedule "A";

"Contaminating Life Span" means contaminating life span as defined in Ontario Regulation 232/98;

"Director" means any Ministry employee appointed in writing by the Minister pursuant to section 5 of the EPA as a Director for the purposes of Part II.1 of the EPA;

"District Manager" means the District Manager of the local district office of the Ministry in which the Site is geographically located;

"EPA" means Environmental Protection Act, R.S.O. 1990, c. E. 19, as amended;

"Ministry" means the Ontario Ministry of the Environment, Conservation and Parks;

"NMA" means Nutrient Management Act, 2002, S.O. 2002, c. 4, as amended from time to time;

"Operator" means any person, other than the Owner's employees, authorized by the Owner as having the charge, management or control of any aspect of the Site and includes its successors or assigns;

"Owner" means any person that is responsible for the establishment or operation of the Site being approved by this Approval, and includes The Corporation of the Town of Saugeen Shores, its successors and assigns;

"OWRA" means the Ontario Water Resources Act, R.S.O. 1990, c. O.40, as amended;

"PA" means the Pesticides Act, R.S.O. 1990, c. P-11, as amended from time to time;

"Provincial Officer" means any person designated in writing by the Minister as a provincial officer pursuant to Section 5 of the OWRA or Section 5 of the EPA or Section 17 of PA or Section 4 of NMA or Section 8 of SDWA;

"Regional Director" means the Regional Director of the local Regional Office of the Ministry in which the Site is located;

"Regulation 347" or "Reg. 347" means R.R.O. 1990, Regulation 347: GENERAL-WASTE MANAGEMENT, made under the EPA, as amended;

"SDWA" means Safe Drinking Water Act, 2002, S.O. 2002, c. 32, as amended from time to time;

"Site" means the entire waste disposal site, including the buffer lands, and contaminant attenuation zone at 126 Concession Road 14, Part Lots 10, 11 and 12, Concession 15, Town of Saugeen Shores, County of Bruce; and

"Trained personnel" means personnel who have received annual training as per the Owner's training program and have the general knowledge of the following:

a. relevant waste management legislation, regulations and guidelines;
b. major environmental concerns pertaining to the waste to be handled;
c. occupational health and safety concerns pertaining to the processes and wastes to be handled;
d. management procedures including the use and operation of equipment for the processes and wastes to be handled;
e. emergency response procedures;
f. specific procedures for the control of nuisance conditions;
g. specific procedures for refusal of unacceptable waste loads; and
h. the requirements of this Approval.

You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. GENERAL

Compliance

(1) The Owner and Operator shall ensure compliance with all the conditions of this Approval and shall ensure that any person authorized to carry out work on or operate any aspect of the Site is notified of this Approval and the conditions herein and shall take all reasonable measures to ensure any such person complies with the same.

(2) Any person authorized to carry out work on or operate any aspect of the Site shall comply with the conditions of this Approval.

In Accordance

(3) Except as otherwise provided by this Approval, the Site shall be designed, developed, built, operated and maintained in accordance with the documentation listed in the attached Schedule “A”.

Interpretation

(4) Where there is a conflict between a provision of any document listed in Schedule "A" in this Approval, and the conditions of this Approval, the conditions in this Approval shall take precedence.

(5) Where there is a conflict between the application and a provision in any document listed in Schedule "A", the application shall take precedence, unless it is clear that the purpose of the document was to amend the application and that the Ministry approved the amendment.

(6) Where there is a conflict between any two documents listed in Schedule "A", the document bearing the most recent date shall take precedence.

(7) The conditions of this Approval are severable. If any condition of this Approval, or the application of any condition of this Approval to any circumstance, is held invalid or unenforceable, the application of such condition to other circumstances and the remainder of this Approval shall not be affected thereby.

Other Legal Obligations

(8) The issuance of, and compliance with, this Approval does not:
   (a) relieve any person of any obligation to comply with any provision of any applicable statute, regulation or other legal requirement; or
   (b) limit in any way the authority of the Ministry to require certain steps be taken or to require the Owner and Operator to furnish any further information related to compliance with this Approval.

Adverse Effect

(9) The Owner and Operator shall take steps to minimize and ameliorate any adverse effect on the natural environment or impairment of water quality resulting from the Site, including such accelerated or additional monitoring as may be necessary to determine the nature and extent of the effect or impairment.

(10) Despite an Owner, Operator or any other person fulfilling any obligations imposed by this Approval the person remains responsible for any contravention of any other condition of this Approval or any applicable statute, regulation, or other legal requirement resulting from any act or omission that caused the adverse effect to the natural environment or impairment of water quality.

Change of Ownership

(11) The Owner shall notify the Director, in writing, and forward a copy of the notification to the District Manager, within 30 days of the occurrence of any changes in the following information:
   (a) the ownership of the Site;
   (b) the Operator of the Site;
   (c) the address of the Owner or Operator; and
   (d) the partners, where the Owner or Operator is or at any time becomes a partnership and a copy of the most recent declaration filed under the Business Names Act, R. S. O. 1990, c. B.17, shall be included in the notification.

(12) No portion of this Site shall be transferred or encumbered prior to or after closing of the Site unless the Director is notified in advance and sufficient financial assurance is deposited with the Ministry to ensure that these conditions will be carried out.

(13) In the event of any change in Ownership of the Site, other than change to a successor Owner, the Owner shall notify the successor of and provide the successor with a copy of this Approval, and the Owner shall provide a copy of the notification to the District Manager and the Director.

Certificate of Requirement/Registration on Title

(14) The Owner shall:

(a) Within sixty (60) days of the date of the issuance of this Approval, submit to the Director for review, two copies of a completed Certificate of Requirement with a registerable description of the Site; and

(b) Within 10 calendar days of receiving the Certificate of Requirement authorized by the Director, register the Certificate of Requirement in the appropriate Land Registry Office on title to the Site and submit to the Director and the District Manager the duplicate registered copy immediately following registration.

(15) Pursuant to Section 197 of the Environmental Protection Act, neither the Owner nor any person having an interest in the Site shall deal with the Site in any way without first giving a copy of this Approval to each person acquiring an interest in the Site as a result of the dealing.

Inspections by the Ministry

(16) No person shall hinder or obstruct a Provincial Officer from carrying out any and all inspections authorized by the OWRA, the EPA, the PA, the SDWA or the NMA, of any place to which this Approval relates, and without limiting the foregoing:

(a) to enter upon the premises where the approved works are located, or the location where the records required by the conditions of this Approval are kept;
(b) to have access to, inspect, and copy any records required to be kept by the conditions of this Approval;
(c) to inspect the Site, related equipment and appurtenances;
(d) to inspect the practices, procedures, or operations required by the conditions of this Approval; and
(e) to sample and monitor for the purposes of assessing compliance with the terms and conditions of this Approval or the EPA, the OWRA, the PA, the SDWA or the NMA.

Information and Record Retention

(17) (a) Except as authorized in writing by the Director, all records required by this ECA shall be retained at the Site for a minimum of two (2) years from their date of creation.

(b) The Owner shall retain all documentation listed in Schedule "A" for as long as this ECA is valid.

(c) All monthly summary reports are to be kept at the Site until they are included in the Annual Report.

(d) The Owner shall retain employee training records as long as the employee is working at the Site.

(e) The Owner shall make all of the above documents available for inspection upon request of Ministry staff.

(18) The receipt of any information by the Ministry or the failure of the Ministry to prosecute any person or to require any person to take any action, under this Approval or under any statute, regulation or other legal requirement, in relation to the information, shall not be construed as:
(a) an approval, waiver, or justification by the Ministry of any act or omission of any person that contravenes any term or condition of this Approval or any statute, regulation or other legal requirement; or
(b) acceptance by the Ministry of the information's completeness or accuracy.

(19) The Owner shall ensure that a copy of this Approval, in its entirety and including all its Notices of Amendment, and documentation listed in Schedule "A", are retained at the Site at all times.

2. SITE OPERATION

Operation

(1) The Site shall be operated and maintained at all time including management and disposal of all waste in accordance with the EPA, Regulation 347, and the conditions of this Approval. At no time shall the discharge of a contaminant that causes or is likely to cause an adverse effect be permitted.

Signs

(2) A sign shall be installed and maintained at the main entrance/exit to the Site on which is legibly displayed the following information:
(a) the name of the Site and Owner;
(b) the number of the Approval;
(c) the name of the Operator;
(d) the normal hours of operation;
(e) the allowable and prohibited waste types;
(f) the telephone number to which complaints may be directed;
(g) a warning against unauthorized access;
(h) a twenty-four (24) hour emergency telephone number (if different from above); and
(i) a warning against dumping outside the Site.

(3) The Owner shall install and maintain signs to direct vehicles to working face and recycling areas.

(4) The Owner shall provide signs at recycling depot informing users what materials are acceptable and directing users to appropriate storage area.

Vermin, Vectors, Dust, Litter, Odour, Noise and Traffic

(5) The Site shall be operated and maintained such that the vermin, vectors, dust, litter, odour, noise and traffic do not create a nuisance.

Burning Waste Prohibited

(6) (a) Burning of waste at the Site is prohibited.

(b) Notwithstanding Condition 2. (6) (a) above, burning of segregated, clean wood and brush at the landfill may be carried out in strict compliance with the Ministry of the Environment Document titled "Guideline C-7, Burning at Landfill Sites" dated April 1994.

(c) Access to the burning area by the public is prohibited while burning occurs.

Site Access

(7) Waste shall only be accepted during the following time periods:

Monday, Wednesday and Friday:	9 a.m. to 5 p.m.
Saturday:	9 a.m. to 4 p.m.

(8) On-site equipment used for daily site preparation and closing activities may be operated from Monday to Saturday from 7:00 a.m. to 7:00 p.m.

(9) With the prior written approval from the District Manager, the time periods may be extended to accommodate seasonal or unusual quantities of waste.

Site Security

(10) No waste shall be received, landfilled or removed from the Site unless a site supervisor or an attendant is present and supervises the operations during operating hours. The Site shall be closed when a site attendant is not present to supervise landfilling operations.

(11) The Site shall be operated and maintained in a safe and secure manner. During non-operating hours, the Site entrance and exit gates shall be locked and the Site shall be secured against access by unauthorized persons.

3. EMPLOYEE TRAINING

(1) A training plan for all employees that operate any aspect of the Site shall be developed and implemented by the Operator. Only Trained Personnel shall operate any aspect of the Site or carry out any activity required under this Approval.

4. COMPLAINTS RESPONSE PROCEDURE

(1) If at any time the Owner receives complaints regarding the operation of the Site, the Owner shall respond to these complaints according to the following procedure:

(a) The Owner shall record and number each complaint, either electronically or in a log book, and shall include the following information: the nature of the complaint, the name, address and the telephone number of the complainant if the complainant will provide this information and the time and date of the complaint;
(b) The Owner, upon notification of the complaint, shall initiate appropriate steps to determine possible causes of the complaint, proceed to take the necessary actions to eliminate the cause of the complaint and forward a formal reply to the complainant; and
(c) Upon review. the Owner shall complete and retain a record of the complaint within municipal files, listing the actions taken to resolve the complaint and any recommendations for remedial measures, and managerial or operational changes to reasonably avoid the recurrence of similar incidents.

5. EMERGENCY RESPONSE

(1) Any spills, fires or other emergency situations shall be forthwith reported directly to the Ministry's Spills Action Centre (1-800-268-6060) and shall be cleaned up immediately.

(2) In addition, the Owner shall submit, to the District Manager a written report outlining the nature of the incident, and a summary of remedial actions taken and the measures taken to prevent future occurrences at the Site.

(3) All wastes resulting from an emergency situation shall be managed and disposed of in accordance with O.Reg. 347.

(4) All equipment and materials required to handle the emergency situations shall be:
(a) kept on hand at all times that waste landfilling and/or handling is undertaken at the Site; and
(b) adequately maintained and kept in good repair.

(5) The Owner shall ensure that the emergency response personnel are familiar with the use of such equipment and its location(s).

6. RECORD KEEPING AND REPORTING

Daily Log Book

(1) A daily log shall be maintained in written format and shall include the following information:
   (a) the type, date and time of arrival, hauler, and quantity (tonnes) of all waste and cover material received at the Site;
   (b) the area of the Site in which waste disposal operations are taking place;
   (c) a record of litter collection activities and the application of any dust suppressants;
   (d) a record of the daily inspections; and
   (e) a description of any out-of-service period of any control, treatment, disposal or monitoring facilities, the reasons for the loss of service, and action taken to restore and maintain service.

(2) Any information requested, by the Director or a Provincial Officer, concerning the Site and its operation under this Approval, including but not limited to any records required to be kept by this Approval shall be provided to the Ministry, upon request.

Daily Inspections and Log Book

(3) An inspection of the entire Site and all equipment on the Site shall be conducted each day the Site is in operation to ensure that: the Site is secure; that the operation of the Site is not causing any nuisances; that the operation of the Site is not causing any adverse effects on the environment and that the Site is being operated in compliance with this Approval. Any deficiencies discovered as a result of the inspection shall be remedied immediately, including temporarily ceasing operations at the Site if needed**.**

(4) A record of the inspections shall be kept in a daily log book that includes:
   (a) the name and signature of person that conducted the inspection;
   (b) the date and time of the inspection;
   (c) the list of any deficiencies discovered;
   (d) the recommendations for remedial action; and
   (e) the date, time and description of actions taken.

(5) A record shall be kept in the daily log book of all refusals of waste shipments, the reason(s) for refusal, and the origin of the waste, if known.

Annual Report

(6) A written report on the development, operation and monitoring of the Site, shall be completed annually (the "Annual Report"). The Annual Report shall be submitted to the District Manager, by March 31st of the year following the period being reported upon.

(7) The Annual Report shall include the following:

(a) a survey of the waste disposal area conducted once every three years and a map illustrating all development and existing contours and between surveys the Town can provide an estimate of capacity left on the Site;

(b) a summary of the total annual quantities of waste received on monthly basis, volume of waste landfilled, volume of cover material and final cover used on an annual basis;

(c) a drawing(s) indicating all groundwater and surface water monitoring locations;

(d) tables outlining monitor locations, analytical parameters sampled, and the frequency of sampling;

(e) an interpretation of the surface water, groundwater and leachate monitoring data; a review of the adequacy of the monitoring programs; provide conclusions and recommendations for any changes made in monitoring programs;

(f) an assessment of groundwater quality as it relates to RUPO and ODWO;

(g) an assessment of surface water quality with respect to the PWQO/ Guidelines;

(h) an update of changes in operations, equipment, procedures made at the Site, and any operating difficulties encountered;

(i) drawings showing areas of fill, buffer areas, current landfill contours, percentage of available space utilized, and an estimate of the remaining disposal capacity and the landfill life span;

(j) a summary discussion for the landfill daily cover requirements and erosion protection;

(k) a statement of compliance with all Conditions with respect to the inspection and reporting requirements as indicated in the Approval;

(l) summary of any complaints made regarding the landfill operation and the response from the Owner and necessary action taken to address these complaints; and

(m) recommendations with respect to any proposed changes made in the operation and monitoring of the landfill.

7. LANDFILL DESIGN AND DEVELOPMENT

Approved Waste Types

(1) Only solid non-hazardous municipal waste as defined under Reg. 347 shall be accepted at the Site for landfilling.

(2) The Owner shall develop and implement a program to inspect waste to ensure that the waste received at the Site is of a type approved for acceptance under this Approval.

(3) The Owner shall ensure that all loads of waste are properly inspected by Trained personnel prior to acceptance at the Site and that the waste vehicles are directed to the appropriate areas for disposal or transfer of the waste. The Owner shall notify the District Manager, in writing, of load rejections at the Site within one (1) business day from their occurrence.

Capacity

(4) The bottom contours of the Site floor shall be approximately 217.5 metres above the assumed elevation datum, or a minimum of one metre above the seasonable high water table in order to maintain at all time a sate vertical separation distance between the bottom of the Site floor and the groundwater as indicated on Map no.3 of Item no.2, Schedule "A".

(5) The maximum height of the refuse (including final cover) shall not exceed 228.0 metres above the assumed elevation, which gives the maximum approved capacity of 493,000 cubic meters.

(6) No waste shall be deposited at the Site after the final contours which shall include 0.75 m of final cover have been attained as shown on Map 5, of Item 2, Schedule "A".

Service Area

(7) Only waste that is generated within the boundaries of the Town of Saugeen Shores may be accepted at the Site.

Cover

(8) Alternative materials to soil may be used as weekly and interim cover material, based on an application with supporting information and applicable fee for a trial use or permanent use, submitted by the Owner to the Director, copied to the District Manager and as approved by the Director via an amendment to this Approval. The alternative material shall be non-hazardous according to Reg. 347 and will be expected to perform at least as well as soil in relation to the following functions:

(a) Control of blowing litter, odours, dust, landfill gas, gulls, vectors, vermin and fires;
(b) Provision for an aesthetic condition of the landfill during the active life of the Site;
(c) Provision for vehicle access to the active tipping face; and
(d) Compatibility with the design of the Site for groundwater protection, leachate management and landfill gas management.

(9) Cover material shall be applied as follows:

(a) Daily Cover - Weather permitting, deposited waste shall be covered on each day the site in operation in a manner acceptable to the District Manager so that no waste is exposed to the atmosphere;
(b) Intermediate Cover - In areas where landfilling has been temporarily discontinued for six (6) months or more, a minimum thickness of 300 millimetre of soil cover or an approved thickness of alternative cover material shall be placed; and
(c) Final Cover - In areas where landfilling has been completed to final contours, a

minimum 600 millimetre thick layer of soil of medium permeability and 150 millimetres of top soil (vegetative cover) shall be placed. Fill areas shall be progressively completed and rehabilitated as landfill development reaches final contours.

8. LANDFILL MONITORING

Landfill Gas

(1) The Owner shall ensure that any buildings or structures at the Site contain adequate ventilation systems to relieve any possible landfill gas accumulation to prevent methane concentration reaching the levels within its explosive range. Routine monitoring for explosive methane gas levels shall be conducted in all buildings or structures at the Site, especially enclosed structures which at times are occupied by people.

Compliance

(2) The Site shall be operated in such a way as to ensure compliance with the following:

(a) Reasonable Use Guideline B-7 for the protection of the groundwater at the Site; and

(b) Provincial Water Quality Objectives included in the July 1994 publication entitled Water Management Policies, Guidelines, Provincial Water Quality Objectives, as amended from time to time or limits set by the Regional Director, for the protection of the surface water at and off the Site.

Surface Water and Ground Water

(3) The Owner shall monitor surface water and ground water in accordance with the monitoring programs outlined in documents listed in the attached Schedule "A".

(4) A certified Professional Geoscientist or Engineer possessing appropriate hydrogeologic training and experience shall execute or directly supervise the execution of the groundwater monitoring and reporting program.

Groundwater Wells and Monitors

(5) The Owner shall ensure that all groundwater monitoring wells which form part of the monitoring program are properly capped, locked and protected from damage.

(6) Where landfilling is to proceed around monitoring wells, suitable extensions shall be added to the wells and the wells shall be properly re-secured.

(7) Any groundwater monitoring well included in the on-going monitoring program that are

damaged shall be assessed, repaired, replaced or decommissioned by the Owner, as required.

(a) The Owner shall repair or replace any monitoring well which is destroyed or in any way made to be inoperable for sampling such that no more than one regular sampling event is missed.

(b) All monitoring wells which are no longer required as part of the groundwater monitoring program, and have been approved by the Director for abandonment, shall be decommissioned by the Owner, as required, in accordance with O.Reg. 903, that will prevent contamination through the abandoned well. A report on the decommissioning of the well shall be included in the Annual Report for the period during which the well was decommissioned.

Trigger Mechanisms and Contingency Plans

(8) (a) Trigger mechanisms shall be in accordance with the documents in the Schedule "A".

(b) Contingency plan in the event of a confirmed exceedence of a site-specific trigger level relating to leachate mounding or groundwater or surface water impacts due to leachate shall be in accordance with the documents in Schedule "A".

(9) In the event of a confirmed exceedence of a site-specific trigger level relating to leachate mounding or groundwater or surface water impacts due to leachate, the Owner shall notify the District Manager, and an investigation into the cause and the need for implementation of remedial or contingency actions shall be carried out by the Owner in accordance with the approved trigger mechanisms and associated contingency plans.

(10) If monitoring results, investigative activities and/or trigger mechanisms indicate the need to implement contingency measures, the Owner shall ensure that the following steps are taken:

(a) The Owner shall notify the District Manager, in writing of the need to implement contingency measures, no later than 30 days after confirmation of the exceedences;
(b) Detailed plans, specifications and descriptions for the design, operation and maintenance of the contingency measures shall be prepared and submitted by the Owner to the District Manager for approval; and
(c) The contingency measures shall be implemented by the Owner upon approval by the District Manager.

(11) The Owner shall ensure that any proposed changes to the site-specific trigger levels for leachate impacts to the surface water or groundwater, are approved in advance by the Director via an amendment to this Approval.

Changes to the Monitoring Plan

(12) The Owner may request to make changes to the monitoring program(s) to the District Manager in accordance with the recommendations of the annual report. The Owner shall make clear reference to the proposed changes in separate letter that shall accompany the annual report.

(13) Within fourteen (14) days of receiving the written correspondence from the District Manager confirming that the District Manager is in agreement with the proposed changes to the environmental monitoring program, the Owner shall forward a letter identifying the proposed changes and a copy of the correspondences from the District Manager and all other correspondences and responses related to the changes to the monitoring program, to the Director requesting the Approval be amended to approve the proposed changes to the environmental monitoring plan prior to implementation.

(14) In the event any other changes to the environmental monitoring program are proposed outside of the recommendation of the annual report, the Owner shall follow current ministry procedures for seeking approval for amending the Approval.

9. CLOSURE PLAN

(1) At least 3 years prior to the anticipated date of closure of this Site, the Owner shall submit to the Director for approval, with copies to the District Manager, a detailed Site closure plan pertaining to the termination of landfilling operations at this Site, post-closure inspection, maintenance and monitoring, and end use. The plan shall include the following:

- (a) a plan showing Site appearance after closure;
- (b) a description of the proposed end use of the Site;
- (c) a description of the procedures for closure of the Site, including:
  - (i) advance notification of the public of the landfill closure;
  - (ii) posting of a sign at the Site entrance indicating the landfill is closed and identifying any alternative waste disposal arrangements;
  - (iii) completion, inspection and maintenance of the final cover and landscaping;
  - (iv) Site security;
  - (v) removal of unnecessary landfill-related structures, buildings and facilities;
  - (vi) final construction of any control, treatment, disposal and monitoring facilities for leachate, groundwater, surface water and landfill gas; and
  - (vii) a schedule indicating the time-period for implementing sub-conditions (i) to (vi) above;
- (d) descriptions of the procedures for post-closure care of the Site, including:
  - (i) operation, inspection and maintenance of the control, treatment, disposal and monitoring facilities for leachate, groundwater, surface water and landfill gas;

(ii) record keeping and reporting; and
(iii) complaint contact and response procedures;

(e) an assessment of the adequacy of and need to implement the contingency plans for leachate and methane gas; and

(f) an updated estimate of the contaminating life span of the Site, based on the results of the monitoring programs to date.

(2) The Site shall be closed in accordance with the closure plan as approved by the Director.

10. WASTE DIVERSION

(1) The Owner shall ensure that:

(a) all bins and waste storage areas are clearly labelled;

(b) all lids or doors on bins shall be kept closed during non-operating hours and during high wind events; and

(c) if necessary to prevent litter, waste storage areas shall be covered during high winds events.

(2) The Owner shall provide a segregated area for the storage of Refrigerant Appliances so that the following are ensured:

(a) all Refrigerant Appliances have been tagged to indicate that the refrigerant has been removed by a licensed technician. The tag number shall be recorded in the log book and shall remain affixed to the appliance until transferred from the Site; or

(b) all Refrigerant Appliances accepted at the Site, which have not been tagged by a licensed technician to verify that the equipment no longer contains refrigerants, are stored segregated, in a clearly marked area, in an upright position and in a manner which allows for the safe handling and transfer from the Site for removal of refrigerants as required by O.Reg. 189; and

(c) all Refrigerant Appliances received on-site shall either have the refrigerant removed prior to being transferred from the Site or shall be shipped off-site only to facilities where the refrigerants can be removed by a licensed technician in accordance with O.Reg. 189.

(3) Propane cylinders shall be stored in a segregated area in a manner which prevents cylinders from being knocked over or cylinder valves from breaking.

(4) The Owner shall transfer waste and recyclable materials from the Site as follows:

(a) recyclable materials shall be transferred off-site once their storage bins are full;

(b) scrap metal shall be transferred off-site at least twice a year;

(c) tires shall be transferred off-site as soon as a load for the contractor hired by the Owner has accumulated or as soon as the accumulated volume exceeds the storage capacity of its bunker; and

(d) immediately, in the event that waste is creating an odour or vector problem.

(5) The Owner shall notify the appropriate contractors that waste and recyclable wastes that are to be transferred off-site are ready for removal. Appropriate notice time, as determined by the contract shall be accommodated in the notification procedure.

(6) Collection, storage and transfer of Waste Electrical and Electronic Equipment shall be in accordance with the documents in the Schedule "A". If there is any discrepancy between the guideline titled "Collection Site Organizing & Operating Waste Electrical and Electronic Equipment (WEEE) Guidebook" dated March 11, 2010 as amended prepared by Ontario Electronic Stewardship and the documents in Schedule "A", the guideline shall take precedence.

11. COMPOSTING

(1) Waste accepted for composting shall be limited to leaf and yard waste.
(2) Windrows/stockpiles shall be arranged in a manner which allows equipment access for management of the piles and to allow access for emergency vehicles.
(3) Windrows/stockpiles shall be constructed at bulk densities and heights which promote aerobic conditions.
(4) Use of the produced compost from leaf and yard waste shall be limited to daily cover material.
(5) For other uses of composted leaf and yard waste, the owner shall obtain approval from the Director.

12. PARKING LOT CONSTRUCTION

(1) The construction and operation of a 55 metre by 58 metre parking lot in the clay capped region of Phase III of the Southampton Landfill Site, in accordance with Items 5 and 6 of Schedule "A" and subject to the terms and conditions of this Approval.

(2) Upon completion of the construction of the parking lot, the Owner shall submit to the District Manager a written notification and as-built drawings that construction has been completed.

13. RECEIVING AREA CONSTRUCTION

(1) Upon Approval is hereby granted for the construction and operation of a 0.8 hectare receiving area. The receiving area must include scale house, two (2) scales (entry and exit), and a paved area with storage bins for recyclable and divertable materials, as well as waste delivery bins.

(2) The receiving area must be fenced and locked when unattended by trained employees. There will be two separate areas including a Waste and Diversion and blue box recycling area, both must be fenced and gated separately.

(3) Recyclable goods are collected and stored in on-site recycling bins. The recycling bins

shall be emptied as needed, by an appropriate waste management service provider (or hauler) for recyclable goods.

(4) The Owner shall ensure that signage be provided to direct traffic and provide direction regarding the location for deposit of materials. Additional signs must be provided where specific instruction is required and at locations to specify the types of materials accepted at each bin/area.

(5) The Owner shall notify the District Manager 30 days prior to adding additional diversion streams.

SCHEDULE "A"

1. Report titled “Town of Southampton Waste Disposal Site, Site Capacity Study, 1994,” prepared by Paragon Engineering Ltd, dated February, 1995.

2. Report titled “Town of Southampton Waste Disposal Site, Plan of Development and Operation,” prepared by Paragon Engineering Limited, dated March, 1997.

3. Application for a Provisional Certificate of Approval for a Waste Disposal Site, dated May 31, 2005, and the supporting documentation entitled Southampton Waste Disposal Site Township of Saugeen Shores Landfill Service Area Report, prepared by Pryde Schropp McComb Inc, dated June 2005.

4. Report titled "Plan of Development and Operation, Southhampton Landfill, Part Lot 12, Concession 15, Former Township of Saugeen, Town of Saugeen Shores, County of Bruce" dated February 2011 prepared by Gamsby and Mannerow Engineers.

5. Letter dated January 29, 2016 from BluePlan Engineering Limited and signed by Matthew Nelson to the Ministry of the Environment and Climate Change, including all attached information.

6. E-mail dated June 29, 2016 from Matthew Nelson, Senior Project Manager, BluePlan Engineering Limited to Maliha Tariq, Review Engineering Assistant, Ministry of the Environment and Climate Change, including all attached information.

7. Plan of Development and Operations (PDO) Addendum dated November 2021 from GM BluePlan Engineering Limited by M.D. Nelson, P.Eng., P.Geo.

8. Cover Letter for ECA amendment dated November 26, 2021 from GM BluePlan Engineering Limited by M.D. Nelson, P.Eng., P.Geo.

The reasons for the imposition of these terms and conditions are as follows:

GENERAL

1. The reason for Conditions 1(1), (2), (4), (5), (6), (7), (8), (9), (10), (17), (18) and (19) is to clarify the legal rights and responsibilities of the Owner and Operator under this Approval.

2. The reasons for Condition 1(3) are to ensure that the Site is designed, operated, monitored and maintained in accordance with the application and supporting documentation submitted by the Owner, and not in a manner which the Director has not been asked to consider.

3. The reasons for Condition 1(11) are to ensure that the Site is operated under the corporate name

which appears on the application form submitted for this approval and to ensure that the Director is informed of any changes.

4. The reasons for Condition 1(12) are to restrict potential transfer or encumbrance of the Site without the approval of the Director and to ensure that any transfer of encumbrance can be made only on the basis that it will not endanger compliance with this Approval.

5. The reason for Condition 1(13) is to ensure that the successor is aware of its legal responsibilities.

6. Conditions 1 (14) and (15) are included, pursuant to subsection 197(1) of the EPA, to provide that any persons having an interest in the Site are aware that the land has been approved and used for the purposes of waste disposal.

7. The reason for Condition 1(16) is to ensure that appropriate Ministry staff has ready access to the Site for inspection of facilities, equipment, practices and operations required by the conditions in this Approval. This Condition is supplementary to the powers of entry afforded a Provincial Officer pursuant to the Act, the OWRA, the PA, the NMA and the SDWA.

SITE OPERATION

8. The reasons for Conditions 2(1), 2(5) and 6(3) are to ensure that the Site is operated, inspected and maintained in an environmentally acceptable manner and does not result in a hazard or nuisance to the natural environment or any person.

9. The reason for Conditions 2 (2), 2(3) and 2(4) is to ensure that users of the Site are fully aware of important information and restrictions related to Site operations and access under this Approval.

10. The reasons for Condition 2(6) (a), (b) and (c) are open burning of municipal waste is unacceptable because of concerns with air emissions, smoke and other nuisance affects, and the potential fire hazard and to make sure burning of brush and wood are carried out in accordance with Ministry guidelines.

11. The reasons for Condition 2(7), 2(8) and 2(9) are to specify the hours of operation for the landfill site and a mechanism for amendment of the hours of operation, as required.

12. The reasons for Condition 2(10) and 2(11) are to ensure that the Site is supervised by properly trained staff in a manner which does not result in a hazard or nuisance to the natural environment or any person and to ensure the controlled access and integrity of the Site by preventing unauthorized access when the Site is closed and no site attendant is on duty.

EMPLOYEE TRAINING

13. The reason for Condition 3(1) is to ensure that the Site is supervised and operated by properly trained staff in a manner which does not result in a hazard or nuisance to the natural environment

or any person.

COMPLAINTS RESPONSE PROCEDURE

14. The reason for Condition 4(1) is to ensure that any complaints regarding landfill operations at this Site are responded to in a timely and efficient manner.

EMERGENCY RESPONSE

15. Conditions 5(1) and 5(2) are included to ensure that emergency situations are reported to the Ministry to ensure public health and safety and environmental protection.

16. Conditions 5(3), 5(4) and 5(5) are included to ensure that emergency situations are handled in a manner to minimize the likelihood of an adverse effect and to ensure public health and safety and environmental protection.

RECORD KEEPING AND REPORTING

17. The reason for Conditions 6(1) and 6(2) is to ensure that accurate waste records are maintained to ensure compliance with the conditions in this Approval (such as fill rate, site capacity, record keeping, annual reporting, and financial assurance requirements), the EPA and its regulations.

18. The reason for Conditions 6(4) and 6(5) is to ensure that detailed records of Site inspections are recorded and maintained for inspection and information purposes.

19. The reasons for Conditions 6(6) and 6(7) are to ensure that regular review of site development, operations and monitoring data is documented and any possible improvements to site design, operations or monitoring programs are identified. An annual report is an important tool used in reviewing site activities and for determining the effectiveness of site design.

LANDFILL DESIGN AND DEVELOPMENT

20. The reason for Conditions 7(1) to 7(7) inclusive is to specify the approved areas from which waste may be accepted at the Site and the types and amounts of waste that may be accepted for disposal at the Site, based on the Owner's application and supporting documentation.

21. Condition 7(8) is to provide the Owner the process for getting the approval for alternative daily and intermediate cover material.

22. The reasons for Condition 7(9) are to ensure that daily/weekly and intermediate cover are used to control potential nuisance effects, to facilitate vehicle access on the Site, and to ensure an acceptable site appearance is maintained. The proper closure of a landfill site requires the application of a final cover which is aesthetically pleasing, controls infiltration, and is suitable for the end use planned for the Site.

LANDFILL MONITORING

23. Reasons for Condition 8(1) are to ensure that off-site migration of landfill gas is monitored and all buildings at the Site are free of any landfill gas accumulation, which due to a methane gas component may be explosive and thus create a danger to any persons at the Site.

24. Condition 8(2) is included to provide the groundwater and surface water limits to prevent water pollution at the Site.

25. Conditions 8(3) and 8(4) are included to require the Owner to demonstrate that the Site is performing as designed and the impacts on the natural environment are acceptable. Regular monitoring allows for the analysis of trends over time and ensures that there is an early warning of potential problems so that any necessary remedial/contingency action can be taken.

26. Conditions 8(5), 8(6) and 8(7) are included to ensure the integrity of the groundwater monitoring network so that accurate monitoring results are achieved and the natural environment is protected.

27. Conditions 8(8) to 8(11) inclusive are added to ensure the Owner has a plan with an organized set of procedures for identifying and responding to potential issues relating to groundwater and surface water contamination at the Site's compliance point.

28. Conditions 8(12), 8(13) and 8(14) are included to streamline the approval of the changes to the monitoring plan.

CLOSURE PLAN

29. The reasons for Condition 9 are to ensure that final closure of the Site is completed in an aesthetically pleasing manner, in accordance with Ministry standards, and to ensure the long-term protection of the health and safety of the public and the environment.

WASTE DIVERSION

30. Condition 10 is included to ensure that the recyclable materials are stored in their temporary storage location in a manner as to minimize a likelihood of an adverse effect or a hazard to the natural environment or any person.

COMPOSTING

31. Condition 11 was added to ensure that composting is undertaken in a manner which does not result in a nuisance or a hazard to the health and safety of the environment or people.

PARKING LOT CONSTRUCTION

32. Condition 12 was added to permit the construction and operation of a parking lot used to alleviate traffic and parking constraints at the Southampton Landfill Site.

RECEIVING AREA CONSTRUCTION

33. Condition 13 was added to permit the the construction and operation of the receiving area and receiving area constraints at the Southhampton Landfill Site.

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). A273101 issued on December 17, 1980

In accordance with Section 139 of the *Environmental Protection Act,* you may by written notice served upon me and the Ontario Land Tribunal within 15 days after receipt of this notice, require a hearing by the Tribunal. Section 142 of the *Environmental Protection Act* provides that the notice requiring the hearing ("the Notice") shall state:

a. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
b. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

Pursuant to subsection 139(3) of the *Environmental Protection Act,* a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.

The Notice should also include:

1. The name of the appellant;
2. The address of the appellant;
3. The environmental compliance approval number;
4. The date of the environmental compliance approval;
5. The name of the Director, and;
6. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

Registrar*
Ontario Land Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5
OLT.Registrar@ontario.ca

and

The Director appointed for the purposes of Part II.1 of the *Environmental Protection Act*
Ministry of the Environment, Conservation and Parks
135 St. Clair Avenue West, 1st Floor
Toronto, Ontario
M4V 1P5

*** Further information on the Ontario Land Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349 or 1 (866) 448-2248, or www.oltt.gov.on.ca**

The above noted activity is approved under s.20.3 of Part II.1 of the *Environmental Protection Act.*

DATED AT TORONTO this 5th day of March, 2022

Mohsen Keyvani, P.Eng.
Director
appointed for the purposes of Part II.1 of the
Environmental Protection Act

MS/

c: District Manager, MECP Owen Sound
Matthew Nelson, GM BluePlan Engineering Limited

CONTENT COPY OF ORIGINAL

Ontario

Ministry of the Environment
Ministère de l'Environnement

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL
NUMBER 0849-8L7JN9
Issue Date: November 25, 2011

The Corporation of the Town of Saugeen Shores
600 Tomlinson Dr Port Elgin
Post Office Box, No. 820
Saugeen Shores, Ontario
N0H 2C0

Site Location: Southampton Landfill Site - Stormwater Management Facility
Part of Lot 11 and Part of Lot 12S, Concession 15
Town of Saugeen Shores, County of Bruce
N0H 2L0

You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:

constructing a stormwater management facility at the Southampton Landfill Site to service a total drainage area of 20.2 ha designed to provide quality control for a 25 mm 4-hour durations storm event and quantity control for storm events up to 1:100 years return frequency, consisting of the following:

INFILTRATION POND #1

- One (1) infiltration pond located at the southwest corner of the landfill site, receiving stormwater runoff from a total drainage area of 2.5 ha including the solid waste recycling area, topsoil stockpiles, and a capped and closed portion of the landfill, designed with a basin bottom percolation area of 1400 m^2 providing a maximum storage capacity of 307 m^3 between the elevations of 217.0 m and 217.3 m, equipped with a 3.0 m wide overflow weir at an elevation of 217.2 m allowing overflows into adjacent low lying sandy lightly treed plain;

INFILTRATION POND #2

- One (1) infiltration pond located at the southeast corner of the landfill site, receiving stormwater runoff from a total drainage area of 2.0 ha of a capped and closed portion of the landfill, designed with a basin bottom percolation area of 700 m^2 providing a maximum storage capacity of 868 m^3 between the elevations of 220.0 m and 220.6 m, equipped with a 3.0 m wide overflow weir at an elevation of 220.6 m allowing overflows into adjacent low lying sandy plain;

INFILTRATION POND #3

- One (1) infiltration pond located at the northeast corner of the landfill site, to receive stormwater runoff from a total drainage area of 2.0 ha portion of the landfill which will be land-filled and capped in the future, designed with a basin bottom percolation area of 450 m^2 providing a maximum storage capacity of 447 m^3 between the elevations of 216.0 m and 216.6 m, equipped with a 3.0 m wide overflow weir at an elevation of 216.6 m allowing overflows into adjacent low lying sandy plain;

STORMWATER MANAGEMENT WETLAND "A"

- One (1) stormwater management wetland located at north corner of the landfill site, receiving stormwater runoff from a total drainage area of 7.5 ha consisting of the central and northeast portions of the landfill site, providing a permanent storage volume of 891 m^3 and an active storage capacity of 1,082 m^3, equipped with a 100 m long constructed conveyance ditch, a **relocated** outlet structure consisting of a 5 m long 150 mm diameter PVC pipe at

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2.0% horizontal slope equipped with a 50 mm diameter orifice plate and a 3.0 m wide emergency overflow weir at 215.73 m masl elevation, both located at the northwest corner of the stormwater management wetland, both discharging through an approximately 15.0 long swale with 3H:1V side slopes into a low lying swampy area owned by the Owner and eventually into the Saugeen River; and

- including all associated controls and appurtenances.

all in accordance with the Application for Approval of Municipal and Private Sewage Works submitted by the Town of Saugeen Shores dated March 7, 2003, and design specifications and drawings prepared by Stantec Consulting Ltd., Kitchener, Ontario, included in following document:

1. "Southampton Waste Disposal Site - Stormwater Management Plan -Draft" prepared by Stantec Consulting Ltd., July 2000.

AND

all in accordance with the Application for Approval of Sewage Works submitted by the Town of Saugeen Shores dated July 7, 2011, and design specifications and drawings prepared by Gamsby and Mannerow Limited, Owen Sound, Ontario.

For the purpose of this environmental compliance approval, the following definitions apply:

"*Act*" means the Ontario Water Resources Act, R.S.O. 1990, Chapter 0.40, as amended;

"*Approval*" means this Environmental Compliance Approval and any Schedules attached to it, including the application and supporting documentation listed in Schedule "A".

"*Daily Concentration*" means the concentration of a contaminant in the effluent discharged over any single day, as measured by a composite or grab sample, whichever is required;

"*Director*" means any *Ministry* employee appointed by the Minister pursuant to section 5 of the *Act*;

"*District Manager*" means the District Manager of the Barrie District Office of the Ministry;

"*Ministry*" means the Ontario Ministry of the Environment;

"*Owner*" means The Town of Saugeen Shores and includes its successors and assignees;

"Previous Works" means those portions of the sewage works previously constructed and approved under an *Approval*;

"Proposed Works" means the sewage works described in the *Owner*'s application, this *Approval* and in the supporting documentation referred to herein, to the extent approved by this *Approval*;

"*Regional Director*" means the Regional Director of the Southwestern Region of the Ministry;

"*Works*" means the sewage works described in the *Owner*'s application, this *Approval* and in the supporting documentation referred to herein, to the extent approved by this *Approval* and includes both *Previous Works* and *Proposed Works*.

You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. GENERAL PROVISIONS

(1) The *Owner* shall ensure that any person authorized to carry out work on or operate any aspect of the *Works* is notified of this *Approval* and the conditions herein and shall take all reasonable measures to ensure any such person complies with

the same.

(2) Except as otherwise provided by these Conditions, the *Owner* shall design, build, install, operate and maintain the *Works* in accordance with the description given in this *Approval*, the application for approval of the works and the submitted supporting documents and plans and specifications as listed in this *Approval*.

(3) Where there is a conflict between a provision of any submitted document referred to in this *Approval* and the Conditions of this *Approval*, the Conditions in this *Approval* shall take precedence, and where there is a conflict between the listed submitted documents, the document bearing the most recent date shall prevail.

(4) Where there is a conflict between the listed submitted documents, and the application, the application shall take precedence unless it is clear that the purpose of the document was to amend the application.

(5) The requirements of this *Approval* are severable. If any requirement of this *Approval*, or the application of any requirement of this *Approval* to any circumstance, is held invalid or unenforceable, the application of such requirement to other circumstances and the remainder of this Approval shall not be affected thereby.

2. EXPIRY OF APPROVAL

The approval issued by this *Approval* will cease to apply to those parts of the *Works* which have not been constructed within five (5) years of the date of this *Approval*.

3. CHANGE OF OWNER

(1) The *Owner* shall notify the *District Manager* and the *Director*, in writing, of any of the following changes within 30 days of the change occurring:

(a) change of *Owner*;

(b) change of address of the *Owner*;

(c) change of partners where the *Owner* is or at any time becomes a partnership, and a copy of the most recent declaration filed under the Business Names Act, R.S.O. 1990, c.B17 shall be included in the notification to the *District Manager*;

(d) change of name of the corporation where the *Owner* is or at any time becomes a corporation, and a copy of the most current information filed under the Corporations Information Act, R.S.O. 1990, c. C39 shall be included in the notification to the *District Manager*;

(2) In the event of any change in ownership of the *Works*, other than a change to a successor municipality, the *Owner* shall notify in writing the succeeding owner of the existence of this *Approval*, and a copy of such notice shall be forwarded to the *District Manager* and the *Director*.

4. OPERATION AND MAINTENANCE

(1) The Owner shall make all necessary investigations, take all necessary steps and obtain all necessary approvals so as to ensure that the physical structure, siting and operations of the stormwater works do not constitute a safety or health hazard to the general public.

(2) The Owner shall ensure that sediment and excessive decaying vegetation are removed from the above noted stormwater management system **on as required basis** to prevent the excessive build-up of sediment and/or decaying vegetation in the works.

5. EFFLUENT MONITORING AND RECORDING

The *Owner* shall, upon commencement of operation of the *Works*, carry out the following monitoring program:

(1) All samples and measurements taken for the purposes of this *Approval* are to be taken at a time and in a location characteristic of the quality and quantity of the effluent stream over the time period being monitored.

(2) The Owner shall ensure that grab samples are collected from all stormwater management *Works* (**Infiltration Ponds #1, #2, and #3,** and **Stormwater Management Wetland "A") at a semi-annual frequency** (spring and fall) and analyzed for the parameters listed in Table 1:

Table 1		
Monitoring Parameter		**Field Monitoring Parameter**
Alkalinity	Total (Ammonium + Ammonia) N	Conductivity
Arsenic	Total Kjeldahl Nitrogen (TKN)	Dissolved Oxygen (DO)
Barium	Total Phosphorus	pH
Boron	Total Suspended Solids	Temperature
Biological Oxygen Demand (BOD5)	Total Dissolved Solids	
Cadmium	Total Phenols	
Chemical Oxygen Demand (COD)	Zinc	
Chloride		
Chromium		
Conductivity (Laboratory)		
Copper		
Iron		
Lead		
Mercury		
Nitrate as Nitrogen		
Nitrite as Nitrogen		
pH (Laboratory)		
Sulphate		

(3) The methods and protocols for sampling, analysis and recording shall conform, in order of precedence, to the methods and protocols specified in the following:

(a) the Ministry's Procedure F-10-1, “Procedures for Sampling and Analysis Requirements for Municipal and Private Sewage Treatment Works (Liquid Waste Streams Only), as amended from time to time by more recently published editions;

(b) the Ministry's publication "Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater" (January 1999), ISBN 0-7778-1880-9, as amended from time to time by more recently published editions;

(c) the publication "Standard Methods for the Examination of Water and Wastewater" (21st edition), as amended from time to time by more recently published editions;

(4) Following review of any of the analytical results required by Condition 5 or any of the reports required by Condition 6 of this *Approval*, the *District Manager* may alter the frequencies and locations of sampling and parameters for analysis required by Condition 5 (2) if he/she considers it necessary for proper assessment of the operation of the works and its impact on the environment of if he/she is requested to do so by the *Owner* and considers it acceptable by the evidence of information submitted is support of the request.

(5) The *Owner* shall retain for a minimum of three (3) years from the date of their creation, all records and information related to or resulting from the monitoring activities required by this *Approval*.

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6. REPORTING

(1) The *Owner* shall, upon request, make all manuals, plans, records, data, procedures and supporting documentation available to *Ministry* staff.

(2) The *Owner* shall prepare, and upon request submit to the *District Manager,* a performance report, on an annual basis, within ninety (90) days following the end of the period being reported upon. The first such report shall cover the first annual period following the commencement of operation of the *Works* and subsequent reports shall be submitted to cover successive annual periods following thereafter. The reports shall contain, but shall not be limited to, the following information:

(a) a tabulation of all monitoring and analytical results obtained during the reporting period, including sampling/monitoring locations and dates;

(b) a summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming a part of the works;

(c) an account of any environmental and operating problems encountered at the site of the sewage works and the mitigative measures taken during the reporting period;

The reasons for the imposition of these terms and conditions are as follows:

1. Condition 1 is imposed to ensure that the *Works* are built and operated in the manner in which they were described for review and upon which approval was granted. This condition is also included to emphasize the precedence of Conditions in the *Approval* and the practice that the Approval is based on the most current document, if several conflicting documents are submitted for review. The condition also advises the Owners their responsibility to notify any person they authorized to carry out work pursuant to this *Approval* the existence of this *Approval*.

2. Condition 2 is included to ensure that, when the *Works* are constructed, the *Works* will meet the standards that apply at the time of construction to ensure the ongoing protection of the environment.

3. Condition 3 is included to ensure that the *Ministry* records are kept accurate and current with respect to the approved works and to ensure that subsequent owners of the *Works* are made aware of the *Approval* and continue to operate the *Works* in compliance with it.

4. Condition 4 is included to require that the *Works* be properly operated, maintained, funded, staffed and equipped such that the environment is protected and deterioration, loss, injury or damage to any person or property is prevented. Regular removal of sediment and excessive decaying vegetation from this approved stormwater management system are required to mitigate the impact of sediment and/or decaying vegetation on the performance of the works. It is also required to ensure that adequate storage is maintained in the stormwater management facilities at all times as required by the design.

5. Condition 5 is included to enable the *Owner* to evaluate and demonstrate the performance of the *Works*, on a continual basis, so that the *Works* are properly operated and maintained at a level which is consistent with the terms and conditions specified in the *Approval* and that the *Works* does not cause any impairment to the receiving watercourse.

6. Condition 6 is included to provide a performance record for future references, to ensure that the *Ministry* is made aware of problems as they arise, and to provide a compliance record for all the terms and conditions outlined in this *Approval,* so that the *Ministry* can work with the *Owner* in resolving any problems in a timely manner.

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). 7416-5LEHYJ issued on June 6, 2003

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142

CONTENT COPY OF ORIGINAL

of the Environmental Protection Act provides that the Notice requiring the hearing shall state:

1. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

Pursuant to subsection 139(3) of the Environmental Protection Act, a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The environmental compliance approval number;
6. The date of the environmental compliance approval;
7. The name of the Director, and;
8. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5

AND

The Director appointed for the purposes of Part II.1 of the Environmental Protection Act
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 314-4506 or www.ert.gov.on.ca**

The above noted activity is approved under s.20.3 of Part II.1 of the Environmental Protection Act.

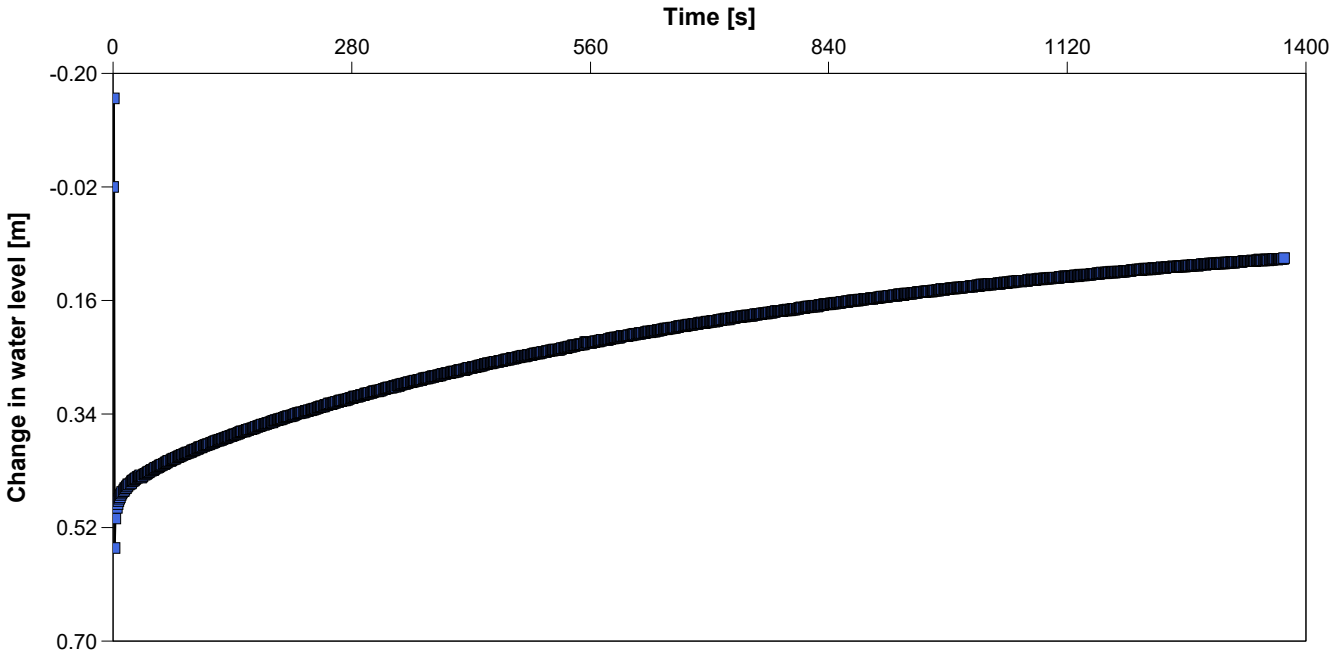
DATED AT TORONTO this 25th day of November, 2011

Ian Parrott, P.Eng.
Director
appointed for the purposes of Part II.1 of the
Environmental Protection Act

SH/
c: District Manager, MOE Owen Sound
Matthew Nelson, M.Sc. P.Geo., P.Eng., Gamsby and Mannerow Limited

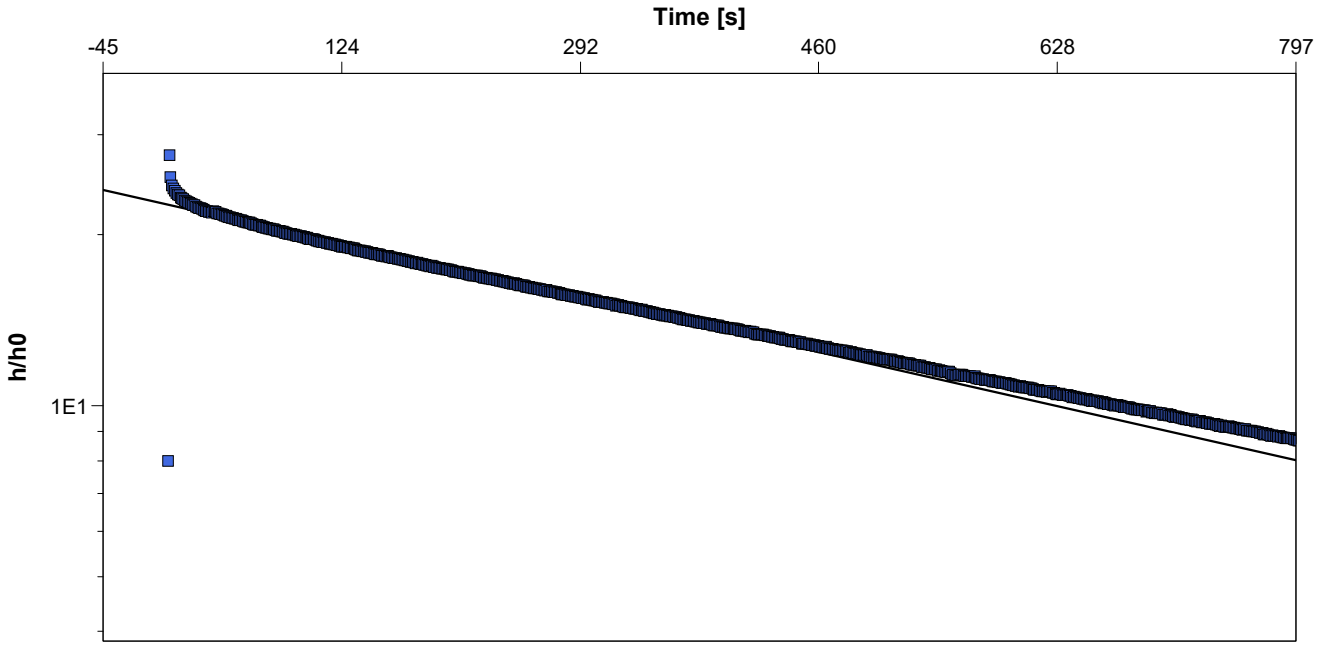
APPENDIX B
HYDRAULIC CONDUCTIVITY ANALYSES

	Slug Test Analysis Report	
	Project: Hydrogeological Study - Southampton Landfill Site	
	Number: 220341	
	Client: Town of Saugeen Shores	
Location: 126 Concession 14, Southampton	Slug Test: TW-35S	Test Well: TW-35S
Test Conducted by: JW		Test Date: 11/2/2022
Analysis Performed by: CS	Time vs. Drawdown	Analysis Date: 8/25/2023
Aquifer Thickness:		



	Slug Test Analysis Report
	Project: Hydrogeological Study - Southampton Landfill Site
	Number: 220341
	Client: Town of Saugeen Shores

Location: 126 Concession 14, Southampton	Slug Test: TW-35S	Test Well: TW-35S
Test Conducted by: JW		Test Date: 11/2/2022
Analysis Performed by: CS	Hvorslev	Analysis Date: 8/28/2023
Aquifer Thickness:		



Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]	
TW-35S	1.13×10^{-6}	

Slug Test - Analyses Report

Project: Hydrogeological Study - Southampton Landfill Site

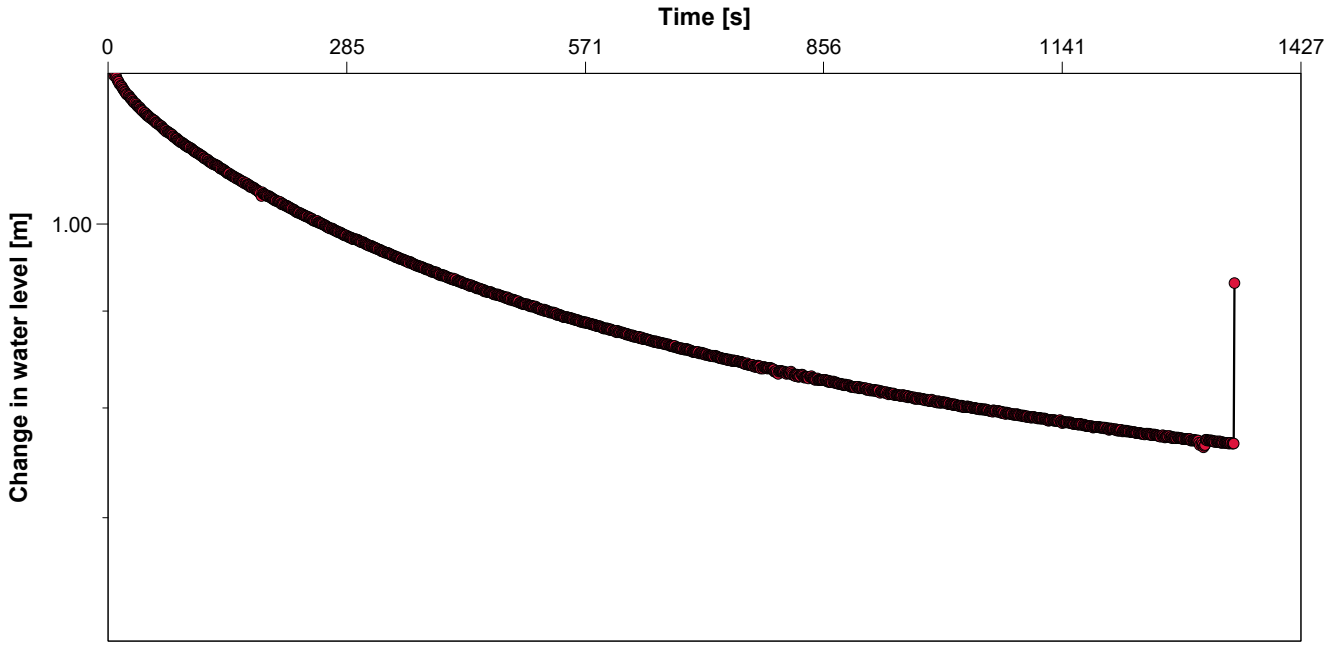
Number: 220341

Client: Town of Saugeen Shores

Location: 126 Concession 14, Southampton	Slug Test: TW-35S	Test Well: TW-35S
Test Conducted by: JW		Test Date: 11/2/2022
Aquifer Thickness:		

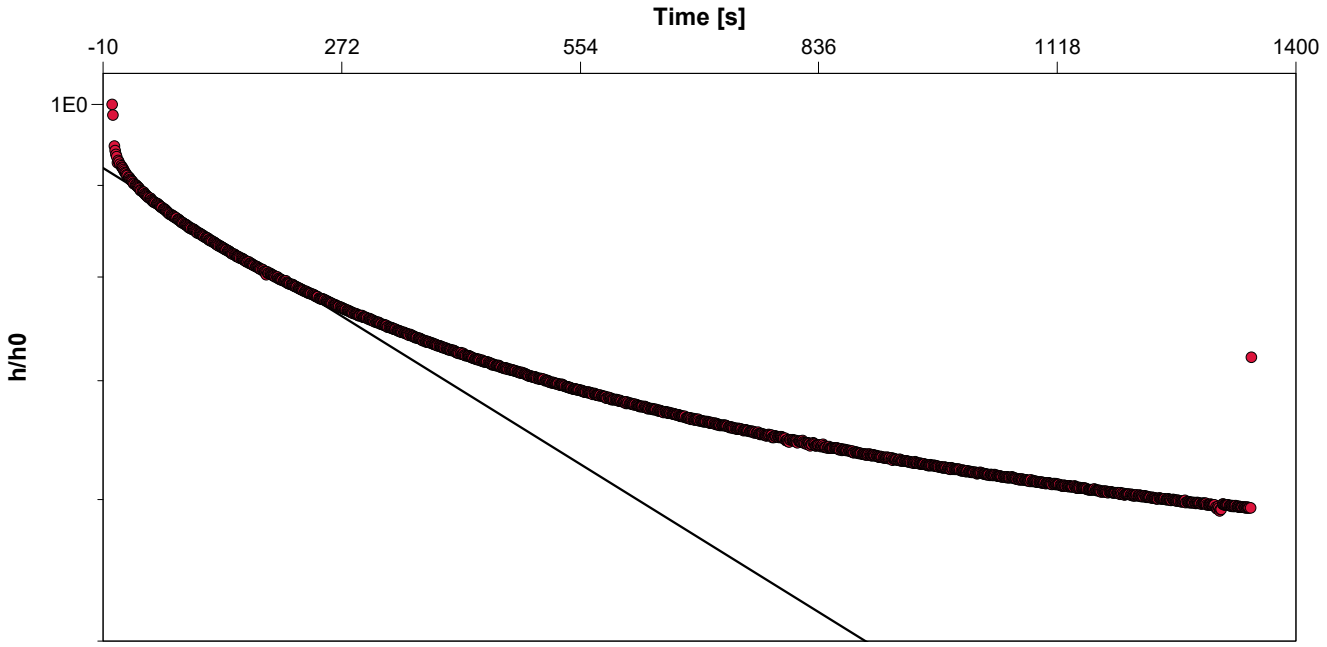
	Analysis Name	Analysis Performed by	Analysis Date	Method name	Well	T [m²/s]	S
1	Hvorslev	CS	8/28/2023	Hvorslev	TW-35S		1.13×10^{-6}

	Slug Test Analysis Report	
	Project: Hydrogeological Study - Southampton Landfill Site	
	Number: 220341	
	Client: Town of Saugeen Shores	
Location: 126 Concession 14, Southampton	Slug Test: TW-35I	Test Well: TW-35I
Test Conducted by: JW		Test Date: 11/2/2022
Analysis Performed by: CS	Time vs. Drawdown	Analysis Date: 8/28/2023
Aquifer Thickness:		



	Slug Test Analysis Report
	Project: Hydrogeological Study - Southampton Landfill Site
	Number: 220341
	Client: Town of Saugeen Shores

Location: 126 Concession 14, Southampton	Slug Test: TW-35I	Test Well: TW-35I
Test Conducted by: JW		Test Date: 11/2/2022
Analysis Performed by: CS	Hvorslev	Analysis Date: 8/28/2023
Aquifer Thickness:		



Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]	
TW-35I	3.44×10^{-7}	

Slug Test - Analyses Report

Project: Hydrogeological Study - Southampton Landfill Site

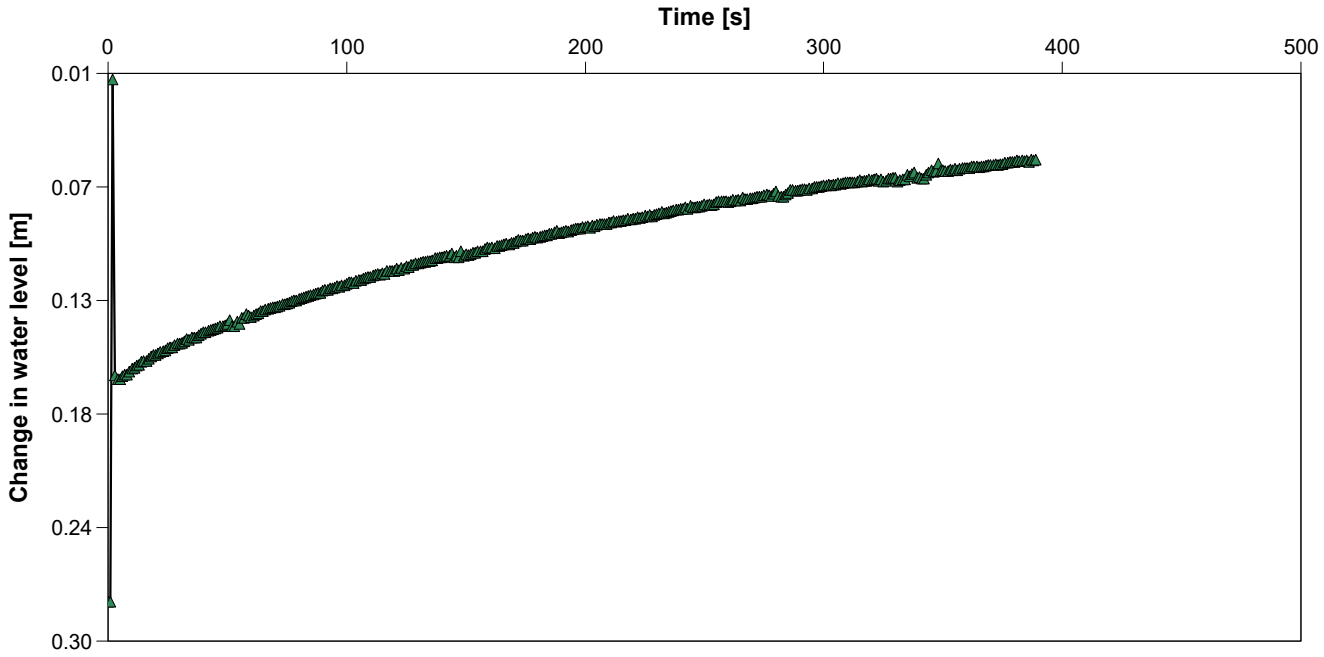
Number: 220341

Client: Town of Saugeen Shores

Location: 126 Concession 14, Southampton	Slug Test: TW-35I	Test Well: TW-35I
Test Conducted by: JW		Test Date: 11/2/2022
Aquifer Thickness:		

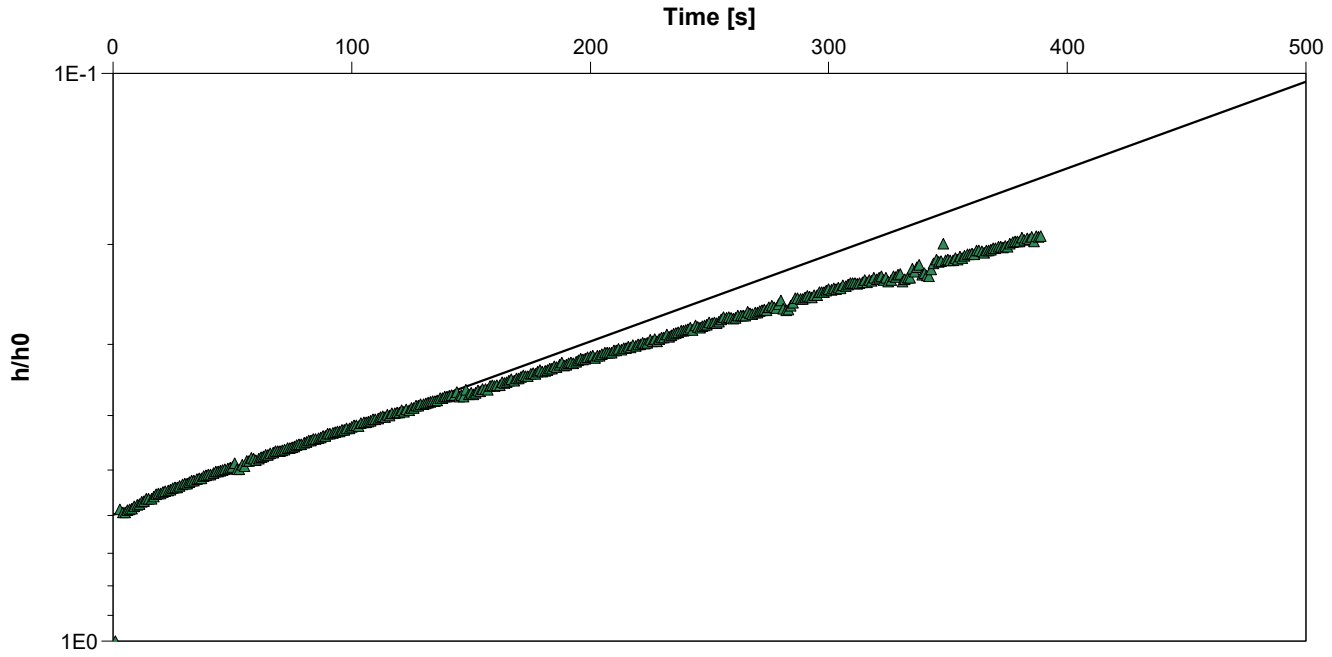
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1	Hvorslev	CS	8/28/2023	Hvorslev	TW-35I		3.44×10^{-7}

	Slug Test Analysis Report	
	Project: Hydrogeological Study - Southampton Landfill Site	
	Number: 220341	
	Client: Town of Saugeen Shores	
Location: 126 Concession 14, Southampton	Slug Test: TW-36S	Test Well: TW-36S
Test Conducted by:		Test Date: 11/2/2022
Analysis Performed by: C.S.	Time vs Drawdown	Analysis Date: 8/30/2023
Aquifer Thickness:		



	Slug Test Analysis Report
	Project: Hydrogeological Study - Southampton Landfill Site
	Number: 220341
	Client: Town of Saugeen Shores

Location: 126 Concession 14, Southampton	Slug Test: TW-36S	Test Well: TW-36S
Test Conducted by:		Test Date: 11/2/2022
Analysis Performed by: C.S.	Hvorslev	Analysis Date: 8/31/2023
Aquifer Thickness:		



Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]	
TW-36S	3.05×10^{-6}	

Slug Test - Analyses Report

Project: Hydrogeological Study - Southampton Landfill Site

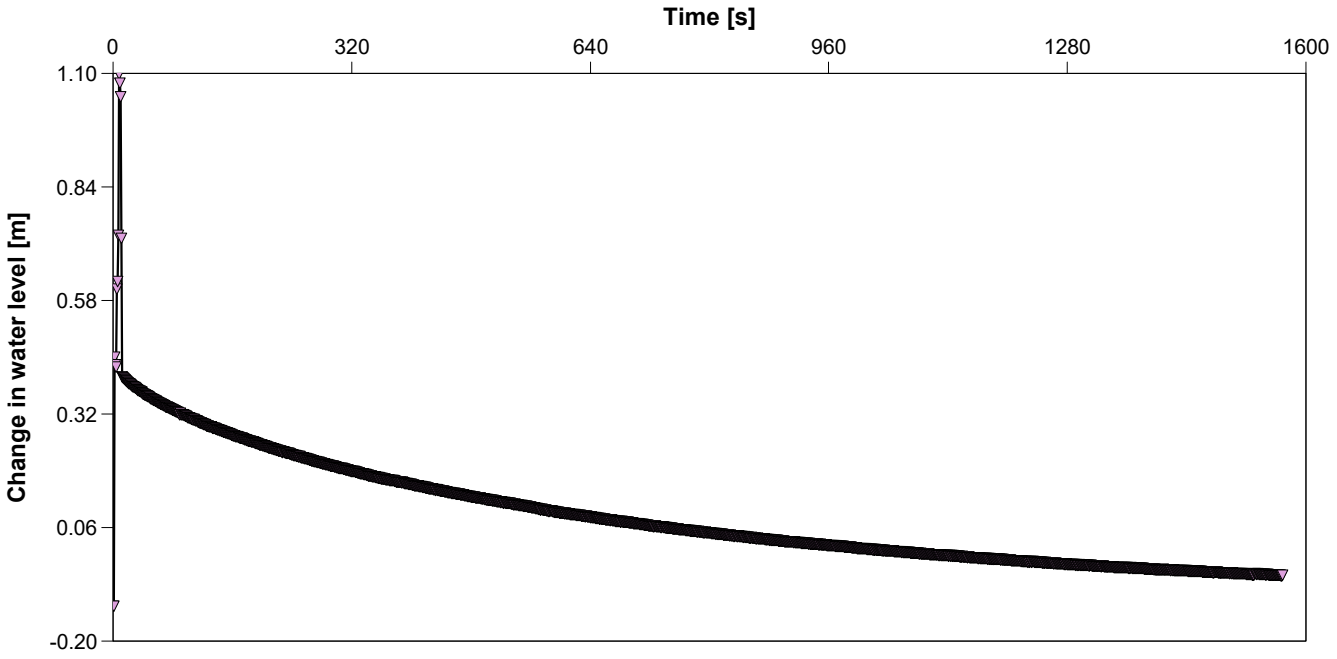
Number: 220341

Client: Town of Saugeen Shores

Location: 126 Concession 14, Southampton	Slug Test: TW-36S	Test Well: TW-36S
Test Conducted by:		Test Date: 11/2/2022
Aquifer Thickness:		

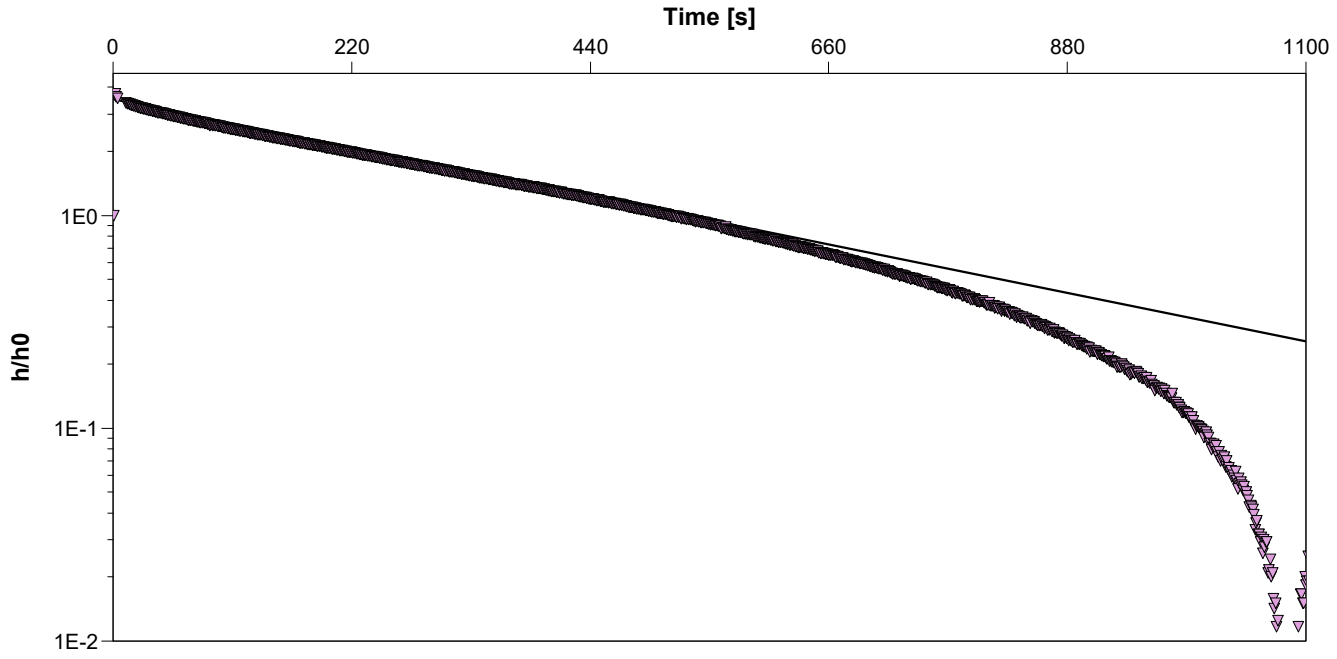
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1	Hvorslev	C.S.	8/31/2023	Hvorslev	TW-36S		3.05×10^{-6}

	Slug Test Analysis Report	
	Project: Hydrogeological Study - Southampton Landfill Site	
	Number: 220341	
	Client: Town of Saugeen Shores	
Location: 126 Concession 14, Southampton	Slug Test: TW-36I	Test Well: TW-36I
Test Conducted by: JW		Test Date: 11/2/2022
Analysis Performed by: C.S.	Time vs Drawdown	Analysis Date: 8/28/2023
Aquifer Thickness:		



	Slug Test Analysis Report
	Project: Hydrogeological Study - Southampton Landfill Site
	Number: 220341
	Client: Town of Saugeen Shores

Location: 126 Concession 14, Southampton	Slug Test: TW-36I	Test Well: TW-36I
Test Conducted by: JW		Test Date: 11/2/2022
Analysis Performed by: CS	Hvorslev	Analysis Date: 8/31/2023
Aquifer Thickness:		



Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]	
TW-36I	1.21×10^{-6}	

Slug Test - Analyses Report

Project: Hydrogeological Study - Southampton Landfill Site

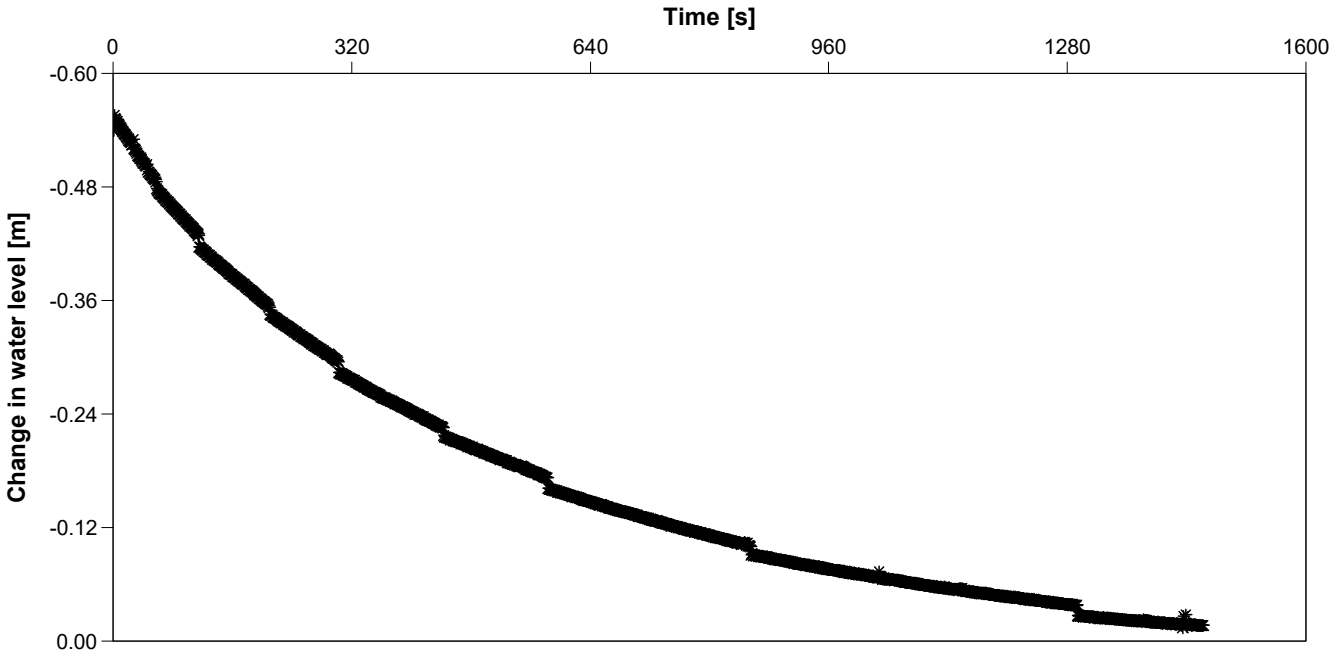
Number: 220341

Client: Town of Saugeen Shores

Location: 126 Concession 14, Southampton	Slug Test: TW-36I	Test Well: TW-36I
Test Conducted by: JW		Test Date: 11/2/2022
Aquifer Thickness:		

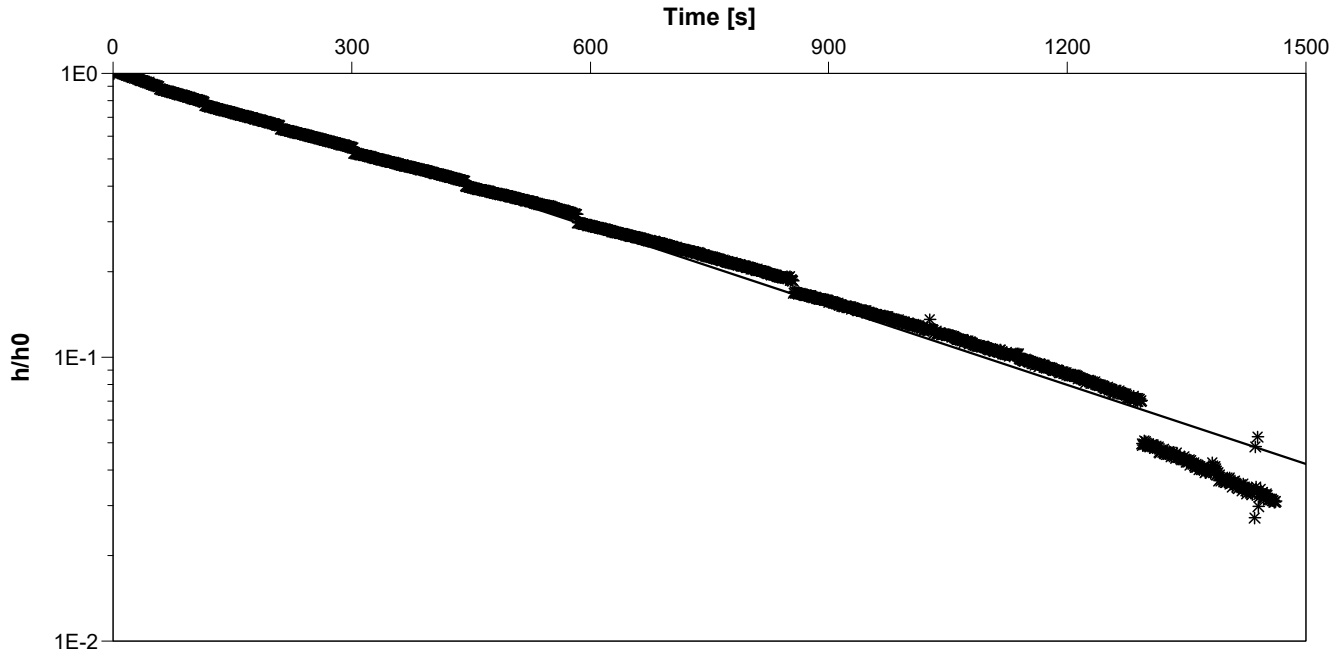
	Analysis Name	Analysis Performed by	Analysis Date	Method name	Well	T [m²/s]	S
1	Hvorslev	CS	8/31/2023	Hvorslev	TW-36I		1.21×10^{-6}

	Slug Test Analysis Report	
	Project: Hydrogeological Study - Southampton Landfill Site	
	Number: 220341	
	Client: Town of Saugeen Shores	
Location: 126 Concession 14, Southampton	Slug Test: TW-38S	Test Well: TW-38S
Test Conducted by: JW		Test Date: 11/2/2022
Analysis Performed by: CS	Time vs Drawdown	Analysis Date: 8/28/2023
Aquifer Thickness:		



	Slug Test Analysis Report
	Project: Hydrogeological Study - Southampton Landfill Site
	Number: 220341
	Client: Town of Saugeen Shores

Location: 126 Concession 14, Southampton	Slug Test: TW-38S	Test Well: TW-38S
Test Conducted by: JW		Test Date: 11/2/2022
Analysis Performed by: C.S.	Hvorslev	Analysis Date: 8/31/2023
Aquifer Thickness:		



Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]	
TW-38S	1.85×10^{-6}	

Slug Test - Analyses Report

Project: Hydrogeological Study - Southampton Landfill Site

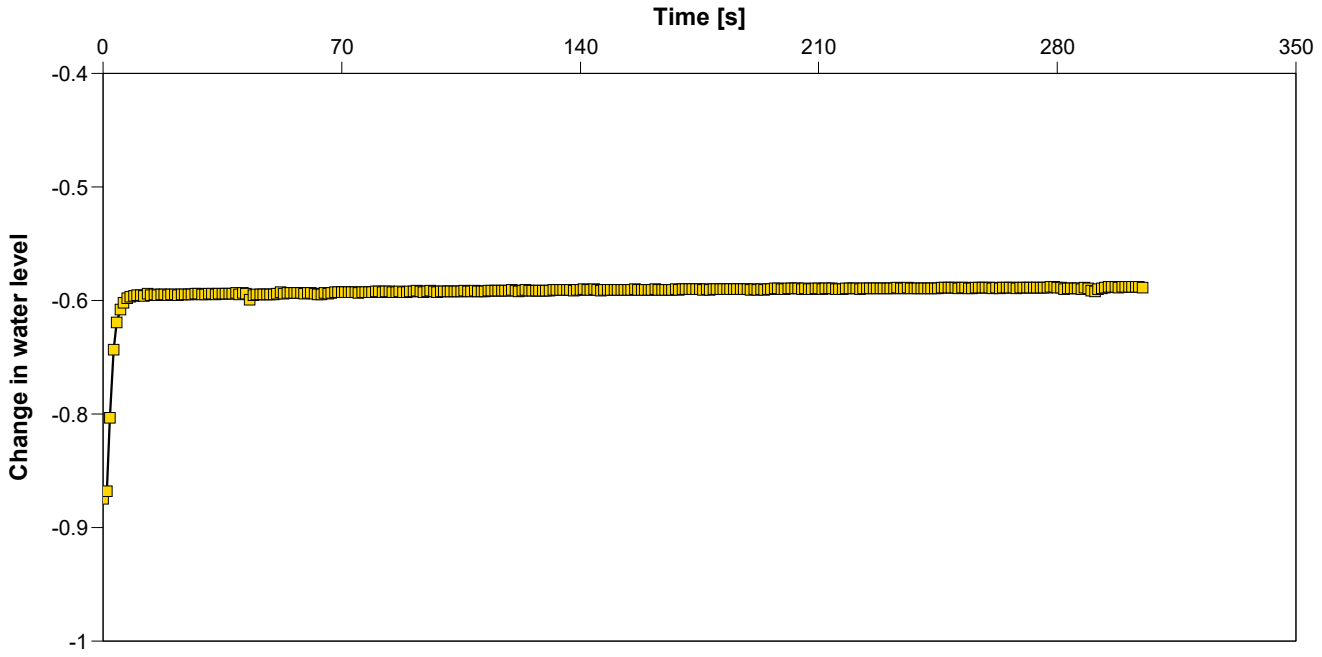
Number: 220341

Client: Town of Saugeen Shores

Location: 126 Concession 14, Southampton	Slug Test: TW-38S	Test Well: TW-38S
Test Conducted by: JW		Test Date: 11/2/2022
Aquifer Thickness:		

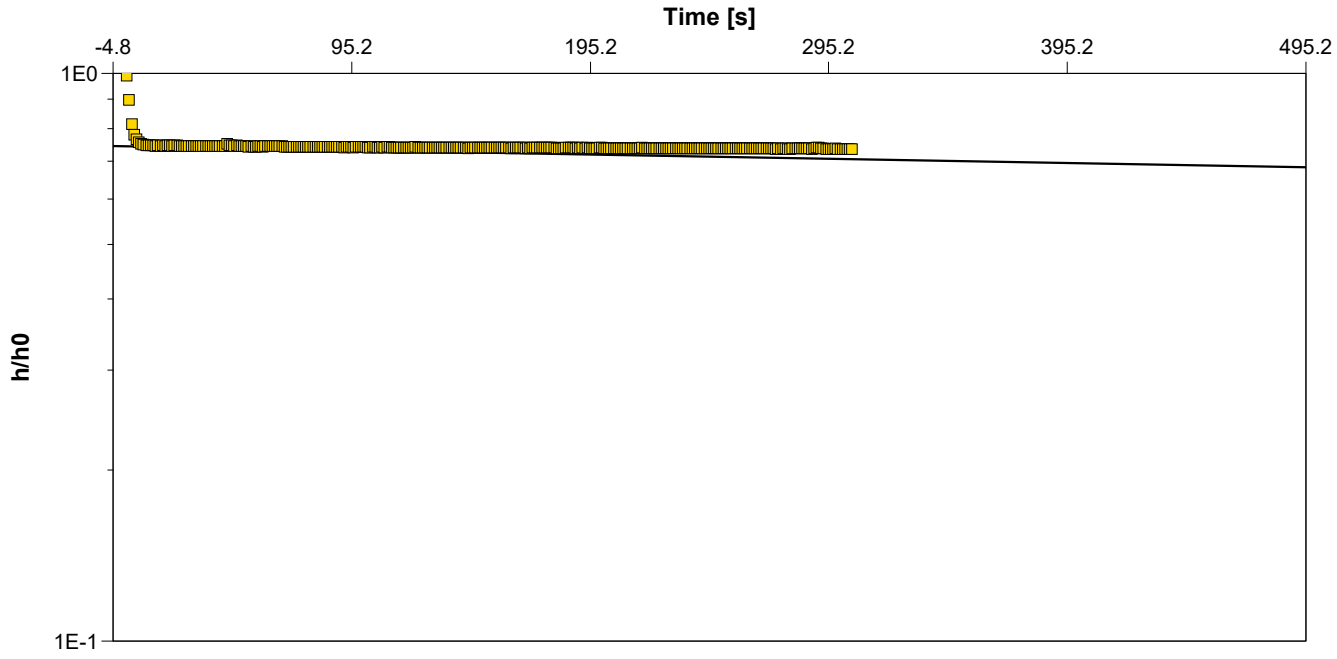
	Analysis Name	Analysis Performed by	Analysis Date	Method name	Well	T [m²/s]	S
1	Hvorslev	C.S.	8/31/2023	Hvorslev	TW-38S		1.85×10^{-6}

	Slug Test Analysis Report	
	Project: Hydrogeological Study - Southampton Landfill Site	
	Number: 220341	
	Client: Town of Saugeen Shores	
Location: 126 Concession 14, Southampton	Slug Test: TW-38I	Test Well: TW-38I
Test Conducted by: JW		Test Date: 11/2/2022
Analysis Performed by:	Time vs Drawdown	Analysis Date: 8/28/2023
Aquifer Thickness:		



	Slug Test Analysis Report
	Project: Hydrogeological Study - Southampton Landfill Site
	Number: 220341
	Client: Town of Saugeen Shores

Location: 126 Concession 14, Southampton	Slug Test: TW-38I	Test Well: TW-38I
Test Conducted by: JW		Test Date: 11/2/2022
Analysis Performed by: CS	Hvorslev	Analysis Date: 8/31/2023
Aquifer Thickness:		



Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]	
TW-38I	8.50×10^{-8}	

Slug Test - Analyses Report

Project: Hydrogeological Study - Southampton Landfill Site

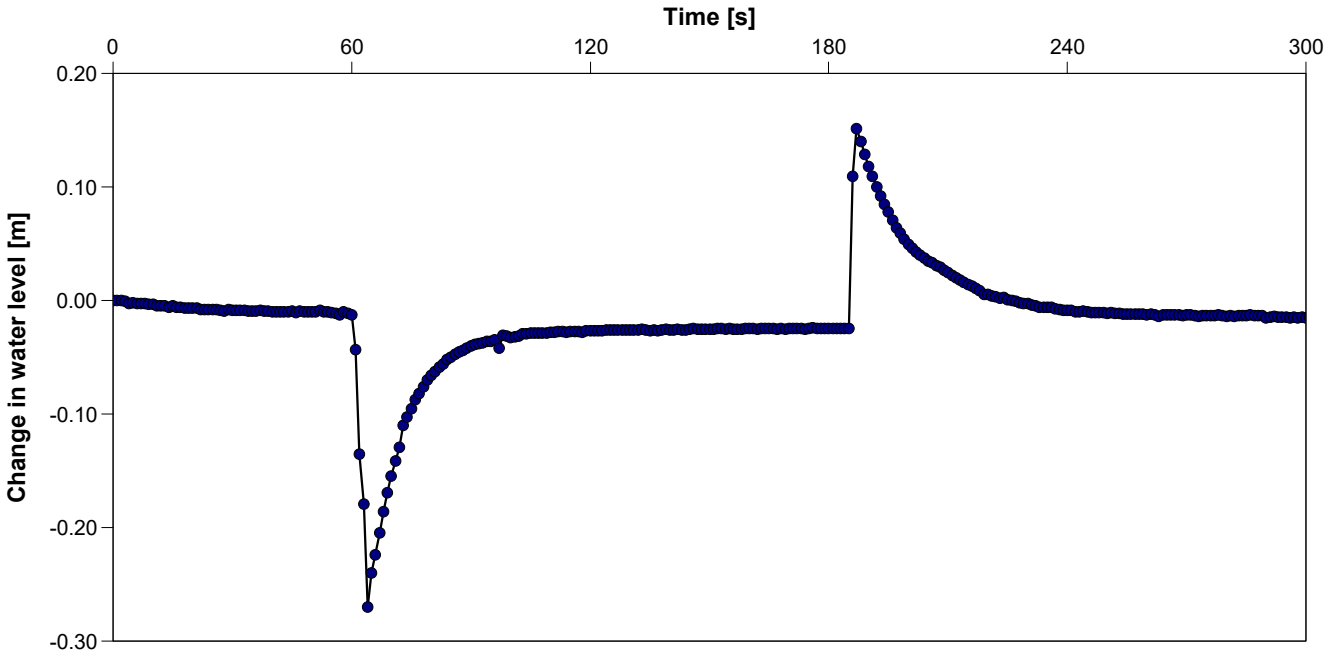
Number: 220341

Client: Town of Saugeen Shores

Location: 126 Concession 14, Southampton	Slug Test: TW-38I	Test Well: TW-38I
Test Conducted by: JW		Test Date: 11/2/2022
Aquifer Thickness:		

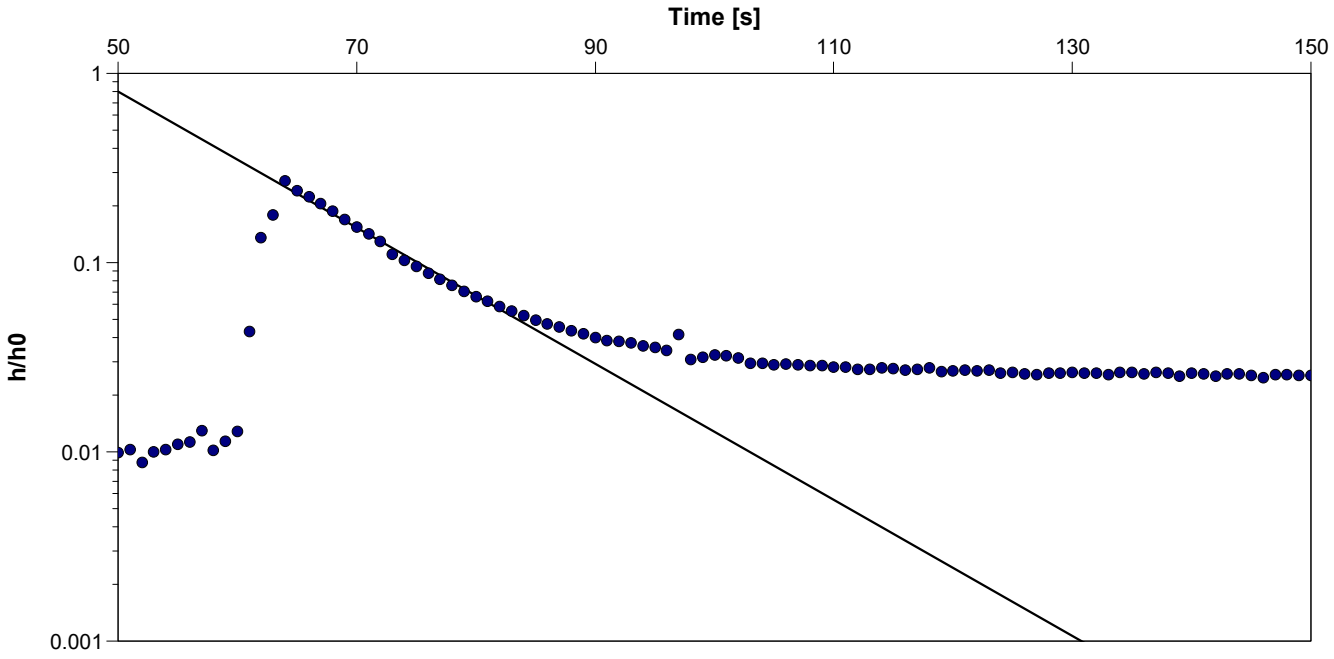
	Analysis Name	Analysis Performed by	Analysis Date	Method name	Well	T [m²/s]	S
1	Hvorslev	CS	8/31/2023	Hvorslev	TW-38I		8.50×10^{-8}

	Slug Test Analysis Report	
	Project: Hydrogeological Study - Southampton Landfill Site	
	Number: 220341	
	Client: Town of Saugeen Shores	
Location: 126 Concession 14, Southampton	Slug Test: TW-39S	Test Well: TW-39S
Test Conducted by: JW		Test Date: 11/2/2022
Analysis Performed by: CS	Time vs Drawdown	Analysis Date: 8/28/2023
Aquifer Thickness:		



	Slug Test Analysis Report
	Project: Hydrogeological Study - Southampton Landfill Site
	Number: 220341
	Client: Town of Saugeen Shores

Location: 126 Concession 14, Southampton	Slug Test: TW-39S	Test Well: TW-39S
Test Conducted by: JW		Test Date: 11/2/2022
Analysis Performed by: CS	Hvorslev	Analysis Date: 8/31/2023
Aquifer Thickness:		

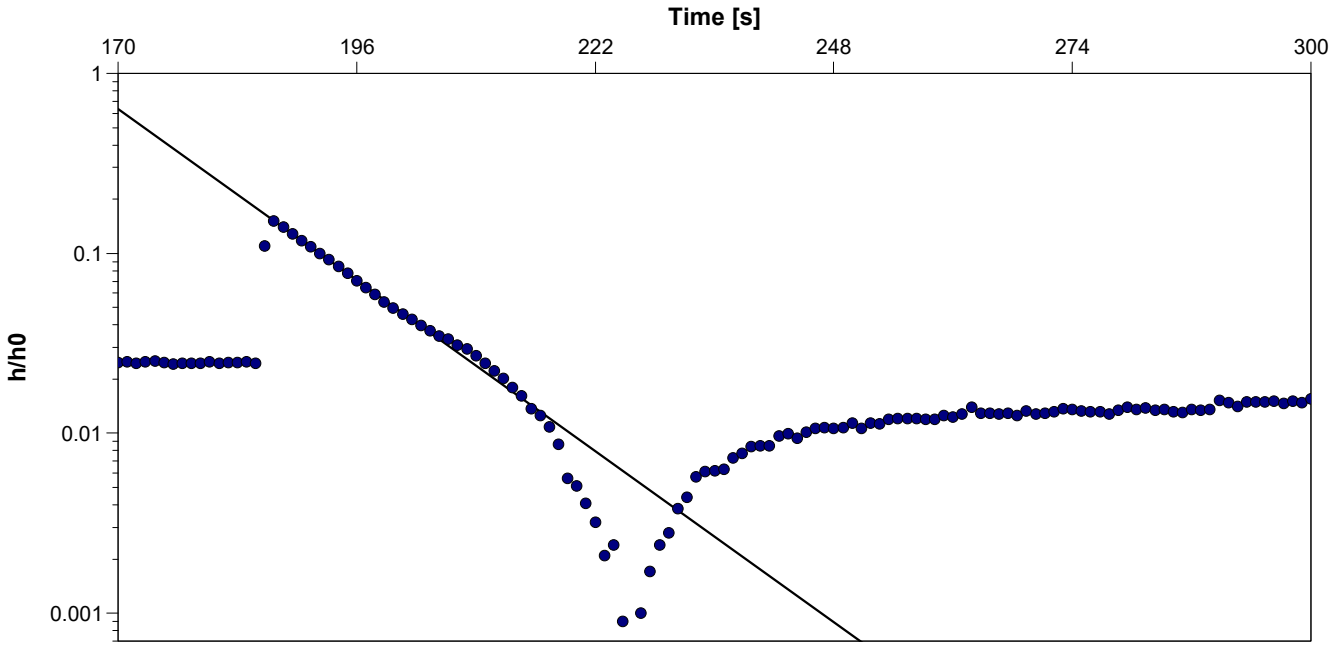


Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]	
TW-39S	7.18×10^{-5}	

	Slug Test Analysis Report
	Project: Hydrogeological Study - Southampton Landfill Site
	Number: 220341
	Client: Town of Saugeen Shores

Location: 126 Concession 14, Southampton	Slug Test: TW-39S	Test Well: TW-39S
Test Conducted by: JW		Test Date: 11/2/2022
Analysis Performed by: CS	Hvorslev 2	Analysis Date: 8/31/2023
Aquifer Thickness:		



Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]	
TW-39S	7.30×10^{-5}	

Slug Test - Analyses Report

Project: Hydrogeological Study - Southampton Landfill Site

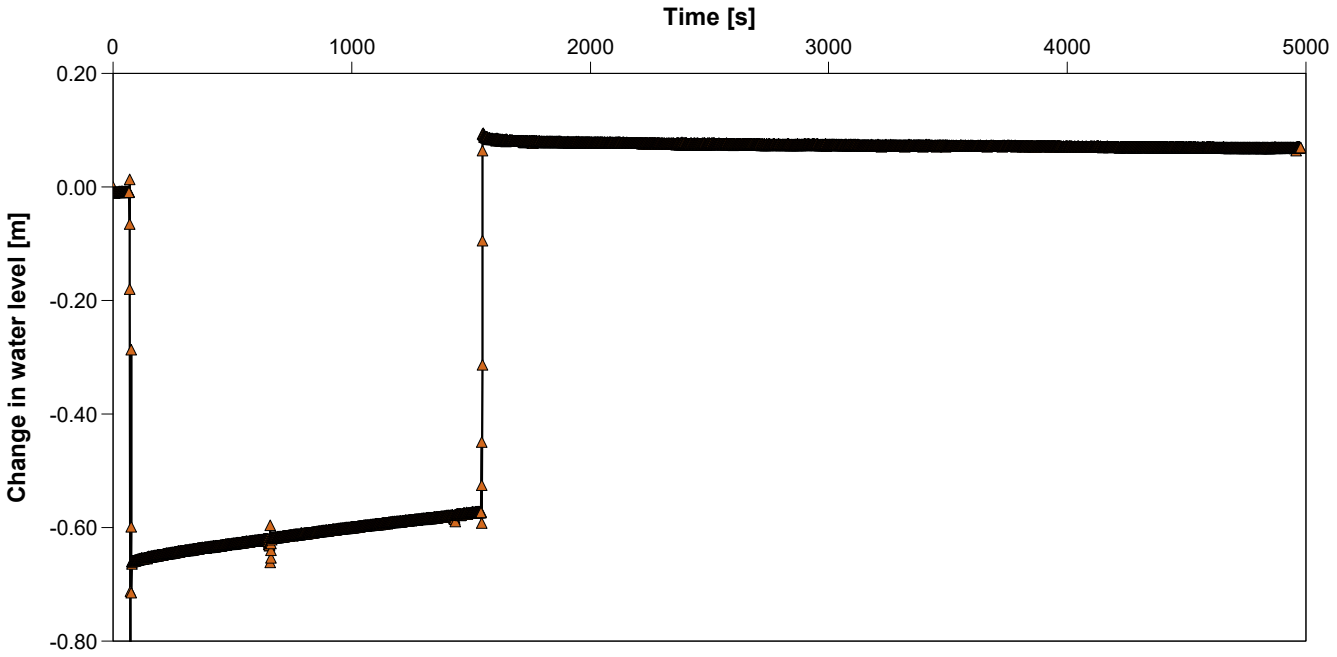
Number: 220341

Client: Town of Saugeen Shores

Location: 126 Concession 14, Southampton	Slug Test: TW-39S	Test Well: TW-39S
Test Conducted by: JW		Test Date: 11/2/2022
Aquifer Thickness:		

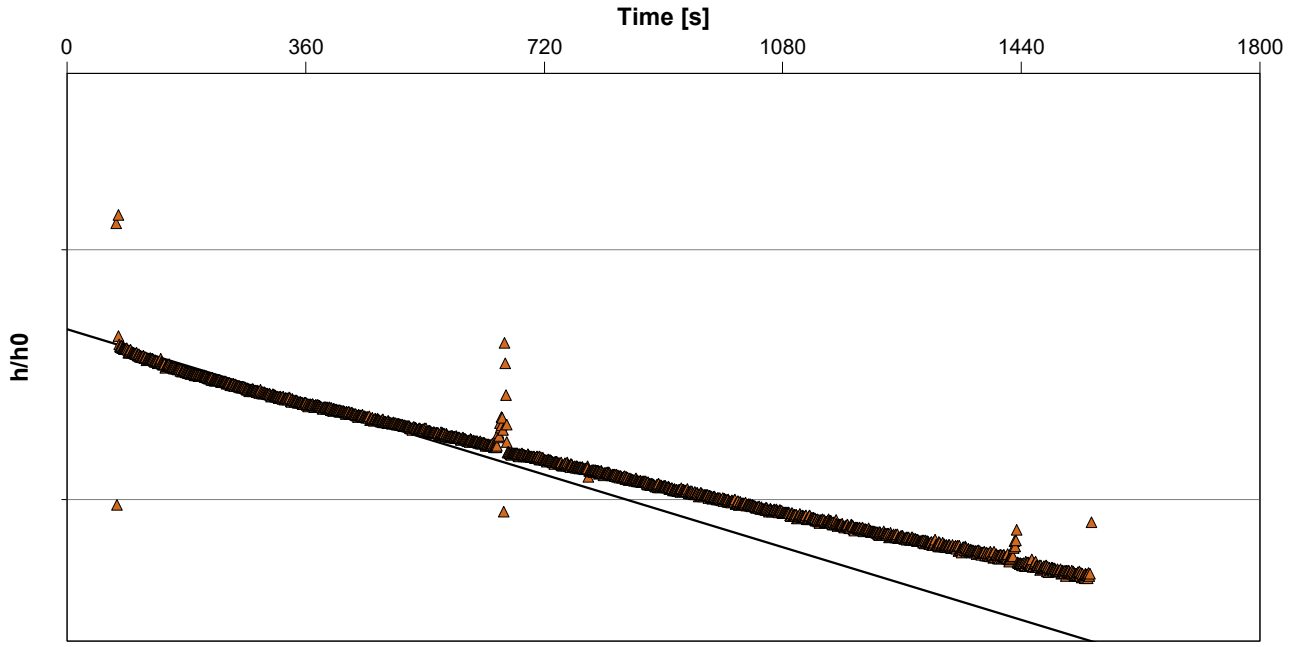
	Analysis Name	Analysis Performed by	Analysis Date	Method name	Well	T [m²/s]	S
1	Hvorslev	CS	8/31/2023	Hvorslev	TW-39S		7.18×10^{-5}
2	Hvorslev 2	CS	8/31/2023	Hvorslev	TW-39S		7.30×10^{-5}

	Slug Test Analysis Report	
	Project: Hydrogeological Study - Southampton Landfill Site	
	Number: 220341	
	Client: Town of Saugeen Shores	
Location: 126 Concession 14, Southampton	Slug Test: TW-39I	Test Well: TW-39I
Test Conducted by: JW		Test Date: 11/2/2022
Analysis Performed by: CS	Time vs Drawdown	Analysis Date: 8/28/2023
Aquifer Thickness:		



	Slug Test Analysis Report
	Project: Hydrogeological Study - Southampton Landfill Site
	Number: 220341
	Client: Town of Saugeen Shores

Location: 126 Concession 14, Southampton	Slug Test: TW-39I	Test Well: TW-39I
Test Conducted by: JW		Test Date: 11/2/2022
Analysis Performed by: CS	Hvorslev	Analysis Date: 8/31/2023
Aquifer Thickness:		

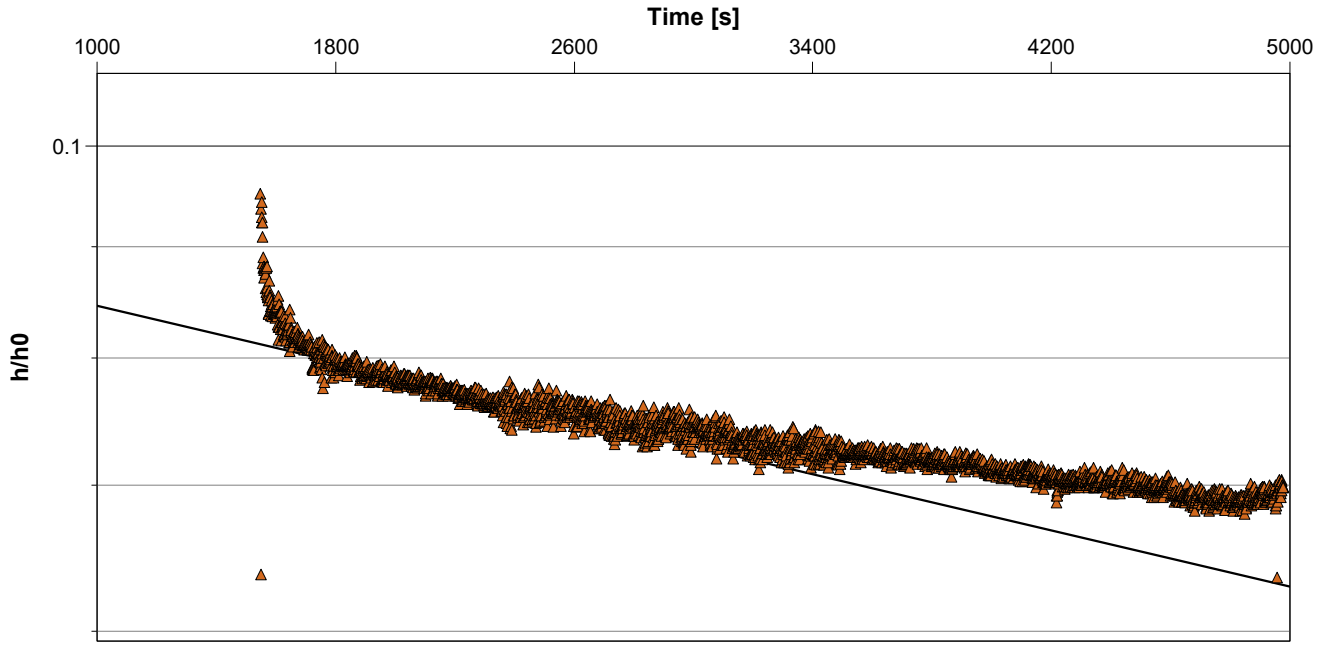


Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]	
TW-39I	6.30×10^{-8}	

	Slug Test Analysis Report
	Project: Hydrogeological Study - Southampton Landfill Site
	Number: 220341
	Client: Town of Saugeen Shores

Location: 126 Concession 14, Southampton	Slug Test: TW-39I	Test Well: TW-39I
Test Conducted by: JW		Test Date: 11/2/2022
Analysis Performed by: CS	Hvorslev 2	Analysis Date: 8/31/2023
Aquifer Thickness:		



Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]	
TW-39I	3.75×10^{-8}	

Slug Test - Analyses Report

Project: Hydrogeological Study - Southampton Landfill Site

Number: 220341

Client: Town of Saugeen Shores

Location: 126 Concession 14, Southampton	Slug Test: TW-39I	Test Well: TW-39I
Test Conducted by: JW		Test Date: 11/2/2022
Aquifer Thickness:		

	Analysis Name	Analysis Performed by	Analysis Date	Method name	Well	T [m²/s]	S
1	Hvorslev	CS	8/31/2023	Hvorslev	TW-39I		6.30×10^{-8}
2	Hvorslev 2	CS	8/31/2023	Hvorslev	TW-39I		3.75×10^{-8}

APPENDIX C
HISTORICAL GROUNDWATER ELEVATIONS

SOUTHAMPTON WASTE DISPOSAL SITE
GROUNDWATER LEVEL DATA (1982 to 2004)

Test Well	Ground Level Elevation m	Measuring Point Elevation m	1982-01-06 WL Elev. m	1983-01-12 WL Elev. m	1986-06-09 WL Elev. m	1988-07-25 WL Elev. m	1988-10-31 WL Elev. m	1989-05-16 WL Elev. m	1989-10-05 WL Elev. m	1990-12-11 WL Elev. m	1991-03-18 WL Elev. m	1991-09-09 WL Elev. m	1992-04-30 WL Elev. m	1992-09-08 WL Elev. m
TW-1	216.60	217.27	214.03	----	----	211.98	214.54	214.74	----	----	----	----	----	----
TW-2	214.80	-	214.48	----	----	destroyed	----	----	----	----	----	----	----	----
TW-3	216.10	217.14	215.09	215.31	215.54	214.05	215.91	215.35	214.44	213.50	215.84	215.13	215.85	215.65
TW-4	216.10	217.15	215.99	216.04	216.12	214.77	215.80	214.10	215.29	215.45	216.22	215.75	216.28	216.10
TW-5	223.20	224.74	219.21	----	----	217.84	218.20	218.55	216.97	219.62	219.60	218.61	219.56	218.84
TW-6	218.70	219.88	216.68	----	216.93	214.43	216.98	216.80	214.42	217.41	217.35	215.72	217.51	216.59
TW-7	217.20	217.79	216.20	----	----	214.43	215.57	216.05	213.90	216.61	216.65	215.62	216.61	215.94
TW-8	221.10		220.24	220.73	----	destroyed	----	----	----	----	----	----	----	----
TW-10	217.00	218.08	211.77	----	213.16	211.01	211.65	212.40	211.16	211.99	212.65	N/A	212.88	211.79
TW-11	216.90	-	----	----	----	destroyed	----	----	----	----	----	----	----	----
TW-12	221.00	-	213.91	215.35	----	destroyed	----	----	----	----	----	----	----	----
TW-13	221.00	-	216.54	216.94	----	destroyed	----	----	----	----	----	----	----	----
TW-14	218.50	218.95	----	216.43	216.21	215.73	215.62	216.16	----	214.79	216.50	215.57	215.63	215.84
TW-15	217.55	218.33	----	216.46	----	214.51	215.47	216.17	dry	215.27	215.61	dry	217.74	215.39
TW-16	217.18	217.78	----	216.51	216.74	215.32	215.30	216.72	215.04	216.55	216.74	215.46	217.11	215.65
TW-17	216.03	216.57	----	215.57	----	214.07	214.77	215.63	214.45	215.52	215.71	214.84	215.86	N/A
TW-18	215.38	216.14	----	----	214.53	213.72	214.70	215.23	213.96	215.26	215.29	214.30	215.24	215.05
TW-18A	215.38	216.14	----	----	215.49	213.23	214.29	215.18	213.88	216.23	215.24	214.24	215.19	214.89
TW-19	220.51	221.28	----	----	215.02	213.46	214.03	214.93	212.84	214.71	214.87	213.22	214.96	213.68
TW-20	218.21	218.64	----	----	215.30	213.24	213.84	215.28	212.37	215.55	215.55	213.49	215.70	214.40
TW-21	220.83	221.57	----	----	211.81	210.34	210.89	211.49	210.43	210.33	211.07	dry	211.10	210.34
TW-22	220.31	221.10	----	----	210.90	210.29	211.59	210.85	210.83	209.60	215.76	dry	210.11	N/A
TW-22A	220.30	221.11	----	----	215.52	dry	dry	dry	dry	216.25	210.31	210.01	216.08	N/A
TW-23	215.16	216.09	----	----	----	----	----	----	----	----	----	----	----	----
TW-24	214.48	215.39	----	----	----	----	----	----	----	----	----	----	----	----
TW-25	214.42	215.45	----	----	----	----	----	----	----	----	----	----	----	----
TW-26	216.15	217.01	----	----	----	----	----	----	----	----	----	----	----	----
TW-27	215.43	216.41	----	----	----	----	----	----	----	----	----	----	----	----
TW-28	214.84	215.87	----	----	----	----	----	----	----	----	----	----	----	----

NOTES:

1. "-" means water level not obtained.
2. Water levels taken by GAMSBY AND MANNEROW LIMITED between 1982 and 1994 and PSMI between 1994 and 2002.
3. TW9 - not instrumented with monitoring well
4. TW-19 was re-surveyed in 2015. Prior to 2015 the measuring point elevation was 221.55.
5. Shaded cells indicate that the subject well was not constructed at that time.

SOUTHAMPTON WASTE DISPOSAL SITE
GROUNDWATER LEVEL DATA (1982 to 2004)

Test Well	Ground Level Elevation m	Measuring Point Elevation m	1994-04-29 WL Elev. m	1994-11-11 WL Elev. m	1995-05-15 WL Elev. m	1995-11-17 WL Elev. m	1996-05-30 WL Elev. m	1996-11-11 WL Elev. m	1997-05-07 WL Elev. m	1998-01-12 WL Elev. m	1998-05-06 WL Elev. m	1998-12-15 WL Elev. m	1999-06-20 WL Elev. m	1999-12-01 WL Elev. m
TW-1	216.60	217.27	213.79	213.33	213.51	213.09	213.82	213.62	214.39	213.80	213.76	212.83	212.18	212.73
TW-2	214.80	-	----	----	----	----	----	----	----	----	----	----	----	----
TW-3	216.10	217.14	216.14	215.81	215.49	215.38	215.39	215.62	215.81	215.70	215.79	214.83	214.04	213.90
TW-4	216.10	217.15	216.20	216.03	215.95	216.03	215.97	216.07	216.11	215.85	216.00	215.24	214.68	214.70
TW-5	223.20	224.74	219.49	219.20	218.95	218.94	219.07	219.02	219.08	219.30	219.21	217.45	217.13	215.18
TW-6	218.70	219.88	217.53	216.99	216.70	217.08	217.04	217.14	217.06	216.74	216.68	DRY	214.98	215.18
TW-7	217.20	217.79	216.46	216.01	215.99	215.78	216.10	215.91	216.17	216.07	215.87	DRY	215.00	214.48
TW-8	221.10		----	----	----	----	----	----	----	----	----	----	----	----
TW-10	217.00	218.08	212.51	211.56	212.18	211.03	212.25	211.43	213.22	211.97	212.23	210.29	208.78	208.50
TW-11	216.90	-	----	----	----	----	----	----	----	----	----	----	----	----
TW-12	221.00	-	----	----	----	----	----	----	----	----	----	----	----	----
TW-13	221.00	-	----	----	----	----	----	----	----	----	----	----	----	----
TW-14	218.50	218.95	216.50	215.70	216.03	215.55	216.00	215.82	216.47	215.60	216.14	214.92	215.02	214.94
TW-15	217.55	218.33	216.56	215.51	216.10	215.47	216.38	215.66	216.58	215.24	216.16	215.33	214.46	214.47
TW-16	217.18	217.78	217.18	216.02	216.39	216.08	216.67	216.06	216.90	215.52	216.42	214.47	215.06	214.80
TW-17	216.03	216.57	215.72	215.04	215.47	214.87	215.57	215.07	215.75	215.26	215.41	214.02	214.05	213.62
TW-18	215.38	216.14	215.16	215.10	215.16	215.12	215.08	----	215.16	215.04	215.04	213.94	214.24	213.93
TW-18A	215.38	216.14	215.16	215.10	215.16	215.22	215.08	215.17	215.16	215.04	215.09	DRY	214.24	213.93
TW-19	220.51	221.28	214.90	213.87	214.34	213.87	214.55	214.24	214.79	213.94	214.45	DRY	212.08	211.84
TW-20	218.21	218.64	215.71	215.01	215.22	214.49	214.96	214.94	215.44	215.24	214.81	212.15	213.70	213.23
TW-21	220.83	221.57	211.42	210.78	211.36	210.26	211.44	210.64	212.45	211.15	211.64	209.65	208.70	208.17
TW-22	220.31	221.10	209.40	210.42	209.19	209.83	210.97	210.21	211.75	210.67	211.00	209.35	208.16	DRY
TW-22A	220.30	221.11	216.44	214.29	214.76	----	215.48	----	215.72	215.01	215.06	DRY	DRY	DRY
TW-23	215.16	216.09	----	----	----	----	----	----	215.19	215.17	215.12	DRY	212.03	210.96
TW-24	214.48	215.39	----	----	----	----	----	----	214.32	214.24	214.09	212.27	212.46	212.77
TW-25	214.42	215.45	----	----	----	----	----	----	214.36	213.64	214.25	211.98	212.45	212.32
TW-26	216.15	217.01	----	----	----	----	----	----	215.16	214.73	215.01	213.85	213.66	213.47
TW-27	215.43	216.41	----	----	----	----	----	----	214.89	213.91	214.54	213.03	212.41	212.39
TW-28	214.84	215.87	----	----	----	----	----	----	214.65	213.69	214.20	213.32	212.66	212.54

SOUTHAMPTON WASTE DISPOSAL SITE
GROUNDWATER LEVEL DATA (1982 to 2004)

Test Well	Ground Level Elevation m	Measuring Point Elevation m	2000-05-31 WL Elev. m	2000-11-29 WL Elev. m	2001-07-06 WL Elev. m	2001-12-10 WL Elev. m	2002-05-28 WL Elev. m	2002-11-11 WL Elev. m	2003-05-29 WL Elev. m	2003-11-27 WL Elev. m	2004-05-31 WL Elev. m	2004-11-23 WL Elev. m
TW-1	216.60	217.27	213.54	213.31	212.92	214.43	DRY	DRY	214.56	215.36	215.29	214.90
TW-2	214.80	-	----	----	----	----	----	----	----	----	----	----
TW-3	216.10	217.14	215.40	215.36	----	215.36	215.75	214.93	215.81	215.80	215.56	215.54
TW-4	216.10	217.15	215.96	215.89	----	215.99	216.23	215.60	216.26	216.08	216.15	215.69
TW-5	223.20	224.74	219.27	218.84	218.97	219.26	219.15	217.71	218.38	219.53	219.16	218.62
TW-6	218.70	219.88	----	----	----	216.26	215.95	DRY	216.34	216.91	216.55	215.43
TW-7	217.20	217.79	215.95	215.69	215.46	215.95	215.65	DRY	216.16	216.33	215.85	215.90
TW-8	221.10		----	----	----	----	----	----	----	----	----	----
TW-10	217.00	218.08	210.79	210.35	211.65	211.78	212.53	210.31	211.33	211.75	212.73	211.49
TW-11	216.90	-	----	----	----	----	----	----	----	----	----	----
TW-12	221.00	-	----	----	----	----	----	----	----	----	----	----
TW-13	221.00	-	----	----	----	----	----	----	----	----	----	----
TW-14	218.50	218.95	215.97	215.52	215.93	215.95	216.34	215.16	216.31	216.13	216.50	215.42
TW-15	217.55	218.33	215.94	215.39	215.89	215.91	216.52	215.30	216.55	216.07	216.53	215.23
TW-16	217.18	217.78	216.45	215.42	216.12	216.22	216.41	214.80	216.54	216.53	216.73	215.07
TW-17	216.03	216.57	215.39	214.71	215.24	215.27	215.57	214.12	215.47	----	215.65	214.57
TW-18	215.38	216.14	215.04	215.12	214.61	215.02	215.17	214.36	----	----	----	----
TW-18A	215.38	216.14	215.04	215.12	214.61	215.02	DRY	214.36	----	----	----	----
TW-19	220.51	221.28	214.37	213.31	212.97	214.28	214.71	DRY	214.86	214.30	214.56	212.84
TW-20	218.21	218.64	214.87	214.23	214.29	214.93	214.80	212.75	214.56	214.30	215.31	214.14
TW-21	220.83	221.57	209.88	209.65	210.95	210.75	211.38	210.03	210.65	210.86	212.52	210.88
TW-22	220.31	221.10	209.62	209.30	210.58	210.39	211.31	209.89	210.35	210.61	211.63	210.49
TW-22A	220.30	221.11	215.58	DRY	DRY	DRY	DRY	DRY	----	----	----	----
TW-23	215.16	216.09	215.11	214.12	214.10	215.07	214.03	DRY	215.19	215.20	215.16	212.99
TW-24	214.48	215.39	213.92	214.17	213.53	214.17	214.15	210.63	214.06	214.35	214.05	213.40
TW-25	214.42	215.45	213.97	213.67	213.85	214.05	214.17	212.67	214.22	214.43	214.26	213.59
TW-26	216.15	217.01	214.98	214.58	214.68	214.92	214.96	214.05	215.52	215.38	215.41	214.63
TW-27	215.43	216.41	214.21	213.79	214.31	214.33	214.57	213.23	214.45	214.66	214.89	213.70
TW-28	214.84	215.87	214.09	213.85	213.93	214.14	214.29	214.38	214.50	214.60	214.52	213.82

SOUTHAMPTON WASTE DISPOSAL SITE
GROUNDWATER LEVEL DATA (2005 to 2022)

Test Well	Ground Level Elevation m	Measuring Point Elevation m	2005-06-09		2005-11-14		2006-05-24		2006-10-25		2007-05-03		2007-11-15	
			Depth to Water m	WL Elev. m	Depth to Water m	WL Elev. m	Depth to Water m	WL Elev. m	Depth to Water m	WL Elev. m	Depth to Water m	WL Elev. m	Depth to Water m	WL Elev. m
TW-1	216.60	217.27	4.00	213.28	2.45	214.82	2.03	215.24	1.87	215.40	1.85	215.42	2.39	214.88
TW-3	216.10	217.14	----	----	----	----	1.26	215.88	1.33	215.81	1.04	216.10	1.50	215.65
TW-4	216.10	217.15	1.05	216.10	1.27	215.89	0.96	216.19	----	----	0.89	216.26	1.47	215.68
TW-5	223.20	224.74	5.27	219.48	6.26	218.48	5.30	219.44	5.79	218.95	5.12	219.63	6.72	218.02
TW-6	218.70	219.88	3.95	215.93	5.91	213.97	3.57	216.31	3.50	216.38	2.66	217.22	----	-
TW-10	217.00	218.08	5.70	212.38	7.15	210.93	5.27	212.81	6.59	211.49	5.01	213.08	7.04	211.04
TW-14	218.50	218.95	2.88	216.07	3.46	215.49	2.54	216.41	3.43	215.52	2.35	216.60	3.65	215.30
TW-15	217.55	218.33	2.17	216.17	DRY	DRY	1.71	216.62	2.96	215.37	1.73	216.60	2.75	215.58
TW-16	217.18	217.78	1.52	216.26	2.78	215.00	1.20	216.58	2.43	215.35	0.95	216.83	2.96	214.82
TW-17	216.03	216.57	1.23	215.34	2.26	214.31	1.01	215.56	1.84	214.73	0.91	215.66	2.21	214.36
TW-19	220.51	221.28	----	----	----	----	7.55	214.00	----	----	----	----	----	----
TW-20	218.21	218.64	3.66	214.98	4.52	214.13	3.52	215.12	3.91	214.73	3.20	215.45	5.31	213.33
TW-22	220.31	221.10	10.21	210.89	11.28	209.82	9.78	211.32	10.87	210.23	9.74	211.36	11.06	210.04
TW-23	215.16	216.09	2.88	213.21	3.78	212.31	0.95	215.15	2.54	213.55	0.87	215.22	4.40	211.69
TW-24	214.48	215.39	1.74	213.66	2.32	213.07	1.09	214.30	1.08	214.31	1.06	214.33	3.64	211.76
TW-25	214.42	215.45	1.21	214.24	1.69	213.76	1.04	214.41	1.39	214.06	0.94	214.51	1.90	213.55
TW-26	216.15	217.01	3.34	213.67	2.35	214.66	1.74	215.27	2.22	214.79	1.53	215.49	2.67	214.34
TW-27	215.43	216.41	1.99	214.42	2.75	213.66	1.68	214.73	2.47	213.94	1.55	214.87	3.08	213.33
TW-28	214.84	215.87	3.02	212.86	2.11	213.76	1.29	214.58	1.90	213.97	1.99	213.88	2.32	213.55
TW-29	TBD	214.84	----	----	----	----	----	----	----	----	----	----	----	----
TW-30	TBD	219.25	----	----	----	----	----	----	----	----	----	----	----	----
TW-31	TBD	209.89	----	----	----	----	----	----	----	----	----	----	----	----
TW-32	TBD	210.20	----	----	----	----	----	----	----	----	----	----	----	----

NOTES:
1. "-" means water level not obtained.
2. TW-19 was re-surveyed in 2015. Prior to 2015 the measuring point elevation was 221.55.
3. Shaded cells indicate that the subject well was not constructed at that time.

SOUTHAMPTON WASTE DISPOSAL SITE
GROUNDWATER LEVEL DATA (2005 to 2022)

	Ground	Measuring	2008-04-24		2008-10-14		2009-04-17		2009-09-11		2010-04-19		2010-11-11	
	Level	Point	Depth to	WL	Depth to	WL	Depth to	WL	Depth to	WL	Depth to	WL	Depth to	WL
	Elevation	Elevation	Water	Elev.	Water	Elev.	Water	Elev.	Water	Elev.	Water	Elev.	Water	Elev.
Test Well	m	m	m	m	m	m	m	m	m	m	m	m	m	m
TW-1	216.60	217.27	1.89	215.38	2.14	215.13	3.05	214.22	1.92	215.35	3.14	214.13	2.35	214.92
TW-3	216.10	217.14	0.91	216.23	1.13	216.01	0.82	216.32	1.45	215.69	1.18	215.96	1.34	215.80
TW-4	216.10	217.15	0.89	216.26	1.14	216.01	0.78	216.37	1.32	215.83	1.07	216.08	1.14	216.01
TW-5	223.20	224.74	5.02	219.72	3.41	221.33	5.05	219.69	6.15	218.59	6.47	218.27	-	-
TW-6	218.70	219.88	2.99	216.89	2.99	216.89	2.85	217.03	4.11	215.77	3.85	216.03	4.15	215.73
TW-10	217.00	218.08	5.37	212.71	6.35	211.73	4.34	213.74	6.39	211.69	6.61	211.47	6.92	211.16
TW-14	218.50	218.95	2.32	216.63	3.23	215.72	2.23	216.72	3.53	215.42	3.13	215.82	3.27	215.68
TW-15	217.55	218.33	1.50	216.83	2.73	215.60	1.35	216.98	2.78	215.55	2.55	215.78	2.79	215.54
TW-16	217.18	217.78	0.71	217.07	2.24	215.54	0.65	217.13	2.77	215.01	1.96	215.82	2.17	215.61
TW-17	216.03	216.57	0.85	215.72	1.78	214.79	0.77	215.80	2.03	214.54	1.74	214.83	1.90	214.67
TW-19	220.51	221.28	6.98	214.57	Dry	----	----	----	----	----	7.75	213.80	8.13	213.42
TW-20	218.21	218.64	3.16	215.48	5.66	212.98	3.05	215.59	4.63	214.01	3.66	214.98	3.69	214.95
TW-22	220.31	221.10	10.21	210.89	10.62	210.48	9.30	211.80	10.55	210.55	10.91	210.19	11.11	209.99
TW-23	215.16	216.09	0.87	215.22	3.16	212.93	0.86	215.23	2.95	213.14	1.26	214.83	2.82	213.27
TW-24	214.48	215.39	1.87	213.52	1.51	213.88	1.03	214.36	1.51	213.88	1.31	214.08	1.29	214.10
TW-25	214.42	215.45	0.92	214.53	1.46	213.99	0.90	214.55	1.83	213.62	1.61	213.84	----	----
TW-26	216.15	217.01	1.42	215.59	2.19	214.82	0.51	216.50	2.33	214.68	2.07	214.94	2.19	214.82
TW-27	215.43	216.41	1.50	214.91	2.33	214.08	1.38	215.03	2.65	213.76	2.53	213.88	2.60	213.81
TW-28	214.84	215.87	1.16	214.71	1.89	213.98	1.12	214.75	2.09	213.78	1.82	214.05	----	----
TW-29	TBD	214.84	----	----	----	----	----	----	----	----	----	----	----	----
TW-30	TBD	219.25	----	----	----	----	----	----	----	----	----	----	----	----
TW-31	TBD	209.89	----	----	----	----	----	----	----	----	----	----	----	----
TW-32	TBD	210.20	----	----	----	----	----	----	----	----	----	----	----	----

SOUTHAMPTON WASTE DISPOSAL SITE
GROUNDWATER LEVEL DATA (2005 to 2022)

	Ground	Measuring	2011-04-20		2011-11-07		2012-04-12		2012-10-31		2013-04-25		2013-11-07	
	Level	Point	Depth to	WL	Depth to	WL	Depth to	WL	Depth to	WL	Depth to	WL	Depth to	WL
	Elevation	Elevation	Water	Elev.	Water	Elev.	Water	Elev.	Water	Elev.	Water	Elev.	Water	Elev.
Test Well	m	m	m	m	m	m	m	m	m	m	m	m	m	m
TW-1	216.60	217.27	1.50	215.77	1.98	215.29	2.90	214.37	1.48	215.79	1.32	215.95	1.48	215.79
TW-3	216.10	217.14	0.87	216.27	1.12	216.02	0.93	216.21	1.23	215.91	1.00	216.14	1.05	216.09
TW-4	216.10	217.15	0.77	216.38	0.98	216.17	1.14	216.01	1.90	215.25	0.75	216.40	1.02	216.13
TW-5	223.20	224.74	5.11	219.63	3.28	221.46	5.35	219.39	5.33	219.41	4.78	219.96	5.14	219.60
TW-6	218.70	219.88	2.84	217.04	3.50	216.38	3.63	216.25	3.93	215.95	2.53	217.35	3.53	216.35
TW-10	217.00	218.08	5.98	212.10	5.86	212.22	5.12	212.96	11.06	207.02	4.60	213.48	5.95	212.13
TW-14	218.50	218.95	2.22	216.73	3.24	215.71	2.68	216.27	3.51	215.44	1.98	216.97	3.15	215.80
TW-15	217.55	218.33	1.37	216.96	2.30	216.03	1.90	216.43	2.79	215.54	1.09	217.24	2.42	215.91
TW-16	217.18	217.78	0.63	217.15	1.75	216.03	1.41	216.37	2.19	215.59	0.55	217.23	----	----
TW-17	216.03	216.57	0.68	215.89	1.47	215.10	1.15	215.42	2.17	214.40	0.56	216.01	1.22	215.35
TW-19	220.51	221.28	6.93	214.62	----	----	1.77	219.78	8.40	213.15	----	----	----	----
TW-20	218.21	218.64	3.15	215.49	3.40	215.24	3.50	215.14	4.20	214.44	2.93	215.71	3.41	215.23
TW-22	220.31	221.10	9.93	211.17	10.19	210.91	9.64	211.46	6.82	214.28	9.74	211.36	10.40	210.70
TW-23	215.16	216.09	0.83	215.26	1.13	214.96	0.93	215.16	2.08	214.01	0.83	215.26	1.04	215.05
TW-24	214.48	215.39	0.90	214.49	1.08	214.31	1.00	214.39	1.32	214.07	0.98	214.41	1.10	214.29
TW-25	214.42	215.45	0.90	214.55	1.02	214.43	0.87	214.58	1.34	214.11	0.86	214.59	1.16	214.29
TW-26	216.15	217.01	1.30	215.71	1.84	215.17	1.93	215.08	2.08	214.93	1.34	215.67	1.35	215.66
TW-27	215.43	216.41	1.12	215.29	1.88	214.53	1.70	214.71	2.62	213.79	1.12	215.29	2.16	214.25
TW-28	214.84	215.87	1.03	214.84	1.47	214.40	1.32	214.55	2.09	213.78	1.06	214.81	1.41	214.46
TW-29	TBD	214.84	----	----	----	----	----	----	----	----	----	----	2.10	212.74
TW-30	TBD	219.25	----	----	----	----	----	----	----	----	----	----	1.19	218.06
TW-31	TBD	209.89	----	----	----	----	----	----	----	----	----	----	1.10	208.79
TW-32	TBD	210.20	----	----	----	----	----	----	----	----	----	----	1.00	209.20

SOUTHAMPTON WASTE DISPOSAL SITE
GROUNDWATER LEVEL DATA (2005 to 2022)

	Ground	Measuring	2014-05-07		2014-10-27		2015-04-27		2015-11-02		2016-04-13		2016-10-21	
	Level	Point	Depth to	WL	Depth to	WL	Depth to	WL	Depth to	WL	Depth to	WL	Depth to	WL
	Elevation	Elevation	Water	Elev.	Water	Elev.	Water	Elev.	Water	Elev.	Water	Elev.	Water	Elev.
Test Well	m	m	m	m	m	m	m	m	m	m	m	m	m	m
TW-1	216.60	217.27	1.45	215.82	1.65	215.62	1.52	215.75	2.30	214.97	1.44	215.83	2.42	214.85
TW-3	216.10	217.14	0.73	216.41	1.12	216.02	1.10	216.04	1.44	215.70	0.87	216.27	1.70	215.44
TW-4	216.10	217.15	0.83	216.32	1.09	216.06	0.97	216.18	1.41	215.74	0.82	216.33	1.63	215.52
TW-5	223.20	224.74	4.95	219.79	5.76	218.98	5.53	219.21	6.22	218.52	5.20	219.54	5.97	218.77
TW-6	218.70	219.88	2.79	217.09	3.80	216.08	3.43	216.45	4.77	215.11	2.74	217.14	4.57	215.31
TW-10	217.00	218.08	4.47	213.61	5.92	212.16	4.45	213.63	6.98	211.10	----	----	6.71	211.37
TW-14	218.50	218.95	2.15	216.80	3.18	215.77	2.17	216.78	3.65	215.30	2.21	216.74	3.55	215.40
TW-15	217.55	218.33	1.27	217.06	2.60	215.73	1.19	217.14	2.78	215.55	1.36	216.97	<2.88	<215.45
TW-16	217.18	217.78	----	----	----	----	----	----	----	----	----	----	----	----
TW-17	216.03	216.57	0.65	215.92	1.51	215.06	1.17	215.40	2.07	214.50	0.56	216.01	1.96	214.61
TW-19	220.51	221.28	6.80	214.48	----	----	----	----	----	----	----	----	----	----
TW-20	218.21	218.64	3.05	215.59	4.80	213.84	3.30	215.34	5.18	213.46	3.11	215.53	5.36	213.28
TW-22	220.31	221.10	9.18	211.92	10.16	210.94	10.01	211.09	10.96	210.14	9.99	211.11	10.75	210.35
TW-23	215.16	216.09	0.85	215.24	1.37	214.72	0.91	215.18	2.97	213.12	0.87	215.22	2.71	213.38
TW-24	214.48	215.39	0.99	214.40	1.12	214.27	0.98	214.41	2.00	213.39	0.96	214.43	2.25	213.14
TW-25	214.42	215.45	0.85	214.60	1.35	214.10	0.85	214.60	1.74	213.71	0.84	214.61	1.95	213.50
TW-26	216.15	217.01	1.42	215.59	1.93	215.08	1.85	215.16	2.78	214.23	1.45	215.56	2.72	214.29
TW-27	215.43	216.41	1.36	215.05	2.15	214.26	1.65	214.76	2.90	213.51	1.34	215.07	2.85	213.56
TW-28	214.84	215.87	1.09	214.78	1.72	214.15	1.67	214.20	2.31	213.56	1.08	214.79	2.32	213.55
TW-29	TBD	214.84	4.24	210.60	5.75	209.09	1.39	213.45	1.40	213.44	1.02	213.82	1.55	213.29
TW-30	TBD	219.25	1.14	218.11	1.46	217.79	4.88	214.37	6.58	212.67	2.75	216.50	----	----
TW-31	TBD	209.89	1.22	208.67	2.40	207.49	1.14	208.75	1.73	208.16	1.12	208.77	1.88	208.01
TW-32	TBD	210.20	1.03	209.17	1.21	208.99	1.04	209.16	1.87	208.33	0.95	209.25	1.98	208.22

SOUTHAMPTON WASTE DISPOSAL SITE
GROUNDWATER LEVEL DATA (2005 to 2022)

	Ground	Measuring	2017-05-02		2017-10-27		2018-05-11		2018-10-22		2019-04-04		2019-11-06	
	Level	Point	Depth to	WL	Depth to	WL	Depth to	WL	Depth to	WL	Depth to	WL	Depth to	WL
	Elevation	Elevation	Water	Elev.	Water	Elev.	Water	Elev.	Water	Elev.	Water	Elev.	Water	Elev.
Test Well	m	m	m	m	m	m	m	m	m	m	m	m	m	m
TW-1	216.60	217.27	1.29	215.98	2.52	214.75	1.56	215.71	2.21	215.06	1.38	215.89	1.42	215.85
TW-3	216.10	217.14	1.70	215.44	----	----	----	----	----	----	----	----	----	----
TW-4	216.10	217.15	0.80	216.35	1.10	216.05	0.84	216.31	1.43	215.72	0.86	216.29	1.01	216.14
TW-5	223.20	224.74	5.18	219.56	5.81	218.93	5.95	218.79	6.23	218.51	5.12	219.62	5.16	219.58
TW-6	218.70	219.88	2.88	217.00	4.62	215.26	3.02	216.86	4.97	214.91	3.14	216.74	3.74	216.14
TW-10	217.00	218.08	----	----	5.98	212.10	----	----	----	----	----	----	----	----
TW-14	218.50	218.95	2.28	216.67	3.25	215.70	2.37	216.58	3.61	215.34	2.53	216.42	3.20	215.75
TW-15	217.55	218.33	0.68	217.65	2.74	<215.45	1.50	216.83	2.84	<215.45	1.67	216.66	2.62	215.71
TW-16	217.18	217.78	----	----	----	----	----	----	----	----	----	----	----	----
TW-17	216.03	216.57	0.75	215.82	1.72	214.85	0.88	215.69	1.93	214.64	0.71	215.86	1.59	214.98
TW-19	220.51	221.28	----	----	----	----	----	----	----	----	----	----	----	----
TW-20	218.21	218.64	3.19	215.45	4.69	213.95	3.19	215.45	5.55	213.09	3.20	215.44	4.09	214.55
TW-22	220.31	221.10	9.83	211.27	10.15	210.95	9.57	211.53	10.76	210.34	10.29	210.81	10.61	210.49
TW-23	215.16	216.09	0.86	215.23	2.18	213.92	0.89	215.20	3.10	212.99	0.76	215.33	1.24	214.85
TW-24	214.48	215.39	0.90	214.49	1.09	214.30	0.98	214.41	2.02	213.37	0.98	214.41	0.98	214.41
TW-25	214.42	215.45	0.83	214.62	1.60	213.85	0.93	214.52	1.80	213.65	0.86	214.59	1.22	214.23
TW-26	216.15	217.01	1.39	215.62	2.60	214.41	1.66	215.35	2.87	214.14	1.15	215.86	1.70	215.31
TW-27	215.43	216.41	1.35	215.06	2.52	213.90	1.53	214.88	2.88	213.53	1.50	214.91	2.27	214.14
TW-28	214.84	215.87	1.08	214.79	2.00	213.87	1.16	214.71	2.37	213.50	1.11	214.76	1.87	214.00
TW-29	TBD	214.84	0.99	213.85	1.39	213.45	1.33	213.51	1.53	213.31	1.07	213.77	1.21	213.63
TW-30	TBD	219.25	3.15	216.10	----	----	5.45	213.80	----	----	3.24	216.01	3.93	215.32
TW-31	TBD	209.89	1.09	208.80	1.49	208.40	1.28	208.61	1.81	208.08	1.10	208.79	1.09	208.80
TW-32	TBD	210.20	0.67	209.53	1.64	208.56	1.19	209.01	1.95	208.25	0.98	209.22	1.20	209.00

SOUTHAMPTON WASTE DISPOSAL SITE
GROUNDWATER LEVEL DATA (2005 to 2022)

	Ground	Measuring	2020-04-14		2020-10-21		2021-05-06		2021-12-12		2022-05-02		2022-09-14	
	Level	Point	Depth to	WL	Depth to	WL	Depth to	WL	Depth to	WL	Depth to	WL	Depth to	WL
	Elevation	Elevation	Water	Elev.	Water	Elev.	Water	Elev.	Water	Elev.	Water	Elev.	Water	Elev.
Test Well	m	m	m	m	m	m	m	m	m	m	m	m	m	m
TW-1	216.60	217.27	1.57	215.70	1.88	215.39	1.57	215.70	1.37	215.90	1.45	215.82	4.42	212.85
TW-3	216.10	217.14	----	----	----	----	----	----	----	----	----	----	----	----
TW-4	216.10	217.15	0.87	216.28	1.39	215.76	0.92	216.23	0.86	216.29	0.85	216.30	DRY	DRY
TW-5	223.20	224.74	5.11	219.63	5.80	218.94	2.59	222.15	5.13	219.61	5.15	219.59	6.32	218.42
TW-6	218.70	219.88	3.49	216.39	4.12	215.76	3.56	216.32	----	----	3.04	216.84	----	----
TW-10	217.00	218.08	----	----	----	----	----	----	----	----	Decommissioned		Decommissioned	
TW-14	218.50	218.95	2.47	216.48	3.37	215.58	2.73	216.22	2.90	216.05	2.42	216.53	3.85	215.10
TW-15	217.55	218.33	1.63	216.70	2.77	215.56	1.93	216.40	2.12	216.21	1.57	216.76	DRY	DRY
TW-16	217.18	217.78	----	----	----	----	----	----	----	----	Removed		Removed	
TW-17	216.03	216.57	0.96	215.61	1.80	214.77	1.41	215.16	1.28	215.29	0.99	215.58	2.05	214.52
TW-19	220.51	221.28	----	----	----	----	----	----	----	----	Removed		Removed	
TW-20	218.21	218.64	3.36	215.28	4.46	214.18	3.47	215.17	3.32	215.32	3.24	215.40	----	----
TW-22	220.31	221.10	9.84	211.26	10.80	210.30	10.27	210.83	10.28	210.82	9.64	211.46	DRY	DRY
TW-23	215.16	216.09	0.89	215.20	1.87	214.22	0.98	215.11	----	----	0.87	215.22	3.22	212.87
TW-24	214.48	215.39	1.04	214.35	1.02	214.37	0.98	214.41	0.94	214.45	0.96	214.43	2.34	213.05
TW-25	214.42	215.45	0.95	214.50	2.25	213.20	1.02	214.43	0.90	214.55	0.81	214.64	1.46	213.99
TW-26	216.15	217.01	1.69	215.32	2.52	214.49	1.81	215.20	1.39	215.62	1.57	215.44	2.89	214.12
TW-27	215.43	216.41	1.53	214.88	2.47	213.94	1.67	214.74	----	----	1.47	214.94	2.31	214.10
TW-28	214.84	215.87	1.65	214.22	1.99	213.88	1.24	214.63	1.10	214.77	1.12	214.75	2.31	213.56
TW-29	TBD	214.84	1.36	213.48	1.27	213.57	1.35	213.49	0.95	213.89	1.23	213.61	1.69	213.15
TW-30	TBD	219.25	4.39	214.86	4.34	214.91	4.22	215.03	3.73	215.52	3.27	215.98	DRY	DRY
TW-31	TBD	209.89	1.11	208.78	1.10	208.79	1.13	208.76	1.06	208.83	1.12	208.77	1.04	208.85
TW-32	TBD	210.20	1.22	208.98	1.28	208.92	1.12	209.08	0.90	209.30	NM	NM	NM	NM

SOUTHAMPTON WASTE DISPOSAL SITE
GROUNDWATER LEVEL DATA (2022 to Present)

Test Well	Ground Level Elevation (m)	Measuring Point Elevation (m)	2022-05-02		2022-09-14		2023-04-13		2023-11-16		2024-04-24		2024-11-15		2025-04-22	
			Depth to Water (m)	WL Elev. (m)	Depth to Water (m)	WL Elev. (m)	Depth to Water (m)	WL Elev. (m)	Depth to Water (m)	WL Elev. (m)	Depth to Water (m)	WL Elev. (m)	Depth to Water (m)	WL Elev. (m)	Depth to Water (m)	WL Elev. (m)
TW-1	216.32	217.15	1.45	215.70	4.42	212.73	1.50	215.65	1.54	215.61	1.43	215.72	2.47	214.68	1.35	215.80
TW-3	216.32	216.93	----	----	----	----	----	----	----	----	----	----	1.46	215.47	----	----
TW-4	216.32	216.94	0.85	216.09	DRY	DRY	0.83	216.11	1.85	215.09	0.84	216.10	1.45	215.49	0.83	216.11
TW-5	224.08	224.62	5.15	219.47	6.32	218.30	4.99	219.63	6.30	218.32	5.08	219.54	6.37	218.25	5.02	219.60
TW-6	220.94	220.46	3.04	217.42	----	----	3.17	217.29	3.75	216.71	3.18	217.28	5.40	215.06	2.97	217.49
TW-14	218.47	218.90	2.42	216.48	3.85	215.05	2.43	216.47	3.18	215.72	2.53	216.37	3.65	215.25	2.18	216.72
TW-15	217.56	218.12	1.57	216.55	DRY	DRY	1.64	216.48	2.75	215.37	1.71	216.41	Dry	----	1.31	216.81
TW-17	215.85	216.68	0.99	215.69	2.05	214.63	1.00	215.68	1.80	214.88	1.12	215.56	2.36	214.32	0.82	215.86
TW-20	218.00	218.64	3.24	215.40	----	----	3.14	215.50	3.81	214.83	3.20	215.44	4.69	213.95	3.18	215.46
TW-21	220.73	221.59	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TW-22	220.72	221.09	9.64	211.45	DRY	DRY	10.29	210.80	10.80	210.29	10.16	210.93	10.96	210.13	10.20	210.89
TW-23	215.18	216.02	0.87	215.15	3.22	212.80	0.84	215.18	1.40	214.62	0.83	215.19	3.44	212.58	0.84	215.18
TW-24	214.52	215.36	0.96	214.40	2.34	213.02	0.98	214.38	1.03	214.33	0.93	214.43	2.07	213.29	0.96	214.40
TW-25	215.85	216.52	0.81	215.71	1.46	215.06	0.77	215.75	1.14	215.38	0.72	215.80	2.01	214.51	0.65	215.87
TW-26	216.14	216.97	1.57	215.40	2.89	214.08	1.48	215.49	1.88	215.09	1.45	215.52	2.89	214.08	1.44	215.53
TW-27	215.51	216.39	1.47	214.92	2.31	214.08	1.52	214.87	1.30	215.09	1.40	214.99	2.88	213.51	1.30	215.09
TW-28	214.91	215.74	1.12	214.62	2.31	213.43	1.10	214.64	1.68	214.06	1.06	214.68	2.34	213.40	1.05	214.69
TW-29	214.01	214.85	1.23	213.62	1.69	213.16	1.20	213.65	1.40	213.45	1.03	213.82	1.55	213.30	1.03	213.82
TW-30	218.38	219.27	3.27	216.00	DRY	DRY	2.73	216.54	3.43	215.84	2.82	216.45	6.81	212.46	2.69	216.58
TW-31	208.98	209.87	1.12	208.75	2.04	207.83	1.22	208.65	1.17	208.70	1.09	208.78	1.71	208.16	1.09	208.78
TW-32	209.42	210.18	NM	NM	NM	NM	NM	NM	1.21	208.97	0.92	209.26	1.92	208.26	0.93	209.25
TW-33	221.27	222.14	2.84	219.30	6.46	215.68	2.72	219.42	4.70	217.44	2.84	219.30	NM	----	2.57	219.57
TW-34	217.21	218.01	3.09	214.92	5.13	212.88	3.02	214.99	3.38	214.63	2.96	215.05	5.50	212.51	2.95	215.06
TW-35S	214.50	215.32	1.37	213.95	2.63	212.69	1.48	213.84	2.34	212.98	1.28	214.04	2.88	212.44	1.20	214.12
TW-35I	214.47	215.32	1.84	213.48	3.15	212.17	1.98	213.34	2.85	212.47	1.38	213.94	3.46	211.86	1.77	213.55
TW-36S	214.83	215.71	2.46	213.25	3.54	212.17	2.43	213.28	2.96	212.75	2.44	213.27	3.70	212.01	2.30	213.41
TW-36I	214.75	215.52	2.54	212.98	3.67	211.85	2.54	212.98	3.11	212.41	2.55	212.97	3.86	211.66	2.41	213.11
TW-37	215.57	216.02	1.42	214.60	2.57	213.45	1.40	214.62	1.56	214.46	1.36	214.66	2.66	213.36	1.32	214.70
TW-38S	211.57	212.31	0.90	211.41	2.05	210.26	0.91	211.40	1.36	210.95	0.90	211.41	2.03	210.28	0.88	211.43
TW-38I	211.49	212.24	0.73	211.51	1.88	210.36	0.71	211.53	1.19	211.05	0.68	211.56	1.86	210.38	0.65	211.59
TW-39S	211.18	212.03	1.06	210.97	2.38	209.65	1.24	210.79	1.78	210.25	0.96	211.07	2.37	209.66	0.99	211.04
TW-39I	211.14	211.99	0.99	211.00	2.34	209.65	1.15	210.84	1.69	210.30	NM	----	2.33	209.66	0.90	211.09
TW-40	210.61	211.41	1.05	210.36	2.29	209.12	1.15	210.26	1.49	209.92	0.98	210.43	2.19	209.22	1.00	210.41

NOTES:

1. "-" means water level not obtained.
2. A comprehensive survey of all monitoring locations was completed on May 4, 2023.

SOUTHAMPTON WASTE DISPOSAL SITE
GROUNDWATER LEVEL DATA (2022 to Present)

Test Well	Ground Level Elevation (m)	Measuring Point Elevation (m)	2025-09-09		2025-11-18	
			Depth to Water (m)	WL Elev. (m)	Depth to Water (m)	WL Elev. (m)
TW-1	216.32	217.15	1.78	215.37	1.55	215.60
TW-3	216.32	216.93	----	----	1.29	215.64
TW-4	216.32	216.94	1.15	215.79	1.30	215.64
TW-5	224.08	224.62	5.83	218.79	----	----
TW-6	220.94	220.46	4.45	216.01	----	----
TW-14	218.47	218.90	3.31	215.59	----	----
TW-15	217.56	218.12	2.76	215.36	2.81	215.31
TW-17	215.85	216.68	NM	NM	2.21	214.47
TW-20	218.00	218.64	4.32	214.32	5.20	213.44
TW-21	220.73	221.59	----	----	----	----
TW-22	220.72	221.09	10.65	210.44	----	----
TW-23	215.18	216.02	3.15	212.87	----	----
TW-24	214.52	215.36	1.84	213.52	----	----
TW-25	215.85	216.52	1.57	214.95	----	----
TW-26	216.14	216.97	2.80	214.17	----	----
TW-27	215.51	216.39	2.56	213.83	----	----
TW-28	214.91	215.74	2.23	213.51	----	----
TW-29	214.01	214.85	1.53	213.32	----	----
TW-30	218.38	219.27	DRY	DRY	4.42	214.85
TW-31	208.98	209.87	1.89	207.98	----	----
TW-32	209.42	210.18	1.96	208.22	----	----
TW-33	221.27	222.14	6.15	215.99	----	----
TW-34	217.21	218.01	4.85	213.16	----	----
TW-35S	214.50	215.32	2.56	212.76	----	----
TW-35I	214.47	215.32	3.08	212.24	----	----
TW-36S	214.83	215.71	3.45	212.26	----	----
TW-36I	214.75	215.52	3.62	211.90	----	----
TW-37	215.57	216.02	2.48	213.54	----	----
TW-38S	211.57	212.31	1.96	210.35	----	----
TW-38I	211.49	212.24	1.74	210.50	----	----
TW-39S	211.18	212.03	2.31	209.72	----	----
TW-39I	211.14	211.99	2.26	209.73	----	----
TW-40	210.61	211.41	2.03	209.38	----	----

NOTES:

1. "-" means water level not obtained.
2. A comprehensive survey of all monitoring locations was completed on May 4, 2023.

APPENDIX D
HISTORICAL GROUNDWATER QUALITY RESULTS (TABLES AND GRAPHS)

NOTES:

1. All results expresses in mg/L unless otherwise noted.
2. ODWS is the Ontario Drinking Water Standards.
3. All ODWS values expressed are Maximum Acceptable Concentrations, unless indicated otherwise.
4. IMAC indicates an interim maximum acceptable concentration ODWS.
5. AO indicates an aesthetic objective ODWS, not health related.
6. OG indicates an operational guideline ODWS, not health related.
7. < indicates parameter not detected above method detection limit.
8. * Result interpreted to be erroneous.
9. DOC = Dissolved Organic Carbon
10. TKN = Total Kjeldahl Nitrogen
11. Phophorus (Dis) = Dissolved; Phosphorus (Tot) = Total

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1
			1-6-1982	11-3-1988	5-27-1989	5-28-1990	9-10-1991	5-5-1993	11-17-1993	5-2-1994	11-13-1996	11-13-1996	5-7-1997	5-7-1997	12-18-1997	12-18-1997	5-28-1998	5-28-1998	12-17-1998	12-17-1998	5-21-1999	5-21-1999	12-2-1999	5-31-2000	11-30-2000
Alkalinity	30-500	OG	287	----	----	108	----	173	170	174	203	206	184	183	198	198	192	200	144	146	167	166	144	182	136
Aluminum	0.1	OG	----	----	----	----	----	----	----	----	0.061	0.062	0.612	0.65	0.353	0.351	----	----	ND	ND	ND	ND	0.04	0.06	ND
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	0.04	----	----	0.037	0.148	0.13	0.082	0.043	<0.05	----	0.25	----	0.05	0.04	0.04	0.04	ND	ND	0.04	0.04	0.02	0.03	0.07
Barium	1.0	MAC	----	----	----	----	----	----	----	----	0.006	0.006	0.009	0.008	0.009	0.009	----	----	ND	ND	0.006	0.006	ND	0.667	ND
Beryllium	NV	NV	----	----	----	----	----	----	----	----	<0.005	<0.005	----	----	----	----	----	----	ND	ND	ND	ND	ND	ND	ND
Bismuth	NV	NV	----	----	----	----	----	----	----	----	<0.05	<0.05	----	----	----	----	----	----	ND	ND	ND	ND	ND	ND	ND
Boron	5.0	IMAC	----	----	----	----	----	----	----	----	<0.01	<0.01	0.01	0.01	----	----	----	----	ND	ND	ND	ND	ND	0.15	ND
Cadmium	0.005	MAC	<0.00016	----	----	----	----	----	----	----	<0.003	<0.003	----	----	----	----	----	----	ND	ND	ND	ND	ND	ND	ND
Calcium	NV	NV	54	54.4	47	42.7	31.6	46.1	45.5	55.6	59.1	59.5	53	35	53.7	53	53.3	53	46.7	45.3	51.7	51.5	48.6	57.5	43.5
Chloride	250	AO	10	1.56	1.6	2.1	2.6	2.6	2.2	9.7	1.02	1.03	1.16	1.14	1.18	1.25	0.84	0.81	1	1	0.5	0.5	0.6	na	0.5
Chromium	0.05	MAC	0.0008	----	----	----	----	----	----	----	<0.005	<0.005	----	----	----	----	----	----	ND	ND	ND	ND	ND	ND	ND
Cobalt	NV	NV	----	----	----	----	----	----	----	----	<0.005	<0.005	----	----	----	----	----	----	ND	ND	ND	ND	ND	ND	ND
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	530	358	298	253	393	342	355	1003	381	380	356	357	379	385	372	377	287	286	284	284	297	300	244
Copper	1.0	AO	0.0032	----	----	----	----	----	----	----	<0.003	<0.003	----	----	----	----	----	----	ND	ND	ND	ND	ND	0.005	0.006
DOC	5.0	AO	3.5	1.2	5.8	0.9	----	0.5	0.6	11	0.7	----	----	----	1.9	1.8	0.4	0.6	1.3	1.3	1.4	1.3	1.9	2.2	3
Fluoride	1.5	MAC	----	----	----	----	----	----	----	----	<0.02	<0.02	0.03	0.03	----	----	ND	ND	0.09	0.09	ND	ND	ND	na	ND
Hardness	80 - 100	OG	240	186.6	159	141	122	168	176	210	224	220	199	199	208	205	203	202	167	158	170	170	161	188	143
Iron	0.3	AO	0.008	0.29	1.29	3	0.42	0.02	0.87	<0.01	0.049	0.049	0.396	0.401	0.281	0.285	0.075	0.076	ND	ND	0.01	0.01	ND	0.03	0.02
Lead	0.01	MAC	<0.0024	----	----	----	----	----	----	----	<0.025	<0.025	----	----	----	----	----	----	ND	ND	ND	ND	ND	ND	ND
Magnesium	NV	NV	25.4	12.28	10.1	8.3	10.5	12.8	15.1	17.3	17.8	17.9	16.2	16.2	17.9	17.7	16.9	16.9	12.3	11	10.5	10.3	9.54	10.6	8.36
Manganese	0.05	AO	----	----	----	----	----	----	----	0.003	<0.005	<0.005	0.01	0.01	0.011	0.012	ND	ND	ND	ND	ND	ND	ND	0.006	ND
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	----	----	----	----	----	----	----	----	<0.01	<0.01	----	----	----	----	----	----	ND	ND	ND	ND	0.26	ND	ND
Nickel	NV	NV	<0.0016	----	----	----	----	----	----	----	<0.01	<0.01	----	----	----	----	----	----	ND	ND	ND	ND	ND	ND	ND
Nitrate	10	MAC	2.5	----	----	1	0.7	1	1	1.3	0.68	0.66	0.54	0.53	0.5	1	0.37	0.37	0.04	0.03	ND	ND	ND	ND	2.4
Nitrite	1.0	MAC	0.69	----	----	0.02	0.03	<0.01	<0.01	<0.01	<0.03	<0.03	----	----	----	----	ND	ND	ND	ND	ND	ND	ND	ND	ND
Orthophosphate	NV	NV	----	----	----	----	----	----	----	----	<0.05	<0.05	----	----	----	----	ND	ND	ND	ND	ND	ND	ND	ND	ND
pH	6.5 - 8.5	OG	7.87	7.59	7.86	7.82	8.41	8.05	8.07	7.38	7.7	7.71	7.62	7.64	7.83	7.85	7.65	7.67	8.19	8.14	7.95	7.93	7.74	7.8	7.11
Phenols	NV	NV	0.0035	<0.001	0.001	<0.001	----	<0.001	<0.001	0.0055	<0.001	----	----	----	----	----	ND	ND	ND	ND	ND	ND	ND	0.001	ND
Phosphorus	NV	NV	----	----	----	----	----	----	----	----	<0.06	<0.06	----	----	----	----	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phosphorus (Dis)	NV	NV	----	----	----	----	----	----	----	0.01	<0.01	<0.01	----	----	0.35	0.35	ND	ND	ND	ND	0.18	0.16	----	----	----
Phosphorus (Tot)	NV	NV	0.144	----	----	0.07	----	0.012	0.032	0.072	0.59	----	1.38	----	0.44	0.41	----	----	ND	ND	----	----	----	----	0.018
Potassium	NV	NV	4.9	----	----	----	----	----	----	1.1	<1	<1	1.9	1.8	----	----	ND	1.4	2.2	1.8	ND	ND	ND	1	ND
Silver	NV	NV	----	----	----	----	----	----	----	----	<0.003	<0.003	----	----	----	----	----	----	ND	ND	ND	ND	ND	ND	ND
Sodium	200	AO	14.5	----	----	----	----	----	----	1.7	1.88	1.87	1.52	1.51	1.58	1.55	1.56	1.56	0.8	0.8	0.83	0.86	1	9.6	0.6
Sulphate	500	AO	29	----	----	----	----	----	----	9.9	9.5	9.54	8.72	8.74	9.6	9.9	10.2	10	9.9	9.4	4.4	4.2	6	4.1	4.6
Sulphide	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	----	----	----	----	----	----	----	----	<0.05	<0.05	----	----	----	----	----	----	ND	ND	ND	ND	ND	ND	ND
Titanium	NV	NV	----	----	----	----	----	----	----	----	<0.05	<0.05	----	----	----	----	----	----	ND	ND	----	ND	ND	ND	ND
TKN	NV	NV	0.48	----	----	0.34	3.76	0.47	0.76	0.97	0.41	----	0.51	----	0.12	0.13	0.33	0.2	0.13	0.13	0.09	0.09	0.1	0.37	0.79
Vanadium	NV	NV	----	----	----	----	----	----	----	----	<0.01	<0.01	----	----	----	----	----	----	ND	ND	ND	ND	ND	ND	ND
Zinc	5.0	AO	<0.0008	----	----	----	----	----	----	----	0.01	0.011	0.012	0.011	0.008	0.009	----	----	ND	ND	0.08	0.07	0.024	0.049	0.04
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1
			11-30-2000	12-12-2001	12-12-2001	5-29-2002	5-29-2003	6-1-2004	11-24-2004	6-24-2005	11-14-2005	5-24-2006	10-25-2006	5-3-2007	11-15-2007	4-24-2008	10-14-2008	11-9-2009	4-19-2010	11-11-2010	4-20-2011	11-7-2011	4-12-2012	10-31-2012	4-25-2013
Alkalinity	30-500	OG	136	199	201	198	190	200	195	158	159	187	181	163	199	158	182	159	164	202	184	200	184	179	145
Aluminum	0.1	OG	ND	ND	ND	0.32	196	4.49	0.02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	0.05	0.2	0.19	0.2	----	----	0.4	<0.1	<0.1	0.2	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Barium	1.0	MAC	ND	0.005	0.005	0.008	0.018	0.026	0.006	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Beryllium	NV	NV	ND	ND	ND	<0.005	<0.005	<0.005	<0.005	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV	NV	ND	ND	ND	<0.0003	<0.01	<0.0003	<0.0003	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	5.0	IMAC	ND	ND	0.01	<0.01	<0.05	<0.05	0.01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cadmium	0.005	MAC	ND	ND	ND	<0.0001	0.0001	0.0002	<0.0001	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Calcium	NV	NV	43.4	57	57	61.5	160	220	57	48.4	53	53.8	50.6	54.8	51.3	44.8	55.5	51.5	51.4	61.8	49.8	194	57.9	56.7	59.5
Chloride	250	AO	0.5	ND	ND	0.6	<0.2	<0.2	1	0.4	----	0.3	0.4	0.2	0.8	0.4	0.6	1.0	<2	1.0	0.8	0.4	<2	<2	0.4
Chromium	0.05	MAC	ND	ND	ND	0.003	0.005	0.012	0.002	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cobalt	NV	NV	ND	ND	ND	0.058	0.009	0.0198	<0.0003	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	244	340	340	304	308	317	325	302	298	325	337	328	367	274	324	312	319	369	239	370	340	351	290
Copper	1.0	AO	0.007	ND	ND	0.0045	0.0066	0.0079	0.001	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
DOC	5.0	AO	2.9	1.1	1	0.9	<1	<1	1.6	1	<1	1.4	<1	<1	<1	<1	3	1.1	<1.0	1.1	1.1	1.6	<1.0	<1.0	2.7
Fluoride	1.5	MAC	ND	ND	ND	0.06	0.04	0.08	0.12	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	80 - 100	OG	143	186	187	201	515	690	191	158	167	174	165	177	169	143	181	165	168	201	160	581	186	184	187
Iron	0.3	AO	0.02	ND	ND	0.23	2.98	3.73	<0.02	0.02	<0.02	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Lead	0.01	MAC	ND	ND	ND	0.0003	0.0036	0.0036	<0.0002	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Magnesium	NV	NV	8.35	10.5	10.7	11.6	28.2	35.1	11.8	9.11	8.4	9.61	9.35	9.63	9.99	7.58	10.2	8.91	9.71	11.3	8.72	23.5	10.1	10.2	9.26
Manganese	0.05	AO	ND	ND	ND	0.006	0.33	0.676	0.003	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	ND	ND	ND	<0.0003	<0.0003	<0.0003	0.0004	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	NV	NV	ND	ND	ND	0.002	0.004	0.004	<0.001	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nitrate	10	MAC	2.3	ND	ND	0.05	<0.05	<0.05	<0.05	0.05	<0.05	<0.05	<0.05	<0.05	0.14	<0.05	0.06	<0.005	0.32	0.74	0.75	0.11	0.18	0.12	<0.06
Nitrite	1.0	MAC	ND	ND	ND	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.03
Orthophosphate	NV	NV	ND	ND	ND	<0.03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	7.11	7.86	7.84	----	8.08	8.11	7.89	8.19	8.21	8.38	8.09	8.31	8.19	8.05	7.94	----	8.24	7.93	8.26	8.06	8.19	8.21	8.23
Phenols	NV	NV	ND	ND	ND	8.16	0.002	0.002	<0.002	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus	NV	NV	ND	ND	ND	0.67	2.04	0.82	<0.03	----	----	----	0.02	<0.01	<0.01	<0.01	0.06	----	<0.01	<0.01	<0.009	0.756	<0.009	<0.009	0.078
Phosphorus (Dis)	NV	NV	----	----	----	----	----	0.04	<0.03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus (Tot)	NV	NV	0.019	0.159	0.16	----	----	----	----	0.34	0.09	1.85	----	----	----	----	----	<0.01	<0.01	<0.01	----	----	----	----	----
Potassium	NV	NV	ND	2	ND	1.24	----	2.9	0.97	1.02	0.77	1.09	0.98	1.06	0.67	1.09	1.09	1.07	0.90	0.75	0.773	1.53	0.993	0.946	1.11
Silver	NV	NV	ND	ND	ND	<0.0001	<0.0001	<0.0001	<0.0001	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	200	AO	0.6	0.3	0.3	0.84	3.2	0.5	0.9	0.4	0.3	0.31	0.63	0.33	0.42	0.3	0.5	0.40	0.51	0.44	0.38	0.5	0.44	0.43	0.27
Sulphate	500	AO	4.5	4	4	4.4	----	2.7	4.6	2.9	4.3	----	3.6	2.6	4.4	2.4	2.6	2.2	2.9	2.7	2.3	1.8	2.3	2	1.3
Sulphide	0.05	AO	----	ND	----	<0.02	<0.02	<0.02	0.06	<0.2	<0.02	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	ND	ND	ND	<0.1	<0.1	<0.1	<0.1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV	NV	ND	ND	ND	0.021	0.015	0.005	<0.003	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV	NV	0.83	0.22	0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	----	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vanadium	NV	NV	ND	ND	ND	0.0051	0.014	0.0301	0.0044	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	5.0	AO	0.04	0.026	0.025	0.017	0.015	0.374	0.015	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1
			11-7-2013	5-7-2014	10-27-2014	4-27-2015	11-2-2015	4-13-2016	11-21-2016	5-2-2017	11-27-2017	5-11-2018	10-22-2018	4-4-2019	11-6-2019	4-14-2020	10-21-2020	5-6-2021	12-13-2021	5-2-2022	4-13-2023	11-16-2023	4-24-2024	11-15-2024	4-22-2025
Alkalinity	30-500	OG	185	175	236	176	185	125	192	175	190	172	167	179	218	177	191	203	171	211	173	257	153	144	155
Aluminum	0.1	OG	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	0.1	<0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Barium	1.0	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Beryllium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	5.0	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cadmium	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Calcium	NV	NV	67.6	52.9	70.1	52.6	49.7	41	52.1	61.5	52.9	56.9	56.2	49.8	67.7	66.1	60.6	58.1	52.6	74.5	61.8	86.5	59.3	42.4	53.4
Chloride	250	AO	0.5	0.6	0.3	2	<1	1	2	1	1	<1	1	6	<1	1	<1	1	2	<1	<1	1	<1	<1	<1
Chromium	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cobalt	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	350	327	416	330	329	220	330	330	326	297	281	322	----	365	339	374	290	381	326	479	376	272	316
Copper	1.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
DOC	5.0	AO	1.0	2	2.6	<1.0	1.4	<1.0	1	1	<1	<1	1	1	<1	<1	2	<1	<1	<1	1	1	1	<1	2
Fluoride	1.5	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	80 - 100	OG	216	168	227	169	159	129	168	195	169	176	178	161	213	212	189	185	169	234	196	274	183	132	168
Iron	0.3	AO	----	----	----	0.055	----	----	0.018	----	----	0.076	0.650	----	----	----	----	----	----	----	----	----	----	----	----
Lead	0.01	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Magnesium	NV	NV	11.4	8.77	12.5	9.11	9.59	6.5	9.15	10.10	9.03	8.38	9.06	9.01	10.60	11.5	9.1	9.7	9.0	11.6	10.2	14.0	8.37	6.31	8.31
Manganese	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nitrate	10	MAC	<0.06	0.21	0.32	0.33	0.25	0.14	0.42	0.69	0.45	0.23	----	3.24	0.34	0.30	0.22	0.15	0.40	0.66	0.11	<0.06	<0.06	0.50	0.14
Nitrite	1.0	MAC	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	----	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Orthophosphate	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	8.14	8.26	8.16	8.26	8.3	8.18	8.05	8.04	8.08	7.99	8.27	7.97	8.11	8.28	8.22	8.18	8.01	7.87	7.96	8.01	8.27	8.25	8.09
Phenols	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus	NV	NV	0.056	<0.009	<0.009	0.02	0.01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus (Dis)	NV	NV	----	----	----	----	----	0.017	<0.009	0.042	0.01	0.008	0.04	0.017	0.018	<0.003	0.003	<0.003	<0.003	<0.003	0.004	0.007	0.004	<0.003	0.004
Phosphorus (Tot)	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Potassium	NV	NV	1.17	1.12	1.29	0.95	0.862	0.962	0.984	1.240	0.954	0.895	0.828	0.773	1.010	1.140	0.948	0.92	0.88	1.05	0.915	1.14	0.994	0.697	1.02
Silver	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	200	AO	0.42	0.42	0.57	0.73	1.27	0.4	0.66	0.66	1.08	0.43	0.76	1.04	0.54	1.26	0.66	0.82	0.86	1.43	0.84	0.70	0.59	0.56	1.22
Sulphate	500	AO	1.3	1.7	1.9	2	2	<1	1	49	<2	<2	<2	10	6	17	<2	4	4	4	17	14	7	2	21
Sulphide	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV	NV	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5
Vanadium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	5.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-1	TW-3	TW-3	TW-3	TW-3	TW-3	TW-3	TW-3	TW-3	TW-3	TW-3	TW-3	TW-3	TW-3	TW-3	TW-3	TW-3	TW-3	TW-3	TW-3	TW-3	TW-3
			9-9-2025	1-6-1982	1-12-1983	9-15-1983	6-13-1986	8-10-1988	11-3-1988	5-27-1989	10-11-1989	6-17-1992	9-17-1992	5-5-1993	11-17-1993	5-2-1994	11-14-1994	5-15-1995	11-20-1995	5-31-1996	11-13-1996	5-7-1998	5-21-1999	5-31-2000	5-29-2003
Alkalinity	30-500	OG	210	1330	----	----	----	681.1	----	----	851	759	1131	796	809	----	980	528	883	875	941	1000	865	927	858
Aluminum	0.1	OG	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.025	----	ND	ND	2.57
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	<0.1	16.6	----	28	----	5.55	----	----	9.8	15	20	16	>10	10.6	13.9	11.2	9.25	----	18.5	23.3	12.9	7.07	22.2
Barium	1.0	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.209	----	0.198	0.868	0.25
Beryllium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.005	----	ND	ND	<0.005
Bismuth	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.05	----	ND	ND	<0.0003
Boron	5.0	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.49	----	0.39	0.54	0.46
Cadmium	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.003	----	ND	ND	0.0003
Calcium	NV	NV	61.1	212	238	195	100	145	245.5	191	168	193	100	129	136	132	178	118	180	156	222	177	185	211	314
Chloride	250	AO	<1	315	240	215	100	131.3	184.8	143	146	142	127	106	92.7	59.3	118	48.3	93.8	55.6	112	64.9	56.4	34	51
Chromium	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.005	----	ND	ND	0.009
Cobalt	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.005	----	ND	ND	0.006
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	379	3110	2750	2640	2220	2150	2340	2310	2180	2020	2130	1660	1770	958	2020	1440	1750	1620	1910	1780	1480	1570	1550
Copper	1.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.003	----	ND	ND	0.017
DOC	5.0	AO	2	----	26	28	14.4	15	3	9.5	11.8	17.8	17.9	11.9	11.1	21.2	14.5	9.7	10.6	----	9.9	11.7	8.8	10.4	9.3
Fluoride	1.5	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.04	0.55	0.31	ND	ND	0.04
Hardness	80 - 100	OG	194	1074	1184	1204	613	794.9	1077.9	997	824	878	702	655	664	624	846	577	747	703	852	782	822	912	1270
Iron	0.3	AO	----	----	60	----	----	1.24	1.54	1.33	5.2	<0.01	7.9	1.52	14.6	12.3	22.7	3.81	10.3	4.55	9.22	15.7	7.23	1.14	8.16
Lead	0.01	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.025	----	ND	ND	0.0018
Magnesium	NV	NV	9.95	132	143	174	88	104.95	112.65	126	98	96	^109	80.6	78.5	71	97.4	68.1	72.2	76	80.5	82.6	87.8	93.3	1119
Manganese	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	0.795	0.859	0.729	0.921	1.44	0.858	0.85	0.98	1.05	1.25
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.01	----	ND	ND	<0.0003
Nickel	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.01	----	ND	ND	0.013
Nitrate	10	MAC	0.44	<0.01	----	0.03	----	0.1	----	----	<0.1	0.7	<0.1	<0.1	0.1	0.4	0.2	<0.1	<0.1	----	<0.03	ND	ND	0.6	0.23
Nitrite	1.0	MAC	<0.03	0.007	----	0.03	----	0.02	----	----	0.01	0.01	0.02	0.01	<0.01	<0.01	0.01	0.02	0.01	----	<0.03	ND	ND	ND	<0.06
Orthophosphate	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.05	ND	ND	ND	----
pH	6.5 - 8.5	OG	7.76	7.4	6.88	6.97	7.23	7.14	6.78	6.84	6.87	6.92	7.04	7.34	7.14	7.67	699	7.54	7.03	----	6.75	6.75	7.06	6.86	779
Phenols	NV	NV	----	0.0045	0.0045	0.0065	<0.001	<0.001	0.001	0.0055	0.0055	0.0095	0.0145	0.0075	0.0144	0.0055	0.0133	0.0049	0.0076	----	'<0.001	ND	ND	0.003	<0.002
Phosphorus	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.06	<0.06	0.11	ND	0.1	0.38
Phosphorus (Dis)	NV	NV	0.003	----	----	----	----	----	----	----	----	----	----	----	----	0.007	<0.01	<0.01	0.02	----	<0.01	ND	----	----	----
Phosphorus (Tot)	NV	NV	----	0.118	----	----	----	----	----	----	----	0.037	0.022	0.007	0.012	0.018	0.019	0.05	0.04	----	0.79	----	----	----	----
Potassium	NV	NV	1.28	42.25	----	----	----	74	----	----	0.011	----	----	----	----	41.1	54.8	41.9	36.1	36.4	45.3	46.5	47.5	50	59.8
Silver	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.003	----	ND	ND	<0.0001
Sodium	200	AO	0.96	310	----	----	----	78.1	----	----	----	----	----	----	----	40.9	70.1	38.4	60.6	----	69.2	51.8	41.1	38.6	44.2
Sulphate	500	AO	3	135	----	----	----	30	----	----	----	----	----	----	----	11.8	6.5	7.4	10.4	----	3.37	6.2	80.3	22.6	19
Sulphide	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	*	<0.02	----	----	----	----	----	<0.6
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.05	----	ND	ND	<0.1
Titanium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.05	----	ND	ND	0.012
TKN	NV	NV	<0.5	16.9	----	41	----	----	----	----	12.2	0.08	24.9	16.7	21.5	16	20.5	12.8	10.6	----	21.7	258	13.5	7.3	23.1
Vanadium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.01	----	ND	ND	0.017
Zinc	5.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.07	----	0.07	0.278	0.35
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-3	TW-3	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4
			11-27-2003	10-25-2006	1-6-1982	1-12-1983	9-15-1983	6-13-1986	8-10-1988	11-3-1988	5-27-1989	3-19-1991	5-5-1993	11-17-1993	5-2-1994	11-14-1994	5-15-1995	11-20-1995	5-31-1996	11-13-1996	12-18-1997	5-7-1998	12-17-1998	5-21-1999	12-12-2001
Alkalinity	30-500	OG	946	964	1320	----	----	----	672.8	----	----	649	898	633	----	1820	179	741	875	992	671	995	879	818	946
Aluminum	0.1	OG	0.03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.025	0.402	----	ND	0.14	ND
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	23.4	33.0	33	----	33.2	----	5.6	----	----	4.3	15	4.04	6.44	13.1	9.43	6.08	8.24	16.1	5.9	21.4	12.9	10.1	13
Barium	1.0	MAC	0.271	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.217	0.132	----	0.148	0.184	0.128
Beryllium	NV	NV	<0.005	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.005	----	----	ND	ND	ND
Bismuth	NV	NV	<0.0003	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.05	----	----	ND	ND	ND
Boron	5.0	IMAC	0.53	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.43	0.5	----	0.39	0.54	0.48
Cadmium	0.005	MAC	<0.0001	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.003	----	----	ND	ND	ND
Calcium	NV	NV	175	204	235	248	110	110	150	230	210	177	144	118	138	188	149	200	206	217	139	185	183	200	188
Chloride	250	AO	53	56	305	240	230	100	145.1	211.3	133	63.9	109	95.3	87.6	109	59.3	98.1	76	99	134	85	119	84.9	83.4
Chromium	0.05	MAC	0.012	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.005	----	----	ND	0.01	ND
Cobalt	NV	NV	0.004	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.005	----	----	ND	0.01	ND
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	1760	1850	3200	2850	3040	2150	2230	2000	2160	1610	1770	1530	2660	1950	1490	1760	1660	1900	1640	1820	286	1390	1750
Copper	1.0	AO	0.0052	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.003	----	----	ND	0.01	ND
DOC	5.0	AO	11	10.5	----	28	----	13.4	----	10.7	3.6	10.7	11.5	11.8	14.8	^14.0	9.8	10.1	8.6	10.1	12.6	11	9	8.9	12.6
Fluoride	1.5	MAC	0.06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1.02	0.81	----	0.3	ND	ND	ND
Hardness	80 - 100	OG	793	839	1255	1250	934	588	777.1	954.7	958	747	677	627	707	878	672	812	846	842	681	783	750	811	825
Iron	0.3	AO	5.35	----	----	34	----	----	2.05	0.28	1.67	0.78	7.98	0.04	1.79	13.1	1.43	1.07	4.31	8.05	0.064	4.75	ND	4.04	0.31
Lead	0.01	MAC	0.0008	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.025	----	----	ND	0.05	ND
Magnesium	NV	NV	86.3	80.1	162	153	160	76	97.6	92.15	105	74	76.6	80.8	87.9	98.6	72.7	76	80.3	83.7	81.3	78.2	71.4	75.8	86.5
Manganese	0.05	AO	0.64	----	----	----	----	----	----	----	----	----	----	----	0.531	0.746	0.549	0.646	0.942	0.983	0.186	0.632	0.22	0.79	0.752
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	<0.0003	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.01	----	----	ND	ND	ND
Nickel	NV	NV	0.007	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.01	0.13	----	ND	ND	ND
Nitrate	10	MAC	0.63	0.16	<0.01	----	0.15	----	<0.1	----	----	<0.1	<0.1	8.5	3	0.4	0.4	1.1	0.93	2.02	15.3	0.1	0.92	0.73	10.5
Nitrite	1.0	MAC	<0.06	<0.06	0.002	----	0.102	----	0.02	----	----	0.05	0.04	0.16	0.14	0.01	0.23	0.04	<0.03	<0.03	----	ND	ND	ND	1.3
Orthophosphate	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.05	<0.05	----	ND	ND	ND	ND
pH	6.5 - 8.5	OG	7.72	7.72	7.53	6.92	7.21	7.25	7.09	7	6.87	7.08	7.19	7.7	7.24	7.12	7.83	7.36	6.87	6.99	7.65	6.84	8.21	7.31	7.57
Phenols	NV	NV	<0.002	----	0.004	0.0045	0.008	<0.001	<0.001	<0.001	0.004	<0.001	0.005	0.0114	0.0072	0.0073	0.0024	0.0048	0.002	<0.001	----	ND	ND	ND	ND
Phosphorus	NV	NV	0.17	0.03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.06	0.06	0.19	0.07	ND	0.1	ND
Phosphorus (Dis)	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	0.006	<0.01	<0.01	0.01	----	0.1	0.04	0.01	ND	----	----
Phosphorus (Tot)	NV	NV	----	----	0.114	----	----	----	----	----	----	0.008	0.01	0.008	0.016	0.013	0.03	0.04	<0.004	0.17	0.05	----	0.01	----	0.655
Potassium	NV	NV	61.9	44.5	74	----	----	----	69.15	----	----	----	----	----	47.8	54.8	42.3	36	37.7	44.4	44	45.2	40.4	43.1	53
Silver	NV	NV	<0.0001	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.003	----	----	ND	ND	ND
Sodium	200	AO	44.1	45.0	172	----	----	----	85.9	----	----	----	----	----	57.1	65.3	41.1	57	38.9	63.4	62.8	59.9	60.8	46.4	53.6
Sulphate	500	AO	4.2	<0.5	90	----	----	----	36	----	----	----	----	----	8.7	5.7	6.3	7.7	6.84	2.2	----	3.32	10.7	87.7	1.4
Sulphide	0.05	AO	<0.06	----	----	----	----	----	----	----	----	----	----	----	----	----	0.03	0.04	----	----	0.78	----	----	----	0.7
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	<0.1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.05	----	----	ND	ND	ND
Titanium	NV	NV	<0.003	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.05	----	----	ND	ND	ND
TKN	NV	NV	23.1	28.5	33	----	57.5	----	----	----	----	5.08	16	7.45	10.7	19.2	10.4	7.04	9	18.8	5.9	256	12.2	10.8	12.8
Vanadium	NV	NV	0.029	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.01	----	----	ND	0.01	ND
Zinc	5.0	AO	0.083	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	13.2	5.46	----	0.74	9.15	3.73
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4
			5-29-2002	11-11-2002	5-29-2003	11-27-2003	6-1-2004	11-24-2004	6-24-2005	11-14-2005	5-24-2006	5-3-2007	4-24-2008	10-14-2008	4-17-2009	11-9-2009	4-19-2010	11-11-2010	4-20-2011	11-7-2011	4-12-2012	10-31-2012	4-25-2013	11-7-2013	5-7-2014
Alkalinity	30-500	OG	1090	920	961	898	984	722	964	818	681	669	849	788	766	758	704	598	862	725	668	702	724	770	713
Aluminum	0.1	OG	0.01	0.33	0.05	0.07	0.01	0.15	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	24.2	20.3	21.3	9.6	9.5	3.7	26	13	0.7	1.7	10.7	14.6	1.6	6.8	10.5	0.2	9.5	9.3	1.3	13.3	5.7	13.4	5.29
Barium	1.0	MAC	0.14	0.17	0.18	0.176	0.182	0.143	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Beryllium	NV	NV	<0.005	<0.0005	<0.005	<0.005	<0.005	<0.005	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV	NV	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	5.0	IMAC	0.5	0.55	0.5	0.55	0.54	0.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cadmium	0.005	MAC	<0.0001	0.0002	<0.0001	<0.0001	<0.0001	0.0001	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Calcium	NV	NV	191	176	220	182	195	128	186	156	156	149	155	140	153	173	152	147	153	193	165	164	186	183	169
Chloride	250	AO	65	94	75	55	45	71	44	47	51	57	52	46	48	46	83	57	38	40	43	51	72	66	57
Chromium	0.05	MAC	0.017	0.007	0.01	0.007	0.027	0.006	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cobalt	NV	NV	0.041	0.003	0.003	0.003	0.0037	0.0022	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	1630	1810	1740	1740	1800	1510	1840	1550	1280	1460	1520	1410	1400	1500	1520	1280	1490	1500	1390	1390	1540	1600	1480
Copper	1.0	AO	0.0035	0.014	0.0055	0.0044	0.0014	0.0066	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
DOC	5.0	AO	13	13	9.8	12	13	8.7	<1	16.7	12.2	8.2	7.4	5	6.6	6.4	8.6	10.7	10.4	7.7	9.2	10.6	21.4	12.6	12.4
Fluoride	1.5	MAC	0.04	0.04	0.04	0.06	0.06	0.06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	80 - 100	OG	896	870	898	843	860	697	830	717	651	687	619	590	620	678	625	584	609	746	669	644	702	705	650
Iron	0.3	AO	0.02	2.97	1.23	1.28	5.66	3.79	<0.02	<0.02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Lead	0.01	MAC	<0.0002	0.003	<0.0002	0.0006	<0.0002	0.0022	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Magnesium	NV	NV	102	104	84.7	94.1	90.8	91.6	88.5	79.6	63.7	76.6	56.4	58.3	57.6	60.0	59.7	52.4	55.5	64.1	62.3	57.1	58.1	60.3	55.4
Manganese	0.05	AO	0.92	0.82	0.95	0.7	0.85	0.423	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	0.0006	0.0003	0.0004	<0.0003	<0.0003	0.0003	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	NV	NV	0.007	0.01	0.008	0.007	0.007	0.005	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nitrate	10	MAC	6.08	6.86	0.73	11.6	5.21	18.1	0.81	4.79	15.6	19.5	6.63	4.53	11.5	0.59	5.47	10.8	3.26	6.24	17.9	3.83	9.37	4.54	0.25
Nitrite	1.0	MAC	0.06	0.2	><0.06	0.09	<0.06	0.11	0.1	<0.06	0.18	<0.06	0.14	<0.06	0.11	<0.06	0.13	<0.06	<0.06	0.09	<0.06	<0.06	0.25	0.04	12.5
Orthophosphate	NV	NV	<0.03	<0.03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	7.8	8.12	7.65	8.03	7.77	7.78	7.59	7.91	8.34	8.30	7.73	7.79	7.98	7.96	7.95	8.09	7.92	7.66	7.96	8.36	8.06	7.73	8
Phenols	NV	NV	0.004	0.003	<0.002	<0.002	0.009	0.002	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus	NV	NV	0.16	0.29	0.11	0.14	0.33	0.13	----	----	----	0.06	0.04	0.08	0.04	<0.01	0.01	0.03	0.021	0.073	<0.009	<0.009	<0.009	0.010	0.009
Phosphorus (Dis)	NV	NV	----	----	----	----	0.1	<0.03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus (Tot)	NV	NV	----	----	----	----	----	----	0.1	0.13	0.09	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Potassium	NV	NV	51.6	56.9	57.7	63.4	46.4	51	54.3	48.8	42.6	40.9	37	41.2	38.1	34.0	41.9	29.1	30.1	39.3	39.9	38.7	36.6	39.6	38.4
Silver	NV	NV	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	200	AO	46.5	54.9	48.5	44	37.3	45.2	38.2	38.9	27.5	35.5	31.7	30.2	41.2	30.7	36.5	34.9	26.5	29	33.2	31.6	35.5	35.3	34.5
Sulphate	500	AO	1.4	1.3	9	6.5	3.5	3	0.8	1.5	2.0	1.7	2.9	1.9	1.3	0.3	1.3	6.3	1.3	1.5	0.5	4.1	2.7	6.0	3.9
Sulphide	0.05	AO	<0.02	<0.02	<0.2	<0.02	<0.06	<0.02	0.042	<0.02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	<0.1	<0.01	<0.1	<0.1	<0.1	<0.1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV	NV	<0.003	0.07	<0.003	<0.003	<0.003	0.005	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV	NV	24.8	18.2	22.3	10.7	20.4	5.2	24.3	15.3	1.6	2.6	10.8	15.3	1.7	7.3	10.1	1.0	9.3	8.8	2.3	12	6.3	12.7	4.8
Vanadium	NV	NV	0.041	0.014	0.028	0.014	0.0658	0.0132	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	5.0	AO	8.7	15.6	14	0.833	10.6	8.63	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-4	TW-5	TW-5
			10-27-2014	4-27-2015	11-2-2015	4-13-2016	5-2-2017	10-27-2017	5-11-2018	10-22-2018	4-4-2019	11-6-2019	4-14-2020	10-21-2020	5-6-2021	12-13-2021	5-2-2022	4-13-2023	11-16-2023	4-24-2024	11-15-2024	4-22-2025	11-18-2025	1-6-1982	11-3-1988
Alkalinity	30-500	OG	701	794	666	686	737	629	782	629	719	668	707	559	582	528	821	621	701	429	491	729	780	343	----
Aluminum	0.1	OG	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	10.1	9.5	13.1	5.6	7.2	4.9	<0.1	9.2	11.2	11.6	10.8	8.1	2.3	1.7	18.6	8.0	16.1	1.3	5.1	17.4	15.2	0.01	----
Barium	1.0	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Beryllium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	5.0	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cadmium	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.00016	----
Calcium	NV	NV	162	150	139	183	200	147	203	156	162	171	200	147	177	149	199	160	192	128	120	164	158	77.5	140.8
Chloride	250	AO	56	48	60	77	58	60	40	45	71	53	48	54	59	53	31	65	45	48	44	48	34	13	3.45
Chromium	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.0028	----
Cobalt	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	1410	1490	1390	1340	1290	1270	1270	1150	1320	1300	1390	1120	1210	1030	1400	1260	1360	1180	1080	1320	1370	650	855
Copper	1.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.006	----
DOC	5.0	AO	6.6	7.3	15.2	8.7	8	7.0	11	11.0	7	7.0	7	8.0	6	6	8	6	5	6	6	7	6	13	2.5
Fluoride	1.5	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	80 - 100	OG	639	615	585	670	724	564	737	582	608	634	725	562	647	564	726	575	683	471	452	590	568	312	467.9
Iron	0.3	AO	----	0.073	----	----	----	----	0.082	0.367	----	----	----	----	----	----	----	----	----	----	----	----	----	0.008	0.06
Lead	0.01	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.0024	----
Magnesium	NV	NV	56.9	58.3	57.8	51.8	54.4	47.8	56	46.9	49.3	50.4	54.7	47.5	50.0	46.8	55.7	42.5	49.2	36.9	36.9	44	42.3	28.6	28.13
Manganese	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.0028	----
Nitrate	10	MAC	7.51	9.42	4.21	5.35	4.95	7.58	6.32	0.48	2.54	4.30	5.78	8.10	12.0	11.5	0.09	3.26	0.30	10.5	10.6	0.21	0.25	0.15	----
Nitrite	1.0	MAC	0.05	0.3	0.04	0.14	0.07	0.06	0.07	<0.03	0.05	<0.03	0.17	0.09	0.11	0.05	<0.03	0.06	0.06	0.08	<0.03	<0.03	<0.03	0.011	----
Orthophosphate	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	7.79	7.99	8.05	7.96	7.53	7.97	7.69	8.13	7.59	7.35	7.99	7.55	7.94	7.96	6.95	7.23	7.92	8.50	8.12	7.31	7.77	7.9	6.89
Phenols	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.0155	<0.001
Phosphorus	NV	NV	0.02	0.033	0.01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus (Dis)	NV	NV	----	----	----	0.010	0.016	0.024	0.005	<0.003	<0.009	0.008	0.004	0.024	0.004	<0.003	<0.003	0.005	0.007	0.006	0.004	0.008	<0.003	----	----
Phosphorus (Tot)	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.178	----
Potassium	NV	NV	38	58.3	32.9	26.0	25.4	24.3	35.2	31.7	27.1	29.7	33.2	28.6	31.8	30.0	31.7	23.8	29.4	21.3	23.6	22.9	24.5	22	----
Silver	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	200	AO	32.2	29.4	29.2	37.5	32.1	27.3	28.5	24.0	32.4	24.7	28.1	23.3	31.2	27.1	24.0	28.3	22.7	20.6	19.9	30.1	18.6	9.8	----
Sulphate	500	AO	3.7	<1	1	3	35	2	<2	<2	<2	<2	7	<2	<2	<2	<2	8	<2	<2	<2	5	<2	26.5	----
Sulphide	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV	NV	9.4	10.6	13	6.3	7.5	6.6	12.4	12.2	13.7	13.5	10.8	8.0	2.3	2.0	17.6	12.3	16.0	1.3	5.8	16.4	15.6	0.4	----
Vanadium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	5.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.0008	----
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5
			5-27-1989	10-11-1989	3-19-1991	9-10-1991	6-17-1992	9-17-1992	11-14-1994	5-15-1995	11-20-1995	5-31-1996	11-13-1996	5-7-1997	5-7-1998	5-21-1999	12-2-1999	5-31-2000	7-9-2001	7-9-2001	5-29-2002	6-1-2004	11-24-2004	6-24-2005	11-14-2005
Alkalinity	30-500	OG	----	496	379	----	388	502	461	432	518	572	963	610	672	420	476	451	456	461	412	425	599	379	591
Aluminum	0.1	OG	----	----	----	----	----	----	----	----	----	----	0.04	0.042	----	0.13	ND	ND	0.06	ND	0.18	0.1	0.03	----	----
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	----	0.009	0.002	0.003	0.121	0.09	0.33	0.32	0.26	0.1	<0.05	0.1	0.08	0.06	0.04	0.04	0.07	0.07	0.1	0.2	0.2	<0.1	<0.1
Barium	1.0	MAC	----	----	----	----	----	----	----	----	----	----	0.064	0.067	----	0.027	0.019	0.786	0.018	0.018	0.019	0.048	0.037	----	----
Beryllium	NV	NV	----	----	----	----	----	----	----	----	----	----	<0.005	----	----	ND	ND	ND	ND	ND	<0.005	<0.005	<0.005	----	----
Bismuth	NV	NV	----	----	----	----	----	----	----	----	----	----	<0.05	----	----	ND	ND	ND	ND	ND	<0.0003	<0.0003	<0.0003	----	----
Boron	5.0	IMAC	----	----	----	----	----	----	----	----	----	----	0.05	0.05	----	0.03	0.06	0.21	0.09	0.09	0.11	0.08	0.07	----	----
Cadmium	0.005	MAC	----	----	----	----	----	----	----	----	----	----	<0.003	----	----	ND	ND	ND	ND	ND	<0.0001	0.0005	<0.0001	----	----
Calcium	NV	NV	153	146	132	143	148	99.7	118	102	116	153	148	155	167	146	168	157	144	145	133	676	185	120	211
Chloride	250	AO	26.2	24.1	100	27.2	36.7	31.7	36.6	37.6	44.7	74.2	54	63.9	60.7	46.3	38.1	22.3	55.8	56.8	64	21	140	40	150
Chromium	0.05	MAC	----	----	----	----	----	----	----	----	----	----	<0.005	----	----	ND	ND	ND	ND	ND	0.007	0.029	0.007	----	----
Cobalt	NV	NV	----	----	----	----	----	----	----	----	----	----	<0.005	----	----	ND	ND	ND	ND	ND	0.047	0.0031	0.0004	----	----
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	989	1138	1187	1042	1109	1094	1217	1187	1153	1100	1050	1120	1300	1500	1000	830	875	876	809	798	1400	807	1450
Copper	1.0	AO	----	----	----	----	----	----	----	----	----	----	<0.003	----	----	ND	ND	0.005	ND	ND	0.0084	0.0026	0.0016	----	----
DOC	5.0	AO	1.7	2.9	3.1	3.4	2.4	3.7	9.6	3.5	3.5	1.8	1.4	1.1	1.8	3.6	4.1	5.1	5.9	5.7	3.1	4	14.5	3.3	10.7
Fluoride	1.5	MAC	----	----	----	----	----	----	----	----	----	0.56	0.3	----	ND	ND	ND	ND	ND	ND	0.07	0.12	0.06	----	----
Hardness	80 - 100	OG	546	563	461	513	574	455	561	507	508	629	588	606	656	446	511	469	446	447	430	1780	652	353	709
Iron	0.3	AO	0.35	0.58	0.02	0.04	<0.01	0.01	0.05	1.19	0.1	0.149	0.038	0.035	0.107	0.05	0.01	0.03	ND	ND	0.16	0.09	<0.02	0.03	<0.02
Lead	0.01	MAC	----	----	----	----	----	----	----	----	----	----	<0.025	----	----	ND	ND	ND	ND	ND	0.0002	<0.0002	<0.0002	----	----
Magnesium	NV	NV	39.6	48	31.7	----	49.4	49.9	64.3	60.5	53.1	60.1	57.1	57.8	58	20.1	22.1	18.6	20.7	20.4	23.7	23.3	46.3	12.8	44.1
Manganese	0.05	AO	----	----	----	37.7	----	----	0.176	0.077	0.113	0.044	0.027	0.017	0.011	0.04	0.056	0.01	0.008	0.008	0.013	1.1	0.007	----	----
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	----	----	----	----	----	----	----	----	----	----	<0.01	----	----	ND	0.14	0.02	ND	ND	0.002	0.001	0.0011	----	----
Nickel	NV	NV	----	----	----	----	----	----	----	----	----	----	<0.01	----	----	ND	ND	ND	ND	ND	0.005	0.005	<0.001	----	----
Nitrate	10	MAC	----	0.068	0.1	0.3	0.6	0.8	0.2	<0.1	<0.1	0.14	<0.03	0.4	0.48	2	0.8	ND	0.3	0.3	0.14	0.36	2.53	0.07	1.69
Nitrite	1.0	MAC	----	0.1	0.01	<0.01	0.01	<0.01	0.02	0.01	0.01	<0.03	<0.03	----	ND	ND	ND	ND	ND	ND	<0.06	<0.06	<0.06	<0.06	<0.06
Orthophosphate	NV	NV	----	----	----	----	----	----	----	----	----	<0.05	<0.05	----	ND	ND	ND	ND	ND	ND	0.04	----	----	----	----
pH	6.5 - 8.5	OG	7.12	7.11	7.57	7.42	7.45	7.28	7.22	7.46	7.29	7.34	7.13	7.15	7.05	7.27	6.68	7.15	6.94	6.94	8.06	7.94	7.62	7.86	7.93
Phenols	NV	NV	0.001	<0.001	----	0.002	<0.0010	<0.0010	0.0023	<0.0010	<0.0010	<0.001	<0.001	----	ND	ND	ND	0.002	ND	ND	0.004	0.003	0.005	----	----
Phosphorus	NV	NV	----	----	----	----	----	----	----	----	----	<0.06	<0.06	----	0.1	ND	0.1	0.1	0.2	0.1	1.43	0.25	0.15	----	----
Phosphorus (Dis)	NV	NV	----	----	----	----	----	----	<0.001	<0.01	0.01	----	0.02	----	0.03	----	----	----	----	----	----	0.15	0.07	----	----
Phosphorus (Tot)	NV	NV	----	0.068	0.044	----	0.005	0.045	0.009	0.04	0.03	<0.004	0.29	0.39	----	----	----	----	5.45	5.35	----	----	----	0.27	0.14
Potassium	NV	NV	----	----	----	----	----	----	23.2	23.2	21.2	21.8	22.7	----	19.7	5.5	4	2	3	4	5.05	3.36	10.7	1.96	6.29
Silver	NV	NV	----	----	----	----	----	----	----	----	----	----	<0.003	----	----	ND	ND	ND	ND	ND	<0.0001	<0.0001	<0.0001	----	----
Sodium	200	AO	----	----	----	----	----	----	26.9	25.2	25.2	27.7	30.6	35	35.6	39.7	25.8	31.8	37	37.5	43.1	17.2	49.3	42.9	60.7
Sulphate	500	AO	----	----	----	----	----	----	32.8	27.4	27.4	20.4	18.5	17.2	15.3	17.3	14.7	18.8	9.6	9.6	13	8.4	25	15	27
Sulphide	0.05	AO	----	----	----	----	----	----	----	0.02	0.02	----	----	----	----	----	----	----	ND	----	<0.02	<0.02	0.21	<0.02	<0.02
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	----	----	----	----	----	----	----	----	----	----	<0.05	----	----	ND	ND	ND	ND	ND	<0.1	<0.1	<0.1	----	----
Titanium	NV	NV	----	----	----	----	----	----	----	----	----	----	<0.05	----	----	ND	ND	ND	ND	ND	0.016	0.004	<0.003	----	----
TKN	NV	NV	----	0.42	0.38	0.56	0.88	0.49	0.49	0.39	0.27	0.38	0.51	0.48	0.4	0.36	0.37	1.13	0.29	0.29	0.5	<0.5	<0.5	<0.5	<0.5
Vanadium	NV	NV	----	----	----	----	----	----	----	----	----	----	<0.01	----	----	0.005	ND	ND	ND	ND	0.016	0.0764	0.0152	----	----
Zinc	5.0	AO	----	----	----	----	----	----	----	----	----	----	0.032	0.032	----	0.21	0.038	0.282	0.065	0.07	0.01	0.02	0.884	----	----
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5
			5-24-2006	10-25-2006	5-3-2007	11-15-2007	4-24-2008	10-14-2008	4-17-2009	11-9-2009	4-19-2010	11-11-2010	4-20-2011	11-7-2011	4-12-2012	10-31-2012	4-25-2013	11-7-2013	5-7-2014	10-27-2014	4-27-2015	11-2-2015	4-13-2016	11-21-2016	5-2-2017
Alkalinity	30-500	OG	459	568	340	578	383	503	372	543	451	501	421	459	488	339	281	446	316	499	425	573	404	544	385
Aluminum	0.1	OG	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Barium	1.0	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Beryllium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	5.0	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cadmium	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Calcium	NV	NV	121	187	136	142	106	144	94.8	174	164	155	136	140	153	133	104	141	111	150	136	154	131	167	97
Chloride	250	AO	67	110	68	88	69	45	65	110	55	29	82	29	89	36	72	37	110	43	88	86	110	140	95
Chromium	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cobalt	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	951	1370	894	1270	842	1030	815	1430	1010	988	947	1020	1110	819	1540	950	900	1000	1010	1330	1030	1300	966
Copper	1.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
DOC	5.0	AO	3.1	6.7	2.6	4.6	2.7	6	2.9	25.4	11.0	2.8	4.5	3.5	2.7	2.7	21.4	3.2	4.4	11.7	4.5	3.1	2.9	6	4.0
Fluoride	1.5	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	80 - 100	OG	379	646	414	460	311	423	285	596	535	466	421	417	473	392	310	417	327	443	403	536	409	551	297
Iron	0.3	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.082	----	----	0.055	----
Lead	0.01	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Magnesium	NV	NV	18.6	43.8	17.8	25.8	11.2	15.5	11.8	39.3	30.3	19.3	19.6	16.4	22.3	14.7	11.9	15.7	12	16.4	15.7	36.6	20	32.3	13.3
Manganese	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nitrate	10	MAC	0.30	0.51	0.08	0.15	<0.05	<0.05	<0.05	<0.05	0.29	0.15	0.06	0.67	0.05	0.09	<0.06	0.28	<0.06	0.08	0.08	0.06	<0.06	0.53	0.07
Nitrite	1.0	MAC	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Orthophosphate	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	8.27	7.88	8.19	8	7.71	7.44	8.02	7.46	7.90	7.50	8.06	7.67	7.68	8.09	8.22	7.91	8.08	8	8.06	8.03	7.87	7.74	7.95
Phenols	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus	NV	NV	----	0.05	0.04	0.05	0.03	0.12	0.21	0.02	0.04	<0.01	0.026	0.056	0.016	0.021	0.081	0.047	0.02	0.031	0.038	0.028	----	----	----
Phosphorus (Dis)	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.021	0.033	0.031
Phosphorus (Tot)	NV	NV	0.08	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Potassium	NV	NV	4.57	10.1	4.09	6.28	1.6	1.73	2.4	10.4	11.6	5.65	5.55	3.77	6.73	2.94	2.60	2.88	3.19	2.97	2.27	9.02	5.92	10.1	4.72
Silver	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	200	AO	41.6	59.5	36.0	68.7	69.4	48.7	38.2	87.4	68.6	32.3	38.2	32.5	54.2	43.6	32.9	41.0	64.9	54.7	44.4	70.9	50.1	61.6	86.3
Sulphate	500	AO	17	32	16	32	14	44	11	39	21	16	17	13	22	41	7.5	21	8	15	12	23	13	22	10
Sulphide	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV	NV	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vanadium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	5.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-5	TW-6	TW-6	TW-6	TW-6	TW-6	TW-6	TW-6
			10-27-2017	5-11-2018	4-4-2019	11-6-2019	4-14-2020	10-21-2020	5-6-2021	12-13-2021	5-2-2022	9-14-2022	4-13-2023	11-16-2023	4-24-2024	11-15-2024	4-22-2025	9-9-2025	1-6-1982	6-13-1986	8-10-1988	11-3-1988	5-27-1989	5-28-1990	3-19-1991
Alkalinity	30-500	OG	461	454	486	472	662	651	431	487	604	575	502	470	493	475	483	570	244	----	174.78	----	----	194	240
Aluminum	0.1	OG	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	0.2	13.6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.025	----	<0.001	----	----	0.011	----
Barium	1.0	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Beryllium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	5.0	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cadmium	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.00016	----	----	----	----	----	----
Calcium	NV	NV	155	161	168	169	218	218	222	210	276	281	183	179	134	188	151	162	55.5	63.5	58.9	98.7	68.9	65	83.2
Chloride	250	AO	90	98	170	220	250	330	210	390	410	580	430	300	270	420	300	350	16	10	4.14	5.22	16.6	19.2	32.6
Chromium	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.0068	----	----	----	----	----	----
Cobalt	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	1040	1040	1340	1630	1430	1880	1690	1480	2420	3000	1560	1560	1320	2090	1850	1940	475	545	487	509	489	493	643
Copper	1.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.022	----	----	----	----	----	----
DOC	5.0	AO	4	3.0	3.0	2.0	2.0	4.0	3	4	4	4	3	3	4	4	4	3	7	1.8	1.5	1	2.4	0.9	1.7
Fluoride	1.5	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	80 - 100	OG	472	488	547	534	689	687	690	653	890	921	560	573	418	605	481	533	227	237	230.3	351.8	260	232	302
Iron	0.3	AO	----	0.174	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.024	----	0.2	6.1	0.45	0.25	0.02
Lead	0.01	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.0024	----	----	----	----	----	----
Magnesium	NV	NV	20.6	21.0	30.8	27.0	35.0	34.9	32.8	31.1	48.9	53.4	25.1	30.4	20.4	32.7	24.9	31.2	21.4	19	20.16	25.5	21.2	16.8	22.7
Manganese	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.0056	----	----	----	----	----	----
Nitrate	10	MAC	0.36	0.16	0.34	0.35	0.28	1.15	0.42	0.36	0.47	0.86	0.36	0.47	0.10	0.26	0.22	<0.06	0.42	----	1.8	----	----	4.7	----
Nitrite	1.0	MAC	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.3	<0.3	<0.03	<0.03	<0.3	<0.03	<0.3	0.009	----	0.09	----	----	<0.01	----
Orthophosphate	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	7.72	7.84	7.80	7.96	7.54	7.59	7.99	7.55	7.16	7.75	7.47	8.02	8.04	7.71	7.88	7.75	7.92	7.74	7.84	7.43	7.66	7.61	7.78
Phenols	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.0045	0.0015	----	<0.001	<0.001	<0.001	<0.001
Phosphorus	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus (Dis)	NV	NV	0.032	0.028	0.021	0.014	0.011	0.023	0.003	0.032	0.006	0.022	0.017	0.021	0.011	0.014	0.014	0.010	----	----	----	----	----	----	----
Phosphorus (Tot)	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.334	----	----	----	----	0.006	----
Potassium	NV	NV	4.0	6.08	9.09	7.33	8.79	10.00	9.50	8.11	12.8	14.2	7.01	8.95	5.95	11	6.12	8.16	2.4	----	1.46	----	----	----	----
Silver	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	200	AO	53.5	62.0	109.0	136.0	117.0	124.0	118	130	237	298	121	222	143	222	177	202	15.9	----	4.43	----	----	----	----
Sulphate	500	AO	11	10	15	26	22	27	20	25	26	38	34	34	28	23	25	24	19	----	13.5	----	----	----	----
Sulphide	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV	NV	<0.5	<0.5	1.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	2.24	----	0.32	----	----	0.29	----
Vanadium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	5.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.002	----	----	----	----	----	----
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-6	TW-6	TW-6	TW-6	TW-6	TW-6	TW-6	TW-6	TW-6	TW-6	TW-6	TW-6	TW-6	TW-6	TW-6	TW-6	TW-6	TW-6	TW-6	TW-6	TW-6	TW-6
			9-10-1991	11-17-1993	5-2-1994	11-14-1994	5-15-1995	11-20-1995	5-31-1996	11-13-1996	5-7-1997	5-21-1999	12-2-1999	12-12-2001	5-29-2002	6-1-2004	11-14-2005	5-24-2006	10-25-2006	5-3-2007	4-24-2008	10-14-2008	4-17-2009	11-9-2009	4-19-2010
Alkalinity	30-500	OG	----	225	----	313	273	420	426	371	375	264	314	418	404	450	418	399	388	326	409	448	379	356	469
Aluminum	0.1	OG	----	----	----	----	----	----	----	<0.025	0.032	0.18	ND	ND	0.04	0.36	----	----	----	----	----	----	----	----	----
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	0.038	0.099	0.045	0.2	0.1	0.17	0.1	0.08	0.11	0.03	ND	0.03	0.4	<0.1	0.2	0.2	0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1
Barium	1.0	MAC	----	----	----	----	----	----	----	0.017	0.017	0.016	0.715	0.017	0.024	0.028	----	----	----	----	----	----	----	----	----
Beryllium	NV	NV	----	----	----	----	----	----	----	<0.005	----	ND	ND	ND	<0.005	<0.005	----	----	----	----	----	----	----	----	----
Bismuth	NV	NV	----	----	----	----	----	----	----	<0.05	----	ND	ND	ND	<0.0003	<0.0003	----	----	----	----	----	----	----	----	----
Boron	5.0	IMAC	----	----	----	----	----	----	----	0.05	0.05	0.02	0.13	0.05	0.04	<0.05	----	----	----	----	----	----	----	----	----
Cadmium	0.005	MAC	----	----	----	----	----	----	----	<0.003	----	ND	ND	ND	0.0002	0.0002	----	----	----	----	----	----	----	----	----
Calcium	NV	NV	88	64.1	123	127	105	125	150	114	135	103	118	115	169	269	141	138	140	137	110	145	132	145	172
Chloride	250	AO	34.6	46.3	117	101	77.6	68.7	96.6	34.8	107	83.8	89	80.7	166	39	110	140	51	77	170	200	130	170	150
Chromium	0.05	MAC	----	----	----	----	----	----	----	<0.005	----	ND	ND	ND	0.01	0.002	----	----	----	----	----	----	----	----	----
Cobalt	NV	NV	----	----	----	----	----	----	----	<0.005	----	ND	ND	ND	0.047	0.001	----	----	----	----	----	----	----	----	----
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	746	749	770	1085	1004	1065	984	769	911	856	967	966	1040	978	1090	1110	950	944	1630	1350	1050	1300	1340
Copper	1.0	AO	----	----	----	----	----	----	----	<0.003	----	ND	ND	ND	0.0079	0.0034	----	----	----	----	----	----	----	----	----
DOC	5.0	AO	1.8	1.3	12.1	8.4	2.4	2.7	2.3	1.3	1	3.2	3	7.3	1.9	3.5	1.7	1.7	<1	1.3	<1	1.4	1.1	1.2	14.4
Fluoride	1.5	MAC	----	----	----	----	----	----	0.52	0.15	0.11	ND	ND	0.1	0.04	0.06	----	----	----	----	----	----	----	----	----
Hardness	80 - 100	OG	321	265	450	492	417	477	534	400	473	361	402	383	570	903	465	452	449	435	350	467	426	466	558
Iron	0.3	AO	0.09	0.04	<0.01	0.03	0.07	0.13	0.037	0.044	0.014	0.14	ND	ND	0.03	0.85	<0.02	----	----	----	----	----	----	----	----
Lead	0.01	MAC	----	----	----	----	----	----	----	<0.025	----	ND	ND	ND	<0.0002	0.002	----	----	----	----	----	----	----	----	----
Magnesium	NV	NV	24.5	25.4	34.2	42.4	37.1	40.1	38.9	28.9	33.8	25.2	26.3	23	35.9	56.4	27.5	26.4	23.9	22.6	18.6	25.8	23.6	25.5	31.2
Manganese	0.05	AO	----	----	0.003	0.007	<0.003	0.006	<0.005	<0.005	0.006	0.03	ND	ND	0.006	0.38	----	----	----	----	----	----	----	----	----
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	----	----	----	----	----	----	----	<0.01	----	ND	ND	ND	<0.0003	<0.0003	----	----	----	----	----	----	----	----	----
Nickel	NV	NV	----	----	----	----	----	----	----	<0.01	----	ND	ND	ND	0.002	0.002	----	----	----	----	----	----	----	----	----
Nitrate	10	MAC	1.5	2.3	3.8	5.1	5	7.8	6.15	4.12	3.09	5.9	6.8	3.1	4.66	4.56	3.32	5.23	4.25	3.10	3.01	2.94	2.32	4.13	5.35
Nitrite	1.0	MAC	<0.01	<0.01	<0.01	0.01	0.01	0.01	<0.03	<0.03	----	ND	ND	ND	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
Orthophosphate	NV	NV	----	----	----	----	----	----	<0.05	<0.05	----	ND	ND	ND	<0.03	----	----	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	7.84	7.78	7.89	7.36	7.43	7.36	7.18	7.21	7.26	7.29	7.25	7.48	7.94	7.65	7.87	8.26	7.90	8.14	7.59	7.52	8.05	7.63	7.75
Phenols	NV	NV	<0.001	0.0058	0.001	<0.0010	<0.0010	<0.0010	<0.001	'<0.001	----	ND	ND	ND	<0.002	<0.002	----	----	----	----	----	----	----	----	----
Phosphorus	NV	NV	----	----	----	----	----	----	<0.06	<0.06	----	ND	ND	ND	0.49	0.33	----	----	0.02	0.03	0.02	0.07	0.11	<0.01	<0.01
Phosphorus (Dis)	NV	NV	----	----	0.008	0.001	<0.01	0.02	----	0.03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus (Tot)	NV	NV	----	0.008	0.008	0.013	0.03	0.03	<0.004	0.53	0.75	----	----	1.03	----	----	0.2	0.41	----	----	----	----	----	----	----
Potassium	NV	NV	----	----	1.3	1.82	1.38	1.82	1.7	<1	1	2.5	2	2	2.7	5.97	2.35	2.63	2.51	3.16	2.3	3.06	2.42	2.87	3.49
Silver	NV	NV	----	----	----	----	----	----	----	<0.003	----	ND	ND	ND	<0.0001	<0.001	----	----	----	----	----	----	----	----	----
Sodium	200	AO	----	----	32.4	38.5	36.2	37	35.3	27.3	31.4	38.1	53.7	39.2	60.3	18	62.6	57.8	31.1	34.2	76.6	97.9	65.5	120	67.5
Sulphate	500	AO	----	----	21.2	35.4	33.7	46.4	37.1	35.7	32.1	31.2	37	25.4	25	31	22	22	34	24	19	24	19	19	21
Sulphide	0.05	AO	----	----	----	----	<0.02	<0.02	----	----	----	----	----	ND	<0.02	<0.02	<0.02	----	----	----	----	----	----	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	----	----	----	----	----	----	----	<0.05	----	ND	ND	ND	<0.1	<0.1	----	----	----	----	----	----	----	----	----
Titanium	NV	NV	----	----	----	----	----	----	----	<0.05	----	ND	ND	ND	0.003	0.004	----	----	----	----	----	----	----	----	----
TKN	NV	NV	0.7	0.5	0.22	0.34	0.4	0.45	0.64	0.48	0.51	0.25	0.3	0.46	1.5	0.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.6	<0.5
Vanadium	NV	NV	----	----	----	----	----	----	----	<0.01	----	ND	ND	ND	0.016	0.003	----	----	----	----	----	----	----	----	----
Zinc	5.0	AO	----	----	----	----	----	----	----	0.036	0.016	0.04	0.181	0.058	0.041	0.022	----	----	----	----	----	----	----	----	----
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-6	TW-6	TW-6	TW-6	TW-6	TW-6	TW-6	TW-6	TW-6	TW-6	TW-6	TW-6	TW-6	TW-6	TW-6	TW-6	TW-6	TW-6	TW-6	TW-6	TW-6	TW-6
			11-11-2010	4-20-2011	11-7-2011	4-12-2012	10-31-2012	4-25-2013	11-7-2013	5-7-2014	10-27-2014	4-27-2015	11-2-2015	4-13-2016	11-21-2016	5-2-2017	10-27-2017	5-11-2018	10-22-2018	4-4-2019	11-6-2019	4-14-2020	11-21-2020	5-6-2021	5-2-2022
Alkalinity	30-500	OG	504	448	478	488	271	375	232	413	498	467	452	447	469	176	530	224	490	518	442	503	527	260	324
Aluminum	0.1	OG	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	1.6	<0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1
Barium	1.0	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Beryllium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	5.0	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cadmium	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Calcium	NV	NV	195	159	246	160	139	190	146	178	161	16	113	182	96	111	146.0	74	164.0	184	124.0	226	140.0	52	43.7
Chloride	250	AO	180	280	160	130	180	340	180	310	150	250	150	330	130	43	150	79	170	310	160	360	230	330	55
Chromium	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cobalt	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	1550	1450	1490	1250	1130	1680	480	1660	1350	1600	1480	1770	1210	675	1310	881	1300	1900	1390	1970	1770	1560	1490
Copper	1.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
DOC	5.0	AO	1.5	1.4	2.7	2.2	1.8	2.5	1.8	1.9	11.4	2.8	1.8	1.5	2	3.0	4	2.0	2	2.0	4	2.0	3	2	1
Fluoride	1.5	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	80 - 100	OG	622	514	768	517	448	615	470	567	515	522	361	589	300	347	460	224	505	585	382	698	436	165	128
Iron	0.3	AO	----	----	----	----	----	----	----	----	----	0.034	----	----	0.014	----	----	0.187	0.115	----	----	----	----	----	----
Lead	0.01	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Magnesium	NV	NV	32.5	28.5	37.3	28.7	24.8	33.9	26.0	29.9	27.4	28.8	19.4	30.1	14.7	17.0	23.6	9.8	23.0	30.5	17.5	32.5	20.7	8.4	4.59
Manganese	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nitrate	10	MAC	3.31	3.42	3.27	2.59	4.46	4.2	3.69	0.21	2.55	2.98	2.75	4.23	1.96	0.62	0.50	0.81	7.73	0.44	0.37	0.23	1.85	0.12	0.78
Nitrite	1.0	MAC	<0.06	<0.06	<0.06	<0.06	<0.06	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Orthophosphate	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	7.42	7.68	7.63	7.64	8.05	7.82	8.09	8.01	8.01	7.86	8.11	7.86	7.81	7.86	7.92	7.61	7.77	7.76	8.09	7.39	7.87	7.94	7.33
Phenols	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus	NV	NV	0.05	<0.009	0.273	<0.009	<0.009	0.036	0.024	<0.0009	0.012	0.014	0.008	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus (Dis)	NV	NV	----	----	----	----	----	----	----	----	----	----	----	<0.009	<0.009	0.039	0.025	0.015	0.006	0.011	0.004	0.006	<0.003	0.013	0.007
Phosphorus (Tot)	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Potassium	NV	NV	3.50	2.88	3.85	2.88	3.78	3.97	3.54	3.65	3.59	2.39	2.36	3.19	2.27	2.25	2.90	1.38	3.16	3.41	2.44	3.41	2.78	1.08	0.477
Silver	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	200	AO	79.5	84.4	101	79.9	133	123	92.7	116	95.1	119	78.6	157	61.7	149	103.0	129	101.0	174	106.0	211	108.0	246	37.2
Sulphate	500	AO	25	26	22	21	19	24	21	20	21	20	14	21	17	11	19	19	18	25	15	20	18	14	21
Sulphide	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV	NV	<0.5	<0.5	<0.5	<0.5	0.8	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	0.8	<0.5	<0.5	<0.5	<0.5
Vanadium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	5.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-6	TW-6	TW-6	TW-6	TW-6	TW-6	TW-7	TW-7	TW-7	TW-7	TW-7	TW-7	TW-7	TW-7	TW-7	TW-7	TW-7	TW-7	TW-7	TW-7	TW-7	TW-7
			4-13-2023	11-16-2023	4-24-2024	11-15-2024	4-22-2025	9-9-2025	1-6-1982	8-10-1988	11-3-1988	5-27-1989	10-11-1989	5-28-1990	3-19-1991	9-10-1991	11-17-1993	5-2-1994	11-14-1994	5-15-1995	11-20-1995	5-31-1996	11-13-1996	5-31-2000	7-9-2001
Alkalinity	30-500	OG	143	432	216	366	154	376	490	445.6	----	----	555	503	329	----	397	482	434	463	529	331	506	510	504
Aluminum	0.1	OG	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.025	ND	ND
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	0.075	0.98	----	----	0.921	0.193	----	0.861	1.2	0.73	0.76	0.56	0.68	0.98	0.74	0.26	0.35
Barium	1.0	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.09	0.302	0.21
Beryllium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.005	ND	ND
Bismuth	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.05	ND	ND
Boron	5.0	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.41	0.45	0.5
Cadmium	0.005	MAC	----	----	----	----	----	----	<0.00016	<0.005	----	----	----	----	----	----	----	----	----	----	----	----	<0.003	ND	ND
Calcium	NV	NV	54.4	29.2	28.9	106	21.7	124	74.5	49.3	133.2	76.9	80.2	116	105	104	75	102	102	103	104	70.2	110	350	202
Chloride	250	AO	570	300	91	140	37	180	51	12.75	13.56	9.2	10.3	71.6	11.8	12.5	8.6	14.7	9.9	9.8	10.1	28.7	8.83	19	11.7
Chromium	0.05	MAC	----	----	----	----	----	----	0.0036	<0.02	----	----	----	----	----	----	----	----	----	----	----	----	<0.005	ND	ND
Cobalt	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.005	ND	ND
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	864	1500	764	975	499	1120	998	1020	1032	1062	1139	1172	1350	1287	1143	1288	1276	1295	1242	652	1160	1950	1410
Copper	1.0	AO	----	----	----	----	----	----	0.006	<0.02	----	----	----	----	----	----	----	----	----	----	----	----	<0.003	ND	ND
DOC	5.0	AO	2	2	3	2	3	3	63	4.5	4.2	7.6	----	7	3.6	3.5	3.8	18.4	4.7	8.9	3.4	2.9	2.7	4.5	4.7
Fluoride	1.5	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.15	<0.02	ND	ND
Hardness	80 - 100	OG	167	88.8	85.2	320	67.3	393	471	497.3	748.7	596	621	524	>675	730	548	752	756	778	760	290	793	1450	947
Iron	0.3	AO	----	----	----	----	----	----	0.088	0.15	14.2	0.3	0.59	0.12	0.27	0.03	0.41	0.03	0.03	2.26	1.03	1.55	0.086	0.21	1.35
Lead	0.01	MAC	----	----	----	----	----	----	<0.0024	<0.03	----	----	----	----	----	----	----	----	----	----	----	----	<0.025	ND	ND
Magnesium	NV	NV	7.47	3.89	3.13	13.8	3.21	20.4	69	90.78	100.9	98	102	56.8	>100	114	87.6	120	121	125	122	27.7	126	138	107
Manganese	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.104	0.096	0.092	0.088	0.102	0.061	1.11	0.324
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.01	0.03	ND
Nickel	NV	NV	----	----	----	----	----	----	0.0028	<0.02	----	----	----	----	----	----	----	----	----	----	----	----	<0.01	ND	ND
Nitrate	10	MAC	1.57	1.73	0.90	0.83	1.11	2.85	<0.01	<0.1	----	----	<0.1	<0.1	----	0.1	0.6	0.3	0.2	<0.1	0.1	0.04	0.12	ND	0.2
Nitrite	1.0	MAC	<0.3	<0.03	<0.03	<0.03	<0.03	<0.03	0.002	0.04	----	----	0.01	0.01	----	<0.01	<0.01	<0.01	0.01	0.01	0.01	<0.03	<0.03	ND	ND
Orthophosphate	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.05	<0.05	ND	ND
pH	6.5 - 8.5	OG	7.79	8.02	8.69	8.27	7.94	7.3	7.83	8	7.26	7.42	7.42	7.57	7.99	^7.51	7.89	7.87	7.5	7.46	7.52	7.3	7.24	7.22	7.17
Phenols	NV	NV	----	----	----	----	----	----	0.0405	<0.001	<0.001	0.0015	----	0.001	<0.0010	<0.0010	0.0028	0.0052	0.0017	0.0036	0.0043	<0.001	'<0.001	0.002	ND
Phosphorus	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.06	0.06	0.1	ND
Phosphorus (Dis)	NV	NV	0.112	0.041	0.024	0.005	0.015	0.004	----	----	----	----	----	----	----	----	----	0.006	<0.001	<0.01	0.03	----	0.04	----	----
Phosphorus (Tot)	NV	NV	----	----	----	----	----	----	0.2	----	----	----	0.02	0.018	----	----	0.016	0.022	0.006	0.03	0.03	<0.004	0.83	----	1.33
Potassium	NV	NV	0.863	0.966	0.625	1.83	0.667	3.18	18.7	16.67	----	----	----	----	----	----	----	13.2	14	10.6	11	1.8	8.1	12	6
Silver	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.003	ND	ND
Sodium	200	AO	207	210	96.6	78.4	52.7	144	38	21.4	----	----	----	----	----	----	----	12.5	14.1	13.5	13.5	11.2	14.1	26.3	26.7
Sulphate	500	AO	37	29	18	13	10	20	18	78.5	----	----	----	----	----	----	----	280	267	248	258	19.7	271	885	510
Sulphide	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.02	0.03	----	----	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.05	ND	ND
Titanium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.05	ND	ND
TKN	NV	NV	<0.5	0.6	0.8	<0.5	<0.5	0.8	0.48	1.31	----	----	1.34	1.02	----	1.3	1.76	1.54	1.44	1.01	1.05	1.09	0.98	0.87	0.72
Vanadium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.01	ND	ND
Zinc	5.0	AO	----	----	----	----	----	----	0.0016	0.06	----	----	----	----	----	----	----	----	----	----	----	----	<0.005	0.268	0.347
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-7	TW-7	TW-7	TW-7	TW-10	TW-10	TW-10	TW-10	TW-10	TW-10	TW-10	TW-10	TW-10	TW-10	TW-10	TW-10	TW-10	TW-10	TW-10	TW-10	TW-10	TW-10
			5-29-2002	5-29-2003	11-27-2003	6-24-2005	1-6-1982	6-13-1986	8-10-1988	11-3-1988	5-27-1989	10-11-1989	5-28-1990	3-19-1991	5-5-1993	11-17-1993	5-2-1994	11-14-1994	5-15-1995	11-20-1995	5-31-1996	11-13-1996	5-7-1997	5-7-1998	5-21-1999
Alkalinity	30-500	OG	499	557	519	446	691	----	566.8	----	----	627	778	476	602	485	507	496	467	549	595	559	622	660	636
Aluminum	0.1	OG	0.01	1.58	1.33	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.025	----	----	ND
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	1	0.6	0.7	1.4	0.03	----	0.234	----	----	0.019	0.018	0.049	0.046	0.178	0.039	0.12	0.07	0.1	0.1	<0.05	0.12	ND	0.25
Barium	1.0	MAC	0.026	0.044	0.061	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.021	0.026	----	0.023
Beryllium	NV	NV	<0.005	<0.005	<0.005	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.005	----	----	ND
Bismuth	NV	NV	<0.0003	<0.0003	<0.0003	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.05	----	----	ND
Boron	5.0	IMAC	0.33	0.3	0.38	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.27	0.29	----	0.28
Cadmium	0.005	MAC	<0.0001	0.0006	0.0003	----	<0.00016	----	<0.005	----	----	----	----	----	----	----	----	----	----	----	----	<0.003	----	----	ND
Calcium	NV	NV	308	539	525	383	245	120	175	170.6	144	141	150	136	96.2	93.5	123	126	138	118	148	136	140	132	129
Chloride	250	AO	22	29	23	40	185	105	67.08	67.82	64.3	66.3	66.7	56.4	25.1	23.5	33.5	30	45.3	37.2	40.8	31.8	33	25.6	21.8
Chromium	0.05	MAC	0.011	0.011	0.003	----	0.0068	----	<0.02	----	----	----	----	----	----	----	----	----	----	----	----	<0.005	----	----	ND
Cobalt	NV	NV	0.03	0.005	0.007	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.005	----	----	ND
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	1600	1790	2250	2110	1900	1940	1520	1580	1540	1530	1560	1410	1212	1197	1233	1259	1340	1259	1220	1140	1140	1220	777
Copper	1.0	AO	0.0038	0.042	0.0218	----	0.058	----	<0.02	----	----	----	----	----	----	----	----	----	----	----	----	<0.003	----	----	ND
DOC	5.0	AO	3	3.5	3.8	4.5	1	13.1	7.3	7.4	1.2	5.5	6	5.3	4.7	4.8	9.9	9	7.1	6.7	3.3	3.8	3.7	3.1	4.2
Fluoride	1.5	MAC	0.05	<0.04	0.07	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.49	0.27	0.46	ND	ND
Hardness	80 - 100	OG	1270	1960	2050	1310	1008	613	882.9	854.2	760	740	812	698	617	624	653	711	733	678	771	717	711	687	693
Iron	0.3	AO	<0.02	5.71	5.96	<0.02	0.008	----	11.7	4.05	0.1	2.6	1.58	0.03	0.02	0.13	0.47	0.01	0.61	0.05	0.143	0.059	0.026	0.089	0.02
Lead	0.01	MAC	<0.0002	0.11	0.071	----	<0.0024	----	<0.03	----	----	----	----	----	----	----	----	----	----	----	----	<0.025	----	----	ND
Magnesium	NV	NV	122	150	180	85.8	96	76	108.1	103.8	97	94	106	87	91.4	94.7	83.6	95.9	94.1	93.2	97.6	92.1	90.3	86.5	90.2
Manganese	0.05	AO	0.59	1.74	1.85	----	----	----	----	----	----	----	----	----	----	----	0.112	0.13	0.125	0.145	0.172	0.117	0.154	0.161	0.15
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	0.0005	<0.0003	<0.0003	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.01	----	----	ND
Nickel	NV	NV	0.005	0.016	0.012	----	0.012	----	0.02	----	----	----	----	----	----	----	----	----	----	----	----	<0.01	----	----	ND
Nitrate	10	MAC	0.08	0.08	<0.05	0.06	1.21	----	0.1	----	----	0.2	<0.1	0.2	0.3	6.4	0.4	0.3	<0.1	0.2	0.38	0.2	0.47	0.47	0.32
Nitrite	1.0	MAC	0.08	<0.06	<0.06	<0.06	0.076	----	0.04	----	----	0.04	0.05	0.01	<0.01	<0.01	0.01	0.01	0.02	0.01	<0.03	<0.03	----	ND	ND
Orthophosphate	NV	NV	<0.03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.05	<0.05	----	ND	ND
pH	6.5 - 8.5	OG	7.95	7.88	7.44	7.62	7.42	7.19	7.17	6.9	7.08	7.07	7.02	7.34	7.39	7.45	7.39	7.29	7.26	7.33	7.18	7.05	7.18	7.14	7.39
Phenols	NV	NV	<0.002	<0.002	<0.002	----	0.0075	0.0096	0.0075	0.025	0.028	0.008	0.014	<0.0010	<0.0010	0.0143	0.0044	0.0011	0.0014	0.0109	0.002	<0.001	----	ND	ND
Phosphorus	NV	NV	1	0.71	0.38	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.06	<0.06	----	0.11	ND
Phosphorus (Dis)	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.007	<0.001	<0.01	0.02	----	0.02	----	0.02	----
Phosphorus (Tot)	NV	NV	----	----	----	0.31	0.094	----	----	----	----	0.06	0.047	0.008	0.007	0.013	0.013	0.01	0.02	0.03	<0.004	0.17	0.33	----	----
Potassium	NV	NV	11.2	17	16.7	11.1	2.5	----	2.77	----	----	----	----	----	----	----	0.8	0.58	0.86	0.87	1.5	<1	1.2	1.5	2.4
Silver	NV	NV	<0.0001	<0.0001	<0.0001	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.003	----	----	ND
Sodium	200	AO	18.2	21.9	22.3	22.9	87	----	58.5	----	----	----	----	----	----	----	28.5	30.4	36.9	32.2	33.5	30	30.6	26.8	25.4
Sulphate	500	AO	670	700	1000	810	200	----	87.5	----	----	----	----	----	----	----	116	130	134	126	106	111	95.8	75	66
Sulphide	0.05	AO	<0.02	<0.2	<0.02	<0.02	----	----	----	----	----	----	----	----	----	----	----	----	0.03	<0.02	----	----	----	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	<0.1	<0.1	<0.1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.05	----	----	ND
Titanium	NV	NV	0.01	0.018	0.007	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.05	----	----	ND
TKN	NV	NV	0.8	0.6	<0.5	1.3	0.92	----	3.7	----	----	0.68	0.66	0.54	0.61	0.76	0.47	0.39	0.47	0.47	0.75	0.64	0.56	3.29	0.3
Vanadium	NV	NV	0.028	0.021	0.003	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.01	----	----	ND
Zinc	5.0	AO	0.069	0.21	0.126	----	0.014	----	0.02	----	----	----	----	----	----	----	----	----	----	----	----	0.037	0.05	----	0.08
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-10	TW-10	TW-10	TW-10	TW-10	TW-10	TW-10	TW-10	TW-10	TW-10	TW-10	TW-10	TW-10	TW-10	TW-10	TW-10	TW-10	TW-10	TW-10	TW-10	TW-10	TW-10
			12-2-1999	5-31-2000	5-29-2003	11-27-2003	6-1-2004	6-24-2005	5-24-2006	10-25-2006	5-3-2007	11-15-2007	4-24-2008	10-14-2008	4-17-2009	11-9-2009	4-19-2010	11-11-2010	4-20-2011	11-7-2011	4-12-2012	10-31-2012	4-25-2013	11-7-2013	5-7-2014
Alkalinity	30-500	OG	642	637	565	584	605	580	579	578	537	605	586	561	576	527	535	526	501	504	535	429	396	504	536
Aluminum	0.1	OG	ND	ND	0.8	0.18	0.12	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	ND	ND	0.5	<0.1	1.1	0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.4
Barium	1.0	MAC	0.024	0.643	0.036	0.026	0.028	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Beryllium	NV	NV	ND	ND	<0.005	<0.005	<0.005	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV	NV	ND	ND	<0.0003	<0.0003	<0.0003	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	5.0	IMAC	0.31	0.4	0.25	0.29	0.27	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cadmium	0.005	MAC	ND	ND	0.0004	<0.0001	0.0002	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Calcium	NV	NV	131	141	261	178	227	127	124	136	127	109	122	122	110	118	127	126	103	161	117	122	118	131	126
Chloride	250	AO	20.1	15.2	16	16	16	14	12	11	10	11	10	9.1	9.4	8.7	8.8	7.6	7.7	7.7	8.4	9	8.8	9.2	8.4
Chromium	0.05	MAC	ND	ND	0.007	0.003	0.02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cobalt	NV	NV	ND	ND	0.002	0	0.0013	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	1220	1120	1060	1100	1110	1150	1010	1130	1120	1130	1090	985	1010	1080	1030	978	862	1010	980	889	860	1000	1010
Copper	1.0	AO	ND	ND	0.022	0.0049	0.0076	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
DOC	5.0	AO	3	3.8	2.9	2.9	29	3.4	3.0	12.0	2.5	8.8	4.0	3.7	1.9	14.2	21.6	1.8	3.1	3.1	2.1	2.6	2.4	2.0	3.3
Fluoride	1.5	MAC	ND	ND	<0.04	<0.06	0.07	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	80 - 100	OG	702	730	1110	822	990	649	610	671	635	513	547	571	514	546	568	550	456	666	540	549	529	579	542
Iron	0.3	AO	0.04	0.01	1.78	0.75	0.86	<0.02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Lead	0.01	MAC	ND	ND	0.0071	0.0013	0.0004	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Magnesium	NV	NV	91	91.3	111	92	103	80.7	72.9	80.3	76.9	58.8	59.3	64.7	58.3	61.2	61.0	57.2	48.2	64.1	60.2	59.5	56.7	61.1	55
Manganese	0.05	AO	0.214	0.194	0.67	0.27	0.523	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	0.17	ND	<0.0003	<0.0003	<0.0003	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	NV	NV	ND	ND	0.006	0.003	0.004	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nitrate	10	MAC	ND	4.9	0.46	0.59	0.28	0.18	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	0.11	0.12
Nitrite	1.0	MAC	ND	ND	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.03	<0.03	<0.03
Orthophosphate	NV	NV	ND	ND	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	7.05	7.41	7.97	7.79	8	7.84	8.20	7.99	8.14	7.86	7.68	7.52	8.01	7.50	7.87	7.72	7.85	7.74	7.81	8.03	8.04	8.03	7.97
Phenols	NV	NV	ND	0.001	<0.002	<0.002	0.004	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus	NV	NV	ND	ND	0.41	0.3	0.64	----	----	0.04	0.05	0.02	0.02	0.07	0.09	<0.1	<0.01	0.03	<0.009	0.103	<0.009	<0.009	0.015	0.020	<0.009
Phosphorus (Dis)	NV	NV	----	----	----	----	0.11	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus (Tot)	NV	NV	----	----	----	----	----	0.18	0.03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Potassium	NV	NV	2	2	3.88	3.29	1.69	2.41	1.98	2.02	2.35	2.22	2.25	2.44	2.49	2.46	3.01	2.09	1.84	2.78	3.04	3.09	2.66	2.90	126
Silver	NV	NV	ND	ND	<0.0001	<0.0001	<0.0001	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	200	AO	25	36	20.8	17.7	17.8	16.1	12.8	14.2	12.0	12.4	11.5	12.5	11.8	11.9	----	10.2	8.06	9.81	10.9	11.6	10.5	12.0	10.1
Sulphate	500	AO	65.1	63.9	78	71	76	68	62	58	57	58	57	54	51	51	49	46	43	45	50	49	50	49	46
Sulphide	0.05	AO	----	----	<0.6	<0.02	<0.02	<0.02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	ND	ND	<0.1	<0.1	<0.1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV	NV	ND	ND	0.003	<0.003	<0.003	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV	NV	0.23	0.61	<0.5	0.5	0.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vanadium	NV	NV	ND	ND	0.017	0.006	0.0502	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	5.0	AO	0.06	0.226	0.14	0.03	0.055	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-10	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14
			10-27-2014	1-6-1982	1-6-1982	7-12-1983	9-15-1983	6-13-1986	3-19-1991	6-17-1992	9-17-1992	11-14-1994	5-15-1995	11-20-1995	5-31-1996	11-13-1996	5-7-1997	12-18-1997	5-7-1998	5-21-1999	12-2-1999	5-31-2000	7-9-2001	5-29-2002	11-27-2003
Alkalinity	30-500	OG	557	1440	1180	865	----	----	363	477	686	730	396	452	593	636	472	751	540	575	389	567	582	612	660
Aluminum	0.1	OG	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.025	----	0.165	----	ND	ND	ND	0.07	0.01	0.06
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	<0.1	34.5	21.5	7.87	17.6	----	0.275	0.075	5.4	0.41	0.07	0.1	<0.05	<0.05	0.1	2.8	ND	0.12	0.02	0.13	ND	0.5	7.3
Barium	1.0	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	0.052	0.04	0.086	----	0.032	0.021	0.82	0.038	0.046	0.114
Beryllium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.005	----	----	----	ND	ND	ND	ND	<0.005	<0.005
Bismuth	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.05	----	----	----	ND	ND	ND	ND	<0.0003	<0.0003
Boron	5.0	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	0.06	0.07	0.12	----	0.06	0.03	0.2	0.06	0.07	0.17
Cadmium	0.005	MAC	----	<0.00016	----	0.001	----	----	----	----	----	----	----	----	----	<0.003	----	----	----	ND	ND	ND	ND	<0.0001	0.0003
Calcium	NV	NV	126	147	106	178	185	86	135	227	73.5	172	159	146	119	196	154	171	163	171	105	212	199	199	164
Chloride	250	AO	8.7	155	200	160	205	48	36.2	236	136	116	87.9	97.3	84.2	121	42.7	88.2	49.1	27	24.7	29.8	29.4	25	34
Chromium	0.05	MAC	----	0.0044	----	0.012	----	----	----	----	----	----	----	----	----	<0.005	----	----	----	ND	ND	ND	ND	0.008	0.004
Cobalt	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.005	----	----	----	ND	ND	ND	ND	0.04	0
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	1020	2840	2720	1950	2560	1020	998	1810	1810	1660	1215	1159	1210	1290	956	1550	1150	1100	846	1130	1110	1100	1260
Copper	1.0	AO	----	0.013	----	0.086	----	----	----	----	----	----	----	----	----	<0.003	0.004	----	----	ND	ND	0.006	ND	0.0044	0.0073
DOC	5.0	AO	28.6	<0.5	----	15.1	15.2	----	2.8	3.8	8.3	13.3	2.8	3.3	4.6	1.8	3.1	3.9	7.1	2.3	3.2	3.1	7.2	3	3.3
Fluoride	1.5	MAC	----	----	----	----	----	----	----	----	----	----	----	----	0.47	0.34	----	----	ND	ND	ND	ND	ND	0.04	<0.06
Hardness	80 - 100	OG	551	1093	879	890	1048	417	472	804	462	656	546	504	474	613	545	665	543	600	358	683	650	667	818
Iron	0.3	AO	----	0.21	----	68.3	----	----	0.03	<0.01	0.02	0.02	0.02	<0.01	<0.005	0.006	----	----	0.045	ND	ND	ND	ND	<0.02	0.1
Lead	0.01	MAC	----	<0.0024	----	0.007	----	----	----	----	----	----	----	----	----	<0.025	----	----	----	ND	ND	ND	ND	<0.0002	0.0012
Magnesium	NV	NV	57.4	176	149	108	142	49	32.7	58.5	67.7	54.3	35.5	33.4	42.9	33.5	25	58	32.9	42.1	23	37.1	36.8	41.5	50.6
Manganese	0.05	AO	----	----	----	----	----	----	----	----	----	0.004	0.006	0.007	<0.005	<0.005	0.005	0.006	ND	ND	ND	0.01	0.006	0.008	0.037
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.01	----	----	----	ND	0.03	ND	ND	<0.0003	<0.0003
Nickel	NV	NV	----	0.016	----	0.012	----	----	----	----	----	----	----	----	----	<0.01	----	----	----	ND	ND	ND	ND	0.002	0.002
Nitrate	10	MAC	0.24	0.02	<0.01	0.89	6.71	----	3.6	9.2	5.3	7.9	4.5	6.2	11.1	4.43	9.09	3.7	6.7	6.1	6.1	9	16.9	17.5	2.52
Nitrite	1.0	MAC	<0.03	0.003	0.002	0.015	0.045	----	0.01	0.01	0.25	0.01	0.01	0.01	<0.03	<0.03	----	----	ND	ND	ND	ND	ND	<0.06	<0.06
Orthophosphate	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	<0.05	<0.05	----	----	ND	ND	ND	ND	ND	<0.03	----
pH	6.5 - 8.5	OG	7.92	7.29	7.42	7.12	7.1	7.61	7.28	7.08	7.35	7.2	7.24	7.29	7.24	7.01	7.16	7.28	7.06	7.43	7.34	7.13	7.32	7.99	7.69
Phenols	NV	NV	----	0.011	0.0135	0.0015	0.0035	<0.0010	<0.0010	0.0065	0.004	0.0079	<0.0010	0.0074	<0.001	'<0.001	----	----	ND	ND	ND	0.002	ND	<0.002	<0.002
Phosphorus	NV	NV	<0.009	----	----	----	----	----	----	----	----	----	----	----	<0.06	<0.06	----	----	ND	ND	ND	ND	ND	0.05	0.04
Phosphorus (Dis)	NV	NV	----	----	----	----	----	----	----	----	----	<0.001	<0.01	0.01	----	0.01	----	----	0.01	----	----	----	----	----	----
Phosphorus (Tot)	NV	NV	----	0.254	0.258	----	----	----	0.013	0.003	0.012	0.006	0.02	0.02	<0.004	0.02	0.14	0.02	----	----	----	----	0.019	----	----
Potassium	NV	NV	3.15	110	114	34.5	----	----	----	----	----	11.9	7.37	5.41	4.8	5.3	7.5	14.1	6.2	4.6	4	6	4	6.93	23.2
Silver	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.003	----	----	----	ND	ND	ND	ND	<0.0001	<0.0001
Sodium	200	AO	10.7	163	63	79	----	----	----	----	----	86.7	57.2	51.3	37.4	96.5	19	69.8	33.9	21.3	4.3	26.1	22.5	22.8	24.3
Sulphate	500	AO	49	49	40	58	----	----	----	----	----	16	16	23	32.7	9.97	35.3	5.55	13.8	18.6	16.8	16.4	33.8	30	8.1
Sulphide	0.05	AO	----	----	----	----	----	----	----	----	----	----	0.03	<0.02	----	----	----	----	----	----	----	----	0.01	<0.02	<0.02
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.05	----	----	----	ND	ND	ND	ND	<0.1	<0.1
Titanium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.05	----	----	----	ND	ND	ND	ND	<0.003	<0.0003
TKN	NV	NV	<0.5	37	23.5	8.5	21.8	----	0.95	0.76	7.8	0.6	0.41	0.62	0.54	0.59	0.31	2.7	0.75	0.21	1.55	0.66	0.43	1.1	8.1
Vanadium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.01	----	----	----	ND	ND	ND	ND	0.021	0.01
Zinc	5.0	AO	----	0.0072	----	0.021	----	----	----	----	----	----	----	----	----	0.005	0.025	0.007	----	0.02	0.026	0.287	0.081	0.05	0.053
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14
			6-1-2004	11-24-2004	6-24-2005	11-14-2005	5-24-2006	10-25-2006	5-3-2007	11-15-2007	4-24-2008	10-14-2008	4-17-2009	11-9-2009	4-19-2010	11-11-2010	4-20-2011	11-7-2011	4-12-2012	10-31-2012	4-25-2013	11-7-2013	4-25-2013	10-27-2014	4-27-2015
Alkalinity	30-500	OG	343	829	531	647	344	761	408	635	352	740	284	585	561	609	188	724	537	386	372	562	481	746	631
Aluminum	0.1	OG	0.03	0.06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	0.6	17.1	0.2	5.1	<0.1	8.7	<0.1	4.7	<0.1	<0.1	0.1	4.4	0.1	1.2	<0.1	9.3	<0.1	<0.1	<0.1	1.1	<0.04	10.1	1.2
Barium	1.0	MAC	0.026	0.163	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Beryllium	NV	NV	<0.005	<0.005	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV	NV	<0.0003	<0.0003	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	5.0	IMAC	0.05	0.42	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cadmium	0.005	MAC	<0.0001	0.0002	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Calcium	NV	NV	102	160	149	163	93.7	181	140	132	117	209	66.6	160	194	191	45.6	198	182	150	149	191	173	199	170
Chloride	250	AO	14	81	38	54	18	56	29	66	39	48	13	69	79	100	18	52	66	97	65	94	77	49	46
Chromium	0.05	MAC	0.008	0.008	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cobalt	NV	NV	<0.0003	0.001	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	696	1640	1110	1310	613	1580	918	1330	730	1320	534	1370	1290	1420	306	1530	1250	1080	950	1380	1080	1440	1250
Copper	1.0	AO	0.0026	0.0051	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
DOC	5.0	AO	2.2	7.9	2.4	19.5	1.9	7.4	1.5	15.34	1.4	11	1.5	2.3	27.6	9.4	1.8	1.8	6.7	2.9	1.9	<1.0	3.7	6.6	1.3
Fluoride	1.5	MAC	<0.06	<0.06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	80 - 100	OG	330	702	552	634	308	719	464	496	390	677	225	578	646	627	159	698	613	513	501	648	569	687	583
Iron	0.3	AO	0.04	0.03	<0.02	<0.02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.015
Lead	0.01	MAC	0.0002	0.0005	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Magnesium	NV	NV	18	73.4	43.7	55.4	17.9	64.7	28.0	40.2	23.7	37.8	14.2	43.2	39.2	36.8	10.9	49.2	38.6	33.7	31.7	41.6	33.1	46.2	38.2
Manganese	0.05	AO	0.012	0.028	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	<0.0003	0.0023	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	NV	NV	0.001	0.002	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nitrate	10	MAC	2.83	5.2	6.67	5.42	1.71	8.65	4.15	6.42	2.52	5.42	1.00	5.27	6.46	4.07	0.32	3.62	12.2	7.47	6.36	6.62	5.46	6.22	5.6
Nitrite	1.0	MAC	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.03	0.06	<0.03	<0.03	<0.03
Orthophosphate	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	8.01	7.84	7.88	7.81	8.31	7.83	8.21	7.88	7.76	7.35	8.04	7.98	7.83	7.43	8.24	7.5	7.75	8.03	----	7.75	8.11	7.94	7.72
Phenols	NV	NV	<0.002	0.004	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus	NV	NV	0.14	0.07	----	----	----	0.02	0.05	0.03	0.01	0.07	0.22	<0.01	<0.01	0.02	0.032	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	0.017
Phosphorus (Dis)	NV	NV	0.09	<0.03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus (Tot)	NV	NV	----	----	<0.03	0.1	<0.03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Potassium	NV	NV	5.02	40.7	14.4	20.3	5.46	25.6	6.85	16.5	5.62	7.48	4.01	16.8	11.0	12.4	1.8	22.3	7.99	10.7	6.58	11.1	6.89	20.5	9.69
Silver	NV	NV	<0.0001	<0.0001	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	200	AO	9.59	52.6	19.4	40.7	9.50	46.2	16.6	37.7	16.7	35.2	7.62	37.4	59.9	56.3	9.01	37.8	38.5	53.7	34.3	45.0	45.1	37.7	37.4
Sulphate	500	AO	17	2.6	9.6	8.8	9.6	4.0	10	13	8.6	4.3	9.1	9.5	11	10	4.2	2.4	18	12	12	8.8	11	3.4	7
Sulphide	0.05	AO	<0.02	<0.02	<0.02	<0.02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	<0.1	<0.1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV	NV	<0.0003	<0.0003	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV	NV	0.8	16.7	0.8	5.7	<0.5	9.2	<0.5	6.7	<0.5	0.8	<0.5	5.4	<0.5	0.9	<0.5	12.4	<0.5	<0.5	<0.5	1.2	<0.5	9.4	1
Vanadium	NV	NV	0.0205	0.0185	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	5.0	AO	0.011	0.025	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-14	TW-15	TW-15
			11-2-2015	4-13-2016	11-21-2016	5-2-2017	10-27-2017	5-11-2018	10-22-2018	4-4-2019	11-6-2019	4-14-2020	10-21-2020	5-6-2021	12-13-2021	5-2-2022	9-14-2022	4-13-2023	11-16-2023	4-24-2024	11-15-2024	4-22-2025	9-9-2025	1-12-1983	3-19-1991
Alkalinity	30-500	OG	556	412	567	412	730	378	609	523	613	531	724	502	632	509	708	543	608	524	553	472	644	467	221
Aluminum	0.1	OG	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	2	<0.1	2.4	<0.1	0.2	<0.1	4.7	<0.1	6.4	0.8	11.2	1.0	4.1	0.2	6.0	<0.1	4.0	<0.1	7.0	<0.1	<0.1	0.015	0.144
Barium	1.0	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Beryllium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	5.0	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cadmium	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.0002	----
Calcium	NV	NV	158	144	180	128	194	116	196	165	204	168	194	199	175	176	210	184	192	159	175	137	172	138	74.8
Chloride	250	AO	81	62	130	34	42	25	120	120	50	94	63	77	79	61	47	140	93	80	160	110	56	73	19.1
Chromium	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.006	----
Cobalt	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	1360	880	1390	793	1370	700	1390	1190	1230	1180	1370	1100	1200	1090	1460	1340	1400	1230	1400	1080	1340	1090	590
Copper	1.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	53.5	----
DOC	5.0	AO	2.9	1.5	7	3	4	2	5	17	5	2	5	2	3	2	4	2	4	1	2	2	4	13.9	2.3
Fluoride	1.5	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	80 - 100	OG	550	476	610	427	619	385	647	554	678	580	670	649	594	580	693	600	676	514	584	457	576	596	279
Iron	0.3	AO	----	----	0.003	----	----	<0.007	<0.007	----	----	----	----	----	----	----	----	----	----	----	----	----	----	53.5	0.02
Lead	0.01	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.004	----
Magnesium	NV	NV	37.7	28.1	38.8	25.9	32.7	23.4	38.5	34.5	40.8	39.1	45	36.7	38.0	34.0	40.7	34.2	47.6	28.4	35.9	28	35.6	61	22.3
Manganese	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.003	----
Nitrate	10	MAC	6.16	3.30	5.24	2.72	4.22	2.46	0.2	4.76	6.24	4.4	3.43	5.70	2.75	7.61	4.12	4.58	6.03	4.82	5.03	4.07	6.69	3.28	1.1
Nitrite	1.0	MAC	0.04	<0.03	0.03	<0.03	<0.03	0.11	<0.03	<0.03	<0.03	0.04	0.06	0.07	<0.03	<0.03	0.03	<0.03	0.27	<0.03	<0.03	<0.03	<0.03	0.016	0.01
Orthophosphate	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	8.02	7.90	7.77	7.88	7.55	7.6	7.73	7.89	7.98	7.56	7.16	7.86	7.45	7.79	7.66	7.39	7.90	7.93	7.87	7.6	7.49	7.41	7.67
Phenols	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.0010	<0.0010
Phosphorus	NV	NV	0.005	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus (Dis)	NV	NV	----	<0.009	<0.009	<0.009	0.015	0.003	0.011	0.016	0.005	<0.003	0.119	<0.003	0.013	<0.003	0.014	0.007	0.007	0.006	0.005	0.005	0.017	----	----
Phosphorus (Tot)	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.008
Potassium	NV	NV	11.5	5.64	10.9	3.91	4.19	6.21	14.2	7.77	14.2	11.1	23.4	12.8	15.1	8.06	15.5	8.62	19.3	6.76	15.4	7.75	5.9	11.1	----
Silver	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	200	AO	54.5	28.1	50.0	26.2	31.6	18.9	53.7	71.3	31.7	59.9	36.3	61.2	48.0	46.2	31.9	80.1	42.2	48.9	63.1	57.6	39.9	24	----
Sulphate	500	AO	12	7	10	3	5	10	15	13	3	9	<2	9	17	16	4	13	6	11	11	9	11	26.5	----
Sulphide	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV	NV	2.4	<0.5	2.8	<0.5	<0.5	0.5	4.4	<0.5	7	0.5	11.2	1.2	4.3	<0.5	6.3	<0.5	4.5	<0.5	7.2	<0.5	<0.5	6.85	0.63
Vanadium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	5.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.015	----
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-15	TW-15	TW-15	TW-15	TW-15	TW-15	TW-15	TW-15	TW-15	TW-15	TW-15	TW-15	TW-15	TW-15	TW-15	TW-15	TW-15	TW-15	TW-15	TW-15	TW-15	TW-15
			6-17-1992	5-2-1994	11-14-1994	5-15-1995	5-31-1996	5-31-1996	12-17-1998	5-31-2000	11-30-2000	7-9-2001	12-12-2001	5-29-2002	11-11-2002	5-29-2003	11-27-2003	6-1-2004	6-24-2005	5-24-2006	10-25-2006	4-17-2009	4-20-2011	11-7-2011	4-12-2012
Alkalinity	30-500	OG	237	376	201	247	175	224	166	370	168	246	536	256	175	238	438	249	276	232	182	188	480	186	227
Aluminum	0.1	OG	----	----	----	----	----	----	ND	ND	0.47	0.05	ND	0.04	0.54	1.04	0.38	0.38	----	----	----	----	----	----	----
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	0.028	0.009	0.19	0.07	<0.05	<0.05	ND	0.06	0.04	----	ND	0.3	0.2	0.3	<0.1	0.9	0.1	<0.1	<0.1	0.3	0.2	<0.1	<0.1
Barium	1.0	MAC	----	----	----	----	----	----	0.024	0.886	0.03	0.019	0.029	0.017	0.037	0.034	0.04	0.02	----	----	----	----	----	----	----
Beryllium	NV	NV	----	----	----	----	----	----	ND	ND	ND	ND	ND	<0.005	<0.005	<0.005	<0.005	<0.005	----	----	----	----	----	----	----
Bismuth	NV	NV	----	----	----	----	----	----	ND	ND	ND	ND	ND	<0.0003	<0.0003	<0.0003	<0.00023	<0.0003	----	----	----	----	----	----	----
Boron	5.0	IMAC	----	----	----	----	----	----	0.05	0.18	0.01	0.03	0.04	0.02	0.04	<0.05	0.05	<0.05	----	----	----	----	----	----	----
Cadmium	0.005	MAC	----	----	----	----	----	----	ND	ND	ND	ND	ND	<0.0001	0.0007	0.0004	0.0003	0.002	----	----	----	----	----	----	----
Calcium	NV	NV	73.8	123	54.5	78.9	46.3	67.5	60.8	126	63.5	69.6	139	73.1	132	138	169	83.8	76.3	63.5	55.2	44.4	146	60.4	67.4
Chloride	250	AO	15.7	38.8	1.5	18.7	1.7	19.8	6.2	14.7	0.9	4	31.2	18	7.6	13	27	19	5.5	20	2.1	23	61	4.7	22
Chromium	0.05	MAC	----	----	----	----	----	----	ND	ND	ND	ND	ND	0.004	0.003	0.005	<0.001	0.006	----	----	----	----	----	----	----
Cobalt	NV	NV	----	----	----	----	----	----	ND	ND	ND	ND	ND	0.054	0.002	0.002	0.001	0.008	----	----	----	----	----	----	----
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	570	991	373	567	326	456	346	758	276	382	1000	496	380	413	920	520	572	466	362	395	1120	390	480
Copper	1.0	AO	----	----	----	----	----	----	ND	0.004	0.014	ND	0.007	0.0048	0.024	0.0069	0.0035	0.0033	----	----	----	----	----	----	----
DOC	5.0	AO	1.9	7.6	12.6	2.2	2.2	2.6	2.6	14.3	3.3	2.3	2.6	1.8	1.9	1.4	2	1.8	2.4	2.1	3.5	1.1	2.6	1.3	1.3
Fluoride	1.5	MAC	----	----	----	----	----	0.08	0.05	ND	ND	ND	0.2	0.04	0.05	<0.04	<0.06	0.06	----	----	----	----	----	----	----
Hardness	80 - 100	OG	269	455	194	285	165	243	228	439	224	239	494	260	454	494	609	290	263	220	187	156	478	207	231
Iron	0.3	AO	<0.01	0.09	0.03	0.19	0.18	0.032	ND	ND	0.56	ND	ND	0.02	0.28	1.24	0.43	0.37	<0.02	----	----	----	----	----	----
Lead	0.01	MAC	----	----	----	----	----	----	ND	ND	ND	ND	ND	<0.0002	0.005	0.0049	0.0013	0.0017	----	----	----	----	----	----	----
Magnesium	NV	NV	20.4	35.4	14	21.3	11.9	18.1	18.6	30.3	15.8	15.8	35.8	18.8	30.1	36.3	45.2	20.2	17.7	14.9	11.9	11.0	27.6	13.7	15.2
Manganese	0.05	AO	----	0.026	0.012	<.003	0.005	<0.005	0.02	ND	0.14	0.008	ND	0.003	0.33	0.36	0.17	0.12	----	----	----	----	----	----	----
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	----	----	----	----	----	----	ND	ND	ND	ND	ND	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	----	----	----	----	----	----	----
Nickel	NV	NV	----	----	----	----	----	----	ND	ND	ND	ND	ND	0.001	0.012	0.002	0.001	0.002	----	----	----	----	----	----	----
Nitrate	10	MAC	1.4	0.3	<0.1	1	<0.01	0.22	0.08	ND	ND	0.4	8.6	0.68	3.28	1.2	6.65	0.25	1.86	0.11	0.21	0.15	7.77	0.34	0.25
Nitrite	1.0	MAC	0.02	<0.01	<0.01	0.01	0.01	<0.03	ND	ND	ND	ND	ND	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
Orthophosphate	NV	NV	----	----	----	----	----	<0.05	ND	ND	ND	ND	ND	<0.03	<0.03	----	----	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	7.89	7.66	7.8	7.75	7.96	7.47	8.19	7.65	8	7.86	7.62	8.23	8.34	8.11	7.93	8.15	8.13	8.34	8.15	8.21	7.71	7.99	8.12
Phenols	NV	NV	0.002	0.0038	0.0026	<.001	0.0013	<0.001	ND	ND	ND	ND	ND	<0.002	<0.002	<0.002	<0.002	<0.002	----	----	----	----	----	----	----
Phosphorus	NV	NV	----	----	----	----	----	<0.06	ND	0.1	0.2	ND	ND	0.17	0.56	0.19	0.11	0.24	----	----	0.06	0.26	0.022	0.019	<0.009
Phosphorus (Dis)	NV	NV	----	0.007	<0.001	<.01	0.01	----	ND	----	----	----	----	----	----	----	----	0.1	----	----	----	----	----	----	----
Phosphorus (Tot)	NV	NV	0.005	0.012	0.011	0.02	0.03	<0.004	0.01	----	0.116	0.111	0.117	----	----	----	----	----	0.08	<0.03	----	----	----	----	----
Potassium	NV	NV	----	9.4	5.73	6.46	4.01	4.9	8.1	4	3	6	7	5.05	5.23	7.61	11.6	4.09	5.39	3.76	3.52	1.90	5.08	2.99	2.77
Silver	NV	NV	----	----	----	----	----	----	ND	ND	ND	ND	ND	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	----	----	----	----	----	----	----
Sodium	200	AO	----	22.7	3.2	10.6	1	9.35	11.5	23.2	1.6	4.4	21	10.4	5.92	7.53	20.7	10.8	6.88	11.3	3.09	10.6	28.3	7.06	12.6
Sulphate	500	AO	----	26	6.6	14.1	4.5	5.39	16.3	24.3	3.9	5.5	15.8	8.2	7.9	8.9	16	5.1	13	3.0	4.1	4.2	9.3	1.9	4.4
Sulphide	0.05	AO	----	----	----	0.03	<0.02	----	----	----	----	ND	ND	<0.02	<0.02	<0..2	<0.02	<0.02	<0.02	----	----	----	----	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	----	----	----	----	----	----	ND	ND	ND	ND	ND	<0.1	<0.1	<0.1	<0.1	<0.1	----	----	----	----	----	----	----
Titanium	NV	NV	----	----	----	----	----	----	ND	ND	0.009	ND	ND	<0.003	<0.003	0.009	<0.003	0.006	----	----	----	----	----	----	----
TKN	NV	NV	0.64	0.47	0.4	0.3	0.52	0.35	0.32	1.16	0.36	0.14	0.49	0.6	1.1	<0.5	<0.5	1.1	<0.5	<0.5	<0.5	<0.5	1.1	<0.5	<0.5
Vanadium	NV	NV	----	----	----	----	----	----	ND	ND	ND	ND	ND	0.0074	0.005	0.013	0.002	0.0167	----	----	----	----	----	----	----
Zinc	5.0	AO	----	----	----	----	----	----	0.12	0.182	0.12	0.117	0.014	0.015	0.12	0.026	0.011	0.017	----	----	----	----	----	----	----
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-15	TW-15	TW-15	TW-15	TW-15	TW-15	TW-15	TW-15	TW-15	TW-15	TW-15	TW-15	TW-15	TW-15	TW-15	TW-15	TW-15	TW-16	TW-16	TW-16	TW-16	TW-16	TW-16
			4-25-2013	11-7-2013	5-7-2014	10-27-2014	4-27-2015	4-13-2016	5-2-2017	5-11-2018	4-4-2019	4-14-2020	5-6-2021	12-13-2021	5-2-2022	4-13-2023	11-16-2023	4-24-2024	4-22-2025	1-12-1983	6-13-1986	8-10-1988	5-27-1989	3-19-1991	9-10-1991
Alkalinity	30-500	OG	184	167	216	223	290	176	196	193	193	195	245	228	206	181	230	175	162	268	----	201.53	----	224	----
Aluminum	0.1	OG	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	<0.1	<0.1	<0.4	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.045	----	0.227	----	----	0.044
Barium	1.0	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Beryllium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	5.0	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cadmium	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.0005	----	<0.005	----	----	----
Calcium	NV	NV	55.9	52.5	62.2	61.1	76.1	53.3	62.2	60.8	51.7	58.6	79.5	56.0	67.9	51.1	69.2	62.6	47	72	54.5	70.7	70.8	68.7	77
Chloride	250	AO	24	0.9	22	3.4	14	18	38	41	30	47	22	15	40	31	6	44	28	2	1.5	4.12	3.4	1.8	2.8
Chromium	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.002	----	<0.02	----	----	----
Cobalt	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	440	340	475	403	570	370	499	464	449	512	512	397	478	391	434	521	364	525	460	493	476	484	544
Copper	1.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.009	----	<0.02	----	----	----
DOC	5.0	AO	<1.0	2.6	1.9	1.8	5.4	1.1	2	1	2	1	2	1	2	1	1	2	2	5.7	2	3.3	4.5	1	1.2
Fluoride	1.5	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	80 - 100	OG	194	179	216	208	270	185	215	203	179	201	268	183	225	171	229	207	160	276	203	261.6	259	251	281
Iron	0.3	AO	----	----	----	----	0.034	----	----	0.02	----	----	----	----	----	----	----	----	----	24	----	0.79	0.04	0.02	0.06
Lead	0.01	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.003	----	<0.03	----	----	----
Magnesium	NV	NV	13.3	11.5	14.7	13.3	19.4	12.7	14.5	12.5	12.1	13.3	17.0	10.4	13.5	10.6	13.6	12.3	10.2	23.4	16.2	20.59	20	19.2	21.4
Manganese	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.004	----	<0.02	----	----	----
Nitrate	10	MAC	0.19	<0.06	0.1	0.27	0.71	0.11	0.07	0.08	0.12	<0.06	0.24	0.42	0.08	0.09	0.11	<0.06	0.13	0.07	----	<0.1	----	----	0.1
Nitrite	1.0	MAC	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.002	----	0.02	----	----	<0.01
Orthophosphate	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	8.31	8.10	8.22	8.18	8.26	8.25	8.08	8.13	8.02	8.23	8.25	8.07	7.97	8.03	8.12	8.41	8.12	7.51	7.71	7.9	7.48	7.65	7.82
Phenols	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.004	0.0035	0.0015	0.002	<0.0010	<0.0010
Phosphorus	NV	NV	<0.009	0.016	<0.009	0.021	0.046	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus (Dis)	NV	NV	----	----	----	----	----	<0.009	<0.009	0.005	<0.009	0.004	<0.003	0.025	<0.003	0.015	0.006	0.005	0.010	----	----	----	----	----	----
Phosphorus (Tot)	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Potassium	NV	NV	2.29	2.33	2.35	2.54	1.96	1.69	1.84	1.99	1.60	1.71	1.95	0.91	1.67	1.18	2.18	1.52	1.15	0.35	----	1.28	----	----	----
Silver	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	200	AO	14.5	2.03	14.7	4.94	10.7	9.99	22.7	23.2	18.2	28.0	14.0	2.01	21.2	11.9	7.51	20.8	13.8	2.1	----	1.65	----	----	----
Sulphate	500	AO	4.0	1.7	3.2	1.4	7	3	59	4	3	4	5	2	3	5	3	3	4	21.5	----	25.5	----	----	----
Sulphide	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV	NV	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	<0.5	2.05	----	0.72	----	----	0.37
Vanadium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	5.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.013	----	0.03	----	----	----
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-16	TW-16	TW-16	TW-16	TW-16	TW-16	TW-16	TW-16	TW-16	TW-16	TW-16	TW-16	TW-16	TW-16	TW-16	TW-16	TW-16	TW-16	TW-16	TW-16	TW-16	TW-16
			6-17-1992	9-17-1992	11-20-1995	5-31-1996	11-13-1996	5-7-1997	12-18-1997	5-7-1998	12-17-1998	5-21-1998	12-2-1999	5-31-2000	11-30-2000	7-9-2001	12-12-2001	5-29-2003	11-27-2003	6-1-2004	11-24-2004	6-24-2005	11-14-2005	5-24-2006	10-25-2006
Alkalinity	30-500	OG	177	252	385	549	525	402	381	470	274	373	333	353	334	380	556	326	525	472	392	360	320	311	323
Aluminum	0.1	OG	----	----	----	----	<0.025	----	----	----	ND	0.06	ND	ND	ND	ND	ND	0.13	0.12	<0.01	0.06	----	----	----	----
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	0.461	0.121	<.05	<0.05	<0.05	----	0.08	ND	0.03	0.03	ND	ND	0.04	ND	ND	0.1	0.8	1.6	0.6	1.6	<0.1	0.2	<0.1
Barium	1.0	MAC	----	----	----	----	0.021	0.013	0.014	----	0.013	0.007	0.611	0.84	0.009	0.011	0.02	0.013	0.028	0.021	0.024	----	----	----	----
Beryllium	NV	NV	----	----	----	----	<0.005	----	----	----	ND	ND	ND	ND	ND	ND	ND	<0.005	<0.005	<0.005	<0.005	----	----	----	----
Bismuth	NV	NV	----	----	----	----	<0.05	----	----	----	ND	ND	ND	ND	ND	ND	ND	<0.0003	<0.0003	<0.0003	<0.0003	----	----	----	----
Boron	5.0	IMAC	----	----	----	----	0.13	0.08	0.13	----	0.17	0.2	0.32	0.26	0.23	0.19	0.29	0.2	0.4	0.33	0.3	----	----	----	----
Cadmium	0.005	MAC	----	----	----	----	<0.003	----	----	----	ND	ND	ND	ND	ND	ND	ND	<0.0001	0.0001	0.0002	0.0002	----	----	----	----
Calcium	NV	NV	54.4	66	115	115	152	112	96.6	111	73	104	84.9	88.3	82.5	81	134	87.6	133	114	118	103	106	78.2	92.7
Chloride	250	AO	2.7	2.9	58.6	11	82.8	31.9	57.3	57.8	13.5	69.1	40.7	27.2	24.1	12.8	88.5	32	63	53	38	14	21	7.2	11
Chromium	0.05	MAC	----	----	----	----	<0.005	----	----	----	ND	ND	ND	ND	ND	ND	ND	0.006	0.004	0.01	0.003	----	----	----	----
Cobalt	NV	NV	----	----	----	----	<0.005	----	----	----	ND	ND	ND	ND	ND	ND	ND	0.001	0.002	0.0008	0.001	----	----	----	----
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	388	518	885	1210	1090	733	813	984	587	1020	779	703	629	643	1120	715	1160	1040	917	782	759	598	691
Copper	1.0	AO	----	----	----	----	<0.003	----	----	----	ND	ND	ND	ND	ND	ND	ND	0.0025	0.0052	0.0029	0.0037	----	----	----	----
DOC	5.0	AO	1.6	0.9	3.6	1.3	4	2.1	1.4	4	2.7	3.3	2.5	2.6	1.7	6.7	4.3	1.6	4.3	14.6	<1	2.5	1.6	1.7	1.8
Fluoride	1.5	MAC	----	----	----	0.44	0.22	----	----	ND	0.16	ND	ND	ND	ND	ND	ND	<0.04	<0.06	0.06	<0.06	----	----	----	----
Hardness	80 - 100	OG	321	260	412	815	602	402	378	473	281	432	353	372	338	332	544	373	559	470	470	384	398	296	343
Iron	0.3	AO	<0.01	0.19	0.02	0.01	0.179	0.075	0.068	0.077	0.02	0.02	ND	ND	0.01	ND	0.05	0.1	0.17	<0.02	0.07	<0.02	<0.02	----	----
Lead	0.01	MAC	----	----	----	----	<0.025	----	----	----	ND	ND	ND	ND	ND	ND	ND	0.0004	0.0006	<0.0002	0.0007	----	----	----	----
Magnesium	NV	NV	15	23	30.4	128	40.2	31	33.2	47.6	24.1	41.7	34.2	36.8	32	31.5	50.5	37.4	54.9	44.3	42.8	30.9	32.1	24.5	27.0
Manganese	0.05	AO	----	----	0.027	0.018	0.228	0.15	0.418	0.172	0.02	ND	ND	ND	0.025	0.037	0.092	0.036	0.042	0.06	0.078	----	----	----	----
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	----	----	----	----	<0.01	----	----	----	ND	ND	ND	ND	ND	ND	ND	<0.0003	<0.0003	<0.0003	0.0006	----	----	----	----
Nickel	NV	NV	----	----	----	----	<0.01	----	----	----	ND	ND	ND	ND	ND	ND	ND	0.004	0.006	0.004	0.003	----	----	----	----
Nitrate	10	MAC	0.2	0.3	0.1	0.05	<0.03	0.05	0.76	ND	2.5	4.7	2.9	1.6	0.6	ND	1.3	4.53	1.02	0.06	9.7	1.75	6.64	0.86	1.74
Nitrite	1.0	MAC	<0.01	0.01	<0.01	<0.03	<0.03	----	----	ND	ND	ND	ND	ND	ND	ND	ND	<0.06	<0.06]	<0.06]	<0.06]	<0.06	<0.06	<0.06	<0.06
Orthophosphate	NV	NV	----	----	----	<0.05	<0.05	----	----	ND	ND	ND	ND	ND	ND	ND	ND	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	7.59	7.73	7.43	7.29	7.03	7.21	7.35	7.08	7.95	7.51	7.29	7.52	7.59	7.39	7.25	8.04	7.57	8.11	7.93	7.92	8.07	8.32	8.10
Phenols	NV	NV	0.0055	0.0045	0.0066	<0.001	<0.001	----	----	ND	ND	ND	ND	ND	ND	ND	ND	<0.002	<0.002	0.002	<0.002	----	----	----	----
Phosphorus	NV	NV	----	----	----	<0.06	<0.06	----	----	0.06	ND	ND	ND	ND	ND	ND	ND	0.04	0.07	0.15	0.07	----	----	----	0.03
Phosphorus (Dis)	NV	NV	----	----	<0.01	----	0.01	----	----	0.01	ND	----	----	----	----	----	----	----	----	0.1	<0.03	----	----	----	----
Phosphorus (Tot)	NV	NV	0.005	0.022	0.03	<0.004	0.23	0.29	0.02	----	0.05	----	----	----	0.022	0.028	0.044	----	----	----	----	<0.03	0.11	<0.03	----
Potassium	NV	NV	----	----	0.84	10.8	<1	1.5	----	ND	1.8	2.4	ND	ND	ND	2	2	4.55	10.6	7.68	5.58	9.07	5.16	7.01	5.81
Silver	NV	NV	----	----	----	----	<0.003	----	----	----	ND	ND	ND	ND	ND	ND	ND	<0.0001	<0.0001	<0.0001	<0.0001	----	----	----	----
Sodium	200	AO	----	----	32.3	13.7	36.4	19.2	25.2	40.6	21.5	38.7	41.9	34.5	16.9	21.3	45.8	26.5	41.8	35.7	26.7	17	20.2	11.8	12.7
Sulphate	500	AO	----	----	25.2	249	12.7	12.7	22.7	12	26.9	14.5	24.3	27.3	19	11.2	10.9	23	33	40	32	34	37	27	24
Sulphide	0.05	AO	----	----	<.02	----	----	----	----	----	----	----	----	----	----	0.01	ND	<0.2	<0.02	<0.02	<0.02	<0.02	<0.02	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	----	----	----	----	<0.05	----	----	----	ND	ND	ND	ND	ND	ND	ND	<0.1	<0.1	<0.1	<0.1	----	----	----	----
Titanium	NV	NV	----	----	----	----	<0.05	----	----	----	ND	ND	ND	ND	ND	ND	ND	<0.003	<0.003	<0.003	<0.003	----	----	----	----
TKN	NV	NV	0.96	0.68	0.28	0.09	0.57	0.5	1.15	1.01	0.62	0.34	0.3	0.39	0.89	0.21	0.47	<0.5	1.2	1.7	1.2	1.6	0.6	<0.5	<0.5
Vanadium	NV	NV	----	----	----	----	<0.01	----	----	----	ND	ND	ND	ND	ND	ND	ND	0.014	0.009	0.0301	0.0068	----	----	----	----
Zinc	5.0	AO	----	----	----	----	0.099	0.01	----	----	0.02	0.09	0.171	0.132	0.017	0.01	0.042	0.008	0.012	0.007	0.031	----	----	----	----
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-16	TW-16	TW-16	TW-16	TW-16	TW-16	TW-16	TW-16	TW-16	TW-16	TW-16	TW-16	TW-16	TW-17	TW-17	TW-17	TW-17	TW-17	TW-17	TW-17	TW-17	TW-17	TW-17
			5-3-2007	11-15-2007	4-24-2008	10-14-2008	4-17-2009	11-9-2009	4-19-2010	11-11-2010	4-20-2011	11-7-2011	4-12-2012	10-31-2012	4-25-2013	1-12-1983	8-10-1988	11-3-1988	5-27-1989	10-11-1989	5-28-1990	3-19-1991	9-10-1991	11-14-1994	5-15-1995
Alkalinity	30-500	OG	314	296	478	310	380	279	338	279	266	290	310	249	232	212	198.23	----	----	208	580	231	206	199	269
Aluminum	0.1	OG	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	0.2	<0.1	<0.1	0.2	<0.1	0.3	<0.1	<0.1	<0.1	0.2	<0.1	0.1	<0.1	0.01	0.058	----	----	0.009	0.509	----	0.02	0.05	0.07
Barium	1.0	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Beryllium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	5.0	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cadmium	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	0.0004	<0.005	----	----	----	----	----	----	----	----
Calcium	NV	NV	90.0	68.8	130.0	80.7	97.4	75.7	99.5	78.0	72.3	90.1	90.3	86.3	102	64.5	90.3	66.1	72.6	62.5	104	70.4	61.6	61	74
Chloride	250	AO	7.8	6.2	38	5	14	4.7	6.9	2.2	2.9	5.2	2.3	4	8.8	1.5	2.12	1.28	2.8	2.6	12.5	1.5	2.1	1.8	4
Chromium	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	0.006	<0.02	----	----	----	----	----	----	----	----
Cobalt	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	695	598	1040	572	763	570	696	539	390	620	580	548	520	448	405	452	499	467	1242	496	450	416	496
Copper	1.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	0.014	<0.02	----	----	----	----	----	----	----	----
DOC	5.0	AO	1.6	1.1	4.4	2.2	2.4	2.3	<0.1	1.2	1.3	1.7	1	1.4	2.9	2.3	1.5	1.4	----	1.4	2	1	1	7.9	1.1
Fluoride	1.5	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	80 - 100	OG	338	254	483	297	364	276	365	280	258	319	320	305	361	241	338.3	244	273	238	713	267	228	232	278
Iron	0.3	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	8.7	8	0.23	0.53	0.48	0.91	0.01	0.1	<0.01	0.05
Lead	0.01	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	0.004	<0.03	----	----	----	----	----	----	----	----
Magnesium	NV	NV	27.5	19.9	38.5	23.2	29.4	21.1	28.4	20.7	18.8	22.9	23.1	21.8	25.8	19.4	27.32	19.11	22.1	19.9	110	22	17.9	19.3	22.5
Manganese	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.003	0.008
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	0.005	<0.02	----	----	----	----	----	----	----	----
Nitrate	10	MAC	1.08	2.59	1.46	0.71	0.76	0.46	4.61	0.52	0.49	1.88	0.59	7.95	2.59	0.55	0.6	----	----	1	<0.1	----	0.8	0.4	0.2
Nitrite	1.0	MAC	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.03	0.007	0.02	----	----	0.01	0.03	----	<0.01	0.01	0.01
Orthophosphate	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	8.33	7.99	7.66	7.95	8.20	7.98	8.08	7.96	8.23	7.87	8.1	8.31	8.31	7.63	7.47	7.35	7.45	7.5	7.14	7.77	7.95	7.77	7.74
Phenols	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.001	<0.0010	<0.0010	0.001	0.004	<0.0010	<0.0010	<0.0010	0.0013	<0.001
Phosphorus	NV	NV	0.05	0.02	0.02	0.08	0.12	<0.01	<0.01	<0.01	<0.009	<0.018	<0.009	<0.09	<0.009	----	----	----	----	----	----	----	----	----	----
Phosphorus (Dis)	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.001	0.03
Phosphorus (Tot)	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.018	0.016	----	0.006	0.006	0.09
Potassium	NV	NV	7.65	3.85	6	4.83	6.31	4.19	4.89	3.18	2.84	3.63	2.85	3.24	2.86	1.1	0.79	----	----	----	----	----	----	<0.15	0.29
Silver	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	200	AO	11.8	8.9	25.0	10.4	16.1	6.97	11.2	6.09	3.34	3.85	3.72	4.68	7.5	1.9	1.22	----	----	----	----	----	----	1.1	1.2
Sulphate	500	AO	27	18	74	16	32	10	18	9.7	12	12	11	7.2	14	30.5	18.5	----	----	----	----	----	----	17.8	20.3
Sulphide	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.02
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV	NV	<0.5	<0.5	<0.5	<0.5	<0.5	1.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.9	1.1	----	----	0.21	0.8	----	0.33	0.15	0.35
Vanadium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	5.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	0.014	0.02	----	----	----	----	----	----	----	----
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-17	TW-17	TW-17	TW-17	TW-17	TW-17	TW-17	TW-17	TW-17	TW-17	TW-17	TW-17	TW-17	TW-17	TW-17	TW-17	TW-17	TW-17	TW-17	TW-17	TW-17	TW-17
			11-20-1995	11-13-1996	5-7-1997	5-21-1999	12-2-1999	5-31-2000	7-9-2001	5-29-2002	11-11-2002	5-29-2003	6-1-2004	11-14-2005	5-24-2006	10-25-2006	5-3-2007	11-15-2007	4-24-2008	10-14-2008	4-17-2009	11-9-2009	4-19-2010	11-11-2010	4-20-2011
Alkalinity	30-500	OG	224	219	273	243	243	220	214	303	299	190	305	272	234	231	227	273	238	225	261	239	237	241	236
Aluminum	0.1	OG	----	<0.025	0.038	0.07	ND	ND	ND	0.04	0.57	1.19	0.83	----	----	----	----	----	----	----	----	----	----	----	----
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	<0.05	<0.05	0.11	0.05	0.02	ND	0.03	0.2	0.4	0.4	0.4	<0.1	<0.1	<0.1	0.1	<0.1	0.2	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Barium	1.0	MAC	----	0.005	0.005	0.007	0.63	0.646	ND	0.006	0.02	0.012	0.01	----	----	----	----	----	----	----	----	----	----	----	----
Beryllium	NV	NV	----	<0.005	----	ND	ND	ND	ND	<0.005	<0.005	<0.005	<0.005	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV	NV	----	<0.05	----	ND	ND	ND	ND	<0.0003	<0.0003	<0.0003	<0.0003	----	----	----	----	----	----	----	----	----	----	----	----
Boron	5.0	IMAC	----	0.02	0.04	0.04	0.12	0.15	0.05	0.06	0.08	0.06	0.09	----	----	----	----	----	----	----	----	----	----	----	----
Cadmium	0.005	MAC	----	<0.003	----	ND	ND	ND	ND	<0.0001	0.0001	<0.0001	<0.0001	----	----	----	----	----	----	----	----	----	----	----	----
Calcium	NV	NV	69.6	70.6	87	77.8	74.1	77.3	61.9	100	135	106	96.2	82.3	57.6	63.9	63.6	62.3	57.9	56.2	62.2	63.3	62.9	71.5	53.8
Chloride	250	AO	3.8	10.9	19.7	13.5	13.4	19	12.6	29	25	0.2	33	22	8.9	5.2	6.6	7.8	5.8	4.9	6.7	4.0	3.8	9.1	3
Chromium	0.05	MAC	----	<0.005	----	ND	ND	ND	ND	0.005	0.003	0.004	0.006	----	----	----	----	----	----	----	----	----	----	----	----
Cobalt	NV	NV	----	<0.005	----	ND	ND	ND	ND	0.047	0.001	0.001	0.0009	----	----	----	----	----	----	----	----	----	----	----	----
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	465	456	556	852	534	554	382	598	657	308	683	636	470	474	496	550	469	419	480	495	466	570	349
Copper	1.0	AO	----	<0.003	----	ND	ND	ND	0.007	0.0048	0.016	0.0032	0.0026	----	----	----	----	----	----	----	----	----	----	----	----
DOC	5.0	AO	2.6	1	1.3	2.1	2.1	2.4	4.5	1.2	1.5	<1	1.8	1.2	1.3	1.0	<1	<1	<1	9.5	1.2	1.3	<1.0	<1.0	1.6
Fluoride	1.5	MAC	----	<0.02	----	ND	ND	ND	ND	0.04	0.04	0.04	0.06	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	80 - 100	OG	259	265	316	279	273	283	228	362	511	515	370	312	225	245	251	244	227	223	252	249	251	279	211
Iron	0.3	AO	0.03	0.01	----	0.02	ND	ND	ND	<0.02	0.26	0.81	0.38	<0.02	----	----	----	----	----	----	----	----	----	----	----
Lead	0.01	MAC	----	<0.025	----	ND	ND	ND	ND	<0.0002	0.0019	0.0016	0.0013	----	----	----	----	----	----	----	----	----	----	----	----
Magnesium	NV	NV	20.6	20.1	24.5	20.7	21.3	21.7	17.9	27.4	42.1	30	30.7	26	19.8	20.7	22.3	21.5	20.1	20.2	23.5	22.2	22.8	----	18.6
Manganese	0.05	AO	0.007	<0.005	0.007	0.01	ND	ND	ND	<0.002	0.22	0.34	0.188	----	----	----	----	----	----	----	----	----	----	----	----
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	----	<0.01	----	ND	ND	ND	ND	<0.0003	<0.00003	<0.0003	<0.0003	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	NV	NV	----	<0.01	----	ND	ND	ND	ND	<0.1	0.004	0.003	0.003	----	----	----	----	----	----	----	----	----	----	----	----
Nitrate	10	MAC	0.4	0.59	0.36	0.49	0.8	ND	0.4	0.99	0.72	<0.05	0.96	2.1	1.30	0.76	1.37	1.42	1.31	0.85	1.03	0.28	0.27	4.87	0.92
Nitrite	1.0	MAC	<0.01	<0.03	----	ND	ND	ND	ND	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
Orthophosphate	NV	NV	----	<0.05	----	ND	ND	ND	ND	<0.03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	7.75	7.53	7.52	7.81	7.4	7.77	7.63	8.17	8.27	8.08	8.19	7.96	8.4	8.12	8.36	8.11	7.94	7.98	8.08	7.82	8.16	8.08	8.28
Phenols	NV	NV	0.0043	<0.001	----	ND	ND	ND	ND	<0.002	<0.002	<0.002	<0.002	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus	NV	NV	----	<0.06	----	ND	ND	ND	ND	0.25	0.24	2.04	0.24	----	----	0.02	0.04	<0.01	<0.01	0.06	0.06	<0.01	----	0.03	<0.009
Phosphorus (Dis)	NV	NV	<0.01	<0.01	----	----	----	----	----	----	----	----	0.11	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus (Tot)	NV	NV	0.03	0.52	0.2	----	----	----	0.108	----	----	----	----	0.09	0.04	----	----	----	----	----	----	----	----	----	----
Potassium	NV	NV	0.31	<1	----	ND	ND	ND	ND	0.39	0.5	0.54	0.36	0.4	0.27	0.31	0.26	0.28	0.25	0.28	0.25	0.25	0.28	0.35	0.22
Silver	NV	NV	----	<0.003	----	ND	ND	ND	ND	<0.0001	<0.0001	<0.0001	<0.0001	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	200	AO	1.3	1.84	6.38	15.5	15.5	23.2	8.6	15.4	18.2	16.1	17.5	26.7	13.0	9.60	6.90	7.18	8.53	5.75	5.86	5.19	6.33	8.13	7.36
Sulphate	500	AO	21.3	20.4	14.2	12	19.3	56.2	10.5	14	23	3.2	19	30	16	12	14	16	17	13	14	9.2	8.5	18	10
Sulphide	0.05	AO	<0.02	----	----	----	----	----	ND	<0.02	<0.02	<0.2	<0.2	<0.02	----	----	----	----	----	----	----	----	----	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	----	<0.05	----	ND	ND	ND	ND	<0.1	<0.1	<0.1	<0.1	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV	NV	----	<0.05	----	ND	ND	ND	ND	<0.003	0.003	0.006	0.005	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV	NV	0.2	0.42	0.62	0.16	0.21	0.48	0.16	<0.5	0.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vanadium	NV	NV	----	<0.01	----	ND	ND	ND	ND	0.012	0.008	0.012	0.0162	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	5.0	AO	----	0.012	0.006	0.09	0.105	0.085	ND	0.004	0.031	0.009	0.011	----	----	----	----	----	----	----	----	----	----	----	----
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-17	TW-17	TW-17	TW-17	TW-17	TW-17	TW-17	TW-17	TW-17	TW-17	TW-17	TW-17	TW-17	TW-17	TW-17	TW-17	TW-17	TW-17	TW-17	TW-17	TW-17	TW-17
			11-7-2011	4-12-2012	10-31-2012	4-25-2013	11-7-2013	5-7-2014	10-27-2014	4-27-2015	11-2-2015	4-13-2016	11-21-2016	5-2-2017	10-27-2017	5-11-2018	10-22-2018	4-4-2019	11-6-2019	4-14-2020	10-21-2020	5-6-2021	12-13-2021	5-2-2022	9-14-2022
Alkalinity	30-500	OG	244	277	232	329	222	292	376	330	279	217	362	265	277	443	373	235	304	450	438	551	413	470	420
Aluminum	0.1	OG	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	<0.1	<0.1	<0.1	0.1	<0.1	<0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	0.2	0.5	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Barium	1.0	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Beryllium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	5.0	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cadmium	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Calcium	NV	NV	75.7	68.1	65.1	63	65.3	79.2	96.6	84.7	68.8	62.2	83.4	79.6	77.8	136	87.9	38.5	94.8	131	143	199	113	117	114
Chloride	250	AO	4.2	3.4	4.2	2.1	2.7	2.2	3.2	3	3	2	3	24	12	33	14	5	7	110	92	180	39	41	25
Chromium	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cobalt	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	510	510	465	710	460	558	676	600	545	380	649	548	541	794	662	426	586	1070	1020	1360	787	929	849
Copper	1.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
DOC	5.0	AO	2.6	1.4	1.9	1.2	1.5	2.1	1.1	<1.0	1.4	2.8	2	6	5	5	4	2	<1	17	9	20	10	4	3
Fluoride	1.5	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	80 - 100	OG	288	264	250	242	247	297	358	318	265	221	304	298	293	501	328	120	328	468	499	728	440	438	417
Iron	0.3	AO	----	----	----	----	----	----	----	0.029	----	----	0.025	----	----	0.041	0.033	----	----	----	----	----	----	----	----
Lead	0.01	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Magnesium	NV	NV	24.1	22.9	21.3	20.7	20.4	24.1	28.5	26	22.7	16.0	23.2	24.1	24	38.9	26.3	5.77	22.1	34.5	34.7	56.0	38.4	35.1	32.2
Manganese	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nitrate	10	MAC	0.29	0.74	0.93	3.12	3.10	0.45	1.81	1.37	1.48	1.04	0.86	0.06	<0.06	<0.06	6.15	0.23	1	<0.06	<0.06	<0.06	0.62	1.40	0.11
Nitrite	1.0	MAC	<0.06	<0.06	<0.06	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.18	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Orthophosphate	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	7.98	8.32	8.34	7.97	8.17	8.16	8.06	8.15	8.06	8.00	8.07	7.92	7.99	7.97	7.74	7.79	7.58	7.78	8.01	8.04	7.88	7.84	7.48
Phenols	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus	NV	NV	0.016	<0.009	<0.009	0.012	<0.009	<0.009	<0.009	<0.009	0.003	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus (Dis)	NV	NV	----	----	----	----	----	----	----	----	----	<0.009	<0.009	<0.009	0.009	0.01	<0.003	<0.009	0.01	0.014	<0.003	0.026	<0.003	<0.003	0.014
Phosphorus (Tot)	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Potassium	NV	NV	0.314	0.264	0.285	0.294	0.259	0.234	0.347	0.224	0.28	0.656	0.494	0.252	0.331	0.382	0.774	3.23	0.38	0.38	0.52	0.79	0.66	0.58	5.56
Silver	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	200	AO	3.78	3.67	3.85	4.5	2.28	1.45	1.43	1.52	1.83	0.90	1.11	14.1	4.62	27.5	13.3	3.86	5.08	80.3	46.6	174	38.1	29.5	21.9
Sulphate	500	AO	9.7	8.5	7.2	7.4	6.1	5.6	10	5	5	5	4	30	<2	<2	7	7	7	2	20	14	21	27	31
Sulphide	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV	NV	<0.5	<0.5	<0.5	2.4	<0.5	<0.5	<0.05	<0.05	<0.05	<0.5	<0.5	0.6	0.6	0.6	<0.5	0.8	0.7	1.3	1	2.8	0.6	<0.5	0.5
Vanadium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	5.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-17	TW-17	TW-17	TW-17	TW-17	TW-17	TW-18	TW-18	TW-18	TW-18	TW-18	TW-18	TW-18	TW-18	TW-18	TW-18	TW-18	TW-18	TW-18	TW-18	TW-18	TW-18
			4-13-2023	11-16-2023	4-24-2024	11-15-2024	4-22-2025	11-18-2025	6-13-1986	8-10-1988	5-27-1989	5-28-1990	3-19-1991	9-10-1991	6-17-1992	9-17-1992	11-20-1995	5-7-1997	12-18-1997	5-7-1998	12-17-1998	5-21-1999	12-2-1999	5-31-2000	11-30-2000
Alkalinity	30-500	OG	519	355	313	346	234	281	231	----	----	216	----	258	224	236	251	236	285	255	231	178	208	236	330
Aluminum	0.1	OG	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.029	0.11	----	ND	ND	ND	0.08	ND
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	0.4	3.0	0.1	0.4	<0.1	0.4	0.08	0.484	----	0.015	----	0.08	0.055	0.197	<0.05	0.08	0.06	ND	ND	0.04	0.02	0.09	0.06
Barium	1.0	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.013	0.012	----	0.017	0.012	0.013	0.496	0.605
Beryllium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND
Bismuth	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND
Boron	5.0	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.02	0.01	----	0.01	ND	0.01	0.1	0.13
Cadmium	0.005	MAC	----	----	----	----	----	----	<0.0030	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND
Calcium	NV	NV	153	131	93.7	97.9	89	77.4	47.5	78.5	57.4	75.8	69.8	79.9	64.6	53.2	76.5	67	74.1	77.1	63.4	68.9	70.8	68.4	87.2
Chloride	250	AO	43	25	22	21	3	10	7.5	----	1.9	2.4	1.1	1.9	1.9	1.8	1.4	1.25	1.17	1.4	1.6	1.2	1.3	1.3	1.5
Chromium	0.05	MAC	----	----	----	----	----	----	<0.010	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND
Cobalt	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	1070	855	688	715	540	584	720	473	467	495	493	612	453	481	494	425	516	458	462	491	457	427	553
Copper	1.0	AO	----	----	----	----	----	----	0.12	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND
DOC	5.0	AO	6	6	2	3	2	2	2.2	----	----	0.9	1.9	2.2	1.5	0.7	2.2	1.9	2.2	4	0.8	2.3	1.7	11.4	1.9
Fluoride	1.5	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.03	----	ND	0.13	ND	ND	ND	ND
Hardness	80 - 100	OG	554	465	326	337	318	271	217	326.3	236	287	261	299	243	244	274	249	283	272	256	247	252	251	328
Iron	0.3	AO	----	----	----	----	----	----	0.14	----	0.21	1.45	0.02	0.06	<0.01	1.17	0.01	----	0.04	0.116	ND	0.04	ND	0.05	0.04
Lead	0.01	MAC	----	----	----	----	----	----	<0.030	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND
Magnesium	NV	NV	42.1	33.4	22.3	22.5	23.2	18.8	23.8	31.57	22.4	23.7	20.9	24.2	19.9	26.9	20.2	18.9	23.7	19.4	23.8	18.3	18.2	19.5	26.8
Manganese	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.129	0.115	0.269	0.159	0.05	0.02	0.015	0.059	0.459
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND	0.06	ND	ND
Nickel	NV	NV	----	----	----	----	----	----	<0.010	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND
Nitrate	10	MAC	0.84	2.62	3.68	0.16	1.39	1.49	0.1	0.1	----	0.8	----	0.8	0.2	0.4	<0.1	----	----	0.03	ND	ND	ND	ND	ND
Nitrite	1.0	MAC	0.11	0.34	0.05	<0.03	<0.03	<0.03	0.19	0.02	----	<0.01	----	<0.01	<0.01	<0.01	<0.01	----	----	ND	ND	ND	ND	ND	ND
Orthophosphate	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND	ND
pH	6.5 - 8.5	OG	7.61	8.05	7.88	8.08	7.71	7.95	8.03	8	7.68	7.44	7.65	8.03	7.65	7.68	7.77	7.71	7.7	7.42	8.11	7.94	7.51	7.82	7.64
Phenols	NV	NV	----	----	----	----	----	----	0.0015	----	<0.001	<0.001	<0.001	<0.001	<0.001	0.0015	0.0028	----	0.003	ND	ND	ND	ND	0.001	ND
Phosphorus	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.09	ND	ND	ND	0.1	ND
Phosphorus (Dis)	NV	NV	0.018	0.018	0.003	0.007	0.006	0.003	----	----	----	----	----	----	----	----	<0.01	----	----	0.01	ND	----	----	----	----
Phosphorus (Tot)	NV	NV	----	----	----	----	----	----	----	----	----	0.054	----	0.006	0.002	0.062	0.02	0.13	0.81	----	ND	----	----	----	2.08
Potassium	NV	NV	5.44	4.77	2.88	6.66	0.61	5.78	3.9	----	----	----	----	----	----	----	0.63	1.6	----	ND	2.1	ND	ND	1	ND
Silver	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND
Sodium	200	AO	30.8	24.3	8.69	13.7	8.95	7.82	55	----	----	----	----	----	----	----	1.4	1.19	1.29	1.23	9.5	0.79	1.2	7.1	10.5
Sulphate	500	AO	42	79	43	43	20	20	138	22.5	----	----	----	----	----	----	21.8	4.47	10.6	11.3	31	52.8	33	11.6	9.3
Sulphide	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.02	0.12	----	----	----	----	----	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND
Titanium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND
TKN	NV	NV	1.0	4.5	1.1	0.7	<0.5	0.8	0.33	0.84	----	0.26	----	0.58	0.31	0.6	0.29	0.45	0.21	0.27	0.11	0.09	0.17	1.51	0.18
Vanadium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND
Zinc	5.0	AO	----	----	----	----	----	----	0.024	----	----	----	----	----	----	----	----	1.22	3.11	----	0.1	1.22	1.64	1.21	2.23
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-18	TW-18	TW-18A	TW-18A	TW-18A	TW-18A	TW-18A	TW-18A	TW-18A	TW-18A	TW-18A	TW-18A	TW-18A	TW-19	TW-19	TW-19	TW-19	TW-19	TW-19	TW-19	TW-19	TW-19
			12-12-2001	5-29-2002	6-13-1986	8-10-1988	11-3-1988	5-27-1989	10-11-1989	5-28-1990	3-19-1991	9-10-1991	11-20-1995	11-13-1996	11-11-2002	6-13-1986	8-10-1988	11-3-1988	5-27-1989	5-28-1990	3-19-1991	9-10-1991	6-17-1992	11-14-1994
Alkalinity	30-500	OG	261	315	299	192.24	----	----	220	219	208	230	252	316	300	336	352.14	----	----	487	403	358	489	422
Aluminum	0.1	OG	ND	0.03	----	----	----	----	----	----	----	----	----	0.062	1.71	----	----	----	----	----	----	----	----	----
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	0.06	0.6	0.015	0.006	----	----	0.037	0.01	----	0.073	<0.05	0.48	0.2	0.025	0.002	----	----	0.008	----	0.015	0.112	0.1
Barium	1.0	MAC	0.011	0.02	----	----	----	----	----	----	----	----	----	0.018	0.073	----	----	----	----	----	----	----	----	----
Beryllium	NV	NV	ND	<0.005	----	----	----	----	----	----	----	----	----	<0.005	<0.005	----	----	----	----	----	----	----	----	----
Bismuth	NV	NV	ND	<0.0003	----	----	----	----	----	----	----	----	----	<0.05	<0.0003	----	----	----	----	----	----	----	----	----
Boron	5.0	IMAC	ND	0.06	----	----	----	----	----	----	----	----	----	<0.01	0.03	----	----	----	----	----	----	----	----	----
Cadmium	0.005	MAC	ND	<0.0001	<0.0030	<0.005	----	----	----	----	----	----	----	<0.003	0.0004	<0.0030	----	----	----	----	----	----	----	----
Calcium	NV	NV	73.3	85.5	48.5	70.8	98.7	83.9	59.8	65.4	57.5	55.2	77.9	90.4	258	115	107	265.5	140	134	124	122	126	102
Chloride	250	AO	1.3	1.9	18.5	2	1.9	1.6	2	1.8	1.2	2.4	1.4	1.18	1.4	330	71.23	65.93	64.6	65	48.8	56.3	40.4	31.9
Chromium	0.05	MAC	ND	0.005	<0.010	<0.02	----	----	----	----	----	----	----	<0.005	0.005	0.011	----	----	----	----	----	----	----	----
Cobalt	NV	NV	ND	0.046	----	----	----	----	----	----	----	----	----	<0.005	0.004	----	----	----	----	----	----	----	----	----
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	476	515	640	493	478	532	477	477	470	488	492	545	619	1560	1300	1370	1293	1370	1350	4274	1277	1266
Copper	1.0	AO	0.006	0.0024	0.047	<0.02	----	----	----	----	----	----	----	<0.003	0.002	0.13	----	----	----	----	----	----	----	----
DOC	5.0	AO	4.1	5.4	102	1	0.8	----	1.2	0.3	0.6	0.8	2.1	1.7	1.7	5.2	3.5	3.6	14.5	1.5	4.3	3.3	3.9	10.5
Fluoride	1.5	MAC	ND	0.05	----	----	----	----	----	----	----	----	----	0.07	0.05	----	----	----	----	----	----	----	----	----
Hardness	80 - 100	OG	269	314	243	283.8	374.8	294	248	263	239	224	279	325	827	558	567	1124	662	625	589	662	610	566
Iron	0.3	AO	ND	0.04	2.34	1.76	4.45	0.34	0.87	1.52	0.01	0.07	0.34	0.075	2.78	0.1	0.29	14.6	0.22	1.48	0.04	0.04	<0.01	0.08
Lead	0.01	MAC	ND	<0.0002	<0.030	<0.03	----	----	----	----	----	----	----	<0.025	0.0062	<0.030	----	----	----	----	----	----	----	----
Magnesium	NV	NV	20.9	24.4	29.6	25.92	31.07	20.4	23.8	24.1	23	20.9	20.5	26.6	44.5	66	73.08	112.2	76	70.8	68	87	72	75.8
Manganese	0.05	AO	0.03	0.81	----	----	----	----	----	----	----	----	0.133	0.144	1.97	----	----	----	----	----	----	----	----	0.012
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	ND	0.0003	----	----	----	----	----	----	----	----	----	<0.01	<0.0003	----	----	----	----	----	----	----	----	----
Nickel	NV	NV	ND	0.001	<0.010	<0.02	----	----	----	----	----	----	----	<0.01	0.006	<0.010	----	----	----	----	----	----	----	----
Nitrate	10	MAC	ND	<0.05	<0.1	0.1	----	----	<0.1	<0.1	----	0.1	<0.1	0.04	5.07	0.3	<0.1	----	----	<0.1	----	0.1	0.4	0.2
Nitrite	1.0	MAC	ND	<0.06	<0.01	0.01	----	----	0.01	<0.01	----	<0.01	0.01	<0.03	<0.06	0.01	0.01	----	----	<0.01	----	<0.01	0.01	0.01
Orthophosphate	NV	NV	ND	<0.03	----	----	----	----	----	----	----	----	----	<0.05	<0.03	----	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	7.75	8.13	7.96	7.81	7.55	7.49	7.69	7.58	7.9	8.09	7.9	7.57	8.18	7.74	7.41	7.04	7.06	7.05	7.45	7.49	7.26	7.39
Phenols	NV	NV	ND	0.02	0.006	<0.0010	<0.0010	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<.001	<0.001	<0.002	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.002	0.0035
Phosphorus	NV	NV	ND	1.85	----	----	----	----	----	----	----	----	----	<0.06	0.22	----	----	----	----	----	----	----	----	----
Phosphorus (Dis)	NV	NV	----	----	----	----	----	----	----	----	----	----	<0.01	<0.01	----	----	----	----	----	----	----	----	----	<0.001
Phosphorus (Tot)	NV	NV	5.09	----	----	----	----	----	0.044	0.056	----	0.009	0.02	1.41	----	----	----	----	----	0.04	----	0.007	0.004	0.013
Potassium	NV	NV	ND	0.87	4.65	1.48	----	----	----	----	----	----	0.68	<1	0.83	4.7	1.91	----	----	----	----	----	----	2.52
Silver	NV	NV	ND	<0.0001	----	----	----	----	----	----	----	----	----	<0.003	<0.0001	----	----	----	----	----	----	----	----	----
Sodium	200	AO	1.2	1.53	19.6	22.8	----	----	----	----	----	----	1.4	3.19	1.04	42	51.3	----	----	----	----	----	----	59.1
Sulphate	500	AO	21	3.9	24.5	43.5	----	----	----	----	----	----	21.5	12.3	25	150	155	----	----	----	----	----	----	160
Sulphide	0.05	AO	0.44	0.11	----	----	----	----	----	----	----	----	<0.02	----	0.34	----	----	----	----	----	----	----	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	ND	<0.1	----	----	----	----	----	----	----	----	----	<0.05	<0.1	----	----	----	----	----	----	----	----	----
Titanium	NV	NV	ND	<0.003	----	----	----	----	----	----	----	----	----	<0.05	0.008	----	----	----	----	----	----	----	----	----
TKN	NV	NV	0.9	0.5	13.8	0.17	----	----	0.19	0.12	----	0.6	0.29	0.48	0.6	0.39	0.21	----	----	0.3	----	0.35	0.53	0.48
Vanadium	NV	NV	ND	0.012	----	----	----	----	----	----	----	----	----	<0.01	0.016	----	----	----	----	----	----	----	----	----
Zinc	5.0	AO	2.34	2.7	<0.020	<0.02	----	----	----	----	----	----	----	3.87	21.4	<0.020	----	----	----	----	----	----	----	----
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-19	TW-19	TW-19	TW-19	TW-19	TW-19	TW-19	TW-19	TW-19	TW-19	TW-19	TW-19	TW-19	TW-19	TW-20	TW-20	TW-20	TW-20	TW-20	TW-20	TW-20	TW-20	TW-20
			5-15-1995	11-20-1995	5-31-1996	11-13-1996	5-7-1997	5-7-1998	5-21-1999	5-31-2000	7-9-2001	5-29-2002	5-3-2007	4-24-2008	4-17-2009	4-19-2010	6-13-1986	8-10-1988	11-3-1988	5-27-1989	10-11-1989	5-28-1990	3-19-1991	9-10-1991	5-15-1995
Alkalinity	30-500	OG	436	591	547	503	523	568	520	546	554	----	489	573	569	511	256	97.46	----	----	283	216	284	278	266
Aluminum	0.1	OG	----	----	----	<0.025	----	----	0.14	0.05	ND	0.02	----	----	----	----	----	----	----	----	----	----	----	----	----
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	0.07	2.57	0.6	0.05	0.38	0.2	0.31	0.36	0.21	0.9	0.2	<0.1	0.2	<0.1	0.075	0.003	----	----	0.022	0.008	----	0.044	0.13
Barium	1.0	MAC	----	----	----	0.056	0.057	----	0.05	0.188	0.058	0.07	----	----	----	----	----	----	----	----	----	----	----	----	----
Beryllium	NV	NV	----	----	----	<0.005	----	----	ND	ND	ND	<0.005	----	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV	NV	----	----	----	<0.05	----	----	ND	ND	ND	<0.0003	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	5.0	IMAC	----	----	----	0.09	0.08	----	0.04	0.15	0.08	0.07	----	----	----	----	----	----	----	----	----	----	----	----	----
Cadmium	0.005	MAC	----	----	----	<0.003	----	----	ND	ND	ND	<0.0001	----	----	----	----	<0.0030	<0.005	----	----	----	----	----	----	----
Calcium	NV	NV	134	143	92.9	142	138	138	139	148	148	158	155	147	144	162	47	33.1	58.3	45.9	44.4	92.5	45.1	46.4	47.6
Chloride	250	AO	26.7	29	32	30.6	27.7	26	29.5	20.3	19.8	----	47	56	94	90	2.5	1.62	2.54	2.1	2	1.6	1.4	2.1	1.2
Chromium	0.05	MAC	----	----	----	<0.005	0.005	----	ND	ND	ND	0.006	----	----	----	----	<0.010	<0.02	----	----	----	----	----	----	----
Cobalt	NV	NV	----	----	----	<0.005	----	----	ND	ND	ND	0.055	----	----	----	----	----	----	----	----	----	----	----	----	----
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	1251	1237	1170	1080	1100	1200	424	1110	1040	----	1230	1270	1300	1320	585	250	785	696	680	509	582	596	571
Copper	1.0	AO	----	----	----	<0.003	----	----	ND	ND	ND	0.0024	----	----	----	----	0.13	0.05	----	----	----	----	----	----	----
DOC	5.0	AO	4	5.6	3.6	3.4	3.6	1.9	6	5.9	5	3.5	3.1	3.5	4.1	17.8	1.4	2.3	1	6.2	1.1	1.5	1	0.7	1.1
Fluoride	1.5	MAC	----	----	0.45	0.22	----	0.11	ND	ND	ND	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	80 - 100	OG	638	643	536	635	616	612	628	618	603	513	634	574	566	642	246	123.7	275	230	222	320	222	225	236
Iron	0.3	AO	0.02	0.1	0.049	0.078	0.167	0.224	0.21	0.12	ND	0.04	----	----	----	----	0.2	0.58	0.95	0.12	0.29	2	0.04	0.02	0.64
Lead	0.01	MAC	----	----	----	<0.025	----	----	ND	ND	ND	<0.0002	----	----	----	----	<0.030	0.04	----	----	----	----	----	----	----
Magnesium	NV	NV	73.9	69.6	74.1	68.2	66.2	65.1	68.4	60.5	56.8	28.8	60.2	50.4	50.2	57.7	31.2	9.95	31.37	27.9	27	21.6	^26.6	26.4	28.3
Manganese	0.05	AO	0.006	0.232	0.172	0.079	0.123	0.113	0.1	0.07	0.138	0.17	----	----	----	----	----	----	----	----	----	----	----	----	0.009
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	----	----	----	<0.01	----	----	ND	ND	ND	0.0013	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	NV	NV	----	----	----	<0.01	----	----	ND	ND	ND	0.004	----	----	----	----	<0.010	<0.02	----	----	----	----	----	----	----
Nitrate	10	MAC	<0.1	<0.1	0.05	0.16	0.17	0.03	ND	ND	ND	----	<0.05	<0.05	<0.05	<0.05	0.2	1.8	----	----	<0.1	<0.1	----	0.1	<0.1
Nitrite	1.0	MAC	0.01	0.01	<0.03	<0.03	----	ND	ND	ND	ND	----	<0.06	<0.06	<0.06	<0.06	<0.01	0.03	----	----	0.03	<0.01	----	<0.01	0.02
Orthophosphate	NV	NV	----	----	<0.05	<0.05	----	ND	ND	ND	ND	----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	7.39	7.33	7.12	7.09	7.22	7.12	7.54	7.43	7.18	----	8.14	7.68	7.92	7.81	7.94	7.46	7.61	7.82	7.79	7.36	7.95	8.1	7.91
Phenols	NV	NV	0.001	0.0706	<0.001	<0.001	0.008	0.001	ND	0.003	ND	0.003	----	----	----	----	0.001	<0.0010	<0.0010	<0.0010	0.002	<0.0010	<0.0010	0.002	<.001
Phosphorus	NV	NV	----	----	<0.06	<0.06	----	0.08	ND	ND	ND	----	0.07	0.02	0.09	<0.01	----	----	----	----	----	----	----	----	----
Phosphorus (Dis)	NV	NV	<0.01	0.08	----	<0.01	----	0.02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.03
Phosphorus (Tot)	NV	NV	0.05	0.14	0.012	0.17	----	----	----	----	0.206	----	----	----	----	----	----	----	----	----	0.026	0.074	----	0.008	0.03
Potassium	NV	NV	2.56	3.26	2.7	2.6	5.1	3	4.4	4	3	----	3.75	3.99	3.81	5.00	3.45	2.5	----	----	----	----	----	----	2.04
Silver	NV	NV	----	----	----	<0.003	----	----	0.007	ND	ND	<0.0001	----	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	200	AO	55.1	41.5	52.4	42.5	49.9	44.6	46.7	33.5	32.6	35.8	36.9	39.7	49.2	75.8	15.6	7.22	----	----	----	----	----	----	40
Sulphate	500	AO	148	176	142	142	146	126	166	116	114	----	100	110	92	110	43	18	----	----	----	----	----	----	42.2
Sulphide	0.05	AO	0.03	0.25	----	----	0.91	----	----	----	ND	0.11	----	----	----	----	----	----	----	----	----	----	----	----	0.06
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	----	----	----	<0.05	----	----	ND	ND	ND	<0.1	----	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV	NV	----	----	----	<0.05	----	----	ND	0.005	ND	<0.003	----	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV	NV	1.22	3.53	0.8	0.63	2.34	0.8	0.7	1.09	0.68	6.2	0.5	<0.5	0.6	<0.5	0.31	0.55	----	----	0.26	0.19	----	0.32	0.16
Vanadium	NV	NV	----	----	----	<0.01	----	----	ND	ND	ND	0.015	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	5.0	AO	----	----	----	0.023	0.015	----	0.11	0.338	0.036	0.013	----	----	----	----	<0.020	<0.02	----	----	----	----	----	----	----
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-20	TW-20	TW-20	TW-20	TW-20	TW-20	TW-20	TW-20	TW-20	TW-20	TW-20	TW-20	TW-20	TW-20	TW-20	TW-20	TW-20	TW-20	TW-20	TW-20	TW-20	TW-20
			11-20-1995	11-13-1996	5-7-1997	5-21-1999	5-31-2000	7-9-2001	5-29-2002	11-11-2002	6-1-2004	11-24-2004	6-24-2005	11-14-2005	5-3-2007	11-15-2007	4-24-2008	10-14-2008	4-17-2009	11-9-2009	4-19-2010	11-11-2010	4-20-2011	11-7-2011	4-12-2012
Alkalinity	30-500	OG	----	283	269	274	280	282	288	263	268	265	255	265	247	271	337	281	268	264	257	266	256	245	263
Aluminum	0.1	OG	----	<0.025	----	0.12	0.08	ND	0.02	0.22	0.18	0.02	----	----	----	----	----	----	----	----	----	----	----	----	----
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	----	<0.05	0.07	0.04	0.15	ND	0.8	0.3	0.6	0.4	0.1	0.2	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Barium	1.0	MAC	----	0.03	0.032	0.036	0.685	0.029	0.026	0.041	0.028	0.024	----	----	----	----	----	----	----	----	----	----	----	----	----
Beryllium	NV	NV	----	<0.005	----	ND	ND	ND	<0.005	<0.005	<0.005	<0.005	----	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV	NV	----	<0.05	----	ND	ND	ND	<0.0003	<0.0003	<0.0003	<0.0003	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	5.0	IMAC	----	0.02	0.03	ND	0.17	0.02	0.02	0.04	<0.05	0.02	----	----	----	----	----	----	----	----	----	----	----	----	----
Cadmium	0.005	MAC	----	<0.003	----	ND	ND	ND	<0.0001	0.0005	<0.0001	<0.0001	----	----	----	----	----	----	----	----	----	----	----	----	----
Calcium	NV	NV	----	48.2	51	70.7	50.8	45.5	50.8	87.2	50.1	33.3	42.8	47.4	46.8	41.1	48.8	46.5	45.1	51.8	50.8	52.7	42.6	66.3	52.4
Chloride	250	AO	----	1.4	1.3	1.2	1.2	1	2.4	1.4	1.6	2	1.8	1.4	1.4	1.5	1.4	1.4	<2	1.7	1.5	1.5	1.6	1.4	1.6
Chromium	0.05	MAC	----	<0.005	----	ND	ND	ND	0.004	0.002	0.004	0.002	----	----	----	----	----	----	----	----	----	----	----	----	----
Cobalt	NV	NV	----	<0.005	----	0.01	ND	ND	0.055	0.001	0.0005	<0.0003	----	----	----	----	----	----	----	----	----	----	----	----	----
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	----	537	551	1090	548	526	288	541	545	512	536	536	552	556	560	547	555	587	557	572	388	540	530
Copper	1.0	AO	----	<0.003	----	ND	0.004	ND	0.0065	0.012	0.0042	0.0008	----	----	----	----	----	----	----	----	----	----	----	----	----
DOC	5.0	AO	1.4	0.5	----	1	1.3	2	0.9	1.2	<1	1.1	1.3	1.2	<1	<1	<1	21.1	<1.0	<1.0	<1.0	<1.0	1.6	<1.0	<1.0
Fluoride	1.5	MAC	----	0.14	0.07	ND	ND	ND	0.13	0.11	0.13	0.12	----	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	80 - 100	OG	----	204	221	295	244	219	245	375	230	177	204	223	221	197	229	220	218	241	243	245	204	288	250
Iron	0.3	AO	----	0.015	0.006	0.06	0.05	ND	<0.02	0.94	0.46	<0.02	<0.02	<0.02	----	----	----	----	----	----	----	----	----	----	----
Lead	0.01	MAC	----	<0.025	----	ND	ND	ND	0.0003	0.0038	0.0016	0.0003	----	----	----	----	----	----	----	----	----	----	----	----	----
Magnesium	NV	NV	----	27.1	27.5	29	28.3	25.6	28.8	38.2	25.2	22.7	23.7	25.5	25.3	22.9	26.1	25.3	25.5	27.2	28.2	27.5	23.8	29.8	29.1
Manganese	0.05	AO	----	<0.005	0.011	0.05	0.008	ND	0.015	0.12	0.043	0.008	----	----	----	----	----	----	----	----	----	----	----	----	----
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	----	<0.01	----	ND	ND	ND	0.0014	0.001	0.0009	0.0023	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	NV	NV	----	<0.01	----	ND	ND	ND	0.002	0.005	0.002	<0.001	----	----	----	----	----	----	----	----	----	----	----	----	----
Nitrate	10	MAC	----	0.04	0.1	ND	ND	ND	0.08	0.35	<0.05	0.16	<0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrite	1.0	MAC	----	<0.03	----	ND	ND	ND	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
Orthophosphate	NV	NV	----	<0.05	----	ND	ND	ND	<0.03	<0.03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	----	7.72	7.83	8.03	7.96	7.83	8.27	8.29	8.24	8.07	8.26	8.28	8.40	8.09	7.97	8.04	8.36	8.03	8.14	8.23	8.32	8.19	8.38
Phenols	NV	NV	0.0028	<0.001	----	ND	0.001	ND	<0.002	<0.002	<0.002	<0.002	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus	NV	NV	----	<0.06	----	ND	ND	ND	0.05	0.1	0.3	<0.03	----	----	<0.01	<0.01	<0.01	0.13	0.07	<0.01	<0.01	0.03	0.016	0.054	<0.009
Phosphorus (Dis)	NV	NV	----	<0.01	----	----	----	----	----	----	<0.03	<0.03	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus (Tot)	NV	NV	----	0.17	----	----	----	0.069	----	----	----	----	<0.03	0.08	----	----	----	----	----	----	----	----	----	----	----
Potassium	NV	NV	----	<1	1.7	3.3	2	1	2.04	2.17	1.71	1.62	2	1.73	1.92	1.68	2.02	2.26	1.84	1.86	2.31	1.98	1.52	2.06	1.93
Silver	NV	NV	----	<0.003	----	ND	0.004	ND	<0.0001	<0.0001	<0.0001	<0.0001	----	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	200	AO	----	33.7	31.3	31.8	49.3	39.5	35.3	31	40.1	31.6	40.2	37.7	30.8	31.2	31.2	32.5	31.1	28.4	27.3	28.7	20.6	25.9	21.2
Sulphate	500	AO	----	33.7	41.2	29.9	42.6	28.6	27	34	29	26	27	29	36	42	50	50	44	50	47	45	36	44	33
Sulphide	0.05	AO	<0.02	----	----	----	----	ND	<0.02	<0.02	<0.02	0.05	<0.02	<0.02	----	----	----	----	----	----	----	----	----	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	----	<0.05	----	ND	ND	ND	<0.1	<0.1	<0.1	<0.1	----	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV	NV	----	<0.05	----	ND	ND	ND	<0.003	0.005	0.004	<0.003	----	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV	NV	----	0.38	0.51	0.12	0.57	0.07	1.2	0.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vanadium	NV	NV	----	<0.01	----	ND	ND	ND	0.009	0.003	0.0126	0.0061	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	5.0	AO	----	0.011	0.06	0.37	0.072	0.035	0.1	0.24	0.032	0.019	----	----	----	----	----	----	----	----	----	----	----	----	----
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-20	TW-20	TW-20	TW-20	TW-20	TW-20	TW-20	TW-20	TW-20	TW-20	TW-20	TW-20	TW-20	TW-20	TW-20	TW-20	TW-20	TW-20	TW-20	TW-20	TW-20	TW-20
			10-31-2012	4-25-2013	11-7-2013	5-7-2014	10-27-2014	4-27-2015	11-2-2015	4-13-2016	11-21-2016	5-2-2017	10-27-2017	5-11-2018	10-22-2018	4-4-2019	11-6-2019	4-14-2020	10-21-2020	5-6-2021	12-13-2021	5-2-2022	9-14-2022	4-13-2023	11-16-2023
Alkalinity	30-500	OG	242	204	259	260	268	273	251	259	263	260	269	262	264	250	272	247	264	257	285	271	262	244	259
Aluminum	0.1	OG	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	<0.1	0.1	<0.1	<0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Barium	1.0	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Beryllium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	5.0	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cadmium	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Calcium	NV	NV	51.1	53.9	54.9	51	52.6	51.9	47	54.5	51.1	56.7	55.1	60.0	58.5	51.6	60.3	59.1	59.0	62.4	60.1	61.1	55.2	54.9	56.6
Chloride	250	AO	1.5	1.5	1.6	1.5	1.5	2	2	2	2	1	2	1	2	1	2	2	<1	2	2	1	1	2	2
Chromium	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cobalt	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	537	430	560	529	539	550	544	520	537	519	557	510	528	514	520	500	529	511	495	527	555	488	523
Copper	1.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
DOC	5.0	AO	1.4	<1.0	<1.0	1.2	<1	<1.0	<1	<1.0	<1	1	2	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	2
Fluoride	1.5	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	80 - 100	OG	244	251	259	243	252	254	239	261	247	272	260	270	265	249	271	280	269	292	280	288	257	260	276
Iron	0.3	AO	----	----	----	----	----	0.024	----	----	0.011	----	----	0.015	0.020	----	----	----	----	----	----	----	----	----	----
Lead	0.01	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Magnesium	NV	NV	28.2	28.3	29.6	28.1	29.3	30.1	29.6	30.5	29.0	31.8	29.9	29.3	29.0	29.2	29.4	32.2	29.6	33.1	31.6	32.9	28.9	29.9	32.8
Manganese	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nitrate	10	MAC	<0.05	<0.006	<0.06	<0.06	<0.06	<0.06	0.09	<0.06	0.11	<0.06	0.06	<0.06	<0.06	<0.06	0.08	<0.06	<0.06	<0.06	0.18	0.18	0.07	<0.06	<0.06
Nitrite	1.0	MAC	<0.06	<0.003	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Orthophosphate	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	8.26	8.27	8.20	8.01	8.21	8.21	8.36	8.05	8.30	7.94	8.26	8.09	8.11	8.28	8.05	8.13	8.12	8.33	7.97	8.18	8.00	8.12	8.17
Phenols	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus	NV	NV	<0.009	0.018	0.011	0.01	<0.009	0.009	0.009	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus (Dis)	NV	NV	----	----	----	----	----	----	----	<0.009	0.012	0.022	0.018	0.010	0.003	<0.009	0.011	0.008	<0.003	<0.003	0.009	0.029	0.008	0.014	0.012
Phosphorus (Tot)	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Potassium	NV	NV	2.17	2.15	2.13	1.96	1.97	1.78	1.77	1.79	1.87	1.81	1.70	1.93	1.80	1.82	1.82	1.80	1.94	2.02	2.12	2.01	1.80	1.81	1.87
Silver	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	200	AO	25.9	28.3	23.5	17.5	18.4	17.2	16.2	15.8	14.3	15.9	15.2	13.1	13.5	11.6	12.3	12.9	11.0	12.8	11.7	11.4	10.0	11.0	9.8
Sulphate	500	AO	44	43	43	34	37	36	31	36	39	<2	49	40	44	40	38	35	35	36	41	37	36	39	38
Sulphide	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV	NV	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	----	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vanadium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	5.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-20	TW-20	TW-20	TW-20	TW-21	TW-21	TW-21	TW-21	TW-21	TW-21	TW-21	TW-21	TW-21	TW-21	TW-21	TW-21	TW-21	TW-21	TW-21	TW-21	TW-21	TW-21
			4-24-2024	11-15-2024	4-22-2025	11-18-2025	6-13-1986	8-10-1988	11-3-1988	5-27-1989	10-11-1989	5-28-1990	3-19-1991	9-10-1991	5-2-1994	11-14-1994	5-15-1995	11-20-1995	5-31-1996	11-13-1996	5-7-1998	5-21-1999	7-9-2001	5-29-2002	11-11-2002
Alkalinity	30-500	OG	252	261	261	267	239	151.04	----	----	185	292	155	148	286	197	199	235	226	246	286	268	286	278	247
Aluminum	0.1	OG	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.266	----	0.06	0.07	0.2	0.01
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	<0.1	<0.1	<0.1	<0.1	0.03	0.017	----	----	0.03	0.013	0.032	0.024	<0.005	0.04	0.07	<0.05	0.09	<0.05	ND	0.07	ND	0.1	0.4
Barium	1.0	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.011	----	0.009	0.015	0.01	0.009
Beryllium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.005	----	ND	ND	<0.005	<0.005
Bismuth	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.05	----	ND	ND	<0.0003	<0.0003
Boron	5.0	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.01	----	ND	ND	<0.01	0.01
Cadmium	0.005	MAC	----	----	----	----	<0.0030	----	----	----	----	----	----	----	----	----	----	----	----	<0.003	----	ND	ND	<0.0001	<0.0001
Calcium	NV	NV	54.2	53.0	52.7	51.8	56	62.2	56.3	50	49.8	46.2	48.7	44	66.8	54.3	64	56.4	67.6	71.7	75.6	73.9	87.2	80.7	107
Chloride	250	AO	<1	<1	2	1	25.5	1.14	0.93	1.1	1.8	1.9	1.2	2.2	1.5	1.5	1.5	0.8	0.73	0.89	0.51	0.82	0.5	0.06	0.8
Chromium	0.05	MAC	----	----	----	----	<0.010	----	----	----	----	----	----	----	----	----	----	----	----	<0.005	----	ND	ND	0.005	0.007
Cobalt	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.005	----	ND	ND	0.053	<0.0003
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	531	531	528	534	775	405	392	365	386	663	366	342	451	447	444	471	429	437	495	530	407	374	453
Copper	1.0	AO	----	----	----	----	0.13	----	----	----	----	----	----	----	----	----	----	----	----	<0.003	----	ND	ND	0.0048	0.001
DOC	5.0	AO	<1	<1	<1	1	1	1	0.7	5.5	0.4	0.6	0.3	0.3	15.4	6.9	7.8	2	0.9	0.7	0.6	1.5	2.3	0.7	1
Fluoride	1.5	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.09	<0.02	0.11	ND	ND	0.06	0.05
Hardness	80 - 100	OG	246	247	253	256	238	237.7	208.8	188	192	223	183	167	255	228	248	233	255	259	282	279	312	305	384
Iron	0.3	AO	----	----	----	----	0.39	0.78	0.15	0.33	0.51	0.21	0.03	0.03	<0.01	0.03	0.05	0.12	0.082	0.369	0.149	0.02	0.04	0.23	<0.02
Lead	0.01	MAC	----	----	----	----	<0.030	----	----	----	----	----	----	----	----	----	----	----	----	<0.025	----	ND	ND	0.0004	<0.0002
Magnesium	NV	NV	26.9	27.9	29.5	30.6	23.8	19.96	16.52	15.4	16.4	26.1	14.9	13.8	21.4	22.3	21.3	22.4	21	21.8	22.6	23.1	22.7	25.2	28.5
Manganese	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	<0.003	<0.003	<0.003	0.006	<0.005	0.019	0.008	ND	0.016	0.012	0.01
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.01	----	ND	ND	<0.0003	<0.0003
Nickel	NV	NV	----	----	----	----	<0.010	----	----	----	----	----	----	----	----	----	----	----	----	<0.01	----	ND	ND	0.001	0.001
Nitrate	10	MAC	0.08	0.14	0.19	<0.06	0.6	0.02	----	----	0.3	<0.1	0.1	0.4	0.5	0.3	0.3	0.4	0.33	0.25	0.34	0.53	ND	0.26	0.91
Nitrite	1.0	MAC	<0.03	<0.03	<0.03	<0.03	<0.01	0.02	----	----	0.01	0.02	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.03	<0.03	ND	ND	ND	<0.06	<0.06
Orthophosphate	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.05	<0.05	ND	ND	ND	<0.03	<0.03
pH	6.5 - 8.5	OG	8.27	8.10	8.23	8.05	7.98	7.75	7.6	7.78	7.79	7.69	8.08	8.34	7.93	7.95	7.88	7.97	7.66	7.68	7.53	7.93	7.65	8.15	8.1
Phenols	NV	NV	----	----	----	----	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	----	<0.0010	0.002	0.001	<.001	0.0075	<0.001	<0.001	ND	ND	ND	0.003	0.003
Phosphorus	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.06	<0.06	ND	ND	ND	1.39	0.08
Phosphorus (Dis)	NV	NV	0.004	0.005	0.016	0.005	----	----	----	----	----	----	----	----	0.007	<0.001	<0.01	0.01	----	<0.01	0.02	----	----	----	----
Phosphorus (Tot)	NV	NV	----	----	----	----	----	----	----	----	0.012	0.013	0.005	0.006	0.01	0.004	0.02	0.04	<0.004	0.52	----	----	1.04	----	----
Potassium	NV	NV	1.67	1.68	1.8	1.81	2	0.76	----	----	----	----	----	----	0.5	0.2	0.31	0.46	<1	<1	ND	2.2	2	0.65	0.67
Silver	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.003	----	0.006	ND	<0.0001	<0.0001
Sodium	200	AO	9.26	9.44	9.37	11.2	58	4.16	----	----	----	----	----	----	1.5	1.3	1.3	1.3	1.53	1.55	1.47	1.71	1.6	1.97	1.42
Sulphate	500	AO	36	34	36	36	118	13.5	----	----	----	----	----	----	13.8	20	18.7	17.5	14.9	9.48	7.2	6.5	5.7	5.4	7.4
Sulphide	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.04	<0.02	----	----	----	----	ND	<0.02	<0.4
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.05	----	ND	ND	<0.1	<0.1
Titanium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.05	----	ND	ND	0.02	<0.003
TKN	NV	NV	<0.5	<0.5	<0.5	<0.5	0.23	0.23	----	----	0.19	0.12	0.2	0.35	0.12	0.14	0.18	0.17	0.2	0.38	0.65	0.11	0.1	1	1
Vanadium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.01	----	0.006	ND	0.006	0.018
Zinc	5.0	AO	----	----	----	----	<0.020	----	----	----	----	----	----	----	----	----	----	----	----	0.032	----	0.09	0.258	0.006	0.002
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-21	TW-22	TW-22	TW-22	TW-22	TW-22	TW-22	TW-22	TW-22	TW-22	TW-22	TW-22	TW-22	TW-22	TW-22	TW-22	TW-22	TW-22	TW-22	TW-22	TW-22	TW-22
			5-29-2003	6-13-1986	8-10-1988	11-3-1988	5-27-1989	5-28-1990	3-19-1991	6-17-1992	11-17-1993	11-20-1995	5-31-1996	11-13-1996	11-13-1996	5-7-1998	7-9-2001	5-29-2003	11-27-2003	6-1-2004	11-24-2004	6-24-2005	11-14-2005	5-24-2006	11-15-2007
Alkalinity	30-500	OG	291	304	162.73	----	----	157	208	271	----	344	436	374	377	490	587	534	520	482	500	539	465	433	501
Aluminum	0.1	OG	0.72	----	----	----	----	----	----	----	----	----	----	0.099	0.091	----	ND	0.12	0.13	0.3	0.05	----	----	----	----
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	0.1	0.035	0.01	----	----	0.005	0.025	0.046	^0.078	<0.05	<0.05	<0.05	----	ND	ND	0.4	0.1	0.7	0.3	<0.1	0.2	0.1	<0.1
Barium	1.0	MAC	0.032	----	----	----	----	----	----	----	----	----	----	0.011	0.011	----	0.019	0.025	0.039	0.021	0.016	----	----	----	----
Beryllium	NV	NV	<0.005	----	----	----	----	----	----	----	----	----	----	<0.005	<0.005	----	ND	<0.005	<0.005	<0.005	<0.005	----	----	----	----
Bismuth	NV	NV	<0.0003	----	----	----	----	----	----	----	----	----	----	<0.05	<0.05	----	ND	<0.0003	<0.0003	<0.0003	<0.0003	----	----	----	----
Boron	5.0	IMAC	<0.05	----	----	----	----	----	----	----	----	----	----	<0.01	<0.01	----	0.02	<0.05	<0.05	<0.05	0.01	----	----	----	----
Cadmium	0.005	MAC	0.0002	<0.0030	<0.005	----	----	----	----	----	----	----	----	<0.003	<0.003	----	ND	0.0002	0.0002	<0.0001	<0.0001	----	----	----	----
Calcium	NV	NV	220	64	54.9	79.1	86.6	55.3	95.7	92.2	76.6	103	97.5	129	131	185	217	316	423	221	148	184	148	160	108
Chloride	250	AO	0.6	3.5	1.37	0.93	1.6	1.3	15.1	7	----	3	3	1.72	1.72	1.21	1	1	1.2	0.5	1.3	1.4	1	<2	1.1
Chromium	0.05	MAC	0.008	<0.010	<0.02	----	----	----	----	----	----	----	----	<0.005	<0.005	----	ND	0.004	0.007	0.013	0.005	----	----	----	----
Cobalt	NV	NV	0.002	----	----	----	----	----	----	----	----	----	----	<0.005	<0.005	----	ND	0.002	0.001	0.0016	0.0014	----	----	----	----
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	503	745	434	491	562	395	625	621	----	775	894	702	700	1100	1100	1040	1040	951	858	1100	857	787	886
Copper	1.0	AO	0.0055	0.086	<0.02	----	----	----	----	----	----	----	----	<0.003	<0.003	----	ND	0.008	0.0036	0.0107	<0.0008	----	----	----	----
DOC	5.0	AO	<1	2.2	1.3	0.6	8.6	0.3	0.3	0.2	----	2.7	0.9	0.6	----	2	3.1	1.3	1	23.2	<1	1.1	<1	0.9	<1
Fluoride	1.5	MAC	0.04	----	----	----	----	----	----	----	----	----	<0.02	<0.02	<0.02	ND	ND	<0.04	0.07	0.06	<0.06	----	----	----	----
Hardness	80 - 100	OG	790	272	211.2	283.5	306	206	322	338	----	398	416	438	432	638	747	1010	1280	750	511	622	507	534	384
Iron	0.3	AO	1.67	0.54	0.44	1.38	0.5	0.98	0.02	<0.01	----	1.07	0.074	0.115	0.123	0.131	0.15	0.12	0.59	1.01	0.04	<0.02	<0.02	----	----
Lead	0.01	MAC	0.0042	<0.030	0.03	----	----	----	----	----	----	----	----	<0.025	<0.025	----	ND	0.0002	0.0004	0.0025	0.0008	----	----	----	----
Magnesium	NV	NV	58.3	27.2	17.95	20.82	21.8	16.4	20	26.1	----	34	42	31.7	32.1	43.2	49.6	53.9	54.4	48.3	34	39.6	331	32.6	27.6
Manganese	0.05	AO	0.44	----	----	----	----	----	----	----	----	0.01	<0.005	0.006	0.005	ND	0.439	0.94	0.72	0.584	0.733	----	----	----	----
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	<0.0003	----	----	----	----	----	----	----	----	----	----	<0.01	<0.01	----	ND	<0.0003	<0.0003	<0.0003	<0.0003	----	----	----	----
Nickel	NV	NV	0.003	<0.010	0.02	----	----	----	----	----	----	----	----	<0.01	<0.01	----	ND	0.006	0.003	0.004	0.003	----	----	----	----
Nitrate	10	MAC	0.27	1.5	0.2	----	----	0.3	0.1	0.2	----	0.1	0.16	0.07	0.06	0.03	ND	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.07	<0.05
Nitrite	1.0	MAC	<0.06	<0.01	0.01	----	----	<0.01	<0.01	<0.01	<0.01	0.01	<0.03	<0.03	<0.03	ND	ND	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
Orthophosphate	NV	NV	----	----	----	----	----	----	----	----	----	----	<0.05	<0.05	<0.05	ND	ND	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	8.09	7.92	7.78	7.48	7.56	7.73	7.49	7.69	----	7.62	7.29	7.29	7.29	7.08	7.26	7.9	7.68	7.98	7.72	7.79	8.05	8.20	7.80
Phenols	NV	NV	<0.002	0.0085	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<.001	<0.001	<0.001	----	ND	ND	<0.002	<0.002	0.004	<0.002	----	----	----	----
Phosphorus	NV	NV	0.3	----	----	----	----	----	----	----	----	----	<0.06	<0.06	<0.06	ND	ND	0.39	0.34	0.34	0.18	----	----	----	0.02
Phosphorus (Dis)	NV	NV	----	----	----	----	----	----	----	----	----	<0.01	----	0.02	0.01	0.02	----	----	----	0.1	<0.03	----	----	----	----
Phosphorus (Tot)	NV	NV	----	----	----	----	----	0.019	0.005	0.011	^0.008	0.03	<0.004	1.11	----	----	4.08	----	----	----	----	0.25	0.3	0.22	----
Potassium	NV	NV	1.08	1.05	1.19	----	----	----	----	----	----	0.77	<1	<1	<1	ND	1	1.96	2.09	0.96	1.14	1.42	1.29	1.25	0.88
Silver	NV	NV	<0.0001	----	----	----	----	----	----	----	----	----	----	<0.003	<0.003	----	ND	<0.0001	<0.0001	<0.0001	<0.0001	----	----	----	----
Sodium	200	AO	1.74	29.5	1.83	----	----	----	----	----	----	3.2	3.85	2.91	2.98	2.83	1.8	2.16	2.15	1.62	1.3	1.56	0.96	1.09	1.07
Sulphate	500	AO	6.1	76	18	----	----	----	----	----	----	86.8	127	56.6	56.6	145	161	130	100	91	16	88	20	50	15
Sulphide	0.05	AO	<0.2	----	----	----	----	----	----	----	----	<0.02	----	----	----	----	ND	<0.6	<0.02	<0.02	0.02	<0.02	<0.02	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	<0.1	----	----	----	----	----	----	----	----	----	----	<0.05	<0.05	----	ND	<0.1	<0.1	<0.1	<0.1	----	----	----	----
Titanium	NV	NV	0.013	----	----	----	----	----	----	----	----	----	----	<0.05	<0.05	----	ND	0.005	<0.003	0.006	<0.003	----	----	----	----
TKN	NV	NV	<0.5	0.24	0.18	----	----	0.09	0.15	0.21	^0.31	0.16	0.17	0.61	----	0.7	0.33	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vanadium	NV	NV	0.022	----	----	----	----	----	----	----	----	----	----	<0.01	<0.01	----	ND	0.012	0.019	0.0354	0.0134	----	----	----	----
Zinc	5.0	AO	0.039	0.022	0.02	----	----	----	----	----	----	----	----	0.129	0.129	----	0.042	0.0761	0.016	0.033	0.012	----	----	----	----
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-22	TW-22	TW-22	TW-22	TW-22	TW-22	TW-22	TW-22	TW-22	TW-22	TW-22	TW-22	TW-22	TW-22	TW-22	TW-22	TW-22	TW-22	TW-22	TW-22	TW-22	TW-22
			4-24-2008	10-14-2008	4-17-2009	11-9-2009	4-19-2010	11-11-2010	4-20-2011	11-7-2011	4-12-2012	10-31-2012	4-25-2013	11-7-2013	5-7-2014	10-27-2014	4-27-2015	11-2-2015	4-13-2016	11-21-2016	5-2-2017	10-27-2017	5-11-2018	10-22-2018	4-4-2019
Alkalinity	30-500	OG	537	492	521	436	576	600	479	521	632	438	435	469	521	574	595	559	504	505	533	507	530	579	522
Aluminum	0.1	OG	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Barium	1.0	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Beryllium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	5.0	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cadmium	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Calcium	NV	NV	150	130	133	146	190	52.7	165	204	153	185	165	169	165	173	157	154	184	151	185	152	192	188	172
Chloride	250	AO	1.1	1.2	<2	1.8	1.5	<2	1.2	0.9	1.6	<2	0.8	<2	0.7	1.5	1	1	2	1	1	1	1	2	1
Chromium	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cobalt	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	961	838	873	947	1060	1140	861	1020	1030	846	890	900	943	998	1020	1020	830	823	918	908	878	799	836
Copper	1.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
DOC	5.0	AO	<1	4.9	-----	4.3	1.6	<1.0	1.5	1.7	18.2	10.4	<1	<1.0	1.7	15.4	2	2.2	1.6	<1	17.0	2	17.0	2	9.0
Fluoride	1.5	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	80 - 100	OG	507	440	453	504	649	245	545	660	537	634	559	564	548	588	547	549	607	502	611	509	616	609	568
Iron	0.3	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.024	----	----	0.010	----	----	0.155	0.027	----
Lead	0.01	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Magnesium	NV	NV	32.2	27.8	29.7	33.8	42.1	27.5	32.4	36.5	37.4	41.5	35.8	34.4	1.15	38.2	37.7	40	36.1	30.5	36.4	31.3	33.5	33.8	33.7
Manganese	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nitrate	10	MAC	0.06	<0.05	0.15	0.11	0.05	<0.05	0.14	0.41	0.17	0.1	0.14	0.23	0.12	0.69	0.3	1.05	3.28	1.18	2.83	1.38	1.07	0.07	1.79
Nitrite	1.0	MAC	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Orthophosphate	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	7.61	7.66	7.85	7.43	7.86	7.74	7.72	7.64	7.55	7.86	7.83	7.76	7.86	7.9	7.77	7.7	7.49	7.55	7.53	7.67	7.45	7.44	7.62
Phenols	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus	NV	NV	0.02	0.04	0.06	<0.01	<0.01	0.03	<0.009	0.031	<0.009	0.014	0.012	<0.009	0.011	<0.009	0.017	0.005	----	----	----	----	----	----	----
Phosphorus (Dis)	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.009	0.013	<0.009	0.011	0.007	<0.003	<0.009
Phosphorus (Tot)	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Potassium	NV	NV	14.9	0.87	0.99	0.82	1.32	1.98	1.01	1.13	0.968	1.08	1.16	1.23	33.3	1.22	0.902	0.907	1.03	0.794	0.97	0.683	0.98	1.020	1.07
Silver	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	200	AO	1.03	1.09	1.36	1.10	1.50	28.7	1.12	1.27	1.42	1.52	1.27	1.35	1.27	1.35	1.31	1.29	1.53	1.26	1.53	1.34	1.37	1.33	1.26
Sulphate	500	AO	39	33	26	14	36	72	51	32	34	23	38	30	27	23	30	39	48	28	43	24	22	18	37
Sulphide	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV	NV	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vanadium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	5.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-22	TW-22	TW-22	TW-22	TW-22	TW-22	TW-22	TW-22	TW-22	TW-22A	TW-22A	TW-22A	TW-22A	TW-22A	TW-22A	TW-22A	TW-22A	TW-23	TW-23	TW-23	TW-23	TW-23
			11-6-2019	4-14-2020	10-21-2020	5-6-2021	5-2-2022	4-13-2023	4-24-2024	4-22-2025	9-9-2025	6-13-1986	5-28-1990	3-19-1991	9-10-1991	5-2-1994	5-15-1995	5-31-1996	5-7-1998	5-7-1997	5-7-1998	5-21-1999	12-2-1999	5-31-2000
Alkalinity	30-500	OG	487	536	572	420	597	530	266	457	544	191	276	208	227	257	236	517	629	741	844	576	736	794
Aluminum	0.1	OG	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.069	----	ND	ND	ND
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	0.1	<0.1	0.2	0.03	0.009	0.019	----	0.031	0.08	0.09	ND	0.19	0.03	0.06	0.04	0.04
Barium	1.0	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.099	----	0.068	0.058	0.639
Beryllium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND
Bismuth	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND
Boron	5.0	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.37	----	0.24	0.28	0.51
Cadmium	0.005	MAC	----	----	----	----	----	----	----	----	----	<0.0030	----	----	----	----	----	----	----	----	----	ND	ND	ND
Calcium	NV	NV	132	182	190	172	207	188	175	178	153	48.5	93	90.5	88.4	158	124	117	261	208	224	173	183	239
Chloride	250	AO	2	1	<1	2	<1	3	<1	3	<1	3.5	2	3.8	5.7	4	1.9	3.33	0.56	17.2	20.5	23.7	19.3	13.2
Chromium	0.05	MAC	----	----	----	----	----	----	----	----	----	<0.010	----	----	----	----	----	----	----	----	----	ND	ND	ND
Cobalt	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	888	876	1020	703	969	931	790	857	878	500	606	606	624	949	1054	1000	1360	1500	1510	471	1350	1400
Copper	1.0	AO	----	----	----	----	----	----	----	----	----	0.063	----	----	----	----	----	----	----	----	----	ND	ND	0.004
DOC	5.0	AO	3	1.0	1	3	1	1	<1	1	1	0.9	0.1	0.3	0.4	14.7	1.7	1.1	2.7	5.3	7.2	5.2	4.7	10.1
Fluoride	1.5	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.11	ND	----	0.15	ND	ND	ND
Hardness	80 - 100	OG	447	597	614	567	658	599	549	570	504	175	333	323	321	533	494	441	837	777	852	663	769	905
Iron	0.3	AO	----	----	----	----	----	----	----	----	----	0.36	1.01	0.02	0.03	0.01	0.02	0.012	0.009	0.028	0.087	0.02	ND	ND
Lead	0.01	MAC	----	----	----	----	----	----	----	----	----	<0.030	----	----	----	----	----	----	----	----	----	ND	ND	ND
Magnesium	NV	NV	28.5	34.4	33.9	33.3	34.7	31.5	27.2	30.8	29.8	13	24.5	23.4	24.2	33.4	44.4	36	45	69.6	71.2	56.1	76	74.7
Manganese	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.003	<0.003	0.306	0.056	0.133	0.089	ND	ND	0.02
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	0.11	ND
Nickel	NV	NV	----	----	----	----	----	----	----	----	----	0.01	----	----	----	----	----	----	----	----	----	ND	ND	ND
Nitrate	10	MAC	1.30	1.89	1.76	1.06	0.99	0.92	0.81	0.4	0.29	0.3	0.1	0.1	----	0.4	0.1	<0.03	0.28	0.15	0.07	0.48	ND	ND
Nitrite	1.0	MAC	0.04	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.01	<0.01	<0.01	----	<0.01	0.01	<0.03	ND	----	ND	ND	ND	ND
Orthophosphate	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.05	ND	----	ND	ND	ND	ND
pH	6.5 - 8.5	OG	7.88	7.54	7.78	7.91	7.43	7.57	8.27	7.87	7.57	8.12	7.41	7.86	7.84	7.65	7.5	7.04	6.8	7.12	7.08	7.56	7.26	7.39
Phenols	NV	NV	----	----	----	----	----	----	----	----	----	<0.001	<0.001	<0.001	<0.001	<0.0010	<0.001	<0.001	ND	----	ND	ND	ND	0.001
Phosphorus	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.06	0.09	----	0.09	ND	ND	ND
Phosphorus (Dis)	NV	NV	0.006	0.008	<0.003	<0.003	<0.003	0.025	0.019	0.058	0.031	----	----	----	----	0.01	0.01	----	0.02	----	0.01	----	----	----
Phosphorus (Tot)	NV	NV	----	----	----	----	----	----	----	----	----	----	0.017	0.004	----	0.013	0.02	<0.004	----	----	----	----	----	----
Potassium	NV	NV	1.320	0.77	0.951	1.39	1.12	1.02	1.05	1.22	1.41	0.44	----	----	----	1.1	1.52	2	1.6	19.1	19.3	14.3	8	17
Silver	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND
Sodium	200	AO	1.45	1.21	1.46	1.35	1.27	1.18	0.96	1.3	1.22	22.2	----	----	----	4	4	1.72	2.18	46.3	20.7	25.3	21.7	33.7
Sulphate	500	AO	23	24	28	30	30	26	25	28	20	58	----	----	----	29.2	213	101	196	89.4	58.9	120	50	151
Sulphide	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.02	----	----	----	----	----	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND
Titanium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND
TKN	NV	NV	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.9	<0.5	<0.5	0.16	0.07	0.17	----	0.12	0.52	0.27	0.37	0.55	1.76	0.53	0.29	0.84
Vanadium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND
Zinc	5.0	AO	----	----	----	----	----	----	----	----	----	<0.020	----	----	----	----	----	----	----	----	----	0.04	0.02	0.285
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-23	TW-23	TW-23	TW-23	TW-23	TW-23	TW-23	TW-23	TW-23	TW-23	TW-23	TW-23	TW-23	TW-23	TW-23	TW-23	TW-23	TW-23	TW-23	TW-23	TW-23	TW-23
			11-30-2000	7-9-2001	12-12-2001	5-29-2003	11-27-2003	6-1-2004	11-24-2004	6-24-2005	11-14-2005	5-24-2006	10-25-2006	5-3-2007	4-24-2008	10-14-2008	4-17-2009	11-9-2009	4-19-2010	11-11-2010	4-20-2011	11-7-2011	4-12-2012	10-31-2012	4-25-2013
Alkalinity	30-500	OG	662	865	989	794	728	974	736	890	719	778	656	918	871	697	849	648	522	639	634	612	793	542	591
Aluminum	0.1	OG	ND	ND	ND	0.3	0.15	0.31	0.06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	0.04	ND	ND	0.2	<0.1	0.7	<0.1	0.1	<0.1	0.3	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.1	<0.1	<0.1	<0.1	<0.1	0.1
Barium	1.0	MAC	0.068	0.082	0.086	0.11	0.091	0.108	0.073	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Beryllium	NV	NV	ND	ND	ND	<0.005	<0.005	<0.005	<0.005	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV	NV	ND	ND	ND	<0.0003	<0.0003	<0.0003	<0.0003	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	5.0	IMAC	0.26	0.38	0.35	0.42	0.39	0.49	0.3	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cadmium	0.005	MAC	ND	ND	ND	0.0004	<0.0001	0.0006	<0.0001	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Calcium	NV	NV	184	238	260	487	275	443	212	260	231	234	210	229	227	187	211	198	177	210	188	235	250	190	212
Chloride	250	AO	20.9	22.7	25.1	15	24	13	22	14	28	14	30	15	19	38	17	42	30	48	19	26	18	31	13
Chromium	0.05	MAC	ND	ND	ND	0.009	0.003	0.031	0.009	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cobalt	NV	NV	ND	ND	ND	0.002	0.001	0.0032	0.0004	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	1140	1400	1630	1460	1580	1610	1420	1620	1480	1300	1410	1530	1580	1320	1490	1510	1250	1430	1280	1500	1490	1230	1270
Copper	1.0	AO	0.006	ND	ND	0.01	0.0034	0.005	0.0015	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
DOC	5.0	AO	5	9.6	10.3	8.3	8.2	11.2	5.8	6.9	6.7	5.3	22.9	31.2	27.5	9.6	5.4	2.6	5.7	23.6	8	15.2	7.2	6.6	13.7
Fluoride	1.5	MAC	ND	ND	ND	0.04	0.08	0.08	0.07	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	80 - 100	OG	723	893	968	630	1030	1550	823	953	883	861	803	882	819	709	790	739	662	758	686	843	901	726	795
Iron	0.3	AO	0.06	ND	ND	0.41	0.3	0.64	<0.02	<0.02	<0.02	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Lead	0.01	MAC	ND	ND	ND	0.0006	0.0005	0.0007	<0.0002	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Magnesium	NV	NV	63.8	72.3	77.3	100]	83.9	108	71.1	73.9	74.4	67.5	67.7	75.2	60.9	58.9	63.7	59.0	53.4	56.6	52.5	62.5	67.5	61.1	64.3
Manganese	0.05	AO	0.009	0.241	0.037	0.64	0.11	0.901	0.009	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	ND	ND	ND	<0.0003	0.0003	<0.0003	<0.0003	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	NV	NV	ND	ND	ND	0.004	0.002	0.004	<0.001	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nitrate	10	MAC	0.2	ND	ND	0.05	<0.05	<0.05	0.08	<0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.39	<0.05	<0.05	0.11	<0.05	0.08	<0.06
Nitrite	1.0	MAC	ND	ND	ND	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.03
Orthophosphate	NV	NV	ND	ND	ND	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	7.34	7.25	7.39	7.91	7.67	7.84	7.64	7.77	7.9	8.05	7.89	7.97	7.64	7.53	7.87	7.39	7.93	7.83	7.73	7.72	7.73	7.89	7.82
Phenols	NV	NV	ND	ND	ND	<0.002	<0.002	0.006	<0.002	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus	NV	NV	ND	ND	ND	0.78	0.14	0.63	0.43	----	----	----	0.06	0.11	0.03	0.07	0.04	<0.01	<0.01	<0.01	0.018	0.05	<0.009	<0.009	0.033
Phosphorus (Dis)	NV	NV	----	----	----	----	----	0.1	<0.03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus (Tot)	NV	NV	2.1	1.49	2	----	----	----	----	0.25	0.41	0.22	----	----	----	----	----	----	----	----	----	----	----	----	----
Potassium	NV	NV	13	19	18	23.3	19.2	16.9	14.5	17.6	13.9	16.4	11.9	15.4	14.9	16.3	14.2	13.5	16.1	9.88	11.1	17	16	16.3	15.3
Silver	NV	NV	ND	ND	ND	<0.0001	<0.0001	<0.0001	<0.0001	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	200	AO	21.1	19.9	22.7	18.9	22.6	16.9	18.9	18.4	20.4	14.4	20.7	14.4	15.1	24.3	15.6	23.4	18.8	27.3	15	21	17.9	24.4	19.3
Sulphate	500	AO	139	136	137	150	210	73	130	77	160	81	100	96	140	100	89	110	190	97	140	200	76	230	99
Sulphide	0.05	AO	----	ND	ND	<0.2	<0.02	<0.02	0.04	<0.02	<0.02	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	ND	ND	ND	<0.1	<0.1	<0.1	<0.1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV	NV	ND	ND	ND	0.004	<>0.003	<0.003	<0.003	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV	NV	0.32	0.65	0.64	0.6	<0.5	1	<0.5	0.5	<0.5	0.7	0.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.0	<0.5	<0.5	<0.5	<0.5	<0.5
Vanadium	NV	NV	ND	ND	ND	0.023	0.007	0.0792	0.0229	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	5.0	AO	0.013	0.02	0.005	0.12	0.002	0.012	0.868	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-23	TW-23	TW-23	TW-23	TW-23	TW-23	TW-23	TW-23	TW-23	TW-23	TW-23	TW-23	TW-23	TW-23	TW-23	TW-23	TW-23	TW-23	TW-23	TW-23	TW-23	TW-23
			11-7-2013	5-7-2014	10-27-2014	4-27-2015	11-2-2015	4-13-2016	11-21-2016	5-2-2017	10-27-2017	5-11-2018	10-22-2018	4-4-2019	11-6-2019	4-14-2020	10-21-2020	5-6-2021	12-13-2021	5-2-2022	9-14-2022	4-13-2023	11-16-2023	4-24-2024	11-15-2024
Alkalinity	30-500	OG	672	764	839	798	784	655	755	711	779	661	760	548	630	698	760	590	768	800	745	564	603	717	588
Aluminum	0.1	OG	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	<0.1	<0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Barium	1.0	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Beryllium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	5.0	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cadmium	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Calcium	NV	NV	225	222	232	201	188	209	195	233	209	223	210	166	230	245	225	245	234	190	210	202	217	211	175
Chloride	250	AO	16	11	11	16	19	16	22	15	18	16	22	18	11	14	14	14	19	16	19	25	18	13	19
Chromium	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cobalt	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	1490	1440	1550	1450	1520	1170	1360	1220	1390	1150	1260	1040	1250	1300	1380	1280	1230	1400	1460	1140	1220	1180	1120
Copper	1.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
DOC	5.0	AO	5.4	7.8	5.2	4.8	4.6	6.0	3	10.0	5	8	10	13	5	19	4	5	5	6	3	6	5	6	4
Fluoride	1.5	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	80 - 100	OG	853	815	873	772	811	762	728	840	776	784	785	601	794	878	814	852	858	754	798	708	784	734	662
Iron	0.3	AO	----	----	----	0.052	----	----	0.020	----	----	0.168	0.083	----	----	----	----	----	----	----	----	----	----	----	----
Lead	0.01	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Magnesium	NV	NV	70.7	63.6	71	65.5	83.1	58.5	58.4	63.1	61.9	55.2	63.4	45.1	53.4	64.4	61.4	58.2	66.4	67.8	66.2	49.2	58.7	50.4	54.7
Manganese	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nitrate	10	MAC	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	1	<0.06	<0.06	<0.06	0.07	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
Nitrite	1.0	MAC	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Orthophosphate	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	7.85	7.9	7.82	7.69	7.99	7.59	7.62	7.58	7.67	7.75	7.98	7.91	7.67	7.60	7.77	7.93	7.46	7.84	7.83	7.77	7.88	7.98	7.91
Phenols	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus	NV	NV	0.026	<0.009	<0.009	0.019	0.013	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus (Dis)	NV	NV	----	----	----	----	----	<0.009	<0.009	0.014	0.025	0.009	0.003	<0.009	0.008	<0.003	<0.003	<0.003	0.007	<0.003	0.015	0.011	0.014	0.006	0.004
Phosphorus (Tot)	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Potassium	NV	NV	17.9	16.2	18	11.4	10.7	12.5	9.60	13.6	12.40	13.4	9.53	12.0	12.90	13.40	13.10	13.9	13.5	12.6	10.3	11.1	12.7	11.1	7.83
Silver	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	200	AO	23.5	15	20.7	13.3	27.5	13.8	29.4	13.7	19.1	13.1	21.8	12.7	14.3	14.2	15.5	13.6	16.3	14.2	16.1	12.1	13.8	10.6	15.8
Sulphate	500	AO	160	70	120	72	81	88	72	<2	70	89	68	81	120	81	78	87	71	57	61	93	88	68	52
Sulphide	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV	NV	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	<0.5
Vanadium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	5.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-23	TW-23	TW-24	TW-24	TW-24	TW-24	TW-24	TW-24	TW-24	TW-24	TW-24	TW-24	TW-24	TW-24	TW-24	TW-24	TW-24	TW-24	TW-24	TW-24	TW-24	TW-24
			4-22-2025	9-9-2025	5-7-1997	12-18-1997	5-7-1998	12-17-1998	5-21-1999	12-2-1999	5-31-2000	11-30-2000	11-11-2002	5-29-2003	11-27-2003	6-1-2004	11-24-2004	6-24-2005	11-14-2005	5-24-2006	10-25-2006	5-3-2007	11-15-2007	4-24-2008	10-14-2008
Alkalinity	30-500	OG	579	711	355	347	355	414	495	448	406	460	390	858	440	396	403	419	396	363	403	400	436	458	438
Aluminum	0.1	OG	----	----	----	0.493	----	ND	0.15	0.04	ND	ND	0.49	0.19	0.09	0.53	0.07	----	----	----	----	----	----	----	----
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	<0.1	2.2	0.07	0.07	ND	ND	0.05	0.02	0.03	ND	0.4	22.2	<0.1	0.8	0.9	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Barium	1.0	MAC	----	----	0.164	0.056	----	0.069	0.058	0.054	0.805	0.044	0.061	0.04	0.039	0.035	0.027	----	----	----	----	----	----	----	----
Beryllium	NV	NV	----	----	----	----	----	ND	ND	0.0011	ND	ND	<0.005	<0.005	<0.005	<0.005	<0.005	----	----	----	----	----	----	----	----
Bismuth	NV	NV	----	----	----	----	----	ND	ND	ND	ND	ND	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	----	----	----	----	----	----	----	----
Boron	5.0	IMAC	----	----	0.02	0.02	----	ND	ND	0.02	0.17	ND	0.02	<0.05	<0.05	<0.05	<0.01	----	----	----	----	----	----	----	----
Cadmium	0.005	MAC	----	----	----	----	----	ND	ND	ND	ND	ND	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	----	----	----	----	----	----	----	----
Calcium	NV	NV	191	165	109	95.1	101	141	163	144	113	129	236	144	128	133	102	115	113	103	120	130	107	122	116
Chloride	250	AO	16	19	22.6	9.2	14.9	33.5	18.5	21.1	9	11.8	9.1	51	6.6	4.3	12	7.8	6.1	4.9	5.0	7.1	15.0	8.5	6.4
Chromium	0.05	MAC	----	----	----	----	----	ND	ND	ND	ND	ND	0.005	0.003	0.003	0.01	0.003	----	----	----	----	----	----	----	----
Cobalt	NV	NV	----	----	----	----	----	ND	ND	ND	ND	ND	0.001	0.002	0	0.0014	<0.0003	----	----	----	----	----	----	----	----
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	1230	1270	711	656	696	943	1090	993	742	777	861	1550	827	711	782	838	793	663	803	861	882	870	791
Copper	1.0	AO	----	----	----	----	----	ND	ND	ND	ND	ND	0.018	0.0064	0.0015	0.0039	0.0009	----	----	----	----	----	----	----	----
DOC	5.0	AO	6	4	1.2	1.1	1.6	1.4	1.7	2.6	2.4	2.1	2.9	1.9	2.1	1.4	2	1.7	2.2	1.6	2.3	1.2	<1	1.8	2.7
Fluoride	1.5	MAC	----	----	----	----	ND	ND	ND	ND	ND	ND	0.04	0.04	<0.06	0.06	<0.06	----	----	----	----	----	----	----	----
Hardness	80 - 100	OG	687	640	420	359	839	559	615	530	412	480	838	1270	467	480	371	420	411	370	439	465	409	444	422
Iron	0.3	AO	----	----	----	0.103	0.047	ND	0.06	ND	ND	ND	1.11	2.49	0.18	0.89	0.08	<0.02	<0.02	----	----	----	----	----	----
Lead	0.01	MAC	----	----	----	----	----	ND	ND	ND	ND	ND	0.0038	0.0008	0.0004	0.0022	0.0004	----	----	----	----	----	----	----	----
Magnesium	NV	NV	51.2	55.2	39	29.7	33.5	50.6	50.5	41.4	31.2	38.1	60.2	37.2	35.7	35.3	28.6	32.4	31.4	27.5	34.0	33.8	34.4	33.7	32.5
Manganese	0.05	AO	----	----	0.025	0.032	0.031	0.04	0.05	0.008	0.007	0.019	0.27	0.16	0.017	0.16	0.013	----	----	----	----	----	----	----	----
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	----	----	----	----	----	ND	ND	0.13	0.02	ND	<0.0003	0.0004	<0.0003	<0.0003	<0.0003	----	----	----	----	----	----	----	----
Nickel	NV	NV	----	----	----	----	----	ND	ND	ND	ND	ND	0.004	0.003	<0.001	0.02	<0.001	----	----	----	----	----	----	----	----
Nitrate	10	MAC	<0.06	<0.06	0.05	----	ND	ND	ND	ND	ND	ND	0.08	0.23	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrite	1.0	MAC	<0.03	<0.03	----	----	ND	ND	ND	ND	ND	ND	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
Orthophosphate	NV	NV	----	----	----	----	ND	ND	ND	ND	ND	ND	<0.03	----	----	----	----	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	7.96	7.75	7.38	7.6	7.29	7.7	7.4	6.99	7.66	7.35	8.03	7.79	7.71	8.05	7.81	7.87	8.04	8.21	7.99	8.18	7.88	7.54	7.54
Phenols	NV	NV	----	----	----	----	ND	0.001	ND	ND	0.003	ND	0.002	<0.002	<0.002	0.004	<0.002	----	----	----	----	----	----	----	----
Phosphorus	NV	NV	----	----	----	----	ND	ND	ND	ND	ND	ND	0.4	0.38	0.06	0.34	0.37	----	----	----	0.03	0.06	0.01	0.0.1	0.05
Phosphorus (Dis)	NV	NV	0.004	0.081	----	----	0.01	ND	----	----	----	----	----	----	----	0.07	<0.03	----	----	----	----	----	----	----	----
Phosphorus (Tot)	NV	NV	----	----	----	0.18	----	ND	----	----	----	0.08	----	----	----	----	----	0.04	0.28	0.26	----	----	----	----	----
Potassium	NV	NV	10.6	9.39	3.7	1.1	ND	2.7	3.3	2	1	1	1.93	1.98	2.14	1.18	1.21	1.39	1.32	1.17	1.25	1.36	1.27	1.38	1.7
Silver	NV	NV	----	----	----	----	----	ND	ND	ND	ND	ND	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	----	----	----	----	----	----	----	----
Sodium	200	AO	10.4	15.7	6.26	3.9	3.88	4.8	5.47	11.8	16.8	9	7.49	12.9	16.5	8.65	7.46	17.6	19.5	12.4	14.3	13.2	10.7	17.4	14.4
Sulphate	500	AO	130	62	36.8	28.6	32.7	105	53.9	88.3	39.1	46.6	93	19	35	22	38	35	39	26	39	40	66	54	38
Sulphide	0.05	AO	----	----	----	----	----	----	----	----	----	----	<0.12	<0.6	<0.02	<0.02	<0.02	<0.02	<0.02	----	----	----	----	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	----	----	----	----	----	ND	ND	ND	ND	ND	<0.1	<0.1	<0.1	<0.1	<0.1	----	----	----	----	----	----	----	----
Titanium	NV	NV	----	----	----	----	----	ND	ND	ND	ND	ND	0.005	<0.003	<0----.003	0.005	<0.003	----	----	----	----	----	----	----	----
TKN	NV	NV	<0.5	2.5	0.47	0.16	0.31	0.15	0.13	0.15	0.23	0.15	0.9	23.1	<0.5	0.7	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	<0.5	<0.5
Vanadium	NV	NV	----	----	----	----	----	ND	ND	ND	ND	ND	0.012	0.009	0.009	0.0265	0.0089	----	----	----	----	----	----	----	----
Zinc	5.0	AO	----	----	----	----	----	0.01	0.38	0.017	0.209	0.011	0.05	0.005	0.002	0.006	0.004	----	----	----	----	----	----	----	----
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-24	TW-24	TW-24	TW-24	TW-24	TW-24	TW-24	TW-24	TW-24	TW-24	TW-24	TW-24	TW-24	TW-24	TW-24	TW-24	TW-24	TW-24	TW-24	TW-24	TW-24	TW-24
			4-17-2009	11-9-2009	4-19-2010	11-11-2010	4-20-2011	11-7-2011	4-12-2012	10-31-2012	4-25-2013	11-7-2013	5-7-2014	10-27-2014	4-27-2015	11-2-2015	4-13-2016	11-21-2016	5-2-2017	10-27-2017	5-11-2018	10-22-2018	4-4-2019	11-6-2019	4-14-2020
Alkalinity	30-500	OG	395	393	435	450	329	371	354	284	427	387	362	407	384	431	422	441	415	431	363	443	401	411	355
Aluminum	0.1	OG	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	0.1	<0.1	<0.1	<0.1	<0.1	0.5	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.01	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Barium	1.0	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Beryllium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	5.0	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cadmium	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Calcium	NV	NV	90.4	108	124	133	85.2	133	105	90.9	107	125	102	112	95	109	127	113	133	122	110	138	124	127	107
Chloride	250	AO	4.6	5.6	7.9	7.1	4.2	5.4	3.4	7.9	6	5.4	4.4	5.2	----	5	6	5	6	5	3	5	5	4	3
Chromium	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cobalt	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	706	824	846	870	649	770	670	652	870	790	691	764	680	853	780	810	795	793	634	844	788	842	626
Copper	1.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
DOC	5.0	AO	1.3	1.7	8.4	1.7	2.7	3.2	2.1	1.7	2.7	3.2	2.1	2.7	3.4	2.1	1.4	2	2	3	2.0	2	2.0	<1	2.0
Fluoride	1.5	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	80 - 100	OG	336	401	452	474	313	474	387	338	393	457	375	410	357	440	470	419	488	447	394	505	456	459	393
Iron	0.3	AO	----	----	----	----	----	----	----	----	----	----	----	----	0.061	----	----	0.015	----	----	0.058	0.029	----	----	----
Lead	0.01	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Magnesium	NV	NV	26.8	31.8	34.8	34.6	24.5	34.3	30.4	27	30.7	----	29.1	32	29	40.5	37.1	33.0	37.9	34.7	29.2	39.2	35.5	34.1	30.6
Manganese	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nitrate	10	MAC	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.03	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
Nitrite	1.0	MAC	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Orthophosphate	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	8.05	7.53	7.88	7.52	7.87	7.74	7.85	8.05	7.73	7.89	7.97	7.95	8.09	8.12	7.86	7.91	7.72	7.79	7.79	7.92	7.66	7.71	7.63
Phenols	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus	NV	NV	0.15	<0.01	<0.01	0.03	0.017	0.069	<0.009	<0.009	0.015	0.065	<0.009	<0.009	0.022	0.004	----	----	----	----	----	----	----	----	----
Phosphorus (Dis)	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.009	<0.009	0.022	0.033	0.004	<0.003	<0.009	0.005	0.006
Phosphorus (Tot)	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Potassium	NV	NV	1.00	1.43	1.66	1.58	0.805	1.41	0.899	1.3	1.25	1.73	1.05	1.17	0.642	1.51	1.07	1.40	1.23	1.29	0.88	1.26	1.19	1.21	0.78
Silver	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	200	AO	13.5	14.9	17.6	13.6	6.26	8.25	5.07	19.3	11.7	12.3	7.46	5.15	3.92	7..86	9.28	6.50	8.83	5.58	4.03	8.65	5.83	6.11	5.02
Sulphate	500	AO	26	40	44	50	27	35	17	57	40	39	23	39	16	43	47	45	94	40	31	68	63	58	26
Sulphide	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV	NV	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vanadium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	5.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-24	TW-24	TW-24	TW-24	TW-24	TW-24	TW-24	TW-24	TW-24	TW-24	TW-24	TW-25	TW-25	TW-25	TW-25Dup	TW-25	TW-25	TW-25	TW-25	TW-25	TW-25	TW-25
			10-21-2020	5-6-2021	12-13-2021	5-2-2022	9-14-2022	4-13-2023	11-16-2023	4-24-2024	11-15-2024	4-22-2025	9-9-2025	5-7-1997	5-7-1998	5-21-1999	5-21-1999	12-2-1999	5-31-2000	12-12-2001	12-12-2001	5-29-2002	5-29-2003	11-27-2003	6-1-2004
Alkalinity	30-500	OG	439	380	454	426	418	387	420	361	405	373	408	311	312	268	269	277	306	409	387	345	317	364	387
Aluminum	0.1	OG	----	----	----	----	----	----	----	----	----	----	----	0.136	----	0.1	0.1	ND	0.05	ND	0.44	0.26	0.89	0.36	2.79
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.19	0.05	0.04	0.04	0.02	0.03	0.08	0.2	0.4	0.2	0.1	0.6
Barium	1.0	MAC	----	----	----	----	----	----	----	----	----	----	----	0.05	----	0.066	0.063	0.083	0.547	0.052	0.05	0.067	0.057	0.076	0.059
Beryllium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND	<0.005	<0.005	<0.005	<0.005	<0.005
Bismuth	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	5.0	IMAC	----	----	----	----	----	----	----	----	----	----	----	0.03	----	ND	ND	0.05	0.2	0.05	0.05	0.06	<0.05	0.06	0.06
Cadmium	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND	<0.0001	<0.0001	<0.0001	0.0002	0.0002
Calcium	NV	NV	136	134	124	126	126	111	133	90.9	112	99.3	94.1	108	106	119	117	175	137	133	154	175	213	234	214
Chloride	250	AO	4	3	6	5	4	12	6	4	6	8	5	56.2	75.9	69.5	67.2	59.7	31.2	47.4	61	62	31	36	36
Chromium	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	0.01	0.01	ND	ND	ND	0.005	0.003	0.008	0.003	0.011
Cobalt	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	0.02	0.02	ND	ND	ND	0.055	0.001	0.001	0.001	0.0021
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	854	716	769	755	837	708	812	631	724	707	741	726	794	825	826	1300	862	953	883	939	717	878	859
Copper	1.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	0.01	0.01	ND	0.004	ND	0.0031	0.011	0.0077	0.0072	0.0098
DOC	5.0	AO	2	2	12	2	1	2	1	2	2	1	2	3.6	4.6	2.4	2.3	3.5	4.7	6.9	2.3	2.5	3.5	4.2	3.8
Fluoride	1.5	MAC	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND	ND	0.05	0.06	0.07	0.08	0.08
Hardness	80 - 100	OG	489	472	461	465	462	407	489	328	411	368	358	408	400	461	453	647	496	498	563	660	731	810	750
Iron	0.3	AO	----	----	----	----	----	----	----	----	----	----	----	0.153	0.123	0.04	0.04	ND	ND	ND	0.36	0.95	2.59	1.01	4.02
Lead	0.01	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND	0.0002	0.0019	0.0022	0.0014	0.003
Magnesium	NV	NV	36.4	33.6	36.7	36.5	36.0	31.7	38.4	24.4	31.8	29.3	29.9	28.8	32.7	40.1	39.1	51	37.5	40.1	43.4	54.2	48.5	54.6	52.2
Manganese	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	0.497	0.953	0.12	0.11	ND	0.093	0.02	0.3	0.3	0.68	0.78	1.1
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND	0.03	ND	ND	0.0004	0.0004	<0.0003	0.0003	<0.0003
Nickel	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND	0.003	0.003	0.003	0.002	0.005
Nitrate	10	MAC	<0.06	<0.06	<0.06	<0.06	0.16	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	----	0.15	ND	ND	ND	ND	ND	<0.05	0.15	<0.05	0.05	0.07
Nitrite	1.0	MAC	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	----	ND	ND	ND	ND	ND	ND	<0.06	<0.06	<0.06	<0.06	<0.06
Orthophosphate	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND	ND	<0.03	<0.03	----	----	----
pH	6.5 - 8.5	OG	8.06	8.20	7.53	7.68	7.84	7.72	7.95	7.84	7.83	7.97	7.86	7.38	7.49	7.83	7.85	7.39	7.77	7.51	8.16	8.1	7.97	7.59	8.02
Phenols	NV	NV	----	----	----	----	----	----	----	----	----	----	----	0.003	ND	ND	ND	ND	----	ND	<0.002	<0.002	<0.002	<0.002	<0.002
Phosphorus	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	0.08	ND	ND	ND	ND	ND	0.44	0.21	0.53	0.41	0.62
Phosphorus (Dis)	NV	NV	<0.003	<0.003	<0.003	<0.003	0.007	0.004	0.010	<0.003	<0.003	0.005	0.004	----	0.01	----	----	----	----	----	----	----	----	----	0.09
Phosphorus (Tot)	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	3.05	----	----	----	----	----
Potassium	NV	NV	1.13	0.81	0.98	0.768	1.11	0.825	1.27	0.683	1	0.795	0.889	3.2	2.2	2.3	2.5	3	2	2	2.33	2.74	3.42	3.51	2.69
Silver	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Sodium	200	AO	5.52	4.04	4.66	4.07	4.92	4.90	5.32	4.08	5.05	4.67	4.58	14	15.5	17.8	17	26	25.2	15.9	15.6	16.3	11.5	14.1	12.6
Sulphate	500	AO	61	24	32	23	27	39	43	18	24	24	20	38.8	27.9	119	113	388	168	106	95	120	55	77	56
Sulphide	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	<0.02	<0.02	<0.2	<0.06	<0.02
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND	<0.1	0.006	<0.1	<0.1	<0.1
Titanium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND	0.029	0.006	0.007	<0.003	0.006
TKN	NV	NV	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	0.5	0.91	0.16	0.16	0.27	----	0.44	1.1	0.7	0.8	<0.5	0.9
Vanadium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	0.005	0.0084	0.007	0.019	0.005	0.0297
Zinc	5.0	AO	----	----	----	----	----	----	----	----	----	----	----	0.007	----	0.01	0.01	0.02	0.199	0.01	0.008	0.021	0.011	0.008	0.018
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-25	TW-25	TW-25	TW-25	TW-25	TW-25	TW-25	TW-25	TW-25	TW-25	TW-25	TW-25	TW-25	TW-25	TW-25	TW-25	TW-25	TW-25	TW-25	TW-25	TW-25	TW-25
			11-24-2004	6-24-2005	11-14-2005	5-24-2006	10-25-2006	5-3-2007	11-15-2007	4-24-2008	10-14-2008	4-17-2009	11-9-2009	4-19-2010	4-20-2011	11-7-2011	4-12-2012	10-31-2012	4-25-2013	11-7-2013	5-7-2014	10-27-2014	4-27-2015	11-2-2015	4-13-2016
Alkalinity	30-500	OG	403	432	253	286	331	288	498	458	468	443	446	501	362	341	369	273	293	388	509	634	670	741	835
Aluminum	0.1	OG	0.04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	<0.1	0.1	0.2	0.2	0.2	<0.1	0.1	0.1	0.3	0.1	0.5	0.8	0.2	0.2	<0.1	<0.1	<0.1	0.7	<0.4	1.2	1.1	3.5	3.9
Barium	1.0	MAC	0.051	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Beryllium	NV	NV	<0.005	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV	NV	<0.0003	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	5.0	IMAC	0.06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cadmium	0.005	MAC	<0.0001	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Calcium	NV	NV	137	155	110	109	123	111	139	138	146	123	156	132	124	140	139	150	129	140	144	177	186	173	233
Chloride	250	AO	44	68	80	52	65	60	92	89	65	80	89	99	99	100	110	120	120	120	130	150	171	230	270
Chromium	0.05	MAC	0.005	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cobalt	NV	NV	<0.0003	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	915	1070	815	712	894	805	1210	1110	1040	1010	1170	1200	947	1080	1080	976	990	1170	1780	1540	1700	2080	2070
Copper	1.0	AO	0.0016	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
DOC	5.0	AO	4	4.6	3.9	3.2	8.5	5.0	5.2	5.4	3.9	4.7	14.8	18.3	3.9	4.8	3.2	3.7	5.1	7.6	9.8	14.8	12.4	33.4	27.8
Fluoride	1.5	MAC	<0.06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	80 - 100	OG	505	535	384	393	439	415	519	494	545	465	593	614	469	530	534	577	504	548	562	682	742	766	936
Iron	0.3	AO	<0.02	<0.02	<0.02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1.14	----	----
Lead	0.01	MAC	<0.0002	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Magnesium	NV	NV	39.8	36.2	26.7	29.1	32.0	33.5	41.8	36.5	43.7	38.0	49.1	50.7	38.6	43.8	45.4	48.9	44.3	47.9	48.9	58.3	67.4	81.3	94.7
Manganese	0.05	AO	0.071	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	0.0009	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	NV	NV	<0.001	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nitrate	10	MAC	0.08	0.06	<0.05	0.21	<0.05	0.07	<0.05	<0.05	0.07	0.07	<0.05	<0.05	0.06	0.22	0.08	0.21	0.1	<0.06	0.1	<0.06	<0.06	0.15	<0.06
Nitrite	1.0	MAC	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.03	<0.03	<0.3	<0.03	<0.03	<0.03	<0.03
Orthophosphate	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	7.77	7.94	7.97	8.28	7.99	8.20	7.81	7.73	7.83	8.05	7.61	7.77	7.95	7.81	7.85	8.08	8.03	7.93	8.12	7.96	7.84	8.12	7.63
Phenols	NV	NV	<0.002	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus	NV	NV	0.21	----	----	----	0.04	0.04	0.04	0.02	0.08	0.10	<0.01	0.03	0.031	0.057	<0.009	<0.009	0.032	0.017	<0.009	<0.009	0.019	0.011	----
Phosphorus (Dis)	NV	NV	<0.03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.023
Phosphorus (Tot)	NV	NV	----	0.54	0.26	0.22	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Potassium	NV	NV	2.16	2.79	2.31	2.47	6.86	4.10	4.55	6.36	7.02	3.55	6.85	8.59	3.07	4.51	4.04	6.48	3.99	4.82	4.39	7.03	5.08	8.96	9.87
Silver	NV	NV	<0.0001	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	200	AO	14.9	26.7	22.5	18.9	17.8	16.5	19.2	26.1	24.9	22.7	28.6	35.9	21.8	23.6	25.3	36.1	26.3	34.4	40.2	55.2	70.5	128	148
Sulphate	500	AO	74	39	62	42	49	37	66	46	58	50	51	55	66	75	73	71	63	55	48	49	44	36	33
Sulphide	0.05	AO	<0.02	<0.2	<0.02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	<0.1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV	NV	<0.003	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV	NV	<0.5	<0.5	<0.5	<0.5	1.1	<0.5	<0.5	<0.5	<0.5	<0.5	0.9	0.8	<0.5	<0.5	<0.5	0.7	<0.5	0.6	0.6	1.7	2.4	4.2	5.1
Vanadium	NV	NV	0.0106	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	5.0	AO	0.004	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-25	TW-25	TW-25	TW-25	TW-25	TW-25	TW-25	TW-25	TW-25	TW-25	TW-25	TW-25	TW-25	TW-25	TW-25	TW-25	TW-25	TW-25	TW-26	TW-26	TW-26	TW-26
			11-21-2016	5-2-2017	10-27-2017	5-11-2018	10-22-2018	4-4-2019	11-6-2019	4-14-2020	10-21-2020	5-6-2021	12-13-2021	5-2-2022	9-14-2022	4-13-2023	11-16-2023	4-24-2024	11-15-2024	4-22-2025	9-9-2025	5-7-1997	12-18-1997	5-7-1998	12-17-1998
Alkalinity	30-500	OG	771	854	868	785	732	687	683	649	725	667	683	713	694	662	725	675	603	734	755	311	343	317	287
Aluminum	0.1	OG	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.161	1.2	----	ND
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	6.4	5.3	8.2	<0.1	10.9	9.2	10.2	8.5	10.5	7.2	8.0	6.6	6.7	6.3	6.3	4.1	5.0	3.3	4.8	0.24	0.18	0.05	0.06
Barium	1.0	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.057	0.043	----	0.033
Beryllium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND
Bismuth	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND
Boron	5.0	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.13	0.15	----	0.11
Cadmium	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND
Calcium	NV	NV	187	221	205	237	225	204	235	218	221	235	199	227	190	206	210	175	171	195	178	91.3	88.5	89.7	87.6
Chloride	250	AO	280	280	310	310	310	290	260	220	230	210	220	230	210	300	270	230	220	200	210	9.57	6.5	4.9	5.6
Chromium	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND
Cobalt	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	2140	2010	2380	2260	2140	2050	2050	1860	2020	1850	1620	1830	1980	1830	1960	1940	1750	1820	1810	641	653	648	593
Copper	1.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND
DOC	5.0	AO	25	29.0	26	32	23	26	21	19	22	12	16	17	13	16	14	12	13	12	14	3.9	7.1	6.4	5.7
Fluoride	1.5	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.09	----	ND	ND
Hardness	80 - 100	OG	808	938	843	943	872	804	876	856	861	894	797	908	784	819	862	686	686	799	763	354	361	362	348
Iron	0.3	AO	0.334	----	----	0.129	2.980	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.645	0.786	0.297	ND
Lead	0.01	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND
Magnesium	NV	NV	82.7	93.7	80.6	85.2	75.4	71.7	70.5	75.7	75.1	74.6	73.1	83.1	75.2	74.0	82.4	60.8	63.0	75.7	77.1	31.7	34.1	33.6	31.6
Manganese	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.348	0.54	0.509	0.15
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.01	----	----	ND
Nickel	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.01	----	ND
Nitrate	10	MAC	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	0.28	<0.06	<0.06	0.16	0.67	0.41	0.19	1.17	0.64	1.04	1.15	----	----	ND	0.04
Nitrite	1.0	MAC	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.04	<0.03	<0.03	<0.03	----	----	ND	ND
Orthophosphate	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND
pH	6.5 - 8.5	OG	7.91	7.58	7.87	7.73	8.00	7.68	7.37	7.89	7.95	7.91	7.49	7.63	7.69	7.58	7.92	7.72	7.91	7.18	7.43	7.34	7.4	7.28	8
Phenols	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND
Phosphorus	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.12	ND	ND
Phosphorus (Dis)	NV	NV	<0.009	0.012	0.034	0.014	0.021	<0.009	0.011	0.012	<0.003	0.009	<0.003	0.017	0.016	0.009	0.012	0.007	0.004	0.009	0.005	----	----	0.01	ND
Phosphorus (Tot)	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1.4	----	ND
Potassium	NV	NV	13.0	10.70	14.5	14.9	19.7	17.3	16.6	17.2	20.3	18.2	18.3	16.5	16.2	13.9	15.8	11.1	11.7	12.1	12.6	2.5	1.9	1.6	2.7
Silver	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND
Sodium	200	AO	139	160	163	171	163	169	136	122	103	102	92.5	91.7	83.4	93.6	100	78.8	80.1	98.6	92.4	14.8	8.23	6.52	7.6
Sulphate	500	AO	45	<2	46	85	130	140	160	130	110	110	110	98	110	97	99	94	93	85	80	49.5	34.5	49.7	41.3
Sulphide	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND
Titanium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND
TKN	NV	NV	7.8	7.1	8.5	8.7	10.0	10.1	12.0	9.2	11.2	8.4	8.7	11.5	7.6	7.1	7.7	5.8	6	3.9	6	0.63	0.47	1.14	0.34
Vanadium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND
Zinc	5.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.008	----	----	ND
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-26	TW-26	TW-26	TW-26	TW-26	TW-26	TW-26	TW-26	TW-26	TW-26	TW-26	TW-26	TW-26	TW-26	TW-26	TW-26	TW-26	TW-26	TW-26	TW-26	TW-26	TW-26
			5-21-1999	12-2-1999	5-31-2000	11-30-2000	5-29-2002	5-29-2003	11-27-2003	6-1-2004	11-24-2004	6-24-2005	11-14-2005	5-24-2006	10-25-2006	5-3-2007	11-15-2007	4-24-2008	10-14-2008	4-17-2009	11-9-2009	4-19-2010	11-11-2010	4-20-2011	11-7-2011
Alkalinity	30-500	OG	242	262	245	264	298	794	334	340	348	305	369	395	384	529	686	908	2500	1630	1540	1260	1020	1240	1360
Aluminum	0.1	OG	0.06	ND	0.04	ND	0.45	0.92	0.26	0.66	0.39	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	0.27	0.14	0.08	0.12	0.4	0.2	<0.1	0.4	0.2	0.3	<0.1	0.3	0.3	0.2	0.2	0.2	2.2	0.9	7.0	4.9	3.3	4.6	8.5
Barium	1.0	MAC	0.043	0.027	0.447	0.027	0.039	0.034	0.032	0.039	0.033	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Beryllium	NV	NV	ND	ND	ND	ND	<0.005	<0.005	<0.005	<0.005	<0.005	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV	NV	ND	ND	ND	ND	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	5.0	IMAC	0.1	0.11	0.24	0.13	0.13	0.07	0.1	0.09	0.11	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cadmium	0.005	MAC	ND	ND	ND	ND	<0.0001	0.0002	0.0002	0.0002	0.0001	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Calcium	NV	NV	122	92.9	104	94.4	184	168	120	181	130	106	115	125	134	173	136	201	813	1220	273	284	250	268	283
Chloride	250	AO	6.5	6.3	5	5.6	10	15	9.7	9	12	14	15	13	13	41	50	54	240	250	260	180	150	210	280
Chromium	0.05	MAC	ND	ND	ND	ND	0.003	0.007	0.001	0.009	0.005	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cobalt	NV	NV	ND	ND	ND	ND	0.001	0.002	0.001	0.0018	0.0012	----	----	----	----	----	----	----	----	----	----	----	----	----	----
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	827	758	690	635	679	1460	694	694	692	779	824	857	916	1240	1340	1540	4380	2990	3100	2370	2240	2480	3020
Copper	1.0	AO	ND	ND	ND	ND	0.015	0.012	0.0039	0.0123	0.0036	----	----	----	----	----	----	----	----	----	----	----	----	----	----
DOC	5.0	AO	6	6.2	7.5	7.1	5.5	5.2	7.4	5.6	7.6	8.4	7.1	7.5	8.1	12.6	19.8	38.4	1560	156	45.8	40.4	31.2	46.3	5.8
Fluoride	1.5	MAC	ND	ND	ND	ND	0.06	0.04	0.08	0.08	0.06	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	80 - 100	OG	481	372	414	376	670	1630	463	640	499	416	442	475	519	680	534	778	3068	1220	1160	1320	1053	1310	1290
Iron	0.3	AO	0.09	0.08	0.07	0.05	1.98	2.64	1.34	2.38	1.89	0.02	<0.02	----	----	----	----	----	----	----	----	----	----	----	----
Lead	0.01	MAC	ND	ND	ND	ND	0.003	0.0025	0.0009	0.0026	0.0013	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Magnesium	NV	NV	43.2	33.9	37.3	33.9	51	51.4	39.9	46.2	42.4	35.5	37.7	39.6	44.6	60.3	46.9	67.2	252	113	116	148	104	157	142
Manganese	0.05	AO	0.38	0.263	0.327	0.208	0.54	0.56	0.36	0.625	0.347	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	ND	0.06	ND	ND	0.0008	0.0003	0.0007	<0.0003	0.0006	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	NV	NV	ND	ND	ND	ND	0.003	0.006	0.002	0.002	<0.001	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nitrate	10	MAC	ND	ND	ND	ND	0.06	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrite	1.0	MAC	ND	ND	ND	ND	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	0.25	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
Orthophosphate	NV	NV	ND	ND	ND	ND	<0.03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	7.66	7.38	7.7	7.65	8.28	7.91	7.5	8.06	7.84	7.94	7.91	8.22	7.96	8.11	7.89	7.28	7.19	7.56	7.22	7.36	7.45	7.59	7.27
Phenols	NV	NV	ND	ND	0.001	ND	<0.002	<0.002	<0.002	<0.002	<0.002	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus	NV	NV	ND	ND	ND	ND	0.35	0.78	0.13	0.62	0.19	----	----	----	0.03	0.05	0.04	0.04	0.18	0.10	0.04	0.10	0.03	0.01	0.017
Phosphorus (Dis)	NV	NV	----	----	----	----	----	----	----	0.05	<0.03	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus (Tot)	NV	NV	----	----	----	0.48	----	----	----	----	----	0.13	0.39	0.15	----	----	----	----	----	----	----	----	----	----	----
Potassium	NV	NV	3.4	2	1	1	1.65	2.57	2.15	1.43	1.53	1.56	1.61	2.11	1.81	2.66	1.95	2.78	17.4	8.88	16.3	14	10.4	9.69	16.4
Silver	NV	NV	ND	ND	ND	ND	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	200	AO	7.19	5.9	13.5	6.1	5.89	7.14	6.44	5.93	6.69	7.73	13	8.58	10.1	17.7	18.4	20.4	220	163	265	99.3	82.1	96.6	135
Sulphate	500	AO	262	152	154	106	75	150	81	44	37	97	88	120	100	85	36	31	0.3	<0.2	0.5	28	81	31	2.1
Sulphide	0.05	AO	----	----	----	----	<0.02	<0.2	<0.02	<0.06	<0.02	<0.02	<0.02	----	----	----	----	----	----	----	----	----	----	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	ND	ND	ND	ND	<0.1	<0.1	<0.1	<0.1	<0.1	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV	NV	ND	ND	ND	ND	0.006	0.018	<0.003	<0.003	0.012	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV	NV	0.33	0.41	0.56	0.39	0.8	0.6	<0.5	0.8	<0.5	0.9	<0.5	0.6	1.2	0.6	0.7	0.9	17.9	1.6	12.0	6.8	3.5	4.5	11.8
Vanadium	NV	NV	ND	ND	ND	ND	0.007	0.017	0.002	0.0265	0.0128	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	5.0	AO	0.02	0.032	0.173	0.015	0.0221	0.016	0.004	0.014	0.007	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-26	TW-26	TW-26	TW-26	TW-26	TW-26	TW-26	TW-26	TW-26	TW-26	TW-26	TW-26	TW-26	TW-26	TW-26	TW-26	TW-26	TW-26	TW-26	TW-26	TW-26	TW-26
			4-12-2012	10-31-2012	4-25-2013	11-7-2013	5-7-2014	10-27-2014	4-27-2015	11-2-2015	4-13-2016	11-21-2016	5-2-2017	10-27-2017	5-11-2018	10-22-2018	4-4-2019	11-6-2019	4-14-2020	10-21-2020	5-6-2021	12-13-2021	5-2-2022	9-14-2022	4-13-2023
Alkalinity	30-500	OG	1600	1200	1130	1270	1390	1580	1440	1390	1277	1450	1320	1440	1270	1570	1240	933	935	1300	1440	1220	1140	1070	1130
Aluminum	0.1	OG	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	27.8	19.6	16.9	18.4	43.8	29.1	16.7	13.9	20.5	26.9	29.4	32.9	8.1	54.6	49.2	31.1	28.4	48.4	63.1	59.2	46.0	42.3	53.3
Barium	1.0	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Beryllium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	5.0	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cadmium	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Calcium	NV	NV	303	262	246	276	279	297	285	225	245	247	222	239	328	276	207	183	254	268	276	230	240	226	244
Chloride	250	AO	230	240	210	310	240	350	350	300	170	270	91	260	120	230	110	66	46	160	170	150	68	85	180
Chromium	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cobalt	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	3060	2690	2630	3010	2890	3410	3250	3180	2530	2960	2150	3030	2070	2880	2110	1700	1670	2550	2810	2050	2040	2270	2260
Copper	1.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
DOC	5.0	AO	56.7	41.1	123	53.6	58.9	83.5	62.9	67.5	50.4	60	32.0	63	45.0	56	39.0	20	3.0	51	49	44	29	41	42
Fluoride	1.5	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	80 - 100	OG	1390	1420	1220	1370	1280	1450	1430	1290	1230	1250	1070	1070	1249	1193	869	703	869	1010	1130	933	907	837	923
Iron	0.3	AO	----	----	----	----	----	----	6.02	----	----	0.707	----	----	0.712	1.800	----	----	----	----	----	----	----	----	----
Lead	0.01	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Magnesium	NV	NV	153	186	146	164	141	173	175	177	147	153	125	114	105	123	85	60	57	82	106	87.1	74.7	66.0	76.5
Manganese	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nitrate	10	MAC	<0.05	<0.05	<0.06	<0.06	<0.06	0.06	0.06	0.14	<0.6	<0.06	<0.06	<0.06	0.01	<0.06	<0.06	<0.06	<0.06	0.19	<0.06	<0.06	<0.06	0.67	<0.06
Nitrite	1.0	MAC	<0.06	<0.06	<0.03	<0.03	<0.03	<0.03	<0.03	0.05	<0.3	<0.03	<0.03	<0.3	<0.3	<0.03	<0.03	<0.03	<0.03	<0.3	<0.3	<0.3	<0.3	<0.3	<0.03
Orthophosphate	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	7.2	7.78	7.84	7.40	7.59	7.47	7.39	7.53	7.33	7.27	6.96	7.37	6.96	7.15	7.26	6.82	7.27	7.35	7.50	6.87	6.80	7.47	7.01
Phenols	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus	NV	NV	0.029	0.019	0.024	0.041	0.023	0.026	0.029	0.021	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus (Dis)	NV	NV	----	----	----	----	----	----	----	----	0.024	0.024	0.016	0.023	0.243	0.032	0.016	0.008	0.011	<0.003	0.021	0.033	0.010	0.017	0.025
Phosphorus (Tot)	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Potassium	NV	NV	40.1	26.2	27.8	29.2	45.3	40.1	18.1	17.2	20.1	26.3	21.1	38.2	65.6	59.0	43.9	37.8	37.8	56.8	81.1	78.1	63.5	62.7	62.0
Silver	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	200	AO	133	173	97.6	162	142	244	195	206	121	163	114	175	113	154	95	48	42	89	113	91.3	54.0	60.4	92.5
Sulphate	500	AO	0.5	0.6	2.3	0.7	3.8	0.3	<10	<1	<10	<1	51	<2	<2	<2	<2	25	6	7	<2	<2	<2	<2	<2
Sulphide	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV	NV	34.3	25.2	18.6	17.4	41	31.5	19.8	13.4	20.4	26.5	28.4	40.2	45.7	53.3	49.5	34.3	30.0	49.8	64.5	60.6	47.1	47.8	51.0
Vanadium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	5.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-26	TW-26	TW-26	TW-26	TW-26	TW-27	TW-27	TW-27	TW-27	TW-27	TW-27	TW-27	TW-27	TW-27	TW-27	TW-27	TW-27	TW-27	TW-27	TW-27	TW-27	TW-27
			11-16-2023	4-24-2024	11-15-2024	4-22-2025	9-9-2025	5-7-1997	12-18-1997	5-7-1998	12-17-1998	5-21-1999	12-2-1999	5-31-2000	11-30-2000	5-29-2003	11-27-2003	6-1-2004	11-24-2004	6-24-2005	11-14-2005	5-24-2006	10-25-2006	5-3-2007	11-15-2007
Alkalinity	30-500	OG	640	778	1070	991	986	398	339	424	205	154	197	218	326	141	266	334	405	380	330	301	328	315	398
Aluminum	0.1	OG	----	----	----	----	----	2.19	0.584	----	ND	0.08	ND	0.03	0.05	2.16	0.88	2.65	0.03	----	----	----	----	----	----
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	32.2	24.3	37.5	37.6	38.5	0.07	0.05	ND	ND	ND	0.11	0.09	0.04	0.1	0.1	0.1	0.4	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Barium	1.0	MAC	----	----	----	----	----	0.109	0.014	----	0.009	0.006	0.006	0.537	0.484	0.02	0.045	0.034	0.01	----	----	----	----	----	----
Beryllium	NV	NV	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND	<0.005	<0.005	<0.005	<0.005	----	----	----	----	----	----
Bismuth	NV	NV	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND	<0.0003	<0.0003	<0.0003	<0.0003	----	----	----	----	----	----
Boron	5.0	IMAC	----	----	----	----	----	0.1	0.09	----	0.06	0.02	0.05	0.18	0.22	>0.05	0.05	0.05	0.08	----	----	----	----	----	----
Cadmium	0.005	MAC	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND	0.0002	0.0002	0.0002	<0.0001	----	----	----	----	----	----
Calcium	NV	NV	191	168	244	214	205	545	92.1	133	71.6	51	70.4	92.2	99.7	162	277	240	120	154	121	105	115	117	109
Chloride	250	AO	86	32	120	84	120	14.8	6.5	14.7	8.5	2.2	7.3	18.7	11.2	5.1	11	23	17	36	45	37	32	40	47
Chromium	0.05	MAC	----	----	----	----	----	0.009	----	----	ND	ND	ND	ND	ND	0.005	0.002	0.012	0.008	----	----	----	----	----	----
Cobalt	NV	NV	----	----	----	----	----	----	----	----	ND	0.01	ND	ND	ND	0.004	0.003	0.0058	<0.0003	----	----	----	----	----	----
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	1430	1460	2100	2020	1900	757	641	842	497	281	455	631	636	277	577	716	773	962	791	696	760	776	862
Copper	1.0	AO	----	----	----	----	----	0.007	----	----	ND	ND	ND	0.005	ND	0.016	0.0045	0.0069	<0.0008	----	----	----	----	----	----
DOC	5.0	AO	26	18	31	24	26	1	2.3	0.9	1.2	1.5	5.6	2.6	2.8	1.3	1.3	1.6	1.6	2.2	1.7	1.2	1.8	2.1	1.9
Fluoride	1.5	MAC	----	----	----	----	----	----	----	0.31	0.11	ND	ND	ND	ND	0.06	0.06	0.07	<0.06	----	----	----	----	----	----
Hardness	80 - 100	OG	716	550	889	789	779	446	348	493	264	180	255	331	359	583	867	850	437	541	414	356	385	389	367
Iron	0.3	AO	----	----	----	----	----	1.44	0.153	0.089	ND	0.06	ND	ND	0.03	2.82	0.4	1.94	<0.02	<0.02	<0.02	----	----	----	----
Lead	0.01	MAC	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND	0.0036	0.0019	0.0038	<0.0002	----	----	----	----	----	----
Magnesium	NV	NV	58.0	31.9	68.0	61.8	64.8	88.8	28.7	39	20.9	12.9	19.2	24.5	26.7	43.2	43	61.1	33	38.4	27.4	23.1	23.9	23.8	22.8
Manganese	0.05	AO	----	----	----	----	----	1.43	0.099	ND	0.01	0.04	ND	0.006	0.005	0.57	0.65	0.937	<0.002	----	----	----	----	----	----
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND	<0.0003	<0.0003	<0.0003	0.0026	----	----	----	----	----	----
Nickel	NV	NV	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND	0.012	0.003	0.005	<0.001	----	----	----	----	----	----
Nitrate	10	MAC	0.15	<0.06	0.70	<0.06	<0.06	0.05	----	0.06	0.25	ND	0.2	ND	ND	0.24	,0.05	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	0.25	<0.05
Nitrite	1.0	MAC	<0.03	<0.03	<0.3	<0.03	0.03	----	----	ND	ND	ND	ND	ND	ND	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
Orthophosphate	NV	NV	----	----	----	----	----	----	----	ND	ND	ND	ND	ND	ND	----	----	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	7.87	7.75	7.61	7.79	6.88	7.27	7.54	7.23	8.17	8.04	7.79	7.93	7.78	8.01	7.8	8.08	7.94	7.95	8.04	8.32	8.10	8.27	7.78
Phenols	NV	NV	----	----	----	----	----	----	0.001	ND	ND	ND	ND	0.001	ND	<0.002	<0.002	0.003	<0.002	----	----	----	----	----	----
Phosphorus	NV	NV	----	----	----	----	----	0.76	----	ND	ND	ND	ND	ND	0.1	0.19	0.24	0.76	0.23	----	----	----	0.03	0.04	0.01
Phosphorus (Dis)	NV	NV	0.015	0.005	0.011	0.013	0.011	----	1.09	ND	ND	----	----	----	----	----	----	0.17	0.03	----	----	----	----	----	----
Phosphorus (Tot)	NV	NV	----	----	----	----	----	----	1.09	----	ND	----	----	----	0.62	----	----	----	----	0.3	0.19	0.22	----	----	----
Potassium	NV	NV	44.3	29.4	45.2	44.5	47.8	1.1	----	ND	1.8	ND	1	1	ND	1.19	1.24	0.91	1.35	0.99	0.91	0.84	1.02	0.86	1.02
Silver	NV	NV	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND	<0.0001	<0.0001	<0.0001	<0.0001	----	----	----	----	----	----
Sodium	200	AO	57.0	23.5	76.9	56.2	68.7	11.9	8.86	8.89	9.3	4.04	5.7	13	22.1	2.07	6.43	6.06	9.08	12.1	16.5	12.2	16.9	11.0	14.2
Sulphate	500	AO	22	<2	<2	16	<2	44.8	27.3	62.6	46.4	10.7	36.1	118	62.6	13	47	38	36	91	44	52	27	31	23
Sulphide	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.2	<0.06	<0.02	<0.02	<0.02	<0.02	----	----	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND	<0.1	<0.1	<0.1	<0.1	----	----	----	----	----	----
Titanium	NV	NV	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND	0.038	0.003	0.016	<0.003	----	----	----	----	----	----
TKN	NV	NV	33.0	24.7	37.2	34.8	39.1	0.47	0.18	0.73	0.16	0.14	1.3	0.36	0.18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	<0.5
Vanadium	NV	NV	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND	0.014	0.003	0.0324	0.0209	----	----	----	----	----	----
Zinc	5.0	AO	----	----	----	----	----	0.022	----	----	ND	0.05	0.011	0.079	0.164	0.031	0.007	0.019	<0.001	----	----	----	----	----	----
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-27	TW-27	TW-27	TW-27	TW-27	TW-27	TW-27	TW-27	TW-27	TW-27	TW-27	TW-27	TW-27	TW-27	TW-27	TW-27	TW-27	TW-27	TW-27	TW-27	TW-27	TW-27
			4-24-2008	10-14-2008	4-17-2009	11-9-2009	4-19-2010	11-11-2010	4-20-2011	11-7-2011	4-12-2012	10-31-2012	4-25-2013	11-7-2013	5-7-2014	10-27-2014	4-27-2015	11-2-2015	4-13-2016	11-21-2016	5-2-2017	10-27-2017	5-11-2018	10-22-2018	4-4-2019
Alkalinity	30-500	OG	397	364	395	342	450	565	445	435	395	311	454	347	405	371	490	676	654	675	788	995	907	1150	320
Aluminum	0.1	OG	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	<0.1	0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.4	<0.1	0.1	0.2	<0.1	0.2	0.4	1.0	47	13.0	3.2
Barium	1.0	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Beryllium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	5.0	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cadmium	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Calcium	NV	NV	137	122	114	111	151	189	128	135	121	158	184	161	130	117	107	170	197	155	258	228	281	240	80
Chloride	250	AO	55	62	48	51	63	110	63	40	38	160	170	160	87	160	91	260	180	200	260	300	290	360	35
Chromium	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cobalt	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	910	823	817	832	1020	1390	971	1000	850	1140	1480	1300	1100	1050	1340	2130	1750	1700	2050	2600	2290	2810	807
Copper	1.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
DOC	5.0	AO	2.6	2.8	1.4	1.6	13.4	6.4	5.2	4.1	3.2	3.3	8.2	3.2	4.8	7.6	10	26	11.2	33	25.0	42	30.0	65	6.0
Fluoride	1.5	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	80 - 100	OG	459	410	395	380	517	657	461	479	437	564	647	547	439	403	408	704	755	599	1020	911	976	994	316
Iron	0.3	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.055	----	----	0.115	----	----	0.058	0.372	----
Lead	0.01	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Magnesium	NV	NV	28.2	25.6	26.7	24.8	34.0	45.2	34.5	34.3	32.7	41.4	45.3	35.3	27.8	26.9	34.4	67.8	66.2	51.4	90.6	83.1	66.9	95.8	28.0
Manganese	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nitrate	10	MAC	0.19	<0.05	<0.05	<0.05	0.40	<0.05	0.14	<0.05	<0.05	0.9	0.20	<0.06	0.12	<0.06	<0.06	0.11	0.10	<0.06	<0.06	<0.06	0.20	<0.06	0.54
Nitrite	1.0	MAC	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.3	<0.03	0.04	0.09
Orthophosphate	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	7.70	7.77	8.00	7.46	7.81	7.57	7.86	7.68	7.64	7.93	7.80	7.79	7.91	8.04	8	8.09	7.79	7.75	7.35	7.59	7.33	7.72	7.72
Phenols	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus	NV	NV	<0.01	0.06	0.08	<0.01	<0.01	0.02	0.01	0.04	<0.009	<0.009	<0.009	0.038	<0.009	0.022	0.025	0.021	----	----	----	----	----	----	----
Phosphorus (Dis)	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.028	0.031	0.033	0.030	0.295	0.062	0.022
Phosphorus (Tot)	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Potassium	NV	NV	1.07	1.31	0.99	1.29	1.89	2.25	1.51	2.08	2.09	4.07	4.06	3.46	2.89	3.24	2.11	4.44	6.88	8.71	12.20	18.10	17.40	34.10	13.70
Silver	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	200	AO	15.1	26.0	15.2	16.4	25.2	46.9	38.1	32.1	30.9	41.7	70.1	44.4	61.5	56.6	70.6	179	129	137	175	204	160	288	41
Sulphate	500	AO	49	35	26	21	25	55	25	32	53	52	90	87	59	14	46	58	64	19	500	86	170	67	45
Sulphide	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV	NV	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	0.9	1.6	1.0	1.7	0.7	0.9	1.4	14.4	3.9
Vanadium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	5.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-27	TW-27	TW-27	TW-27	TW-27	TW-27	TW-27	TW-27	TW-27	TW-27	TW-27	TW-27	TW-27	TW-28	TW-28	TW-28	TW-28	TW-28	TW-28	TW-28	TW-28	TW-28	TW-28
			11-6-2019	4-14-2020	10-21-2020	5-6-2021	12-13-2021	5-2-2022	9-14-2022	4-13-2023	11-16-2023	4-24-2024	11-15-2024	4-22-2025	9-9-2025	5-7-1997	12-18-1997	5-7-1998	12-17-1998	5-21-1999	12-2-1999	5-31-2000	11-30-2000	12-12-2001	5-29-2002
Alkalinity	30-500	OG	779	865	1460	987	958	1040	1270	602	677	1030	985	475	752	288	299	268	277	216	227	207	260	283	288
Aluminum	0.1	OG	----	----	----	----	----	----	----	----	----	----	----	----	----	0.198	1.93	----	ND	0.18	ND	0.07	0.07	1.01	0.55
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	18.4	26.8	57.9	38.2	50.8	31.2	49.9	17.9	11.0	24.3	41.2	20.6	14	0.26	0.16	ND	0.02	0.06	0.12	0.05	0.08	0.1	0.2
Barium	1.0	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	0.049	0.093	----	0.031	0.036	0.032	0.578	0.023	0.028	0.044
Beryllium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND	<0.005	<0.005
Bismuth	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND	<0.0003	<0.0003
Boron	5.0	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	0.09	0.09	----	0.08	0.07	0.1	0.18	0.08	0.07	0.12
Cadmium	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND	<0.0001	<0.0001
Calcium	NV	NV	181	212	252	235	239	165	217	171	189	238	245	155	190	79.9	259	68.8	81	71.3	84.9	66.3	83.8	91.3	212
Chloride	250	AO	160	220	300	180	270	250	170	150	240	270	220	110	150	14.2	7	3.29	4.7	3	3.5	2.7	4.4	4.7	5.9
Chromium	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND	0.007	0.003
Cobalt	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	0.01	ND	ND	ND	0.046	0.002
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	2020	2100	3400	2280	1960	2360	2830	1690	1760	2520	2280	1270	1730	625	605	520	602	478	610	463	572	594	670
Copper	1.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	0.01	ND	ND	ND	0.0084	0.016
DOC	5.0	AO	34	1.0	54	23	31	18	44	14	12	19	22	6	13	1.8	2.7	1.4	2.1	1.8	5.7	1.9	3.2	2	2.1
Fluoride	1.5	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	0.02	0.03	ND	0.19	ND	ND	ND	ND	0.04	0.05
Hardness	80 - 100	OG	702	840	1080	904	957	662	902	609	654	824	871	540	670	320	965	282	333	291	344	265	342	376	788
Iron	0.3	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	0.298	5.43	0.288	ND	0.17	ND	0.08	0.06	0.86	1.71
Lead	0.01	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND	0.0006	0.0033
Magnesium	NV	NV	60.8	75.7	109.0	77.1	87.5	60.8	87.8	44.2	43.9	55.6	63.1	37	47.5	30.3	77.2	26.7	32	27.3	32	24	32.1	36	52.3
Manganese	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	0.125	0.725	0.037	0.02	0.08	0.063	0.015	0.028	0.025	0.38
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND	0.03	ND	ND	0.0006	<0.0003
Nickel	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND	0.003	0.003
Nitrate	10	MAC	0.08	0.25	0.13	0.47	0.10	<0.06	<0.06	5.90	0.20	0.40	0.07	3.04	0.07	0.06	0.03	0.04	0.03	0.18	ND	ND	ND	<0.05	0.05
Nitrite	1.0	MAC	<0.03	<0.3	<0.3	<0.03	<0.3	<0.3	<0.3	0.17	0.04	<0.03	<0.3	0.16	0.05	----	----	ND	ND	ND	ND	ND	ND	<0.06	<0.06
Orthophosphate	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND	ND	<0.03	<0.03
pH	6.5 - 8.5	OG	7.42	7.43	7.60	7.79	7.17	7.04	7.48	7.56	7.91	7.69	7.93	7.46	7.3	7.59	7.79	7.51	8.04	7.86	7.59	7.92	7.78	8.18	8.24
Phenols	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.001	ND	0.001	ND	ND	0.002	ND	<0.002	<0.002
Phosphorus	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.79	ND	ND	ND	ND	ND	ND	0.32	0.13
Phosphorus (Dis)	NV	NV	0.025	0.024	0.028	0.019	0.030	0.020	0.036	0.012	0.015	0.022	0.020	0.01	0.009	----	----	ND	ND	----	----	----	----	----	----
Phosphorus (Tot)	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	----	----	----	2.49	----	----
Potassium	NV	NV	40.30	49.30	82.10	56.8	66.0	47.3	68.0	33.3	27.7	37.7	48.3	27.1	28.8	3.3	2.9	1.2	2.8	2.7	2	1	2	2.06	2.21
Silver	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND	<0.0001	<0.0001
Sodium	200	AO	142	173	219	124	178	100	154	85.0	76.0	133	110	79.5	77.6	14.7	11.9	5.65	6.1	5.71	5.2	12.1	3.9	3.7	4.29
Sulphate	500	AO	150	66	100	47	100	37	77	94	110	99	73	81	110	55.2	----	29.5	55.1	44.6	100	59.6	87.4	84	84
Sulphide	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	38.1	----	----	----	----	----	----	<0.02	<0.02
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND	<0.1	<0.1
Titanium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND	0.1	0.004
TKN	NV	NV	23.3	29.2	58.4	40.8	52.2	30.0	54.1	18.7	12.3	26.4	41	19.5	14.1	0.57	0.24	6.31	0.16	0.18	0.57	0.59	0.27	1.2	<0.5
Vanadium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	ND	0.014	0.007
Zinc	5.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	0.036	0.012	----	ND	0.02	0.013	0.098	0.015	0.012	0.027
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-28	TW-28	TW-28	TW-28	TW-28	TW-28	TW-28	TW-28	TW-28	TW-28	TW-28	TW-28	TW-28	TW-28	TW-28	TW-28	TW-28	TW-28	TW-28	TW-28	TW-28	TW-28
			5-29-2003	11-27-2003	6-1-2004	11-24-2004	6-24-2005	11-14-2005	5-24-2006	10-25-2006	5-3-2007	11-15-2007	4-24-2008	4-17-2009	11-9-2009	4-19-2010	11-11-2010	4-20-2011	11-7-2011	4-12-2012	10-31-2012	4-25-2013	11-7-2013	5-7-2014	10-27-2014
Alkalinity	30-500	OG	234	285	306	331	397	424	405	365	348	325	432	524	544	921	1250	1110	497	689	592	788	724	850	698
Aluminum	0.1	OG	1.4	0.39	0.14	3.22	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	0.2	0.1	0.1	<0.1	0.1	<0.1	0.1	0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	0.6	0.9	1	3.5	5.1	12.3	19.1	17.6	15.3
Barium	1.0	MAC	0.045	0.025	0.081	0.039	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Beryllium	NV	NV	<0.005	<0.005	<0.005	<0.005	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV	NV	<0.0003	<0.0003	<0.0003	<0.0003	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	5.0	IMAC	0.06	0.08	0.08	0.1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cadmium	0.005	MAC	0.0003	<0.0001	0.0003	0.0002	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Calcium	NV	NV	361	118	593	180	104	122	119	121	98.7	83.8	103	114	157	217	275	214	110	170	179	226	193	212	184
Chloride	250	AO	4.6	5	6.6	8.8	6.6	4.1	5.5	10	10	49	27	94	150	210	240	170	44	65	75	90	59	86	77
Chromium	0.05	MAC	0.013	0.003	0.021	0.008	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cobalt	NV	NV	0	0.001	0.0047	0.0021	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	481	570	704	665	763	831	765	746	728	758	810	1100	1440	1990	2670	2130	1180	1420	1310	1660	1540	1780	1480
Copper	1.0	AO	0.024	0.0039	0.0028	0.0173	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
DOC	5.0	AO	1.3	1.7	2.1	2.4	2.9	2.7	2.8	2.4	2.5	6	3.8	23.7	38.2	67.6	61.0	45.6	13.3	8.4	24	45.2	33.8	30.2	24.2
Fluoride	1.5	MAC	0.05	0.12	0.11	<0.06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	80 - 100	OG	1310	457	1650	715	419	489	467	479	387	325	395	461	620	889	1185	903	449	691	701	829	692	742	652
Iron	0.3	AO	4.01	1.18	0.2	3.8	<0.02	<0.02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Lead	0.01	MAC	0.0056	0.0011	<0.0002	0.0039	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Magnesium	NV	NV	98.5	39.6	41.1	64.5	39	44.7	41.3	43.0	34.1	28.1	33.7	42.8	55.5	84.4	105	89.2	42	65	61.7	64.3	51.0	51.6	46.6
Manganese	0.05	AO	1.02	0.12	1.21	0.37	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	<0.0003	0.0005	0.0006	0.0003	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	NV	NV	0.01	0.001	0.006	0.004	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nitrate	10	MAC	0.08	0.35	0.2	<0.05	<0.05	<0.05	0.10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.06	0.08	0.06	<0.06
Nitrite	1.0	MAC	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.03	<0.03	0.03	<0.03
Orthophosphate	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	8.04	7.66	8.08	7.92	8	7.98	8.24	8.08	8.25	8.15	7.66	7.96	7.39	7.51	7.11	7.79	7.68	7.54	8.06	7.84	7.74	7.73	7.62
Phenols	NV	NV	<0.0023	<0.002	0.004	<0.002	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus	NV	NV	0.58	0.24	0.23	0.2	----	----	----	0.04	0.05	0.03	0.02	0.19	0.01	0.06	0.05	0.036	0.014	0.01	<0.009	0.050	0.015	0.016	<0.009
Phosphorus (Dis)	NV	NV	----	----	0.05	<0.03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus (Tot)	NV	NV	----	----	----	----	0.2	0.44	0.43	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Potassium	NV	NV	3.45	2.59	2.1	3.41	2.01	2.22	2.12	2.17	2.01	1.81	2.12	1.73	2.59	4.14	5.79	8.04	10.8	18	24.1	32.8	42.4	40	41.7
Silver	NV	NV	<0.0001	<0.0001	<0.0001	<0.0001	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	200	AO	4.66	4.06	3.96	4.22	5.92	4.71	4.39	4.73	8.09	7.61	16.9	36.4	72.3	124	194	150	56.2	56.8	52.3	69.1	52.2	64.8	49.6
Sulphate	500	AO	38	50	86	48	40	46	61	30	22	23	14	2.7	0.6	0.9	38	34	69	52	19	24	33	42	42
Sulphide	0.05	AO	<0.2	<0.06	<0.02	<0.02	<0.02	<0.02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	<0.1	<0.1	<0.1	<0.1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV	NV	0.013	<0.003	<0.003	0.089	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV	NV	<0.5	0.4	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	0.5	0.6	1.8	1.7	1.4	3.9	4.8	14.6	17.6	20	15.3
Vanadium	NV	NV	0.034	0.008	0.0595	0.0167	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	5.0	AO	0.029	0.004	0.014	0.032	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-28	TW-28	TW-28	TW-28	TW-28	TW-28	TW-28	TW-28	TW-28	TW-28	TW-28	TW-28	TW-28	TW-28	TW-28	TW-28	TW-28	TW-28	TW-28	TW-28	TW-28	TW-29
			4-27-2015	11-2-2015	4-13-2016	11-21-2016	5-2-2017	10-27-2017	5-11-2018	10-22-2018	4-4-2019	11-6-2019	4-14-2020	10-21-2020	5-6-2021	12-13-2021	5-2-2022	9-14-2022	4-13-2023	11-16-2023	4-24-2024	11-15-2024	4-22-2025	9-9-2025	11-7-2013
Alkalinity	30-500	OG	759	681	885	560	705	586	699	475	637	450	566	378	542	513	546	372	571	413	473	343	507	414	441
Aluminum	0.1	OG	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	16.5	16.8	21.5	16.3	14.8	10.3	1.2	9.0	7.7	6.7	5.9	5.4	4.8	4.1	3.7	3.4	3.4	2.6	3.2	2.6	2.3	2.2	<0.1
Barium	1.0	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Beryllium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	5.0	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cadmium	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Calcium	NV	NV	185	160	242	145	196	155	254	178	187	150	199	149	195	159	164	133	188	155	154	121	166	141	169
Chloride	250	AO	57	40	49	64	47	63	48	69	32	55	35	61	38	41	44	47	30	44	43	52	34	43	1.3
Chromium	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cobalt	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	1550	1440	1550	1220	1290	1250	1230	1130	1170	1060	1180	970	1090	902	963	919	1070	968	1030	823	1040	917	1380
Copper	1.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
DOC	5.0	AO	19.5	25.6	26.2	19	19.0	18	18.0	13	14.0	11	18.0	11	11	12	10	9	11	8	8	9	8	8	1.5
Fluoride	1.5	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	80 - 100	OG	644	574	803	479	637	507	775	548	586	452	606	453	596	493	508	407	569	480	468	367	505	440	262
Iron	0.3	AO	2.2	----	----	0.139	----	----	0.627	0.252	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Lead	0.01	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Magnesium	NV	NV	44.1	42.3	48.4	28.4	36.0	29.1	33.8	25.1	28.9	18.7	26.4	19.5	26.5	23.0	24.2	18.0	24.4	22.9	20.5	15.6	22.1	21.6	24.1
Manganese	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nitrate	10	MAC	<0.06	0.42	<0.06	0.57	<0.06	0.51	0.54	1.56	<0.06	<0.06	<0.06	0.17	0.07	<0.06	<0.06	<0.06	0.07	0.34	<0.06	<0.06	0.18	0.41	<0.06
Nitrite	1.0	MAC	<0.03	<0.03	<0.03	0.03	<0.03	<0.03	0.04	0.24	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.03	<0.03	<0.03	0.22	0.14	<0.03
Orthophosphate	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	7.53	7.72	7.28	7.42	7.16	7.51	7.21	7.80	7.48	7.46	7.89	7.78	7.74	7.11	7.40	7.64	7.18	7.90	7.75	8.03	7.93	7.39	7.92
Phenols	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus	NV	NV	0.025	0.017	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.013
Phosphorus (Dis)	NV	NV	----	----	0.011	<0.009	0.021	<0.009	0.311	0.012	<0.009	0.006	<0.003	<0.003	<0.003	<0.003	<0.003	0.011	0.009	0.019	0.006	<0.003	0.005	<0.003	----
Phosphorus (Tot)	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Potassium	NV	NV	31.9	41.9	36.4	33.0	34.5	32.0	52.5	36.4	31.1	26.4	27.6	26.7	28.4	26.1	25.1	25.0	22.6	22.2	18.1	17.9	18.4	18.7	----
Silver	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	200	AO	39.8	36.5	38.9	26.6	30.1	26.5	39.2	26.1	25.7	31.3	26.8	19.6	23.4	21.1	17.7	17.8	18.4	14.1	16.8	15.2	14.7	11.8	4.46
Sulphate	500	AO	60	29	25	45	77	46	43	140	45	82	51	76	26	40	37	36	33	53	39	33	24	47	23
Sulphide	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV	NV	18.2	18.2	22.5	16.5	16.3	13.1	10.8	10.1	8.8	7.1	6.2	5.7	6.4	4.3	4.0	4.0	5.8	3.9	4.4	3.3	2.7	2.7	<0.5
Vanadium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	5.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-29	TW-29	TW-29	TW-29	TW-29	TW-29	TW-29	TW-29	TW-29	TW-29	TW-29	TW-29	TW-29	TW-29	TW-29	TW-29	TW-29	TW-29	TW-29	TW-29	TW-29	TW-29
			5-7-2014	10-27-2014	4-27-2015	11-2-2015	4-13-2016	11-21-2016	5-2-2017	10-27-2017	5-11-2018	10-22-2018	4-4-2019	11-6-2019	4-14-2020	10-21-2020	5-6-2021	12-13-2021	5-2-2022	4-13-2023	11-16-2023	4-24-2024	11-15-2024	4-22-2025	9-9-2025
Alkalinity	30-500	OG	271	331	247	232	226	241	255	293	230	216	202	186	195	203	192	213	222	272	324	389	401	465	504
Aluminum	0.1	OG	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	<0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	9.9	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	0.1
Barium	1.0	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Beryllium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	5.0	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cadmium	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Calcium	NV	NV	83.9	104	61.5	54.3	60.1	53.7	69.5	61.0	67.3	64.5	51.2	56.1	50.9	53.6	57.3	55.2	68.6	76.8	131	140	180	166	159
Chloride	250	AO	0.6	<2	2	3	2	2	1	1	1	2	1	1	<1	<1	1	3	9	24	51	72	140	130	170
Chromium	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cobalt	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	485	573	480	461	440	428	480	475	394	372	376	362	363	376	369	360	439	534	905	1200	1350	1550	1520
Copper	1.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
DOC	5.0	AO	2	2.6	<1.0	<1	<1.0	1	2	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	1	8	11	15	23
Fluoride	1.5	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	80 - 100	OG	263	326	255	223	240	213	275	247	250	237	202	205	201	204	218	216	262	297	512	527	687	658	657
Iron	0.3	AO	----	----	0.024	----	----	0.032	----	----	0.094	1.13	----	----	----	----	----	----	----	----	----	----	----	----	----
Lead	0.01	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Magnesium	NV	NV	8.77	16.5	24.6	21.2	21.9	19.2	24.7	22.9	20.0	18.4	18.0	15.7	18.0	17.0	18.1	19.1	22.0	25.5	45.1	43.1	57.5	59	63.2
Manganese	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nitrate	10	MAC	0.21	0.24	0.32	0.28	0.50	0.18	0.33	<0.06	0.12	<0.06	0.09	0.29	0.08	<0.06	<0.06	0.07	0.10	<0.06	<0.06	<0.06	<0.06	<0.06	0.08
Nitrite	1.0	MAC	<0.03	,0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Orthophosphate	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	8.26	8.09	8.11	8.27	8.13	8.20	7.96	8.08	8.07	7.99	8.03	8.07	8.28	8.15	8.34	7.84	7.97	7.98	7.98	8.05	7.79	8.06	7.52
Phenols	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus	NV	NV	<0.009	<0.009	<0.009	0.04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus (Dis)	NV	NV	----	----	----	----	0.010	<0.009	<0.009	<0.009	0.219	0.049	<0.009	<0.003	0.004	<0.003	<0.003	<0.003	<0.003	0.011	0.018	0.017	0.016	0.029	0.036
Phosphorus (Tot)	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Potassium	NV	NV	0.737	0.855	1.06	1.04	0.993	1.05	1.010	1.24	1.170	1.11	0.964	0.55	0.758	0.81	0.84	0.80	0.772	0.814	1.44	1.04	1.42	1.39	1.38
Silver	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	200	AO	0.42	0.89	3.31	2.72	3.68	2.96	2.83	3.11	11.10	3.79	8.01	2.08	5.81	2.56	2.28	2.32	2.27	3.84	14.3	29	49.6	66.2	73.1
Sulphate	500	AO	1.7	0.24	23	13	19	14	<2	17	23	16	20	9	15	14	14	12	26	16	99	220	220	240	210
Sulphide	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV	NV	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.8	1.6	1.3	1.5	2.3
Vanadium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	5.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-30	TW-30	TW-30	TW-30	TW-30	TW-30	TW-30	TW-30	TW-30	TW-30	TW-30	TW-30	TW-30	TW-30	TW-30	TW-30	TW-30	TW-30	TW-30	TW-30		TW-31	TW-31
			11-7-2013	5-7-2014	11-9-2013	4-27-2015	11-2-2015	4-13-2016	5-2-2017	5-11-2018	4-4-2019	11-6-2019	4-14-2020	10-21-2020	5-6-2021	12-13-2021	5-2-2022	9-14-2022	4-13-2023	11-16-2023	4-24-2024	4-22-2025	11-18-2025		11-7-2013	5-7-2014
Alkalinity	30-500	OG	262	236	252	275	237	242	287	275	276	249	521	316	349	338	389	225	227	297	245	238	266		225	221
Aluminum	0.1	OG	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----
Ammonia	NV	NV	<0.1	<0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		0.1	<0.4
Barium	1.0	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----
Beryllium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----
Bismuth	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----
Boron	5.0	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----
Cadmium	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----
Calcium	NV	NV	112	83.9	63.7	83.5	62.7	76.9	93.5	120.0	79.0	85.8	102.0	106.0	129	94.5	105	64.2	73.0	99.0	81.9	67.6	76.6		65.7	64.9
Chloride	250	AO	0.6	1.1	1.2	1	6	3	4	2	2	1	1	<1	1	<1	<1	9	<1	3	<1	<1	<1		5.9	5.7
Chromium	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----
Cobalt	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----
Conductivity	NV	NV	490	466	480	480	447	440	498	483	491	455	534	556	592	490	502	490	384	531	470	391	473		430	433
Copper	1.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----
DOC	5.0	AO	2.5	1.4	<1	3.4	<1	1.2	2	2.0	2.0	3.0	2.0	2.0	2	2	2	<1	1	4	2	2	3		1.4	2.4
Fluoride	1.5	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----
Hardness	80 - 100	OG	352	243	257	264	232	242	292	362	249	262	319	321	389	293	322	245	224	307	248	209	241		234	232
Iron	0.3	AO	----	----	----	0.118	----	----	----	0.646	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----
Lead	0.01	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----
Magnesium	NV	NV	17.9	22.5	23.9	13.4	18.3	12.1	14.3	15.2	12.6	11.6	15.4	13.8	16.3	13.9	14.5	20.5	10.2	14.6	10.6	9.73	12.1		17.0	17
Manganese	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----
Molybdenum	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----
Nickel	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----
Nitrate	10	MAC	<0.06	0.45	0.45	0.15	0.2	0.08	0.07	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	0.13	<0.06	<0.06	0.38	0.09	0.16		0.15	0.67
Nitrite	1.0	MAC	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03		<0.03	<0.03
Orthophosphate	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----
pH	6.5 - 8.5	OG	8.14	8.19	8.16	8.18	8.09	8.10	7.79	7.72	7.73	7.99	7.99	7.99	8.00	7.57	7.65	8.00	8.04	8.07	8.02	8.14	8.04		8.06	8.2
Phenols	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----
Phosphorus	NV	NV	1.33	<0.009	<0.009	0.027	0.005	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		0.015	<0.009
Phosphorus (Dis)	NV	NV	----	----	----	----	----	<0.009	0.02	0.204	0.011	0.004	0.005	<0.003	0.008	0.012	<0.003	0.005	0.011	0.005	0.003	0.006	<0.003		----	----
Phosphorus (Tot)	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----
Potassium	NV	NV	----	1.14	1.23	0.563	0.901	0.560	0.803	1.110	0.616	0.861	0.765	0.900	1.02	0.65	0.746	0.745	0.614	0.706	0.702	0.914	0.651		----	----
Silver	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----
Sodium	200	AO	2.10	4.76	3.77	0.71	1.26	1.90	4.8	6.06	4.10	1.26	3.23	1.47	3.18	1.01	1.43	2.09	0.75	1.40	0.58	0.77	0.77		0.95	0.89
Sulphate	500	AO	3.8	22	19	<1	5	2	<2	8	11	3	9	7	8	<2	4	27	<2	<2	<2	<2	2		7.5	7.9
Sulphide	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----
Tin	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----
Titanium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----
TKN	NV	NV	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5
Vanadium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----
Zinc	5.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-31	TW-31	TW-31	TW-31	TW-31	TW-31	TW-31	TW-31	TW-31	TW-31	TW-31	TW-31	TW-31	TW-31	TW-31	TW-31	TW-31	TW-31	TW-31	TW-31	TW-31	TW-31
			10-27-2014	4-27-2015	11-2-2015	4-13-2016	11-21-2016	5-2-2017	10-27-2017	5-11-2018	10-22-2018	4-4-2019	11-6-2019	4-14-2020	10-21-2020	5-6-2021	12-13-2021	5-2-2022	9-14-2022	4-13-2023	11-16-2023	4-24-2024	11-15-2024	4-22-2025	9-9-2025
Alkalinity	30-500	OG	229	223	237	224	253	207	287	247	249	179	236	200	235	217	227	241	227	239	249	266	263	266	236
Aluminum	0.1	OG	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.5	<0.1	0.2	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Barium	1.0	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Beryllium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	5.0	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cadmium	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Calcium	NV	NV	67.6	57.6	62.7	67.2	62.9	67.5	64.1	94.0	79.0	55.6	73.7	69.9	70.0	69.1	66.7	78.7	67.4	74.3	76.5	75.8	73	70.7	60.3
Chloride	250	AO	8.8	6	6	7	10	8	11	14	16	15	13	19	19	6	10	16	16	18	13	11	11	13	10
Chromium	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cobalt	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	442	430	447	440	467	420	464	502	494	419	490	468	476	435	400	449	476	477	492	532	514	512	418
Copper	1.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
DOC	5.0	AO	1.3	<1.0	<1	<1.0	1	2	<1	2	1	1	<1	1	1	2	<1	2	1	1	6	1	1	2	1
Fluoride	1.5	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	80 - 100	OG	236	209	232	245	226	242	231	322	269	200	257	250	243	244	228	275	237	260	267	259	256	247	219
Iron	0.3	AO	----	0.017	----	----	0.047	----	----	0.054	0.205	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Lead	0.01	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Magnesium	NV	NV	16.2	15.9	18.3	18.9	16.7	18.0	17.3	21.3	17.5	14.8	17.8	18.3	16.5	17.5	15.0	19.0	16.8	18.0	18.6	17.0	18.0	17.1	16.6
Manganese	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nitrate	10	MAC	0.22	0.15	0.2	1.06	0.11	1.93	0.10	2.19	0.11	3.34	0.13	2.36	0.08	0.67	0.84	0.27	0.14	1.16	0.15	2.02	0.06	2.6	0.09
Nitrite	1.0	MAC	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Orthophosphate	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	8.1	8.18	8.09	8.11	8.21	8.23	7.98	8.05	7.74	8.04	7.98	8.24	8.10	8.16	7.67	7.87	7.99	7.99	8.10	8.19	8.10	8.12	8.13
Phenols	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus	NV	NV	<0.009	0.009	0.005	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus (Dis)	NV	NV	----	----	----	<0.009	<0.009	0.01	<0.009	0.147	<0.003	<0.009	<0.003	<0.003	<0.003	<0.003	0.001	0.005	0.009	0.014	0.004	0.004	<0.003	0.004	<0.003
Phosphorus (Tot)	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Potassium	NV	NV	1.01	1.15	0.901	1.24	1.26	1.45	1.14	2.15	2.26	3.27	2.65	2.61	2.07	2.25	2.39	1.75	1.29	1.93	1.52	1.49	1.01	1.47	0.84
Silver	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	200	AO	----	1.33	1.06	1.18	1.97	1.88	1.79	3.89	3.67	2.35	6.28	2.61	2.78	1.44	3.66	2.44	2.93	4.49	4.73	4.72	7.95	3.88	2.77
Sulphate	500	AO	7.6	6	5	9	12	5	8	26	10	13	8	9	8	4	4	6	7	10	9	10	11	8	4
Sulphide	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV	NV	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	<0.5
Vanadium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	5.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-32	TW-32	TW-32	TW-32	TW-32	TW-32	TW-32	TW-32	TW-32	TW-32	TW-32	TW-32	TW-32	TW-32	TW-32	TW-32	TW-32	TW-32	TW-32	TW-32	TW-32	TW-32	TW-33
			11-7-2013	5-7-2014	10-27-2014	4-27-2015	11-2-2015	4-13-2016	11-21-2016	5-2-2017	10-27-2017	5-11-2018	10-22-2018	4-4-2019	11-6-2019	4-14-2020	10-21-2020	5-6-2021	12-13-2021	11-16-2023	4-24-2024	11-15-2024	4-22-2025	9-9-2025	12-13-2021
Alkalinity	30-500	OG	237	189	252	260	254	216	267	187	240	249	256	205	224	228	248	245	276	243	262	244	214	272	295
Aluminum	0.1	OG	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Arsenic	0.025	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV	NV	<0.1	<0.04	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Barium	1.0	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Beryllium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	5.0	IMAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cadmium	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Calcium	NV	NV	71.6	52.9	74.4	75.2	65.8	67.3	70.6	60.7	68.3	89.0	70.5	67.0	70.0	69.7	75.8	77.4	88.5	76.4	85.9	74.2	61.5	69.1	87.7
Chloride	250	AO	3.0	2.4	2.3	4	2	3	4	8	9	9	4	16	2	2	1	3	11	2	11	2	6	5	<1
Chromium	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cobalt	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
COD	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV	NV	470	366	500	490	488	420	478	384	478	458	426	436	427	428	463	454	538	466	548	456	404	455	524
Copper	1.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
DOC	5.0	AO	1.5	3.9	1.3	2.6	<1	1.6	<1	2.0	<1	2.0	1	2.0	<1	1.0	1	<1	1	1	2	1	2	1	<1
Fluoride	1.5	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	80 - 100	OG	250	185	258	268	238	241	248	215	240	301	241	236	241	245	259	267	311	263	291	256	216	246	331
Iron	0.3	AO	----	----	----	0.025	----	----	0.026	----	----	0.024	0.013	----	----	----	----	----	----	----	----	----	----	----	----
Lead	0.01	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Magnesium	NV	NV	17.3	12.9	17.5	19.4	17.8	17.7	17.4	15.3	16.8	19.1	15.7	16.8	16.1	17.3	16.8	18.0	21.9	17.6	18.5	17.1	15.3	17.9	27.1
Manganese	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Mercury	0.001	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nitrate	10	MAC	3.11	0.76	0.72	1.39	0.26	1.54	1.34	3.10	3.86	2.43	0.22	3.36	0.19	0.35	1.65	1.02	4.8	0.70	5.77	0.69	1.29	1.23	<0.06
Nitrite	1.0	MAC	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.14	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Orthophosphate	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	8.03	8.15	8.13	8.14	8.01	8.00	8.09	8.23	8.02	8.03	8.09	7.99	8.08	8.24	8.10	8.21	7.91	8.14	8.07	8.09	7.76	7.73	7.79
Phenols	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus	NV	NV	<0.009	0.009	<0.009	0.009	0.009	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus (Dis)	NV	NV	----	----	----	----	----	<0.009	<0.009	<0.009	<0.009	0.176	<0.003	<0.009	0.003	0.004	<0.003	<0.003	<0.003	0.019	0.004	<0.003	0.004	<0.003	<0.003
Phosphorus (Tot)	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Potassium	NV	NV	----	0.648	0.958	0.681	0.88	0.603	0.907	0.538	0.854	0.831	0.895	0.639	0.891	0.612	0.870	0.79	0.95	0.951	0.958	0.91	0.839	0.833	0.26
Silver	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	200	AO	1.12	0.9	1.01	1.12	1.06	0.91	0.91	0.86	1.00	1.07	0.93	0.76	0.96	0.74	0.96	0.86	1.04	0.98	0.94	1.01	0.79	0.96	2.00
Sulphate	500	AO	12	7.3	12	6	10	1	10	7	8	8	7	9	9	9	10	9	11	11	9	7	8	9	<2
Sulphide	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TDS	500	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tin	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV	NV	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5
Vanadium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	5.0	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Benzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	0.024	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-33	TW-33	TW-33	TW-33	TW-33	TW-33	TW-34	TW-34	TW-34	TW-34	TW-34	TW-34	TW-34	TW-35S	TW-35S	TW-35S	TW-35S	TW-35S	TW-35S	TW-35S	TW-35I	TW-35I
			5-2-2022	4-13-2023	11-16-2023	4-24-2024	4-22-2025	9-9-2025	12-13-2021	5-2-2022	9-14-2022	4-13-2023	11-16-2023	4-24-2024	9-9-2025	12-13-2021	5-2-2022	9-14-2022	4-13-2023	11-16-2023	4-24-2024	9-9-2025	12-13-2021	5-2-2022
Alkalinity	30-500	OG	417	290	321	200	280	377	320	255	261	227	292	212	267	401	437	376	351	338	211	343	340	69*
Aluminum	0.1	OG	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Arsenic	0.025	IMAC	<0.0002	<0.0002	<0.0002	----	----	----	----	<0.0002	0.0002	<0.0002	<0.0002	----	----	----	0.0002	0.0011	0.0003	0.0002	----	----	----	0.0006
Ammonia	NV	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1
Barium	1.0	MAC	0.00425	0.00355	0.00571	----	----	----	----	0.00474	0.0103	0.00417	0.00771	----	----	----	0.0261	0.0384	0.0270	0.0273	----	----	----	0.0274
Beryllium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	5.0	IMAC	0.015	0.015	0.008	----	----	----	----	0.014	0.011	0.011	0.011	----	----	----	0.252	0.163	0.210	0.209	----	----	----	0.064
Cadmium	0.005	MAC	<0.000003	<0.000003	0.000003	----	----	----	----	0.000004	<0.000003	0.000005	0.000007	----	----	----	0.000004	0.000009	0.000014	0.000035	----	----	----	0.000003
Calcium	NV	NV	94.0	78.7	86.9	80.8	71	82	82.5	66.7	73.4	60.5	75.7	54.6	62.8	119	129	125	120	120	115	97.5	126	126
Chloride	250	AO	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	140	85	82	72	73	66	50	88	73
Chromium	0.05	MAC	0.00075	0.00073	0.00090	----	----	----	----	0.00053	0.00044	0.00037	0.00060	----	----	----	0.00031	0.00020	0.00021	0.00028	----	----	----	0.00025
Cobalt	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
COD	NV	NV	<8	<8	<8	----	----	----	----	<8	<8	<8	<8	----	----	----	<8	<8	<8	<8	----	----	----	<8
Conductivity	NV	NV	572	486	582	517	475	578	508	436	499	410	528	396	471	1060	477*	1100	924	958	909	823	824	338*
Copper	1.0	AO	0.0013	0.0032	0.0006	----	----	----	----	0.0012	0.0004	0.0003	0.0035	----	----	----	0.0014	0.0004	0.0035	0.0036	----	----	----	0.0012
DOC	5.0	AO	<1	2	<1	<1	1	1	1	<1	<1	<1	1	1	<1	2	3	3	2	2	2	2	2	2
Fluoride	1.5	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	80 - 100	OG	352	294	330	293	266	323	313	252	268	228	287	199	243	468	481	464	451	431	410	347	534	490
Iron	0.3	AO	<0.007	<0.007	0.009	----	----	----	----	<0.007	<0.007	<0.007	<0.007	----	----	----	0.028	0.026	<0.007	<0.007	----	----	----	0.187
Lead	0.01	MAC	<0.00009	0.00010	<0.00009	----	----	----	----	<0.00009	<0.00009	<0.00009	<0.00009	----	----	----	<0.00009	<0.00009	0.00012	<0.00009	----	----	----	<0.00009
Magnesium	NV	NV	28.6	23.6	27.4	22.1	21.5	28.6	25.9	20.8	20.5	18.8	23.7	15.3	21	41.1	38.8	37.1	36.7	32.3	30.1	25.2	53.0	42.6
Manganese	0.05	AO	0.00028	0.00033	0.00021	----	----	----	----	0.00123	0.00062	0.00056	0.00050	----	----	----	0.107	0.925	0.0684	0.0608	----	----	----	0.177
Mercury	0.001	MAC	<0.00001	<0.00001	<0.00001	----	----	----	----	<0.00001	<0.00001	<0.00001	<0.00001	----	----	----	<0.00001	<0.00001	<0.00001	<0.00001	----	----	----	<0.00001
Molybdenum	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nitrate	10	MAC	0.06	0.10	0.13	0.07	0.07	0.15	0.08	0.32	0.14	0.15	0.33	0.07	0.18	<0.06	0.13	0.10	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
Nitrite	1.0	MAC	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Orthophosphate	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	7.80	8.10	8.02	8.38	7.70	7.77	7.58	8.10	7.88	8.23	8.08	8.38	7.86	7.64	8.15	7.86	8.00	7.96	8.28	7.81	7.70	7.26
Phenols	NV	NV	<0.002	<0.002	<0.002	----	----	----	----	<0.002	<0.002	<0.002	<0.002	----	----	----	<0.002	<0.002	<0.002	<0.002	----	----	----	0.003
Phosphorus	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus (Dis)	NV	NV	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.005	<0.003	<0.003	0.004	0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.003	0.012	0.009
Phosphorus (Tot)	NV	NV	0.94	0.25	0.91	----	----	----	----	0.19	0.32	0.09	0.48	----	----	----	0.05	<0.03	<0.03	0.16	----	----	----	0.04
Potassium	NV	NV	0.165	0.107	0.227	0.11	0.114	0.401	0.46	0.217	0.311	0.187	0.363	0.143	0.356	3.07	1.88	2.16	1.90	2.40	1.92	3.14	6.70	1.99
Silver	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	200	AO	1.17	2.74	1.49	2.05	1.78	1.5	2.36	1.72	1.67	2.01	4.20	1.55	1.73	86.9	56.3	52.1	41.0	33.0	33.2	27.3	26.4	23.0
Sulphate	500	AO	3	3	3	<2	<2	<2	8	2	4	4	4	<2	2	110	82	91	78	85	93	53	41	83
Sulphide	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TDS	500	AO	317	329	326	----	----	----	----	211	269	257	297	----	----	----	643	677	637	569	----	----	----	560
Tin	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV	NV	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.8	<0.5	<0.5	<0.5	0.9	<0.5	<0.5	0.6	<0.5	<0.5	<0.5
Vanadium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	5.0	AO	0.004	<0.002	<0.002	----	----	----	----	0.002	<0.002	<0.002	0.002	----	----	----	0.003	<0.002	0.003	0.004	----	----	----	0.003
Benzene	0.005	MAC	<0.0005	----	----	----	----	----	----	<0.0005	<0.0005	----	----	----	----	----	<0.0005	<0.0005	----	----	----	----	----	<0.0005
1,4-Dichlorobenzene	0.005	MAC	<0.0005	----	----	----	----	----	----	<0.0005	<0.0005	----	----	----	----	----	<0.0005	<0.0005	----	----	----	----	----	<0.0005
Dichloromethane	0.05	MAC	<0.0005	----	----	----	----	----	----	<0.0005	<0.0005	----	----	----	----	----	<0.0005	<0.0005	----	----	----	----	----	<0.0005
Toluene	0.024	AO	<0.0005	----	----	----	----	----	----	<0.0005	<0.0005	----	----	----	----	----	<0.0005	<0.0005	----	----	----	----	----	<0.0005
Vinyl Chloride	0.002	MAC	<0.0002	----	----	----	----	----	----	<0.0002	<0.0002	----	----	----	----	----	<0.0002	<0.0002	----	----	----	----	----	<0.0002

Southampton Landfill
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Parameter	ODWS		TW-35I	TW-35I	TW-35I	TW-35I	TW-35I	TW-36S	TW-36S	TW-36S	TW-36S	TW-36S	TW-36S	TW-36S	TW-36I	TW-36I	TW-36I	TW-36I	TW-36I	TW-36I	TW-36I	TW-37	TW-37	TW-37
			9-14-2022	4-13-2023	11-16-2023	4-24-2024	9-9-2025	12-13-2021	5-2-2022	9-14-2022	4-13-2023	11-16-2023	4-24-2024	9-9-2025	12-13-2021	5-2-2022	9-14-2022	4-13-2023	11-16-2023	4-24-2024	9-9-2025	12-13-2021	5-2-2022	9-14-2022
Alkalinity	30-500	OG	344	345	315	346	354	407	354	331	297	308	283	281	229	1040*	206	214	209	210	230	335	464	342
Aluminum	0.1	OG	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Arsenic	0.025	IMAC	0.0017	<0.0002	0.0009	----	----	----	0.0004	0.0006	0.0004	0.0003	----	----	----	<0.0002	0.0005	0.0002	0.0003	----	----	----	0.0011	0.0033
Ammonia	NV	NV	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	0.2	<0.1	0.2	<0.1	<0.1	0.2	0.1	0.1	<0.1	0.2	<0.1	0.1	0.1	<0.1	0.2
Barium	1.0	MAC	0.0283	0.0281	0.0280	----	----	----	0.0116	0.0194	0.0109	0.00959	----	----	----	0.0149	0.0164	0.0145	0.0144	----	----	----	0.0375	0.0365
Beryllium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	5.0	IMAC	0.042	0.060	0.049	----	----	----	0.093	0.081	0.088	0.078	----	----	----	0.022	0.018	0.022	0.018	----	----	----	0.037	0.041
Cadmium	0.005	MAC	0.000003	<0.000003	0.000012	----	----	----	0.000013	0.000003	0.000003	0.000008	----	----	----	<0.000003	<0.000003	<0.000003	0.000022	----	----	----	0.000006	<0.000003
Calcium	NV	NV	126	121	117	120	107	152	114	103	95.5	83.9	94.2	72.9	51.2	68.3	65.1	64.1	63.7	63.4	61.4	84.7	74.9	70.3
Chloride	250	AO	71	82	78	79	77	20	21	18	16	17	14	12	6	6	5	9	6	5	5	66	31	25
Chromium	0.05	MAC	0.00052	0.00012	0.00021	----	----	----	0.00040	0.00023	0.00031	0.00034	----	----	----	0.00024	0.00014	0.00017	0.00018	----	----	----	0.00029	0.00031
Cobalt	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
COD	NV	NV	<8	<8	<8	----	----	----	22	<8	20	22	----	----	----	<8	<8	<8	<8	----	----	----	11	20
Conductivity	NV	NV	1010	980	966	1020	968	659	676	680	612	637	626	581	419	440	473	468	467	470	492	747	395*	695
Copper	1.0	AO	<0.0002	0.0007	0.0010	----	----	----	0.0043	0.0008	0.0053	0.0036	----	----	----	0.0004	<0.0002	0.0064	0.0007	----	----	----	0.0011	<0.0002
DOC	5.0	AO	2	2	2	2	2	7	9	6	9	5	8	5	1	2	2	2	1	2	2	8	6	8
Fluoride	1.5	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	80 - 100	OG	474	473	461	452	434	554	394	344	324	285	314	261	228	258	245	245	244	233	240	424	375	349
Iron	0.3	AO	1.18	0.091	0.176	----	----	----	0.024	0.290	0.034	0.102	----	----	----	0.142	0.611	0.246	0.836	----	----	----	0.994	3.48
Lead	0.01	MAC	<0.00009	<0.00009	<0.00009	----	----	----	<0.00009	0.00010	0.00009	<0.00009	----	----	----	<0.00009	<0.00009	0.00018	<0.00009	----	----	----	<0.00009	<0.00009
Magnesium	NV	NV	38.5	41.8	40.9	37.4	40.6	42.4	26.6	21.4	20.8	18.4	19.1	19.3	24.4	21.2	20.1	20.6	20.6	18.1	21	51.6	45.8	42.1
Manganese	0.05	AO	0.156	0.121	0.0545	----	----	----	0.218	0.863	0.0698	0.234	----	----	----	0.0156	0.0258	0.0151	0.0113	----	----	----	0.739	0.452
Mercury	0.001	MAC	<0.00001	<0.00001	<0.00001	----	----	----	<0.00001	<0.00001	<0.00001	<0.00001	----	----	----	<0.00001	<0.00001	<0.00001	<0.00001	----	----	----	<0.00001	<0.00001
Molybdenum	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nitrate	10	MAC	<0.06	<0.06	0.07	<0.06	<0.06	<0.06	0.09	0.15	0.12	<0.06	0.07	<0.06	<0.06	0.16	0.25	0.38	<0.06	0.14	<0.06	<0.06	<0.06	0.13
Nitrite	1.0	MAC	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.16	0.04	<0.03	<0.03	<0.03	<0.03	<0.03
Orthophosphate	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	7.85	8.05	7.97	7.94	7.82	7.71	8.24	8.01	8.19	8.04	8.14	7.77	7.84	7.99	7.96	8.19	7.98	8.20	7.86	7.65	8.11	7.89
Phenols	NV	NV	<0.002	<0.002	<0.002	----	----	----	<0.002	<0.002	<0.002	<0.002	----	----	----	<0.002	<0.002	<0.002	<0.002	----	----	----	<0.002	<0.002
Phosphorus	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus (Dis)	NV	NV	0.016	<0.003	0.004	<0.003	0.004	0.091	<0.003	<0.003	<0.003	<0.003	0.005	0.003	<0.003	<0.003	<0.003	0.007	0.015	<0.003	0.004	<0.003	<0.003	<0.003
Phosphorus (Tot)	NV	NV	<0.03	<0.03	0.04	----	----	----	0.53	1.58	0.44	0.72	----	----	----	1.46	<0.03	0.62	1.16	----	----	----	0.05	0.32
Potassium	NV	NV	2.18	1.85	1.99	1.92	2.17	2.31	1.28	0.977	0.916	0.724	1.03	1.09	3.09	0.782	0.826	0.697	0.643	0.685	0.65	6.74	4.33	4.63
Silver	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	200	AO	20.7	25.8	22.1	24.8	28	12.3	12.4	8.57	9.32	6.87	7.88	6.67	4.66	3.89	3.65	4.40	3.61	3.34	3.6	18.0	9.80	8.56
Sulphate	500	AO	77	82	86	91	74	23	24	26	61	55	47	40	39	47	43	49	46	49	44	14	29	16
Sulphide	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TDS	500	AO	706	617	557	----	----	----	397	414	391	394	----	----	----	271	306	303	306	----	----	----	386	417
Tin	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV	NV	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.8	0.9	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6
Vanadium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	5.0	AO	<0.002	<0.002	<0.002	----	----	----	0.005	<0.002	<0.002	<0.002	----	----	----	0.002	<0.002	0.005	<0.002	----	----	----	0.003	<0.002
Benzene	0.005	MAC	<0.0005	----	----	----	----	----	<0.0005	<0.0005	----	----	----	----	----	<0.0005	<0.0005	----	----	----	----	----	<0.0005	<0.0005
1,4-Dichlorobenzene	0.005	MAC	<0.0005	----	----	----	----	----	<0.0005	<0.0005	----	----	----	----	----	<0.0005	<0.0005	----	----	----	----	----	<0.0005	<0.0005
Dichloromethane	0.05	MAC	<0.0005	----	----	----	----	----	<0.0005	<0.0005	----	----	----	----	----	<0.0005	<0.0005	----	----	----	----	----	<0.0005	<0.0005
Toluene	0.024	AO	<0.0005	----	----	----	----	----	<0.0005	<0.0005	----	----	----	----	----	<0.0005	<0.0005	----	----	----	----	----	<0.0005	<0.0005
Vinyl Chloride	0.002	MAC	<0.0002	----	----	----	----	----	<0.0002	<0.0002	----	----	----	----	----	<0.0002	<0.0002	----	----	----	----	----	<0.0002	<0.0002

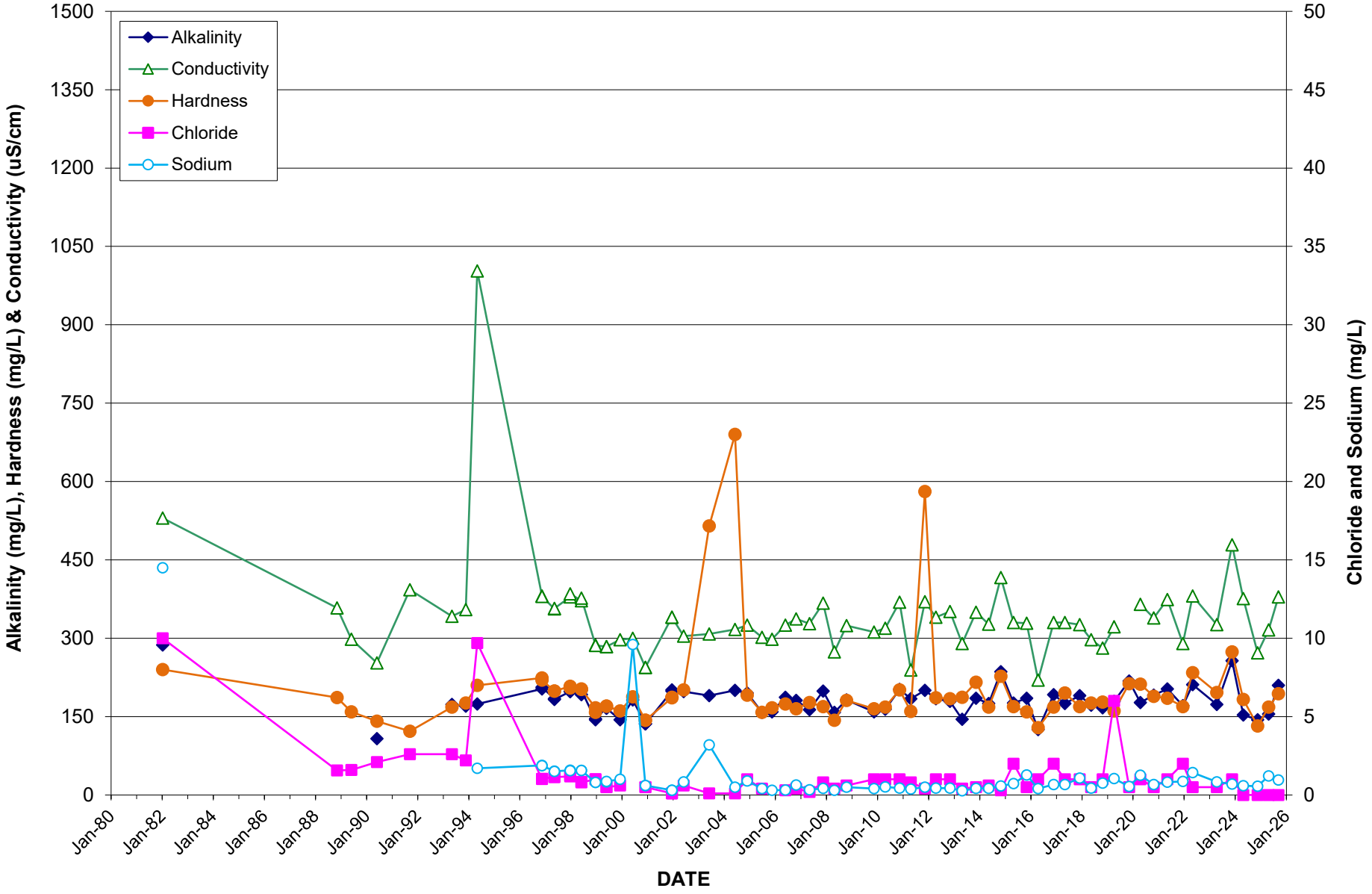
Southampton Landfill
Historical Groundwater Quality Results

Parameter	ODWS		TW-37	TW-37	TW-37	TW-37	TW-38S	TW-38S	TW-38S	TW-38S	TW-38S	TW-38S	TW-38S	TW-38I	TW-38I	TW-38I	TW-38I	TW-38I	TW-38I	TW-38I	TW-39S	TW-39S	TW-39S	TW-39S
			4-13-2023	11-16-2023	4-24-2024	9-9-2025	12-13-2021	5-2-2022	9-14-2022	4-13-2023	11-16-2023	4-24-2024	9-9-2025	12-13-2021	5-2-2022	9-14-2022	4-13-2023	11-16-2023	4-24-2024	9-9-2025	12-13-2021	9-14-2022	4-13-2023	11-16-2023
Alkalinity	30-500	OG	332	333	200	361	316	567*	213	190	196	219	193	179	380*	172	170	164	194	182	306	266	271	268
Aluminum	0.1	OG	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Arsenic	0.025	IMAC	0.0003	0.0005	----	----	----	0.0006	0.0010	0.0008	0.0018	----	----	----	0.0046	0.0029	0.0026	0.0029	----	----	----	<0.0002	<0.0002	<0.0002
Ammonia	NV	NV	<0.1	0.2	<0.1	0.2	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Barium	1.0	MAC	0.0241	0.0245	----	----	----	0.0194	0.0255	0.0151	0.0176	----	----	----	0.0388	0.0317	0.0301	0.0275	----	----	----	0.0125	0.0064	0.00782
Beryllium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	5.0	IMAC	0.040	0.043	----	----	----	0.056	0.054	0.054	0.053	----	----	----	0.177	0.160	0.188	0.193	----	----	----	0.010	0.020	0.013
Cadmium	0.005	MAC	0.000005	0.000004	----	----	----	0.000004	0.000012	0.000005	0.000010	----	----	----	0.000006	0.000012	0.000006	0.000006	----	----	----	0.000003	<0.000003	<0.000003
Calcium	NV	NV	68.2	65.7	68.9	61.9	84.3	66.1	64.4	57.6	70.2	63.9	52.8	27.2	32.8	24.0	22.6	22.8	26.3	22	78.9	77.8	78.4	81.3
Chloride	250	AO	16	17	5	5	50	29	23	19	20	28	12	45	34	27	30	23	18	12	11	5	6	13
Chromium	0.05	MAC	0.00018	0.00032	----	----	----	0.00044	0.00019	0.00016	0.00026	----	----	----	0.00089	0.00011	0.00019	0.00016	----	----	----	0.00010	0.00018	0.00010
Cobalt	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
COD	NV	NV	15	20	----	----	----	<8	<8	9	14	----	----	----	<8	<8	<8	<8	----	----	----	<8	<8	<8
Conductivity	NV	NV	649	638	645	645	655	530	544	503	486	576	469	406	647*	423	364	353	359	348	499	521	500	524
Copper	1.0	AO	0.0077	0.0016	----	----	----	0.0019	0.0036	0.0029	0.0035	----	----	----	0.0013	0.0004	0.0056	0.0008	----	----	----	0.0007	0.0013	0.0006
DOC	5.0	AO	5	5	3	6	5	4	3	3	2	3	2	2	1	2	<1	<1	1	1	1	2	1	1
Fluoride	1.5	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	80 - 100	OG	348	345	326	326	340	280	256	243	282	249	214	174	188	142	139	141	142	134	287	277	284	293
Iron	0.3	AO	0.094	0.197	----	----	----	0.070	0.031	0.016	0.014	----	----	----	0.480	0.087	0.058	0.040	----	----	----	0.015	0.007	0.014
Lead	0.01	MAC	0.00018	<0.00009	----	----	----	<0.00009	<0.00009	<0.00009	0.00034	----	----	----	0.00017	<0.00009	0.00018	<0.00009	----	----	----	<0.00009	<0.00009	<0.00009
Magnesium	NV	NV	43.2	43.9	37.5	41.7	31.4	27.9	23.0	24.0	25.8	21.6	20	25.7	25.8	20.0	20.1	20.5	18.5	19.2	21.8	20.2	21.3	22.0
Manganese	0.05	AO	0.347	0.433	----	----	----	0.0325	0.216	0.0120	0.0524	----	----	----	0.0365	0.00701	0.00616	0.0103	----	----	----	0.0112	0.00341	0.0114
Mercury	0.001	MAC	<0.00001	<0.00001	----	----	----	<0.00001	<0.00001	<0.00001	<0.00001	----	----	----	<0.00001	<0.00001	<0.00001	<0.00001	----	----	----	<0.00001	<0.00001	<0.00001
Molybdenum	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nitrate	10	MAC	<0.06	<0.06	<0.06	<0.06	0.28	0.26	0.10	<0.06	<0.06	<0.06	0.07	<0.06	0.06	<0.06	<0.06	<0.06	<0.06	<0.06	0.06	<0.06	<0.06	<0.06
Nitrite	1.0	MAC	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Orthophosphate	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	8.21	8.04	8.22	7.99	7.85	8.13	7.85	8.21	7.97	8.56	7.86	8.11	8.17	8.09	8.25	7.95	8.63	8.05	7.60	7.89	8.12	7.97
Phenols	NV	NV	<0.002	<0.002	----	----	----	<0.002	<0.002	<0.002	<0.002	----	----	----	<0.002	<0.002	<0.002	<0.002	----	----	----	<0.002	<0.002	<0.002
Phosphorus	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus (Dis)	NV	NV	0.004	<0.003	0.004	0.004	0.004	<0.003	<0.003	0.003	<0.003	0.021	<0.003	0.006	0.032	<0.003	<0.003	0.004	0.007	0.006	0.001	<0.003	0.003	<0.003
Phosphorus (Tot)	NV	NV	<0.03	0.08	----	----	----	0.05	0.12	0.68	1.28	----	----	----	<0.03	<0.03	1.00	0.16	----	----	----	0.82	0.42	0.30
Potassium	NV	NV	3.88	4.20	3.39	3.67	7.87	4.75	4.33	3.34	3.35	3.13	2.38	13.8	10.2	8.24	6.78	5.61	5.20	4.19	0.73	0.624	0.534	0.609
Silver	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	200	AO	7.79	7.17	4.75	5.32	23.9	13.4	10.4	10.2	10.4	8.1	6.37	21.8	19.5	17.1	19.9	18.1	17.2	17.8	5.79	4.09	3.20	2.66
Sulphate	500	AO	24	12	35	17	46	58	51	63	53	70	52	17	12	9	6	4	4	<2	10	6	9	6
Sulphide	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TDS	500	AO	406	346	----	----	----	331	320	329	329	----	----	----	266	231	243	180	----	----	----	297	291	271
Tin	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV	NV	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	0.5	<0.5	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vanadium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	5.0	AO	0.004	<0.002	----	----	----	0.003	<0.002	<0.002	0.004	----	----	----	0.003	<0.002	0.005	<0.002	----	----	----	0.002	<0.002	<0.002
Benzene	0.005	MAC	----	----	----	----	----	<0.0005	<0.0005	----	----	----	----	----	<0.0005	<0.0005	----	----	----	----	----	<0.0005	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	----	----	<0.0005	<0.0005	----	----	----	----	----	<0.0005	<0.0005	----	----	----	----	----	<0.0005	----	----
Dichloromethane	0.05	MAC	----	----	----	----	----	<0.0005	<0.0005	----	----	----	----	----	<0.0005	<0.0005	----	----	----	----	----	<0.0005	----	----
Toluene	0.024	AO	----	----	----	----	----	<0.0005	<0.0005	----	----	----	----	----	<0.0005	<0.0005	----	----	----	----	----	<0.0005	----	----
Vinyl Chloride	0.002	MAC	----	----	----	----	----	<0.0002	<0.0002	----	----	----	----	----	<0.0002	<0.0002	----	----	----	----	----	<0.0002	----	----

Southampton Landfill
Historical Groundwater Quality Results

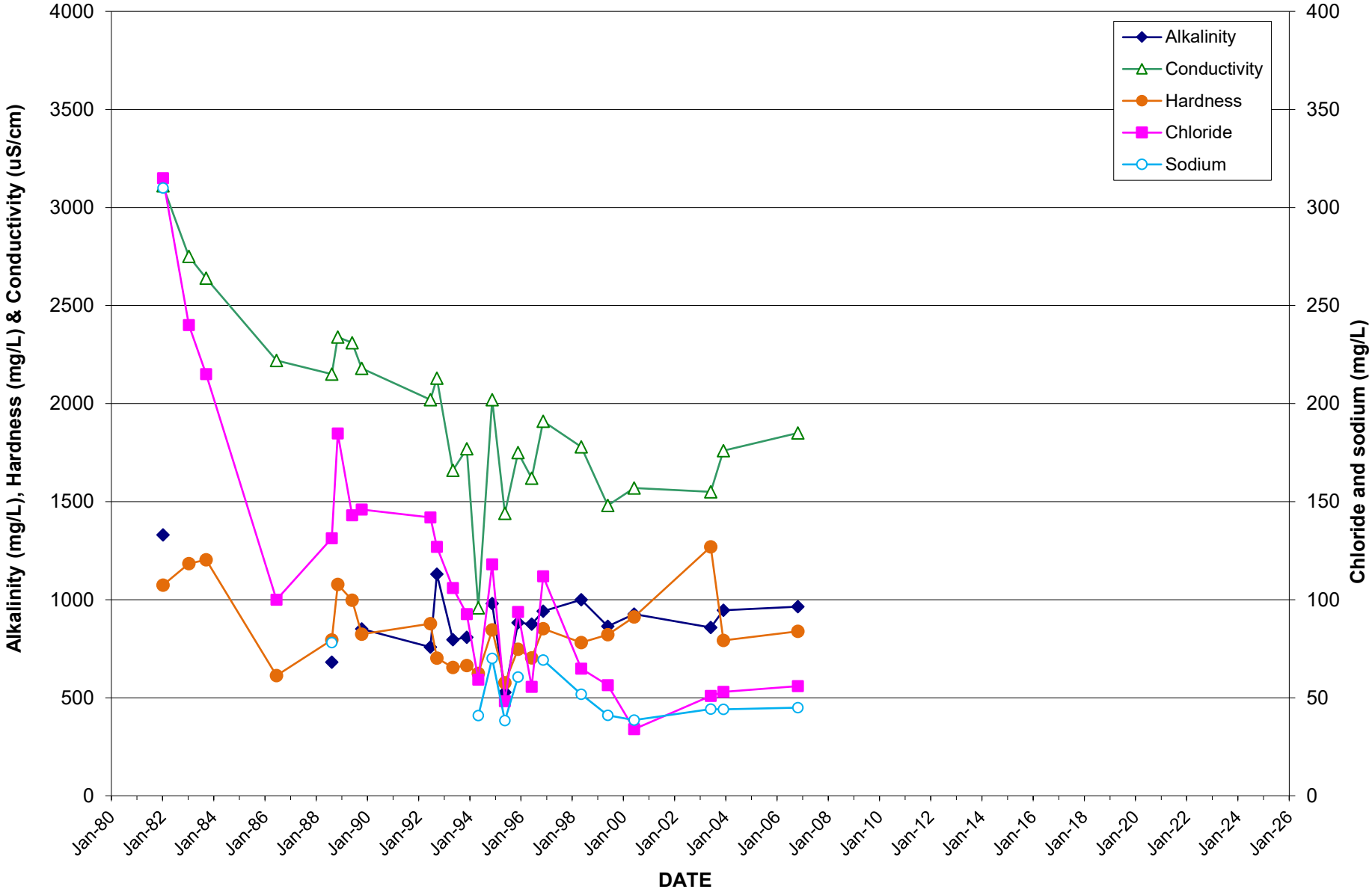
Parameter	ODWS		TW-39S	TW-39S	TW-39I	TW-39I	TW-39I	TW-39I	TW-39I	TW-39I	TW-39I	TW-40	TW-40	TW-40	TW-40	TW-40	TW-40	TW-40
			4-24-2024	9-9-2025	12-13-2021	5-2-2022	9-14-2022	4-13-2023	11-16-2023	4-24-2024	9-9-2025	12-13-2021	5-2-2022	9-14-2022	4-13-2023	11-16-2023	4-24-2024	9-9-2025
Alkalinity	30-500	OG	208	280	189	139	168	167	169	176	171	256	100*	213	231	235	210	311
Aluminum	0.1	OG	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Arsenic	0.025	IMAC	----	----	----	0.0019	0.0013	0.0010	0.0012	----	----	----	<0.0002	<0.0002	<0.0002	<0.0002	----	----
Ammonia	NV	NV	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Barium	1.0	MAC	----	----	----	0.0169	0.0174	0.0113	0.0100	----	----	----	0.00468	0.00511	0.0040	0.00463	----	----
Beryllium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	5.0	IMAC	----	----	----	0.244	0.223	0.256	0.281	----	----	----	0.015	0.006	0.013	0.010	----	----
Cadmium	0.005	MAC	----	----	----	0.000005	0.000015	0.000012	0.000003	----	----	----	<0.000003	0.000239	<0.000003	<0.000003	----	----
Calcium	NV	NV	71.8	69.7	24.5	32.0	19.3	19.1	19.8	16.6	16.3	64.0	66.0	67.8	69.2	69.8	66.6	62.9
Chloride	250	AO	3	13	54	42	31	30	21	13	8	<1	<1	<1	5	2	<1	1
Chromium	0.05	MAC	----	----	----	0.00085	0.00025	0.00028	0.00016	----	----	----	0.00039	0.00037	0.00028	0.00027	----	----
Cobalt	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
COD	NV	NV	----	----	----	<8	<8	<8	<8	----	----	----	<8	<8	<8	<8	----	----
Conductivity	NV	NV	475	534	465	1460*	407	368	361	330	323	392	352	403	389	442	397	449
Copper	1.0	AO	----	----	----	0.0016	0.0005	0.0057	<0.0002	----	----	----	0.0011	0.0025	0.0013	0.0004	----	----
DOC	5.0	AO	2	2	2	1	1	<1	<1	<1	1	<1	<1	1	1	<1	<1	1
Fluoride	1.5	MAC	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	80 - 100	OG	251	261	180	197	131	125	124	104	104	221	230	225	241	248	229	227
Iron	0.3	AO	----	----	----	0.30	0.046	0.019	0.029	----	----	----	0.068	0.010	<0.007	<0.007	----	----
Lead	0.01	MAC	----	----	----	0.00015	<0.00009	0.00017	<0.00009	----	----	----	<0.00009	<0.00009	<0.00009	<0.00009	----	----
Magnesium	NV	NV	17.5	21.1	28.7	28.5	20.1	18.8	18.2	15.1	15.4	14.9	15.7	13.5	16.7	17.9	15.2	17.1
Manganese	0.05	AO	----	----	----	0.0348	0.00752	0.00509	0.00913	----	----	----	0.0101	0.00128	0.00078	0.00462	----	----
Mercury	0.001	MAC	----	----	----	<0.00001	<0.00001	<0.00001	<0.00001	----	----	----	<0.00001	<0.00001	<0.00001	<0.00001	----	----
Molybdenum	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nitrate	10	MAC	<0.06	<0.06	<0.06	<0.06	<0.06	0.07	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
Nitrite	1.0	MAC	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Orthophosphate	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH	6.5 - 8.5	OG	8.36	7.97	8.07	7.06	8.12	8.26	8.05	8.36	7.96	7.81	7.15	7.92	8.17	8.03	8.31	7.94
Phenols	NV	NV	----	----	----	<0.002	<0.002	<0.002	<0.002	----	----	----	<0.002	<0.002	<0.002	<0.002	----	----
Phosphorus	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus (Dis)	NV	NV	0.004	<0.003	<0.003	0.034	<0.003	<0.003	0.013	<0.003	0.01	0.004	<0.003	<0.003	0.003	<0.003	<0.003	<0.003
Phosphorus (Tot)	NV	NV	----	----	----	0.75	0.55	1.64	1.07	----	----	----	0.04	1.19	1.07	0.40	----	----
Potassium	NV	NV	0.471	0.63	8.88	7.33	5.50	4.58	3.97	3.65	2.99	0.49	0.400	0.669	0.398	0.489	0.363	0.40
Silver	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	200	AO	2.01	3.4	28.8	29.0	26.9	29.6	28.4	26.6	26	0.72	0.61	1.17	0.75	0.85	0.63	0.69
Sulphate	500	AO	4	6	5	4	<2	4	<2	2	4	5	3	3	5	5	2	2
Sulphide	0.05	AO	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TDS	500	AO	----	----	----	240	240	220	177	----	----	----	263	234	260	226	----	----
Tin	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV	NV	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5
Vanadium	NV	NV	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	5.0	AO	----	----	----	0.003	<0.002	0.005	<0.002	----	----	----	0.003	0.004	<0.002	<0.002	----	----
Benzene	0.005	MAC	----	----	----	<0.0005	<0.0005	----	----	----	----	----	<0.0005	<0.0005	----	----	----	----
1,4-Dichlorobenzene	0.005	MAC	----	----	----	<0.0005	<0.0005	----	----	----	----	----	<0.0005	<0.0005	----	----	----	----
Dichloromethane	0.05	MAC	----	----	----	<0.0005	<0.0005	----	----	----	----	----	<0.0005	<0.0005	----	----	----	----
Toluene	0.024	AO	----	----	----	<0.0005	<0.0005	----	----	----	----	----	<0.0005	<0.0005	----	----	----	----
Vinyl Chloride	0.002	MAC	----	----	----	<0.0002	<0.0002	----	----	----	----	----	<0.0002	<0.0002	----	----	----	----

GROUNDWATER SAMPLING LOCATION: TW-1



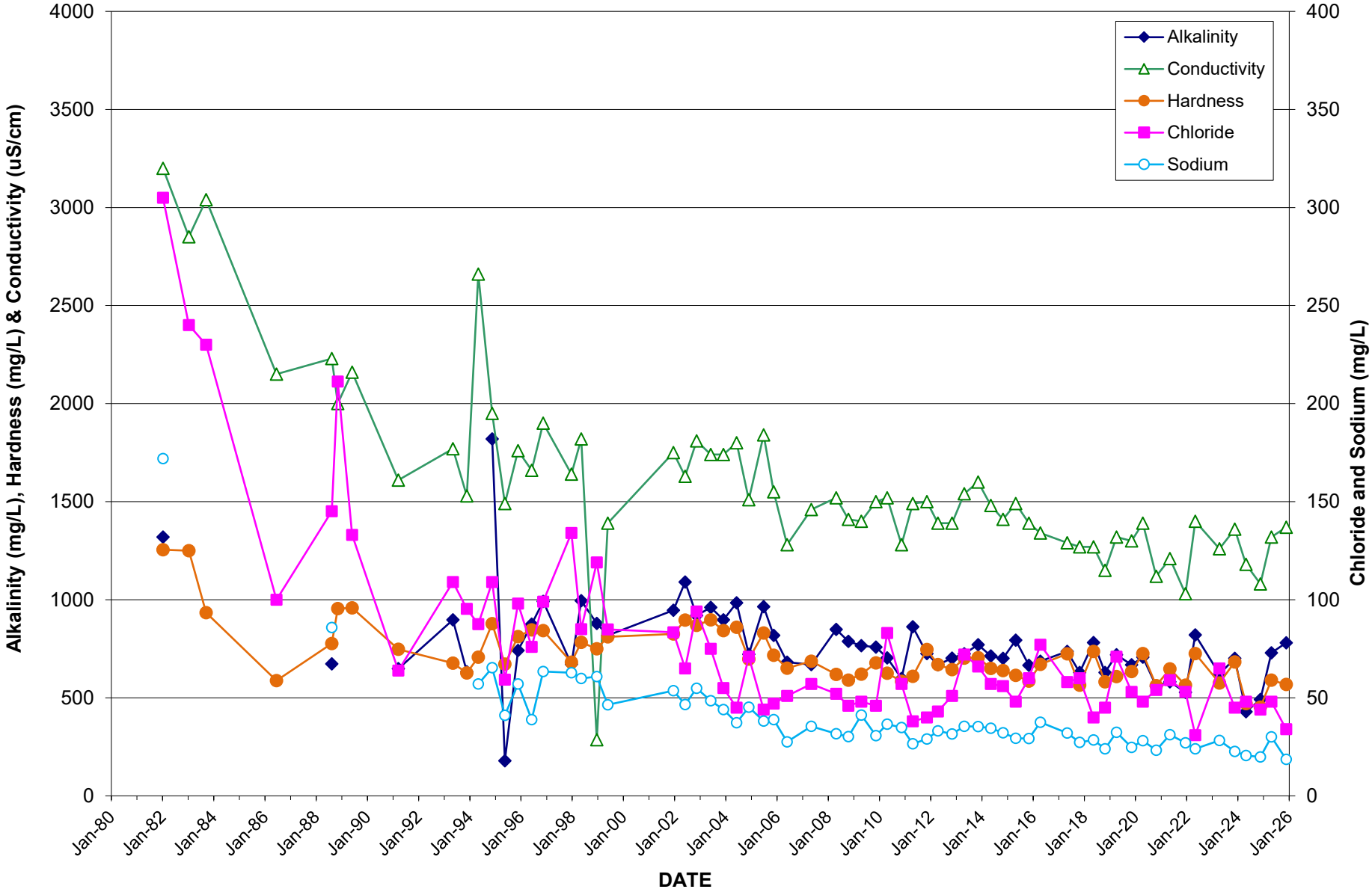
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Southampton Landfill

GROUNDWATER SAMPLING LOCATION: TW-3



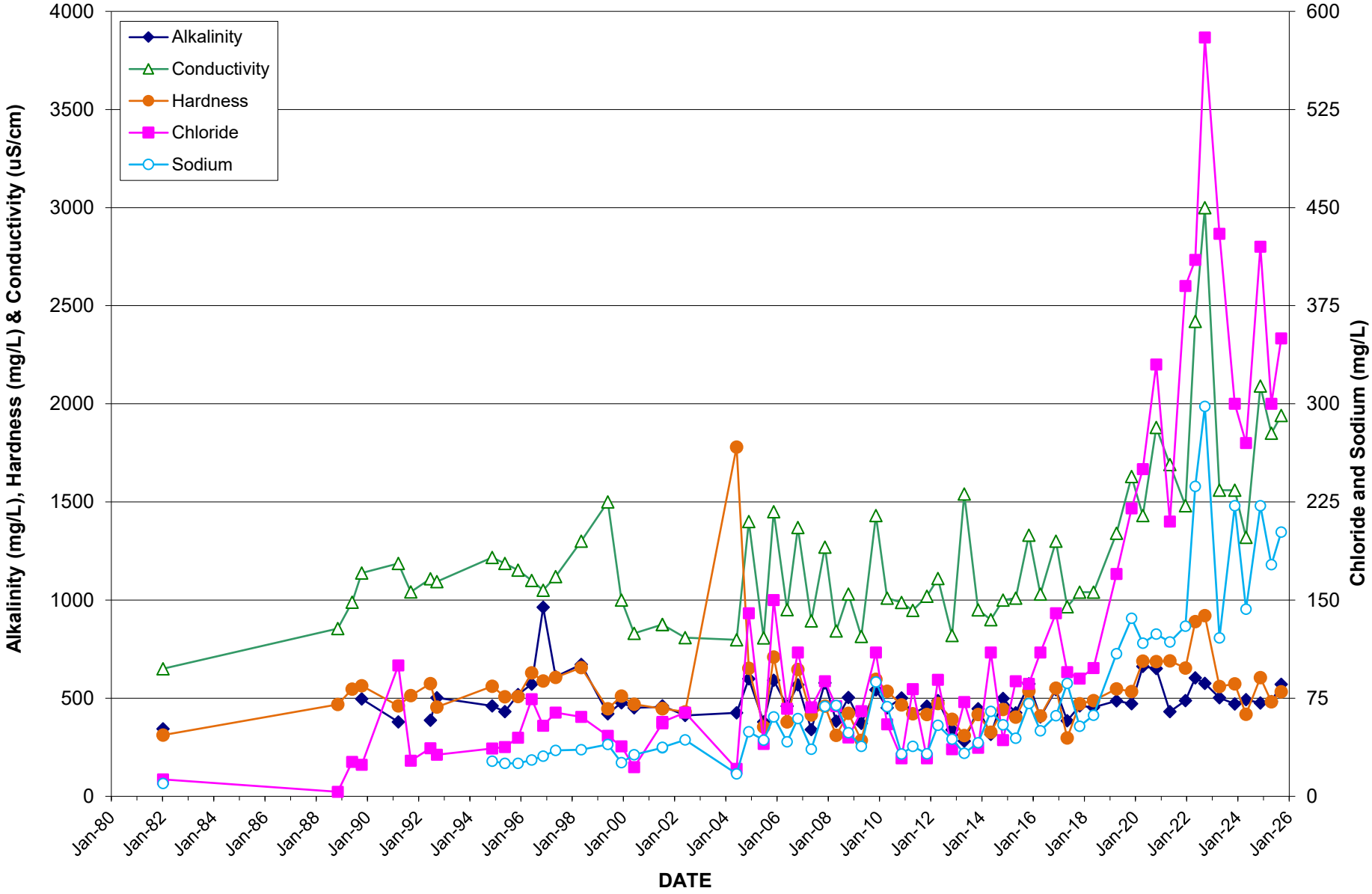
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GROUNDWATER SAMPLING LOCATION: TW-4



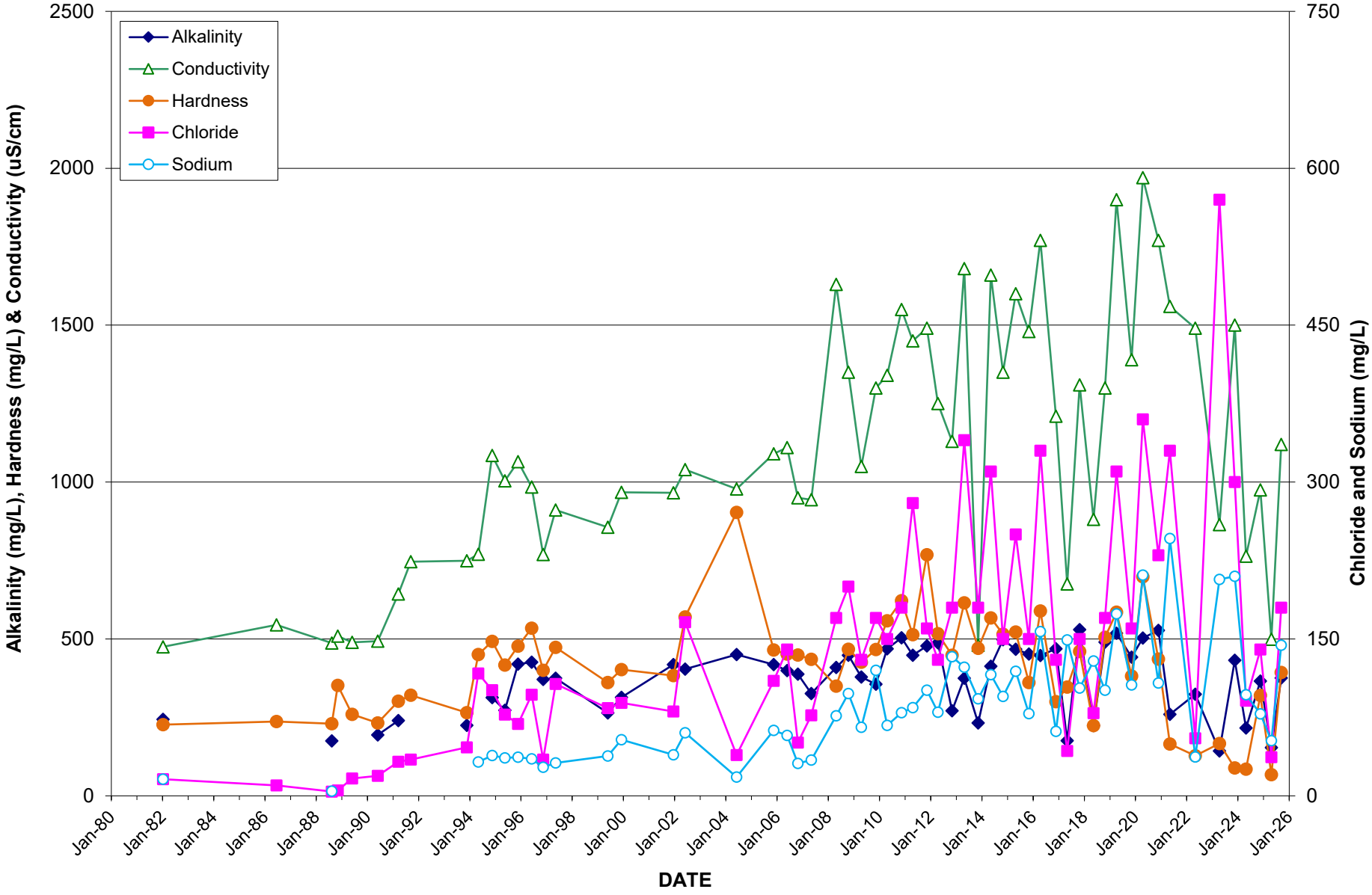
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GROUNDWATER SAMPLING LOCATION: TW-5



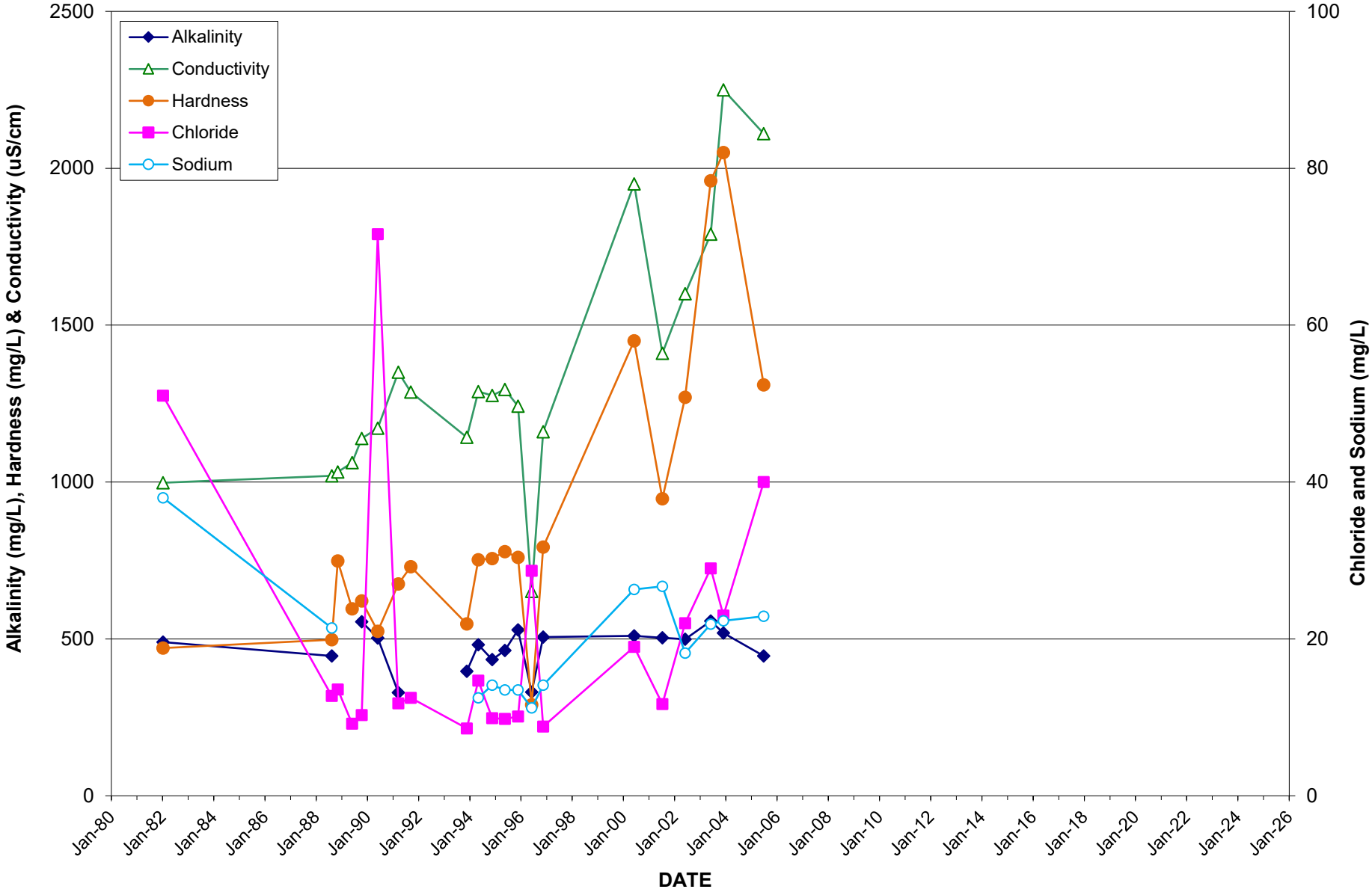
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GROUNDWATER SAMPLING LOCATION: TW-6



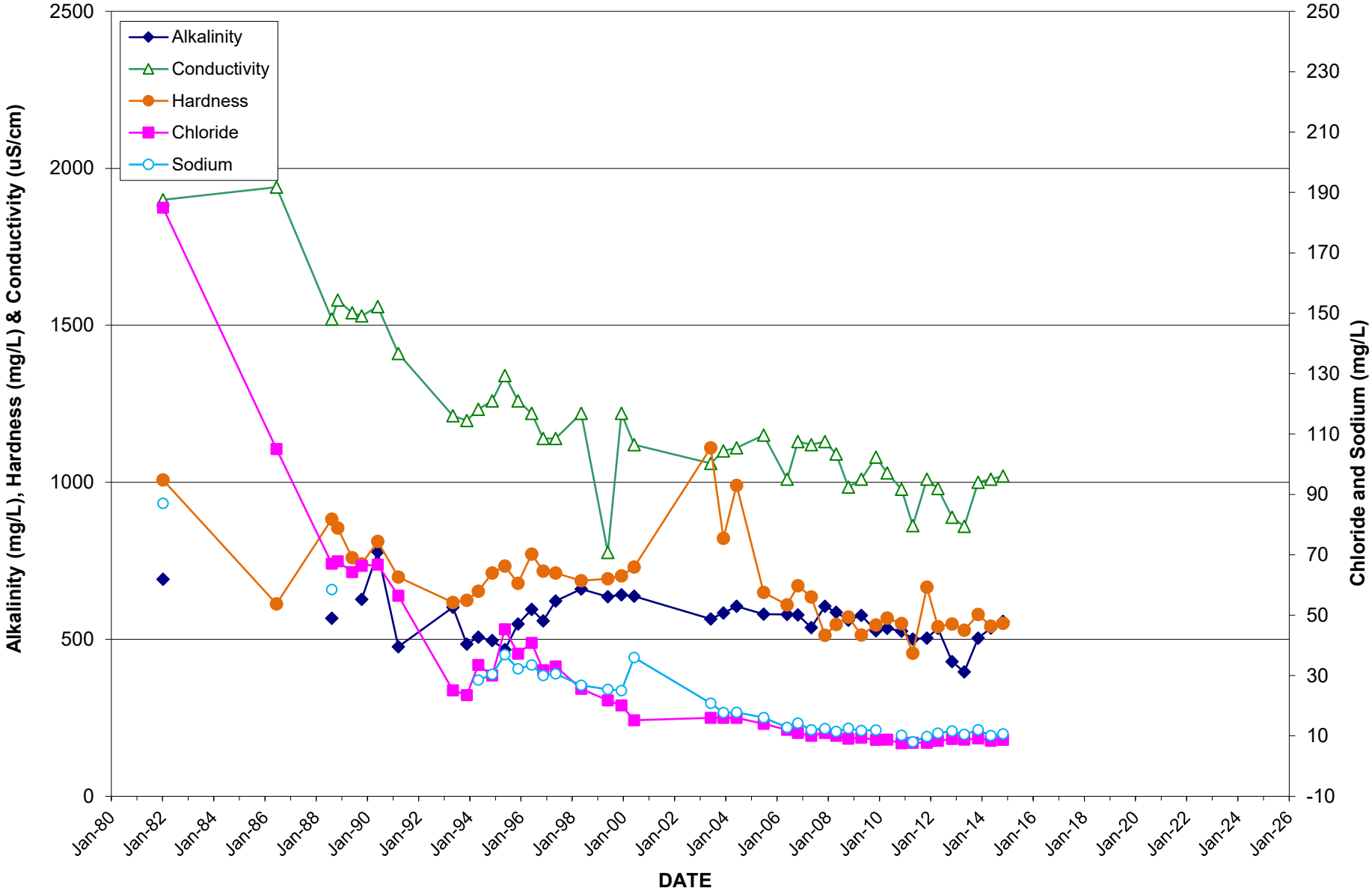
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GROUNDWATER SAMPLING LOCATION: TW-7



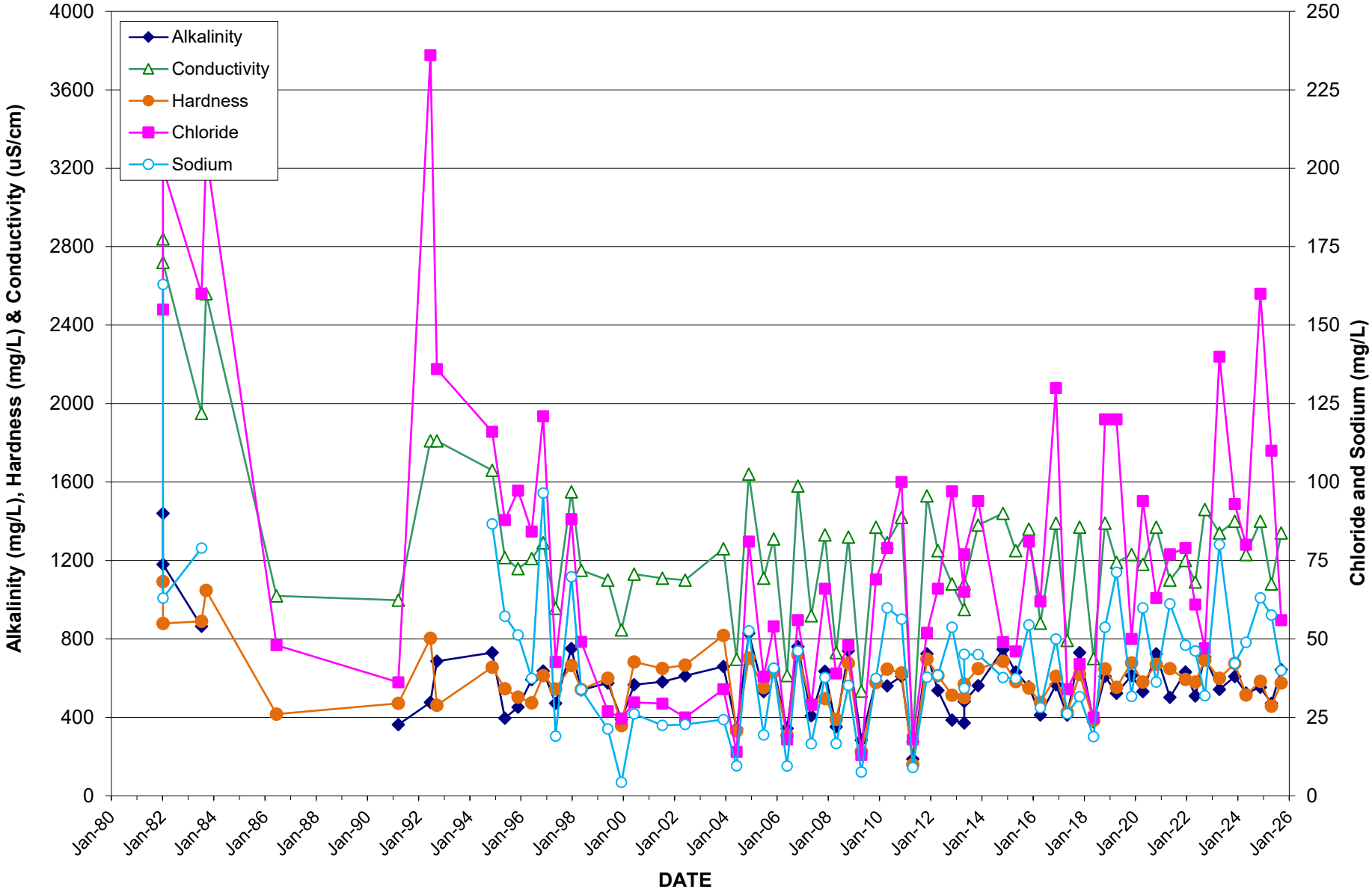
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GROUNDWATER SAMPLING LOCATION: TW-10



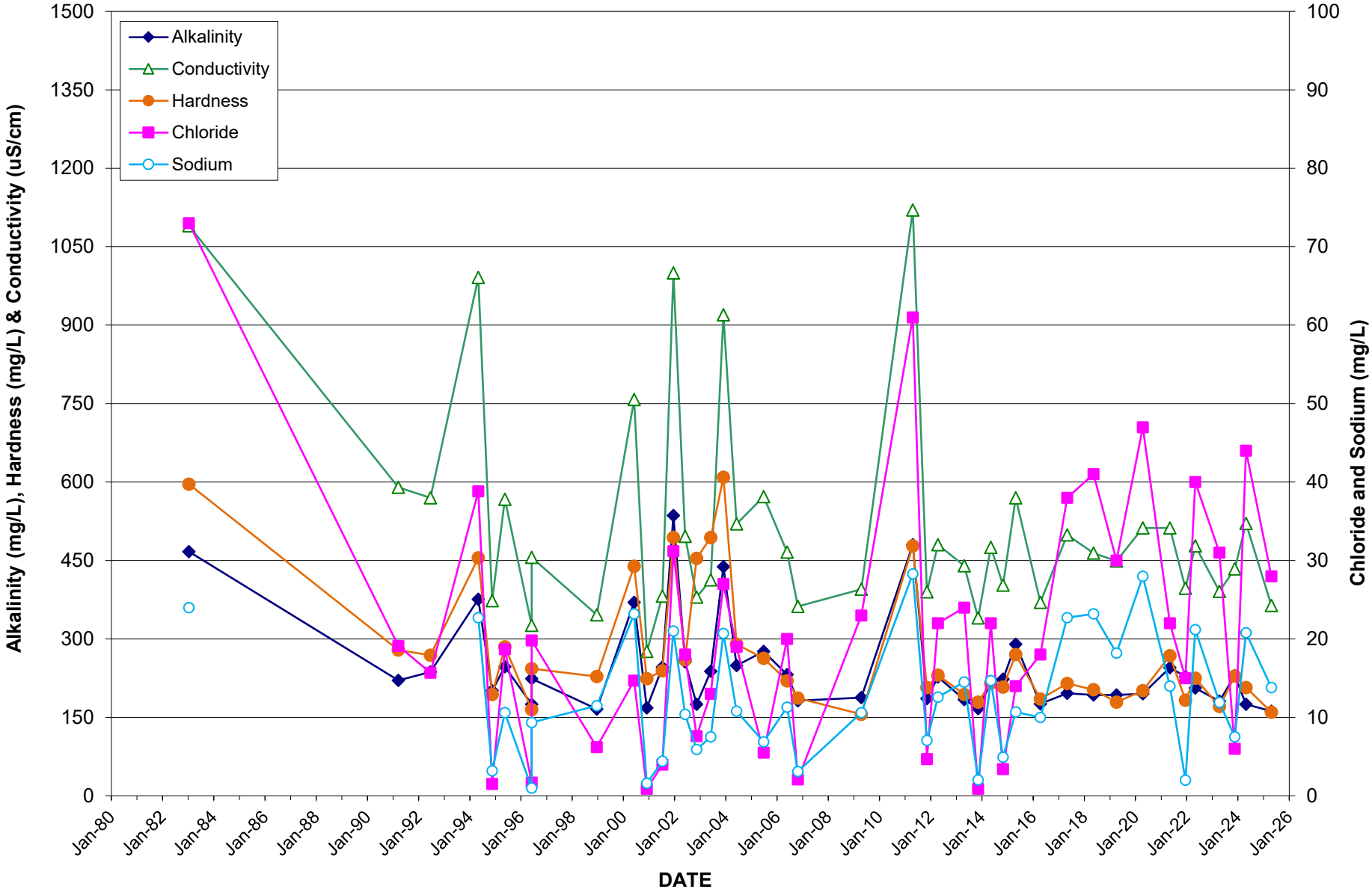
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Southampton Landfill

GROUNDWATER SAMPLING LOCATION: TW-14



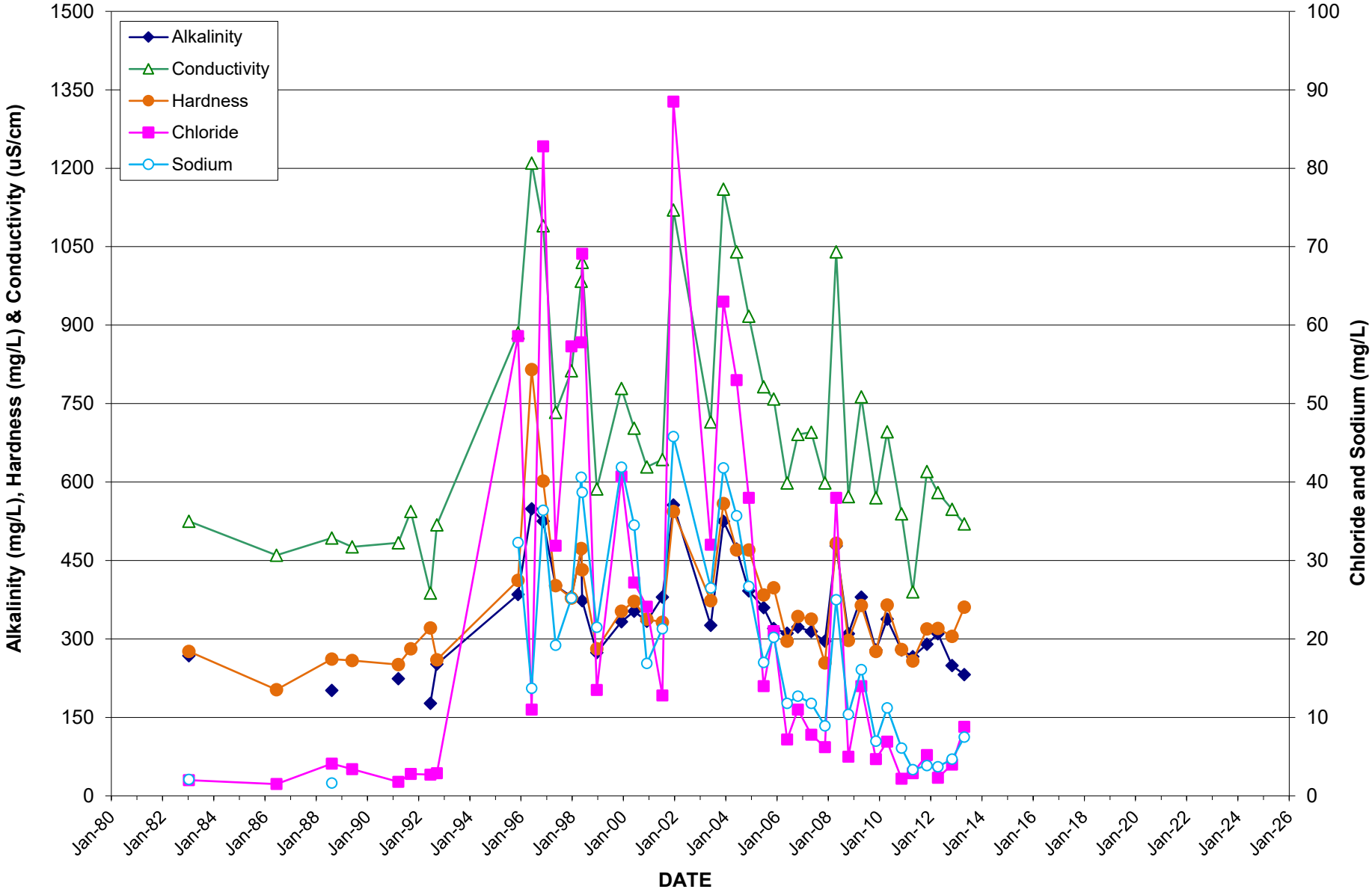
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Southampton Landfill

GROUNDWATER SAMPLING LOCATION: TW-15



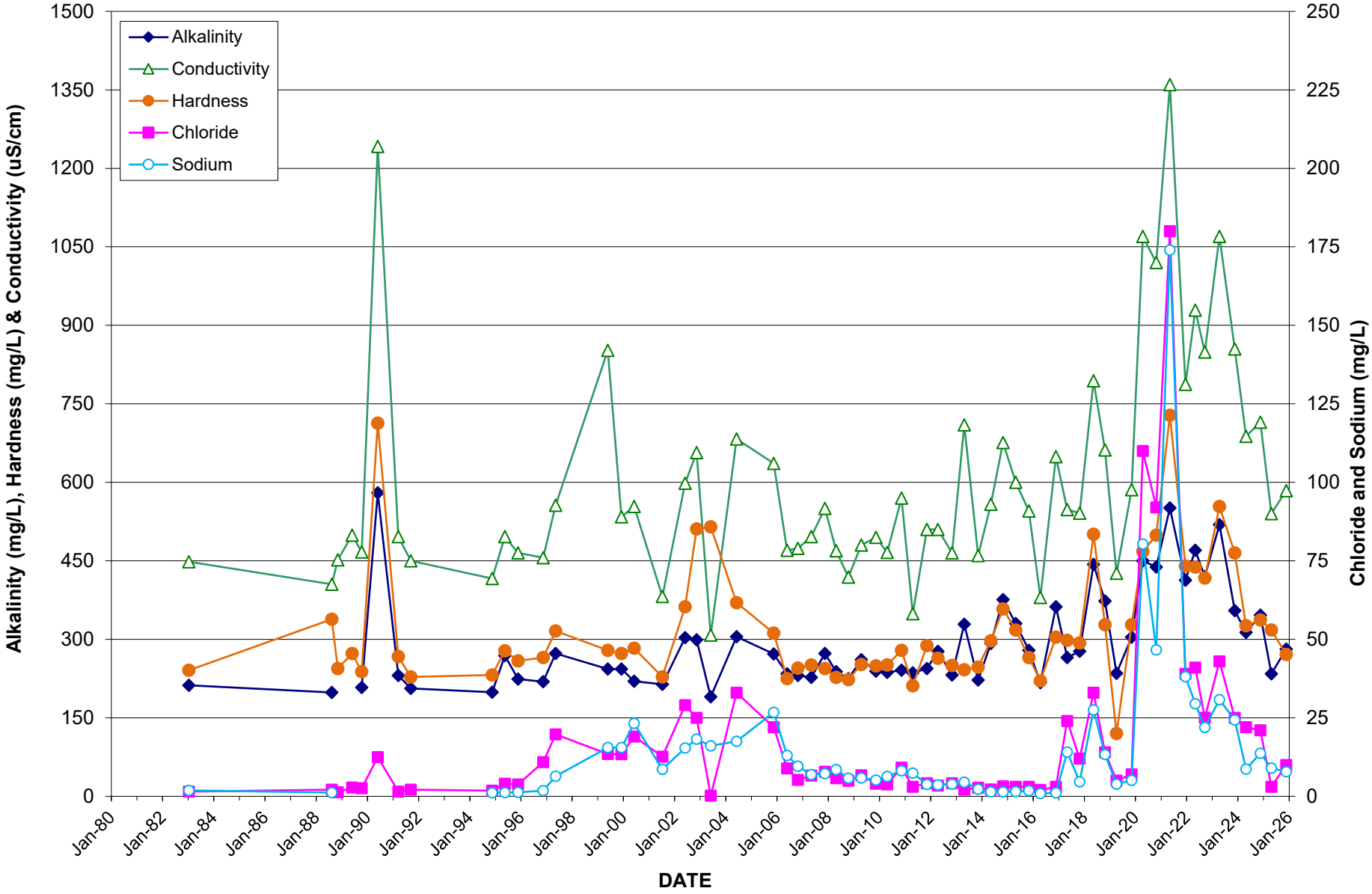
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Southampton Landfill

GROUNDWATER SAMPLING LOCATION: TW-16



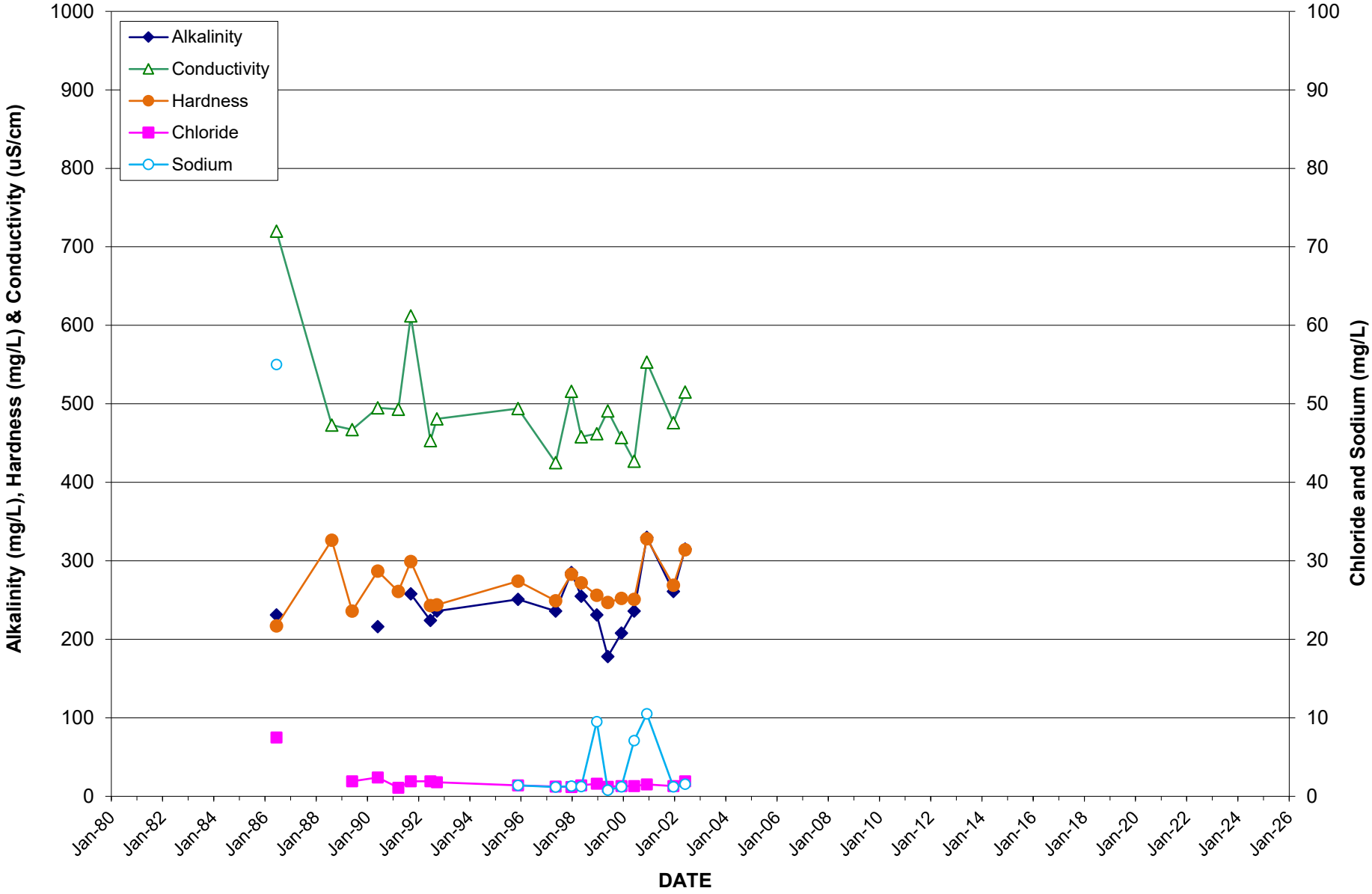
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Southampton Landfill

GROUNDWATER SAMPLING LOCATION: TW-17



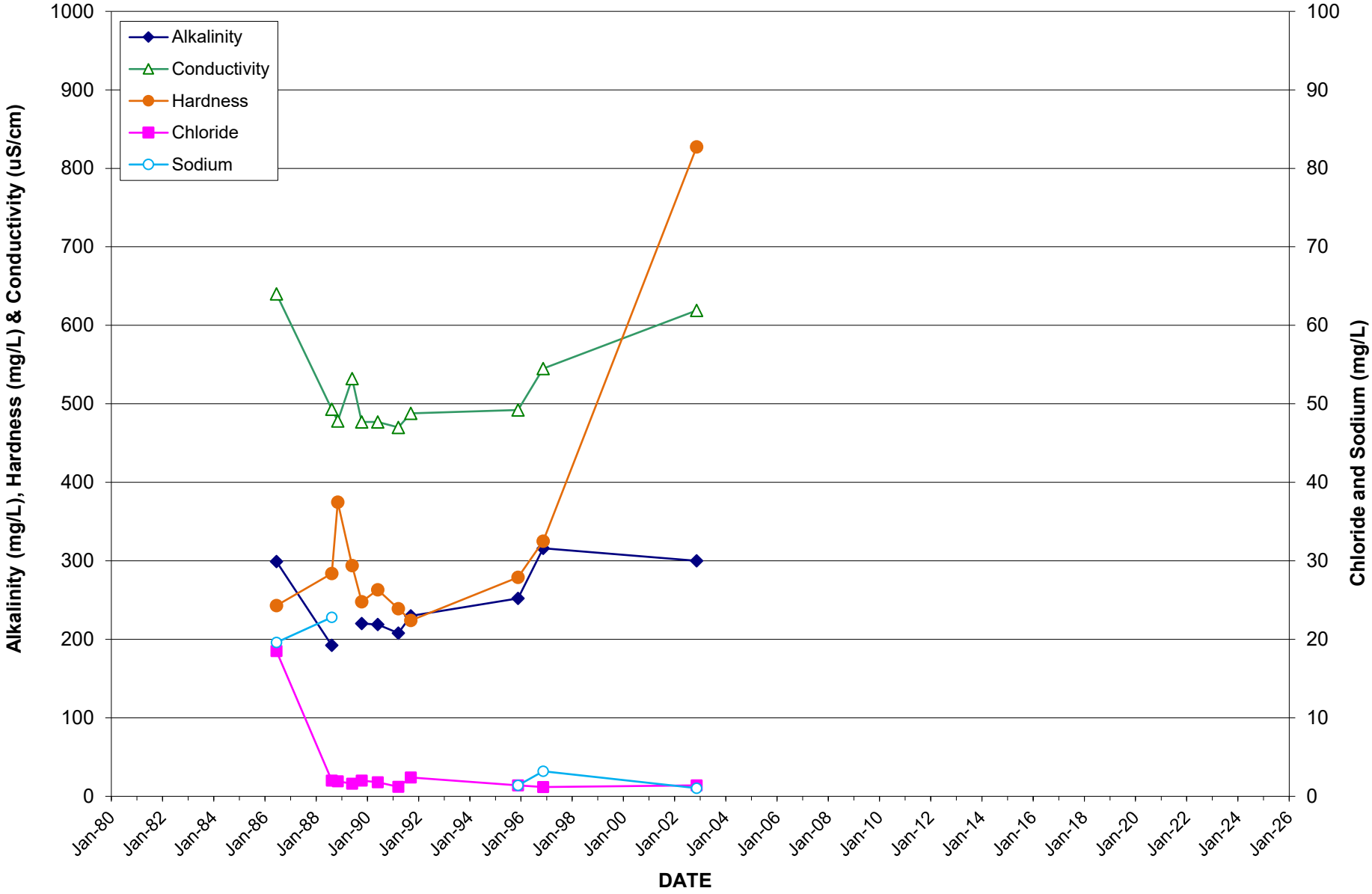
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Southampton Landfill

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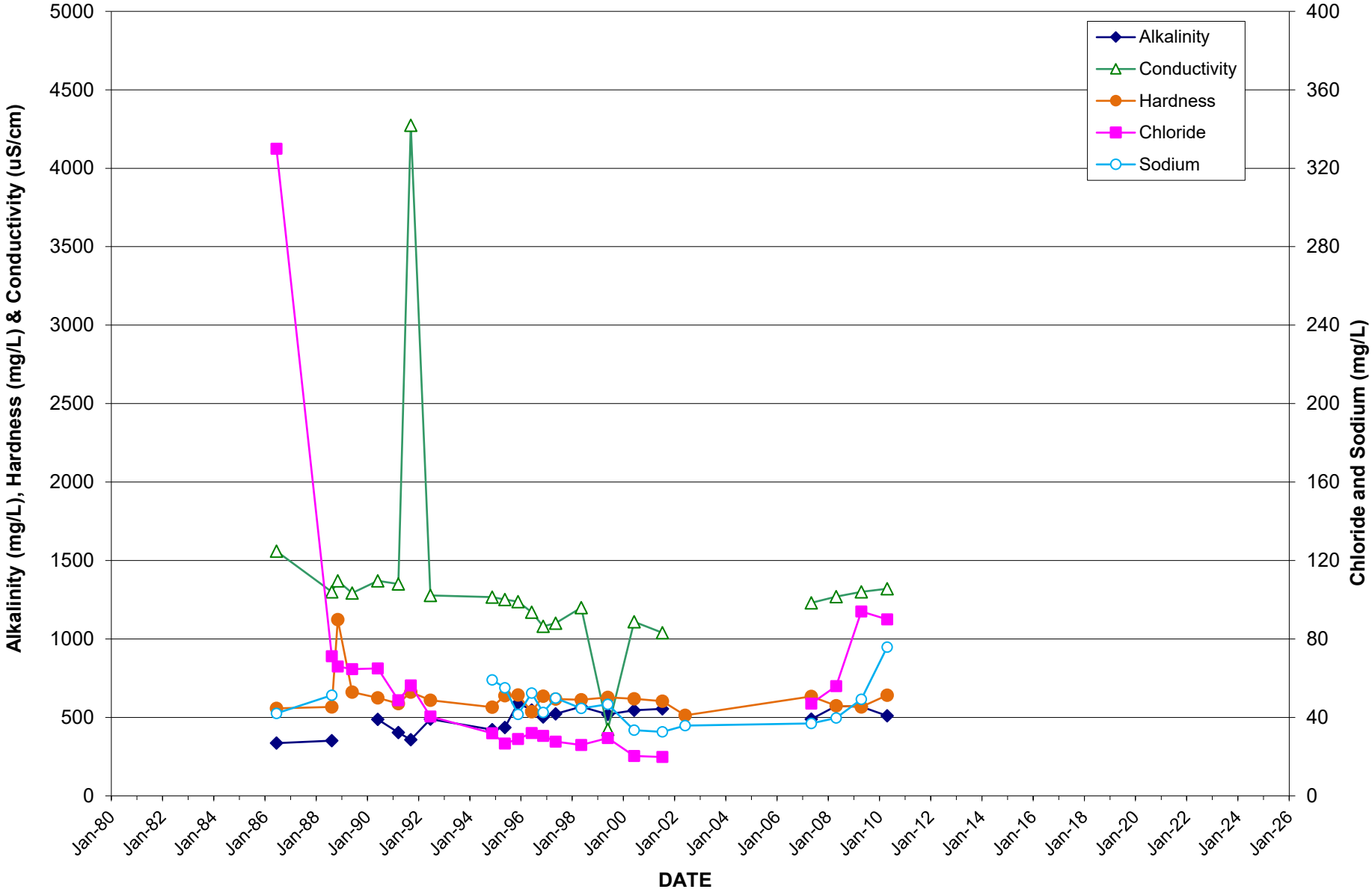
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Southampton Landfill

GROUNDWATER SAMPLING LOCATION: TW-18A



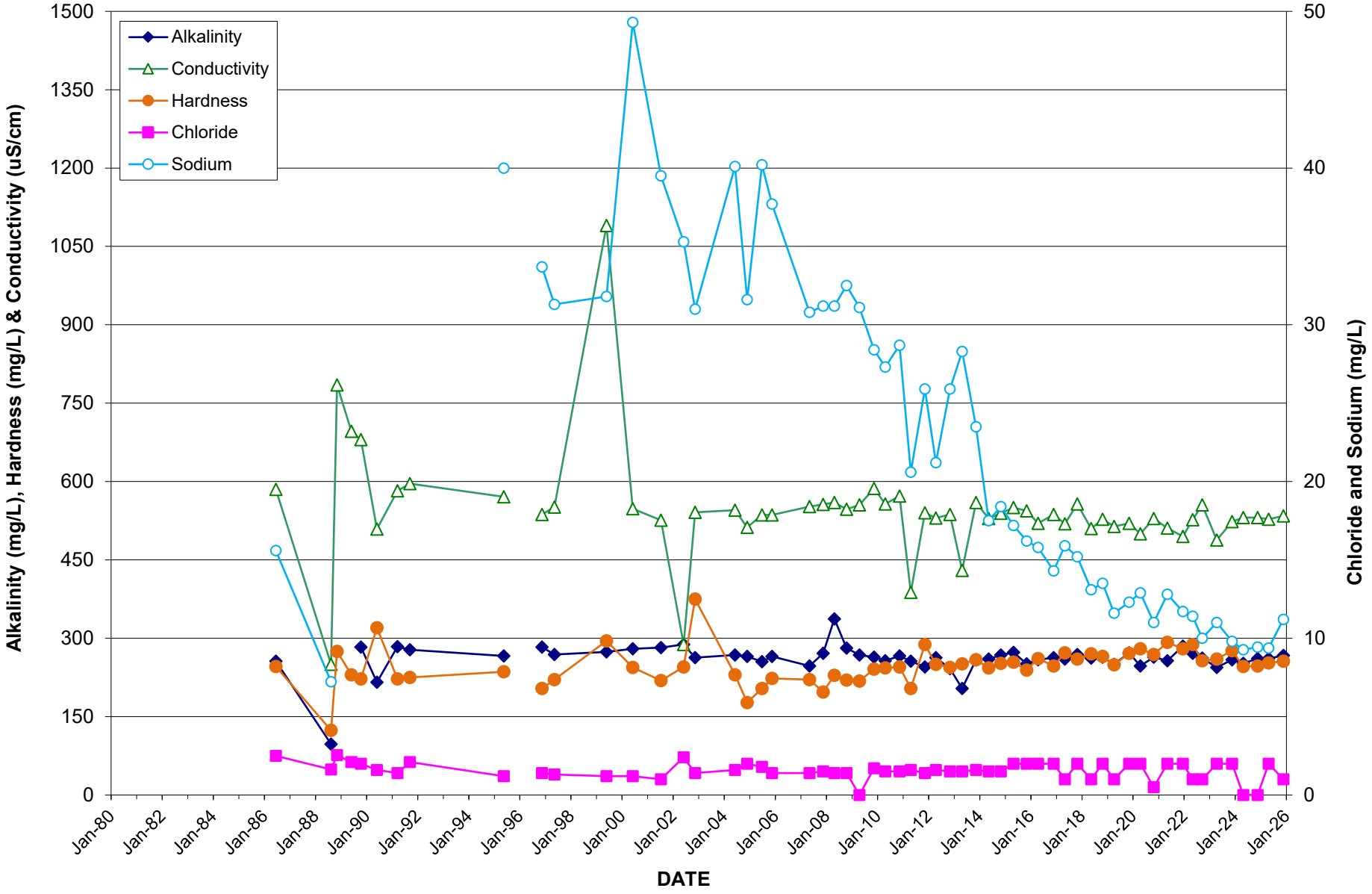
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Southampton Landfill

GROUNDWATER SAMPLING LOCATION: TW-19



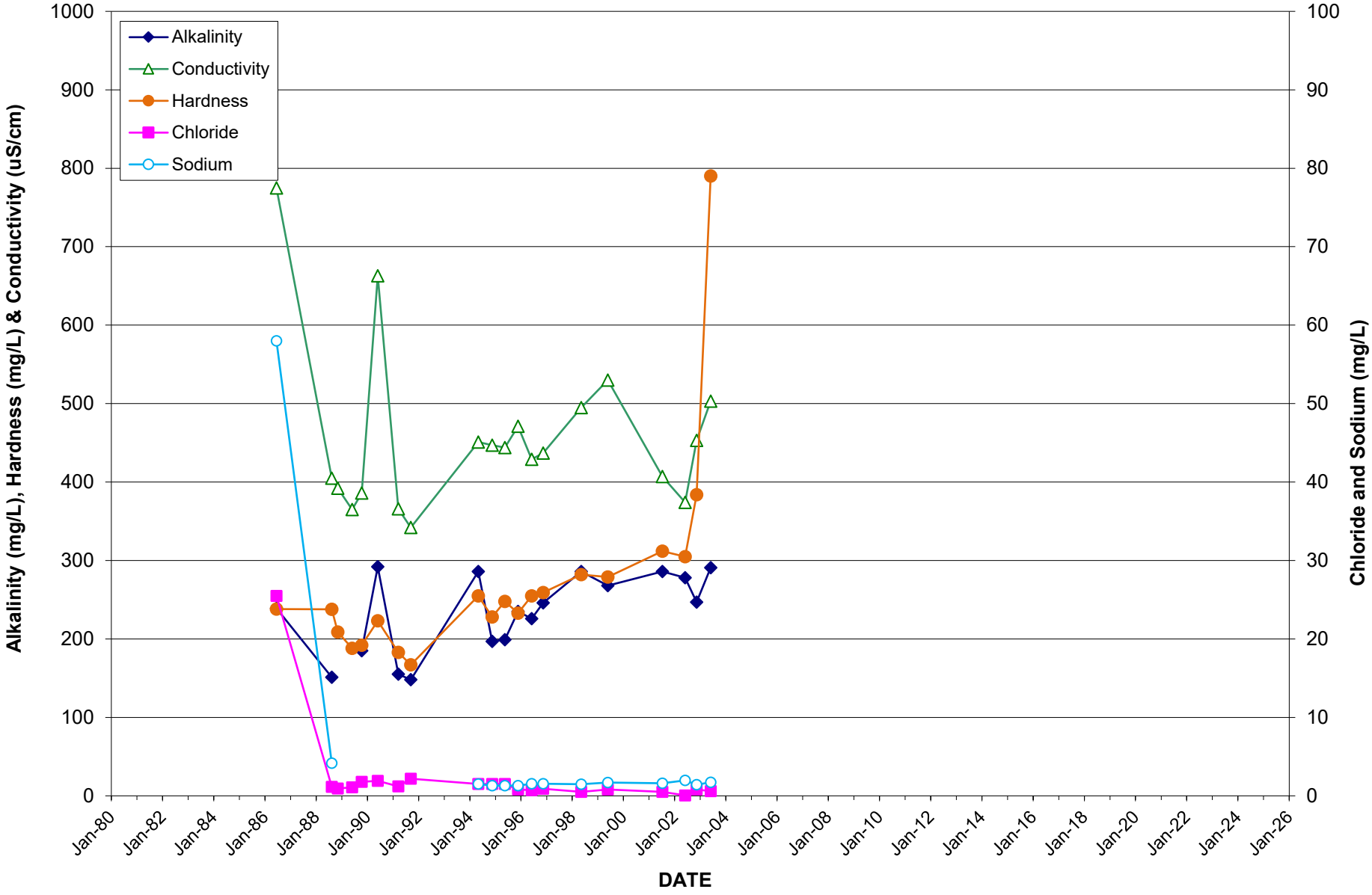
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Southampton Landfill

GROUNDWATER SAMPLING LOCATION: TW-20



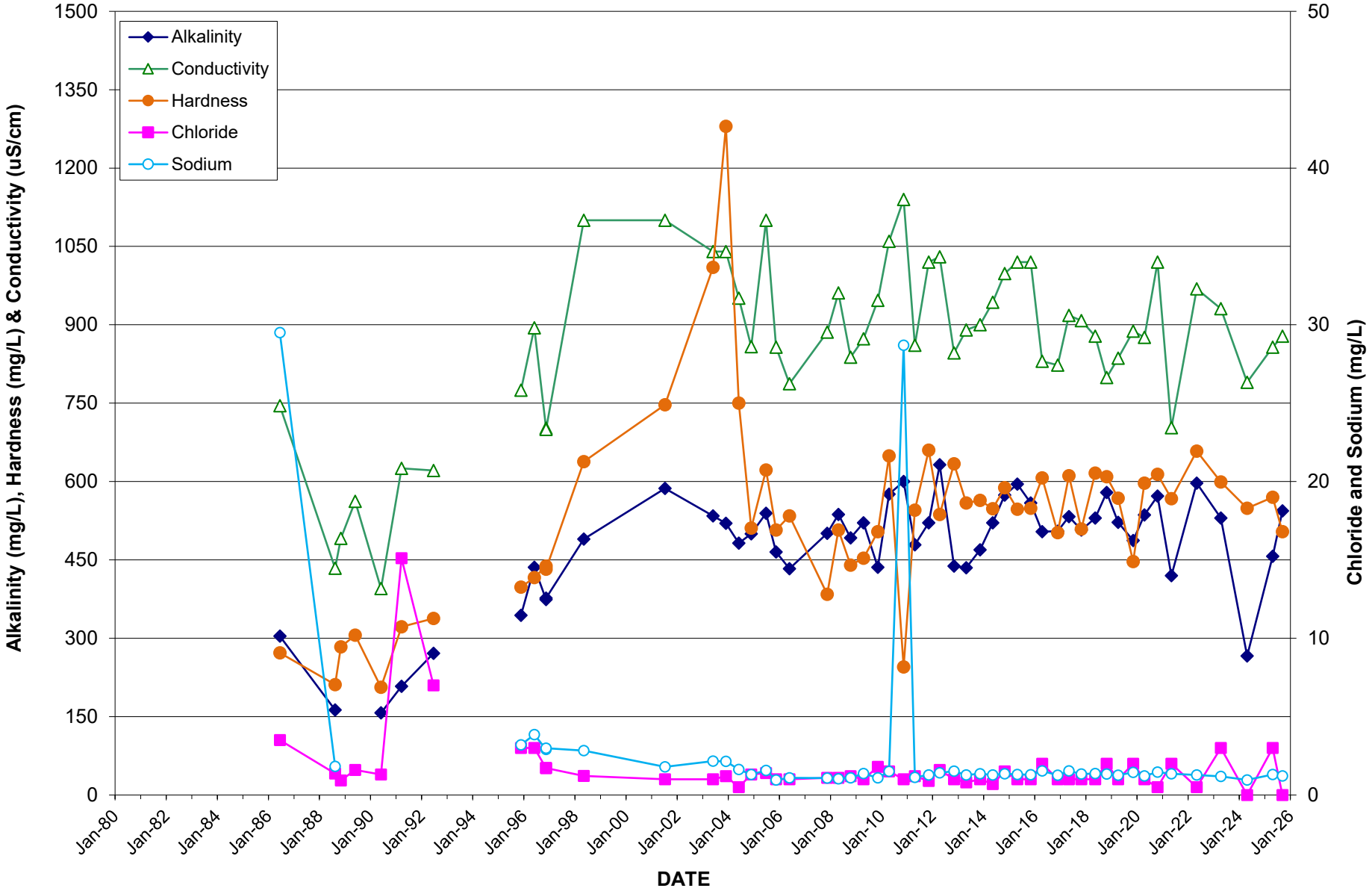
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Southampton Landfill

GROUNDWATER SAMPLING LOCATION: TW-21



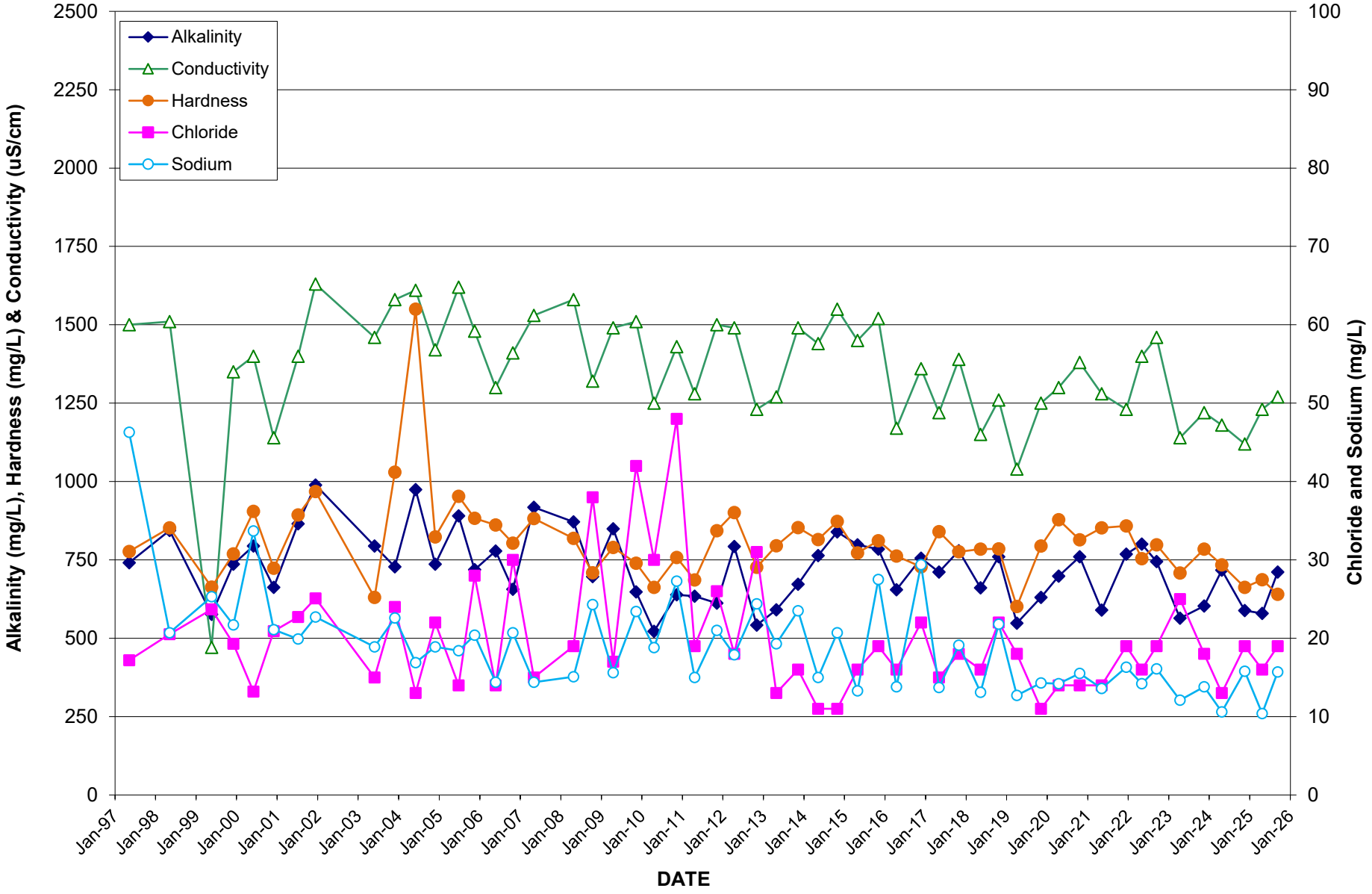
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Southampton Landfill

GROUNDWATER SAMPLING LOCATION: TW-22



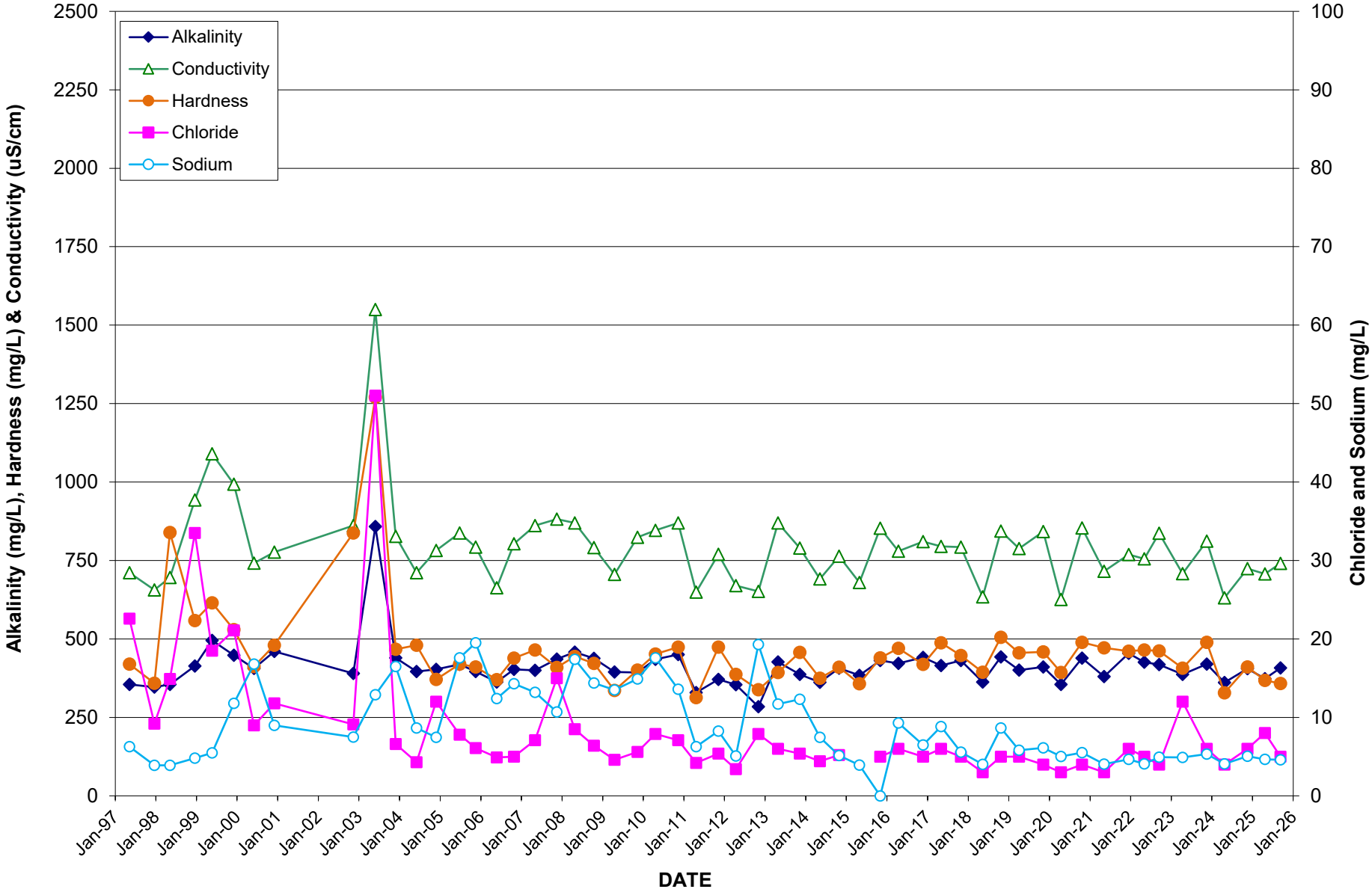
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Southampton Landfill

GROUNDWATER SAMPLING LOCATION: TW-23



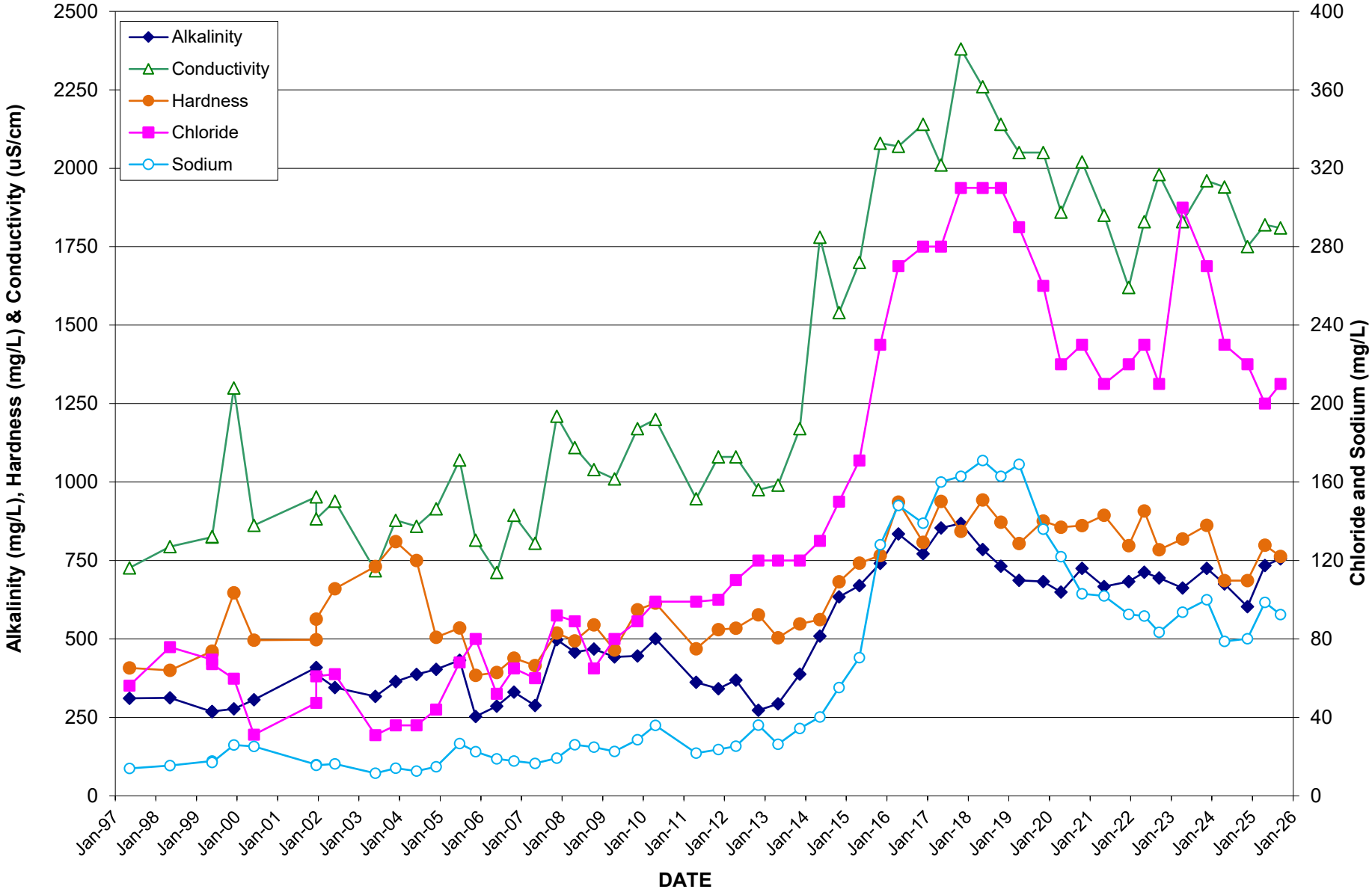
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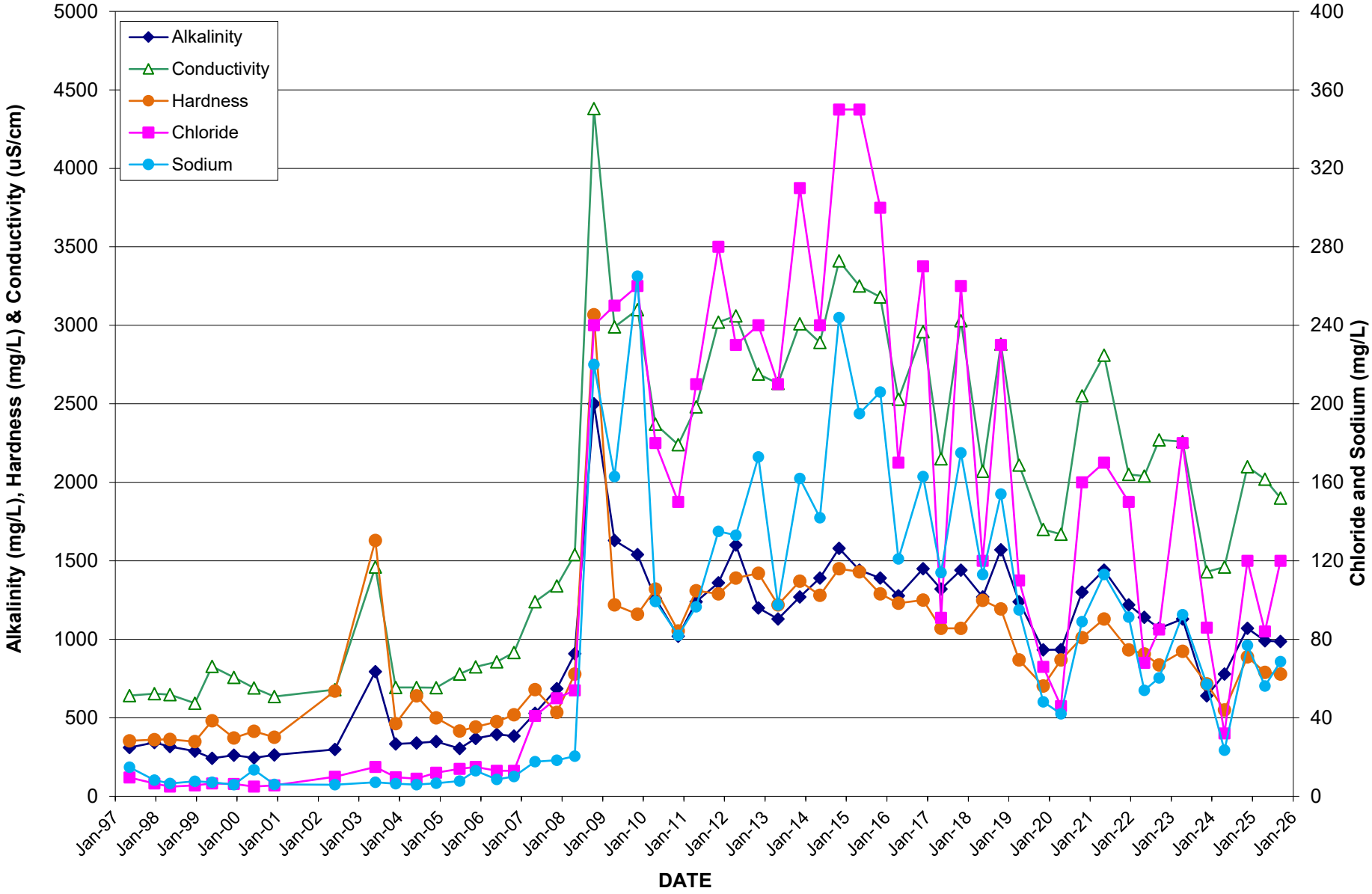
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Southampton Landfill

GROUNDWATER SAMPLING LOCATION: TW-25



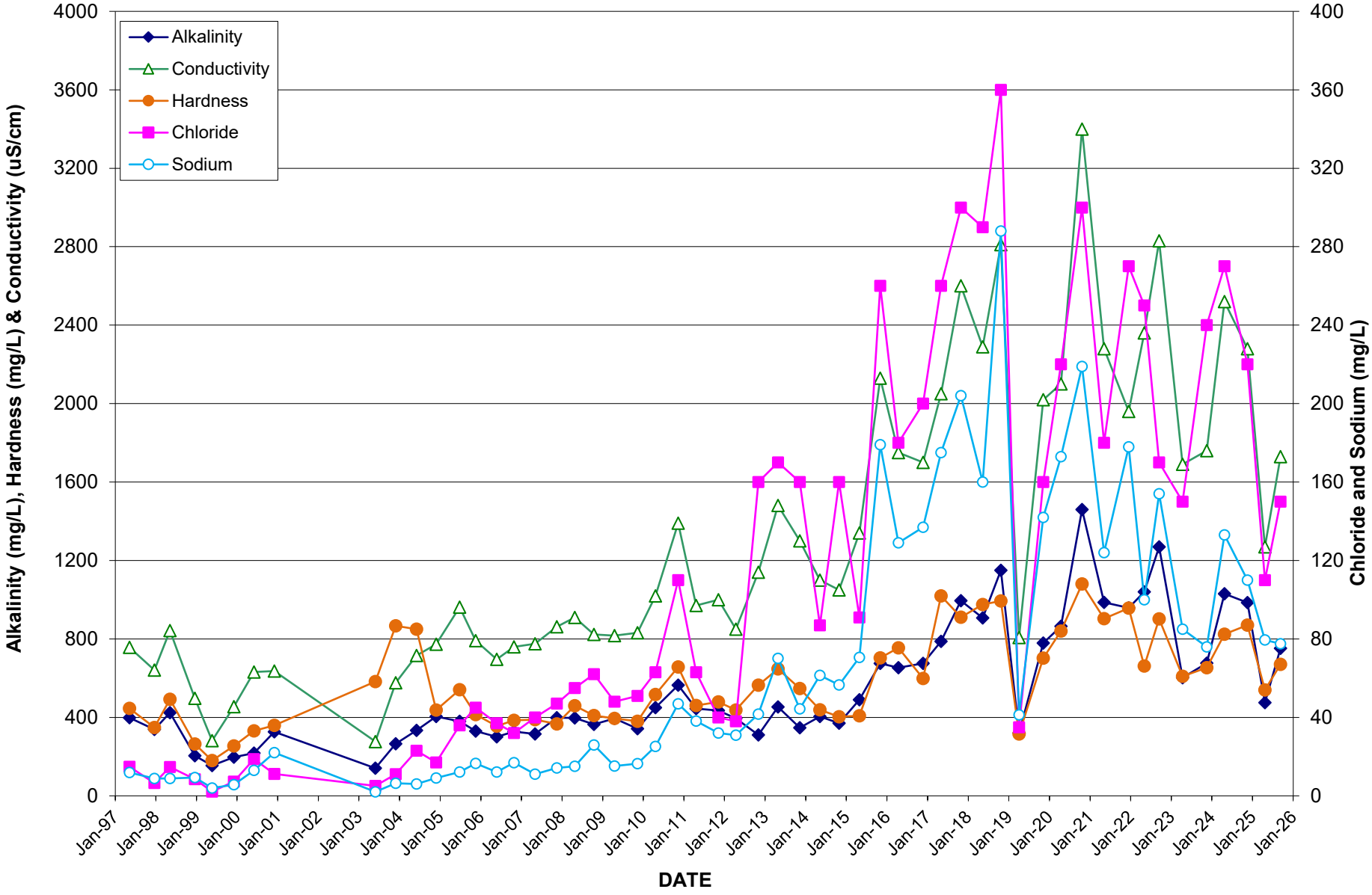
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Southampton Landfill

GROUNDWATER SAMPLING LOCATION: TW-26



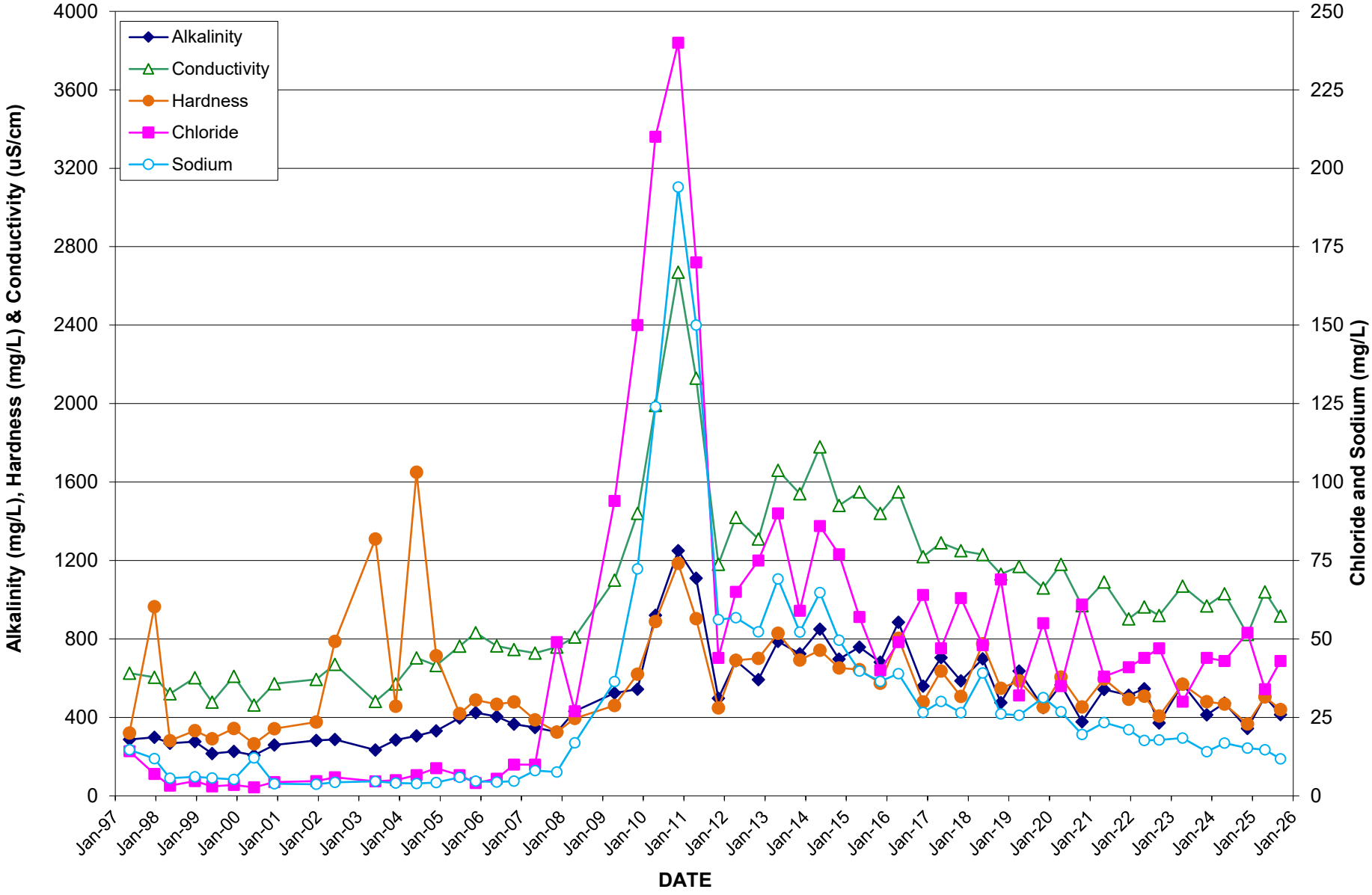
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Southampton Landfill

GROUNDWATER SAMPLING LOCATION: TW-27



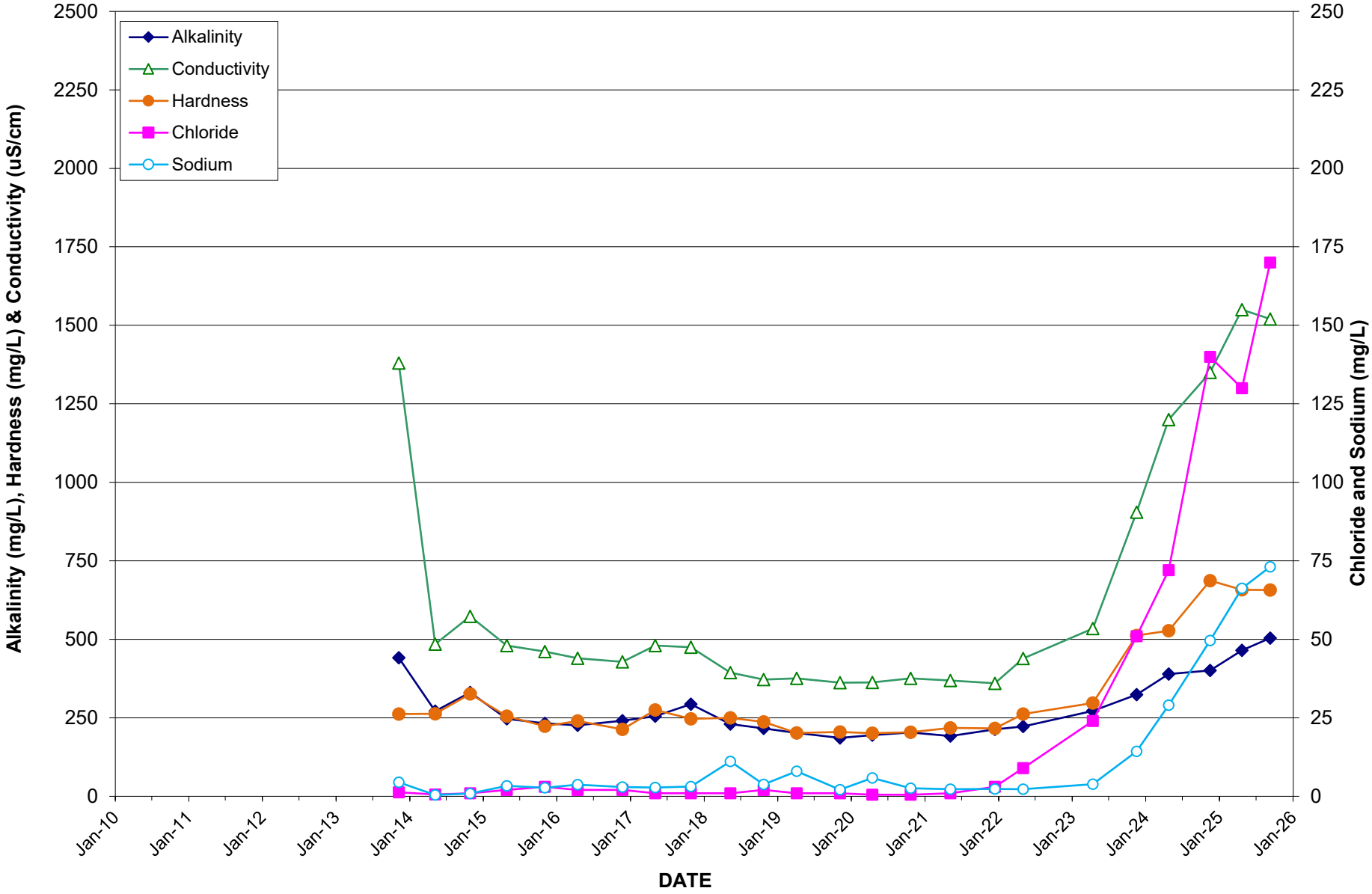
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Southampton Landfill

GROUNDWATER SAMPLING LOCATION: TW-28



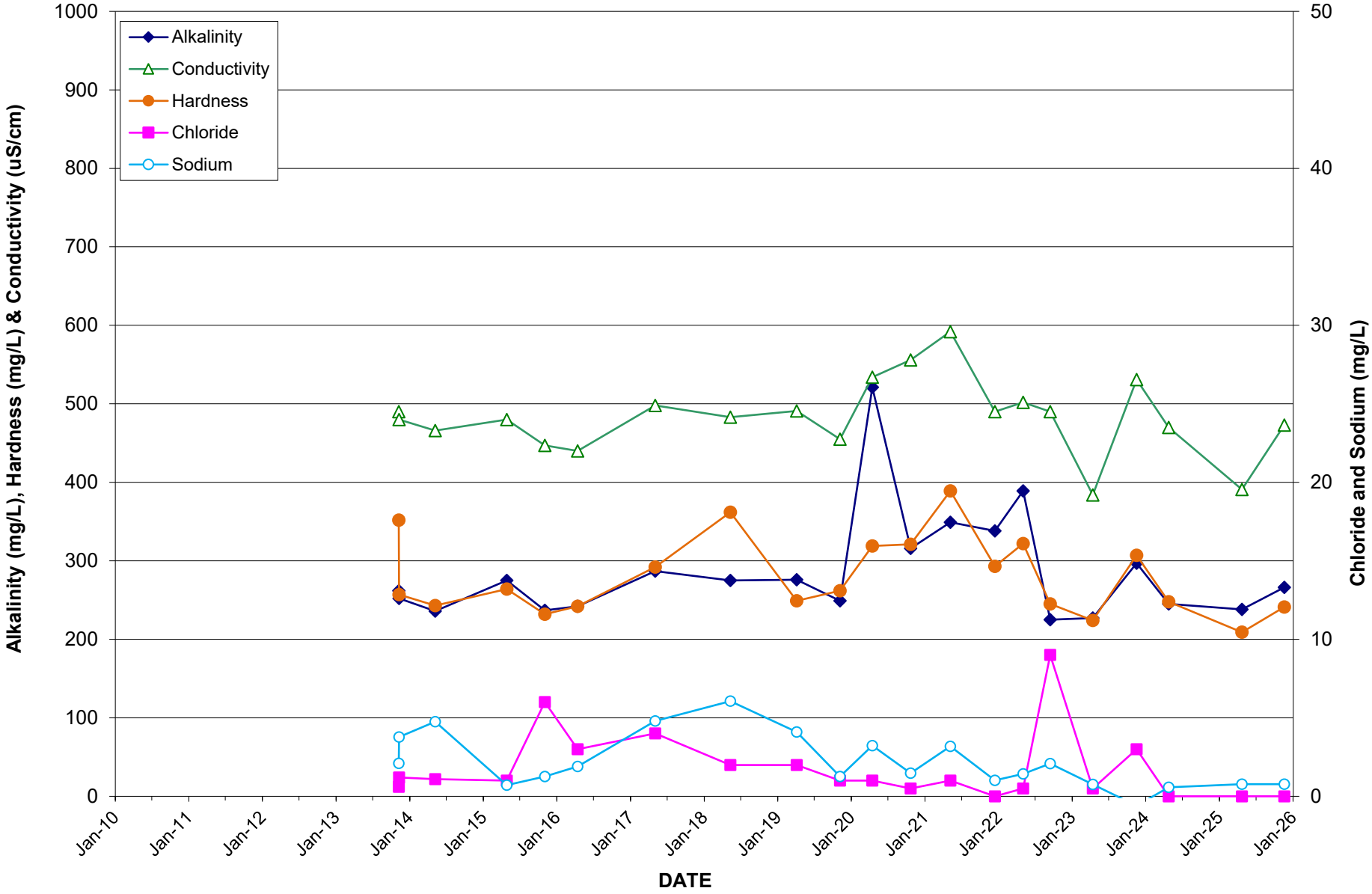
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Southampton Landfill

GROUNDWATER SAMPLING LOCATION: TW-29



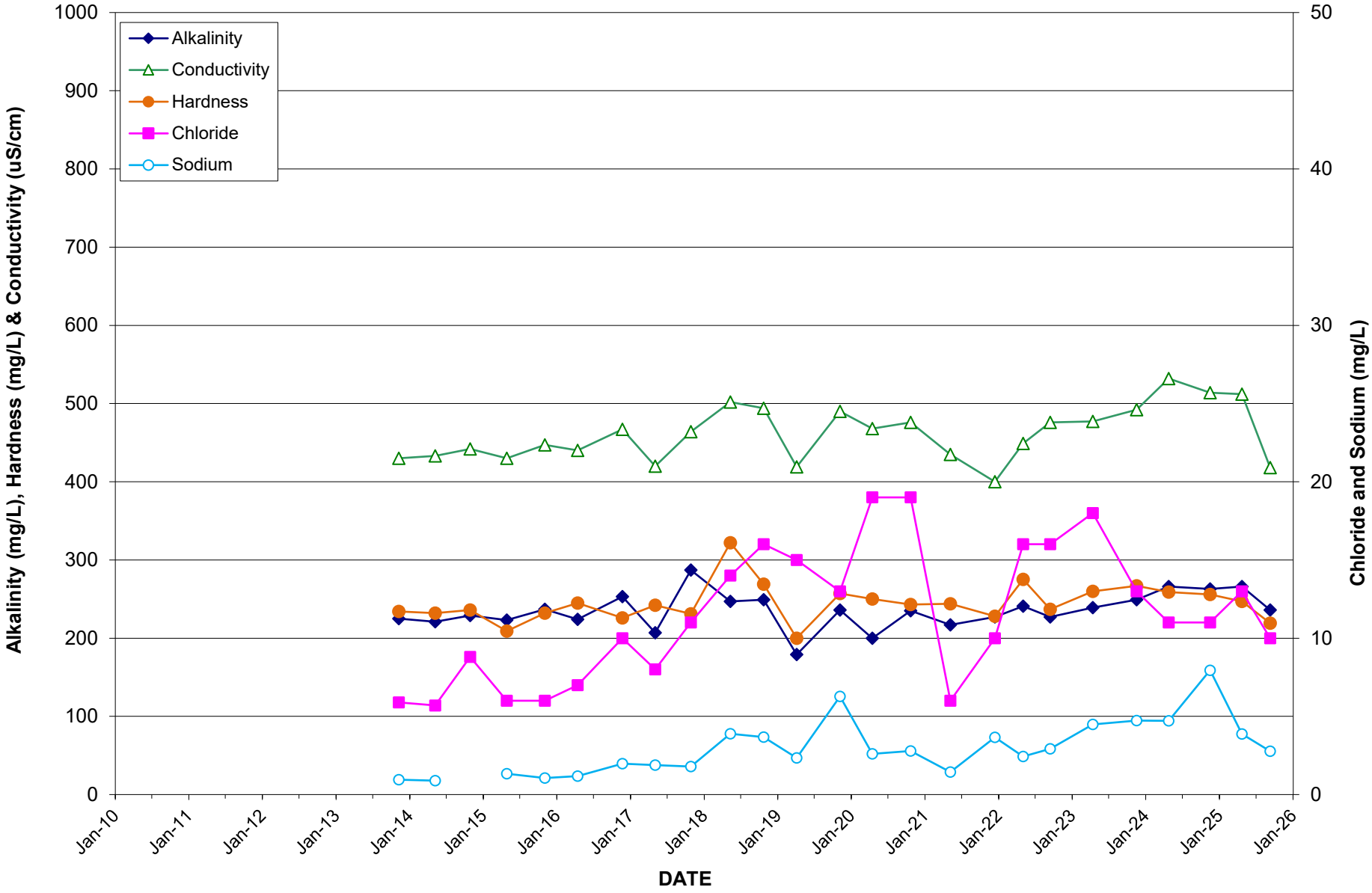
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Southampton Landfill

GROUNDWATER SAMPLING LOCATION: TW-30



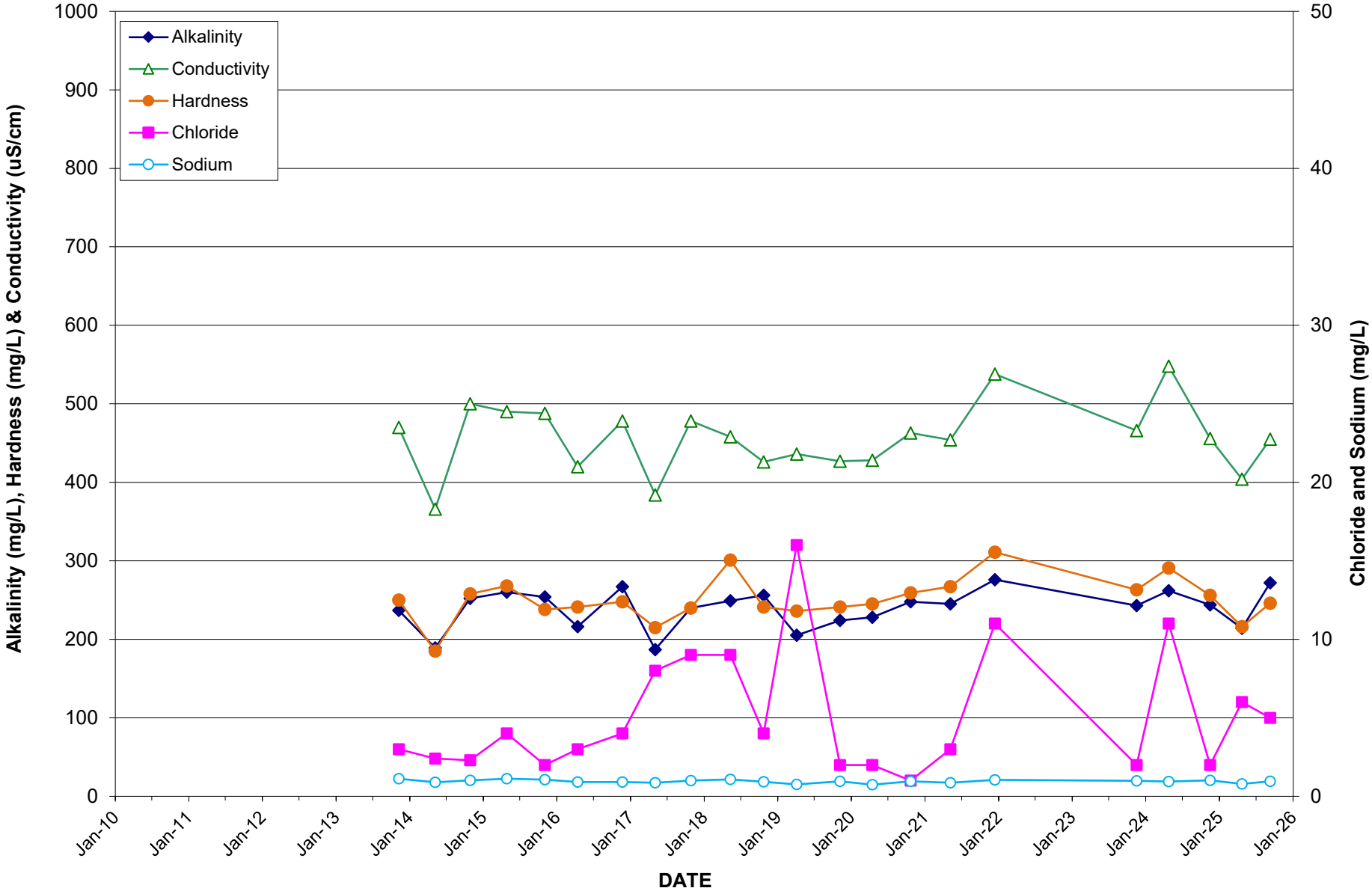
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Southampton Landfill

GROUNDWATER SAMPLING LOCATION: TW-31



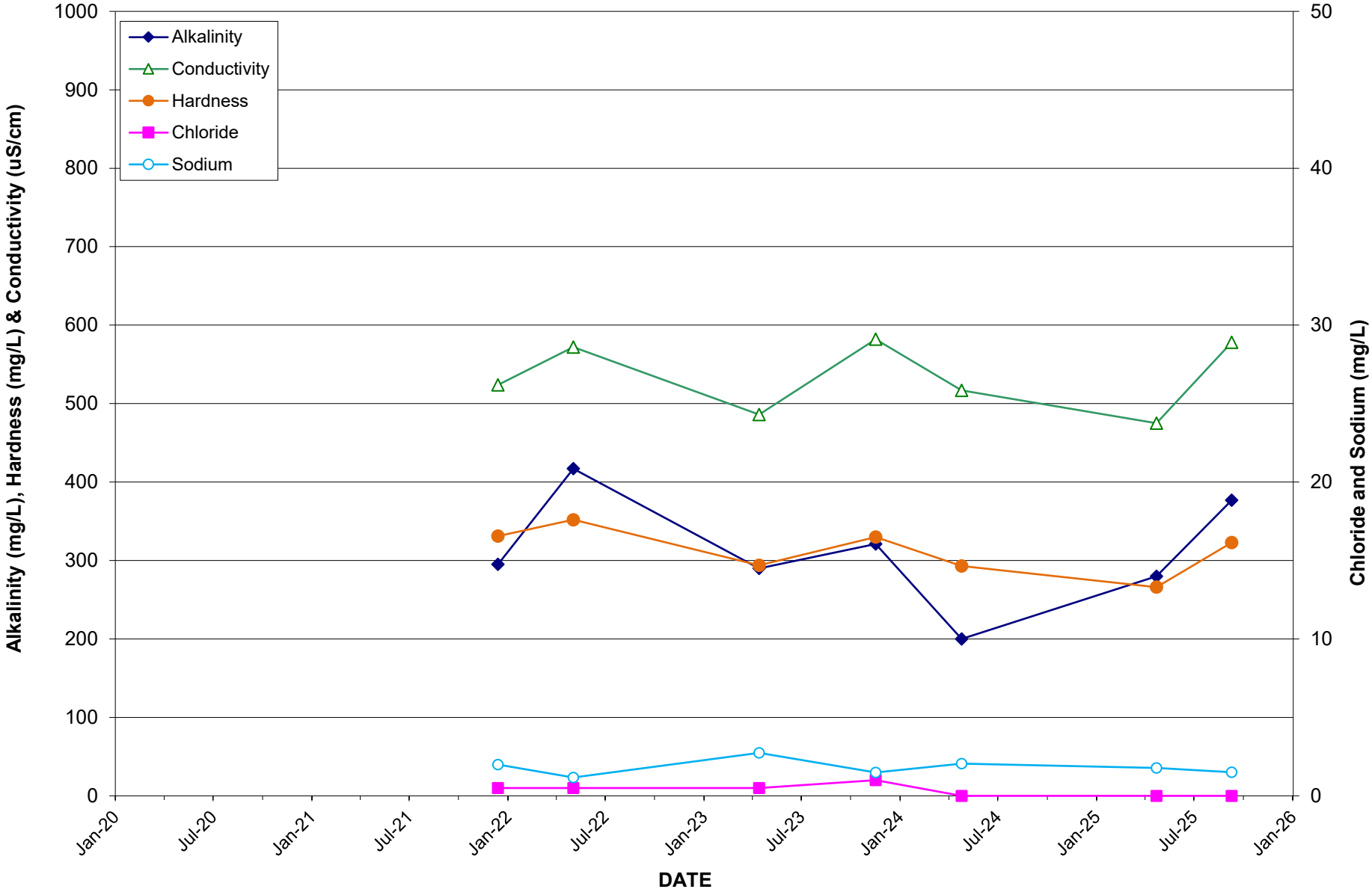
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Southampton Landfill

GROUNDWATER SAMPLING LOCATION: TW-32



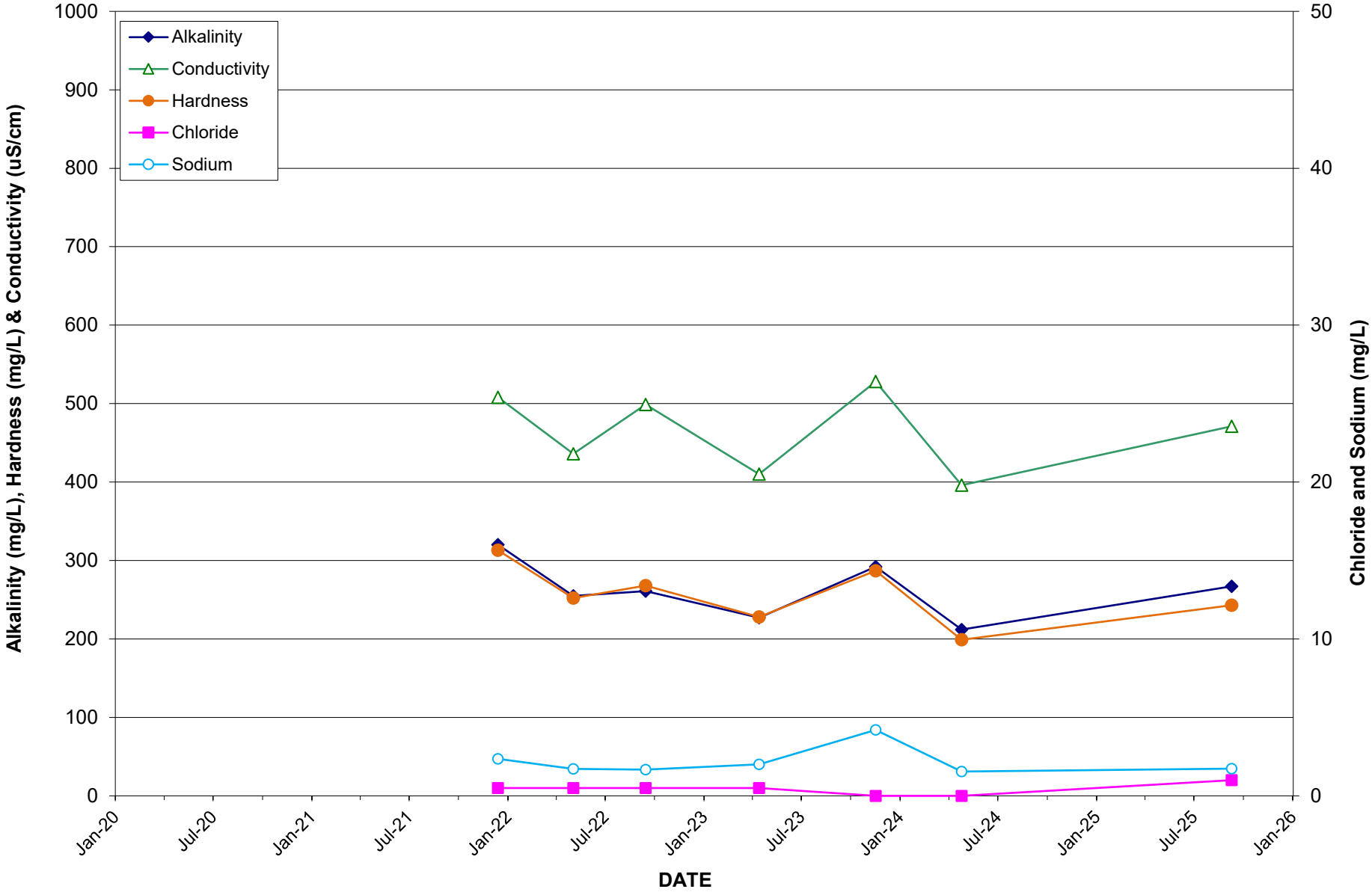
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Southampton Landfill

GROUNDWATER SAMPLING LOCATION: TW-33



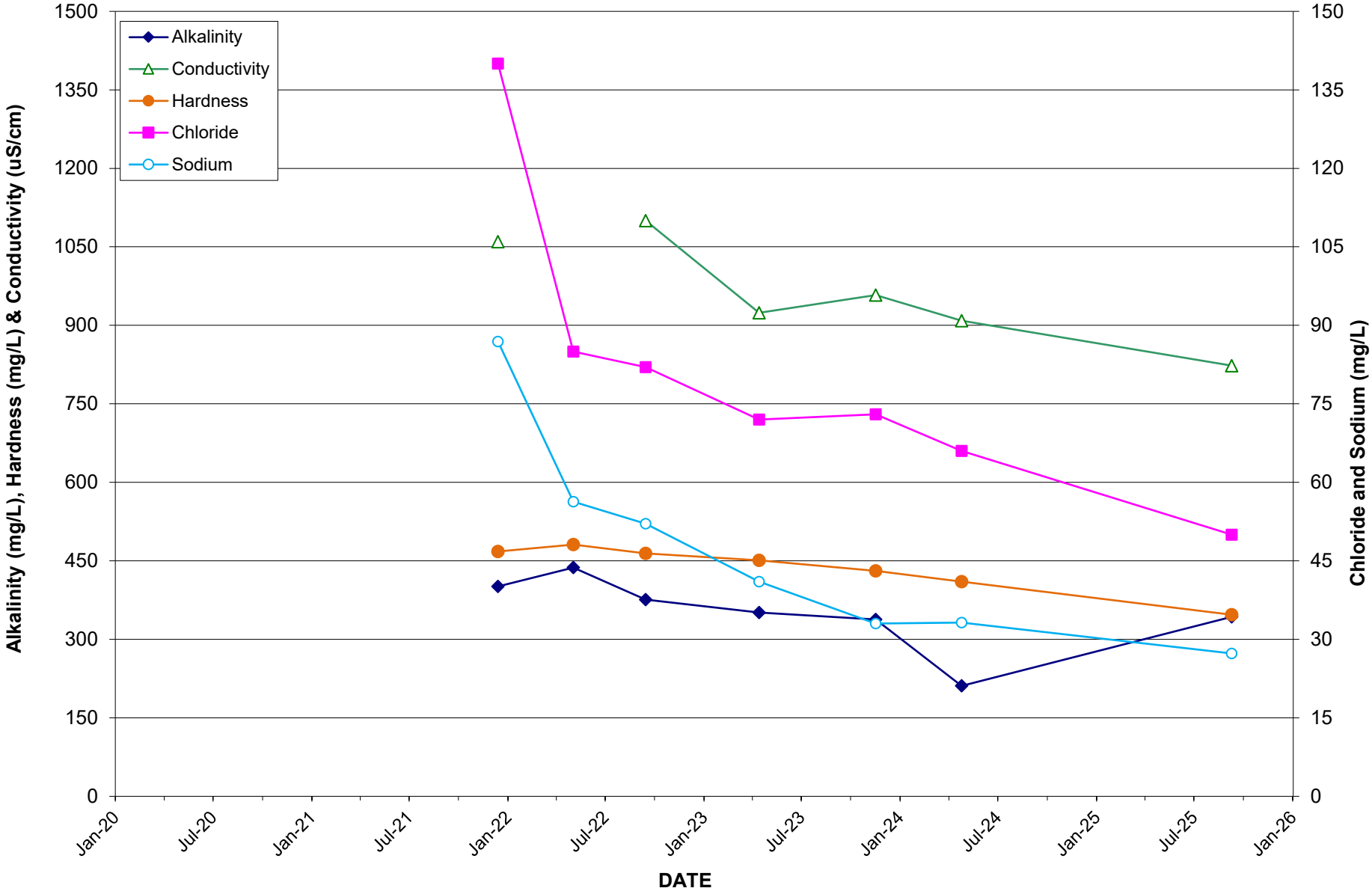
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GROUNDWATER SAMPLING LOCATION: TW-34



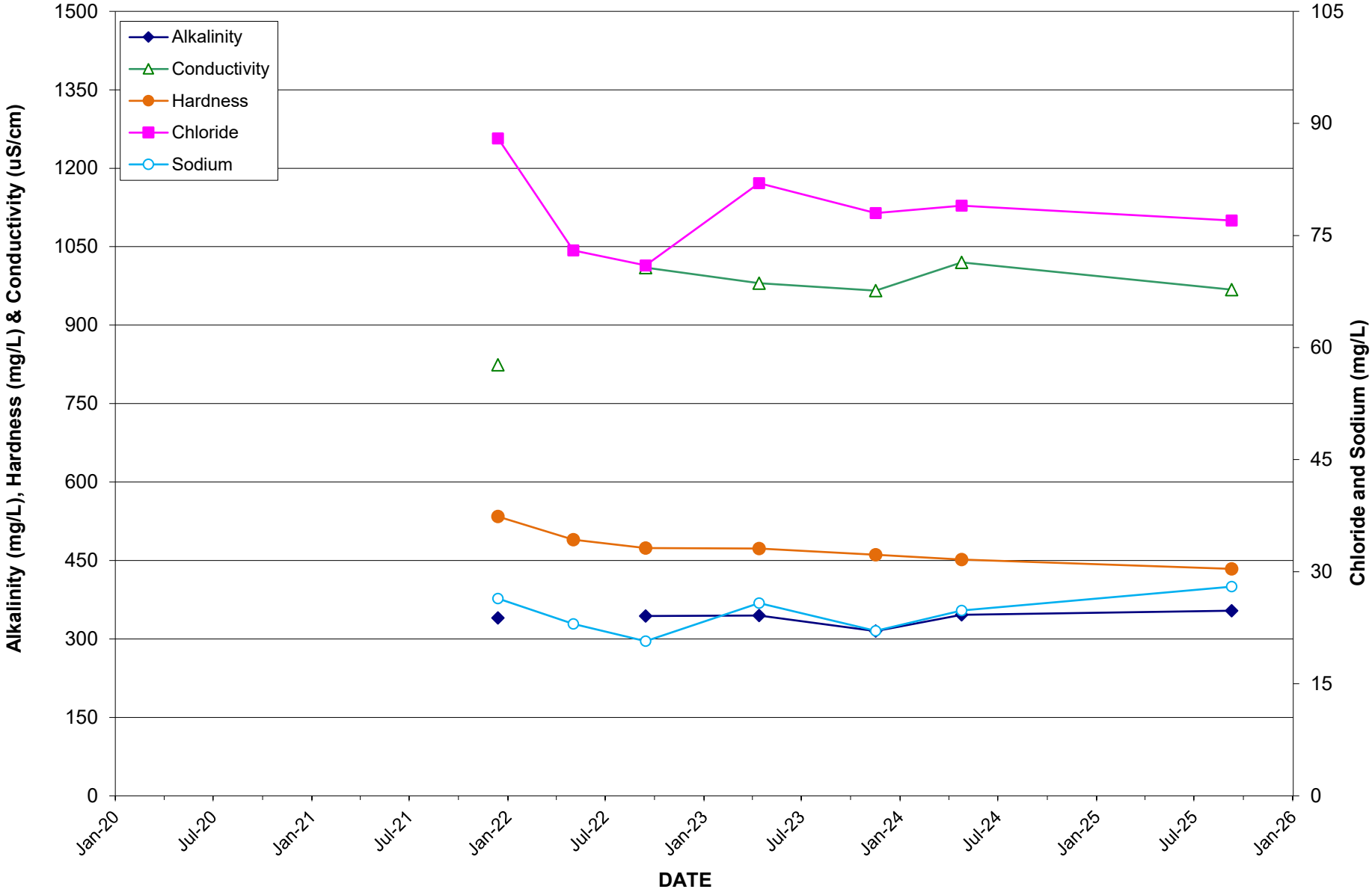
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Southampton Landfill

GROUNDWATER SAMPLING LOCATION: TW-35S



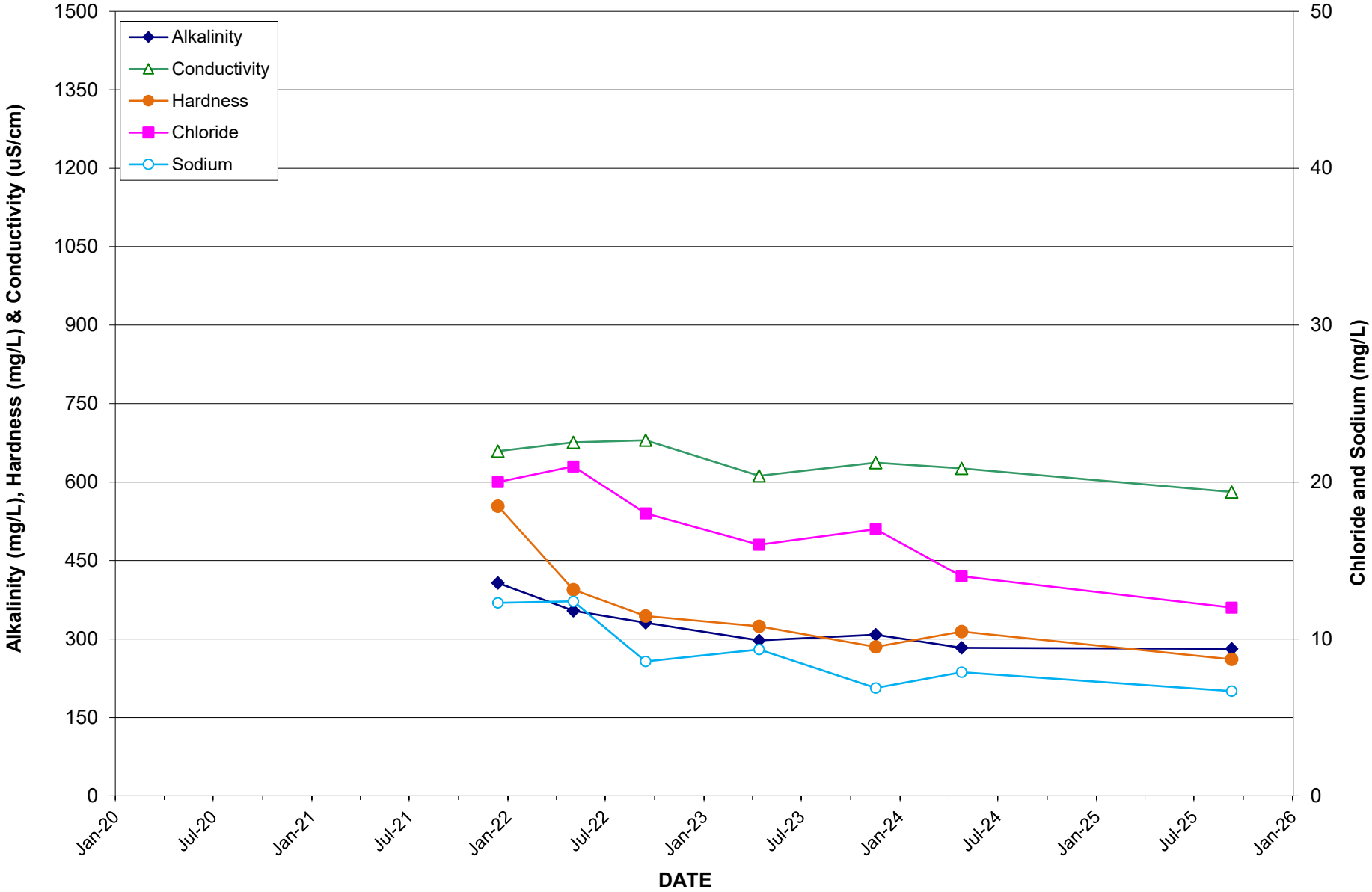
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Southampton Landfill

GROUNDWATER SAMPLING LOCATION: TW-35I



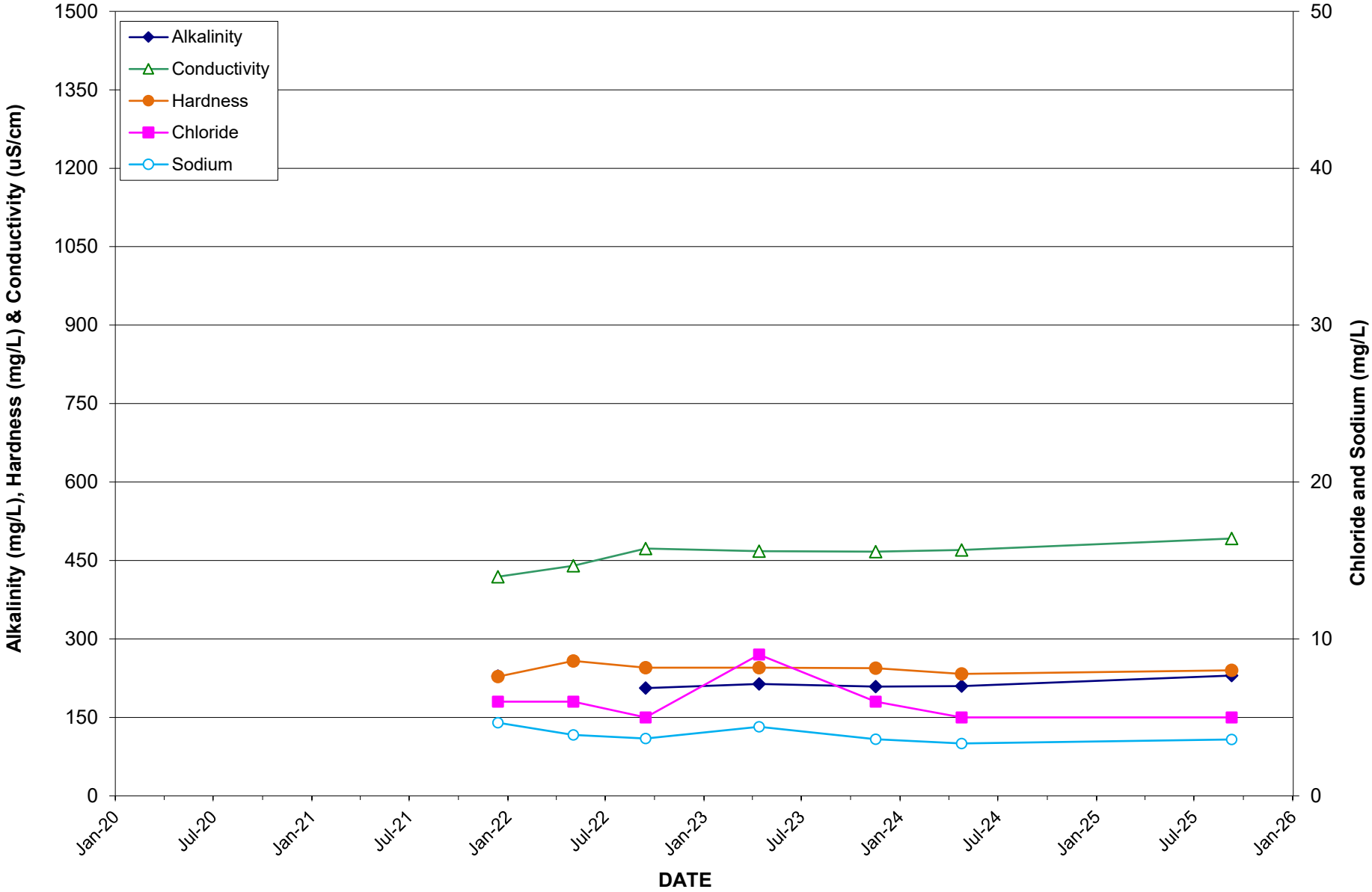
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Southampton Landfill

GROUNDWATER SAMPLING LOCATION: TW-36S



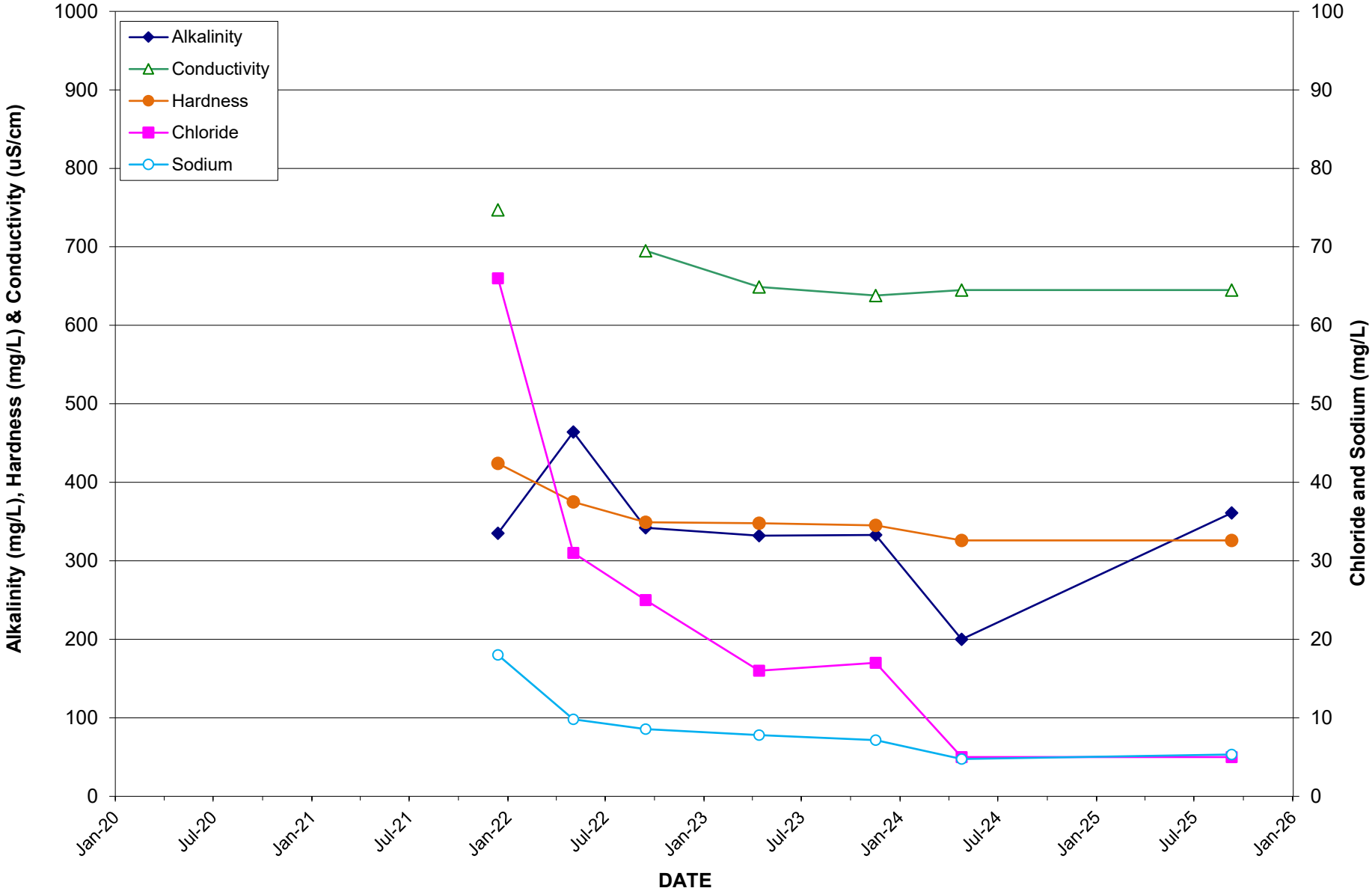
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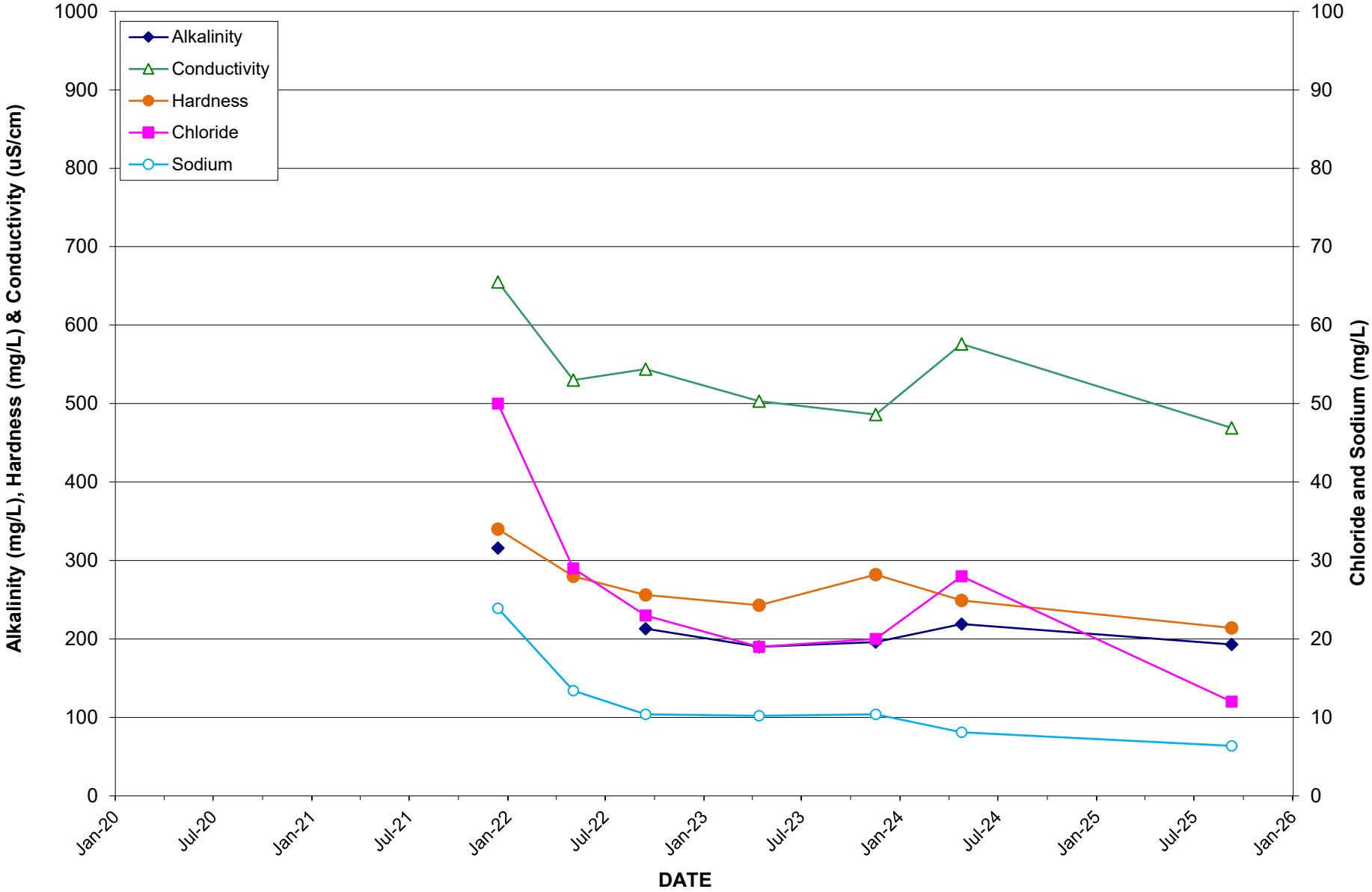
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GROUNDWATER SAMPLING LOCATION: TW-37



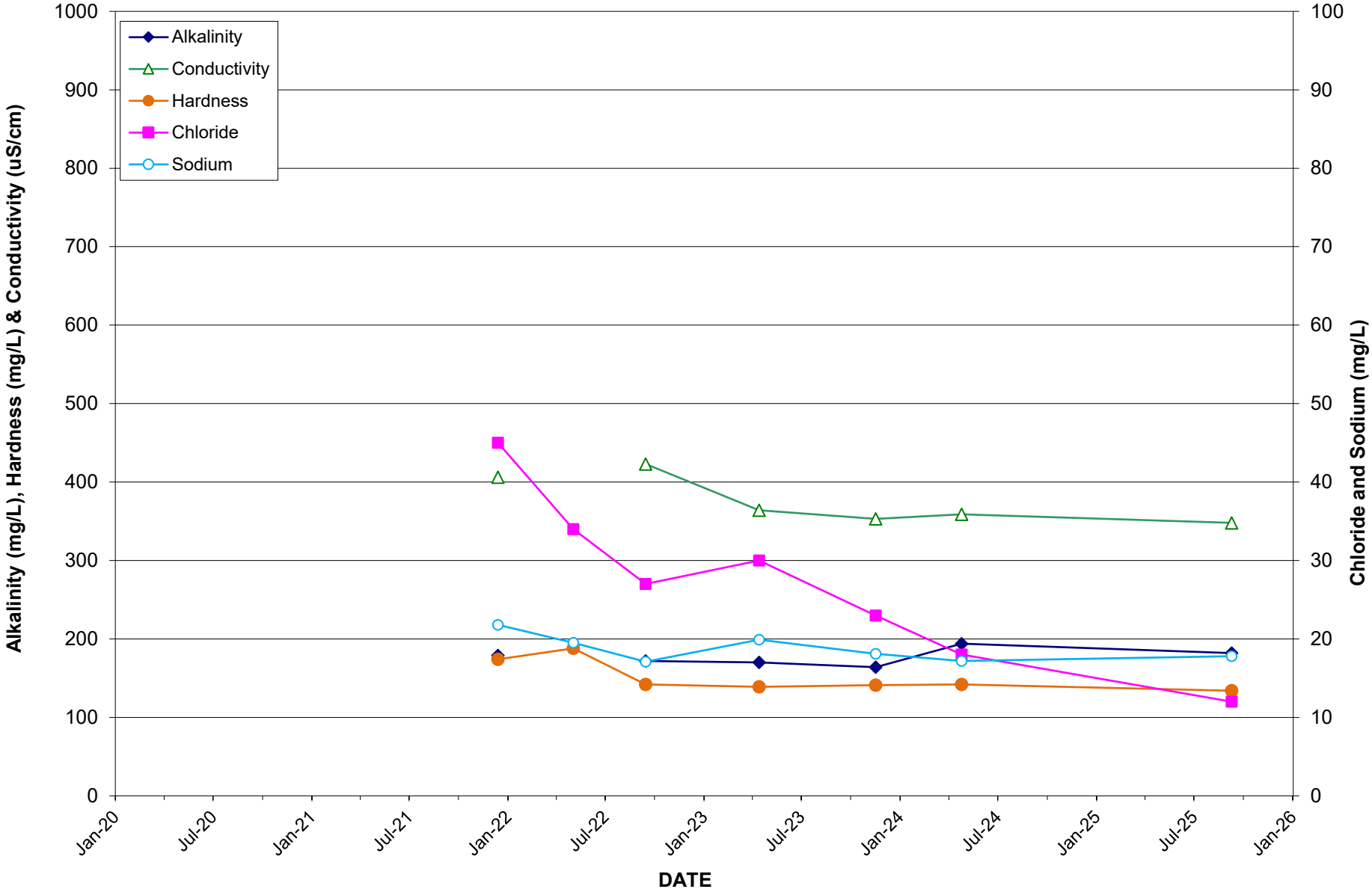
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Southampton Landfill

GROUNDWATER SAMPLING LOCATION: TW-38S



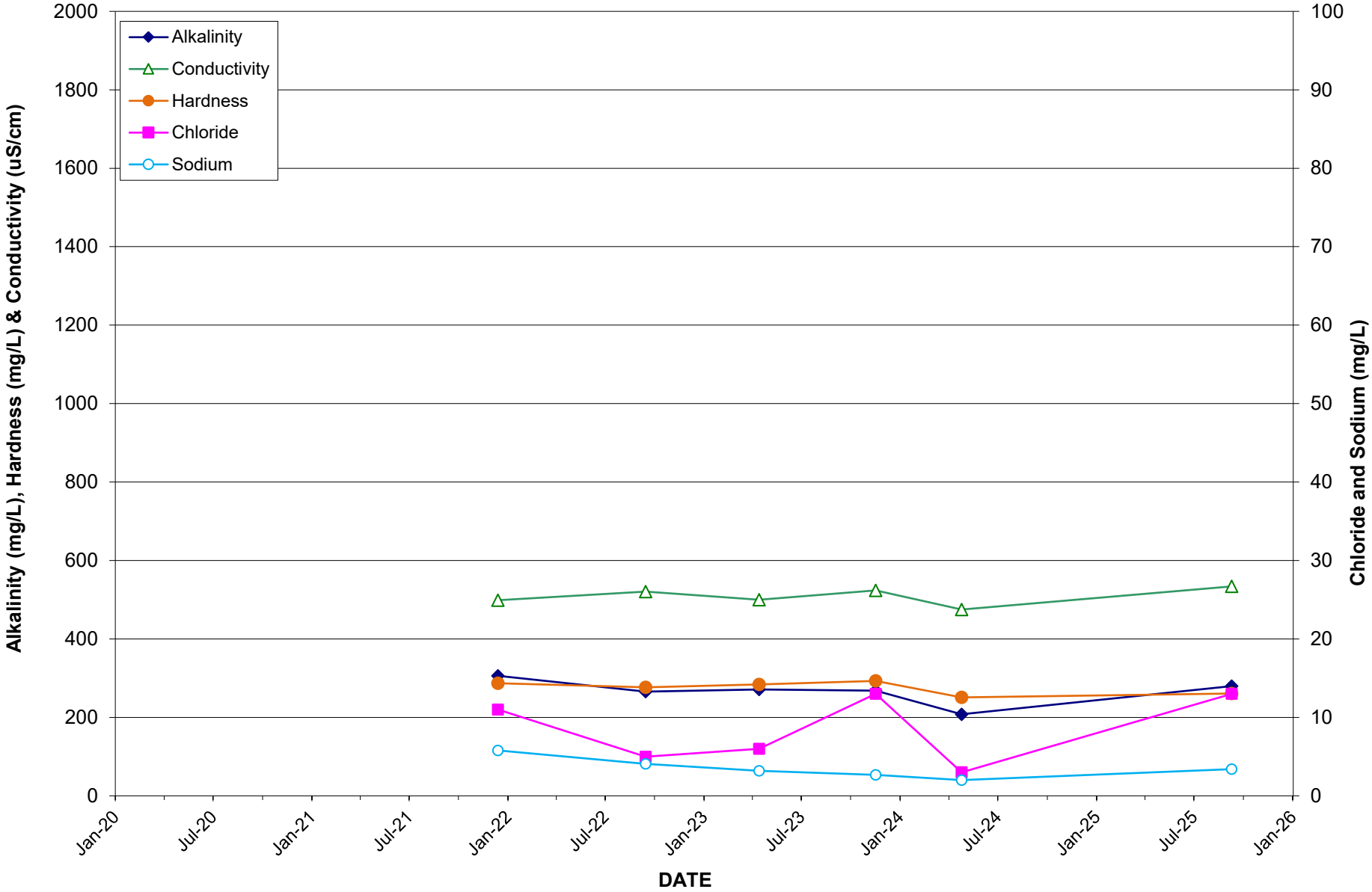
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Southampton Landfill

GROUNDWATER SAMPLING LOCATION: TW-38I



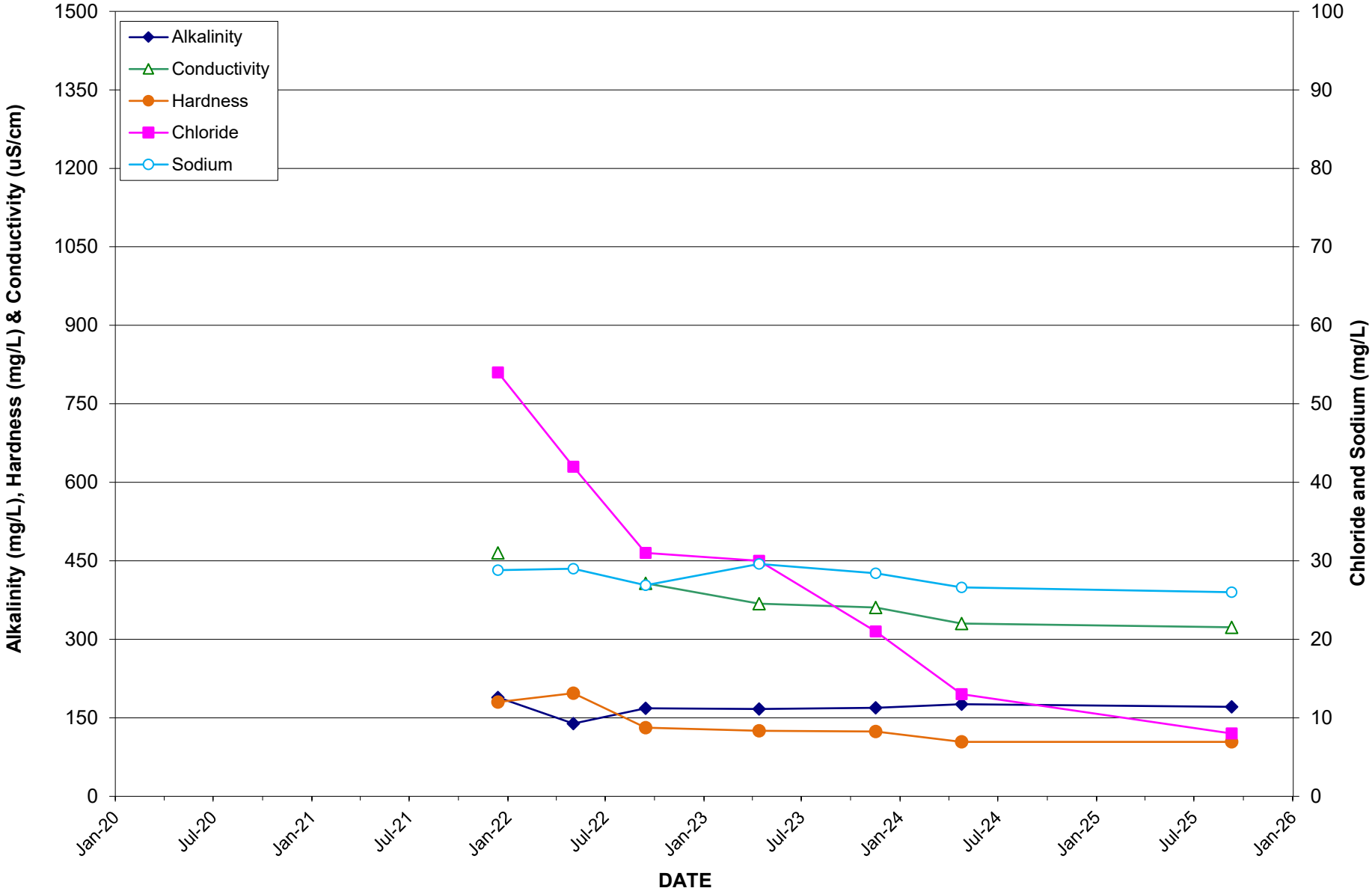
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Southampton Landfill

GROUNDWATER SAMPLING LOCATION: TW-39S



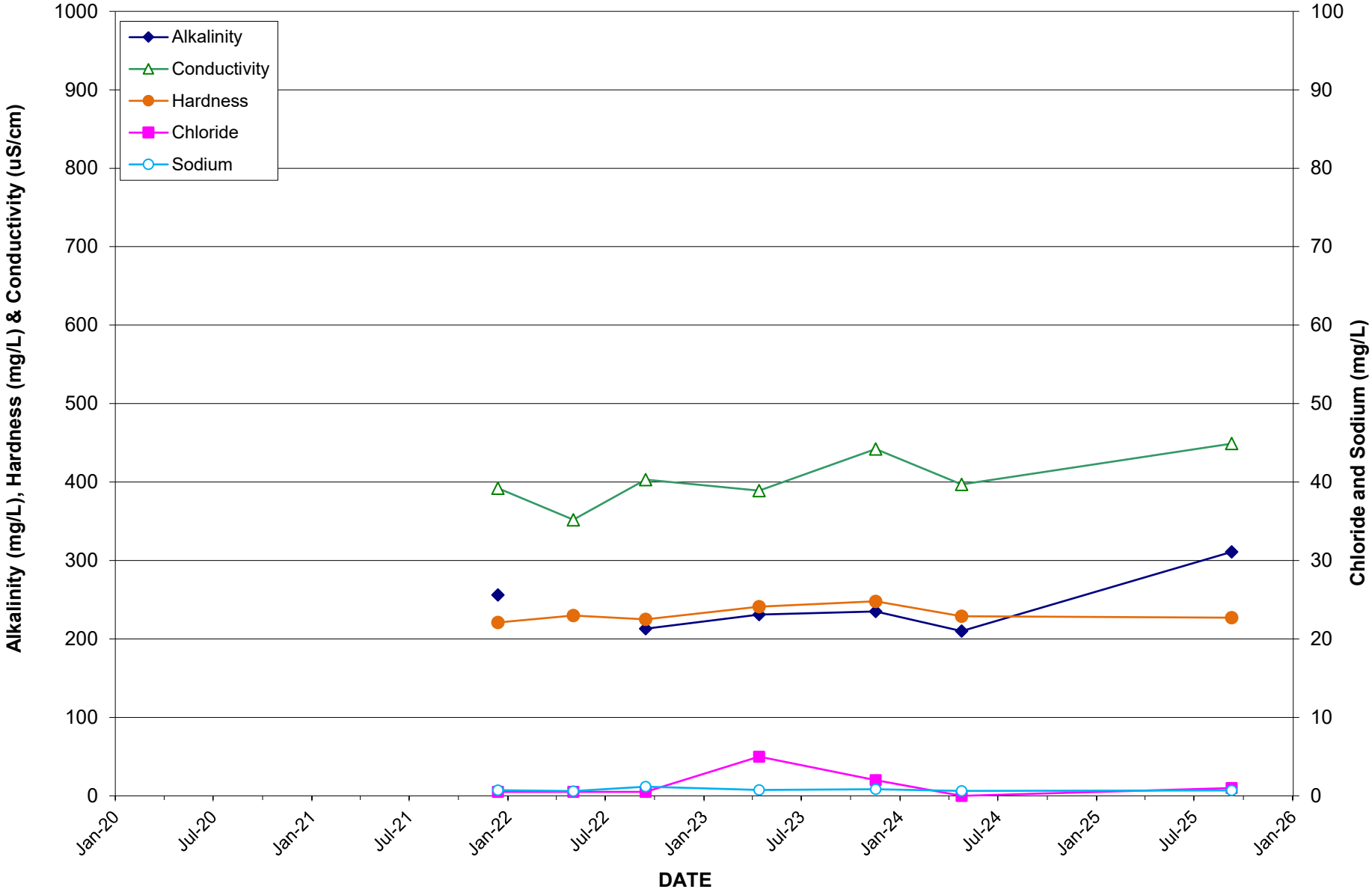
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GROUNDWATER SAMPLING LOCATION: TW-39I



File No. 2402965
Southampton Landfill

GROUNDWATER SAMPLING LOCATION: TW-40



File No. 2402965
Southampton Landfill

APPENDIX E
HISTORICAL SURFACE WATER QUALITY RESULTS (TABLES AND GRAPHS)

NOTES:

1. All results in mg/L unless otherwise noted.
2. ---- means analysis not conducted.
3. PWQO indicates Provicial Water Quality Objectives.
4. Interim = Interim PWQO
5. Alkalinity should not be decreased by more than 25% of the natural concentration.
6. The PWQO for chromium is 0.001 mg/L and 0.0089 mg/L for hexavalent and trivalent chromium, respectively.
7. PWQO for total phosphorus = 0.020 mg/L to avoid nuisance algae growth, 0.010 mg/L for high level of protection, and 0.030 mg/L for prevention of excessive plant growth.

Southampton Landfill
Historical Surface Water Quality Results

	PWQO		SW-1	SW-1	SW-1	SW-1	SW-1	SW-1	SW-1	SW-1	SW-1	SW-1	SW-1	SW-1	SW-1	SW-1	SW-1	SW-1	SW-1	SW-1	SW-1	SW-1	SW-1
	mg/L	Note	6-13-1986	5-27-1989	3-19-1991	5-5-1993	11-14-1994	5-15-1995	11-20-1995	5-7-1997	12-18-1997	11-30-2000	11-30-2000	12-12-2001	12-12-2001	5-29-2003	11-27-2003	6-1-2004	6-23-2005	11-18-2005	10-25-2006	5-3-2007	10-28-2008	9-12-2009
Alkalinity		5	----	----	----	----	225	297	146	264	247	147	146	236	234	245	230	238	296	243	317	360	424	295
Aluminum	0.075	Interim	----	----	----	----	----	----	----	0.034	0.459	0.16	0.15	0.09	0.09	0.09	0.04	0.02	----	----	----	----	----	----
Ammonia	NV		0.065	0.014	0.083	0.023	0.05	0.43	<0.05	0.06	0.05	ND	ND	0.08	0.09	0.2	0.1	0.4	0.6	0.5	0.1	<0.1	0.8	0.2
Unionized Ammonia	0.020		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.005	<0.005	0.028	----
Arsenic	0.10		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.05	<0.005	----	0.0007	0.0024	0.0013
Barium	NV		----	----	----	----	----	----	----	0.011	0.015	0.011	0.011	0.011	0.012	0.020	0.024	0.013	0.08	0.015	----	0.0216	0.209	0.137
Beryllium	1.1		----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	<0.005	<0.005	<0.005	----	----	----	----	----	----
Bismuth	NV		----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	<0.0003	<0.0003	<0.0003	----	----	----	----	----	----
Boron	0.2	Interim	----	----	----	----	----	----	----	0.02	0.03	ND	0.01	0.01	ND	<0.05	0.05	<0.05	0.07	0.06	----	0.083	1.16	0.682
Cadmium	0.0005		----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	----	<0.00006	0.000095	0.000187
Calcium	NV		59.5	67.4	52.5	59.7	68.7	73.1	50.5	63.7	69.7	45.3	45.7	74.7	75.9	78.2	67.9	66.8	90.2	76.2	120	106	153	137
Chloride	NV		1	1.7	0.8	0.9	2.5	2.2	1.8	1.92	1.3	2.2	2.2	1.5	1.5	6	3.4	11	7.9	11	33	34	83	140
Chromium	0.00089	6	----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	<0.001	<0.001	<0.001	<0.001	<0.001	----	0.0006	0.0006	0.0006
Cobalt	0.0009	Interim	----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	0.0005	<0.0003	0.0003	----	----	----	----	----	----
Conductivity	NV		515	463	395	426	453	500	361	410	453	304	302	428	430	502	501	514	553	625	826	810	1320	1300
Copper	0.005	Interim	----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	<0.001	0.0012	0.0013	<0.0008	<0.0008	----	0.0007	0.0062	0.0015
DOC	NV		----	10.1	2.8	5.4	6.5	6.2	6	4.2	5	6.4	6.4	22.3	21.7	7.7	15	8.1	9.7	4.8	5.5	11.3	9.3	5.5
Fluoride	NV		----	----	----	----	----	----	----	0.02	0.13	ND	ND	ND	ND	0.04	0.06	0.06	----	----	----	----	----	----
Hardness	NV		235	255	201	226	263	280	193	238	250	191	192	243	244	288	263	255	322	279	435	390	577	503
Hydrogen Sulphide	0.002		----	----	----	----	----	----	0.02	<0.02	0.06	ND	ND	----	----	<0.003	<0.02	<0.02	<0.02	<0.02	----	----	----	----
Iron	0.30		0.75	0.18	0.04	0.19	0.16	2.1	1.45	0.218	0.256	0.5	0.5	0.31	0.32	0.29	0.15	0.46	10.8	<0.02	----	0.22	6.96	0.38
Lead	0.025		----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	0.0002	0.0005	0.0003	0.006	<0.0002	----	0.00037	0.00081	0.0003
Magnesium	NV		21	21	17	18.6	22.1	23.5	16.3	17.9	19	15.5	15.6	18.8	18.8	22.4	22.8	21.3	23.5	21.6	33.2	30.7	47.7	39.4
Manganese	NV		----	----	----	----	0.055	0.514	0.19	0.107	0.233	0.111	0.109	0.197	0.198	1.01	0.21	0.521	----	----	----	----	----	----
Mercury	0.0002		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.0001	<0.0001	<0.0001
Molybdenum	0.040	Interim	----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	0.0006	<0.0003	<0.0003	----	----	----	----	----	----
Nickel	0.025		----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	<0.001	<0.001	0.001	----	----	----	----	----	----
Nitrate	NV		----	0.2	<0.1	<0.1	0.1	<0.1	<0.1	0.03	----	ND	ND	ND	ND	0.51	<0.05	<0.05	0.08	0.06	<0.05	<0.05	<0.05	0.18
Nitrite	NV		----	0.01	<0.01	<0.01	<0.01	<0.01	0.01	----	----	ND	ND	ND	ND	<0.06	<0.006	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
Orthophosphate	NV		----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	----	----	----	----	----	----	----	----	----
pH (unitless)	6.5 - 8.5		7.89	7.36	7.79	7.7	7.6	7.71	7.56	7.39	7.25	7.64	7.67	7.52	7.5	7.83	7.61	8.13	7.94	7.91	7.91	8.11	8.02	7.95
Phenols	0.001		<0.0010	0.0025	----	0.008	0.0049	0.0019	0.0071	----	0.001	ND	ND	ND	ND	<0.001	<0.001	0.001	0.002	<0.001	<0.001	<0.001	<0.001	0.001
Phosphorus	NV		----	----	----	----	<0.001	0.08	0.15	----	0.18	----	----	----	----	<0.02	0.04	0.02	0.17	<0.02	0.04	0.01	0.35	0.02
Phosphorus (Soluble)	NV		----	----	----	----	----	----	----	----	0.06	----	----	----	----	<0.03	0.06	0.12	----	----	----	----	----	----
Phosphorus (Total)	0.030	7	----	----	----	----	0.025	<0.01	<0.01	----	0.07	0.029	0.027	0.082	0.085	----	----	----	----	----	----	----	----	----
Potassium	NV		----	----	----	----	0.97	1.2	0.38	1.2	----	ND	ND	ND	ND	4.38	11.2	3.88	4.35	2.39	4.12	9.04	29.4	18.9
Selenium	0.10		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Silver	0.0001		----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	<0.0001	<0.0001	<0.0001	----	----	----	----	----	----
Sodium	NV		----	----	----	----	1.4	2.6	1	1.44	1.1	0.7	0.7	0.7	0.7	3.43	5.79	7.41	7.84	6.01	16.9	24.0	77.3	88.5
Sulphate	NV		----	----	----	----	36.4	4.9	40.1	1.73	12.4	31.1	30.6	3.7	3.7	26	7.6	20	1.7	75	87	8.5	260	230
Tin	NV		----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	<0.1	<0.1	<0.001	----	----	----	----	----	----
Titanium	NV		----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	<0.003	<0.003	<0.003	----	----	----	----	----	----
TKN	NV		----	0.68	0.47	0.44	0.43	0.79	0.99	0.48	0.34	0.45	0.45	0.56	0.59	0.6	0.8	0.7	1.1	<0.5	<0.5	0.8	1.3	<0.5
Vanadium	0.006	Interim	----	----	----	----	----	----	----	----	----	ND	ND	ND	ND	<0.0009	<0.0009	<0.0009	----	----	----	----	----	----
Zinc	0.03		----	----	----	----	----	----	----	0.012	----	0.007	0.011	0.246	0.255	0.002	0.008	<0.001	0.06	0.003	----	0.0027	0.016	0.007
BOD	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	3	9	<4
COD	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	31	47	20
TSS	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	4	248	16
TDS	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	483	920	874

Southampton Landfill
Historical Surface Water Quality Results

	PWQO		SW-1	SW-1	SW-1	SW-1	SW-1	SW-1	SW-1	SW-1	SW-1	SW-1	SW-1	SW-1	SW-1	SW-1	SW-2	SW-2	SW-2	SW-3	SW-3	SW-3	SW-3
	mg/L	Note	4-19-2010	11-11-2010	4-20-2011	11-7-2011	4-12-2012	10-31-2012	4-25-2013	11-7-2013	5-9-2014	4-27-2015	5-2-2017	5-2-2022	4-24-2024	4-22-2025	6-13-1986	3-19-1991	5-7-1997	8-10-1988	11-3-1988	5-27-1989	10-11-1989
Alkalinity		5	276	337	403	361	385	289	396	228	419	323	309	328	306	248	----	----	691	----	----	----	92.1
Aluminum	0.075	Interim	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.048	----	----	----	----
Ammonia	NV		0.2	0.6	7.8	1.1	0.4	<0.1	6.7	0.7	3.8	<0.1	3.8	< 0.1	<0.1	<0.1	0.2	1.4	0.73	0.108	0.062	0.037	0.03
Unionized Ammonia	0.020		0.009	0.001	0.375	----	----	----	0.298	0.009	0.213	<0.001	0.01	< 0.001	0.002	<0.001	----	----	----	----	----	----	----
Arsenic	0.10		0.0005	0.0009	0.0078	0.0012	0.0008	0.0018	0.298	0.0026	0.0033	0.003	0.003	0.0004	0.0011	0.0006	----	----	----	----	----	----	----
Barium	NV		0.122	0.145	0.0604	0.101	0.0346	0.0383	0.0982	0.0517	0.0458	0.028	0.0372	0.0323	0.0645	0.0431	----	----	0.094	----	----	----	----
Beryllium	1.1		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	0.2	Interim	0.832	0.235	0.288	0.207	0.142	0.19	0.314	0.116	0.2	0.157	0.208	0.145	0.152	0.175	----	----	0.27	----	----	----	----
Cadmium	0.0005		0.000076	0.000030	0.000115	0.000035	0.000202	0.000031	0.000081	0.000129	0.000023	0.0000026	0.000052	0.000013	0.000043	0.000181	----	----	----	----	----	----	----
Calcium	NV		96.5	104	94.9	106	101	----	143	81.1	112	87	107	95.5	91.4	77.8	88.5	179	222	22.3	24.1	36.2	16.3
Chloride	NV		52	34	120	50	60	62	74	42	110	38	95	26	16	16	26.5	18.5	11.6	20.86	17.84	17.4	22.1
Chromium	0.00089	6	<0.0005	0.0006	0.0057	<0.0005	0.0008	<0.005	0.0069	0.0029	0.00394	0.00012	0.00286	0.00057	0.00066	0.00077	----	----	----	----	----	----	----
Cobalt	0.0009	Interim	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV		838	791	1150	1020	890	1050	1170	699	1120	737	912	617	618	536	1180	1288	1170	311	290	346	288
Copper	0.005	Interim	0.0020	0.0025	0.0068	0.0018	0.0017	0.0057	0.0033	0.0046	0.00164	0.0006	0.00398	0.0024	0.003	0.002	----	----	----	----	----	----	----
DOC	NV		5.7	6.2	48.2	22.8	16.7	----	116	24.5	23.8	10.2	30	19	13	11	----	13	10.9	5.3	4.4	3.5	3.8
Fluoride	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	NV		348	372	357	377	367	----	494	282	390	319	353	332	313	263	468	699	729	134.2	123.9	165	117
Hydrogen Sulphide	0.002		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Iron	0.30		0.28	1.41	1.58	1.11	0.658	0.533	2.53	2.41	0.61	0.104	1.03	0.112	2.54	0.639	1.65	0.05	0.888	0.19	0.18	0.32	0.07
Lead	0.025		0.00015	0.00026	0.00273	0.00042	0.00092	0.00017	0.00236	0.00327	0.00056	0.00011	0.00135	<0.00009	0.00185	0.00082	----	----	----	----	----	----	----
Magnesium	NV		26.1	27.6	29.1	27.4	28.1	27.8	33.5	19.3	26.7	23.5	20.9	22.6	20.6	16.8	60	61	49.3	19.03	15.46	18	18.4
Manganese	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	2.01	----	----	----	----
Mercury	0.0002		<0.0001	<0.0001	<0.0001	<0.0001	<0.001	<0.0001	<0.00001	<0.00001	0.000002	<0.01	0.00003	<0.00001	<0.00001	<0.00001	----	----	----	----	----	----	----
Molybdenum	0.040	Interim	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	0.025		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nitrate	NV		0.07	<0.05	0.24	<0.05	0.19	<0.05	<01.06	<0.006	<0.006	<0.03	< 0.06	0.76	<0.06	0.53	----	0.9	0.08	----	0.2	1.5	<0.1
Nitrite	NV		<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.03	<0.003	<0.003	0.11	< 0.03	<0.03	<0.03	<0.03	----	0.06	----	----	0.03	0.03	0.01
Orthophosphate	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH (unitless)	6.5 - 8.5		6.91	7.27	8.08	8.34	7.88	8.17	8.02	7.98	8.11	8.24	7.88	8.29	7.89	7.82	7.83	7.91	7.51	8.18	8.04	8.49	8.47
Phenols	0.001		<0.001	0.001	0.013	0.01	0.002	0.003	0.002	0.002	0.008	<0.001	0.015	<0.001	<0.001	0.002	0.004	<0.0010	0.002	<0.0010	<0.0010	0.0015	0.003
Phosphorus	NV		<0.01	0.035	0.274	0.014	0.16	0.148	0.206	0.171	0.236	0.16	----	----	----	----	----	----	----	----	----	----	----
Phosphorus (Soluble)	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus (Total)	0.030	7	----	----	----	----	----	----	----	----	----	----	0.193	0.049	0.1	0.043	----	----	----	0.023	----	----	0.012
Potassium	NV		18.1	11.2	58.2	40.1	24.5	----	45.7	40.5	46.3	22.3	37.9	30.6	23.9	20.9	----	----	18.2	----	----	----	----
Selenium	0.10		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Silver	0.0001		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	NV		69.0	25.1	79	34.6	31.1	----	66.1	19.8	67.5	22.8	61	14.3	8.48	9.25	----	----	8.95	----	----	----	----
Sulphate	NV		94	40	200	100	4.6	----	39	56	17	34	53	27	18	36	----	----	49.5	----	----	----	----
Tin	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV		<0.5	0.5	10.4	1.4	1.2	1.6	11.6	2.3	6.4	0.5	4.8	0.9	<0.5	0.7	----	2.31	1.69	----	0.46	0.46	0.44
Vanadium	0.006	Interim	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	0.03		0.004	<0.002	0.024	0.003	0.01	0.008	0.043	0.018	0.002	0.001	0.01	0.003	0.026	0.006	----	----	0.012	----	----	----	----
BOD	NV		<2	<2	23	<4	<4	<4	97	26	38	<4	18	<4	15	<4	----	----	----	----	----	----	----
COD	NV		18	18	190	50	40	91	360	119	195	20	130	55	41	38	----	----	----	----	----	----	----
TSS	NV		9	33	88	13	7	37	23	40	26	9	22	3	179	27	----	----	----	----	----	----	----
TDS	NV		506	477	780	614	526	740	800	489	634	449	631	391	463	320	----	----	----	----	----	----	----

Southampton Landfill
Historical Surface Water Quality Results

	PWQO		SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3
	mg/L	Note	5-28-1990	3-19-1991	9-10-1991	6-17-1992	9-17-1992	5-5-1993	11-17-1993	5-2-1994	11-14-1994	5-15-1995	11-20-1995	5-31-1996	11-13-1996	5-7-1997	5-7-1998	12-17-1998	12-17-1998	5-21-1999	12-2-1999	12-2-1999	5-31-2000	11-30-2000
Alkalinity		5	109	----	----	----	----	----	----	179	111	434	124	171	127	195	143	160	163	139	116	118	129	82
Aluminum	0.075	Interim	----	----	----	----	----	----	----	----	----	----	----	----	0.042	0.038	----	----	----	0.08	0.17	0.18	ND	0.17
Ammonia	NV		0.029	0.045	0.009	0.039	0.011	0.039	5.46	1.36	0.09	3.09	<0.05	<0.05	<0.05	0.07	ND	0.6	0.61	0.1	0.05	0.06	ND	0.11
Unionized Ammonia	0.020		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Arsenic	0.10		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Barium	NV		----	----	----	----	----	----	----	----	----	----	----	----	0.014	0.017	----	----	----	0.014	0.01	0.011	0.015	ND
Beryllium	1.1		----	----	----	----	----	----	----	----	----	----	----	----	<0.005	----	----	----	----	ND	ND	ND	ND	ND
Bismuth	NV		----	----	----	----	----	----	----	----	----	----	----	----	<0.05	----	----	----	----	ND	ND	ND	ND	ND
Boron	0.2	Interim	----	----	----	----	----	----	----	----	----	----	----	----	0.02	0.03	----	----	----	0.02	0.02	0.02	0.02	ND
Cadmium	0.0005		----	----	----	----	----	----	----	----	----	----	----	----	<0.003	----	----	----	----	ND	ND	ND	ND	ND
Calcium	NV		25.8	14.8	10.8	18.9	14.2	52.8	45.5	91.9	19.2	103	26.2	46.3	28.3	56.2	46	37	39.9	33	27.1	27.5	28.9	15.4
Chloride	NV		19	2.2	28.4	18.3	18.8	17.6	82.6	25.4	16.3	63.3	16.2	17.4	21.8	21.8	21.1	26.2	26.2	19.2	20.1	19.9	16.6	16.1
Chromium	0.00089	6	----	----	----	----	----	----	----	----	----	----	----	----	<0.005	----	----	----	----	ND	ND	ND	ND	ND
Cobalt	0.0009	Interim	----	----	----	----	----	----	----	----	----	----	----	----	<0.005	----	----	----	----	ND	ND	ND	ND	ND
Conductivity	NV		320	118	297	316	274	469	1144	791	274	1263	296	387	310	417	324	416	414	314	307	306	287	205
Copper	0.005	Interim	----	----	----	----	----	----	----	----	----	----	----	----	<0.003	----	----	----	----	ND	ND	ND	ND	ND
DOC	NV		3.6	3.1	----	6.4	6.1	3.8	11.7	16.6	10.4	6.7	7.1	6	6.2	3.7	7.2	6.8	6.6	8.5	9.9	9.4	7	4.2
Fluoride	NV		----	----	----	----	----	----	----	----	----	----	----	0.11	<0.02	0.06	ND	0.03	0.03	ND	ND	ND	ND	ND
Hardness	NV		135	49	109	573	133	216	354	362	122	475	140	189	137	211	187	186	182	149	136	136	157	93
Hydrogen Sulphide	0.002		----	----	----	----	----	----	----	----	----	0.02	<0.02	0.02	<0.02	----	ND	0.02	----	0.02	ND	ND	ND	ND
Iron	0.30		0.04	0.04	0.12	<0.01	0.05	0.02	0.03	<0.01	<0.01	0.37	0.06	0.047	0.071	0.059	0.1	0.26	0.38	0.21	0.2	0.21	0.08	0.28
Lead	0.025		----	----	----	----	----	----	----	----	----	----	----	----	<0.025	----	----	----	----	ND	ND	ND	ND	ND
Magnesium	NV		17.2	3	19.8	22.5	23.5	20.5	58.3	32.3	18	52.7	18.1	17.9	15.8	15.7	17.6	18.6	18.9	16.8	15.9	16.2	16.4	13.5
Manganese	NV		----	----	----	----	----	----	----	0.031	0.003	0.038	<0.003	0.015	0.01	0.019	0.022	ND	0.01	0.04	0.012	0.012	0.013	0.009
Mercury	0.0002		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	0.040	Interim	----	----	----	----	----	----	----	----	----	----	----	----	<0.01	----	----	----	----	ND	ND	ND	ND	ND
Nickel	0.025		----	----	----	----	----	----	----	----	----	----	----	----	<0.01	----	----	----	----	ND	ND	ND	ND	ND
Nitrate	NV		0.5	0.1	0.1	0.1	<0.1	0.1	0.8	0.6	0.1	0.7	<0.1	<0.03	0.03	0.29	0.05	0.03	0.03	ND	ND	ND	ND	0.2
Nitrite	NV		0.02	0.01	<0.01	0.01	<0.01	<0.01	0.02	0.01	<0.01	0.02	<0.01	<0.03	<0.03	----	ND	ND	ND	ND	ND	ND	ND	ND
Orthophosphate	NV		----	----	----	----	----	----	----	----	----	----	----	<0.05	<0.05	----	ND	ND	ND	ND	ND	ND	ND	ND
pH (unitless)	6.5 - 8.5		8.62	7.5	9.57	9.02	9.39	8.34	8.27	7.81	8.62	7.46	8.44	8.1	8.17	8.14	8.63	8.36	8.37	8.15	8.15	8.16	8.24	8.37
Phenols	0.001		0.001	<0.0010	<0.0010	0.0025	0.0035	0.002	0.0051	0.0064	0.0168	3.1	6.6	<0.001	'<0.001	----	ND	ND	ND	ND	ND	ND	0.002	ND
Phosphorus	NV		----	----	----	----	----	----	----	----	----	----	----	<0.06	<0.06	----	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.02	<0.02
Phosphorus (Soluble)	NV		----	----	----	----	----	----	----	0.008	<0.001	<0.01	<0.01	----	0.01	----	0.01	ND	ND	0.03	0.2	----	----	----
Phosphorus (Total)	0.030	7	0.003	----	0.018	----	----	----	0.008	0.012	0.005	0.05	0.04	<0.004	0.02	----	0.02	0.02	0.02	0.04	0.025	0.03	----	ND
Potassium	NV		----	----	----	----	----	----	----	17.6	2.41	22.4	2.51	2.9	3.5	3.8	3.2	3.9	4.2	3.5	3	3	3	2
Selenium	0.10		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Silver	0.0001		----	----	----	----	----	----	----	----	----	----	----	----	<0.003	----	----	----	----	ND	ND	ND	ND	ND
Sodium	NV		----	----	----	----	----	----	----	17.2	9.6	37.5	9.9	11.8	11.8	10.7	12.3	14.3	14.4	12	11.4	11.6	10.9	9.6
Sulphate	NV		----	----	----	----	----	----	----	12.4	7.8	9.9	5.3	6.71	5.18	7.73	7.5	12.7	12.6	10.4	14.1	14.3	11.3	8.4
Tin	NV		----	----	----	----	----	----	----	----	----	----	----	----	<0.05	----	----	----	----	ND	ND	ND	ND	ND
Titanium	NV		----	----	----	----	----	----	----	----	----	----	----	----	<0.05	----	----	----	----	ND	0.005	0.005	ND	0.006
TKN	NV		0.40	0.38	0.56	0.50	0.49	0.52	8.1	2.45	0.56	4.56	0.69	0.39	0.79	0.6	0.71	1.43	1.45	0.95	0.9	0.85	0.98	0.55
Vanadium	0.006	Interim	----	----	----	----	----	----	----	----	----	----	----	----	<0.01	----	----	----	----	ND	ND	ND	ND	ND
Zinc	0.03		----	----	----	----	----	----	----	----	----	----	----	----	<0.005	0.057	----	----	----	ND	ND	ND	0.027	0.005
BOD	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
COD	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TSS	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TDS	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Surface Water Quality Results

	PWQO		SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3
	mg/L	Note	7-9-2001	7-9-2001	12-12-2001	5-29-2002	11-29-2002	5-29-2003	11-27-2003	6-1-2004	11-24-2004	6-10-2005	11-14-2005	5-24-2006	5-24-2006	10-25-2006	5-3-2007	11-27-2007	5-14-2008	10-28-2008	4-17-2009	9-12-2009	4-19-2010	11-11-2010
Alkalinity		5	120	118	154	168	120	150	160	174	132	138	115	172	172	110	162	105	186	84	666	107	109	128
Aluminum	0.075	Interim	ND	ND	ND	<0.01	<0.001	0.09	0.02	0.21	0.01	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV		ND	ND	0.05	0.1	0.3	0.2	<0.1	0.2	<0.1	0.2	0.1	0.4	0.4	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1
Unionized Ammonia	0.020		----	----	----	----	----	----	----	----	----	----	----	----	0.043	<0.005	<0.005	<0.005	<0.005	0.028	<0.005	<0.005	<0.005	<0.005
Arsenic	0.10		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Barium	NV		0.008	0.008	0.009	0.009	0.004	0.014	0.014	0.014	0.009	----	----	----	----	----	----	----	----	----	----	----	----	----
Beryllium	1.1		ND	ND	ND	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	----	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV		ND	ND	ND	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	0.2	Interim	0.03	0.03	0.02	0.04	0.04	<0.05	<0.05	<0.05	0.04	----	----	----	----	----	----	----	----	----	----	----	----	----
Cadmium	0.0005		ND	ND	ND	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	----	----	----	----	----	<0.00006	----	0.000023	----	----	----	----	----
Calcium	NV		23.2	23.7	37.8	33.3	21.2	43.8	39.3	43.9	25.8	31.2	20.6	43.4	43.4	22.7	50.6	21.1	56.8	16	60.8	22.7	96.5	33.5
Chloride	NV		18.6	18.8	22.8	21	23	19	25	19	27	27	25	22	22	24	21	27	27	33	29	40	36	40
Chromium	0.00089	6	ND	ND	ND	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	----	----	----	----	----	----	----	----	----	----	----	----	----
Cobalt	0.0009	Interim	ND	ND	ND	0.056	<0.0003	0.0013	<0.0003	<0.0003	<0.0003	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV		285	277	361	334	311	309	374	354	327	355	312	394	394	297	395	296	430	278	1180	320	342	394
Copper	0.005	Interim	ND	ND	ND	0.001	<0.001	0.003	<0.0008	0.0014	<0.0008	----	----	----	----	----	----	----	----	----	----	----	----	----
DOC	NV		9.9	9.8	6.2	5.4	5.5	8.3	6	6.8	6	7.3	19.5	5.3	5.3	5.5	3.8	5	2.9	3.6	2.8	4.6	5.7	5.2
Fluoride	NV		ND	ND	ND	<0.1	<0.04	<0.04	0.06	<0.06	<0.06	----	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	NV		127	131	163	166	141	175	167	171	128	147	111	166	166	117	184	111	200	97.4	211	120	348	147
Hydrogen Sulphide	0.002		----	----	----	<0.02	<0.02	<0.003	<0.02	<0.02	<0.02	<0.02	<0.02	----	----	----	----	----	----	----	----	----	----	----
Iron	0.30		0.03	0.03	0.04	<0.02	0.02	0.39	<0.05	0.24	<0.02	0.09	<0.02	----	----	----	----	----	----	----	----	----	----	----
Lead	0.025		ND	ND	ND	<0.0002	0.0002	0.0018	0.0004	0.0009	<0.0002	----	----	----	----	----	----	----	----	----	----	----	----	----
Magnesium	NV		17.1	17.5	16.7	20	21.5	16	16.7	14.9	15.5	----	----	14.1	14.1	14.6	13.9	14.2	14.1	14	14.4	15.3	14.0	15.3
Manganese	NV		0.007	0.007	ND	<0.002	0.002	0.078	0.008	0.066	0.008	16.7	14.3	----	----	----	----	----	----	----	----	----	----	----
Mercury	0.0002		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	0.040	Interim	ND	ND	ND	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	0.025		ND	ND	ND	0.001	<0.001	0.004	<0.001	<0.001	<0.001	----	----	----	----	----	----	----	----	----	----	----	----	----
Nitrate	NV		ND	ND	ND	<0.05	<0.05	<0.05	0.11	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.17	<0.05	0.05	0.05	<0.05	<0.05
Nitrite	NV		ND	ND	ND	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
Orthophosphate	NV		----	----	ND	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH (unitless)	6.5 - 8.5		8.51	8.54	8.19	8.5	8.48	7.85	7.77	8.23	8.22	8.36	8.51	8.39	8.39	8.19	8.32	8.4	8.21	8.77	7.33	8.34	8.25	7.2
Phenols	0.001		ND	ND	ND	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	----	----	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Phosphorus	NV		0.1	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	0.04	0.21	<0.02	<0.02	----	<0.02	<0.01	<0.01	0.01	<0.01	0.03	<0.01	0.02	0.01	0.022
Phosphorus (Soluble)	NV		----	----	----	<0.03	0.05	0.04	0.06	0.1	<0.03	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus (Total)	0.030	7	0.022	0.021	0.01	----	----	----	----	----	----	----	----	<0.02	----	----	----	----	----	----	----	----	----	----
Potassium	NV		3	4	4	3.95	4.56	4.67	4.9	3.41	4.71	4.33	5.13	3.31	3.31	3.85	2.98	3.88	3.14	3.27	2.99	3.83	3.76	4.53
Selenium	0.10		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Silver	0.0001		ND	ND	ND	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0003	----	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	NV		10	10.9	11.3	12.2	11.5	9.58	12.1	11	12.7	15	14	11.6	11.6	14.0	12.5	15	15.2	18.8	19.8	21.5	19.1	22.5
Sulphate	NV		6.6	6.5	7.8	9.2	6.4	7.2	6.5	6.2	4.4	4.7	4.1	5.7	5.7	3.8	5.9	3.2	6.9	3.4	6.1	3.3	3.8	2.9
Tin	NV		ND	ND	ND	<0.1	<0.1	<0.1	<0.1	<0.001	<0.1	----	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV		ND	ND	ND	<0.003	<0.003	0.003	<0.003	<0.003	<0.003	----	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV		0.48	0.49	0.54	<0.5	0.7	0.8	0.6	0.7	0.5	0.6	0.6	0.6	0.6	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.7
Vanadium	0.006	Interim	ND	ND	ND	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	0.03		ND	ND	0.044	0.001	<0.001	0.041	0.005	0.002	0.002	----	----	----	----	----	----	----	----	----	----	----	----	----
BOD	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
COD	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TSS	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TDS	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Surface Water Quality Results

	PWQO		SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3
	mg/L	Note	4-20-2011	11-7-2011	4-12-2012	10-31-2012	4-25-2013	11-7-2013	5-9-2014	10-29-2014	4-27-2015	11-2-2015	4-13-2016	11-21-2016	5-2-2017	10-27-2017	5-11-2018	10-22-2018	4-4-2019	11-6-2019	4-14-2020	10-21-2020	5-6-2021	12-13-2021
Alkalinity		5	165	109	160	129	187	111	207	106	176	122	186	140	178	129	194	143	103	130	197	120	160	158
Aluminum	0.075	Interim	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV		0.3	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1
Unionized Ammonia	0.020		<0.005	<0.005	<0.005	0.009	<0.005	<0.005	<0.005	<0.005	<0.001	0.003	<0.004	0.001	<0.0004	<0.002	<0.003	0.005	0.002	<0.002	0.001	0.004	<0.002	0.002
Arsenic	0.10		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.0002
Barium	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.0121
Beryllium	1.1		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	0.2	Interim	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.032
Cadmium	0.0005		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.000109
Calcium	NV		56.5	25.5	46.4	31.8	64.2	25.3	65.3	2.7	45.9	24.4	57.3	38.0	60.0	26.7	61.9	36.2	27.4	37.0	60.9	26.9	46.4	42.7
Chloride	NV		30	40	38	42	33	40	30	37	35	42	35	48	57	70	54	64	21	70	69	72	61	58
Chromium	0.00089	6	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.00020
Cobalt	0.0009	Interim	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV		444	358	434	395	497	342	479	316	433	362	450	400	511	465	488	460	253	483	593	455	500	456
Copper	0.005	Interim	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.0002
DOC	NV		3.5	5.9	4.5	6.8	4.9	4.4	4.4	6	6	7.1	3.3	6	5.0	7	6.0	8	3.0	6	5.0	7	6	6
Fluoride	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	NV		195	124	184	144	219	119	220	114	170	112	197	156	207	112	210	146	93	144	206	121	173	158
Hydrogen Sulphide	0.002		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Iron	0.30		----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.035	0.018	0.033	0.019	0.023	0.021	0.031	0.031
Lead	0.025		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	< 0.00009
Magnesium	NV		13.2	14.8	16.6	15.6	14.2	13.6	13.8	14	13.4	12.4	13.0	14.9	14.0	11.0	13.4	13.4	6.0	12.6	13.2	13.1	13.8	12.6
Manganese	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Mercury	0.0002		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	< 0.00001
Molybdenum	0.040	Interim	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	0.025		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nitrate	NV		3.19	<0.05	0.53	<0.05	0.32	<0.06	0.14	<0.06	0.92	<0.06	0.19	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	0.18	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06
Nitrite	NV		<0.06	<0.06	<0.06	<0.06	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Orthophosphate	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH (unitless)	6.5 - 8.5		7.67	8.27	8.42	8.27	8.22	8.19	8.3	8.34	8.45	8.24	8.16	8.34	8.25	8.15	8.30	8.33	7.69	8.20	8.41	8.36	8.20	8.20
Phenols	0.001		0.001	<0.01	0.001	0.002	0.035	<0.001	0.001	<0.001	----	<0.001	< 0.001	0.001	< 0.001	0.010	0.002	0.003	0.002	0.005	0.003	0.002	< 0.001	< 0.001
Phosphorus	NV		0.025	<0.009	0.027	<0.009	0.014	<0.009	0.26	0.017	<0.009	0.004	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus (Soluble)	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus (Total)	0.030	7	----	----	----	----	----	----	----	----	----	----	0.010	0.023	0.036	0.026	0.013	0.010	0.014	0.017	0.016	< 0.003	0.021	0.013
Potassium	NV		56.5	2.95	2.95	3.92	3.06	2.97	2.83	2.89	2.33	3.37	2.54	3.77	3.00	2.53	3.20	3.77	1.48	3.02	2.70	3.13	2.66	2.50
Selenium	0.10		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Silver	0.0001		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	NV		17.5	22.5	26.3	26.6	23.1	22.5	20.9	14	22.2	26.1	22.6	29.1	33.6	32.3	33.7	38.8	12.3	38.0	39.2	41.7	40.9	37.5
Sulphate	NV		4.5	3.1	5	4.2	5.4	3.6	4.9	2.7	2	3	5	3	6	4	5	5	< 2	5	6	2	4	< 2
Tin	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV		<0.5	<0.5	<0.5	0.6	0.6	<0.5	<0.5	0.5	<0.1	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5	< 0.5	< 0.5	1	< 0.5	< 0.5	0.7
Vanadium	0.006	Interim	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	0.03		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.005
BOD	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	< 4
COD	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	22
TSS	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	5
TDS	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	263

Southampton Landfill
Historical Surface Water Quality Results

	PWQO		SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3	SW 3	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4
	mg/L	Note	5-2-2022	9-14-2022	4-13-2023	11-16-2023	4-24-2024	11-15-2024	4-22-2025	9-9-2025	1-13-1982	1-12-1983	9-15-1983	8-10-1988	11-3-1988	5-27-1989	10-11-1989	6-17-1992	9-17-1992	5-5-1993	11-17-1993	5-2-1994	11-14-1994
Alkalinity		5	200	119	184	151	176	124	162	114	821	581	----	----	----	----	696	----	----	----	----	300	411
Aluminum	0.075	Interim	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV		< 0.1	< 0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	13.2	5.25	22.9	5.55	3	0.504	0.022	0.039	8.6	4.7	0.056	0.034	3.76
Unionized Ammonia	0.020		< 0.001	<0.005	<0.001	< 0.001	<0.004	<0.003	<0.007	<0.001	----	----	----	----	----	----	----	----	----	----	----	----	----
Arsenic	0.10		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Barium	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Beryllium	1.1		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	0.2	Interim	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cadmium	0.0005		----	----	----	----	----	----	----	----	<0.0002	----	----	<0.005	----	----	----	----	----	----	----	----	----
Calcium	NV		54.2	23.1	65	42	51.1	29.3	53.0	24.6	155	111	110	86	113.2	106	98	112	55.3	70.4	19.2	45	68.1
Chloride	NV		52	57	56	60	55	64	49	62	230	130	280	144.8	81.88	68	149	98.1	120	51.6	16.6	13.2	79.2
Chromium	0.00089	6	----	----	----	----	----	----	----	----	<0.1	----	----	<0.02	----	----	----	----	----	----	----	----	----
Cobalt	0.0009	Interim	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV		513	430	450	472	519	461	424	413	2160	1420	2710	1700	1188	1201	1760	1340	1410	1033	291	394	1122
Copper	0.005	Interim	----	----	----	----	----	----	----	----	0.005	----	----	<0.02	----	----	----	----	----	----	----	----	----
DOC	NV		5	7	6	5	5	6	5	6	----	9.6	30	12.5	8.1	7.8	14.2	+	13.1	6.1	6.3	17.6	11.1
Fluoride	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	NV		190	117	221	156	183	133	182	114	865	582	959	598.2	518.8	545	678	573	481	363	128	188	410
Hydrogen Sulphide	0.002		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Iron	0.30		0.021	0.026	0.035	0.049	0.05	0.008	0.024	0.021	1.36	0.26	----	0.2	0.05	0.12	0.3	<0.01	0.23	0.03	0.02	<0.01	<0.01
Lead	0.025		----	----	----	----	----	----	----	----	<0.005	----	----	<0.03	----	----	----	----	----	----	----	----	----
Magnesium	NV		13.2	14.4	14.3	12.5	13.5	14.5	12.0	12.8	116	74	166	93	57.24	68	105	71.2	83.2	45.3	19.5	18.4	58.2
Manganese	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.003	0.015
Mercury	0.0002		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	0.040	Interim	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	0.025		----	----	----	----	----	----	----	----	<0.025	----	----	<0.02	----	----	----	----	----	----	----	----	----
Nitrate	NV		<0.06	<0.06	<0.06	< 0.06	<0.06	<0.06	0.11	<0.06	1.14	0.88	0.05	----	1.7	0.8	0.1	0.7	<0.1	0.3	<0.1	0.3	0.9
Nitrite	NV		<0.03	<0.03	<0.03	< 0.03	<0.03	<0.03	<0.03	<0.03	0.036	0.024	0.009	----	0.07	0.05	0.02	0.01	0.02	0.01	<0.01	0.01	0.02
Orthophosphate	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH (unitless)	6.5 - 8.5		8.28	8.38	8.12	8.18	8.2	8.07	8.28	7.97	7.46	7.45	7.46	7.56	7.72	7.55	7.68	7.72	7.84	7.94	8.62	8.34	8.05
Phenols	0.001		<0.001	<0.001	0.002	< 0.002	<0.001	0.002	0.004	0.002	<0.0010	----	0.009	<0.0010	<0.0010	0.002	0.005	0.0035	0.007	0.0025	0.0101	<0.0010	0.0085
Phosphorus	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus (Soluble)	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.008	<0.01
Phosphorus (Total)	0.030	7	0.036	0.009	0.027	0.007	0.02	0.01	0.006	0.015	0.051	----	----	0.027	----	----	0.036	----	----	----	0.006	0.009	0.017
Potassium	NV		2.31	3.26	3.38	2.92	2.52	2.94	2.46	2.33	65	46.8	----	----	----	----	----	----	----	----	----	3	31.8
Selenium	0.10		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Silver	0.0001		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	NV		33.1	38.8	34.9	31.7	34.1	43.4	29.1	35.3	120	62.5	----	----	----	----	----	----	----	----	----	8.2	49.5
Sulphate	NV		5	3	9	4	5	4	6	4	77	38.5	----	----	----	----	----	----	----	----	----	36.8	11.3
Tin	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV		<0.5	0.5	0.5	0.6	<0.5	0.5	<0.5	0.8	15.3	7.45	25.3	----	3.9	1.32	8.4	5.8	11.7	6.4	0.7	0.38	6.5
Vanadium	0.006	Interim	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	0.03		----	----	----	----	----	----	----	----	<0.03	----	----	<0.02	----	----	----	----	----	----	----	----	----
BOD	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
COD	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TSS	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TDS	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Surface Water Quality Results

	PWQO		SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4
	mg/L	Note	5-15-1995	11-20-1995	5-31-1996	11-13-1996	5-7-1997	5-7-1998	12-17-1998	5-21-1999	12-2-1999	5-31-2000	5-31-2000	11-30-2000	7-9-2001	12-12-2001	5-29-2002	11-29-2002	5-29-2003	11-27-2003	6-1-2004	11-24-2004	6-10-2005	11-14-2005
Alkalinity		5	172	324	612	514	620	758	566	591	496	706	734	423	842	899	908	535	690	728	728	756	631	612
Aluminum	0.075	Interim	----	----	----	<0.025	----	----	----	ND	0.45	3.60	3.59	ND	ND	1.7	0.45	0.02	0.08	0.02	<0.01	0.02	----	----
Ammonia	NV		0.04	1.41	4.47	7.86	9.49	9.1	9.7	0.36	0.04	2.17	2.18	3.19	23.9	11.1	22	14.5	6.2	7.6	16.9	22.6	9.7	14.9
Unionized Ammonia	0.020		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Arsenic	0.10		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Barium	NV		----	----	----	0.121	0.146	----	----	0.125	0.137	0.196	0.196	0.092	0.272	0.308	<0.005	0.16	0.2	0.205	0.213	0.23	----	----
Beryllium	1.1		----	----	----	<0.005	----	----	----	ND	ND	ND	ND	ND	ND	ND	<0.0003	<0.005	<0.005	<0.005	<0.005	<0.005	----	----
Bismuth	NV		----	----	----	<0.05	----	----	----	ND	ND	ND	ND	ND	ND	ND	158	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	----	----
Boron	0.2	Interim	----	----	----	0.29	0.23	----	----	0.31	0.24	0.31	0.3	0.17	0.5	0.36	0.24	0.41	0.28	0.29	0.35	0.47	----	----
Cadmium	0.0005		----	----	----	<0.003	----	----	----	ND	ND	ND	ND	ND	ND	ND	0.046	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	----	----
Calcium	NV		31.8	74.3	110	107	170	184	117	112	107	188	185	88.6	175	194	<0.0001	84.1	159	165	155	129	134	90.6
Chloride	NV		16.6	32.6	90.3	50.9	71.7	68.2	125	69.7	72.1	41.9	42.1	38.1	84.8	74	68	73	36	43	46	68	44	47
Chromium	0.00089	6	----	----	----	<0.005	----	----	----	ND	ND	0.011	0.011	ND	ND	0.006	0.004	0.001	<0.001	0.001	<0.001	<0.0012	----	----
Cobalt	0.0009	Interim	----	----	----	<0.005	----	----	----	ND	ND	ND	ND	ND	ND	0.007	<0.001	0.002	0.0007	0.0011	0.002	0.0013	----	----
Conductivity	NV		343	692	1270	1030	1200	1500	1440	1130	1070	1240	1230	823	1570	1640	1430	1160	1240	1410	1390	1480	1290	1240
Copper	0.005	Interim	----	----	----	<0.003	----	----	----	ND	ND	0.032	0.034	0.006	ND	0.015	0.17	0.002	0.004	0.0037	0.0024	<0.0008	----	----
DOC	NV		5.1	4.7	6.1	4.5	7	8.3	9.1	8.8	10.3	14.9	15.1	7.6	17.2	15	12	18	7.1	7.1	7.9	10.9	9.4	6.3
Fluoride	NV		----	----	0.41	0.32	----	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1	<0.04	<0.04	0.06	0.06	<0.06	----	----
Hardness	NV		153	323	485	474	610	719	563	556	479	693	696	392	640	756	729	497	640	651	631	666	615	456
Hydrogen Sulphide	0.002		0.02	<0.02	0.02	<0.02	----	ND	0.03	0.04	ND	ND	ND	ND	ND	ND	<0.02	<0.02	<0.003	<0.02	<0.02	<0.02	<0.02	<0.02
Iron	0.30		0.09	0.05	0.497	0.81	0.136	0.442	0.62	0.19	0.81	4.23	4.16	0.22	0.18	5.59	40.8	0.4	0.12	0.18	0.88	0.08	1	0.38
Lead	0.025		----	----	----	<0.025	----	----	----	ND	ND	ND	ND	ND	ND	ND	<0.0002	0.0007	0.0005	0.0005	0.0016	<0.0002	----	----
Magnesium	NV		17.9	33.2	51.3	44.6	43.8	63	70.2	67.4	54.7	58	57.6	40.3	84.9	68.8	0.79	69.6	59.3	58	59.2	83.9	68.1	55.9
Manganese	NV		0.016	0.029	0.144	0.427	0.331	0.603	0.17	0.08	0.096	1.14	1.12	0.29	0.312	4.61	<0.0003	3.02	0.13	0.7	1.06	0.525	----	----
Mercury	0.0002		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	0.040	Interim	----	----	----	<0.01	----	----	----	ND	ND	ND	ND	ND	ND	ND	48.4	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	----	----
Nickel	0.025		----	----	----	<0.01	----	----	----	ND	ND	ND	ND	ND	ND	ND	0.006	0.005	0.004	0.005	0.005	0.004	----	----
Nitrate	NV		<0.1	1.8	0.79	2.73	0.76	0.61	2.3	1.2	1.6	3.3	3.5	2.3	----	1.6	0.13	0.08	0.75	1.46	0.46	0.06	0.76	0.1
Nitrite	NV		<0.01	0.04	<0.03	<0.03	----	ND	ND	ND	ND	ND	ND	ND	----	ND	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
Orthophosphate	NV		----	----	<0.05	<0.05	----	ND	ND	ND	ND	ND	ND	ND	ND	ND	----	----	----	----	----	----	----	----
pH (unitless)	6.5 - 8.5		8.36	7.49	7.04	7	7.27	7.03	8.13	8.06	7.45	7.46	7.62	7.42	7.3	7.13	7.93	8.15	7.66	7.6	7.9	8.01	7.96	8.05
Phenols	0.001		0.0022	0.0043	<0.001	'<0.001	----	ND	ND	ND	ND	0.002	0.002	ND	ND	ND	<0.001	0.006	<0.001	<0.001	<0.001	<0.001	----	----
Phosphorus	NV		----	----	<0.06	<0.06	----	0.07	<0.06	<0.06	0.4	0.7	0.5	<0.02	0.1	0.3	<0.02	0.02	<0.02	0.02	0.03	0.02	0.04	<0.02
Phosphorus (Soluble)	NV		<0.01	<0.01	----	<0.01	----	0.01	ND	0.02	----	----	----	----	----	----	<0.03	0.06	<0.03	0.05	0.24	0.03	----	----
Phosphorus (Total)	0.030	7	0.03	0.02	<0.004	<0.01	----	0.01	0.04	0.04	0.27	----	----	0.017	0.031	0.457	----	----	----	----	----	----	----	----
Potassium	NV		2.72	19.9	20.1	24.4	22.6	34.3	44.3	36.7	31	27	27	26	46	36	81.5	49.1	41.8	35	30.8	51	38.5	38.4
Selenium	0.10		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Silver	0.0001		----	----	----	<0.003	----	----	----	ND	ND	ND	ND	ND	ND	ND	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0002	----	----
Sodium	NV		----	----	40.7	38.7	40.7	44.2	71.7	47	38.9	38.8	38.4	25.7	----	46	48.4	41.2	26.1	34.5	33.5	49.8	30.9	29
Sulphate	NV		9.3	23.5	7.89	4.37	4.82	3.4	83.3	40.3	25.3	14.2	14.6	6.2	9.8	5.1	3.4	3.1	17	4.7	4.1	1	3.2	2.1
Tin	NV		----	----	----	<0.05	----	----	----	ND	ND	ND	ND	ND	ND	ND	<0.1	<0.1	<0.1	<0.1	<0.001	<0.1	----	----
Titanium	NV		----	----	----	<0.05	----	----	----	ND	0.014	0.062	0.062	ND	ND	0.037	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	----	----
TKN	NV		0.58	2.26	6.82	8.03	10.9	111	10.8	1.81	2.14	7.3	7.3	4.16	21	14.2	20.9	15.5	6	8.2	16.7	22	10	14.9
Vanadium	0.006	Interim	----	----	----	<0.01	----	----	----	ND	ND	0.01	0.009	ND	ND	ND	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	----	----
Zinc	0.03		----	----	----	<0.005	0.026	----	----	ND	0.025	0.055	0.051	0.012	0.008	0.062	0.005	0.015	0.008	0.05	0.002	0.003	----	----
BOD	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
COD	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TSS	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TDS	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Surface Water Quality Results

	PWQO		SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4
	mg/L	Note	5-25-2006	5-24-2006	10-25-2006	5-3-2007	11-27-2007	5-14-2008	10-28-2007	4-17-2009	9-12-2009	4-19-2010	11-11-2010	4-20-2011	11-7-2011	4-12-2012	10-31-2012	4-25-2013	11-7-2013	5-9-2014	10-29-2014	4-27-2015	11-2-2015	4-13-2016
Alkalinity		5	817	817	560	707	577	706	564	214	621	621	567	588	633	754	423	485	613	679	727	625	580	645
Aluminum	0.075	Interim	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV		16.9	16.9	13.6	9.5	13	8	16	9.4	13.9	7.4	7.2	6.3	15.1	11.3	7.5	5.2	10.6	9.6	16.9	7.6	12.5	6.1
Unionized Ammonia	0.020		----	0.12	0.74	0.25	0.53	0.05	0.687	0.81	0.16	0.259	0.332	0.092	0.119	0.046	0.582	0.236	0.132	0.278	0.623	0.008	0.285	0.151
Arsenic	0.10		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Barium	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Beryllium	1.1		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	0.2	Interim	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cadmium	0.0005		----	----	----	<0.00006	----	0.000034	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Calcium	NV		180	180	97.7	187	99.3	169	115	163	112	139	121	163	143	189	107	163	25.3	187	167	146	122	179
Chloride	NV		44	44	50	39	49	29	46	36	50	55	57	37	51	38	67	33	62	37	52	49	45	36
Chromium	0.00089	6	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cobalt	0.0009	Interim	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV		1450	1450	1160	1380	1230	1310	1220	450	1100	1320	1180	1140	1380	1380	1030	980	1320	1300	1370	1210	1160	1220
Copper	0.005	Interim	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
DOC	NV		9.8	9.8	16.6	8.0	16.9	4.8	15.2	5.1	25.6	15.3	8.3	7.3	22.8	12.1	10	6.7	31.1	4.4	11.2	6.6	16.3	6.6
Fluoride	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	NV		684	684	486	698	465	612	519	572	496	580	534	572	576	705	439	557	607	650	636	554	491	604
Hydrogen Sulphide	0.002		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Iron	0.30		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Lead	0.025		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Magnesium	NV		56.8	56.8	58.9	56.5	52.8	46.3	56.3	40.3	52.9	56.4	56.2	40.3	53.4	56.9	42	36.6	51.6	44.1	53.2	46	45.5	38.4
Manganese	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Mercury	0.0002		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Molybdenum	0.040	Interim	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	0.025		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nitrate	NV		0.93	0.93	0.22	0.56	<0.05	0.58	0.37	1.27	0.21	1.42	0.26	2.08	1.1	0.54	0.51	0.71	4.33	0.87	1.36	2.36	0.17	0.90
Nitrite	NV		<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	0.12	<0.06	<0.06	<0.03	0.19	<0.03	0.1	0.03	<0.03	< 0.03
Orthophosphate	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH (unitless)	6.5 - 8.5		7.22	7.22	8.08	7.70	7.98	7.20	8.02	8.3	8.04	6.79	6.54	7.59	7.22	7.5	8.25	8.01	7.88	7.79	7.92	8.08	7.78	7.69
Phenols	0.001		<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	0.001	0.001	<0.001	<0.001	0.001	<0.001	0.001	0.004	0.002	<0.001	0.001	<0.001	----	0.001	< 0.001
Phosphorus	NV		----	<0.02	0.06	<0.01	0.05	<0.01	0.05	0.08	0.06	0.02	0.097	<0.009	0.064	0.01	0.023	0.017	0.038	<0.009	0.1	0.011	0.159	----
Phosphorus (Soluble)	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus (Total)	0.030	7	<0.02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.021
Potassium	NV		28.4	28.4	32.2	27.8	33.6	25.7	36.4	20.3	30.8	42.5	38.9	20.2	32.6	32.6	28.6	17.4	33.5	25.1	36.3	23.5	27.5	19.2
Selenium	0.10		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Silver	0.0001		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	NV		29.8	29.8	36.5	26.9	32.8	21.8	35.8	25.6	34.9	38.8	41.1	23.9	47.8	31.7	34	23.8	45.0	28.5	39.7	36.7	27.3	28.2
Sulphate	NV		12	12	1.3	4.5	3.3	9.3	1.6	4.8	1.7	12	2.4	4.9	3.6	5	11	5.4	7.2	7.8	2.4	9	7	6
Tin	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV		16.8	16.8	15.1	11.0	14.1	7.8	15.7	9.2	14.6	6.9	7.9	5.7	16.3	12	7.5	5.8	10.8	9.4	18.5	7.9	12.1	6.6
Vanadium	0.006	Interim	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	0.03		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
BOD	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
COD	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TSS	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TDS	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Southampton Landfill
Historical Surface Water Quality Results

	PWQO		SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW-4	SW 4		SW-5	SW-5	SW-5
	mg/L	Note	11-21-2016	5-2-2017	10-27-2017	5-11-2018	10-22-2018	4-4-2019	11-6-2019	4-14-2020	10-21-2020	5-6-2021	12-13-2021	5-2-2022	4-13-2023	11-16-2023	4-24-2024	11-15-2024	4-22-2025	9-9-2025		5-29-2003	11-27-2003	6-1-2004
Alkalinity		5	624	667	685	633	637	488	546	676	461	632	666	680	649	544	668	578	653	548		220	231	192
Aluminum	0.075	Interim	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		0.3	0.01	0.2
Ammonia	NV		13.9	8.6	13.5	7.2	14.5	4.5	11.2	11.4	10.3	7.4	11.6	7.5	4.4	9.4	8.6	12	4.6	8.1		<0.1	<0.1	0.2
Unionized Ammonia	0.020		0.024	0.022	0.031	0.022	0.208	0.061	0.047	0.060	0.105	0.018	0.011	0.009	0.003	0.186	0.134	0.618	0.009	0.067		----	----	----
Arsenic	0.10		----	----	----	----	----	----	----	----	----	----	0.0021	----	----	----	----	----	----	----		----	----	----
Barium	NV		----	----	----	----	----	----	----	----	----	----	0.283	----	----	----	----	----	----	----		0.02	0.024	0.017
Beryllium	1.1		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		<0.005	<0.005	<0.005
Bismuth	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		<0.0003	<0.0003	<0.0003
Boron	0.2	Interim	----	----	----	----	----	----	----	----	----	----	0.261	----	----	----	----	----	----	----		<0.05	0.05	<0.05
Cadmium	0.0005		----	----	----	----	----	----	----	----	----	----	0.000154	----	----	----	----	----	----	----		<0.0001	<0.0001	<0.0001
Calcium	NV		168	218	119	196	157	135	165	196	126	197	157	198	212	150	184	131	226	124		74.6	67.9	55.9
Chloride	NV		45	41	43	50	48	64	39	39	39	40	54	48	46	44	44	38	47	37		6.7	3.7	11
Chromium	0.00089	6	----	----	----	----	----	----	----	----	----	----	0.00077	----	----	----	----	----	----	----		<0.001	<0.001	<0.001
Cobalt	0.0009	Interim	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		<0.0003	<0.0003	<0.0003
Conductivity	NV		1190	1190	1260	1120	1180	987	1050	1230	918	1230	1220	1270	1180	1090	1310	1120	1170	953		419	441	395
Copper	0.005	Interim	----	----	----	----	----	----	----	----	----	----	0.0013	----	----	----	----	----	----	----		0.003	0.0012	0.0013
DOC	NV		13	5.0	20	5	12	3	8	6	10	5	6	5	4	6	4	10	6	6		13	15	8.4
Fluoride	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		<0.04	0.06	0.06
Hardness	NV		624	720	452	662	577	465	584	668	485	681	571	657	711	545	627	502	721	469		278	260	222
Hydrogen Sulphide	0.002		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		<0.003	<0.02	<0.02
Iron	0.30		----	----	----	1.39	6.21	2.07	1.16	2.8	4.03	0.479	12.7	1.22	1.2	0.5	0.591	0.742	1.4	0.365		0.27	0.15	0.23
Lead	0.025		----	----	----	----	----	----	----	----	----	----	0.00015	----	----	----	----	----	----	----		0.003	0.0005	0.0009
Magnesium	NV		49.8	42.9	37.6	41.7	44.7	31.1	41.7	43.5	41.5	45.9	43.2	39.7	44.1	41.5	40.5	42.4	38.2	39.1		22.3	22.8	20.2
Manganese	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		0.048	0.21	0.061
Mercury	0.0002		----	----	----	----	----	----	----	----	----	----	< 0.00001	----	----	----	----	----	----	----		----	----	----
Molybdenum	0.040	Interim	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		<0.0003	<0.0003	<0.0003
Nickel	0.025		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		0.002	<0.001	<0.001
Nitrate	NV		0.11	1.01	0.15	1.19	0.08	2.09	0.63	0.81	0.09	1.25	< 0.06	0.94	1.94	0.48	1.24	<0.06	0.70	<0.06		<0.05	<0.05	<0.05
Nitrite	NV		< 0.03	< 0.03	< 0.03	< 0.03	0.04	< 0.03	0.04	< 0.03	0.04	0.05	< 0.03	<0.03	0.04	0.05	0.03	<0.03	<0.03	<0.03		<0.06	<0.06	<0.06
Orthophosphate	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----	----
pH (unitless)	6.5 - 8.5		8.01	7.82	7.76	7.40	7.61	7.56	8.20	7.56	8.19	8.11	7.44	7.74	7.70	8.12	7.58	8.06	7.26	7.89		8.21	7.69	8.23
Phenols	0.001		0.001	< 0.001	0.010	0.004	0.008	< 0.001	0.008	0.002	0.003	< 0.001	< 0.001	0.002	0.002	< 0.002	<0.001	0.008	0.003	0.001		<0.001	<0.001	<0.001
Phosphorus	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		<0.02	<0.02	0.02
Phosphorus (Soluble)	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		<0.03	0.03	0.11
Phosphorus (Total)	0.030	7	0.081	0.014	0.060	0.006	0.067	0.019	0.077	0.010	0.075	0.014	0.027	0.010	0.025	0.025	0.01	0.09	<0.003	0.038		----	----	----
Potassium	NV		30.0	23.5	25.6	24.2	30.2	19.7	25.4	25.2	26.4	25.2	22.3	19.0	22.7	22.5	20.6	24	17.2	19.3		7.87	11.2	3.95
Selenium	0.10		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----	----
Silver	0.0001		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		<0.0001	<0.0001	<0.0001
Sodium	NV		30.5	26.8	22.7	28.5	28.8	35.5	24.6	24.9	25.2	28.4	37.8	28.4	33.3	25.8	25.3	24	24.5	22.1		4.17	5.79	7.11
Sulphate	NV		3	7	< 2	4	2	5	< 2	4	13	5	2	4	11	< 2	3	2	25	<2		43	7.6	22
Tin	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		<0.1	<0.1	<0.001
Titanium	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		0.01	<0.003	0.004
TKN	NV		14.0	9.8	17.2	8.4	15.8	4.0	12.4	12.2	10.7	7.8	12.8	10.9	4.4	10.4	9.5	12.3	4.7	9.1		0.5	<0.5	0.6
Vanadium	0.006	Interim	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		0.0009	<0.0009	<0.0009
Zinc	0.03		----	----	----	----	----	----	----	----	----	----	0.005	----	----	----	----	----	----	----		0.01	0.008	0.005
BOD	NV		----	----	----	----	----	----	----	----	----	----	8	----	----	----	----	----	----	----		----	----	----
COD	NV		----	----	----	----	----	----	----	----	----	----	33	----	----	----	----	----	----	----		----	----	----
TSS	NV		----	----	----	----	----	----	----	----	----	----	48	----	----	----	----	----	----	----		----	----	----
TDS	NV		----	----	----	----	----	----	----	----	----	----	669	----	----	----	----	----	----	----		----	----	----

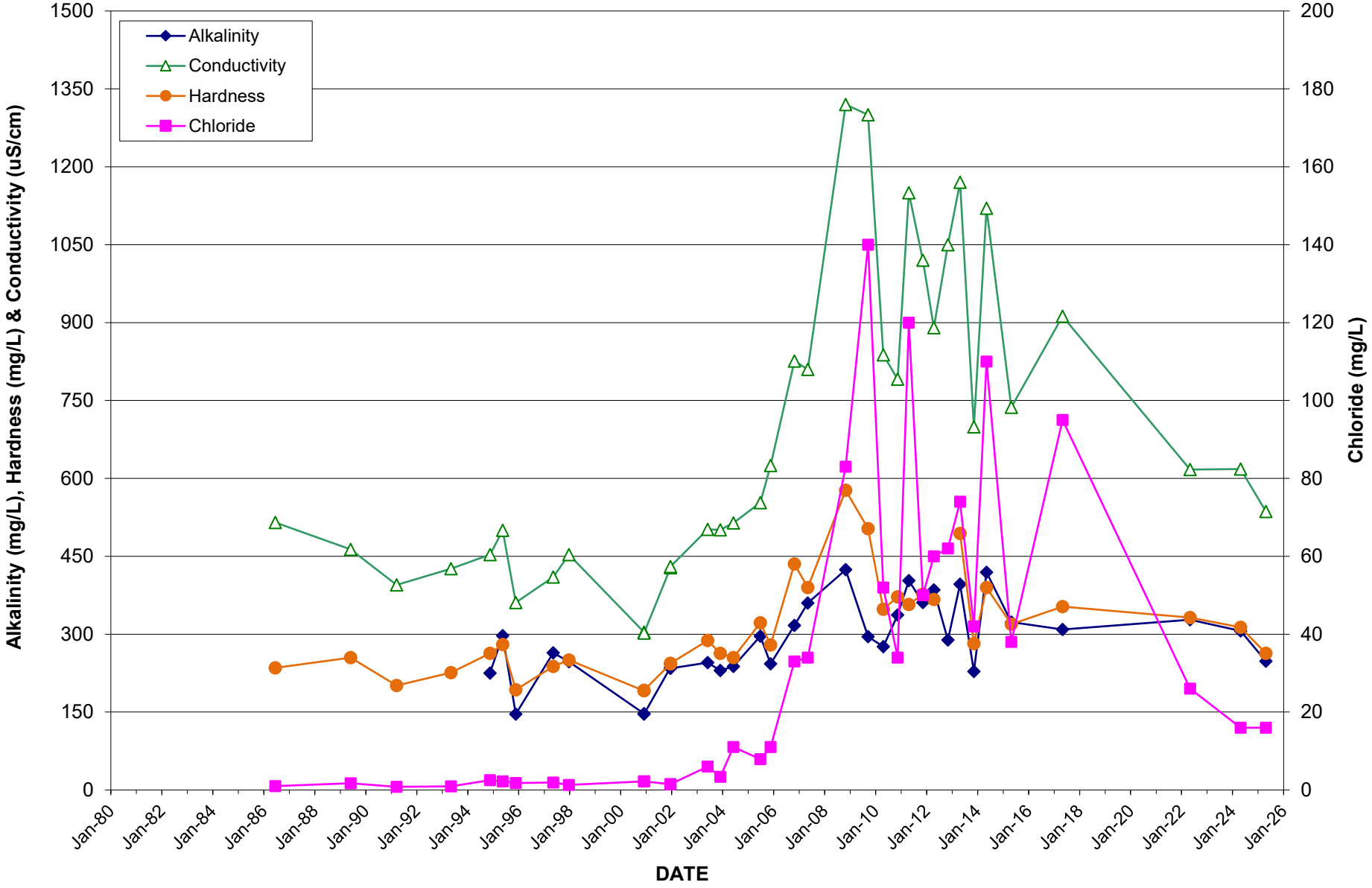
Southampton Landfill
Historical Surface Water Quality Results

	PWQO		SW-5	SW-5	SW-5	SW-5	SW-5	SW-5	SW-5	SW-5	SW-5	SW-5	SW-5	SW-5	SW-5	SW-5	SW-5	SW-5	SW-5	SW-5	SW-5	SW-5	SW-5
	mg/L	Note	6-25-2005	11-18-2005	6-6-2006	10-25-2006	5-3-2007	5-14-2008	10-28-2008	4-17-2009	9-12-2009	4-19-2010	11-11-2010	4-20-2011	11-7-2011	4-12-2012	4-25-2013	11-7-2013	5-9-2014	10-29-2014	4-27-2015	5-2-2017	5-11-2018	4-4-2019
Alkalinity		5	119	157	287	154	397	587	149	480	332	288	271	391	337	428	443	194	419	275	337	273	427	286
Aluminum	0.075	Interim	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV		<0.1	0.4	<0.1	0.3	<0.1	4.2	<0.1	5	<0.1	0.1	0.2	8.6	<0.1	0.2	9.8	1.3	3.8	<0.1	0.4	0.2	0.9	0.8
Unionized Ammonia	0.020		----	----	----	----	<0.005	0.1	<0.005	----	----	0.007	0.000026	0.236	----	<0.005	0.289	0.013	0.213	<0.002	<0.001	0.0006	0.01	0.014
Arsenic	0.10		<0.05	<0.005	0.0012	<0.0005	0.0018	0.004	0.0008	0.0037	0.0011	0.0010	0.0013	0.0084	0.0043	0.0013	0.0045	0.0038	0.0041	0.002	0.001	0.0026	0.0013	0.0009
Barium	NV		<0.01	0.029	0.0249	0.0195	0.0456	0.0765	0.0533	0.0617	0.0707	0.0296	0.0428	0.0694	0.0504	0.0309	0.0822	0.0502	0.0851	0.0306	0.0287	0.027	0.0392	0.0304
Beryllium	1.1		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	0.2	Interim	0.06	0.03	0.306	0.040	0.246	0.631	0.394	0.575	0.343	0.166	0.0937	0.279	0.141	0.139	0.418	0.0983	0.166	0.11	0.111	0.078	0.208	0.228
Cadmium	0.0005		<0.001	<0.0001	<0.00006	<0.00006	<0.00006	0.000072	0.000027	<0.000003	0.000065	0.000006	0.000030	0.000158	0.000069	0.000003	0.000079	0.000204	0.000008	0.000204	0.000008	0.000014	0.000015	0.00001
Calcium	NV		----	----	----	----	----	135	148	95.8	----	155	77.7	103	104	73.4	105	167	72.9	118	84.4	87	85.8	127	103
Chloride	NV		6.7	6.8	40	16	37	94	60	150	140	39	40	110	49	52	100	49	96	48	25	9	29	46
Chromium	0.00089	6	<0.01	0.001	<0.0003	0.0004	0.0015	0.006	0.0012	0.0032	0.0015	<0.0005	0.0019	0.0074	0.0015	0.0006	0.011	0.0064	0.00316	0.00074	0.00028	0.00089	0.00057	0.00056
Cobalt	0.0009	Interim	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV		237	357	658	427	954	1310	885	1250	1310	697	740	1140	935	925	1470	642	1090	684	709	550	818	774
Copper	0.005	Interim	<0.008	0.0039	0.0009	0.0014	0.0010	0.0043	0.0042	0.0016	0.0038	0.0008	0.0032	0.0102	0.0046	0.0016	0.0053	0.0085	0.00103	0.0013	0.00166	0.00436	0.00187	0.0041
DOC	NV		15.5	----	----	----	20.1	47	12.1	----	9.9	13.5	7.9	48.4	36.4	16.6	162	34.3	22.6	34.3	18.4	31	23	18
Fluoride	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	NV		132	187	----	----	493	533	328	----	556	284	358	389	284	424	----	248	----	292	321	298	439	335
Hydrogen Sulphide	0.002		<0.02	<0.02	<0.02	<0.02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Iron	0.30		0.18	0.68	0.01	0.05	0.10	0.49	0.14	0.68	0.85	0.67	1.28	3.72	2.41	0.171	2.87	5.40	4.28	2.29	1.17	0.314	0.591	0.172
Lead	0.025		<0.002	----	<0.00002	0.00022	0.00041	0.00088	0.00053	0.0005	0.00155	0.00012	0.00080	0.00438	0.0014	0.00025	0.00431	0.00734	0.00033	0.00037	0.00028	0.00027	0.00005	0.00034
Magnesium	NV		----	----	----	----	38.2	39.9	21.5	----	41.3	22.0	24.4	31.1	24.5	39	37.2	15.9	275	19.8	25.2	20.3	29.6	18.6
Manganese	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Mercury	0.0002		----	----	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.1	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.00001	<0.00001	0.00002	<0.00001	<0.01	0.00001	0.00002	0.00001
Molybdenum	0.040	Interim	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	0.025		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nitrate	NV		<0.05	<0.05	<0.05	0.07	0.06	<0.05	<0.05	<0.05	1.56	<0.05	<0.05	0.25	0.08	0.11	<0.06	<0.06	<0.06	<0.06	<0.06	0.1	< 0.06	1.38
Nitrite	NV		<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	0.08	<0.06	<0.06	0.04	<0.03	<0.03	<0.03	<0.03	< 0.03	< 0.03	< 0.03
Orthophosphate	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH (unitless)	6.5 - 8.5		9.31	7.98	8.38	8.00	8.22	7.76	7.96	8.08	8.02	7.02	7.38	7.82	8.19	8.03	7.83	7.84	8.14	8	8.21	7.88	7.88	7.68
Phenols	0.001		0.002	<0.001	<0.001	<0.001	0.004	<0.001	0.001	0.008	0.004	<0.001	<0.001	0.013	0.002	0.001	0.007	0.006	0.1	0.001	<0.001	0.004	0.004	0.005
Phosphorus	NV		<0.02	0.02	<0.02	0.04	0.04	0.24	0.12	0.08	0.17	0.06	0.296	0.382	0.232	0.078	0.355	0.392	0.234	0.179	0.105	----	----	----
Phosphorus (Soluble)	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus (Total)	0.030	7	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.182	0.084	0.055
Potassium	NV		----	----	----	----	17.1	34.1	18.1	----	19.1	15.2	14.2	59.6	140	42.2	49.6	46.4	45.3	37.7	28	25.3	38.2	28.7
Selenium	0.10		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Silver	0.0001		7.46	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	NV		4.1	28	----	----	29.2	82.6	37.3	----	63.9	28.0	25.9	77.9	24.8	41.3	84.2	18.7	27.5	18.4	15.7	5.73	17.8	27.9
Sulphate	NV		----	----	9.7	37	55	38	87	31	190	17	64	50	33	16	77	50	7.6	23	20	14	26	67
Tin	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV		0.9	<0.5	<0.5	<0.5	1.0	5	0.9	6.3	<0.5	1.0	0.8	10.4	1.1	1.1	16.8	2.8	6.7	1.5	1.6	1.6	2.3	2.4
Vanadium	0.006	Interim	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	0.03		<0.01	----	0.0029	0.0012	0.0084	0.0463	0.01	0.02	0.015	0.004	0.006	0.035	0.009	0.002	0.08	0.036	<0.002	0.005	0.003	0.006	0.005	0.007
BOD	NV		----	----	3	4	4	69	5	----	10	7	5	>25	<4	4	92	44	38	9	<4	9	13	< 4
COD	NV		----	----	40	25	56	240	39	128	51	48	26	170	119	56	520	153	146	79	58	82	77	50
TSS	NV		----	----	5	3	<2	38	12	----	58	9	30	790	26	8	43	62	22	9	8	4	4	4
TDS	NV		----	----	357	537	606	883	477	843	866	420	386	752	632	563	1050	486	643	457	454	369	586	486

Southampton Landfill
Historical Surface Water Quality Results

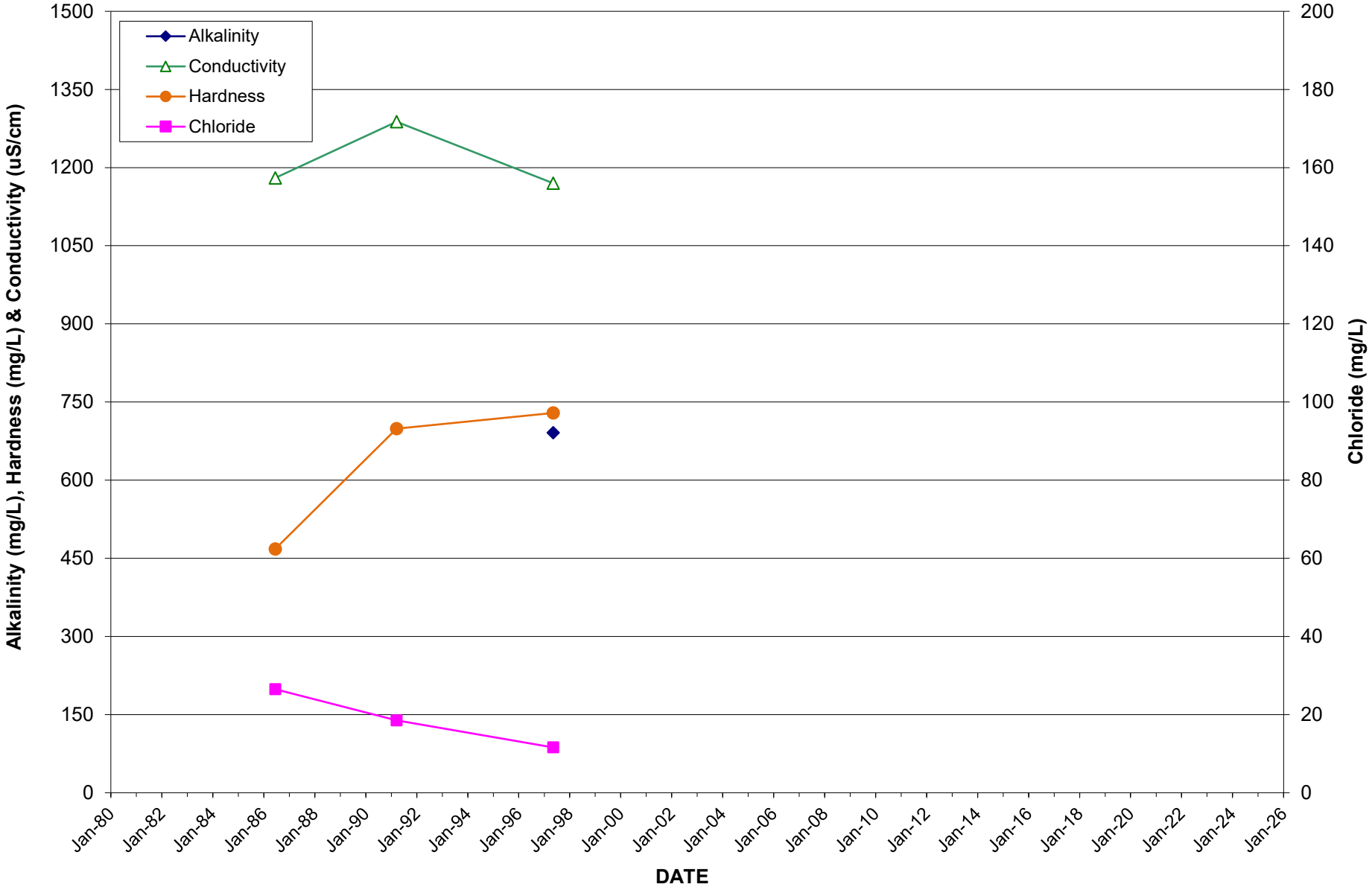
	PWQO		SW-5	SW-5	SW-5	SW-5	SW-5	SW-5	SW-5	SW-9	SW-9	SW-9	SW-9	SW-9	SW-9	SW-9
	mg/L	Note	11-6-2019	4-14-2020	5-6-2021	5-2-2022	4-13-2023	4-24-2024	4-22-2025	4-20-2011	4-12-2012	11-7-2013	5-9-2014	02-May-22	4-13-2023	4-22-2025
Alkalinity		5	253	482	316	1320	267	306	274	294	320	229	380	251	237	237
Aluminum	0.075	Interim	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia	NV		0.1	2.8	< 0.1	< 0.1	<0.1	<0.1	<0.1	3.6	<0.1	<0.1	2	< 0.1	<0.1	<0.1
Unionized Ammonia	0.020		< 0.001	0.003	< 0.001	< 0.001	0.002	0.002	<0.002	0.177	<0.005	<0.005	0.178	< 0.001	<0.003	<0.001
Arsenic	0.10		0.0009	0.0006	0.0006	0.0006	0.0009	0.0008	0.0008	0.0030	0.001	0.0008	0.0023	0.0003	0.0004	0.0006
Barium	NV		0.0185	0.0591	0.0315	0.0314	0.0346	0.0298	0.0317	0.0398	0.0913	0.0381	0.0911	0.00464	0.0450	0.0324
Beryllium	1.1		----	----	----	----	----	----	----	----	----	----	----	----	----	----
Bismuth	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	0.2	Interim	0.113	0.144	0.078	0.081	0.132	0.263	0.279	0.141	0.108	0.152	0.103	0.004	0.178	0.174
Cadmium	0.0005		0.000049	0.000018	0.000007	0.000017	0.000017	0.000021	0.00255	0.000087	0.000009	0.000122	0.000035	0.000005	0.000049	0.000036
Calcium	NV		80.3	135	88.3	87.9	87.8	102	103	77.0	106	79.1	98.2	66.7	82.5	82.6
Chloride	NV		33	25	13	15	16	26	30	58	50	42	62	<1	28	16
Chromium	0.00089	6	0.00037	0.0003	0.00041	0.00038	0.00061	0.00033	0.00064	0.0022	<0.0005	0.0009	0.00103	0.00021	0.00036	0.00036
Cobalt	0.0009	Interim	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Conductivity	NV		653	910	607	437	543	675	651	761	760	680	875	438	530	303
Copper	0.005	Interim	0.004	0.0013	0.0007	0.0016	0.0026	0.002	0.004	0.0035	0.0009	0.0016	0.00102	0.0002	0.0013	0.003
DOC	NV		18	20	15	19	16	15	12	23.7	8.0	15.4	19.4	4	9	12
Fluoride	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----
Hardness	NV		273	478	322	317	294	340	327	284	377	284	353	253	278	277
Hydrogen Sulphide	0.002		----	----	----	----	----	----	----	----	----	----	----	----	----	----
Iron	0.30		0.084	1.8	0.167	0.392	0.338	0.094	0.144	0.824	0.988	0.265	1.91	0.041	0.18	0.121
Lead	0.025		0.00053	0.00015	0.00019	<0.00009	0.00050	0.0001	0.0004	0.00113	0.00020	0.00049	0.00018	<0.00009	0.00017	0.00033
Magnesium	NV		17.7	34.3	24.6	23.7	18.2	20.7	17.1	22.3	27.4	21.0	26.3	21.1	17.5	17.1
Manganese	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----
Mercury	0.0002		< 0.00001	< 0.00001	< 0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.0001	0.0001	<0.0001	<0.0001	<0.00001	<0.00001	<0.00001
Molybdenum	0.040	Interim	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	0.025		----	----	----	----	----	----	----	----	----	----	----	----	----	----
Nitrate	NV		< 0.06	< 0.06	< 0.06	0.16	<0.06	<0.06	0.77	0.13	<0.05	<0.06	<0.06	<0.06	<0.06	0.90
Nitrite	NV		< 0.03	< 0.03	< 0.03	<0.03	<0.03	<0.03	<0.03	<0.06	<0.06	<0.03	<0.03	<0.03	<0.03	<0.03
Orthophosphate	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----
pH (unitless)	6.5 - 8.5		8.19	7.93	8.24	8.26	7.92	8.07	7.82	7.99	7.89	8.10	8.10	8.24	8.02	7.77
Phenols	0.001		0.012	0.007	< 0.001	<0.001	0.002	<0.001	0.005	0.003	0.001	<0.001	0.003	<0.001	0.002	0.004
Phosphorus	NV		----	----	----	----	----	----	----	0.130	0.029	0.034	0.01	----	----	----
Phosphorus (Soluble)	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus (Total)	0.030	7	0.218	0.266	0.041	0.050	0.114	0.049	0.041	----	----	----	----	0.005	0.189	0.036
Potassium	NV		44	30.1	22.6	28.8	22.0	21.8	18.4	29.8	50.9	25.5	29.8	0.518	25.5	20.5
Selenium	0.10		----	----	----	----	----	----	----	----	----	----	----	----	----	----
Silver	0.0001		----	----	----	----	----	----	----	----	----	----	----	----	----	----
Sodium	NV		11.6	15.9	8.26	7.40	10.2	14	16.5	38.5	38.5	23.7	41.4	0.86	16.7	9.49
Sulphate	NV		58	6	< 2	8	28	40	58	27	23	71	1.7	<2	34	37
Tin	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----
Titanium	NV		----	----	----	----	----	----	----	----	----	----	----	----	----	----
TKN	NV		1.2	4.6	0.8	0.9	0.7	<0.5	0.8	4.6	<0.5	1.0	3.5	<0.5	<0.5	0.7
Vanadium	0.006	Interim	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	0.03		0.008	0.005	0.003	0.003	0.005	0.004	0.009	0.008	<0.002	0.003	<0.002	<0.002	0.003	0.004
BOD	NV		6	7	6	<4	13	7	<4	9	6	5	6	6	7	5
COD	NV		62	< 8	52	52	46	41	48	78	<8	43	<8	9	36	30
TSS	NV		9	41	12	31	24	15	20	19	146	6	<11	13	26	7
TDS	NV		409	660	357	346	286	400	417	474	437	469	480	234	334	380

SURFACE WATER SAMPLING LOCATION: SW-1



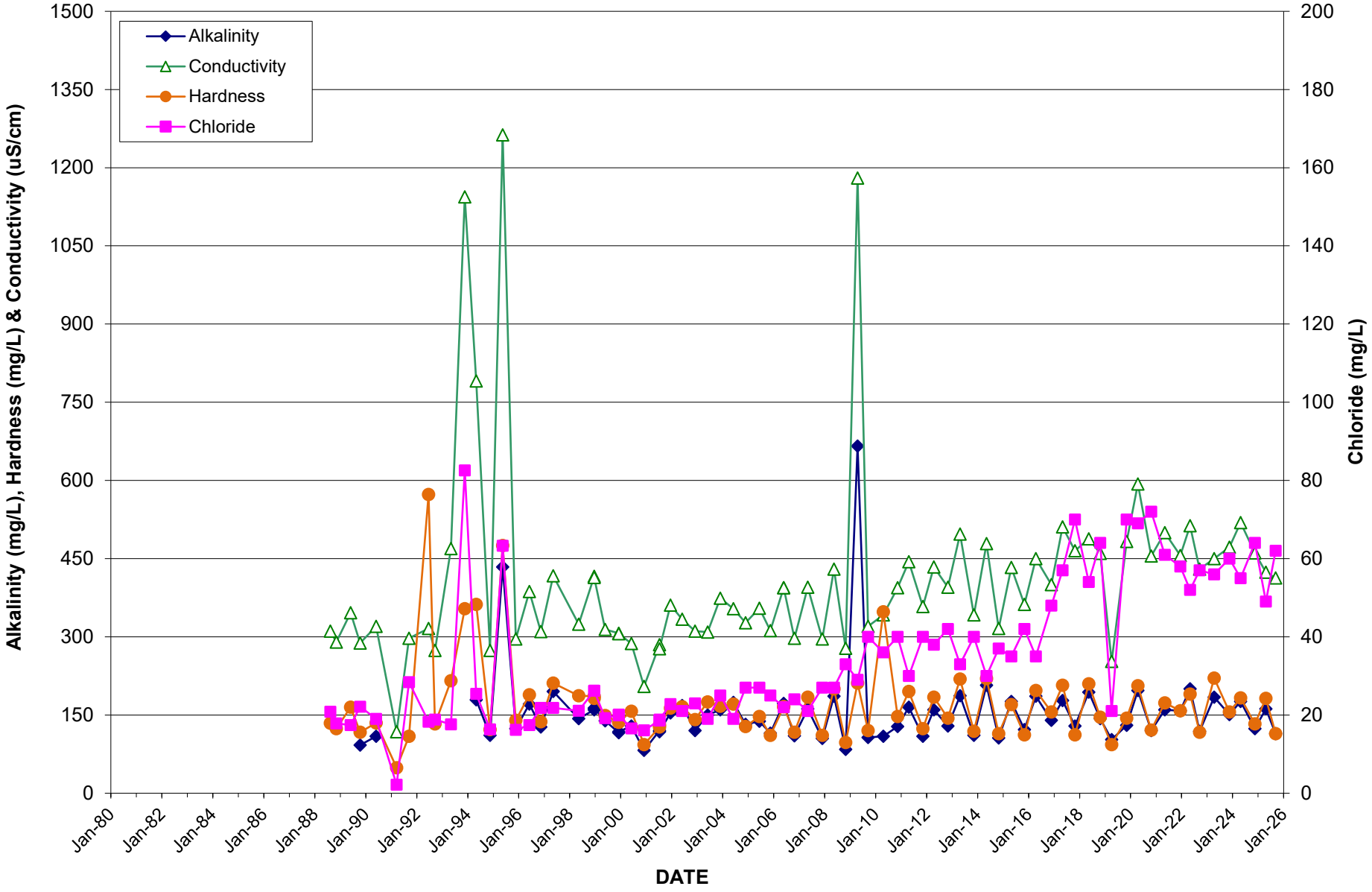
File No. 2401298 (HydroG)
Southampton Landfill

SURFACE WATER SAMPLING LOCATION: SW-2



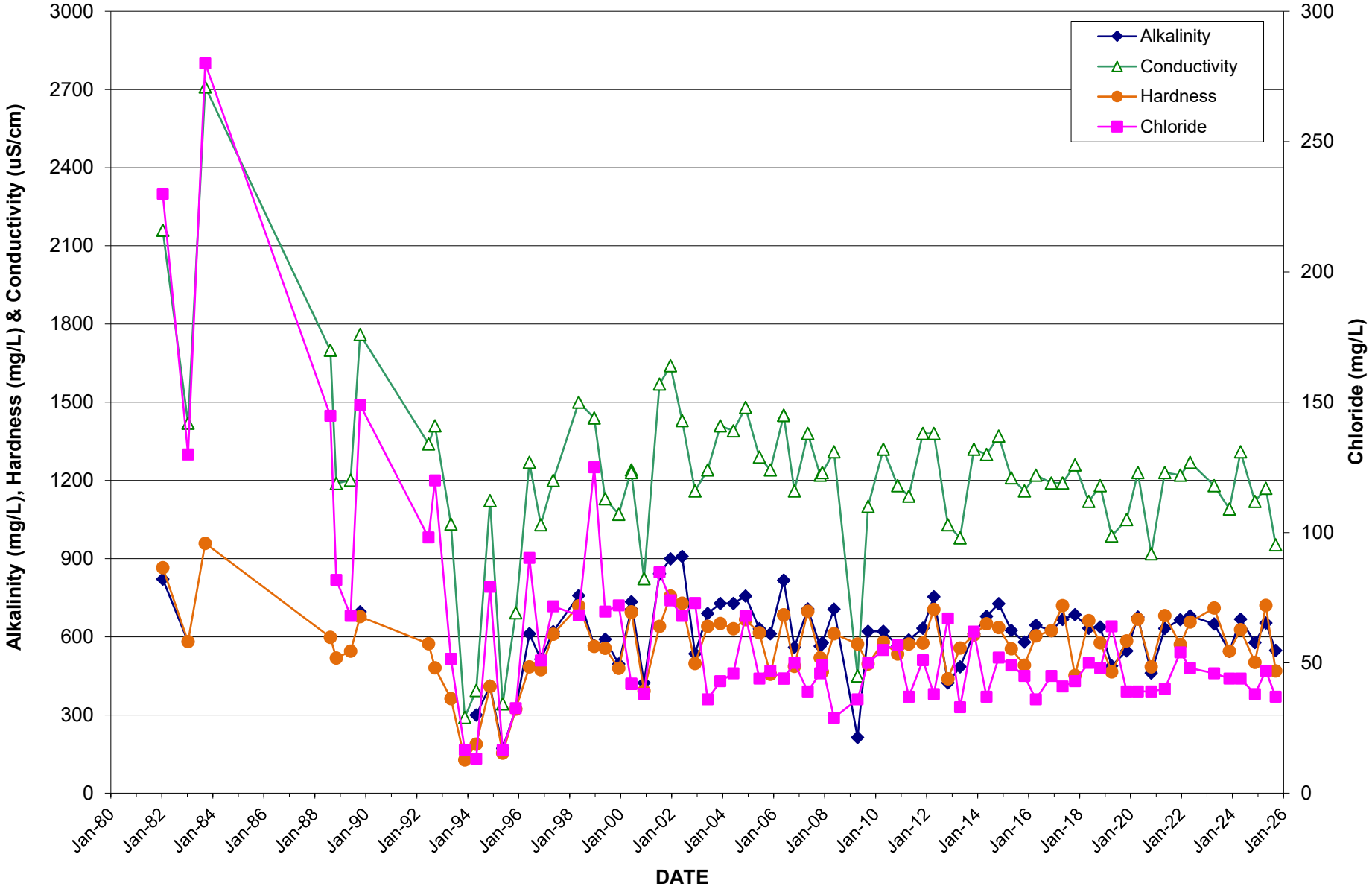
File No. 2401298 (HydroG)
Southampton Landfill

SURFACE WATER SAMPLING LOCATION: SW-3



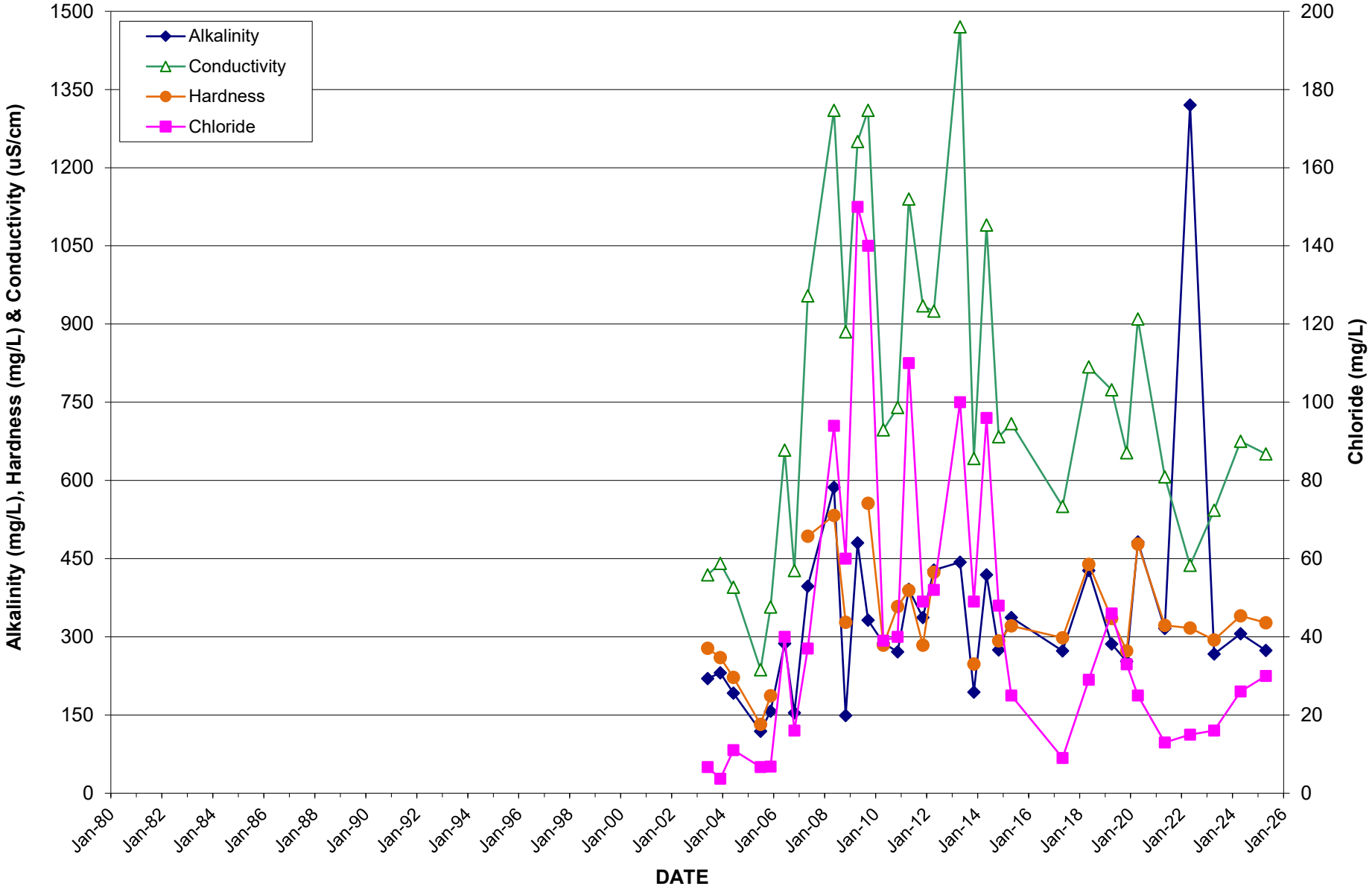
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Southampton Landfill

SURFACE WATER SAMPLING LOCATION: SW-4



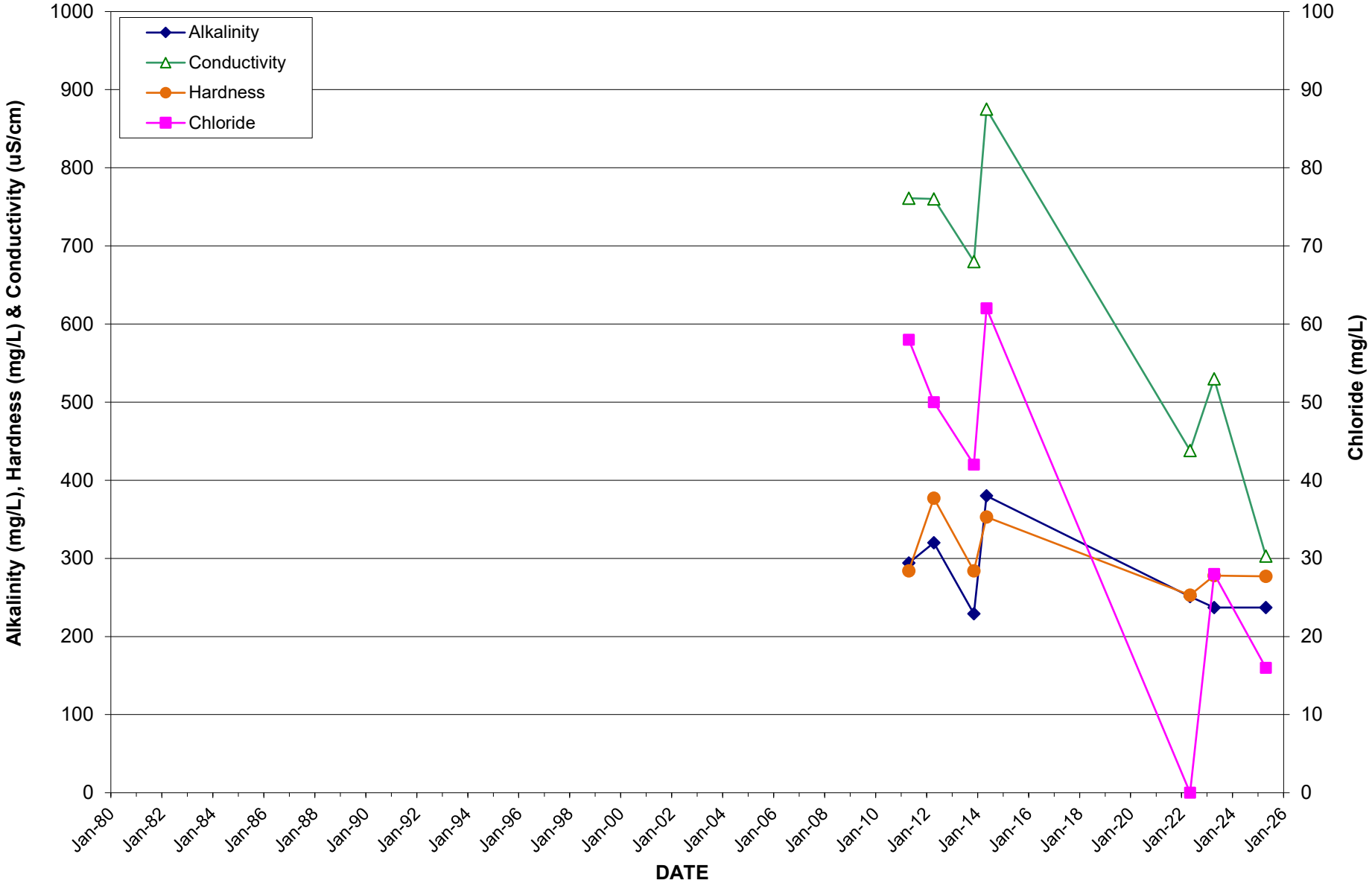
File No. 2401298 (HydroG)
Southampton Landfill

SURFACE WATER SAMPLING LOCATION: SW-5



File No. 2401298 (HydroG)
Southampton Landfill

SURFACE WATER SAMPLING LOCATION: SW-9



File No. 2401298 (HydroG)
Southampton Landfill

APPENDIX F
LABORATORY CERTIFICATES OF ANALYSIS
(FOR WELLS INSTALLED IN 2022)

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

24-December-2021

Town of Saugeen Shores
Attn : Colin Saunders

600 Tomlinson Drive
Port Elgin, ON
N0H 2C0, Canada

Phone: 519-832-2008
Fax:519-832-2140

Date Rec. : 15 December 2021
LR Report: **CA15417-DEC21**
Reference: Southampton Ground Water

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: MAC	6: AO/OG	25: TW-32	26: TW-33	27: TW-34	28: TW-35S	29: TW-35I	30: TW-36S	31: TW-36I	32: TW-37
Sample Date & Time							13-Dec-21	13-Dec-21	13-Dec-21	13-Dec-21	13-Dec-21	13-Dec-21	13-Dec-21	13-Dec-21
Temperature Upon Receipt [°C]	---	---	---	---	---	---	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
pH [No unit]	16-Dec-21	13:10	17-Dec-21	11:23	---	6.5-8.5	7.91	7.79	7.58	7.64	7.70	7.71	7.84	7.65
Alkalinity [mg/L as CaCO3]	16-Dec-21	13:10	17-Dec-21	11:23	---	30-500	276	295	320	401	340	407	229	335
Conductivity [uS/cm]	16-Dec-21	13:10	17-Dec-21	11:23	---	---	538	524	508	1060	824	659	419	747
Total Kjeldahl Nitrogen [as N mg/L]	16-Dec-21	16:14	23-Dec-21	13:36	---	---	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Ammonia+Ammonium (N) [as N mg/L]	17-Dec-21	09:26	21-Dec-21	14:22	---	---	0.1	< 0.1	0.1	0.2	0.1	0.2	0.2	0.1
Chloride [mg/L]	16-Dec-21	07:00	17-Dec-21	07:00	---	250	11	< 1	< 1	140	88	20	6	66
Sulphate [mg/L]	16-Dec-21	11:36	17-Dec-21	07:00	---	500	11	< 2	8	110	41	23	39	14
Nitrite (as N) [mg/L]	15-Dec-21	23:09	20-Dec-21	16:48	1	---	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Nitrate (as N) [mg/L]	15-Dec-21	23:09	20-Dec-21	16:48	10	---	4.80	< 0.06	0.08	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06
Nitrate + Nitrite (as N) [mg/L]	15-Dec-21	23:09	20-Dec-21	16:48	10	---	4.80	< 0.06	0.08	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06
Hardness (dissolved) [mg/L as CaCO3]	20-Dec-21	09:09	21-Dec-21	13:28	---	80-100	311	331	313	468	534	554	228	424
Calcium (dissolved) [mg/L]	20-Dec-21	09:09	21-Dec-21	13:28	---	---	88.5	87.7	82.5	119	126	152	51.2	84.7
Potassium (dissolved) [mg/L]	20-Dec-21	09:09	21-Dec-21	13:28	---	---	0.946	0.257	0.461	3.07	6.70	2.31	3.09	6.74
Magnesium (dissolved) [mg/L]	20-Dec-21	09:09	21-Dec-21	13:28	---	---	21.9	27.1	25.9	41.1	53.0	42.4	24.4	51.6
Sodium (dissolved) [mg/L]	20-Dec-21	09:09	21-Dec-21	13:28	---	200	1.04	2.00	2.36	86.9	26.4	12.3	4.66	18.0
Phosphorus (dissolved) [mg/L]	20-Dec-21	09:09	21-Dec-21	13:28	---	---	< 0.003	< 0.003	< 0.003	3.00	112	191	< 0.003	< 0.003
Dissolved Organic Carbon [mg/L]	15-Dec-21	15:19	21-Dec-21	08:10	---	5	1	< 1	1	2	2	7	1	8

OnLine LIMS

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24-December-2021

Town of Saugeen Shores
Attn : Colin Saunders

600 Tomlinson Drive
Port Elgin, ON
N0H 2C0, Canada

Phone: 519-832-2008
Fax:519-832-2140

Date Rec. : 15 December 2021
LR Report: **CA15417-DEC21**
Reference: Southampton Ground Water

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: MAC	6: AO/OG	33: TW-38S	34: TW-38I	35: TW-39S	36: TW-39I	37: TW-40
Sample Date & Time							13-Dec-21	13-Dec-21	13-Dec-21	13-Dec-21	13-Dec-21
Temperature Upon Receipt [°C]	---	---	---	---	---	---	9.0	9.0	9.0	9.0	9.0
pH [No unit]	16-Dec-21	13:10	17-Dec-21	11:23	---	6.5-8.5	7.85	8.11	7.60	8.07	7.81
Alkalinity [mg/L as CaCO3]	16-Dec-21	13:10	17-Dec-21	11:23	---	30-500	316	179	306	189	256
Conductivity [uS/cm]	16-Dec-21	13:10	17-Dec-21	11:23	---	---	655	406	499	465	392
Total Kjeldahl Nitrogen [as N mg/L]	16-Dec-21	16:14	23-Dec-21	13:36	---	---	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Ammonia+Ammonium (N) [as N mg/L]	17-Dec-21	09:26	21-Dec-21	14:22	---	---	0.1	0.2	< 0.1	0.2	< 0.1
Chloride [mg/L]	16-Dec-21	07:00	17-Dec-21	07:00	---	250	50	45	11	54	< 1
Sulphate [mg/L]	16-Dec-21	11:36	17-Dec-21	07:00	---	500	46	17	10	5	5
Nitrite (as N) [mg/L]	15-Dec-21	23:09	20-Dec-21	16:48	1	---	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Nitrate (as N) [mg/L]	15-Dec-21	23:09	20-Dec-21	16:48	10	---	0.28	< 0.06	0.06	< 0.06	< 0.06
Nitrate + Nitrite (as N) [mg/L]	15-Dec-21	23:09	20-Dec-21	16:48	10	---	0.28	< 0.06	0.06	< 0.06	< 0.06
Hardness (dissolved) [mg/L as CaCO3]	20-Dec-21	09:09	21-Dec-21	13:28	---	80-100	340	174	287	180	221
Calcium (dissolved) [mg/L]	20-Dec-21	09:09	21-Dec-21	13:28	---	---	84.3	27.2	78.9	24.5	64.0
Potassium (dissolved) [mg/L]	20-Dec-21	09:09	21-Dec-21	13:28	---	---	7.87	13.8	0.728	8.88	0.490
Magnesium (dissolved) [mg/L]	20-Dec-21	09:09	21-Dec-21	13:28	---	---	31.4	25.7	21.8	28.7	14.9
Sodium (dissolved) [mg/L]	20-Dec-21	09:09	21-Dec-21	13:28	---	200	23.9	21.8	5.79	28.8	0.72
Phosphorus (dissolved) [mg/L]	20-Dec-21	09:09	21-Dec-21	13:28	---	---	4.00	6.00	1.00	< 0.003	4.00
Dissolved Organic Carbon [mg/L]	15-Dec-21	15:19	21-Dec-21	08:10	---	5	5	2	1	2	< 1

OnLine LIMS

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18-May-2022

Town of Saugeen Shores
Attn : Colin Saunders

600 Tomlinson Drive
Port Elgin, ON
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Phone: 519-832-2008
Fax:519-832-2140

Date Rec. : 04 May 2022
LR Report: **CA15023-MAY22**
Reference: M1135 - Southampton Ground Water

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: MAC	6: AO/OG	25: TW-33	26: TW-34	27: TW-35S	28: TW-35I	29: TW-36S	30: TW-36I
Sample Date & Time							02-May-22 14:50	02-May-22 14:30	02-May-22 13:25	02-May-22 13:40	02-May-22 13:45	02-May-22 13:55
Temperature Upon Receipt [°C]	---	---	---	---	---	---	11.0	11.0	11.0	11.0	11.0	11.0
Total Dissolved Solids [mg/L]	04-May-22	20:16	06-May-22	12:25			317	211	643	560	397	271
Chemical Oxygen Demand [mg/L]	05-May-22	10:49	06-May-22	15:20			< 8	< 8	< 8	< 8	22	< 8
pH [No unit]	05-May-22	06:45	11-May-22	10:18	---	6.5-8.5	7.80	8.10	8.15	7.26	8.24	7.99
Alkalinity [mg/L as CaCO3]	05-May-22	06:45	11-May-22	10:18	---	30-500	417	255	437	69	354	1040
Conductivity [uS/cm]	05-May-22	06:45	11-May-22	10:18	---	---	572	436	477	338	676	440
Total Kjeldahl Nitrogen [as N mg/L]	05-May-22	20:08	10-May-22	15:49	---	---	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Ammonia+Ammonium (N) [as N mg/L]	04-May-22	22:31	06-May-22	12:50	---	---	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1
Phosphorus (total) [mg/L]	05-May-22	16:40	09-May-22	13:12			0.94	0.19	0.05	0.04	0.53	1.46
4AAP-Phenolics [mg/L]	06-May-22	07:54	10-May-22	09:39			< 0.002	< 0.002	< 0.002	0.003	< 0.002	< 0.002
Chloride [mg/L]	11-May-22	15:11	18-May-22	09:43	---	250	< 1	< 1	85	73	21	6
Sulphate [mg/L]	11-May-22	15:42	16-May-22	19:49	---	500	3	2	82	83	24	47
Nitrite (as N) [mg/L]	06-May-22	14:10	10-May-22	10:21	1	---	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Nitrate (as N) [mg/L]	06-May-22	14:10	10-May-22	10:21	10	---	0.06	0.32	0.13	< 0.06	0.09	0.16
Nitrate + Nitrite (as N) [mg/L]	06-May-22	14:10	10-May-22	10:21	10	---	0.06	0.32	0.13	< 0.06	0.09	0.16
Hardness (dissolved) [mg/L as CaCO3]	12-May-22	16:13	16-May-22	13:48	---	80-100	352	252	481	490	394	258
Calcium (dissolved) [mg/L]	12-May-22	16:13	13-May-22	13:40	---	---	94.0	66.7	129	126	114	68.3
Potassium (dissolved) [mg/L]	12-May-22	16:13	13-May-22	13:40	---	---	0.165	0.217	1.88	1.99	1.28	0.782
Magnesium (dissolved) [mg/L]	12-May-22	16:13	13-May-22	13:40	---	---	28.6	20.8	38.8	42.6	26.6	21.2
Sodium (dissolved) [mg/L]	12-May-22	16:13	13-May-22	13:40	---	200	1.17	1.72	56.3	23.0	12.4	3.89
Phosphorus (dissolved) [mg/L]	12-May-22	16:13	13-May-22	13:40	---	---	< 0.003	< 0.003	< 0.003	0.009	< 0.003	< 0.003
Arsenic (dissolved) [mg/L]	12-May-22	16:13	13-May-22	13:40			< 0.0002	< 0.0002	0.0002	0.0006	0.0004	< 0.0002
Barium (dissolved) [mg/L]	12-May-22	16:13	13-May-22	13:40			0.00425	0.00474	0.0261	0.0274	0.0116	0.0149
Boron (dissolved) [mg/L]	12-May-22	16:13	13-May-22	13:40			0.015	0.014	0.252	0.064	0.093	0.022

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LR Report : **CA15023-MAY22**

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: MAC	6: AO/OG	25: TW-33	26: TW-34	27: TW-35S	28: TW-35I	29: TW-36S	30: TW-36I
Cadmium (dissolved) [mg/L]	12-May-22	16:13	13-May-22	13:40			< 0.000003	0.000004	0.000004	0.000003	0.000013	< 0.000003
Chromium (dissolved) [mg/L]	12-May-22	16:13	13-May-22	13:40			0.00075	0.00053	0.00031	0.00025	0.00040	0.00024
Copper (dissolved) [mg/L]	12-May-22	16:13	13-May-22	13:40			0.0013	0.0012	0.0014	0.0012	0.0043	0.0004
Iron (dissolved) [mg/L]	12-May-22	16:13	13-May-22	13:40			< 0.007	< 0.007	0.028	0.187	0.024	0.142
Lead (dissolved) [mg/L]	12-May-22	16:13	13-May-22	13:40			< 0.00009	< 0.00009	< 0.00009	< 0.00009	< 0.00009	< 0.00009
Manganese (dissolved) [mg/L]	12-May-22	16:13	13-May-22	13:40			0.00028	0.00123	0.107	0.177	0.218	0.0156
Zinc (dissolved) [mg/L]	12-May-22	16:13	13-May-22	13:40			0.004	0.002	0.003	0.003	0.005	0.002
Mercury (dissolved) [mg/L]	09-May-22	16:03	09-May-22	17:23			< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Dissolved Organic Carbon [mg/L]	05-May-22	21:33	10-May-22	09:55	---	5	< 1	< 1	3	2	9	2
Benzene [ug/L]	10-May-22	09:20	11-May-22	10:49			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,4-Dichlorobenzene [ug/L]	10-May-22	09:20	11-May-22	10:49			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Dichloromethane [ug/L]	10-May-22	09:20	11-May-22	10:49			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Toluene [ug/L]	10-May-22	09:20	11-May-22	10:49			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl Chloride [ug/L]	10-May-22	09:20	11-May-22	10:49			< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2

Carrie Greenlaw
Project Specialist,
Environment, Health & Safety

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18-May-2022

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Date Rec. : 04 May 2022
LR Report: **CA15023-MAY22**
Reference: M1135 - Southampton Ground Water

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: MAC	6: AO/OG	31: TW-37	32: TW-38S	33: TW-38I	34: TW-39S	35: TW-39I	36: TW-40
Sample Date & Time							02-May-22 14:15	02-May-22 12:40	02-May-22 12:50	02-May-22 12:20	02-May-22 12:25	02-May-22 12:35
Temperature Upon Receipt [°C]	---	---	---	---	---	---	11.0	11.0	11.0	11.0	11.0	11.0
Total Dissolved Solids [mg/L]	04-May-22	20:16	06-May-22	12:25			386	331	266	254	240	263
Chemical Oxygen Demand [mg/L]	05-May-22	10:49	06-May-22	15:20			11	< 8	< 8	< 8	< 8	< 8
pH [No unit]	05-May-22	06:45	11-May-22	10:18	---	6.5-8.5	8.11	8.13	8.17	7.93	7.06	7.15
Alkalinity [mg/L as CaCO3]	05-May-22	06:45	11-May-22	10:18	---	30-500	464	567	380	1790	139	100
Conductivity [uS/cm]	05-May-22	06:45	11-May-22	10:18	---	---	395	530	647	894	1460	352
Total Kjeldahl Nitrogen [as N mg/L]	05-May-22	20:08	10-May-22	15:49	---	---	< 0.5	< 0.5	1.2	< 0.5	< 0.5	< 0.5
Ammonia+Ammonium (N) [as N mg/L]	04-May-22	22:31	06-May-22	12:50	---	---	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phosphorus (total) [mg/L]	05-May-22	16:40	09-May-22	13:12			0.05	0.05	< 0.03	1.28	0.75	0.04
4AAP-Phenolics [mg/L]	06-May-22	07:54	10-May-22	09:39			< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Chloride [mg/L]	11-May-22	15:11	18-May-22	09:43	---	250	31	29	34	6	42	< 1
Sulphate [mg/L]	11-May-22	15:42	16-May-22	19:49	---	500	29	58	12	6	4	3
Nitrite (as N) [mg/L]	06-May-22	14:10	10-May-22	10:21	1	---	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Nitrate (as N) [mg/L]	06-May-22	14:10	10-May-22	10:21	10	---	< 0.06	0.26	0.06	< 0.06	< 0.06	< 0.06
Nitrate + Nitrite (as N) [mg/L]	06-May-22	14:10	10-May-22	10:21	10	---	< 0.06	0.26	0.06	< 0.06	< 0.06	< 0.06
Hardness (dissolved) [mg/L as CaCO3]	12-May-22	16:13	16-May-22	13:48	---	80-100	375	280	188	717	197	230
Calcium (dissolved) [mg/L]	12-May-22	16:13	13-May-22	13:40	---	---	74.9	66.1	32.8	193	32.0	66.0
Potassium (dissolved) [mg/L]	12-May-22	16:13	13-May-22	13:40	---	---	4.33	4.75	10.2	4.84	7.33	0.400
Magnesium (dissolved) [mg/L]	12-May-22	16:13	13-May-22	13:40	---	---	45.8	27.9	25.8	57.2	28.5	15.7
Sodium (dissolved) [mg/L]	12-May-22	16:13	13-May-22	13:40	---	200	9.80	13.4	19.5	4.82	29.0	0.61
Phosphorus (dissolved) [mg/L]	12-May-22	16:13	13-May-22	13:40	---	---	< 0.003	< 0.003	0.032	0.426	0.034	< 0.003
Arsenic (dissolved) [mg/L]	12-May-22	16:13	13-May-22	13:40			0.0011	0.0006	0.0046	0.0025	0.0019	< 0.0002
Barium (dissolved) [mg/L]	12-May-22	16:13	13-May-22	13:40			0.0375	0.0194	0.0388	0.0587	0.0169	0.00468
Boron (dissolved) [mg/L]	12-May-22	16:13	13-May-22	13:40			0.037	0.056	0.177	0.124	0.244	0.015

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LR Report : **CA15023-MAY22**

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: MAC	6: AO/OG	31: TW-37	32: TW-38S	33: TW-38I	34: TW-39S	35: TW-39I	36: TW-40
Cadmium (dissolved) [mg/L]	12-May-22	16:13	13-May-22	13:40			0.000006	0.000004	0.000006	0.000070	0.000005	< 0.000003
Chromium (dissolved) [mg/L]	12-May-22	16:13	13-May-22	13:40			0.00029	0.00044	0.00089	0.01451	0.00085	0.00039
Copper (dissolved) [mg/L]	12-May-22	16:13	13-May-22	13:40			0.0011	0.0019	0.0013	0.0217	0.0016	0.0011
Iron (dissolved) [mg/L]	12-May-22	16:13	13-May-22	13:40			0.994	0.070	0.480	9.24	0.300	0.068
Lead (dissolved) [mg/L]	12-May-22	16:13	13-May-22	13:40			< 0.00009	< 0.00009	0.00017	0.00598	0.00015	< 0.00009
Manganese (dissolved) [mg/L]	12-May-22	16:13	13-May-22	13:40			0.739	0.0325	0.0365	0.424	0.0348	0.0101
Zinc (dissolved) [mg/L]	12-May-22	16:13	13-May-22	13:40			0.003	0.003	0.003	0.151	0.003	0.003
Mercury (dissolved) [mg/L]	09-May-22	16:03	09-May-22	17:23			< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Dissolved Organic Carbon [mg/L]	05-May-22	21:33	10-May-22	09:55	---	5	6	4	1	1	1	< 1
Benzene [ug/L]	10-May-22	09:20	11-May-22	10:49			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,4-Dichlorobenzene [ug/L]	10-May-22	09:20	11-May-22	10:49			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Dichloromethane [ug/L]	10-May-22	09:20	11-May-22	10:49			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Toluene [ug/L]	10-May-22	09:20	11-May-22	10:49			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl Chloride [ug/L]	10-May-22	09:20	11-May-22	10:49			< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2

Carrie Greenlaw
Project Specialist,
Environment, Health & Safety

OnLine LIMS

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28-September-2022

Town of Saugeen Shores
Attn : Colin Saunders

600 Tomlinson Drive
Port Elgin, ON
N0H 2C0, Canada

Phone: 519-832-2008
Fax:519-832-2140

Date Rec. : 15 September 2022
LR Report: **CA15227-SEP22**
Reference: M1135 (Southampton Groundwater)

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: MAC	6: AO/OG	8: TW-34	9: TW-35S	10: TW-35I	11: TW-36S
Sample Date & Time							14-Sep-22	14-Sep-22	14-Sep-22	14-Sep-22
Temperature Upon Receipt [°C]	---	---	---	---	---	---	15.0	15.0	15.0	15.0
pH [No unit]	15-Sep-22	17:14	19-Sep-22	08:44	---	6.5-8.5	7.88	7.86	7.85	8.01
Alkalinity [mg/L as CaCO3]	15-Sep-22	17:14	19-Sep-22	08:44	---	30-500	261	376	344	331
Conductivity [uS/cm]	15-Sep-22	17:14	19-Sep-22	08:44	---	---	499	1100	1010	680
Phosphorus (total) [mg/L]	23-Sep-22	16:57	27-Sep-22	15:23	---	---	0.32	< 0.03	< 0.03	1.58
Total Kjeldahl Nitrogen [as N mg/L]	20-Sep-22	16:54	20-Sep-22	13:06	---	---	< 0.5	0.9	< 0.5	< 0.5
Ammonia+Ammonium (N) [as N mg/L]	19-Sep-22	15:59	20-Sep-22	16:10	---	---	< 0.1	0.1	< 0.1	0.2
Chloride [mg/L]	21-Sep-22	12:53	23-Sep-22	12:34	---	250	< 1	82	71	18
Sulphate [mg/L]	21-Sep-22	13:28	23-Sep-22	12:34	---	500	4	91	77	26
Nitrite (as N) [mg/L]	19-Sep-22	10:56	28-Sep-22	15:02	1	---	< 0.03	< 0.03	< 0.03	< 0.03
Nitrate (as N) [mg/L]	19-Sep-22	10:56	28-Sep-22	15:02	10	---	0.14	0.10	< 0.06	0.15
Nitrate + Nitrite (as N) [mg/L]	19-Sep-22	10:56	28-Sep-22	15:02	10	---	0.14	0.10	< 0.06	0.15
Total Dissolved Solids [mg/L]	15-Sep-22	14:01	20-Sep-22	10:56			269	677	706	414
Chemical Oxygen Demand [mg/L]	16-Sep-22	07:40	22-Sep-22	10:09			< 8	< 8	< 8	< 8
4AAP-Phenolics [mg/L]	16-Sep-22	08:56	19-Sep-22	08:48			< 0.002	< 0.002	< 0.002	< 0.002
Mercury (dissolved) [mg/L]	21-Sep-22	08:41	21-Sep-22	17:32			< 0.00001	< 0.00001	< 0.00001	< 0.00001

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LR Report : **CA15227-SEP22**

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: MAC	6: AO/OG	8: TW-34	9: TW-35S	10: TW-35I	11: TW-36S
Hardness (dissolved) [mg/L as CaCO3]	16-Sep-22	19:37	19-Sep-22	12:06	---	80-100	268	464	474	344
Calcium (dissolved) [mg/L]	16-Sep-22	19:37	19-Sep-22	12:06	---	---	73.4	125	126	103
Potassium (dissolved) [mg/L]	16-Sep-22	19:37	19-Sep-22	12:06	---	---	0.311	2.16	2.18	0.977
Magnesium (dissolved) [mg/L]	16-Sep-22	19:37	19-Sep-22	12:06	---	---	20.5	37.1	38.5	21.4
Sodium (dissolved) [mg/L]	16-Sep-22	19:37	19-Sep-22	12:06	---	200	1.67	52.1	20.7	8.57
Phosphorus (dissolved) [mg/L]	16-Sep-22	19:37	19-Sep-22	12:06	---	---	< 0.003	< 0.003	0.016	< 0.003
Arsenic (dissolved) [mg/L]	16-Sep-22	19:37	19-Sep-22	12:06	---	---	0.0002	0.0011	0.0017	0.0006
Barium (dissolved) [mg/L]	16-Sep-22	19:37	19-Sep-22	12:06	---	---	0.0103	0.0384	0.0283	0.0194
Boron (dissolved) [mg/L]	16-Sep-22	19:37	19-Sep-22	12:06	---	---	0.011	0.163	0.042	0.081
Cadmium (dissolved) [mg/L]	16-Sep-22	19:37	19-Sep-22	12:06	---	---	< 0.000003	0.000009	0.000003	0.000003
Chromium (dissolved) [mg/L]	16-Sep-22	19:37	19-Sep-22	12:06	---	---	0.00044	0.00020	0.00052	0.00023
Copper (dissolved) [mg/L]	16-Sep-22	19:37	19-Sep-22	12:06	---	---	0.0004	0.0004	< 0.0002	0.0008
Iron (dissolved) [mg/L]	16-Sep-22	19:37	19-Sep-22	12:06	---	---	< 0.007	0.026	1.18	0.290
Lead (dissolved) [mg/L]	16-Sep-22	19:37	19-Sep-22	12:06	---	---	< 0.00009	< 0.00009	< 0.00009	0.00010
Manganese (dissolved) [mg/L]	16-Sep-22	19:37	19-Sep-22	12:06	---	---	0.00062	0.925	0.156	0.863
Zinc (dissolved) [mg/L]	16-Sep-22	19:37	19-Sep-22	12:06	---	---	< 0.002	< 0.002	< 0.002	< 0.002
Dissolved Organic Carbon [mg/L]	16-Sep-22	11:14	19-Sep-22	08:42	---	5	< 1	3	2	6
Benzene [µg/L]	22-Sep-22	15:59	23-Sep-22	11:38	---	---	< 0.5	< 0.5	< 0.5	< 0.5
1,4-Dichlorobenzene [µg/L]	22-Sep-22	15:59	23-Sep-22	11:38	---	---	< 0.5	< 0.5	< 0.5	< 0.5
Dichloromethane [µg/L]	22-Sep-22	15:59	23-Sep-22	11:38	---	---	< 0.5	< 0.5	< 0.5	< 0.5
Toluene [µg/L]	22-Sep-22	15:59	23-Sep-22	11:38	---	---	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl Chloride [µg/L]	22-Sep-22	15:59	23-Sep-22	11:38	---	---	< 0.2	< 0.2	< 0.2	< 0.2

Analysis	12: TW-36I	13: TW-37	14: TW-38S	15: TW-38I	16: TW-39S	17: TW-39I	18: TW-40
Sample Date & Time	14-Sep-22	14-Sep-22	14-Sep-22	14-Sep-22	14-Sep-22	14-Sep-22	14-Sep-22
Temperature Upon Receipt [°C]	15.0	15.0	15.0	15.0	15.0	15.0	15.0
pH [No unit]	7.96	7.89	7.85	8.09	7.89	8.12	7.92
Alkalinity [mg/L as CaCO3]	206	342	213	172	266	168	213

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LR Report : **CA15227-SEP22**

Analysis	12: TW-36I	13: TW-37	14: TW-38S	15: TW-38I	16: TW-39S	17: TW-39I	18: TW-40
Conductivity [uS/cm]	473	695	544	423	521	407	403
Phosphorus (total) [mg/L]	< 0.03	0.32	0.12	< 0.03	0.82	0.55	1.19
Total Kjeldahl Nitrogen [as N mg/L]	< 0.5	0.6	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Ammonia+Ammonium (N) [as N mg/L]	0.1	0.2	< 0.1	0.1	< 0.1	< 0.1	< 0.1
Chloride [mg/L]	5	25	23	27	5	31	< 1
Sulphate [mg/L]	43	16	51	9	6	< 2	3
Nitrite (as N) [mg/L]	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Nitrate (as N) [mg/L]	0.25	0.13	0.10	< 0.06	< 0.06	< 0.06	< 0.06
Nitrate + Nitrite (as N) [mg/L]	0.25	0.13	0.10	< 0.06	< 0.06	< 0.06	< 0.06
Total Dissolved Solids [mg/L]	306	417	320	231	297	240	234
Chemical Oxygen Demand [mg/L]	< 8	20	< 8	< 8	< 8	< 8	< 8
4AAP-Phenolics [mg/L]	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Mercury (dissolved) [mg/L]	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Hardness (dissolved) [mg/L as CaCO3]	245	349	256	142	277	131	22.5
Calcium (dissolved) [mg/L]	65.1	70.3	64.4	24.0	77.8	19.3	6.78
Potassium (dissolved) [mg/L]	0.826	4.63	4.33	8.24	0.624	5.50	0.669
Magnesium (dissolved) [mg/L]	20.1	42.1	23.0	20.0	20.2	20.1	1.35
Sodium (dissolved) [mg/L]	3.65	8.56	10.4	17.1	4.09	26.9	1.17
Phosphorus (dissolved) [mg/L]	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Arsenic (dissolved) [mg/L]	0.0005	0.0033	0.0010	0.0029	< 0.0002	0.0013	< 0.0002
Barium (dissolved) [mg/L]	0.0164	0.0365	0.0255	0.0317	0.0125	0.0174	0.00511
Boron (dissolved) [mg/L]	0.018	0.041	0.054	0.160	0.010	0.223	0.006
Cadmium (dissolved) [mg/L]	< 0.000003	< 0.000003	0.000012	0.000012	0.000003	0.000015	0.000239
Chromium (dissolved) [mg/L]	0.00014	0.00031	0.00019	0.00011	0.00010	0.00025	0.00037
Copper (dissolved) [mg/L]	< 0.0002	< 0.0002	0.0036	0.0004	0.0007	0.0005	0.0025
Iron (dissolved) [mg/L]	0.611	3.48	0.031	0.087	0.015	0.046	0.010
Lead (dissolved) [mg/L]	< 0.00009	< 0.00009	< 0.00009	< 0.00009	< 0.00009	< 0.00009	< 0.00009
Manganese (dissolved) [mg/L]	0.0258	0.452	0.216	0.00701	0.0112	0.00752	0.00128
Zinc (dissolved) [mg/L]	< 0.002	< 0.002	< 0.002	< 0.002	0.002	< 0.002	0.004
Dissolved Organic Carbon [mg/L]	2	8	3	2	2	1	1
Benzene [µg/L]	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

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LR Report : **CA15227-SEP22**

Analysis	12: TW-36I	13: TW-37	14: TW-38S	15: TW-38I	16: TW-39S	17: TW-39I	18: TW-40
1,4-Dichlorobenzene [µg/L]	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Dichloromethane [µg/L]	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Toluene [µg/L]	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl Chloride [µg/L]	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2

MAC - Maximum Acceptable Concentration
AO/OG - Aesthetic Objective / Operational Guideline

Hawley Anderson, Hon.B.Sc
Project Specialist,
Environment, Health & Safety

OnLine LIMS

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01-May-2023

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Phone: 519-832-2008
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Date Rec. : 14 April 2023
LR Report: **CA14422-APR23**
Reference: Hydrogeological Assessment (Project No. 220341)

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: MAC	6: AO/OG	7: TW-33	8: TW-34	9: TW-35S	10: TW-35I	11: TW-36S	12: TW-36I
Sample Date & Time							13-Apr-23	13-Apr-23	13-Apr-23	13-Apr-23	13-Apr-23	13-Apr-23
Temperature Upon Receipt [°C]	---	---	---	---	---	---	7.0	7.0	7.0	7.0	7.0	7.0
pH [No unit]	15-Apr-23	11:34	18-Apr-23	12:26	---	6.5-8.5	8.10	8.23	8.00	8.05	8.19	8.19
Alkalinity [mg/L as CaCO3]	15-Apr-23	11:34	18-Apr-23	12:26	---	30-500	290	227	351	345	297	214
Conductivity [uS/cm]	18-Apr-23	16:45	19-Apr-23	16:54	---	---	486	410	924	980	612	468
Phosphorus (total) [mg/L]	20-Apr-23	15:37	28-Apr-23	14:07	---	---	0.25	0.09	< 0.03	< 0.03	0.44	0.62
Total Kjeldahl Nitrogen [as N mg/L]	19-Apr-23	15:37	24-Apr-23	09:49	---	---	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Ammonia+Ammonium (N) [as N mg/L]	19-Apr-23	16:52	24-Apr-23	08:33	---	---	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chloride [mg/L]	19-Apr-23	08:07	21-Apr-23	16:20	---	250	< 1	< 1	72	82	16	9
Sulphate [mg/L]	19-Apr-23	08:05	21-Apr-23	16:20	---	500	3	4	78	82	61	49
Nitrite (as N) [mg/L]	18-Apr-23	23:44	25-Apr-23	14:22	1	---	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.16
Nitrate (as N) [mg/L]	18-Apr-23	23:44	25-Apr-23	14:22	10	---	0.10	0.15	< 0.06	< 0.06	0.12	0.38
Nitrate + Nitrite (as N) [mg/L]	18-Apr-23	23:44	25-Apr-23	14:22	10	---	0.10	0.15	< 0.06	< 0.06	0.12	0.54
Hardness (dissolved) [mg/L as CaCO3]	20-Apr-23	17:04	24-Apr-23	11:51	---	80-100	294	228	451	473	324	245
Mercury (dissolved) [mg/L]	19-Apr-23	11:20	24-Apr-23	11:52	0.001	---	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Calcium (dissolved) [mg/L]	20-Apr-23	17:04	24-Apr-23	11:51	---	---	78.7	60.5	120	121	95.5	64.1
Potassium (dissolved) [mg/L]	20-Apr-23	17:04	24-Apr-23	11:51	---	---	0.107	0.187	1.90	1.85	0.916	0.697
Magnesium (dissolved) [mg/L]	20-Apr-23	17:04	24-Apr-23	11:51	---	---	23.6	18.8	36.7	41.8	20.8	20.6
Sodium (dissolved) [mg/L]	20-Apr-23	17:04	24-Apr-23	11:51	20	200	2.74	2.01	41.0	25.8	9.32	4.40
Phosphorus (dissolved) [mg/L]	20-Apr-23	17:04	24-Apr-23	11:51	---	---	< 0.003	0.005	< 0.003	< 0.003	< 0.003	0.007

OnLine LIMS

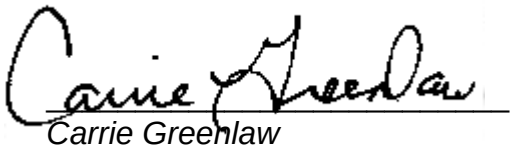
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LR Report : **CA14422-APR23**

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: MAC	6: AO/OG	7: TW-33	8: TW-34	9: TW-35S	10: TW-35I	11: TW-36S	12: TW-36I
Arsenic (dissolved) [mg/L]	20-Apr-23	17:04	24-Apr-23	11:51	0.01	---	< 0.0002	< 0.0002	0.0003	< 0.0002	0.0004	0.0002
Barium (dissolved) [mg/L]	20-Apr-23	17:04	24-Apr-23	11:51	1	---	0.00355	0.00417	0.0270	0.0281	0.0109	0.0145
Boron (dissolved) [mg/L]	20-Apr-23	17:04	24-Apr-23	11:51	---	---	0.015	0.011	0.210	0.060	0.088	0.022
Cadmium (dissolved) [mg/L]	20-Apr-23	17:04	24-Apr-23	11:51	0.005	---	< 0.000003	0.000005	0.000014	< 0.000003	0.000003	< 0.000003
Chromium (dissolved) [mg/L]	20-Apr-23	17:04	24-Apr-23	11:51	0.05	---	0.00073	0.00037	0.00021	0.00012	0.00031	0.00017
Copper (dissolved) [mg/L]	20-Apr-23	17:04	24-Apr-23	11:51	---	---	0.0032	0.0003	0.0035	0.0007	0.0053	0.0064
Iron (dissolved) [mg/L]	20-Apr-23	17:04	24-Apr-23	11:51	---	---	< 0.007	< 0.007	< 0.007	0.091	0.034	0.246
Lead (dissolved) [mg/L]	20-Apr-23	17:04	24-Apr-23	11:51	0.01	---	0.00010	< 0.00009	0.00012	< 0.00009	0.00009	0.00018
Manganese (dissolved) [mg/L]	20-Apr-23	17:04	24-Apr-23	11:51	---	---	0.00033	0.00056	0.0684	0.121	0.0698	0.0151
Zinc (dissolved) [mg/L]	20-Apr-23	17:04	24-Apr-23	11:51	---	---	< 0.002	< 0.002	0.003	< 0.002	< 0.002	0.005
pH Check <2 [pH]	17-Apr-23	21:40	24-Apr-23	11:51	---	---	1.00	1.00	1.00	1.00	1.00	1.00
Dissolved Organic Carbon [mg/L]	17-Apr-23	20:25	19-Apr-23	11:20	---	5	2	< 1	2	2	9	2
Chemical Oxygen Demand [mg/L]	17-Apr-23	10:51	19-Apr-23	10:18	---	---	< 8	< 8	< 8	< 8	20	< 8
Total Dissolved Solids [mg/L]	14-Apr-23	20:25	18-Apr-23	07:46			329	257	637	617	391	303
4AAP-Phenolics [mg/L]	17-Apr-23	08:12	18-Apr-23	08:45			< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002



Carrie Greenlaw
Project Specialist,
Environment, Health & Safety

OnLine LIMS

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01-May-2023

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600 Tomlinson Drive
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Fax:519-832-2140

Date Rec. : 14 April 2023
LR Report: **CA14422-APR23**
Reference: Hydrogeological Assessment (Project No. 220341)

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: MAC	6: AO/OG	13: TW-37	14: TW-38S	15: TW-38I	16: TW-39S	17: TW-39I	18: TW-40
Sample Date & Time							13-Apr-23	13-Apr-23	13-Apr-23	13-Apr-23	13-Apr-23	13-Apr-23
Temperature Upon Receipt [°C]	---	---	---	---	---	---	7.0	7.0	7.0	7.0	7.0	7.0
pH [No unit]	15-Apr-23	11:34	18-Apr-23	12:26	---	6.5-8.5	8.21	8.21	8.25	8.12	8.26	8.17
Alkalinity [mg/L as CaCO3]	15-Apr-23	11:34	18-Apr-23	12:26	---	30-500	332	190	170	271	167	231
Conductivity [uS/cm]	18-Apr-23	16:45	19-Apr-23	16:54	---	---	649	503	364	500	368	389
Phosphorus (total) [mg/L]	20-Apr-23	15:37	28-Apr-23	14:07	---	---	< 0.03	0.68	1.00	0.42	1.64	1.07
Total Kjeldahl Nitrogen [as N mg/L]	19-Apr-23	15:37	24-Apr-23	09:49	---	---	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Ammonia+Ammonium (N) [as N mg/L]	19-Apr-23	16:52	24-Apr-23	08:33	---	---	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chloride [mg/L]	19-Apr-23	08:07	21-Apr-23	16:20	---	250	16	19	30	6	30	5
Sulphate [mg/L]	19-Apr-23	08:05	21-Apr-23	16:20	---	500	24	63	6	9	4	5
Nitrite (as N) [mg/L]	18-Apr-23	23:44	25-Apr-23	14:22	1	---	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Nitrate (as N) [mg/L]	18-Apr-23	23:44	25-Apr-23	14:22	10	---	< 0.06	< 0.06	< 0.06	< 0.06	0.07	< 0.06
Nitrate + Nitrite (as N) [mg/L]	18-Apr-23	23:44	25-Apr-23	14:22	10	---	< 0.06	< 0.06	< 0.06	< 0.06	0.07	< 0.06
Hardness (dissolved) [mg/L as CaCO3]	20-Apr-23	17:04	24-Apr-23	11:51	---	80-100	348	243	139	284	125	241
Mercury (dissolved) [mg/L]	19-Apr-23	11:20	24-Apr-23	11:52	0.001	---	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Calcium (dissolved) [mg/L]	20-Apr-23	17:04	24-Apr-23	11:51	---	---	68.2	57.6	22.6	78.4	19.1	69.2
Potassium (dissolved) [mg/L]	20-Apr-23	17:04	24-Apr-23	11:51	---	---	3.88	3.34	6.78	0.534	4.58	0.398
Magnesium (dissolved) [mg/L]	20-Apr-23	17:04	24-Apr-23	11:51	---	---	43.2	24.0	20.1	21.3	18.8	16.7
Sodium (dissolved) [mg/L]	20-Apr-23	17:04	24-Apr-23	11:51	20	200	7.79	10.2	19.9	3.20	29.6	0.75
Phosphorus (dissolved) [mg/L]	20-Apr-23	17:04	24-Apr-23	11:51	---	---	0.004	0.003	< 0.003	0.003	< 0.003	0.003

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LR Report : **CA14422-APR23**

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: MAC	6: AO/OG	13: TW-37	14: TW-38S	15: TW-38I	16: TW-39S	17: TW-39I	18: TW-40
Arsenic (dissolved) [mg/L]	20-Apr-23	17:04	24-Apr-23	11:51	0.01	---	0.0003	0.0008	0.0026	< 0.0002	0.0010	< 0.0002
Barium (dissolved) [mg/L]	20-Apr-23	17:04	24-Apr-23	11:51	1	---	0.0241	0.0151	0.0301	0.0064	0.0113	0.0040
Boron (dissolved) [mg/L]	20-Apr-23	17:04	24-Apr-23	11:51	---	---	0.040	0.054	0.188	0.020	0.256	0.013
Cadmium (dissolved) [mg/L]	20-Apr-23	17:04	24-Apr-23	11:51	0.005	---	0.000005	0.000005	0.000006	< 0.000003	0.000012	< 0.000003
Chromium (dissolved) [mg/L]	20-Apr-23	17:04	24-Apr-23	11:51	0.05	---	0.00018	0.00016	0.00019	0.00018	0.00028	0.00028
Copper (dissolved) [mg/L]	20-Apr-23	17:04	24-Apr-23	11:51	---	---	0.0077	0.0029	0.0056	0.0013	0.0057	0.0013
Iron (dissolved) [mg/L]	20-Apr-23	17:04	24-Apr-23	11:51	---	---	0.094	0.016	0.058	0.007	0.019	< 0.007
Lead (dissolved) [mg/L]	20-Apr-23	17:04	24-Apr-23	11:51	0.01	---	0.00018	< 0.00009	0.00018	< 0.00009	0.00017	< 0.00009
Manganese (dissolved) [mg/L]	20-Apr-23	17:04	24-Apr-23	11:51	---	---	0.347	0.0120	0.00616	0.00341	0.00509	0.00078
Zinc (dissolved) [mg/L]	20-Apr-23	17:04	24-Apr-23	11:51	---	---	0.004	< 0.002	0.005	< 0.002	0.005	< 0.002
pH Check <2 [pH]	17-Apr-23	21:40	24-Apr-23	11:51	---	---	1.00	1.00	1.00	1.00	1.00	1.00
Dissolved Organic Carbon [mg/L]	17-Apr-23	20:25	19-Apr-23	11:20	---	5	5	3	< 1	1	< 1	1
Chemical Oxygen Demand [mg/L]	17-Apr-23	10:51	19-Apr-23	10:18	---	---	15	9	< 8	< 8	< 8	< 8
Total Dissolved Solids [mg/L]	14-Apr-23	20:25	18-Apr-23	07:46			406	329	243	291	220	260
4AAP-Phenolics [mg/L]	17-Apr-23	08:12	18-Apr-23	08:45			< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002

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Project Specialist,
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Date Rec. : 17 November 2023
LR Report: **CA15503-NOV23**
Reference: Hydrogeological Assessment (Project No. 220341)

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: MAC	6: AO/OG	7: TW-33	8: TW-34	9: TW-35S	10: TW-35I	11: TW-36S	12: TW-36I	13: TW-37
Sample Date & Time							16-Nov-23	16-Nov-23	16-Nov-23	16-Nov-23	16-Nov-23	16-Nov-23	16-Nov-23
Temperature Upon Receipt [°C]	---	---	---	---	---	---	10.0	10.0	10.0	10.0	10.0	10.0	10.0
pH [No unit]	17-Nov-23	15:53	20-Nov-23	11:25	---	6.5-8.5	8.02	8.08	7.96	7.97	8.04	7.98	8.04
Alkalinity [mg/L as CaCO3]	17-Nov-23	15:53	20-Nov-23	11:25	---	30-500	321	292	338	315	308	209	333
Conductivity [uS/cm]	17-Nov-23	15:53	20-Nov-23	11:25	---	---	582	528	958	966	637	467	638
Phosphorus (total) [mg/L]	17-Nov-23	16:57	20-Nov-23	11:38	---	---	0.91	0.48	0.16	0.04	0.72	1.16	0.08
Total Kjeldahl Nitrogen [as N mg/L]	17-Nov-23	19:35	20-Nov-23	08:53	---	---	< 0.5	< 0.5	< 0.5	< 0.5	0.8	< 0.5	< 0.5
Ammonia+Ammonium (N) [as N mg/L]	17-Nov-23	18:34	20-Nov-23	13:13	---	---	< 0.1	< 0.1	< 0.1	< 0.1	0.2	0.2	0.2
Chloride [mg/L]	30-Nov-23	12:12	01-Dec-23	13:01	---	250	1	< 1	73	78	17	6	17
Sulphate [mg/L]	30-Nov-23	12:32	01-Dec-23	13:01	---	500	3	4	85	86	55	46	12
Nitrite (as N) [mg/L]	20-Nov-23	17:20	23-Nov-23	15:10	1	---	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.04	< 0.03
Nitrate (as N) [mg/L]	20-Nov-23	17:20	23-Nov-23	15:10	10	---	0.13	0.33	< 0.06	0.07	< 0.06	< 0.06	< 0.06
Nitrate + Nitrite (as N) [mg/L]	20-Nov-23	17:20	23-Nov-23	15:10	10	---	0.13	0.33	< 0.06	0.07	< 0.06	< 0.06	< 0.06
Hardness (dissolved) [mg/L as CaCO3]	21-Nov-23	15:24	23-Nov-23	16:36	---	80-100	330	287	431	461	285	244	345
Mercury (dissolved) [mg/L]	23-Nov-23	09:09	23-Nov-23	16:36	0.001	---	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Calcium (dissolved) [mg/L]	21-Nov-23	15:24	23-Nov-23	16:36	---	---	86.9	75.7	120	117	83.9	63.7	65.7
Potassium (dissolved) [mg/L]	21-Nov-23	15:24	23-Nov-23	16:36	---	---	0.227	0.363	2.40	1.99	0.724	0.643	4.20
Magnesium (dissolved) [mg/L]	21-Nov-23	15:24	23-Nov-23	16:36	---	---	27.4	23.7	32.3	40.9	18.4	20.6	43.9
Sodium (dissolved) [mg/L]	21-Nov-23	15:24	23-Nov-23	16:36	20	200	1.49	4.20	33.0	22.1	6.87	3.61	7.17
Phosphorus (dissolved) [mg/L]	21-Nov-23	15:24	23-Nov-23	16:36	---	---	< 0.003	< 0.003	< 0.003	0.004	< 0.003	0.015	< 0.003

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LR Report : **CA15503-NOV23**

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: MAC	6: AO/OG	7: TW-33	8: TW-34	9: TW-35S	10: TW-35I	11: TW-36S	12: TW-36I	13: TW-37
Arsenic (dissolved) [mg/L]	21-Nov-23	15:24	23-Nov-23	16:36	0.01	---	< 0.0002	< 0.0002	0.0002	0.0009	0.0003	0.0003	0.0005
Barium (dissolved) [mg/L]	21-Nov-23	15:24	23-Nov-23	16:36	1	---	0.00571	0.00771	0.0273	0.0280	0.00959	0.0144	0.0245
Boron (dissolved) [mg/L]	21-Nov-23	15:24	23-Nov-23	16:36	---	---	0.008	0.011	0.209	0.049	0.078	0.018	0.043
Cadmium (dissolved) [mg/L]	21-Nov-23	15:24	23-Nov-23	16:36	0.005	---	0.000003	0.000007	0.000035	0.000012	0.000008	0.000022	0.000004
Chromium (dissolved) [mg/L]	21-Nov-23	15:24	23-Nov-23	16:36	0.05	---	0.00090	0.00060	0.00028	0.00021	0.00034	0.00018	0.00032
Copper (dissolved) [mg/L]	21-Nov-23	15:24	23-Nov-23	16:36	---	---	0.0006	0.0035	0.0036	0.0010	0.0036	0.0007	0.0016
Iron (dissolved) [mg/L]	21-Nov-23	15:24	23-Nov-23	16:36	---	---	0.009	< 0.007	< 0.007	0.176	0.102	0.836	0.197
Lead (dissolved) [mg/L]	21-Nov-23	15:24	23-Nov-23	16:36	0.01	---	< 0.00009	< 0.00009	< 0.00009	< 0.00009	< 0.00009	< 0.00009	< 0.00009
Manganese (dissolved) [mg/L]	21-Nov-23	15:24	23-Nov-23	16:36	---	---	0.00021	0.00050	0.0608	0.0545	0.234	0.0113	0.433
Zinc (dissolved) [mg/L]	21-Nov-23	15:24	23-Nov-23	16:36	---	---	< 0.002	0.002	0.004	< 0.002	< 0.002	< 0.002	< 0.002
Dissolved Organic Carbon [mg/L]	20-Nov-23	20:13	22-Nov-23	08:55	---	5	< 1	1	2	2	5	1	5
Chemical Oxygen Demand [mg/L]	20-Nov-23	08:42	21-Nov-23	15:08	---	---	< 8	< 8	< 8	< 8	22	< 8	20
Total Dissolved Solids [mg/L]	17-Nov-23	17:52	22-Nov-23	08:18			326	297	569	557	394	306	346
4AAP-Phenolics [mg/L]	20-Nov-23	12:40	21-Nov-23	10:15			< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002

Analysis	14: TW-38S	15: TW-38I	16: TW-39S	17: TW-39I	18: TW-40
Sample Date & Time	16-Nov-23	16-Nov-23	16-Nov-23	16-Nov-23	16-Nov-23
Temperature Upon Receipt [°C]	10.0	10.0	10.0	10.0	10.0
pH [No unit]	7.97	7.95	7.97	8.05	8.03
Alkalinity [mg/L as CaCO3]	196	164	268	169	235
Conductivity [uS/cm]	486	353	524	361	442
Phosphorus (total) [mg/L]	1.28	0.16	0.30	1.07	0.40
Total Kjeldahl Nitrogen [as N mg/L]	0.5	< 0.5	< 0.5	< 0.5	< 0.5
Ammonia+Ammonium (N) [as N mg/L]	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chloride [mg/L]	20	23	13	21	2
Sulphate [mg/L]	53	4	6	< 2	5
Nitrite (as N) [mg/L]	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Nitrate (as N) [mg/L]	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06
Nitrate + Nitrite (as N) [mg/L]	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06
Hardness (dissolved) [mg/L as CaCO3]	282	141	293	124	248
Mercury (dissolved) [mg/L]	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Calcium (dissolved) [mg/L]	70.2	22.8	81.3	19.8	69.8
Potassium (dissolved) [mg/L]	3.35	5.61	0.609	3.97	0.489
Magnesium (dissolved) [mg/L]	25.8	20.5	22.0	18.2	17.9
Sodium (dissolved) [mg/L]	10.4	18.1	2.66	28.4	0.85

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LR Report : **CA15503-NOV23**

Analysis	14: TW-38S	15: TW-38I	16: TW-39S	17: TW-39I	18: TW-40
Phosphorus (dissolved) [mg/L]	< 0.003	0.004	< 0.003	0.013	< 0.003
Arsenic (dissolved) [mg/L]	0.0018	0.0029	< 0.0002	0.0012	< 0.0002
Barium (dissolved) [mg/L]	0.0176	0.0275	0.00782	0.0100	0.00463
Boron (dissolved) [mg/L]	0.053	0.193	0.013	0.281	0.010
Cadmium (dissolved) [mg/L]	0.000010	0.000006	< 0.000003	0.000003	< 0.000003
Chromium (dissolved) [mg/L]	0.00026	0.00016	0.00010	0.00016	0.00027
Copper (dissolved) [mg/L]	0.0035	0.0008	0.0006	< 0.0002	0.0004
Iron (dissolved) [mg/L]	0.014	0.040	0.014	0.029	< 0.007
Lead (dissolved) [mg/L]	0.00034	< 0.00009	< 0.00009	< 0.00009	< 0.00009
Manganese (dissolved) [mg/L]	0.0524	0.0103	0.0114	0.00913	0.00462
Zinc (dissolved) [mg/L]	0.004	< 0.002	< 0.002	< 0.002	< 0.002
Dissolved Organic Carbon [mg/L]	2	< 1	1	< 1	< 1
Chemical Oxygen Demand [mg/L]	14	< 8	< 8	< 8	< 8
Total Dissolved Solids [mg/L]	329	180	271	177	226
4AAP-Phenolics [mg/L]	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002

Hawley Anderson, Hon.B.Sc
Project Specialist,
Environment, Health & Safety

OnLine LIMS

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06-May-2024

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Date Rec. : 25 April 2024
LR Report: **CA15205-APR24**
Reference: Hydrogeological Assessment (Project No. 220341)

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	7: TW-34	8: TW-35S	9: TW-35I	10: TW-36S	11: TW-36I	12: TW-37	13: TW-38S	14: TW-38I	15: TW-39S	16: TW-39I	17: TW-40
Sample Date & Time					24-Apr-24	24-Apr-24	24-Apr-24	24-Apr-24	24-Apr-24	24-Apr-24	24-Apr-24	24-Apr-24	24-Apr-24	24-Apr-24	24-Apr-24
Temperature Upon Receipt [°C]	---	---	---	---	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
pH [No unit]	26-Apr-24	14:31	29-Apr-24	13:10	8.38	8.28	7.94	8.14	8.20	8.22	8.56	8.63	8.36	8.36	8.31
Alkalinity [mg/L as CaCO3]	26-Apr-24	14:31	29-Apr-24	13:10	212	211	346	283	210	200	219	194	208	176	210
Conductivity [uS/cm]	26-Apr-24	14:31	30-Apr-24	11:53	396	909	1020	626	470	645	576	359	475	330	397
Total Kjeldahl Nitrogen [as N mg/L]	26-Apr-24	15:57	30-Apr-24	09:49	0.8	0.6	< 0.5	0.9	< 0.5	< 0.5	0.5	< 0.5	0.5	< 0.5	0.6
Ammonia+Ammonium (N) [as N mg/L]	26-Apr-24	15:53	29-Apr-24	08:48	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1	< 0.1
Chloride [mg/L]	03-May-24	14:52	03-May-24	16:34	< 1	66	79	14	5	5	28	18	3	13	< 1
Sulphate [mg/L]	03-May-24	14:50	03-May-24	16:34	< 2	93	91	47	49	35	70	4	4	2	2
Nitrite (as N) [mg/L]	27-Apr-24	14:57	30-Apr-24	16:16	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Nitrate (as N) [mg/L]	27-Apr-24	14:57	30-Apr-24	16:16	0.07	< 0.06	< 0.06	0.07	0.14	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06
Nitrate + Nitrite (as N) [mg/L]	27-Apr-24	14:57	30-Apr-24	16:16	0.07	< 0.06	< 0.06	0.07	0.14	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06
Hardness (dissolved) [mg/L as CaCO3]	29-Apr-24	01:28	30-Apr-24	14:26	199	410	452	314	233	326	249	142	251	104	229
Calcium (dissolved) [mg/L]	29-Apr-24	01:28	30-Apr-24	14:26	54.6	115	120	94.2	63.4	68.9	63.9	26.3	71.8	16.6	66.6
Potassium (dissolved) [mg/L]	29-Apr-24	01:28	30-Apr-24	14:26	0.143	1.92	1.92	1.03	0.685	3.39	3.13	5.20	0.471	3.65	0.363
Magnesium (dissolved) [mg/L]	29-Apr-24	01:28	30-Apr-24	14:26	15.3	30.1	37.4	19.1	18.1	37.5	21.6	18.5	17.5	15.1	15.2
Sodium (dissolved) [mg/L]	29-Apr-24	01:28	30-Apr-24	14:26	1.55	33.2	24.8	7.88	3.34	4.75	8.10	17.2	2.01	26.6	0.63
Phosphorus (dissolved) [mg/L]	29-Apr-24	01:28	30-Apr-24	14:26	< 0.003	< 0.003	< 0.003	0.005	< 0.003	0.004	0.021	0.007	0.004	< 0.003	< 0.003
Dissolved Organic Carbon [mg/L]	26-Apr-62	21:33	30-Apr-24	13:42	1	2	2	8	2	3	3	1	2	< 1	< 1

OnLine LIMS

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SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

17-September-2025

Town of Saugeen Shores
Attn : Larry Gill

600 Tomlinson Drive
Port Elgin, ON
N0H 2C0, Canada

Phone: 519-832-2008
Fax:519-832-2140

Date Rec. : 10 September 2025
LR Report: **CA15090-SEP25**
Reference: Hydrogeological Assessment (Project No. 220341)

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: MAC	6: AO/OG	7: TW-34	8: TW-35S	9: TW-35I	10: TW-36S	11: TW-36I
Sample Date & Time							09-Sep-25 11:55	09-Sep-25 10:30	09-Sep-25 10:35	09-Sep-25 10:49	09-Sep-25 10:45
Temperature Upon Receipt [°C]	---	---	---	---	---	---	12.0	12.0	12.0	12.0	12.0
pH [No unit]	10-Sep-25	15:31	11-Sep-25	10:50	---	6.5-8.5	7.86	7.81	7.82	7.77	7.86
Alkalinity [mg/L as CaCO3]	10-Sep-25	15:31	11-Sep-25	10:50	---	30-500	267	343	354	281	230
Conductivity [uS/cm]	10-Sep-25	15:31	11-Sep-25	10:50	---	---	471	823	968	581	492
Total Kjeldahl Nitrogen [as N mg/L]	11-Sep-25	15:09	15-Sep-25	12:46	---	---	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Ammonia+Ammonium (N) [as N mg/L]	11-Sep-25	17:27	16-Sep-25	14:31	---	---	< 0.1	< 0.1	< 0.1	< 0.1	0.1
Chloride [mg/L]	15-Sep-25	12:54	15-Sep-25	16:01	---	250	1	50	77	12	5
Sulphate [mg/L]	15-Sep-25	12:52	15-Sep-25	16:01	---	500	2	53	74	40	44
Nitrite (as N) [mg/L]	11-Sep-25	16:28	16-Sep-25	10:37	1	---	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Nitrate (as N) [mg/L]	11-Sep-25	16:28	16-Sep-25	10:37	10	---	0.18	< 0.06	< 0.06	< 0.06	< 0.06
Nitrate + Nitrite (as N) [mg/L]	11-Sep-25	16:28	16-Sep-25	10:37	10	---	0.18	< 0.06	< 0.06	< 0.06	< 0.06
Hardness (dissolved) [mg/L as CaCO3]	11-Sep-25	22:07	15-Sep-25	18:21	---	80-100	243	347	434	261	240
Calcium (dissolved) [mg/L]	11-Sep-25	22:07	15-Sep-25	18:21	---	---	62.8	97.5	107	72.9	61.4
Potassium (dissolved) [mg/L]	11-Sep-25	22:07	15-Sep-25	18:21	---	---	0.356	3.14	2.17	1.09	0.650
Magnesium (dissolved) [mg/L]	11-Sep-25	22:07	15-Sep-25	18:21	---	---	21.0	25.2	40.6	19.3	21.0
Sodium (dissolved) [mg/L]	11-Sep-25	22:07	15-Sep-25	18:21	20	200	1.73	27.3	28.0	6.67	3.60
Phosphorus (dissolved) [mg/L]	11-Sep-25	22:07	15-Sep-25	18:21	---	---	0.004	0.003	0.004	0.003	0.004
Dissolved Organic Carbon [mg/L]	11-Sep-25	15:21	15-Sep-25	10:15	---	5	< 1	2	2	5	2

OnLine LIMS

0004259320

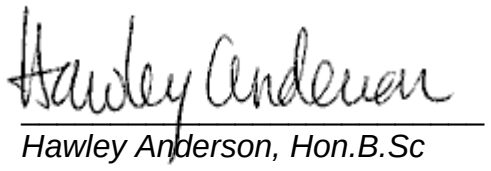
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SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

LR Report : **CA15090-SEP25**

Analysis	12: TW-37	13: TW-38S	14: TW-38I	15: TW-39S	16: TW-39I	17: TW-40
Sample Date & Time	09-Sep-25 11:45	09-Sep-25 09:10	09-Sep-25 09:05	09-Sep-25 09:35	09-Sep-25 09:30	09-Sep-25 09:45
Temperature Upon Receipt [°C]	12.0	12.0	12.0	12.0	12.0	12.0
pH [No unit]	7.99	7.86	8.05	7.97	7.96	7.94
Alkalinity [mg/L as CaCO3]	361	193	182	280	171	311
Conductivity [uS/cm]	645	469	348	534	323	449
Total Kjeldahl Nitrogen [as N mg/L]	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Ammonia+Ammonium (N) [as N mg/L]	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chloride [mg/L]	5	12	12	13	8	1
Sulphate [mg/L]	17	52	< 2	6	4	2
Nitrite (as N) [mg/L]	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Nitrate (as N) [mg/L]	< 0.06	0.07	< 0.06	< 0.06	< 0.06	< 0.06
Nitrate + Nitrite (as N) [mg/L]	< 0.06	0.07	< 0.06	< 0.06	< 0.06	< 0.06
Hardness (dissolved) [mg/L as CaCO3]	326	214	134	261	104	227
Calcium (dissolved) [mg/L]	61.9	52.8	22.0	69.7	16.3	62.9
Potassium (dissolved) [mg/L]	3.67	2.38	4.19	0.630	2.99	0.400
Magnesium (dissolved) [mg/L]	41.7	20.0	19.2	21.1	15.4	17.1
Sodium (dissolved) [mg/L]	5.32	6.37	17.8	3.40	26.0	0.69
Phosphorus (dissolved) [mg/L]	0.004	< 0.003	0.006	< 0.003	0.010	< 0.003
Dissolved Organic Carbon [mg/L]	6	2	1	2	1	1

MAC - Maximum Acceptable Concentration
AO/OG - Aesthetic Objective / Operational Guideline



Hawley Anderson, Hon.B.Sc
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0004259320

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APPENDIX G
WELL RECORDS

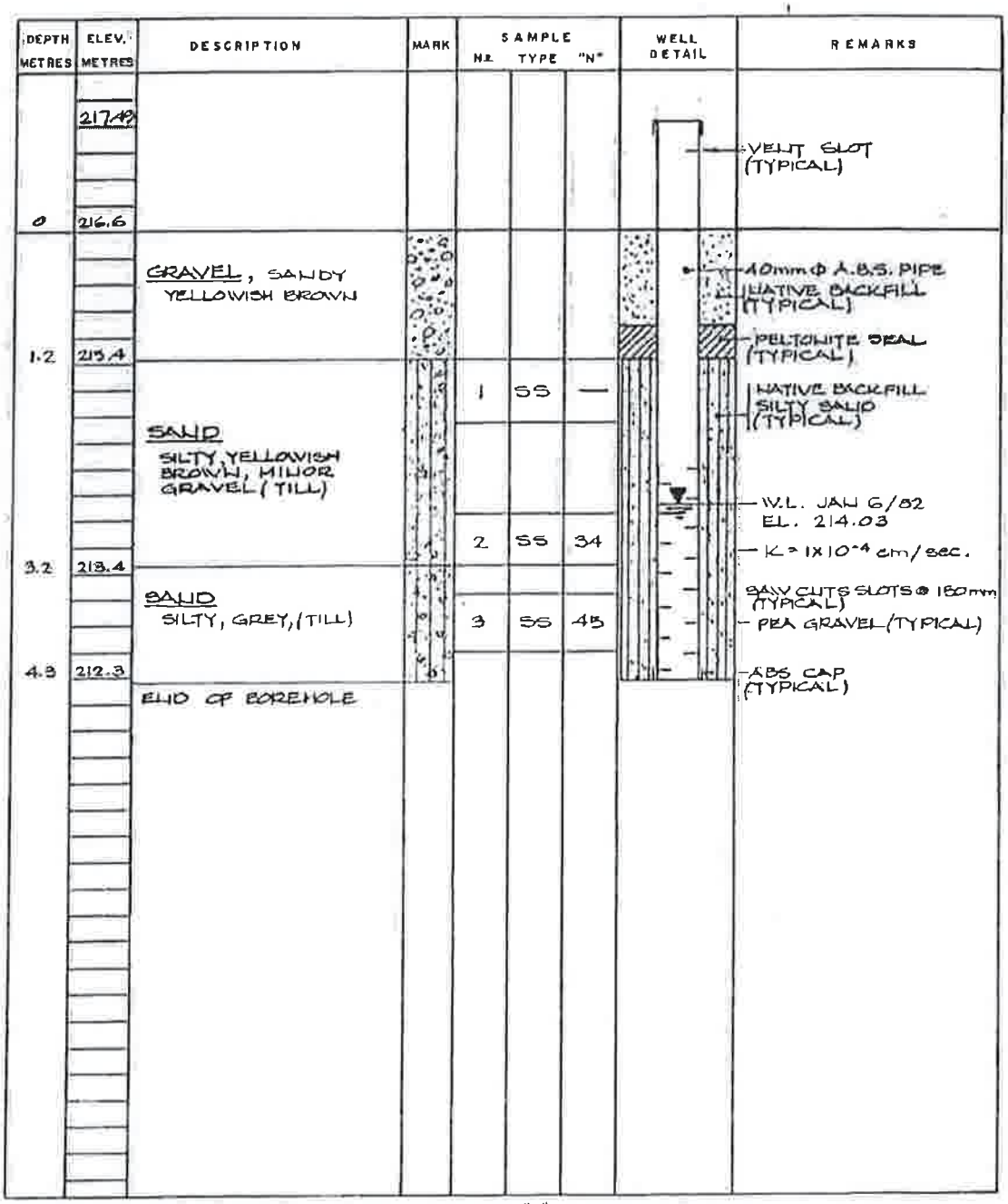
RECORD OF WELL Nº 1

PROJECT Town of Southampton Landfill — PROJECT Nº M-1135

CLIENT Town of Southampton — HYDROLOGIST/ENGINEER R. Slaughter

WELL TYPE 40mmØ ABS Piezometer — DATE December 3, 1981

LOCATION South West part of Lot 13, Con. 15, Township of Saugeen



GS - GRAB SAMPLE, SS - SPLIT SPOON, ST - SHELBY TUBE, "N" - BLOWS/FOOT

GAMSBY AND MANNEROW LTD.

RECORD OF WELL Nº, 2

PROJECT Town of Southampton Landfill — PROJECT Nº M-1135

CLIENT Town of Southampton — HYDROLOGIST/ENGINEER R. Slaughter

WELL TYPE 40mmØ ABS Piezometer — DATE December 3, 1981

LOCATION South West part of Lot 13, Con. 15, Township of Saugeen

DEPTH METRES	ELEV. METRES	DESCRIPTION	MARK	SAMPLE NR	SAMPLE TYPE	SAMPLE "N"	WELL DETAIL	REMARKS
	215.61							
0.	214.8							
		SILT (TILL) YELLOWISH MOTTLED		1	GS	—		W.L. JAN. 6/82 EL. 214.48
1.5	213.3							
		SILT SANDY, YELLOW		2	GS	—		
				3	SS	56		
3.2	211.6	END OF BOREHOLE						

GS – GRAB SAMPLE, SS – SPLIT SPOON, ST – SHELBY TUBE, "N" – BLOWS/FOOT

GAMSBY AND MANNEROW LTD.

RECORD OF WELL Nº 3

PROJECT Town of Southampton Landfill — PROJECT Nº M-1135

CLIENT Town of Southampton — HYDROLOGIST/ENGINEER R. Slaughter

WELL TYPE 40 mm Ø ABS Piezometer — DATE December 3, 1981

LOCATION North East part of Lot 12, Con. 14, Township of Saugeen

DEPTH METRES	ELEV. METRES	DESCRIPTION	MARK	SAMPLE Nº	SAMPLE TYPE	SAMPLE "N"	WELL DETAIL	REMARKS
	217.05							
0	216.1							
		TOPSOIL ORGANIC						
		COARSE SAND & GRAVEL BROWNISH GREY						
1.2	214.9							W.L. JAN. 6/82 EL. 213.09
		SILT CLAY, YELLOWISH BROWN, (TILL)		1	SS	18		
2.4	213.7							
		SILT CLAY, GREY (TILL)		2	SS	19		
3.2	212.9							
		END OF BOREHOLE						

GS – GRAB SAMPLE, SS – SPLIT SPOON, ST – SHELBY TUBE, "N" – BLOWS/FOOT

GAMSBY AND MANNEROW LTD.

RECORD OF WELL Nº 4

PROJECT Town of Southampton Landfill — PROJECT Nº M-1135

CLIENT Town of Southampton — HYDROLOGIST/ENGINEER R. Slaughter

WELL TYPE 40 mm Ø ABS Piezometer — DATE December 3, 1981

LOCATION North East part of Lot 12, Con. 14, Township of Saugeen

DEPTH METRES	ELEV. METRES	DESCRIPTION	MARK	SAMPLE Nº	SAMPLE TYPE	SAMPLE "N"	WELL DETAIL	REMARKS
	217.03							
0	216.1	TOP SOIL (ORGANIC)						W.L. JAN 6/82 EL. 215.99
		SAND MEDIUM, MINOR GRAVEL, BROWNISH GREY.		1	GS	—		K = 3X10⁻³ cm/sec.
1.2	214.9	END OF BOREHOLE						

GS – GRAB SAMPLE, SS – SPLIT SPOON, ST – SHELBY TUBE, "N" – BLOWS/FOOT

GAMSBY AND MANNEROW LTD.

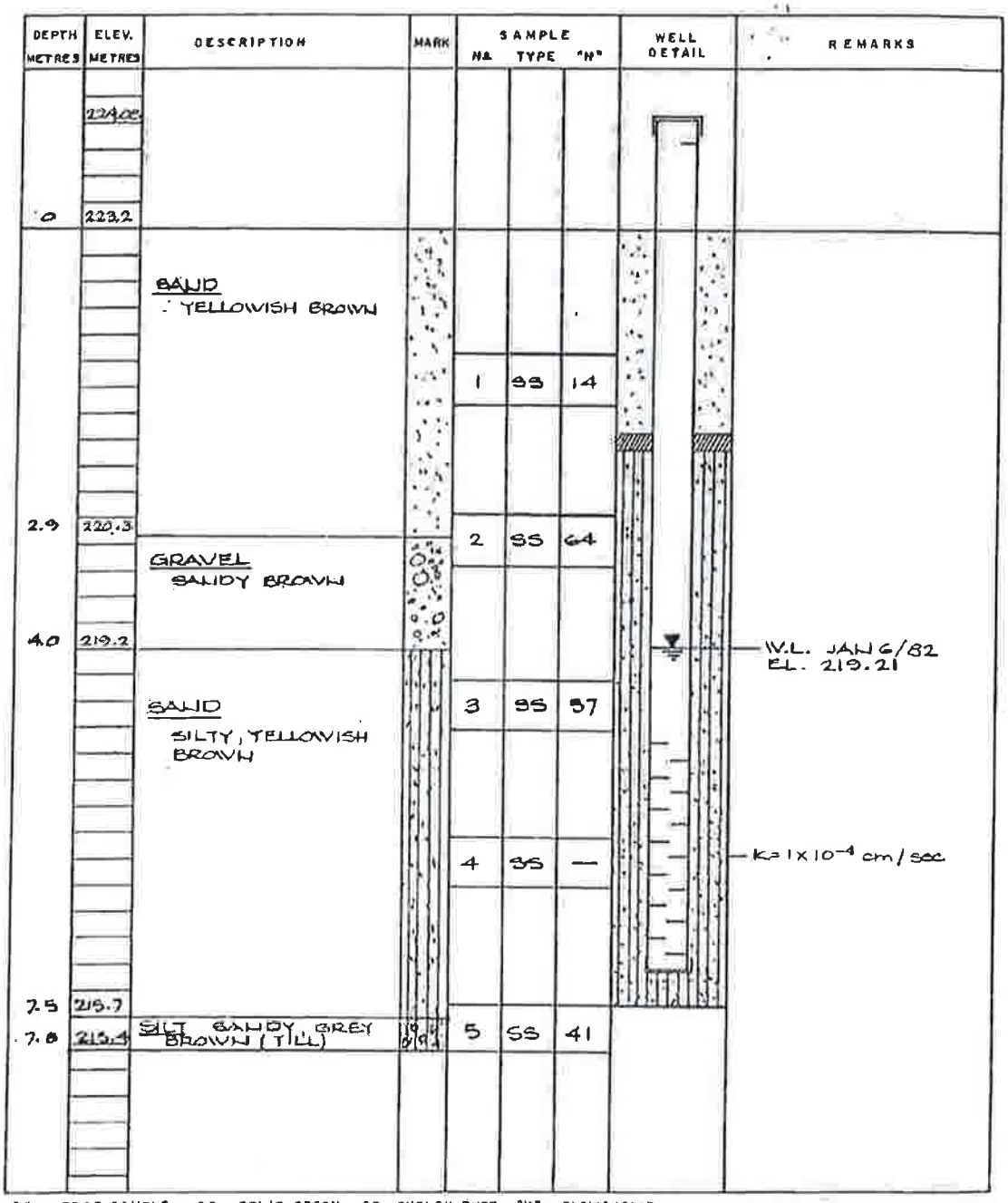
RECORD OF WELL Nº 5

PROJECT Town of Southampton Landfill — PROJECT Nº M-1135

CLIENT Town of Southampton — HYDROLOGIST/ENGINEER R. Slaughter

WELL TYPE 40 mm Ø ABS Piezometer — DATE December 3, 1981

LOCATION South part of Lot 12, Con. 15, Township of Saugeen



GS - GRAB SAMPLE, SS - SPLIT SPOON, ST - SHELBY TUBE, "N" - BLOWS/FOOT

GAMSBY AND MANNEROW LTD.

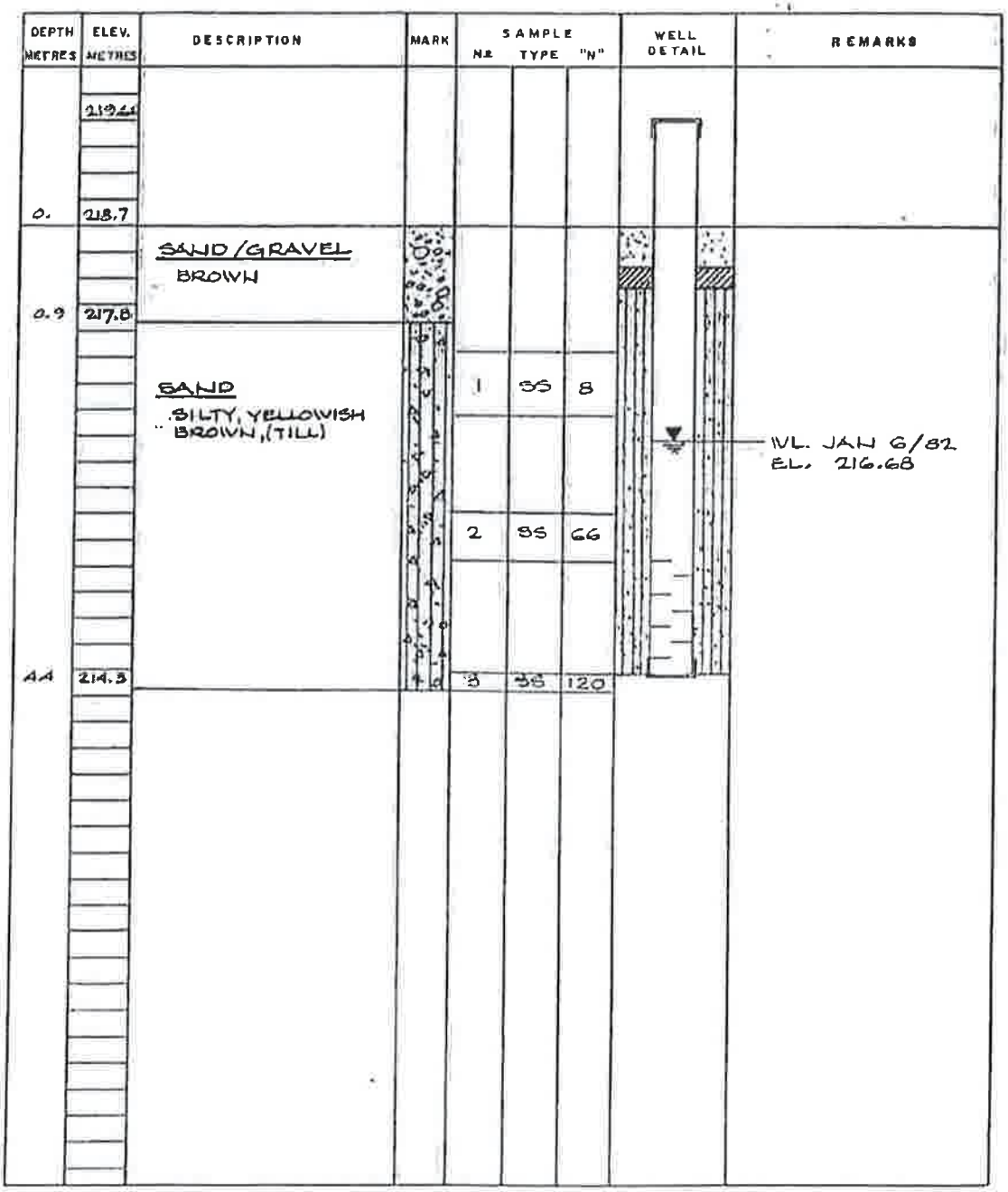
RECORD OF WELL Nº 6

PROJECT Town of Southampton Landfill — PROJECT Nº M-1135

CLIENT Town of Southampton — HYDROLOGIST/ENGINEER R. Slaughter

WELL TYPE 40 mm Ø ABS Piezometer — DATE December 3, 1981

LOCATION South part of Lot 12, Con. 15, Township of Saugeen



GS - GRAB SAMPLE, SS - SPLIT SPOON, ST - SHELBY TUBE, "N" - BLOWS/FOOT

GAMSBY AND MANNEROW LTD.

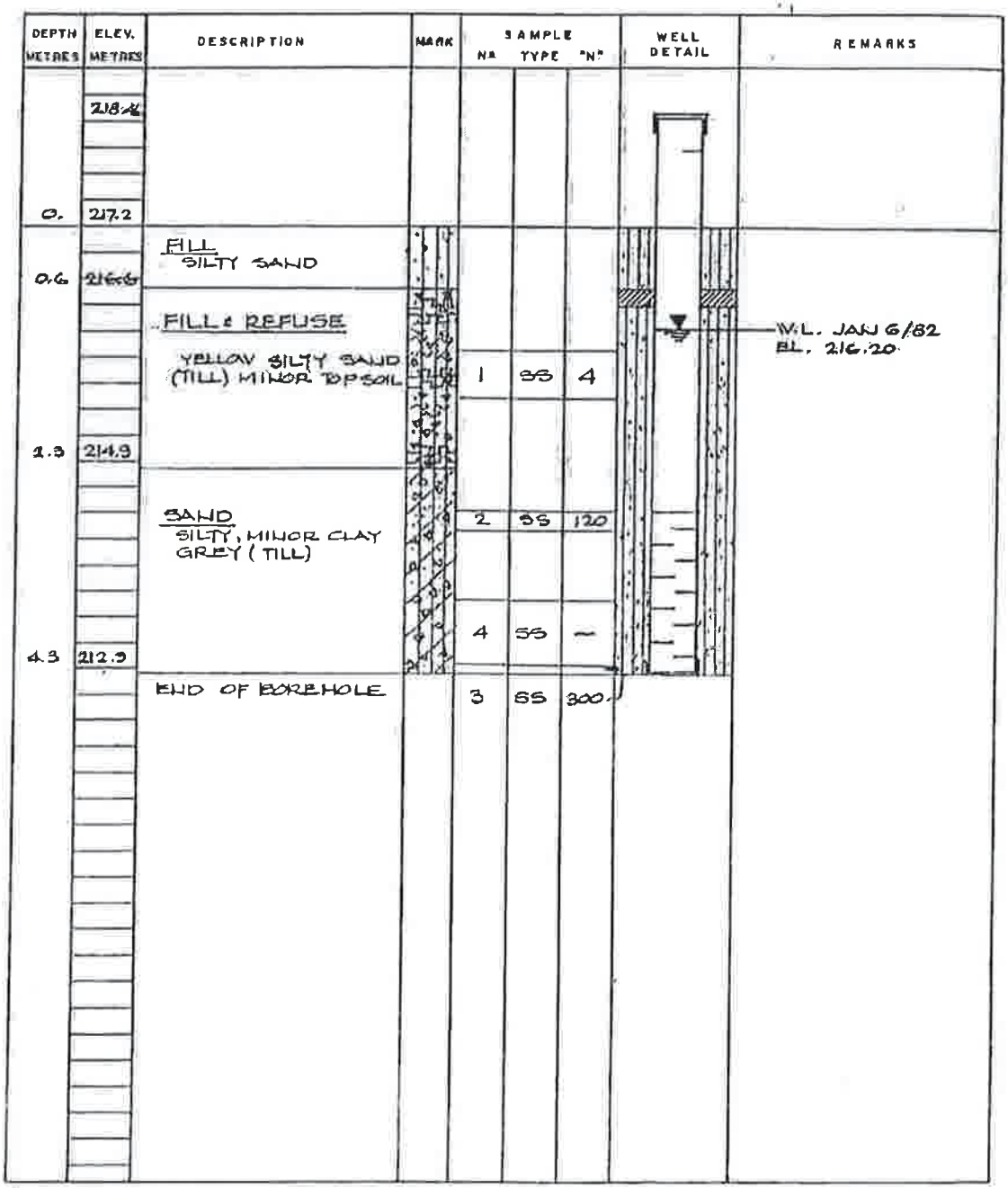
RECORD OF WELL Nº 7

PROJECT Town of Southampton Landfill — PROJECT Nº M-1135

CLIENT Town of Southampton — HYDROLOGIST/ENGINEER R. Sloughter

WELL TYPE 40 mm Ø ABS Piezometer — DATE December 3, 1981

LOCATION South part of Lot 12, Con. 15, Township of Saugeen



GS – GRAB SAMPLE, SS – SPLIT SPOON, ST – SHELBY TUBE, "N" – BLOWS/FOOT

GAMSBY AND MANNEROW LTD.

RECORD OF WELL Nº 8

PROJECT Town of Southampton Landfill — PROJECT Nº M-1135

CLIENT Town of Southampton — HYDROLOGIST/ENGINEER R. Slaughter

WELL TYPE 40 mm Ø ABS Piezometer — DATE December 3, 1981

LOCATION South part of Lot 12, Con. 15, Township of Saugeen

DEPTH METRES	ELEV. METRES	DESCRIPTION	MARK	SAMPLE Nº	SAMPLE TYPE	SAMPLE "N"	WELL DETAIL	REMARKS
	222.0							
0.	221.1							
		SAND FINE TO MED. YELLOW						W.L. JAN 6/82 EL 220.24
1.2	219.9							
		SAND FINE SILTY, GREY YELLOWISH BROWN		1	SS	12		
2.6	218.5							
		SAND SILTY (TILL) YELLOWISH BROWN		2	SS	64		
4.4	216.7							
		END OF BORE HOLE		3	SS	180		

GS – GRAB SAMPLE, SS – SPLIT SPOON, ST – SHELBY TUBE, "N" – BLOWS/FOOT

GAMSBY AND MANNEROW LTD.

RECORD OF WELL Nº 9

PROJECT Town of Southampton Landfill — PROJECT Nº M-1135

CLIENT Town of Southampton — HYDROLOGIST/ENGINEER R. Slaughter

WELL TYPE — DATE December 3, 1981

LOCATION South part of Lot 12, Con. 15, Township of Saugeen

DEPTH METRES	ELEV. METRES	DESCRIPTION	MARK	SAMPLE Nº	SAMPLE TYPE	SAMPLE "N"	WELL DETAIL	REMARKS
0.	220.7							
		SAND FINE YELLOW		1	SS	37		DRY SAND
				2	SS	50		
				3	SS	57		- K= 3.6 x 10⁻³ cm/sec
				4	SS	49		
6.2	214.5	END OF BOREHOLE						

GS - GRAB SAMPLE, SS - SPLIT SPOON, ST - SHELBY TUBE, "N" - BLOWS/FOOT

GAMBBY AND MANNEROW LTD.

RECORD OF WELL Nº 10

PROJECT Town of Southampton Landfill — PROJECT Nº M-1135

CLIENT Town of Southampton — HYDROLOGIST/ENGINEER R. Slaughter

WELL TYPE 40 mm Ø ABS Piezometer — DATE December 3, 1981

LOCATION South part of Lot 12, Con. 15, Township of Saugeen

DEPTH METRES	ELEV. METRES	DESCRIPTION	MARK	SAMPLE Nº	SAMPLE TYPE	SAMPLE "N"	WELL DETAIL	REMARKS
	217.99							
0	217.0							
		SILT CLAY (TILL) MOTTLED		1	SS	10		
1.7	215.3							
		SAND SILTY YELLOWISH BROWN UNIFORM		2	SS	28		
				3	SS	36		K = 1.6 x 10⁻³ cm/sec
								WL JAN 6/82 EL 211.77
5.9	211.1			4	SS	41		
		SILT SANDY YELLOW (TILL)		5	SS	23		
				6	SS	73		
10.6	206.3			7	SS	42		
		END OF BOREHOLE						

GS - GRAB SAMPLE, SS - SPLIT SPOON, ST - SHELBY TUBE, "N" - BLOWS/FOOT

GAMSBY AND MANNEROW LTD.

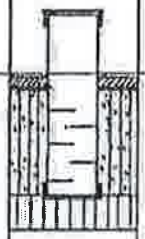
RECORD OF WELL Nº 11

PROJECT Town of Southampton Landfill PROJECT Nº M-1135

CLIENT Town of Southampton HYDROLOGIST/ENGINEER R. Slaughter

WELL TYPE 40 mm Ø ABS Piezometer DATE December 4, 1981

LOCATION South part of Lot 12, Con. 15, Township of Saugeen

DEPTH METRES	ELEV. METRES	DESCRIPTION	MARK	SAMPLE Nº	SAMPLE TYPE	SAMPLE "N"	WELL DETAIL	REMARKS
	217.9							
0	216.9							
		SILT CLAY TILL MOTTLED						WET, DENSER DRY HOLE
1.7	215.2							
		SAND SILTY YELLOW BROWN						
2.7	214.2	END OF BOREHOLE						

GS - GRAB SAMPLE, SS - SPLIT SPOON, ST - SHELBY TUBE, "N" - BLOWS/FOOT

GAMSBY AND MANNEROW LTD.

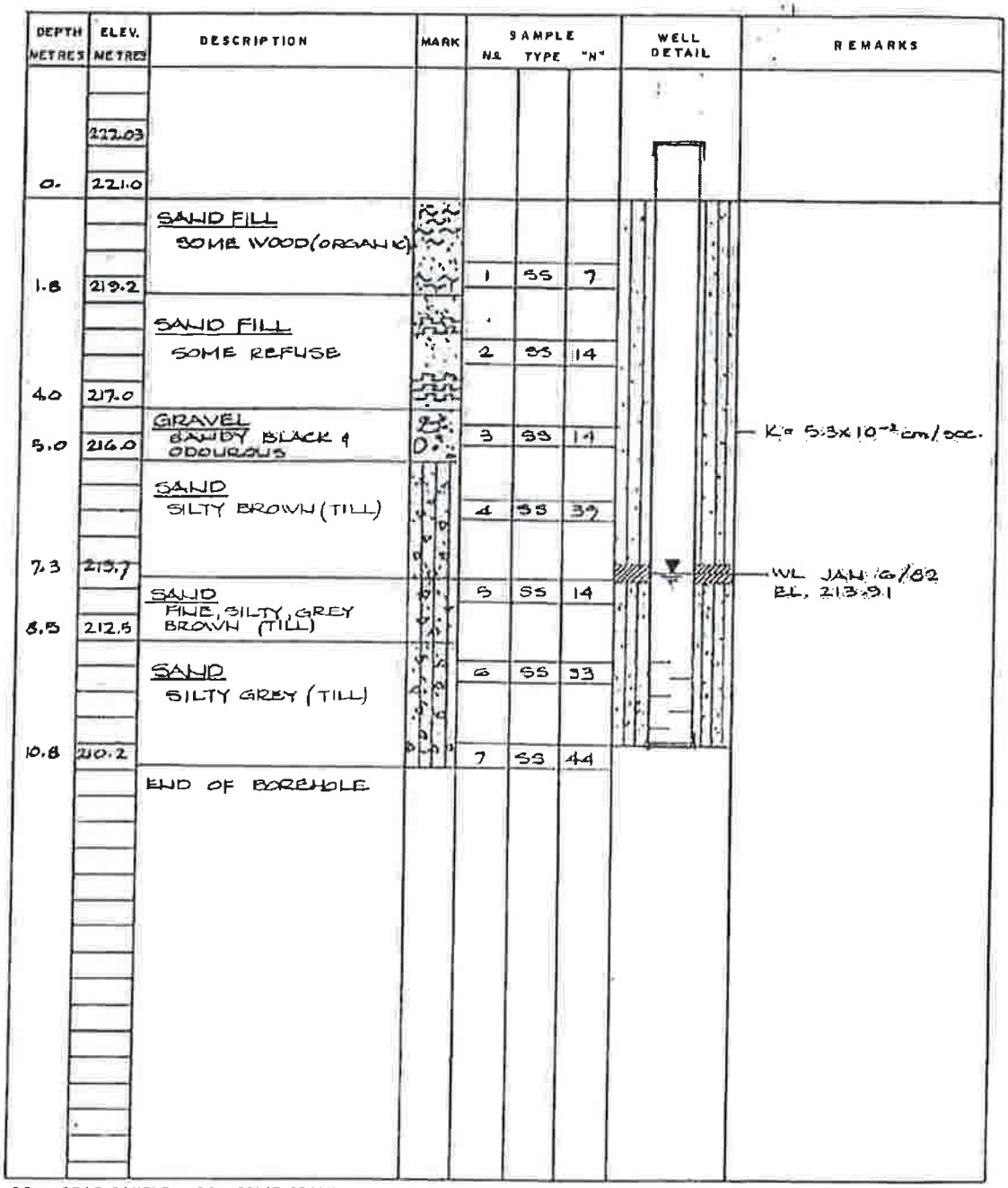
RECORD OF WELL Nº 12

PROJECT Town of Southampton Landfill PROJECT Nº M-1135

CLIENT Town of Southampton HYDROLOGIST/ENGINEER R. Slaughter

WELL TYPE 40 mm Ø ABS Piezometer DATE December 4, 1981

LOCATION South part of Lot 12, Con. 15, Township of Saugeen



GB - GRAB SAMPLE, SS - SPLIT SPOON, ST - SHELBY TUBE, "N" - BLOWS/FOOT

GAMSBY AND MANNEROW LTD.

RECORD OF WELL Nº 13

PROJECT Town of Southampton Landfill — PROJECT Nº M-1135

CLIENT Town of Southampton — HYDROLOGIST/ENGINEER R. Slaughter

WELL TYPE 40 mm Ø ABS Piezometer — DATE December 4, 1981

LOCATION South part of Lot 12, Con. 15, Township of Saugeen

DEPTH METRES	ELEV. METRES	DESCRIPTION	MARK	SAMPLE Nº	SAMPLE TYPE	SAMPLE "N"	WELL DETAIL	REMARKS
—	221.22							
0.	221.0							
1.8	219.1	SAND FILL SOME WOOD (ORGANIC)						
4.0	217.0	SAND FILL SOME WOOD & REFUSE						
5.0	216.0	GRAVEL SANDY BLACK & ODOUROUS						
		END OF BOREHOLE						

WL JAN 6/82
EL. 216.54

GS - GRAB SAMPLE, SS - SPLIT SPOON, ST - SHELBY TUBE, "N" - BLOWS/FOOT

GAMSBY AND MANNEROW LTD.

RECORD OF WELL Nº 14

PROJECT Town of Southampton Landfill — PROJECT Nº M-1135

CLIENT Town of Southampton — HYDROLOGIST/ENGINEER R. Slaughter

WELL TYPE 40 mm Ø ABS Piezometer — DATE December 8, 1982

LOCATION

DEPTH METRES	ELEV. METRES	DESCRIPTION	MARK	SAMPLE Nº	SAMPLE TYPE	SAMPLE "N"	WELL DETAIL	REMARKS
	219.45							
0	219.5	Sand, fine to medium brown		1	GS	--		-216.43 WL elevation Jan. 12/83
1.0								
2.0								
3.0		Sand, grey brown		2	GS	--		-screen saw cuts @ 75mm fiberglass wrapped
		Sand, med. to coarse, minor gravel, grey		3	GS	--		
4.0		Silt Till, sandy brown at bottom of hole						

GS - GRAB SAMPLE, SS - SPLIT SPOON, ST - SHELBY TUBE, "N" - BLOWS/FOOT

GAMSBY AND MANNEROW LTD.

RECORD OF WELL Nº 15

PROJECT Town of Southampton Landfill — PROJECT Nº M-1135

CLIENT Town of Southampton — HYDROLOGIST/ENGINEER R. Slaughter

WELL TYPE 40 mm Ø ABS Piezometer — DATE December 8, 1982

LOCATION

DEPTH METRES	ELEV. METRES	DESCRIPTION	MARK	SAMPLE Nº	SAMPLE TYPE	SAMPLE "N"	WELL DETAIL	REMARKS
	218.57							
0	217.56							
1.0		Sand, minor gravel, brown		1	GS	--		-WL elevation 216.46 Jan. 12, 1983
2.0		Gravel, sandy		2	GS	--		
		Sand Till, silty, brown		3	GS	--		
3.0								
4.0								

GS - GRAB SAMPLE, SS - SPLIT SPOON, ST - SHELBY TUBE, "N" - BLOWS/FOOT

GAMSBY AND MANNEROW LTD.

RECORD OF WELL Nº 16

PROJECT Town of Southampton Landfill — PROJECT Nº M-1135

CLIENT Town of Southampton — HYDROLOGIST/ENGINEER R. Slaughter

WELL TYPE 40 mm Ø ABS Piezometer — DATE December 8, 1982.

LOCATION

DEPTH METRES	ELEV. METRES	DESCRIPTION	MARK	SAMPLE Nº	SAMPLE TYPE	SAMPLE "N"	WELL DETAIL	REMARKS
	218.3							
0	217.1	Topsoil						
		Sand, brown				--		-216.51 WL elevation Jan. 12, 1983
1.0		Sand/Gravel, grey, brown		1	GS	--		$k = 7 \times 10^{-2}$ cm/sec
2.0		Silt, sandy (till), brown		2	GS	--		
3.0								
4.0								

GS – GRAB SAMPLE, SS – SPLIT SPOON, ST – SHELBY TUBE, "N" – BLOWS/FOOT

GAMSBY AND MANNEROW LTD.

RECORD OF WELL Nº 17

PROJECT Town of Southampton Landfill — PROJECT Nº M-1135

CLIENT Town of Southampton — HYDROLOGIST/ENGINEER R. Slaughter

WELL TYPE 40 mm Ø ABS Piezometer — DATE December 8, 1982

LOCATION

DEPTH METRES	ELEV. METRES	DESCRIPTION	MARK	SAMPLE Nº	SAMPLE TYPE	SAMPLE "N"	WELL DETAIL	REMARKS
	217.00							
0	216.00	Topsoil, Sandy Loam						-215.57 WL elevation Jan. 12, 1983
1.0	215.00	Sand brown to grey brown		1	GS	--		
2.0		Sand, med. to coarse, gravel, brownish grey with layers of med. to coarse sand		2	GS	--		
3.0								
4.0								

GS - GRAB SAMPLE, SS - SPLIT SPOON, ST - SHELBY TUBE, "N" - BLOWS/FOOT

GAMSBY AND MANNEROW LTD.

RECORD OF WELL Nº 18

PROJECT Town of Southampton Landfill — PROJECT Nº M-1135

CLIENT Town of Southampton — HYDROLOGIST/ENGINEER R. Slaughter

WELL TYPE — DATE May 30, 1986

LOCATION

DEPTH METRES	ELEV. METRES	DESCRIPTION	MARK	SAMPLE Nº	SAMPLE TYPE	SAMPLE "N"	WELL DETAIL	REMARKS
	216.0							
0	215.58							
0.30	215.28	BLACK TOPSOIL						
1.30		SAND/GRAVEL BROWN, SILTY						
		SAND GREY, SILTY, FINE (TILL)		1		16		WL. OCT. 31/88 EL. 214.70
2.60	212.78							
		SAND GREY, SILTY, FINE (TILL)		2		80+		
4.73	210.65							
5.20	210.18	SILT GREY, UNIFORM		3		117		
5.90	209.48	SAND/GRAVEL GREY, SILTY, FINE		4		113		

GS - GRAB SAMPLE, SS - SPLIT SPOON, ST - SHELBY TUBE, "N" - BLOWS/FOOT

GAMSBY AND MANNEROW LTD.

RECORD OF WELL Nº 18A

PROJECT Town of Southampton Landfill — PROJECT Nº M-1135

CLIENT Town of Southampton — HYDROLOGIST/ENGINEER R. Slaughter

WELL TYPE — DATE May 30, 1986

LOCATION

DEPTH METRES	ELEV. METRES	DESCRIPTION	MARK	SAMPLE Nº	SAMPLE TYPE	SAMPLE "N"	WELL DETAIL	REMARKS
	216.44							
0	215.33	SAND/GRAVEL BROWN, FINE, SILTY						
1.50	213.83							WL. OCT. 31/88 EL. 214.29

GS - GRAB SAMPLE, SS - SPLIT SPOON, ST - SHELBY TUBE, "N" - BLOWS/FOOT

GAMSBY AND MANNEROW LTD.

RECORD OF WELL Nº 19

PROJECT Town of Southampton Landfill — PROJECT Nº M-1135

CLIENT Town of Southampton — HYDROLOGIST/ENGINEER R. Slaughter

WELL TYPE — DATE May 30, 1986

LOCATION

DEPTH METRES	ELEV. METRES	DESCRIPTION	SAMPLE Nº	SAMPLE TYPE	SAMPLE "N"	WELL DETAIL	REMARKS
	221.2						
0	220.51	TOPSOIL & FILL					
1.22	219.29	SILTY SAND FILL WITH GARBAGE	1		12		
			2				
3.66	216.86	SIGNS OF LEACHATE					
		GREY, FINE, SILTY SAND TILL					
4.80	215.71		3		75+		
		GREY, FINE, SILTY SAND TILL	4		60+		
7.32	213.19		5		60+		WL. OCT. 31/88 EL. 214.03
7.90	212.61	GREY, SILT SAND	6		60+		

GS - GRAB SAMPLE, SS - SPLIT SPOON, ST - SHELBY TUBE, "N" - BLOWS/FOOT

GAMSBY AND MANNEROW LTD.

RECORD OF WELL Nº 20

PROJECT Town of Southampton Landfill — PROJECT Nº M-1135

CLIENT Town of Southampton — HYDROLOGIST/ENGINEER R. Slaughter

WELL TYPE — DATE May 30, 1986

LOCATION

DEPTH METRES	ELEV. METRES	DESCRIPTION	MARK	SAMPLE Nº	SAMPLE TYPE	SAMPLE "N"	WELL DETAIL	REMARKS
	219.75							
0	219.2	BLACK TOPSOIL						
		RED BROWN, COURSE SAND		1				
1.0		COURSE SAND WITH SOME SILT		2		18		
2.28		SAND WITH SILT		3		105+		
4.11		SILT/SAND		4				WL. OCT. 31/68 EL. 213.84
6.40		GREY SILT/SAND WITH PEBBLES.		5		60+		
9.14		GREY SILT SAND MOIST		6		60+		
9.75	208.45							

GS - GRAB SAMPLE, SS - SPLIT SPOON, ST - SHELBY TUBE, "N" - BLOWS/FOOT

GAMSBY AND MANNEROW LTD.

RECORD OF WELL Nº 21

PROJECT Town of Southampton Landfill — PROJECT Nº M-1135

CLIENT Town of Southampton — HYDROLOGIST/ENGINEER R. Slaughter

WELL TYPE — DATE May 30, 1986

LOCATION

DEPTH METRES	ELEV. METRES	DESCRIPTION	MARK	SAMPLE Nº	SAMPLE TYPE	SAMPLE "N"	WELL DETAIL	REMARKS
0	221.18 / 220.82							
0.10		SANDY TOPSOIL						
1.52	219.31	FINE SAND						
3.05	217.78	FINE UNIFORM SAND		1				
4.57	216.26	FINE UNIFORM SAND		2				
6.10	214.73	FINE UNIFORM SAND		3				
7.62	213.21	FINE UNIFORM SAND		4				
9.15	211.68	FINE UNIFORM SAND		5				
10.67	210.16	MEDIUM SAND		6				
12.20	208.62	MEDIUM SAND		7				

WL. OCT. 31/88 EL. 210.89

PELTONITE SEAL

SAND

GS - GRAB SAMPLE, SS - SPLIT SPOON, ST - SHELBY TUBE, "N" - BLOWS/FOOT

GAMSBY AND MANNEROW LTD.

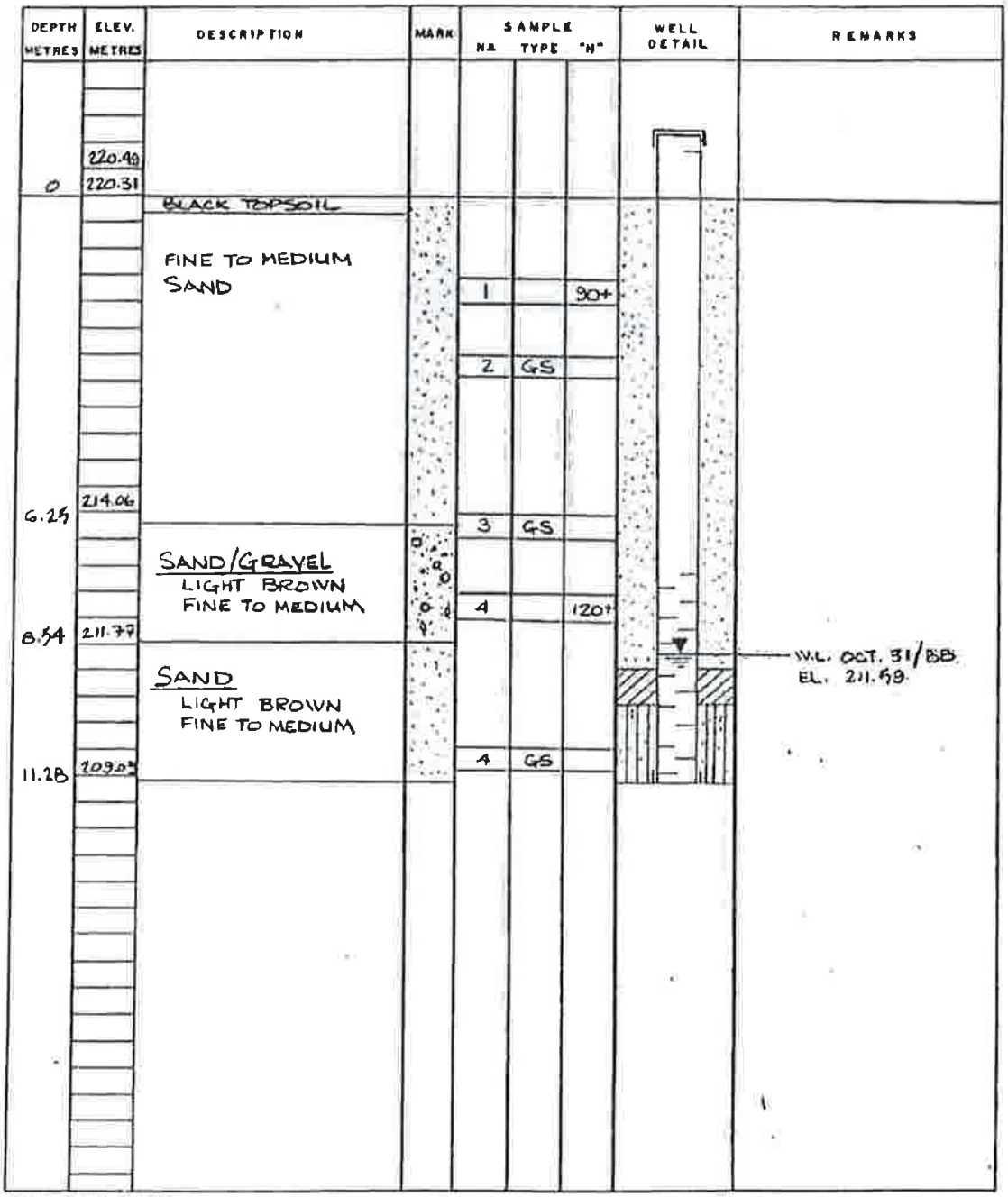
RECORD OF WELL Nº 22

PROJECT Town of Southampton Landfill — PROJECT Nº M-1135

CLIENT Town of Southampton — HYDROLOGIST/ENGINEER R. Slaughter

WELL TYPE — DATE May 30, 1986

LOCATION



GS - GRAB SAMPLE, SS - SPLIT SPOON, ST - SHELBY TUBE, "N" - BLOWS/FOOT

GAMSBY AND MANNEROW LTD.

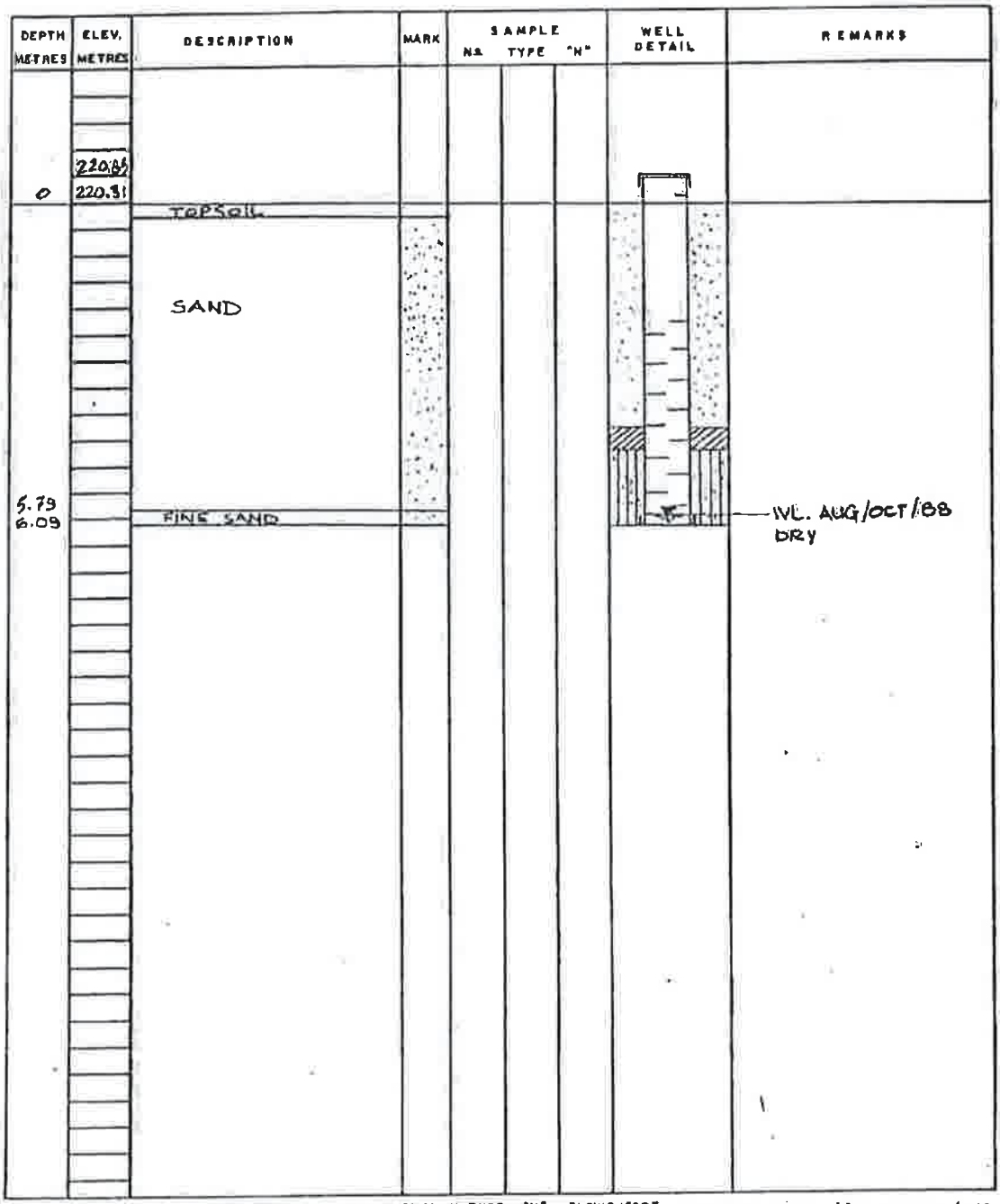
RECORD OF WELL Nº 22A

PROJECT Town of Southampton Landfill — PROJECT Nº M-1135

CLIENT Town of Southampton — HYDROLOGIST/ENGINEER R. Slaughter

WELL TYPE — DATE May 30, 1986

LOCATION



GS - GRAB SAMPLE, SS - SPLIT SPOON, ST - SHELBY TUBE, "N" - BLOWS/FOOT

GAMSBY AND MANNEROW LTD.

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MONITORING WELL ID: TW-29

CLIENT Town of Saugeen Shores
PROJECT NAME Southampton Landfill
PROJECT NUMBER M-1135
PROJECT LOCATION Town of Saugeen Shores
DATE COMPLETED May 30, 2013
CONTRACTOR Aardvark Drilling Inc.
LOGGED BY AB
METHOD Hollow Stem Auger
WELL CONSTRUCTION 0.05m Ø PVC
NOTES

DEPTH (m) (ft)	ELEVATION (m)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	SPT N VALUE 20 40 60 80	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
						Ground Surface	
0						0.00 TOPSOIL	Concrete
						0.30 Brown SANDY SILT, trace stone and gravel, moist	
		SS 1	5-7-8-11 (15)				WL = 1.19 mbgs (07-Nov-13)
							Bentonite Seal
						3.06 Light brown SANDY SILT, iron staining throughout, becoming wet with depth	
		SS 2	5-10-11-12 (21)				
						4.58 Light brown SANDY SILT, iron staining throughout, trace gravel, wet	
		SS 3	16-18-14-17 (32)				Sand Filter
							10 Slot PVC Screen
						6.10 Light brown SANDY SILT, wet. Thin seams of medium brown sand throughout	
		SS 4	17-16-15-18 (31)				

Borehole Terminated at 6.71 m.

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MONITORING WELL ID: TW-30

CLIENT Town of Saugeen Shores
PROJECT NAME Southampton Landfill
PROJECT NUMBER M-1135
PROJECT LOCATION Town of Saugeen Shores
DATE COMPLETED May 30, 2013
CONTRACTOR Aardvark Drilling Inc.
LOGGED BY AB
METHOD Hollow Stem Auger
WELL CONSTRUCTION 0.05m Ø PVC
NOTES

DEPTH (m) (ft)	ELEVATION (m)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	SPT N VALUE 20 40 60 80	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
						Ground Surface	
						0.00 TOPSOIL	Concrete
						0.30 Light brown SILTY CLAY, becoming wet with depth	
		1	3-3-4-5 (7)				Bentonite Seal
		2	3-6-6-6 (12)				WL = 2.10 mbgs (07-Nov-13)
						2.70 Medium brown SAND, wet	
						3.06 Soft grey SILTY CLAY, wet	
		3	5-4-3-3 (7)				
		4	1-2-2-2 (4)				Sand Filter
							10 Slot PVC Screen
						6.10 Soft grey SANDY SILT, trace gravel, wet	
		5	2-4-7-9 (11)				

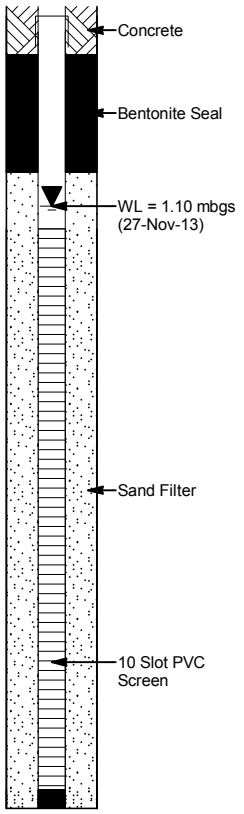
Borehole Terminated at 6.71 m.

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MONITORING WELL ID: TW-31

CLIENT Town of Saugeen Shores
PROJECT NAME Southampton Landfill
PROJECT NUMBER M-1135
PROJECT LOCATION Town of Saugeen Shores
DATE COMPLETED May 30, 2013
CONTRACTOR Aardvark Drilling Inc.
LOGGED BY AB
METHOD Hollow Stem Auger
WELL CONSTRUCTION 0.05m Ø PVC
NOTES

DEPTH (m)	DEPTH (ft)	ELEVATION (m)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	SPT N VALUE 20 40 60 80	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
							Ground Surface	
							0.00 Dark brown TOPSOIL and organics with roots, underlain by sand	
							0.40 Dark brown SAND with organics, underlain by medium brown sand, becoming wet with depth	
			1	1-5-7-10 (12)				
							2.13 Medium grey/brown SAND with GRAVEL, wet	
			2	9-10-19-21 (29)				
							4.57 Medium brown SAND, trace gravel, 5" of compact silt	
			3	3-0-3-13 (3)				



Borehole Terminated at 5.18 m.

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MONITORING WELL ID: TW-32

CLIENT Town of Saugeen Shores
PROJECT NAME Southampton Landfill
PROJECT NUMBER M-1135
PROJECT LOCATION Town of Saugeen Shores
DATE COMPLETED May 30, 2013
CONTRACTOR Aardvark Drilling Inc.
LOGGED BY AB
METHOD Hollow Stem Auger
WELL CONSTRUCTION 0.05m Ø PVC
NOTES

DEPTH (m)	DEPTH (ft)	ELEVATION (m)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	SPT N VALUE 20 40 60 80	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
							Ground Surface	
							0.00 Black organic TOPSOIL, with roots, underlain by medium brown sand, becoming wet at 0.61m	Concrete
							0.40 Medium brown SAND, wet	Bentonite Seal
1	1-4							WL = 1.00 mbgs (27-Nov-13)
	5-6		1	2-5-6-8 (11)	▲			
2	7						2.13 Medium grey/brown SAND, wet	
	8-9		2	7-6-7-9 (13)	▲			Sand Filter
3	10-12						3.66 Medium to coarse grey/brown SAND, wet	
4	13-14		3	1-1-3-5 (4)	▲			10 Slot PVC Screen

Borehole Terminated at 4.57 m.

Borehole ID: TW-33

CLIENT Town of Saugeen Shores
PROJECT NAME Southampton Landfill
PROJECT NUMBER 223041
PROJECT LOCATION 126 Concession 14
DATE COMPLETED 2021/07/29
CONTRACTOR London Soil Test
LOGGED BY JW
METHOD Hollow Stem Auger
WELL CONSTRUCTION 0.05m Ø PVC
NOTES

DEPTH (m)	DEPTH (ft)	ELEVATION (m)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	SPT N VALUE 20 40 60 80	GRAPHIC LOG	MATERIAL DESCRIPTION		WELL DIAGRAM
								0.00 Ground Surface	221.27	TOP = 222.14 mags
								0.20 Dark brown, TOPSOIL, loose, moist	221.07	Concrete
								Light brown, fine SAND with some clay, moist becoming wet with depth		
1	3	220	SS 1	75	5-5-2-5 (7)					Bentonite Seal
3	11	218	SS 2	75	6-10-7-5 (17)					10 Slot PVC Screen
										Sand Filter
5	16	216	SS 3	75	20-10-11-8 (21)					WL = 5.59 mbgs (Sep-14-2022)

Testhole Terminated at 6.09 m.

Borehole ID: TW-34

CLIENT Town of Saugeen Shores
PROJECT NAME Southampton Landfill
PROJECT NUMBER 223041
PROJECT LOCATION 126 Concession 14
DATE COMPLETED 2021/07/29
CONTRACTOR London Soil Test
LOGGED BY JW
METHOD Hollow Stem Auger
WELL CONSTRUCTION 0.05m Ø PVC
NOTES

DEPTH (m)	DEPTH (ft)	ELEVATION (m)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION		WELL DIAGRAM
					0.00 Ground Surface	217.21	TOP = 218.007 masl
					0.25 Brown, TOPSOIL, moist, loose	216.96	Concrete
					Light brown, silty SAND, dry, loose		
					1.52	215.69	Bentonite Seal
					Brown, fine SAND with some gravel, moist		
					2.43	214.78	
					Light brown, fine SAND with some clay, moist becoming wet with depth		Sand Filter
							10 Slot PVC Screen
							WL = 4.34 mbgs (Sep-14-2022)

Testhole Terminated at 6.09 m.

Borehole ID: TW-35(I)

CLIENT Town of Saugeen Shores
PROJECT NAME Southampton Landfill
PROJECT NUMBER 223041
PROJECT LOCATION 126 Concession 14
DATE COMPLETED 2021/07/29
CONTRACTOR London Soil Test
LOGGED BY JW
METHOD Hollow Stem Auger
WELL CONSTRUCTION 0.05m Ø PVC
NOTES

DEPTH (m)	DEPTH (ft)	ELEVATION (m)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	SPT N VALUE 20 40 60 80	GRAPHIC LOG	MATERIAL DESCRIPTION		WELL DIAGRAM
								0.00 Ground Surface	214.47	TOP = 215.319 masl
								0.25 Brown, TOPSOIL, moist, loose	214.22	Concrete
		214						Brown, silty SAND, loose, dry becoming moist with depth		
			SS 1	50	3-4-7 (11)					
								1.52	212.95	
								Brown, fine to medium, SAND and GRAVEL, moist		
								2.13	212.34	
		212						Brown to grey, fine sandy SILT with some gravel, firm, becoming wet with depth		Bentonite Seal
			SS 2	50	11-15-20 (35)					WL = 3.19 mbgs (Nov-04-2022)
								3.81	210.66	
		210						Grey , sandy SILT with trace gravel		
			SS 3	50	27-30-55 (85)					
		208								Sand Filter
										10 Slot PVC Screen
		206	SS 4	50	48-55					

Testhole Terminated at 9.14 m.

Borehole ID: TW-35(S)

CLIENT Town of Saugeen Shores
PROJECT NAME Southampton Landfill
PROJECT NUMBER 223041
PROJECT LOCATION 126 Concession 14
DATE COMPLETED 2021/07/29
CONTRACTOR London Soil Test
LOGGED BY JW
METHOD Hollow Stem Auger
WELL CONSTRUCTION 0.05m Ø PVC
NOTES

DEPTH (m)	DEPTH (ft)	ELEVATION (m)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
					0.00 Ground Surface 214.50	TOP = 215.322 masl
					Brown, TOPSOIL, moist, loose	Concrete
					0.25 214.25	Bentonite Seal
					Brown, silty SAND, loose, dry becoming wet with depth	
					1.52 212.98	
					Brown, fine to medium, SAND and GRAVEL, moist	Sand Filter
						WL = 2.68 mbgs (Nov-04-2022)
						10 Slot PVC Screen

Testhole Terminated at 4.26 m.

Borehole ID: TW-36(I)

CLIENT Town of Saugeen Shores
PROJECT NAME Southampton Landfill
PROJECT NUMBER 223041
PROJECT LOCATION 126 Concession 14
DATE COMPLETED 2021/07/29
CONTRACTOR London Soil Test
LOGGED BY JW
METHOD Hollow Stem Auger
WELL CONSTRUCTION 0.05m Ø PVC
NOTES

DEPTH (m)	DEPTH (ft)	ELEVATION (m)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	SPT N VALUE 20 40 60 80	GRAPHIC LOG	MATERIAL DESCRIPTION		WELL DIAGRAM
								0.00 Ground Surface	214.75	TOP = 215.522 masl
								0.25 Brown, TOPSOIL, moist, loose	214.50	Concrete
		214	SS 1	75	1-2-1-2 (3)			Dark reddish brown, SAND with mixed organics and trace silt, moist, loose		
								1.37	213.38	
								1.82 Brown, medium grained SAND, moist, loose	212.93	
								Light brown, SAND and some silt with cobbles, wet, loose		
		212						3.04	211.71	
			SS 2	75	5-7-7-9 (14)			3.50 Light greyish brown, medium to coarse grained SAND, saturated, loose to compact	211.25	Bentonite Seal
								Light brownish grey, sandy SILT with some gravel, saturated, firm		WL = 3.69 mbgs (Nov-04-2022)
		210	SS 3	75	34-50-53 (103)	>>		4.57	210.18	
								Grey, SILT till with sand and gravel with some cobbles		
		208								10 Slot PVC Screen
										Sand Filter
		206						9.14	205.61	
								Brownish grey, silt TILL		

Testhole Terminated at 10.36 m.

Borehole ID: TW-36(S)

CLIENT Town of Saugeen Shores
PROJECT NAME Southampton Landfill
PROJECT NUMBER 223041
PROJECT LOCATION 126 Concession 14
DATE COMPLETED 2021/07/29
CONTRACTOR London Soil Test
LOGGED BY JW
METHOD Hollow Stem Auger
WELL CONSTRUCTION 0.05m Ø PVC
NOTES

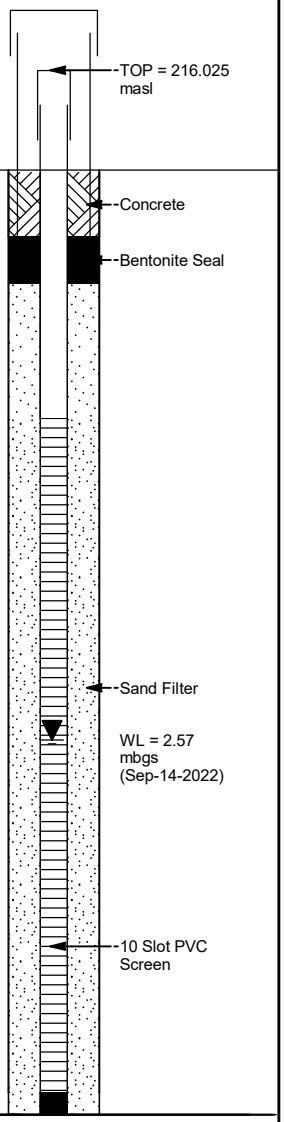
DEPTH (m)	DEPTH (ft)	ELEVATION (m)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION		WELL DIAGRAM
					0.00 Ground Surface	214.83	TOP = 215.708 masl
					Brown, TOPSOIL, moist, loose		Concrete
					0.25	214.58	Bentonite Seal
					Dark reddish brown, SAND with mixed organics and trace silt, moist, loose		
					1.37	213.46	
					Brown, medium SAND, moist, loose		
					1.82	213.01	
					Light brown, SAND and some silt with cobbles, wet, loost		Sand Filter
					3.04	211.79	10 Slot PVC Screen
					Light greyish brown, medium to coarse SAND, saturated, loose to compact		
					3.50	211.33	WL = 3.50 mbgs (Nov-04-2022)
					Light brownish grey, sandy SILT with some gravel, saturated, firm		

Testhole Terminated at 4.26 m.

Borehole ID: TW-37

CLIENT Town of Saugeen Shores
PROJECT NAME Southampton Landfill
PROJECT NUMBER 223041
PROJECT LOCATION 126 Concession 14
DATE COMPLETED 2021/07/29
CONTRACTOR London Soil Test
LOGGED BY JW
METHOD Hollow Stem Auger
WELL CONSTRUCTION 0.05m Ø PVC
NOTES

DEPTH (m)	DEPTH (ft)	ELEVATION (m)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	SPT N VALUE 20 40 60 80	GRAPHIC LOG	MATERIAL DESCRIPTION	
	-2	216							
	-1								
0	0							0.00 Ground Surface	215.57
	1							Brown, TOPSOIL, moist, loose	
								0.30	215.27
	2	215						Brown, medium grained SAND, moist	
1	3		SS 1	50	3-2-1 (3)				
	4							1.21	214.36
	5	214						Greyish brown, SAND with trace silt, saturated, loose	
	6								
2	7								
	8								
		213							
	9								
3	10							3.04	212.53
	11		SS 2	50	10-29-30 (59)			Greyish brown, CLAY with some silt and trace coarse sand, firm	
		212							
	12								
4	13								



Testhole Terminated at 4.26 m.

Borehole ID: TW-38(I)

CLIENT Town of Saugeen Shores
PROJECT NAME Southampton Landfill
PROJECT NUMBER 223041
PROJECT LOCATION 126 Concession 14
DATE COMPLETED 2021/07/29
CONTRACTOR London Soil Test
LOGGED BY JW
METHOD Hollow Stem Auger
WELL CONSTRUCTION 0.05m Ø PVC
NOTES

DEPTH (m)	DEPTH (ft)	ELEVATION (m)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	SPT N VALUE 20 40 60 80	GRAPHIC LOG	MATERIAL DESCRIPTION		WELL DIAGRAM
	-2	212								TOP = 212.241 masl
0	0							0.00 Ground Surface	211.49	
								0.30 Brown, TOPSOIL, moist, loose	211.19	Concrete
	2							Brown, medium SAND, moist		
	4	210	SS 1	50	3-5-10 (15)			1.21	210.28	
2	6							Greyish brown, SAND with trace silt, gravel and cobbles, saturated, loose		WL = 2.42 mbgs (Nov-04-2022)
	8									
	10	208	SS 2	50	15-15-21 (36)					
4	12									
	14									
	16		SS 3	50	30-35-50 (85)			4.57 Grey, SILT TILL	206.92	Bentonite Seal
	18	206								
6	20									
	22									
	24	204								
8	26									
	28									
	30		SS 4	50	35-50			9.14	202.35	
		202						Brownish grey, silt TILL with gravel, some sand and trace clay		
10	32									
	34									
	36									10 Slot PVC Screen
	38	200								Sand Filter
12	40									
	42									
	44	198								

Testhole Terminated at 13.71 m.

Borehole ID: TW-38(S)

CLIENT Town of Saugeen Shores
PROJECT NAME Southampton Landfill
PROJECT NUMBER 223041
PROJECT LOCATION 126 Concession 14
DATE COMPLETED 2021/07/29
CONTRACTOR London Soil Test
LOGGED BY JW
METHOD Hollow Stem Auger
WELL CONSTRUCTION 0.05m Ø PVC
NOTES

DEPTH (m)	DEPTH (ft)	ELEVATION (m)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
					0.00 Ground Surface 211.57	TOP = 212.312 masl
					Brown, TOPSOIL, moist, loose	Concrete
					0.30 211.27	Bentonite Seal
					Brown, medium grained SAND, moist	
					1.21 210.36	
					Greyish brown, SAND with trace silt, gravel and cobbles, saturated, loose	WL = 1.86 mbgs (Nov-04-22)
						Sand Filter
						10 Slot PVC Screen

Testhole Terminated at 4.26 m.

Borehole ID: TW-39(I)

CLIENT Town of Saugeen Shores
PROJECT NAME Southampton Landfill
PROJECT NUMBER 223041
PROJECT LOCATION 126 Concession 14
DATE COMPLETED 2021/07/29
CONTRACTOR London Soil Test
LOGGED BY JW
METHOD Hollow Stem Auger
WELL CONSTRUCTION 0.05m Ø PVC
NOTES

DEPTH (m)	DEPTH (ft)	ELEVATION (m)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	SPT N VALUE 20 40 60 80	GRAPHIC LOG	MATERIAL DESCRIPTION		WELL DIAGRAM
								0.00 Ground Surface	211.14	TOP = 211.993 masl
								0.30 Brown, TOPSOIL, moist, loose	210.84	Concrete
								0.76 Reddish brown, SAND with trace silt, saturated, loose	210.38	
			SS 1	50	1-2-1 (3)			Light brown, medium grained SAND with some silt, loose		
			SS 2	50	13-13-17 (30)			1.52 Light brown to grey, medium grained SAND with increasing silt content	209.62	WL = 2.21 mbgs (Nov-04-2022)
								3.65	207.49	
								3.96 Brownish grey, SAND with some silt, gravel and cobbles, increasing firmness with depth	207.18	
			SS 3	50	5-9-25 (34)			Brownish grey, medium silty SAND, loose to compact		Bentonite Seal
								5.02	206.12	
								Greyish brown, SILT and CLAY with some gravel and fine sand, saturated (intermittent layers of saturated SAND with SILT and cobbles)		
								7.31	203.83	
								Grey, silt TILL with sand and some gravel and clay, saturated, dense		
			SS 4	50	50					10 Slot PVC Screen
										Sand Filter

Testhole Terminated at 13.71 m.

Borehole ID: TW-39(S)

CLIENT Town of Saugeen Shores
PROJECT NAME Southampton Landfill
PROJECT NUMBER 223041
PROJECT LOCATION 126 Concession 14
DATE COMPLETED 2021/07/29
CONTRACTOR London Soil Test
LOGGED BY JW
METHOD Hollow Stem Auger
WELL CONSTRUCTION 0.05m Ø PVC
NOTES

DEPTH (m)	DEPTH (ft)	ELEVATION (m)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION		WELL DIAGRAM
							TOP = 212.029 masl
0	0	212			0.00 Ground Surface	211.19	
		211			Brown, TOPSOIL, moist, loose		Concrete
	1				0.30	210.89	Bentonite Seal
	2				Reddish brown, SAND with trace silt, saturated, loose		
					0.76	210.43	
1	3	210			Light brown, medium SAND with some silt, loose		WL = 1.25 mbgs (Nov-04-2022)
	4						
	5				1.52	209.67	
	6				Light brown to grey, medium SAND with increasing silt content		
2	7	209					Sand Filter
	8						
	9						
3	10	208					
	11						
	12				3.65	207.54	10 Slot PVC Screen
4	13				Brownish grey, SAND with some silt, gravel and cobbles, increasing firmness with depth		
		207			3.96	207.23	
					Brownish grey, medium silty SAND, loose to compact		

Testhole Terminated at 4.26 m.

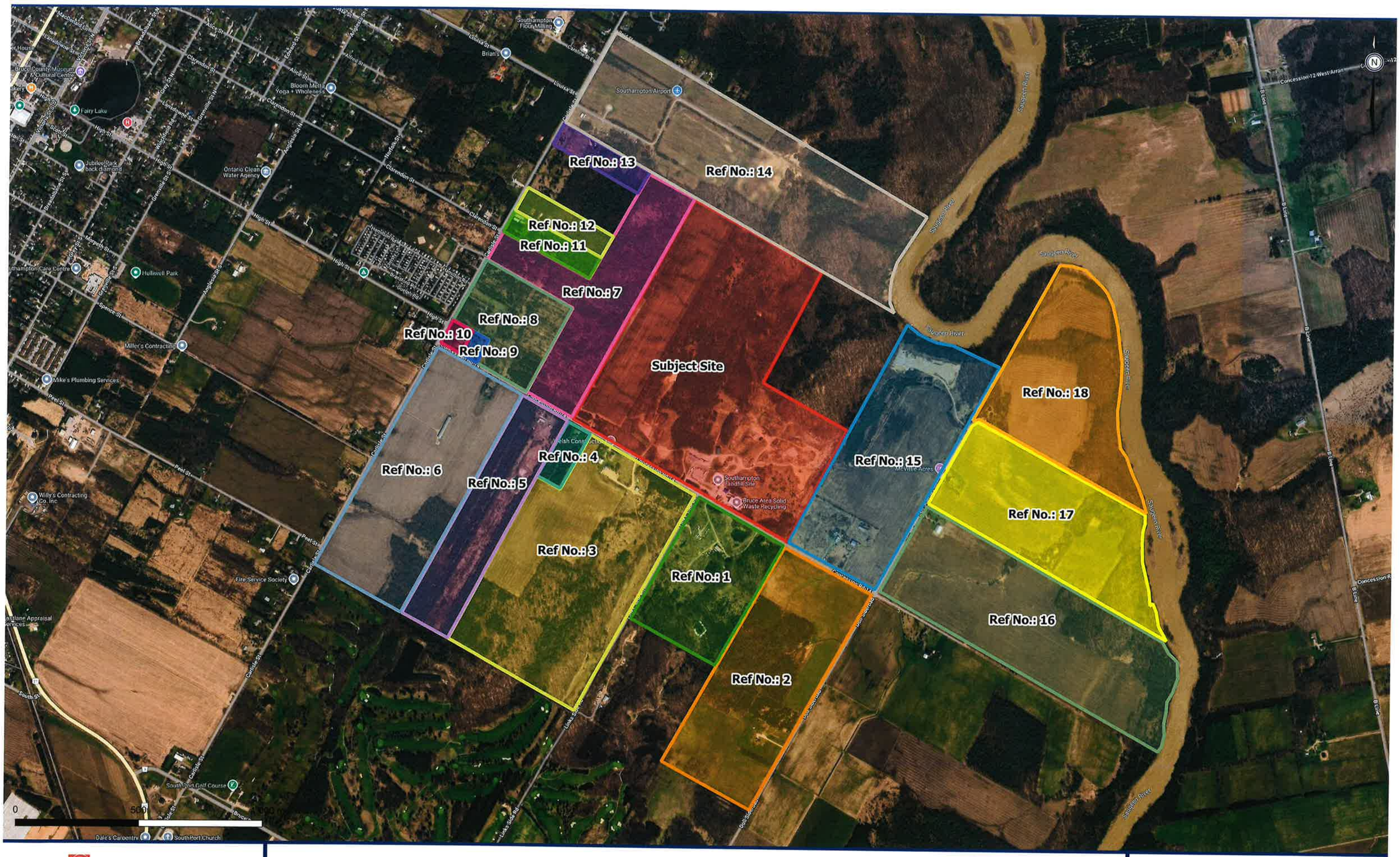
Borehole ID: TW-40

CLIENT Town of Saugeen Shores
PROJECT NAME Southampton Landfill
PROJECT NUMBER 223041
PROJECT LOCATION 126 Concession 14
DATE COMPLETED 2021/07/29
CONTRACTOR London Soil Test
LOGGED BY JW
METHOD Hollow Stem Auger
WELL CONSTRUCTION 0.05m Ø PVC
NOTES

DEPTH (m)	DEPTH (ft)	ELEVATION (m)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION		WELL DIAGRAM
					0.00 Ground Surface	210.61	TOP = 211.413 masl
					Brown, TOPSOIL, moist, loose		Concrete
					0.35	210.26	Bentonite Seal
					Light brown, medium to fine grained SAND with some silt, wet to saturated, loose		WL = 1.49 mbgs (Sep-14-2022)
							Sand Filter
					3.65	206.96	10 Slot PVC Screen
					Grey, silt TILL with some clay, gravel and cobbles, hard		

Testhole Terminated at 4.26 m.

APPENDIX H
DOOR-TO-DOOR SURVEY INFORMATION



GEI 2401298

Surrounding Properties

Southampton Landfill - Well Survey

Figure 1
June, 2025
700000-G-000
Projection EPSG:3857

Reference Number	Distance from Reference Point	Reference Point	Civic Address(es)	Legal Address	GPS coordinates	Description (if >1, indicate #)								
						House	Barn	Shed	Garage	Misc	Farm	Livestock	Crops	Ind/Com
1	~100 m	Southampton Landfill Entrance on Concession Rd 14	101 Concession 14 308 Links Sideroad	Concession 14 N, Part of Lot 12, RP 3R6098; Part 2 Easement	44.47930, -81.33367	1	1	2						
2	~1,500 m	Southampton Landfill Entrance on Concession Rd 14	333 Doll Sideroad	Part of Lot 13, Concession 14, Township of Saugeen	44.47159, -81.33245	1			2					
3	~300 m	Southampton Landfill Entrance on Concession Rd 14	163 Concession 14 171 Concession 14	Lot 11, Concession 14, and Part of Lots 1 and 3-9, Plan 19, Cayley Street East	44.48140, -81.33990	1	4		1					
4	~550 m	Southampton Landfill Entrance on Concession Rd 14	181 Concession 14	Part of Lot 2, Plan 19, Cayley Street East	44.48281, -81.34285	1			2					
5	~725 m	Southampton Landfill Entrance on Concession Rd 14	201 Concession 14	Lots 1 to 10, Plan 19, Cayley Street West, and the West Part of Lot 10, Concession 14	44.48281, -81.34286	1	1	1						
6	~1,000 m	Southampton Landfill Entrance on Concession Rd 14	223 Concession 14	Concession 14, Lot 9	44.48281, -81.34287		1							
7	~1,700 m	Southampton Landfill Entrance on Concession Rd 14	280 Carlisle St	Part of Lot 9 and 10, Concession 15	44.48281, -81.34288									
8	~1,300 m	Southampton Landfill Entrance on Concession Rd 14	258 Carlisle St	Part of Lot 9, Concession 15	44.48281, -81.34289	1	1		1					
9	~1,000 m	Southampton Landfill Entrance on Concession Rd 14	240 Concession 14	Part of Lot 9, Concession 15	44.48281, -81.34290	1		1	1					

Reference Number	Distance from Reference Point	Reference Point	Civic Address(es)	Legal Address	GPS coordinates	Description (if >1, indicate #)								
						House	Barn	Shed	Garage	Misc	Farm	Livestock	Crops	Ind/Com
10	~1,100 m	Southampton Landfill Entrance on Concession Rd 14	246 Concession 14	Part of Lot 9, Concession 15	44.48281, -81.34291	1			1					
11	~1,800 m	Southampton Landfill Entrance on Concession Rd 14	292 Carlisle St	Part of Lot 9, Concession 15	44.48281, -81.34292	1			3					
12	~1,850 m	Southampton Landfill Entrance on Concession Rd 14	300 Carlisle St	Part of Lot 9, Concession 15	44.48281, -81.34293	1			1					
13	~2,100 m	Southampton Landfill Entrance on Concession Rd 14	338 Carlisle St	Part of Lot 9, Concession 15	44.48281, -81.34294	1								
14	~2,300 m	Southampton Landfill Entrance on Concession Rd 14	348 Carlisle St	Part of Lots 9-12, Concession 16	44.48281, -81.34295	1			1					
15	~700 m	Southampton Landfill Entrance on Concession Rd 14	74 Concession 14	Lot 13, Concession 15, RP 3R6098	44.48281, -81.34296	1	2	1		2				
16	~1,100 m	Southampton Landfill Entrance on Concession Rd 14	444 Doll Sideroad	Range River Lot 11	44.48281, -81.34297	1	2	1	1					
17	~1,300 m	Southampton Landfill Entrance on Concession Rd 14	460 Doll Sideroad	Range River A, Part of Lot 12	44.48281, -81.34298	1	1							
18	~1,700 m	Southampton Landfill Entrance on Concession Rd 14	N/A	Lots 13 & 14, and Part of Lot 12, Range River A, and Part 1 on RP 3R9617	44.48281, -81.34299		1							

Southampton Landfill Optimization - Well Survey - Initial Letter

Civic Address(es)	Legal Address	Well Information gathering based on observation from road	Access Form Returned?
101 Concession 14 308 Links Sideroad	Concession 14 N, Part of Lot 12, RP 3R6098; Part 2 Easement	Dug well observed infront of house	No
333 Doll Sideroad	Part of Lot 13, Concession 14, Township of Saugeen	N/A	No
126 Concession 14 163 Concession 14 171 Concession 14	Lot 11, Concession 14, and Part of Lots 1 and 3-9, Plan 19, Cayley Street East	Dug well observed near barn	**Yes**
181 Concession 14	Part of Lot 2, Plan 19, Cayley Street East	N/A	**Yes**
201 Concession 14	Lots 1 to 10, Plan 19, Cayley Street West, and the West Part of Lot 10, Concession 14	Dug well	**Yes**
223 Concession 14	Concession 14, Lot 9	N/A	No
280 Carlisle St	Part of Lot 9 and 10, Concession 15	N/A	No
258 Carlisle St	Part of Lot 9, Concession 15	Dug well observed infront of house	No
240 Concession 14	Part of Lot 9, Concession 15	Dug well observed to the right of the house	No
246 Concession 14	Part of Lot 9, Concession 15	N/A	No
292 Carlisle St	Part of Lot 9, Concession 15	Dug well observed infront of house covered by well decoration	**Yes**
300 Carlisle St	Part of Lot 9, Concession 15	N/A	No
338 Carlisle St	Part of Lot 9, Concession 15	N/A	NO
348 Carlisle St	Part of Lots 9-12, Concession 16	N/A	No
74 Concession 14	Lot 13, Concession 15, RP 3R6098	N/A	**Yes**
444 Doll Sideroad	Range River Lot 11	N/A	**Yes**
460 Doll Sideroad	Range River A, Part of Lot 12	N/A	No
N/A	Lots 13 & 14, and Part of Lot 12, Range River A, and Part 1 on RP 3R9617	N/A	No

TABLE H2:
SUMMARY OF GROUNDWATER QUALITY ANALYTICAL RESULTS
Private Water Wells

PARAMETER Sampling Date	UNITS	ODWS mg/L	163 Concession Rd 14 August 8, 2025	74 Concession Rd 14 August 13, 2025
NUTRIENTS				
Total Ammonia (as N)	mg/L	NV	<0.050	0.068
Phosphate (as P)	mg/L	NV	<0.010	<0.010
ANIONS				
Chloride	mg/L	250 (AO)	3.8	<1.0
Nitrate (as N)	mg/L	10 (MAC)	<0.10	1.17
Nitrite (as N)	mg/L	1 (MAC)	<0.010	<0.010
Sulphate	mg/L	500 (AO)	2.6	31
GENERAL WATER QUALITY				
pH	Unitless	6.5 to 8.5	8.08	7.82
Alkalinity (as CaCO3)	mg/L	30 to 500 (OG)	260	250
Electrical Conductivity	uS/cm	NV	480	550
Total Dissolved Solids	mg/L	500 (AO)	260	310
Dissolved Organic Carbon	mg/L	5 (AO)	0.97	1.3
Hardness	mg/L	80 to 100 (OG)	260	310
METALS				
Aluminum (Al)	mg/L	0.1 (OG)	<0.0049	<0.0049
Antimony (Sb)	mg/L	0.006 (MAC)	<0.0005	<0.0005
Arsenic (As)	mg/L	0.025 (MAC)	<0.001	<0.001
Barium (Ba)	mg/L	1.0 (MAC)	0.0077	0.011
Beryllium (Be)	mg/L	NV	<0.0004	<0.0004
Boron (B)	mg/L	5.0 (IMAC)	<0.01	0.018
Cadmium (Cd)	mg/L	0.005 (MAC)	<0.00009	<0.00009
Calcium (Ca)	mg/L	NV	79	92
Chromium (Cr)	mg/L	0.05 (MAC)	<0.005	<0.005
Cobalt (Co)	mg/L	NV	<0.0005	0.00061
Copper (Cu)	mg/L	1.0 (AO)	0.079	0.093
Iron (Fe)	mg/L	0.3 (AO)	<0.1	0.17
Lead (Pb)	mg/L	0.01 (MAC)	0.00063	0.002
Lithium (Li)	mg/L	NV	<0.005	<0.005
Magnesium (Mg)	mg/L	NV	16	18
Manganese (Mn)	mg/L	0.05 (AO)	<0.002	0.0026
Molybdenum (Mo)	mg/L	NV	<0.0005	<0.0005
Nickel (Ni)	mg/L	NV	<0.001	0.0015
Phosphorus (P)	mg/L	NV	<0.1	<0.1
Potassium (K)	mg/L	NV	0.23	1.7
Selenium (Se)	mg/L	0.01 (MAC)	<0.002	<0.002
Silicon (Si)	mg/L	NV	2	2.4
Silver (Ag)	mg/L	NV	<0.00009	<0.00009
Sodium (Na)	mg/L	200 (AO)	2.7	1.9
Strontium (Sr)	mg/L	NV	0.078	0.11
Thallium (Tl)	mg/L	NV	<0.00005	<0.00005
Titanium (Ti)	mg/L	NV	<0.005	<0.005
Uranium (U)	mg/L	0.02 (MAC)	0.00029	0.00026
Vanadium (V)	mg/L	NV	<0.0005	<0.0005
Zinc (Zn)	mg/L	5.0 (AO)	0.11	0.037

Notes:

1. ODWS = Ontario Drinking Water Standards (June 2003, Revised June 2006).
2. AO= Aesthetic Objective; OG = Operational Guideline; MAC = Maximum Acceptable Concentration; IMAC = Interim Maximum Acceptable Concentration.
3. NV = No Value
4. Values that are shaded represent results greater than the ODWS.
5. mg/L = milligrams per litre; uS/cm = microsiemens per centimeter.
7. Concentrations expressed in terms of < are below the detectable value.

TABLE H2:
SUMMARY OF GROUNDWATER QUALITY ANALYTICAL RESULTS
Private Water Wells

PARAMETER Sampling Date	UNITS	ODWS mg/L	181 Concession Rd 14 August 13, 2025	292 Carlisle Street August 13, 2025
NUTRIENTS				
Total Ammonia (as N)	mg/L	NV	0.091	0.065
Phosphate (as P)	mg/L	NV	<0.010	<0.010
ANIONS				
Chloride	mg/L	250 (AO)	9	12
Nitrate (as N)	mg/L	10 (MAC)	3.67	<0.10
Nitrite (as N)	mg/L	1 (MAC)	<0.010	<0.010
Sulphate	mg/L	500 (AO)	3.9	10
GENERAL WATER QUALITY				
pH	Unitless	6.5 to 8.5	7.7	7.76
Alkalinity (as CaCO3)	mg/L	30 to 500 (OG)	300	290
Electrical Conductivity	uS/cm	NV	610	590
Total Dissolved Solids	mg/L	500 (AO)	350	320
Dissolved Organic Carbon	mg/L	5 (AO)	1.1	3
Hardness	mg/L	80 to 100 (OG)	330	310
METALS				
Aluminum (Al)	mg/L	0.1 (OG)	<0.0049	0.0055
Antimony (Sb)	mg/L	0.006 (MAC)	<0.0005	<0.0005
Arsenic (As)	mg/L	0.025 (MAC)	<0.001	<0.001
Barium (Ba)	mg/L	1.0 (MAC)	0.013	0.015
Beryllium (Be)	mg/L	NV	<0.0004	<0.0004
Boron (B)	mg/L	5.0 (IMAC)	0.014	<0.010
Cadmium (Cd)	mg/L	0.005 (MAC)	<0.00009	<0.00009
Calcium (Ca)	mg/L	NV	100	87
Chromium (Cr)	mg/L	0.05 (MAC)	<0.005	<0.005
Cobalt (Co)	mg/L	NV	<0.0005	<0.0005
Copper (Cu)	mg/L	1.0 (AO)	0.098	0.024
Iron (Fe)	mg/L	0.3 (AO)	<0.1	0.39
Lead (Pb)	mg/L	0.01 (MAC)	<0.0005	0.00059
Lithium (Li)	mg/L	NV	<0.005	<0.005
Magnesium (Mg)	mg/L	NV	19	23
Manganese (Mn)	mg/L	0.05 (AO)	<0.002	0.16
Molybdenum (Mo)	mg/L	NV	<0.0005	<0.0005
Nickel (Ni)	mg/L	NV	<0.001	<0.001
Phosphorus (P)	mg/L	NV	<0.1	<0.1
Potassium (K)	mg/L	NV	2.5	1.7
Selenium (Se)	mg/L	0.01 (MAC)	<0.002	<0.002
Silicon (Si)	mg/L	NV	3.2	2.5
Silver (Ag)	mg/L	NV	<0.00009	<0.00009
Sodium (Na)	mg/L	200 (AO)	4.5	11
Strontium (Sr)	mg/L	NV	0.11	0.1
Thallium (Tl)	mg/L	NV	<0.00005	<0.00005
Titanium (Ti)	mg/L	NV	<0.0005	<0.005
Uranium (U)	mg/L	0.02 (MAC)	0.00021	0.0013
Vanadium (V)	mg/L	NV	<0.0005	<0.0005
Zinc (Zn)	mg/L	5.0 (AO)	0.034	0.018

Notes:

1. ODWS = Ontario Drinking Water Standards (June 2003, Revis
2. AO= Aesthetic Objective; OG = Operational Guideline; MAC = Concentration; IMAC = Interim Maximum Acceptable Concentratio
3. NV = No Value
4. Values that are shaded represent results greater than the ODW
5. mg/L = milligrams per litre; uS/cm = microsiemens per centime
7. Concentrations expressed in terms of < are below the detectab

TABLE H2:
SUMMARY OF GROUNDWATER QUALITY ANALYTICAL RESULTS
Private Water Wells

PARAMETER Sampling Date	UNITS	ODWS mg/L	201 Concession Rd 14 (old) August 18, 2025	201 Concession Rd 14 (new) August 18, 2025
NUTRIENTS				
Total Ammonia (as N)	mg/L	NV	0.052	<0.050
Phosphate (as P)	mg/L	NV	<0.010	<0.010
ANIONS				
Chloride	mg/L	250 (AO)	30	12
Nitrate (as N)	mg/L	10 (MAC)	0.8	1.05
Nitrite (as N)	mg/L	1 (MAC)	<0.010	0.083
Sulphate	mg/L	500 (AO)	7.9	14
GENERAL WATER QUALITY				
pH	Unitless	6.5 to 8.5	7.93	7.97
Alkalinity (as CaCO3)	mg/L	30 to 500 (OG)	320	300
Electrical Conductivity	uS/cm	NV	710	620
Total Dissolved Solids	mg/L	500 (AO)	380	340
Dissolved Organic Carbon	mg/L	5 (AO)	3.6	2
Hardness	mg/L	80 to 100 (OG)	320	310
METALS				
Aluminum (Al)	mg/L	0.1 (OG)	<0.0049	0.089
Antimony (Sb)	mg/L	0.006 (MAC)	<0.0005	<0.0005
Arsenic (As)	mg/L	0.025 (MAC)		<0.001
Barium (Ba)	mg/L	1.0 (MAC)	0.025	0.025
Beryllium (Be)	mg/L	NV	<0.0004	<0.0004
Boron (B)	mg/L	5.0 (IMAC)	0.017	0.029
Cadmium (Cd)	mg/L	0.005 (MAC)	<0.00009	<0.00009
Calcium (Ca)	mg/L	NV	97	98
Chromium (Cr)	mg/L	0.05 (MAC)	<0.005	<0.005
Cobalt (Co)	mg/L	NV	<0.0005	<0.0005
Copper (Cu)	mg/L	1.0 (AO)	0.048	0.0015
Iron (Fe)	mg/L	0.3 (AO)	<0.1	0.1
Lead (Pb)	mg/L	0.01 (MAC)	0.00086	<0.0005
Lithium (Li)	mg/L	NV	<0.005	<0.005
Magnesium (Mg)	mg/L	NV	19	16
Manganese (Mn)	mg/L	0.05 (AO)	0.0029	0.17
Molybdenum (Mo)	mg/L	NV	<0.0005	<0.0005
Nickel (Ni)	mg/L	NV	<0.001	<0.001
Phosphorus (P)	mg/L	NV	<0.1	<0.1
Potassium (K)	mg/L	NV	7.2	6
Selenium (Se)	mg/L	0.01 (MAC)	<0.002	<0.002
Silicon (Si)	mg/L	NV	2.6	2.7
Silver (Ag)	mg/L	NV	<0.00009	<0.00009
Sodium (Na)	mg/L	200 (AO)	19	5.5
Strontium (Sr)	mg/L	NV	0.12	0.13
Thallium (Tl)	mg/L	NV	<0.00005	<0.00005
Titanium (Ti)	mg/L	NV	<0.005	<0.005
Uranium (U)	mg/L	0.02 (MAC)	0.00058	0.00081
Vanadium (V)	mg/L	NV	<0.0005	<0.0005
Zinc (Zn)	mg/L	5.0 (AO)	0.14	<0.005

Notes:

1. ODWS = Ontario Drinking Water Standards (June 2003, Revis
2. AO= Aesthetic Objective; OG = Operational Guideline; MAC = Concentration; IMAC = Interim Maximum Acceptable Concentratio
3. NV = No Value
4. Values that are shaded represent results greater than the ODW
5. mg/L = milligrams per litre; uS/cm = microsiemens per centime
7. Concentrations expressed in terms of < are below the detectab

TABLE H2:
SUMMARY OF GROUNDWATER QUALITY ANALYTICAL RESULTS
Private Water Wells

PARAMETER Sampling Date	UNITS	ODWS mg/L	460 Doll Sideroad January 13, 1982	101 Concession 14 January 13, 1982
NUTRIENTS				
Total Ammonia (as N)	mg/L	NV	0.165	0.01
Phosphate (as P)	mg/L	NV	-	-
ANIONS				
Chloride	mg/L	250 (AO)	14.5	64.5
Nitrate (as N)	mg/L	10 (MAC)	<0.01	3
Nitrite (as N)	mg/L	1 (MAC)	<0.001	<0.001
Sulphate	mg/L	500 (AO)	55	44
GENERAL WATER QUALITY				
pH	Unitless	6.5 to 8.5	8.09	7.73
Alkalinity (as CaCO3)	mg/L	30 to 500 (OG)	141	313
Electrical Conductivity	uS/cm	NV	420	845
Total Dissolved Solids	mg/L	500 (AO)	-	-
Dissolved Organic Carbon	mg/L	5 (AO)	-	-
Hardness	mg/L	80 to 100 (OG)	95	379
METALS				
Aluminum (Al)	mg/L	0.1 (OG)	-	-
Antimony (Sb)	mg/L	0.006 (MAC)	-	-
Arsenic (As)	mg/L	0.025 (MAC)	-	-
Barium (Ba)	mg/L	1.0 (MAC)	-	-
Beryllium (Be)	mg/L	NV	-	-
Boron (B)	mg/L	5.0 (IMAC)	-	-
Cadmium (Cd)	mg/L	0.005 (MAC)	<0.0002	<0.0002
Calcium (Ca)	mg/L	NV	21	102
Chromium (Cr)	mg/L	0.05 (MAC)	<0.1	<0.1
Cobalt (Co)	mg/L	NV	-	-
Copper (Cu)	mg/L	1.0 (AO)	0.006	0.024
Iron (Fe)	mg/L	0.3 (AO)	0.55	0.07
Lead (Pb)	mg/L	0.01 (MAC)	<0.005	<0.005
Lithium (Li)	mg/L	NV	-	-
Magnesium (Mg)	mg/L	NV	10.2	30.2
Manganese (Mn)	mg/L	0.05 (AO)	-	-
Molybdenum (Mo)	mg/L	NV	-	-
Nickel (Ni)	mg/L	NV	<0.025	<0.025
Phosphorus (P)	mg/L	NV	0.017	0.006
Potassium (K)	mg/L	NV	1.15	2.5
Selenium (Se)	mg/L	0.01 (MAC)	-	-
Silicon (Si)	mg/L	NV	-	-
Silver (Ag)	mg/L	NV	-	-
Sodium (Na)	mg/L	200 (AO)	52.5	27.8
Strontium (Sr)	mg/L	NV	-	-
Thallium (Tl)	mg/L	NV	-	-
Titanium (Ti)	mg/L	NV	-	-
Uranium (U)	mg/L	0.02 (MAC)	-	-
Vanadium (V)	mg/L	NV	-	-
Zinc (Zn)	mg/L	5.0 (AO)	0.11	0.17

Notes:

1. ODWS = Ontario Drinking Water Standards (June 2003, Revis
2. AO= Aesthetic Objective; OG = Operational Guideline; MAC = Concentration; IMAC = Interim Maximum Acceptable Concentratio
3. NV = No Value
4. Values that are shaded represent results greater than the ODW
5. mg/L = milligrams per litre; uS/cm = microsiemens per centime
7. Concentrations expressed in terms of < are below the detectab

TABLE H2:
SUMMARY OF GROUNDWATER QUALITY ANALYTICAL RESULTS
Private Water Wells

PARAMETER Sampling Date	UNITS	ODWS mg/L	223 Concession 14 January 13, 1982	21 Concession 14 January 13, 1982
NUTRIENTS				
Total Ammonia (as N)	mg/L	NV	0.02	0.03
Phosphate (as P)	mg/L	NV	-	-
ANIONS				
Chloride	mg/L	250 (AO)	12.5	1.5
Nitrate (as N)	mg/L	10 (MAC)	0.29	<0.01
Nitrite (as N)	mg/L	1 (MAC)	0.012	<0.001
Sulphate	mg/L	500 (AO)	27.5	1.5
GENERAL WATER QUALITY				
pH	Unitless	6.5 to 8.5	7.34	8.07
Alkalinity (as CaCO3)	mg/L	30 to 500 (OG)	353	144
Electrical Conductivity	uS/cm	NV	700	279
Total Dissolved Solids	mg/L	500 (AO)	-	-
Dissolved Organic Carbon	mg/L	5 (AO)	-	-
Hardness	mg/L	80 to 100 (OG)	376	56
METALS				
Aluminum (Al)	mg/L	0.1 (OG)	-	-
Antimony (Sb)	mg/L	0.006 (MAC)	-	-
Arsenic (As)	mg/L	0.025 (MAC)	-	-
Barium (Ba)	mg/L	1.0 (MAC)	-	-
Beryllium (Be)	mg/L	NV	-	-
Boron (B)	mg/L	5.0 (IMAC)	-	-
Cadmium (Cd)	mg/L	0.005 (MAC)	0.0004	<0.0002
Calcium (Ca)	mg/L	NV	110	13
Chromium (Cr)	mg/L	0.05 (MAC)	<0.1	<0.1
Cobalt (Co)	mg/L	NV	-	-
Copper (Cu)	mg/L	1.0 (AO)	0.062	0.053
Iron (Fe)	mg/L	0.3 (AO)	0.14	0.24
Lead (Pb)	mg/L	0.01 (MAC)	<0.005	<0.005
Lithium (Li)	mg/L	NV	-	-
Magnesium (Mg)	mg/L	NV	24.4	5.6
Manganese (Mn)	mg/L	0.05 (AO)	-	-
Molybdenum (Mo)	mg/L	NV	-	-
Nickel (Ni)	mg/L	NV	<0.025	<0.025
Phosphorus (P)	mg/L	NV	0.011	0.052
Potassium (K)	mg/L	NV	5.05	1.1
Selenium (Se)	mg/L	0.01 (MAC)	-	-
Silicon (Si)	mg/L	NV	-	-
Silver (Ag)	mg/L	NV	-	-
Sodium (Na)	mg/L	200 (AO)	3.6	42.5
Strontium (Sr)	mg/L	NV	-	-
Thallium (Tl)	mg/L	NV	-	-
Titanium (Ti)	mg/L	NV	-	-
Uranium (U)	mg/L	0.02 (MAC)	-	-
Vanadium (V)	mg/L	NV	-	-
Zinc (Zn)	mg/L	5.0 (AO)	0.08	<0.03

Notes:

1. ODWS = Ontario Drinking Water Standards (June 2003, Revis
2. AO= Aesthetic Objective; OG = Operational Guideline; MAC = Concentration; IMAC = Interim Maximum Acceptable Concentratio
3. NV = No Value
4. Values that are shaded represent results greater than the ODW
5. mg/L = milligrams per litre; uS/cm = microsiemens per centime
7. Concentrations expressed in terms of < are below the detectab

Ontario — Ministry of the Environment

Well A 074444 (Below)

Well Record

Regulation 903 Ontario Water Resources Act

Page ____ of ____

Measurements recorded in: ☐ Metric ☑ Imperial

Well Owner's Information

[redacted]

223 14TH CON | SAUGEEN | Lot 9 | Concession 14

County/District/Municipality: BRUCE | City/Town/Village: | Province: Ontario | Postal Code: N0H2L0

UTM Coordinates: NAD 83 | Zone 17 | Easting 472395 | Northing 4925722 | Municipal Plan and Sublot Number: | Other:

Overburden and Bedrock Materials/Abandonment Sealing Record *(see instructions on the back of this form)*

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
BROWN	TOP-SOIL			0	1
BROWN	SAND			1	4
GREY	SAND			4	12
GREY	SAND & GRAVEL			12	16
GREY	CLAY	SILT LAYERS		16	25

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
0	8	CONSEAL & SAKRITE JOINTS	
8	25	FILTER SAND	

Method of Construction

☐ Cable Tool ☐ Diamond
☐ Rotary (Conventional) ☐ Jetting
☐ Rotary (Reverse) ☐ Driving
☑ Boring ☐ Digging
☐ Air percussion
☐ Other, specify

Well Use

☐ Public ☐ Commercial ☐ Not used
☐ Domestic ☐ Municipal ☐ Dewatering
☐ Livestock ☐ Test Hole ☐ Monitoring
☐ Irrigation ☐ Cooling & Air Conditioning
☐ Industrial
☐ Other, specify

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	Depth (m/ft) To
48	CONCRETE	3	0	16
36	"	3	15	25

Construction Record - Screen

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From	Depth (m/ft) To

Status of Well

☐ Water Supply
☐ Replacement Well
☐ Test Hole
☐ Recharge Well
☐ Dewatering Well
☐ Observation and/or Monitoring Hole
☐ Alteration (Construction)
☐ Abandoned, Insufficient Supply
☐ Abandoned, Poor Water Quality
☐ Abandoned, other, specify
☐ Other, specify

Water Details

Water found at Depth	Kind of Water	
4 (m/ft) ☐ Gas	☐ Fresh ☑ Untested ☐ Other, specify	
12 (m/ft) ☐ Gas	☐ Fresh ☑ Untested ☐ Other, specify	
(m/ft) ☐ Gas	☐ Fresh ☐ Untested ☐ Other, specify	

Hole Diameter

Depth (m/ft) From	Depth (m/ft) To	Diameter (cm/in)
0	16	60
16	25	48

Results of Well Yield Testing

After test of well yield, water was: ☐ Clear and sand free ☐ Other, specify

If pumping discontinued, give reason:

Pump intake set at (m/ft)

Pumping rate (l/min / GPM)

Duration of pumping ____ hrs + ____ min

Final water level end of pumping (m/ft)

If flowing give rate (l/min / GPM)

Recommended pump depth (m/ft): 21

Recommended pump rate (l/min / GPM): 5 GPM

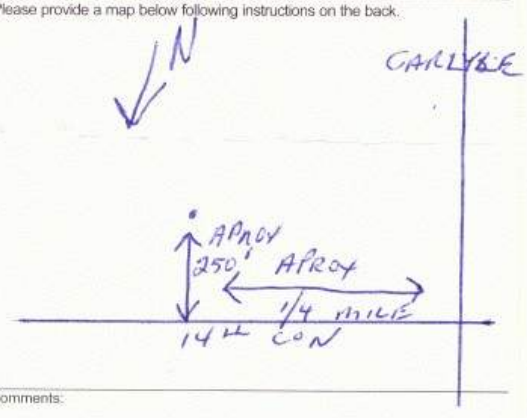
Well production (l/min / GPM)

Disinfected? ☐ Yes ☐ No

	Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	4			
1			1	
2			2	
3			3	
4			4	
5			5	
10			10	
15			15	
20			20	
25			25	
30			30	
40			40	
50			50	
60			60	

Map of Well Location

Please provide a map below following instructions on the back.



Comments:

Well Contractor and Well Technician Information

Business Name of Well Contractor: JOHNSON & BAETZ | Well Contractor's Licence No.: 3030

Business Address (Street Number/Name): 112 McGUINESS DRIVE | Municipality: BRANTFORD

Province: ONT | Postal Code: N3T6R6 | Business E-mail Address:

Bus. Telephone No. (inc. area code): 5197570071 | Name of Well Technician (Last Name, First Name): BAETZ, JOHN

Well Technician's Licence No.: 3333 | Signature of Technician and/or Contractor: John Baetz | Date Submitted: ____

Well owner's information package delivered: ☐ Yes ☐ No

Date Package Delivered: ____

Date Work Completed: 2008 10 01

Ministry Use Only

Audit No. Z 87986

Received JAN 08 2009

0506E (12/2007)

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Elev. [5] [0205]
[5] [2] [ ] [ ] [ ] [ ]

41 A/6 W

1402164

The Ontario Water Resources Commission Act

WATER WELL RECORD

WATER RESOURCES DIVISION
JUN 6 1958
ONTARIO WATER RESOURCES COMMISSION

County or District Bruce
Township, Village, Town or City Saugeen
Con. River Range A Lot 11 12
Date completed 24 (day) May (month) 1968 (year)
Address R. R. 1, Southampton, Ont.

[redacted]

Casing and Screen Record

Inside diameter of casing	4"
Total length of casing	221-10
Type of screen	----
Length of screen	----
Depth to top of screen	----
Diameter of finished hole	4"

Pumping Test

Static level	50'
Test-pumping rate	7 g.p.m. at 160' G.P.M.
Pumping level	160'
Duration of test pumping	1 hr.
Water clear or cloudy at end of test	clear
Recommended pumping rate	5 G.P.M.
with pump setting of	100 feet below ground surface

or 7 g.p.m. at 160'

Well Log

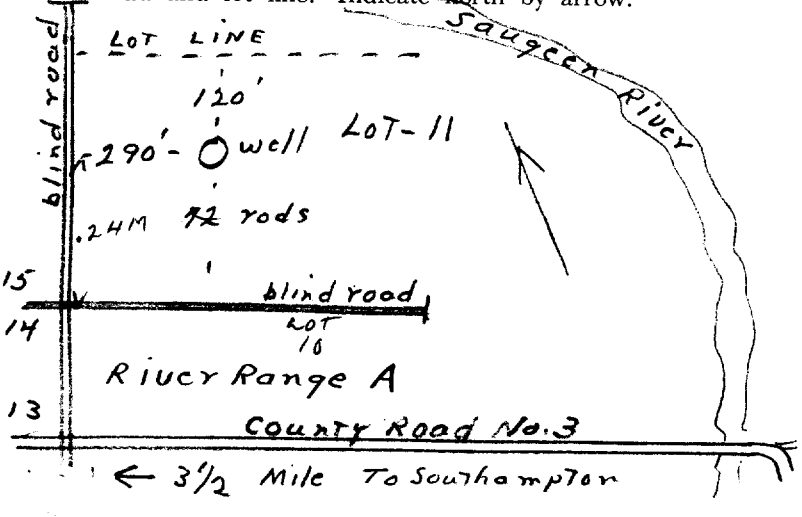
Overburden and Bedrock Record	From ft.	To ft.	Water Record: Depth(s) at which water(s) found	Water Record: Kind of water (fresh, salty, sulphur)
Topsoil	0	1		
Sand, Clay, stones	1	67		
Sand, gravel, stones	67	72		
Hardpan, cemented sand, stones, boulders	72	125		
Stoney hardpan, boulders	125	157		
Hardpan, Sand, stones	157	216		
Clay and stones	216	222		
Limestone, white, hard	222	226		
Blue Shale	226	229		
Limestone, grey, white brown & buff	229	292	292	fresh

For what purpose(s) is the water to be used?
D - S
Is well on upland, in valley, or on hillside? Upland
Drilling or Boring Firm G. L. Davidson
Box 486
Address Wingham, Ont.

Licence Number 2801
Name of Driller or Borer Doug. Davidson
Address Wingham, Ont.
Date May 24, 1968
G. L. Davidson
(Signature of Licensed Drilling or Boring Contractor)

Location of Well

In diagram below show distances of well from road and lot line. Indicate north by arrow.



Form 7 15M-60-4138

OWRC COPY

CSS.58

Ontario — Ministry of the Environment

Measurements recorded in: ☐ Metric ☒ Imperial

Well Tag No: A 091742 (A 091742)

Well Record

Regulation 903 Ontario Water Resources Act

Page 1 of 2

[redacted]

Address of Well Location (Street Number/Name)	Township	Lot	Concession
460 Doll Sideroad		12	

County/District/Municipality	City/Town/Village	Province	Postal Code
Bruce	SAUBLEEN SHORES	Ontario	

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	17	474291	4925388		

Overburden and Bedrock Materials/Abandonment Sealing Record *(see instructions on the back of this form)*

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	To
Brown			Top Soil	0	2
"			Sand	2	18
"			Sandy Clay	18	24
	Boulders		Boulders	24	26
Yellow			Sand	26	47
Grey			Clay + Gravel	47	50
"			Clay	50	70
			Boulders	70	72
		Con't Next Page.			

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
0	30	Bensea l	

Method of Construction

☒ Cable Tool ☐ Diamond ☐ Rotary (Conventional) ☐ Jetting ☐ Rotary (Reverse) ☐ Driving ☐ Boring ☐ Digging ☐ Air percussion ☐ Other, specify

Well Use

☐ Public ☐ Commercial ☐ Not used ☒ Domestic ☐ Municipal ☐ Dewatering ☐ Livestock ☐ Test Hole ☐ Monitoring ☐ Irrigation ☐ Cooling & Air Conditioning ☐ Industrial ☐ Other, specify

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	To
6"	Steel	.188	+2	198
	OPEN HOLE		198	210

Construction Record - Screen

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From	To

Status of Well

☒ Water Supply ☐ Replacement Well ☐ Test Hole ☐ Recharge Well ☐ Dewatering Well ☐ Observation and/or Monitoring Hole ☐ Alteration (Construction) ☐ Abandoned, Insufficient Supply ☐ Abandoned, Poor Water Quality ☐ Abandoned, other, specify ☐ Other, specify

Water Details

Water found at Depth (m/ft)	Gas	Other	Kind of Water: ☒ Fresh ☐ Untested
198	☐	☐	
(m/ft)	☐	☐	☐ Fresh ☐ Untested
(m/ft)	☐	☐	☐ Fresh ☐ Untested

Hole Diameter

Depth (m/ft) From	To	Diameter (cm/in)
0	26	8"
26	210	6"

Results of Well Yield Testing

After test of well yield, water was: ☒ Clear and sand free ☐ Other, specify

If pumping discontinued, give reason: —

Pump intake set at (m/ft): 160

Pumping rate (l/min / GPM): 7

Duration of pumping: 1 hrs + ___ min

Final water level end of pumping (m/ft): 120.7

If flowing give rate (l/min / GPM): —

Recommended pump depth (m/ft): 160

Recommended pump rate (l/min / GPM): 7

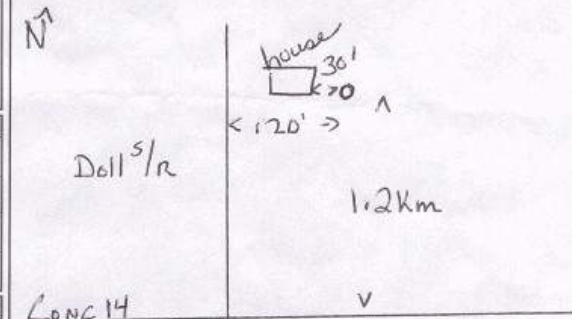
Well production (l/min / GPM): 7

Disinfected? ☐ Yes ☒ No

Draw Down Time (min)	Water Level (m/ft)	Recovery Time (min)	Water Level (m/ft)
Static Level	41		
1	54.33	1	114
2	59.9	2	110
3	64.4	3	107.7
4	68.8	4	104.7
5	72.18	5	101.9
10	83.3	10	91.86
15	94.32	15	83.1
20	100.88	20	75.13
25	105.87	25	70.57
30	109.7	30	67.06
40	115.16	40	60.17
50	118.4	50	57
60	120.7	60	53

Map of Well Location

Please provide a map below following instructions on the back.



Comments:

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
Georgian Bay Well Drilling Ltd	6433

Business Address (Street Number/Name)	Municipality
RR4	Meaford

Province	Postal Code	Business E-mail Address
ONT	N4L 1W7	

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)
519 538 1990	Sevine James

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
2896		2010 05 31

Well owner's information package delivered: ☐ Yes ☐ No

Date Package Delivered: Y Y Y Y M M D D

Date Work Completed: 2010 05 04

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Audit No. Z 105922

Received JUN 15 2010

0506E (12/2007)

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Ontario Ministry of the Environment

Well Tag No. (Below) A 066381

A066381

Well Record

Regulation 903 Ontario Water Resources Act

Page ____ of ____

Well Owner's Information

[redacted]

564 Clayton — County/District/Municipality: Bruce

Southampton — City/Town/Village

Province: Ontario

Postal Code:

UTM Coordinates: NAD 83 | Zone: 17 | Easting: 477226 | Northing: 4926506

GPS Unit Make: Garmin | Model: 12

Mode of Operation: ☐ Differentiated, specify ____ ☑ Undifferentiated ☑ Averaged

Overburden and Bedrock Materials *(see instructions on the back of this form)*

General Colour	Most Common Material	Other Materials	General Description	Depth (Metres) From	To
			fill	0	2
			sand	2	19
			clay soft	19	138
			clay stone	138	203
			limestone	203	312

Annular Space/Abandonment Sealing Record

Depth Set at (Metres) From	To	Type of Sealant Used (Material and Type)	Volume Placed (Cubic Metres)
0	20	bentonite	

Method of Construction

☐ Cable Tool ☐ Diamond
☑ Rotary (Conventional) ☐ Jetting
☐ Rotary (Reverse) ☐ Driving
☑ Rotary (Air) ☐ Digging
☐ Air percussion ☐ Boring
☐ Other, specify ____

Water Use

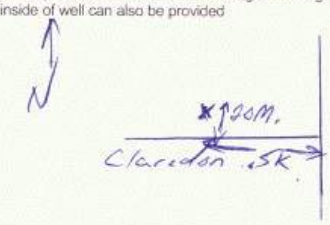
☐ Public ☐ Commercial ☐ Not used
☑ Domestic ☐ Municipal ☐ Dewatering
☐ Livestock ☐ Test Hole ☐ Monitoring
☐ Irrigation ☐ Cooling & Air Conditioning
☐ Industrial
☐ Other, specify ____

Status of Well

☑ Water Supply ☐ Dewatering Well ☐ Observation and/or Monitoring Hole
☐ Replacement Well ☐ Abandoned, Insufficient Supply ☐ Alteration (Construction)
☐ Test Hole ☐ Abandoned, Poor Water Quality ☐ Other, specify ____
☐ Recharge Well ☐ Abandoned, other, specify ____

Location of Well

Please provide a map below showing:
- all property boundaries, and measurements sufficient to locate the well in relation to fixed points,
- an arrow indicating the North direction
- detailed drawings can be provided as attachments no larger than legal size (8.5" by 14")
- vidigital pictures of inside of well can also be provided



Date Well Completed (yyyy/mm/dd)	Was the well owner's information package delivered?	Date the Well Record and Package Delivered to Well Owner (yyyy/mm/dd)
08 06 11	☐ Yes ☑ No	

Well Contractor and Well Technician Information

Business Name of Well Contractor: Wm Wright & Sons Drilling Ltd — Well Contractor's Licence No.: 5507

Business Address (Street No./Name, number, RR): Box 167 — Municipality: Hepworth — South Bruce

Province: Ont — Postal Code: N0H 1P0 — Business E-mail Address:

Bus. Telephone No. (inc. area code): 5199352180 — Name of Well Technician (Last Name, First Name): Wright, Herb

Well Technician's Licence No.: 1140 — Signature of Technician: Herb Wright — Date Submitted (yyyy/mm/dd):

0506E (11/2006)

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Results of Well Yield Testing

Check box if after test of well yield, water was:
☑ Clear and sand free
☐ Cannot develop to sand-free state

If pumping discontinued, give reason:

Pumping test method: AIR

Pump intake set at (Metres): 312

Pumping rate (Litres/min): 10 +

Duration of pumping: 1 hrs + ____ min

Final water level end of pumping (Metres): 312

Recommended pump type: ☐ Shallow ☑ Deep

Recommended pump depth: 200 Metres

Recommended pump rate (Litres/min): 10

If flowing give rate (Litres/min):

	Draw Down Time (Min)	Draw Down Water Level (Metres)	Recovery Time (Min)	Recovery Water Level (Metres)
Static Level		43		
1			1	
2			2	
3			3	
4			4	
5			5	
10			10	
15			15	
20			20	
25			25	
30			30	
40			40	
50			50	
60			60	43

Water Details

Water found at Depth (Metres)	Gas	Kind of Water
304	☐	☑ Fresh ☐ Salty ☐ Sulphur ☐ Minerals
	☐	☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals
	☐	☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals

Casing Used

☐ Galvanized
☑ Steel
☐ Fibreglass
☐ Plastic
☐ Concrete

Screen Used

☐ Galvanized
☐ Steel
☐ Fibreglass
☐ Plastic
☐ Concrete

No Casing and Screen Used

☐ Open Hole

Disinfected? ☑ Yes ☐ No

Casing and Well Details

Diameter of the Hole (Centimetres): 6 5/8

Depth of the Hole (Metres): 312

Wall Thickness (Metres): .188

Inside Diameter of the Casing (Centimetres): 6

Depth of the Casing (Metres): 206.6

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Audit No.: z 77042

Well Contractor No.:

Date Received (yyyy/mm/dd): OCT 23 2008

Date of Inspection (yyyy/mm/dd):

Remarks:

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