

**FIFTH FIVE-YEAR REVIEW REPORT FOR
NORTH SEA LANDFILL SUPERFUND SITE
SUFFOLK COUNTY, NEW YORK**



Prepared by

U.S. Environmental Protection Agency
Region 2
New York, New York

A handwritten signature in black ink, appearing to read "John Prince", is written over a horizontal dashed line.

John Prince, Acting Director
Emergency and Remedial Response Division
U.S. Environmental Protection Agency

May 22, 2012

Date

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Five-Year Review Summary Form

SITE IDENTIFICATION		
Site Name: North Sea Landfill		
EPA ID: NYD980762520		
Region: 2	State: NY	City/County: Southampton/Suffolk
SITE STATUS		
NPL Status: Deleted		
Multiple OUs? Yes	Has the site achieved construction completion? Yes	
REVIEW STATUS		
Lead agency: EPA If “Other Federal Agency” was selected above, enter Agency name: Click here to enter text.		
Author name (Federal or State Project Manager): Ashley Similo		
Author affiliation: EPA		
Review period: 09/30/2013 – 05/15/2018		
Date of site inspection: 10/19/2017		
Type of review: Statutory		
Review number: 5		
Triggering action date: 09/30/2013		
Due date (five years after triggering action date): 09/30/2018		

I. Introduction

The purpose of a five-year review (FYR) is to evaluate the implementation and performance of a remedy in order to determine if the remedy is and will continue to be protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in FYR reports such as this one. In addition, FYR reports identify issues found during the review, if any, and document recommendations to address them.

The U.S. Environmental Protection Agency (EPA) is preparing this FYR review pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121, consistent with the National Contingency Plan (NCP)(40 CFR Section 300.430(f)(4)(ii)), and considering EPA policy.

This is the fifth FYR for the North Sea Landfill Superfund Site. The triggering action for this statutory review is the completion date of the previous FYR. The FYR has been prepared due to the fact that hazardous substances, pollutants or contaminants remain at the site above levels that allow for unlimited use and unrestricted exposure (UU/UE).

The site consists of two operable units (OUs). OU1 will be addressed in this FYR. FYRs are not required for OU2; however, this review will consider the OU2 no action remedy. OU 1 addresses contamination of Cell #1, the former sludge lagoons and on-site groundwater. OU2 addresses off-site groundwater and Fish Cove.

The North Sea Landfill Superfund Site FYR was led by Ashley Similo (Remedial Project Manager) of the EPA. Participants included Michael Scorca (Hydrogeologist), Sharissa Singh (Hydrogeologist) and Julie McPherson (Risk Assessor) of the EPA. The Town of Southampton (the potentially responsible party or PRP) was notified of the initiation of the FYR. The review began on October 2, 2017.

Site Background

Site Description

The North Sea Landfill, which is owned and operated by the Town of Southampton, was initially constructed in 1963 for the disposal of municipal solid waste, refuse and septic system waste. The landfill accepted waste from residential, industrial and commercial sources. Significant features of the 131-acre site include:

- Landfill Cell No. 1- an inactive, unlined landfill which was capped and closed in 1994 in accordance with 6 New York Codes, Rules and Regulations (NYCRR) Part 360;
- Landfill Cell No. 2 - an inactive, lined landfill, with a leachate collection system which was capped and closed in 1990 in accordance with 6NYCRR Part 360;
- Landfill Cell No. 3 - an inactive, lined landfill with a leachate collection system which was capped and closed in 2001 in accordance with 6NYCRR Part 360;

- Sludge Lagoons - septic lagoons located at the south end of the property which were excavated and refilled to grade with sandy loam in 1986.

For the purposes of the federal Superfund Program, Cell No. 1 and the sludge lagoons make up the Superfund site; continued monitoring of the groundwater and the benthic community at nearby Fish Cove is also being addressed under the Superfund program. Cells No. 2 and 3 are closed and monitored by New York State Department of Environmental Conservation (NYSDEC).

In the late 1960s, a series of 14 scavenger lagoons, approximately 50 feet long, 10 feet deep, 25 feet wide and 50 feet above the water table were constructed at the southern portion of the landfill property. The lagoons accepted septic systems wastes from both commercial and residential sources. Sludge was allowed to drain and dry, and it was subsequently disposed of in Cell No. 1. It is estimated that 11 million gallons of septic wastes were disposed into the lagoons. The lagoons were decommissioned in 1985, and most of their solid and liquid contents were removed. After this removal, an additional two feet of soil was excavated. The sludge lagoons were refilled to grade with sandy loam.

The landfill is located in the Township of Southampton, at the intersection of Majors Path and Old Fish Cove Road. The nearest surface water is Fish Cove, located approximately 1500 feet northwest of the landfill. Groundwater in this area ultimately discharges to Fish Cove, which is an arm of the Little Peconic Bay. The area between Fish Cove and the landfill is moderately populated.

Most of the homes in the area that obtained their drinking water from private domestic wells tapped in the highly permeable Pleistocene deposits of the Upper Glacial aquifer. A plume of contaminated groundwater in this aquifer, moving northwest from the landfill, has resulted in the closure of several drinking water wells. Public water supplies have been extended to serve residents of the area.

The Town has filed a deed restriction with the County Clerk's office in June 2003 to limit the future uses of the landfill property. The site is currently zoned for Open Space Conservation and Park District.

II. Response Action Summary

Basis for Taking Action

The OU1 remedial investigation (RI) and feasibility study (FS) was initiated in 1987. The media of concern at the landfill include groundwater, soil and surface water. The investigation identified a groundwater plume containing heavy metals (e.g. chromium, iron, lead and manganese) and leachate indicator parameters (e.g., ammonia and total organic carbon) migrating from the landfill property. Soil samples collected from surface soil, subsurface soil and sludge lagoon borings showed elevated levels of metals (e.g. arsenic, cadmium, iron, lead and magnesium). Surface water samples showed elevated levels of inorganics (e.g., ammonia, chromium, iron, and manganese).

Environmental fate and transport mechanisms were evaluated for each chemical found during the RI. Seven exposure routes were identified including ingestion of contaminated surface water, ingestion of contaminated fish and shellfish, ingestion of contaminated soil, direct contact (dermal) exposure to contaminated surface water, direct contact (dermal) exposure to contaminated soil, ingestion of groundwater and inhalation of dust from the landfill. Exposed populations generally included site workers, visitors to the site and residents of the Town in the area of the site. Individuals who play, swim or wade in Fish Cove near or topographically downgradient from the landfill and neighborhood children venturing onto the site were also included.

Groundwater is replenished primarily from recharge via precipitation and lateral underground flow of fresh water into the Upper Glacial aquifer. Most of the homes in the Southampton area obtain their drinking water from private domestic wells tapping the Upper Glacier aquifer.

The OU1 Record of Decision (ROD) states that the risk associated with the sludge lagoons was considered minimal, therefore, soil remediation of this area is not necessary as they did not pose an unacceptable risk. However, the source control from Cell #1 is above the acceptable levels; therefore, source remediation was necessary to alleviate risk from exposure to groundwater and surface water. The OU1 ROD identified 5 metals and 4 volatile organic contaminants (VOCs) as indicator chemicals (cadmium, chromium, iron, lead, manganese, 1,1-dichloroethene, trichloroethene, tetrachloroethene, 1,2-dichloroethane).

The OU2 RI was initiated in June 1989 to determine the nature and extent of contamination in the groundwater and its impact to Fish Cove. The OU2 ROD identified 13 metals as chemicals of concern (antimony, arsenic, barium, beryllium, cadmium, chromium, iron, lead, manganese, nickel, vanadium and zinc). The ROD identified the major contaminants for potential risk are arsenic and beryllium. However, the risk assessment identified that the risks are within the CERCLA acceptable risk range. The ROD also states that infrequent occurrence of contaminants exceeding maximum contaminant levels (MCLs) has occurred, however, the majority of the contaminants do not exceed primary MCLs in the groundwater. That RI did not find significant site-related contamination in the off-site ground and surface waters. In addition, there were no appreciable environmental impacts from the site to Fish Cove, a body of saltwater marshes. The OU2 risk assessment indicated that off-property groundwater contamination did not pose a threat to human health or the environment.

Remedial action objectives (RAOs) were not identified in either the OU1 or OU2 RODs.

Response Actions

Initial Response

The detection of contaminated groundwater migrating northwest from the landfill resulted in the closure of several private domestic wells. Public water supplies were extended to serve residents in the affected areas. Based on the above, Cell No.1 and the sludge lagoons (which will be referred to as the site) were investigated and placed on the NPL in 1986. As a result of EPA's initial efforts to place the landfill on the NPL, Cell No. 1 was closed by the Town in 1985. Cell closure consisted of the following; capping the top flat portion of the landfill (approximately eight acres in area)

with a 20 mil polyvinyl chloride (PVC) membrane to minimize infiltration, installation of a silty sand protective layer (approximately two feet thick) above the membrane and, placement of a topsoil cover to support vegetation. The Town also installed a storm water diversion/collection system to improve area drainage. The system, installed along the haul road, included: manholes (which were utilized for inlet collection), interconnecting piping and a recharge basin to which all runoff was routed.

Remedy Selection

Following completion of the RI/FS, EPA issued a ROD on September 29, 1989. The ROD selected:

- Covering Cell No. 1 with a low permeability cap while undertaking action consistent with New York State Part 360, sanitary landfill closure requirements.
- No action at the former sludge lagoons with confirmatory sampling.
- Installation of a six foot high chain link fence around the site to restrict access.
- Deed restrictions on future use of the landfill.
- Long term operation and maintenance to provide inspection and repairs to the landfill cap.
- Long term air and water quality monitoring of both the former sludge lagoons and Cell No. 1. Parameters to be monitored included the USEPA's and NYSDEC's Target Compound List (TCL).

Based on the results of the OU2 RI/FS, EPA issued a No Action ROD for OU2 in September 1992.

Status of Implementation

OU1 Remedy Implementation

In August 1990, the Town entered into a Consent Decree with EPA. The Consent Decree required the Town to undertake the design and construction of the OU1 remedy.

Confirmatory Soil/Sludge Sampling Program

The Confirmatory Sludge/Soil Sampling Program was performed during January 1992. The confirmatory soil sludge sampling report was reviewed and confirmed the “no action” alternative for the Sludge Lagoon remediation.

Capping and Closure Cell No. 1

The Town awarded the remedial action (RA) construction contract in April 1993. Work began in June 1993 and was completed in August 1994. Construction completion was determined by EPA in September 1994, and the RA report was approved by EPA in September 1995. The capping of Cell No. 1 included regrading and capping of the side slopes with a geomembrane. Approximately one half acre on the east side slope required capping with a concrete revetment since the slopes are steeper than 33 percent. The structural regrading of Cell No. 1 included demolition of two

concrete drainage manholes and regrading of the area to promote overland flow of storm water to the existing recharge basin

Institutional Controls

Institutional controls have been put in place at the site. EPA has been provided with a copy of restrictive covenants placed on the real property at the site by the Town, filed with the local land record office on June 11, 2003. The restrictions require, “Owner shall not suffer or allow any development or other use of the property that would create an unacceptable high risk to human health or the environment relating directly to the conditions that led to the issuance of the September 1989 ROD, without first obtaining the express written consent of EPA and the concurrence of the New York State Department of Environmental Conservation.” This item completes the institutional controls requirement of the OU1 ROD.

Currently, the residential properties downgradient of the site between the landfill and Fish Cove, as well as other nearby properties, are connected to a public water supply. However, some homes across Fish Cove are currently on private drinking water wells. The ROD for OU2 selected no action and did not discuss ICs. However, previous FYRs have recommended that deed and well restrictions prevent the installation of drinking water wells in impacted areas downgradient of the site. This recommendation has been addressed by the Suffolk County Department of Health Services, Private Water Systems Standards. In addition, NYSDEC Part 602 requires well permits for any private well with a total capacity of over 45 gallons per minute.

IC Summary Table

Media, engineered controls, and areas that do not support UU/UE based on current conditions	ICs Needed	ICs Called for in the Decision Documents	Impacted Parcel(s)	IC Objective	Title of IC Instrument Implemented and Date (or planned)
Soil	Yes	Yes	Landfill Property	Restrict use of property that would create an unacceptable risk to human health or the environment	Declaration of Restrictive Covenants, June 2003
Groundwater	Yes	No	Groundwater Plume	Prevent installation of private drinking water wells in impacted areas downgradient of the site	Suffolk County Department of Health Services, Private Water Systems Standards and NYSDEC Part 602

System Operations/Operation and Maintenance

Until December 2004, groundwater monitoring of the leachate plume had been conducted quarterly. Since 2005, groundwater monitoring has been conducted on a semi-annual basis.

Monitoring of the perimeter methane gas monitoring wells is performed on a monthly basis by the Southampton Fire Marshall. An analysis of the data is included in the Town's semi-annual reports submitted to EPA and NYSDEC. In June 2007, the Town installed a passive gas venting system in the landfill.

The landfill cap is scheduled for a physical inspection on a quarterly basis and/or after significant storm events. Informal visual inspections of the entire landfill site are conducted monthly. These inspections determine when landscape maintenance work is needed, such as clearing vegetation from the swales, removing overgrown planting that may affect the cap and maintaining access to roads and paths. Cell No. 1 is included in an overall vector control system in place for the entire North Sea Landfill property. Controls are in place for ticks, mosquitoes and rodents.

As part of the 1992 Operations and Maintenance Plan for Cell No. 1 a "benthic survey" of Fish Cove was to be performed every three years for a period of nine years. Studies (surface water and sediment toxicity tests) were conducted in 1989, 1992, 1997, 2001 and 2004. Study results showed acceptable survival rates throughout Fish Cove. Therefore, after the 2004 study, surface water samples were determined to no longer be required and benthic investigations have been discontinued for Fish Cove.

Potential site impacts from climate change have been assessed, and the performance of the remedy is currently not at risk due to the expected effects of climate change in the region and near the site.

III. Progress Since the Last Five-Year Review

The last FYR was completed in September 2013. The report included the following protectiveness determinations:

OU #	Protectiveness Determination	Protectiveness Statement
1	Protective	The remedy for OU1 is protective of human health and the environment.
2	Short-term Protective	The remedy at OU2 is protective in the short term. In order for the remedy to be protective in the long term, it is recommended that EPA continue to closely monitor the next two rounds of semi-annual sampling results for increasing inorganic contaminant trends. If increasing trends exist after the next two rounds of sampling events, EPA will determine if additional work to characterize the groundwater is appropriate.

Sitewide	Short-term Protective	The remedy site is protective in the short term. In order for the remedy to be protective in the long term, it is recommended that EPA continue to closely monitor the next two rounds of semi-annual sampling results for increasing inorganic contaminant trends. If increasing trends exist after the next two rounds of sampling events, EPA will determine if additional work to characterize the groundwater is appropriate.
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The following issue/recommendation was identified in the previous FYR:

OU #	Issue	Recommendations	Current Status	Current Implementation Status Description	Completion Date (if applicable)
2	The concentrations of site related contaminants appear to be increasing in the furthest downgradient monitoring well cluster (MW-4) located closest to Fish Cove, specifically manganese, iron and chromium exceeded screening levels during some of the recent sampling events.	It is recommended that EPA continue to closely monitor the next two rounds of semi-annual sampling results for increasing trends. If increasing trends exist after the next two rounds of sampling events, EPA will determine if additional work to characterize the groundwater is appropriate.	Addressed in Next FYR	<i>See Below</i>	N/A

EPA has reviewed the semi-annual data from the last five years and concluded that increasing contaminant trends continue to exist at MW-4. Monitoring well cluster 4 (MW-4A, MW-4B and MW-4C) is located on the north side of Fish Cove Road, adjacent to Fish Cove. Cluster 4 is the furthest downgradient well cluster from Cell No. 1 (approximately 2000 feet downgradient) and is near the discharge zone of the groundwater. Detailed data analysis is presented to support this finding in the *Data Review* section. Based on this analysis, this FYR recommends continued evaluation of groundwater contamination downgradient of Cell No. 1.

IV. Five-Year Review Process

Community Notification, Involvement & Site Interviews

On October 2, 2017, EPA Region 2 posted a notice on its website indicating that it would be reviewing site cleanups and remedies at 31 Superfund sites in New York and New Jersey, including the North Sea Landfill site. The announcement can be found at the following web address:

https://www.epa.gov/sites/production/files/2017-10/documents/five_year_reviews_fy2018_final.pdf.

In addition to this notification, a public notice was made available by posting on the Town's website <http://www.southamptontownny.gov/216/Waste-Management> on 1/23/2018, stating that there was a FYR and inviting the public to submit any comments to the U.S. EPA. The results of the review and the report will be made available at the site information repository located at The Roger's Memorial Library 91 Coopers Farm Road Southampton, NY 11968 (631) 283-0774 and the EPA Region 2 Superfund Records Center 290 Broadway, 18th Floor New York, New York 10007 (212) 637-4308 (call to make an appointment).

Data Review

In order to evaluate the extent of the leachate plume and the quality of groundwater in the aquifer for the FYR, groundwater trends from four well clusters at the North Sea Landfill site were evaluated, with particular attention to redox-sensitive parameters (such as iron, ammonia, nitrate, sulfate) and landfill leachate indicator parameters. The trace metal arsenic was also considered in the review.

A figure of well locations and a table of groundwater sampling results are located in the Figures and Tables at the end of this document. A discussion of groundwater chemical conditions in the monitoring well clusters from upgradient to furthest downgradient is given below. Graphs for specific conductance at certain well locations can also be seen at the end of this document.

Monitoring Well Cluster 1

Monitoring well cluster 1 (MW-1A, MW-1B and MW-1C) is located just upgradient of Cell No. 3 and had been considered to reflect background conditions at the site during previous investigations and reviews. MW-1A is screened 90 – 110 feet below ground surface (fbg), MW-1B is screened at 140 – 160 fbg and MW-1C is screened at 175 – 195 fbg. Geochemical conditions in the two deeper wells (MW-1B and MW-1C) have been generally stable and continue to reflect background water-quality conditions. The review of the data indicates that groundwater in shallow well MW-1A may be influenced by the leachate plume; EPA will continue to review this matter in consultation with NYSDEC and the PRP. Chloride, sulfate, sodium, nitrate, and specific conductivity levels are higher in well MW-1A than the other two wells of the cluster. Ammonia concentrations remain low in all three wells of the cluster.

Monitoring Well Cluster 12

Monitoring well cluster 12 (MW-12A and MW-12B) is located on the north-west side of Cell No. 1, immediately adjacent to the landfill. MW-12A is screened at the top of the water table from 60 - 80 fbg and MW-12B is screened within the contaminant plume from 92-102 fbg. Groundwater quality conditions at monitoring well cluster 12 have been historically affected by the landfill and current conditions generally are improved and stable in both wells.

At well MW-12A, specific conductance, chloride, sulfate, nitrate, and alkalinity levels have been relatively stable. Concentrations of ammonia showed a recent increase to 4.18 mg/L, followed by a decrease to 1.7 mg/L. Arsenic concentrations in well MW-12A have remained below the arsenic MCL (10 ug/L) during this FYR period.

Iron concentrations in well MW-12A historically were very high and have declined, however during the last five years, concentrations in all samples remain above the New York State secondary Groundwater Quality Standards (NYS GWQS, 0.3 mg/L). Manganese levels in well MW-12A have remained well above secondary groundwater standards since 2010, although concentrations have declined since 2012.

At well MW-12B, specific conductance, alkalinity calcium, and sodium levels have fluctuated, but are generally stable. Concentrations of chloride, sulfate, nitrate, and ammonia have recently shown slightly increasing trends. Arsenic concentrations in well MW-12B have remained at or below the arsenic MCL (10 ug/L) during this FYR period.

Iron concentrations in well MW-12B have declined to very low levels and have remained below the secondary NYS GWQS (0.3 mg/L) in all of the sampling rounds since the last FYR. Manganese concentrations have increased during the last five years and are generally above the secondary NYS GWQS (0.3 mg/L).

Monitoring Well Cluster 3

Monitoring well cluster 3 (MW-3A, MW-3B and MW-3C) is located on the west side of Cell No. 1, near Majors Path, and is approximately 600 feet downgradient of the landfill. MW-3A has been considered to be screened above the contaminant plume from 40 - 60 fbg, MW-3B is screened within the contaminant plume from 90 - 110 fbg and MW-3C is screened beneath the contaminant plume from 159- 179 fbg. In summary, groundwater conditions in MW-3C still indicate little to no effect from the plume.

At well MW-3A, concentrations of most chemicals have been fairly stable since the last FYR. Most major ions, including chloride, sulfate, alkalinity, and specific conductance have had minor fluctuations and show no significant trends. Nitrate and ammonia remain well below their secondary NYS GWQS. Iron concentrations in well MW-3A range from low levels to well above the secondary NYS GWQS. Arsenic concentrations remained below the MCL during the past five years. Chromium is showing an increasing trend in 3A and has exhibited concentrations above the MCL (100 ug/L) in the last 5 years.

Trends in groundwater conditions at well MW-3B, which is within the groundwater plume and historically one of the most affected wells, have shown large long-term decreases since 1993 and significant improvement in groundwater quality. Current conditions are generally stable during this FYR period. At well MW-3B, specific conductance, alkalinity, nitrate, sulfate, and ammonia are generally stable, with some minor variability. Chloride concentrations have increased since 2010, but current levels are generally similar to the chloride concentrations observed in 2007. Since 2012, the maximum concentrations of chloride, magnesium, sodium, and calcium were observed in October 2015. The VOCs that were identified in the original ROD were located in

monitoring Well 3B. The concentrations of these chemicals in MW-3B in the 2017 monitoring report were all non-detect.

Two samples from MW-3B during the past five years slightly exceeded the arsenic MCL of 10 ug/L (12.5 ug/l in April 2013; 10.6 ug/L in April 2015). Iron and Manganese concentrations are above the secondary MCLs and RSLs in MW-3B. Iron concentrations ranged from 10.8 to 18.8 mg/L during the past five years, well above the secondary NYS GWQS (0.3 mg/L). Manganese concentration also remained above the secondary NYS GWQS (0.3 mg/L) during the review period, with concentrations ranging from 3 to 5.01 mg/L.

Monitoring Well Cluster 4

Monitoring well cluster 4 (MW-4A, MW-4B and MW-4C) is located on the north side of Fish Cove Road, adjacent to Fish Cove. Cluster 4 is the furthest downgradient well cluster from Cell No. 1 (approximately 2000 feet downgradient) and is near the discharge zone of the groundwater. MW-4A is considered to be screened above the contaminant plume, from 10-30 fbg, intermediate well MW-4B is screened within the contaminant plume, from 58 - 78 fbg and deep well MW-4C has been considered to be screened below the contaminant plume, from 130-150 fbg.

At well MW-4A, concentrations of alkalinity, sulfate, calcium, and magnesium, and specific conductance have been fairly stable during the last five years, with no significant observable trends. Nitrate concentrations have been increasing, with one sample exceeding the NYS Groundwater Standard of 10 mg/L. Ammonia concentrations have remained very low (<0.2 mg/L) during the five-year period.

Chloride and sodium concentrations at well MW-4A have had increasing trends. With the exception of one sample in October 2012, iron concentrations have been below the secondary NYS GWQS (0.3 mg/L) during the last five years. The changes in specific conductivity, nitrate, chloride, and sodium at MW-4A could be related to a more localized source than the landfill plume. Over the FYR period, the concentrations of manganese are above the secondary MCL, but below the RSL, however they are generally similar or less than the concentrations observed during the OU2 RI.

Water-quality conditions in MW-4B, screened within the downgradient plume have been fairly stable to improving for most constituents during the last five years. Alkalinity, chloride, sulfate, and specific conductance levels are generally stable during the FYR period, following the period of long-term decreases after the remedy was implemented. Iron and manganese concentrations have been more variable during the last five years, but are generally elevated above their secondary NYS GWQS (0.3 mg/L). Ammonia concentrations have exceeded the secondary NYS GWQS (2 mg/L) several times during the past five years, however, nitrate concentrations remain very low. Iron is exhibiting an increasing trend in MW-4B, with concentrations above the secondary MCL, but below the RSL. Concentrations of manganese at MW-4B are above both secondary MCLs and RSLs, but remain at levels similar to or less than those at the time of the OU2 RI.

Concentrations of several major ions at well MW-4C, including chloride, sodium, calcium, magnesium, and alkalinity, have had significant or minor increases during the last five years,

continuing their long-term increasing trends. The rise in specific conductance, first noticed in the 2008 FYR and related to the increases in concentrations of these major ions, has continued during the last five years, but the immediate cause of the increases is not known. Arsenic, ammonia, and nitrate have remained very low and are well below their secondary NYS GWQSs. Iron concentrations are showing an increasing trend in MW-4C, with concentrations above the secondary MCL, but below the RSL. Concentrations of manganese in MW-4C have increased since the ROD and remain above the MCL, but below the RSL.

Summary

Groundwater in the furthest downgradient MW-4 cluster, specifically the wells screened within and below the contaminated plume, continues to show demonstrate impacts from manganese, iron and several major ions. Some of the trends have been increasing. The cause for the recent increases remains unknown but possible explanations include impacts from nearby residential septic systems and the recent expansion of the recharge basin located upgradient of these wells. It is recommended that residential wells on the other side of Fish Cove be sampled to ensure that the plume is not impacting these wells and monitoring, including trend analysis, will continue at the MW-4 well cluster to determine if additional investigation may be necessary.

Landfill Gas Monitoring

Monitoring of the perimeter methane monitoring wells is performed on a monthly basis by the Southampton Fire Marshal. No detections were measured at the gas monitoring wells for any of the sampling events performed during the FYR period. Therefore, there is no evidence of offsite migration. The Town has reported that passive venting is being performed to control landfill gas.

Site Inspection

A site inspection was conducted on October 19, 2017. The following parties were in attendance:

Ashley Similo, EPA, Region 2 RPM
Julie McPherson, EPA , Region 2 Risk Assessor
Christine Fetten, Town of Southampton
Derek Ersbak, P.W. Grosser Consulting, Inc.

The purpose of the site inspection was to assess the protectiveness of the remedy. The landfill cap and surrounding fence were found to be in good condition. No other issues were observed that could impact the current and/or future protectiveness of the remedy.

V. Technical Assessment

Question A: Is the remedy functioning as intended by the decision documents?

The 1989 ROD (OU1) addresses source control of Cell No. 1 and the former sludge lagoons and on-property/site groundwater. The ROD identified six components of the remedy: 1) Covering Cell No. 1 with a low permeability cap while undertaking action consistent with NYCRR Part 360,

sanitary landfill closure requirements; 2) No further action at the former sludge lagoons with confirmatory sampling from each of the 14 identified sludge lagoons; 3) Installation of a six foot high chain link fence around the site to restrict access; 4) Deed restrictions on future use of the landfill; 5) Long- term operation and maintenance to provide inspection and repairs to the landfill cap; and 6) Long- term air and water quality monitoring of both the former sludge lagoons and Cell No. 1. Parameters to be monitored included TCL components.

The 1992 ROD (OU2) addresses off-property/site groundwater and Fish Cove. The remedy selected is no further action for OU2 and is based upon the remedies selected and implemented as part of OU1 and the risks identified which were within the risk range as per the 1992 OU2 Risk assessment.

All of the components of the remedy have been implemented. Implementation of deed restrictions on land use, installation of a fence around the landfill and well restrictions downgradient between the site and Fish Cove from the landfill has interrupted the exposure to any site related contamination. All residents downgradient of the site between the site and Fish Cove are connected to the public water supply. Groundwater use is not expected to change in this area within the next five years, the period of time considered in this review. As observed during the site visit, there are no breaches in the landfill cap.

In regard to the former sludge lagoons, the ROD identified no further action for the lagoons, but did require confirmatory sampling within the ten sludge lagoons that had not previously been sampled. The confirmatory soil sludge sampling report was reviewed and the information provided states that confirmatory samples were collected for 10 lagoons; however, the samples were not analyzed since visual observation of the borings did not identify any remaining sludge. This analysis is considered sufficient due the fact that pre-CERCLA activities in these areas included excavation of sludge to a depth of 10 feet, thus eliminating exposure (via ingestion of and direct contact with contaminants) to human and ecological receptors.

Groundwater in the furthest downgradient MW-4 cluster, specifically the wells screened within and below the contaminated plume, continue to demonstrate impacts from manganese, iron and several major ions. Some of the trends have been increasing. The cause for the recent increases remains unknown but possible explanations include impacts from nearby residential septic systems and the recent expansion of the recharge basin located upgradient of these wells. It is recommended that residential wells on the other side of Fish Cove be sampled to ensure that the plume is not impacting these wells and monitoring, including trend analysis, will continue at the MW-4 well cluster to determine if additional investigation may be necessary.

Question B: Are the exposure assumptions, toxicity data, cleanup levels and remedial action objectives used at the time of the remedy still valid?

The landfill cap and previous activities to provide potable water supplies to residents have interrupted the exposure pathways to both current/future on-site workers and residents in the area between the site and Fish Cove. This assessment addresses the contaminants in Cell No. 1 only, since the remaining cells are being addressed by NYSDEC.

The land use considerations, exposure assumptions and potential exposure pathways considered in the baseline human health risk assessment for this pathway are still valid.

Although other specific parameters may have been changed since the time the risk assessment was completed, the process that was used remains valid and is not expected to affect the remedy.

Several site-related contaminants of concern continue to exceed their respective MCLs and/or RSLs in wells downgradient from Cell #1, however, groundwater use is not expected to change in the next five years. Currently, the residential properties within the potential down-gradient plume area between the landfill and Fish Cove are connected to the public water supply. The public water supply meets the appropriate state and federal drinking water standards. Deed and well restrictions to prevent the installation of drinking water wells in this area have been carried out in part by compliance with Suffolk County Department of Health Services, Private Water Systems Standards. Additionally, it is recommended that the private wells located on the other side of Fish Cove be sampled to ensure site-related contaminants have not migrated under the Fish Cove.

Soil vapor intrusion pathway was assessed as part of the 2003 and 2008 FYR. It was determined that this pathway is not expected to be of concern at the site because VOC concentrations were low.

The land use of the landfill and surrounding property has not changed since the last FYR. The town of Southampton built a recreational center on the property adjacent to the landfill. In addition, a recycling facility is located on a portion of the property. The Town has built a fence separating the landfill and recycling facility from the recreational facility; thereby preventing potential trespassing onto the landfill. In addition, the landfill has been capped with a 20 mil PVC membrane to minimize infiltration into the mound, covered with a silty-sand layer two feet thick on top of the geomembrane and covered with a layer of top soil (one foot thick) to prevent soil erosion and maintain vegetative growth, therefore preventing direct exposure (i.e., ingestion or dermal contact of soil) to potential receptors.

Although an endangerment assessment was conducted in 1989 to support the ROD, it could not estimate contaminant concentrations in terrestrial or plant species with the available data, and additional biological studies were conducted in 2002 and 2004 to better evaluate impacts to the aquatic community. The studies did not identify impacts to the aquatic organisms in Fish Cove. Therefore, we can conclude that the remedy adequately protects ecological resources because 1) the contaminated sediments from the lagoon were excavated and disposed of off-site and the area was capped; 2) the landfill was closed and capped according to NYCRR Part 360; and 3) previously collected surface water and sediment toxicity tests indicated that the survival of aquatic organisms is not being impacted by the site contaminants.

Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

During the 2013 FYR, the EPA was informed of new residential drinking water wells located on the other side of Fish Cove. The concentrations of site related contaminants appear to be increasing in the furthest downgradient monitoring well cluster (MW-4) located closest to Fish Cove. It is

recommended that EPA continue to closely monitor the semi-annual sampling results for increasing trends to determine if additional work to characterize the groundwater is appropriate. Additionally, it is recommended that the private wells located on the other side of Fish Cove be sampled.

VI. Issues/Recommendations and Follow-Up Actions

Issues/Recommendations				
OU(s) without Issues/Recommendations Identified in the Five-Year Review:				
OU1				
OU(s): 2	Issue Category: Monitoring			
	Issue: The concentrations of site related contaminants appear to be increasing in the furthest downgradient monitoring well cluster (MW-4) located closest to Fish Cove.			
	Recommendation: It is recommended that EPA continue to closely monitor the semi-annual sampling results for increasing trends. If concentrations continue to increase to levels that pose an unacceptable risk to human health and environmental receptors, additional investigation to characterize the groundwater and evaluate a cause for the increase and potential ways to mitigate would be appropriate.			
Affect Current Protectiveness	Affect Future Protectiveness	Implementing Party	Oversight Party	Milestone Date
No	Yes	EPA	EPA	12/2022
OU(s): 2	Issue Category: Remedy Performance			
	Issue: Private wells are in use across the Fish Cove downgradient of MW-4 where the concentrations of site-related contaminants appear to be increasing.			
	Recommendation: It is recommended that the private wells located on the other side of Fish Cove be sampled to ensure the residents are not at risk and migration under the Fish Cove has not occurred.			
Affect Current Protectiveness	Affect Future Protectiveness	Implementing Party	Oversight Party	Milestone Date
No	Yes	PRP	EPA	12/2022

Other Findings

In addition, the following are recommendations that were identified during the FYR and may improve the quality of data and management of O&M but do not affect current and/or future protectiveness:

- Semi-annual monitoring reports have stated that only 5% data validation was conducted on samples collected at the site. EPA generally recommends a higher percentage of samples be validated for quality assurance purposes. Therefore, it is recommended that this issue be discussed further with the PRP to ensure data validation on a higher percentage of samples collected in the future for the site.

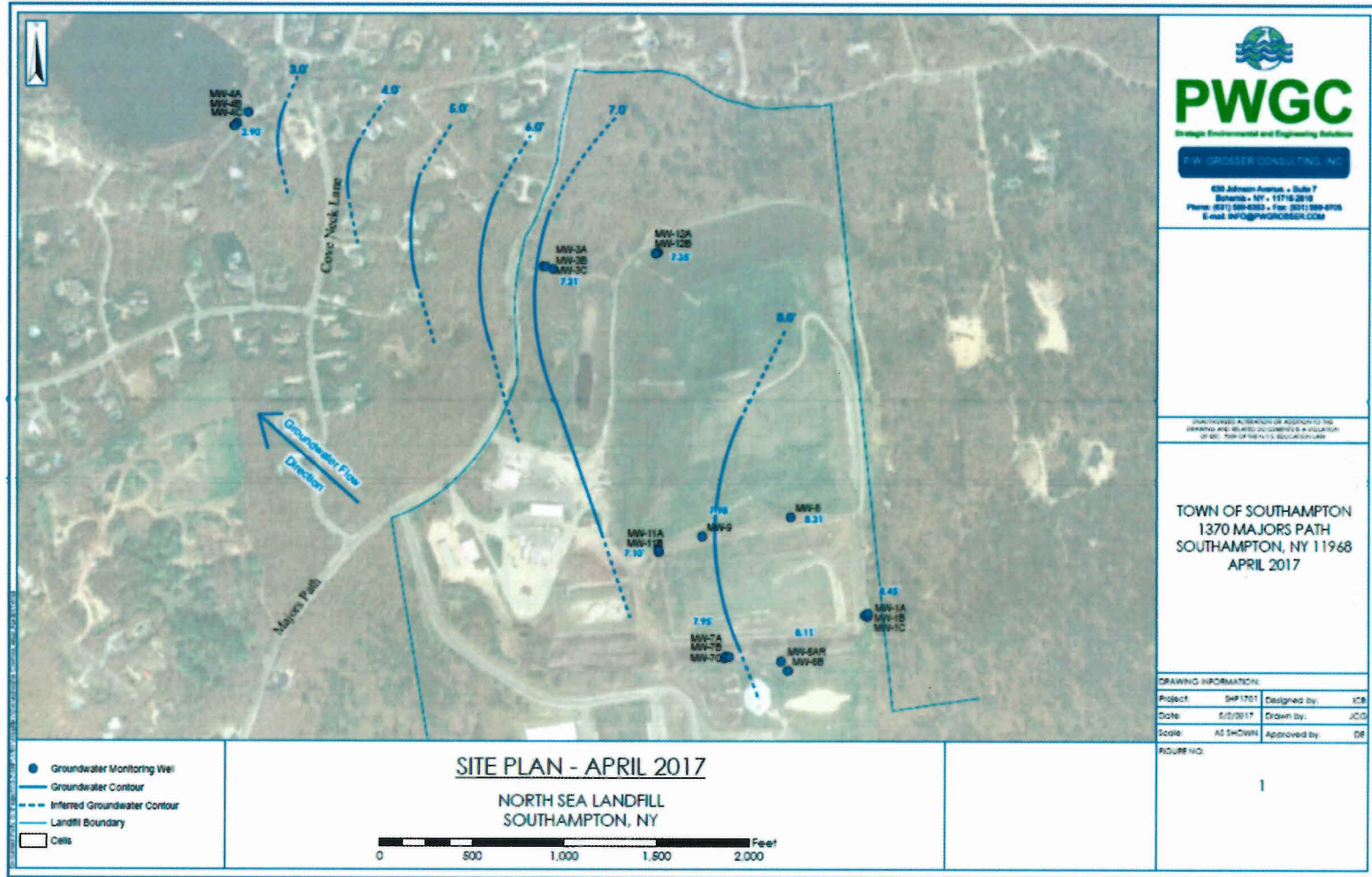
VII. Protectiveness Statement

Protectiveness Statement(s)		
<i>Operable Unit:</i> 1	<i>Protectiveness Determination:</i> Protective	<i>Planned Addendum Completion Date:</i> Click here to enter a date
<i>Protectiveness Statement:</i> The remedy for OU1 is protective of human health and the environment.		
<i>Operable Unit:</i> 2	<i>Protectiveness Determination:</i> Short-term Protective	<i>Addendum Due Date (if applicable):</i> Click here to enter date.
<i>Protectiveness Statement:</i> The remedy at OU2 is protective in the short term. To be protective in the long term, the EPA will continue to monitor the semi-annual sampling results for increasing trends. If concentrations continue to increase to levels that pose an unacceptable risk to human health and environmental receptors, additional investigations to characterize the groundwater and to evaluate a cause for the increase and potential ways to mitigate would be appropriate. Additionally, it is recommended that that the private wells located on the other side of Fish Cove be sampled to ensure that site contaminants have not reached these wells.		

Sitewide Protectiveness Statement	
<i>Protectiveness Determination:</i> Short-term Protective	<i>Planned Addendum Completion Date:</i> Click here to enter a date
<i>Protectiveness Statement:</i> The remedy at OU2 is protective in the short term. To be protective in the long term, the EPA will continue to monitor the semi-annual sampling results for increasing trends. If concentrations continue to increase to levels that pose an unacceptable risk to human health and environmental receptors, additional investigations to characterize the groundwater and to evaluate a cause for the increase and potential ways to mitigate would be appropriate. Additionally, it is recommended that that the private wells located on the other side of Fish Cove be sampled to ensure that site contaminants have not reached these wells.	

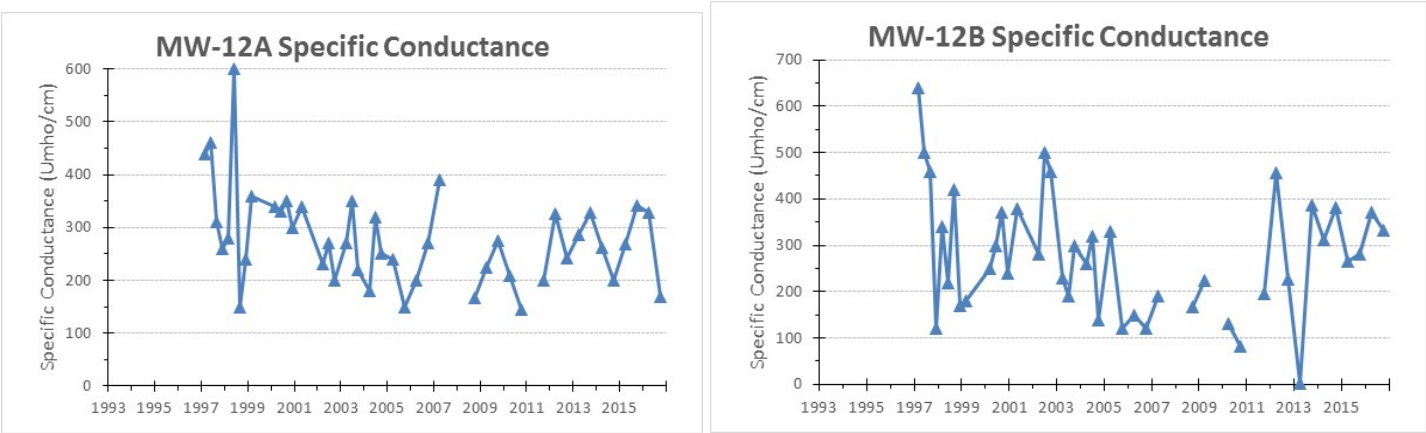
VIII. Next Review

The next FYR for the North Sea Landfill site should be completed within five years of the signature date of this FYR.

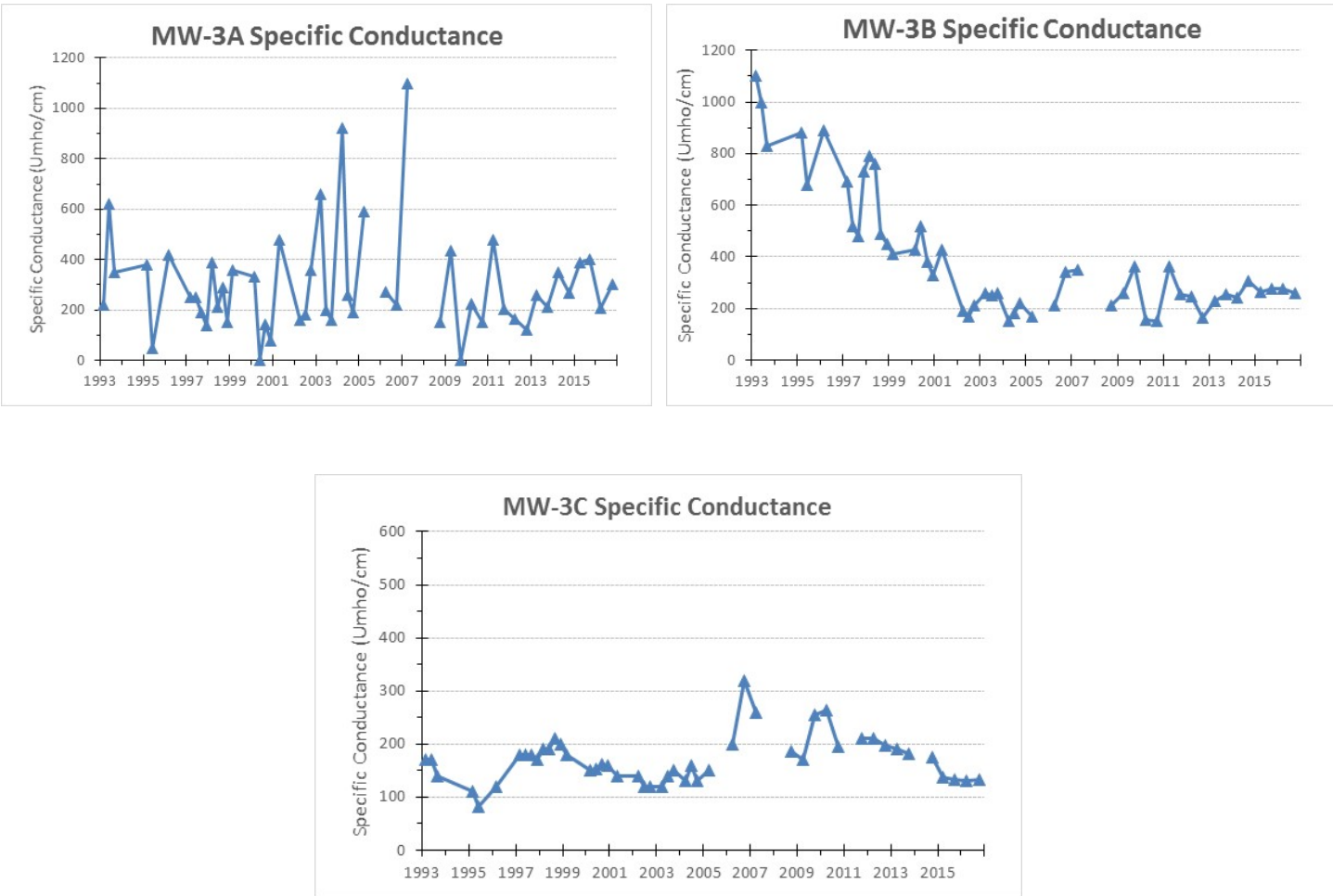


Specific Conductance Graphs

MW-12



MW-3



MW-4

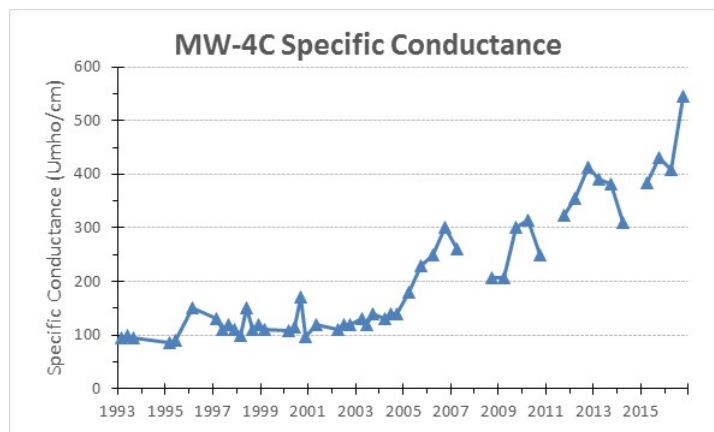
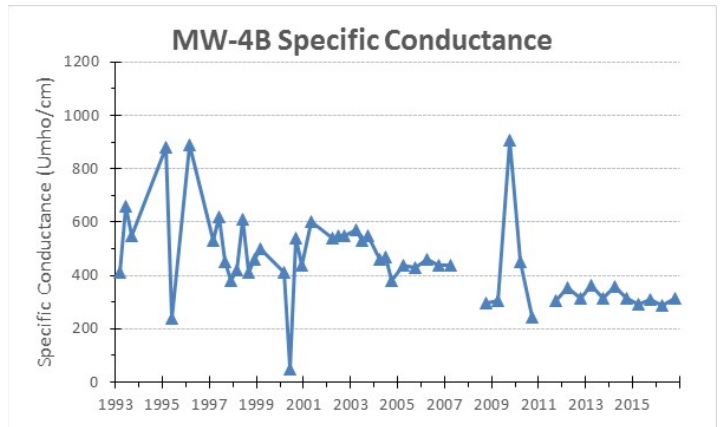
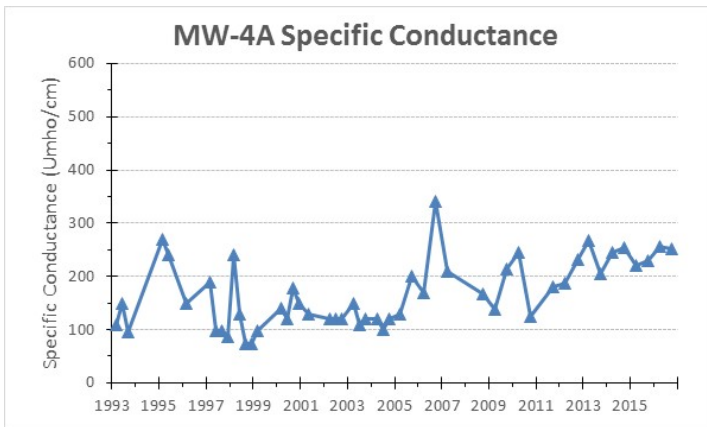


Table 1 : Chronology of Site Events	
Event	Date
Site placed on National Priorities List	1986
Administrative Consent Order No. II issued by EPA to Town of Southampton to conduct RI/FS	March 1987
Operable Unit I Record of Decision signed by EPA	September 1989
Consent Decree CV-90-3309 to perform the OU I ROD entered in the Eastern District Court	February 1991
Operable Unit II ROD signed by EPA	September 1992
Notice of Contract Award issued to Tully Construction by the Town of Southampton	April 1993
Mobilization and start of construction activities	May 1993
Pre-final inspection conducted by EPA, NYSDEC and all contractors	January 1994
Final Operation and Maintenance Plan submitted by Dvirka and Bartilucci	September 1995
Final As-Built Drawings submitted by Dvirka and Bartilucci	June 1995
Benthic Survey Investigation performed	April 1997
First five-year review signed by EPA	September 1998
Groundwater monitoring sampling performed	December 1998 to Present
Quarterly groundwater monitoring report submitted by PWGC (Town contractor)	March 1999 to December 2004
Monthly gas monitoring performed	January 2002 to present

Second five-year review report Signed by EPA	September 2003
Site deleted from the National Priorities List	December 2005
Semi-annual monitoring report submitted by PWGC	February 2005 to Present
Monitoring well abandonments & replacement at the site	December 2006 to January 2007
Implementation of passive venting system	June 2007
Third five-year review signed by EPA	September 2008
Forth five-year review signed by EPA	September 2013

Table 2 : Documents Reviewed		
Author	Date	Title/Description
H2M Group	July 1989	Public Health Evaluation for the North Sea Landfill
US EPA	September 1989 and September 1992	Record of Decision for Operation Unit One and Two, North Sea Landfill
US EPA	February 2001	Consent Decree for OU I
Dvirka and Bartilucci Consulting Engineers	September 1995	Operation and Maintenance Manual for the Post Closure Care of the North Sea Landfill, Cell No. 1 Cap
US EPA	September 1998	Five-Year Review Report for the North Sea Landfill
US EPA	September 2003	Second Five-Year Review Report for the North Sea Landfill
US EPA	September 2008	Third Five-Year Review Report for the North Sea Landfill
P.W. Grosser Consulting, Inc	March 2009-February 2018	Semi Annual Post-Closure Monitoring Report, North Sea Landfill, Southampton , NY
P.W. Grosser Consulting, Inc	March 2009 – February 2018	Annual Post-Closure Monitoring Report, North Sea Landfill, Southampton , NY
US EPA	September 2013	Forth Five-Year Review Report for the North Sea Landfill

Table 3 : Groundwater Monitoring Tables

TOWN OF SOUTHAMPTON
NORTH SEA LANDFILL
TABLE 1
INORGANIC GROUNDWATER QUALITY RESULTS
OCTOBER 2017

ANALYTICAL PARAMETERS	UNITS	GW STND*	MW-1A											
			April 2013	Oct. 2013	April 2014	Oct. 2014	April 2015	Oct. 2015	April 2016	Oct. 2016	April 2017	October 2017		
Aluminum as Al	mg/L	NA	0.0129 B	PNA	0.00336 B	PNA	0.0059 U	PNA	0.2 U	PNA	0.0576 J	PNA		
Antimony as Sb	mg/L	0.003 #	0.0012 U	PNA	0.0019 U	PNA	0.003 U	PNA	0.06 U	PNA	0.0600 U	PNA		
Arsenic as As	mg/L	0.025	0.0028 U	PNA	0.0011 U	PNA	0.0033 U	PNA	0.01 U	PNA	0.0100 U	PNA		
Barium	mg/L	1	0.0058 B	PNA	0.0202 B	PNA	0.0768 B	PNA	0.0246 J	PNA	0.0239 J	PNA		
Beryllium as Be	mg/L	0.003	0.0001 U	PNA	0.00014 U	PNA	0.0001 U	PNA	0.005 U	PNA	0.0050 U	PNA		
Boron as B	mg/L	1.0	0.0248 B	PNA	0.027 B	PNA	0.074 B	PNA	0.0291 J	PNA	0.0178 J	PNA		
Cadmium as Cd	mg/L	0.005	0.0001 U	0.00015 U	0.00011 U	0.0003 U	0.0002 U	0.0001 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U		
Calcium as Ca	mg/L	NA	14.1	59.9	18.2	63.5	51.8	76.6	18.2	60.5	8.440	55.600		
Chromium as Cr	mg/L	0.05	0.0016 B	PNA	0.0031 B	PNA	0.0011 U	PNA	0.01 U	PNA	0.0082 J	PNA		
Cobalt	mg/L	NA	0.0004 U	PNA	0.00019 U	PNA	0.0006 U	PNA	0.05 U	PNA	0.0021 J	PNA		
Copper as Cu	mg/L	0.2	0.0004 U	PNA	0.00076 U	PNA	0.0027 B	PNA	0.0019 J	PNA	0.0048 J	PNA		
Cyanide as CN	mg/L	0.20	0.01 U	PNA	0.01 U	PNA	0.01 U	PNA	0.01 U	PNA	0.0100 U	PNA		
Iron as Fe	mg/L	0.3	0.0124 B	0.228	0.0297 B	0.163	0.0371 B	0.0928 B	0.0645 J	0.399	0.527	0.0625		
Lead as Pb	mg/L	0.025	0.0045	0.0057	0.0052	0.0013 U	0.0023 B	0.0027 J	0.005 U	0.0015 J	0.005 U	0.005 U		
Magnesium	mg/L	35 #	6.28	26	7.54	25.4	25.4	32.9	7.73	23.8	3.280	22.100		
Manganese as Mn	mg/L	0.3	0.0023 B	0.0456	0.0099 B	0.0218	0.0075 B	0.008 B	0.055	0.258	0.290	0.028		
Mercury as Hg	mg/L	0.0007	0.0001 U	PNA	0.0001 U	PNA	0.0001 U	PNA	0.0002 U	PNA	0.00020 U	PNA		
Nickel as Ni	mg/L	0.1	0.0012 B	PNA	0.0012 B	PNA	0.0009 B	PNA	0.04 U	PNA	0.0042 J	PNA		
Potassium	mg/L	NA	4.68 B	13.7	5.17	14.1	6.62	21.7	4.79 J	14.8	2.930 J	12.900		
Selenium as Se	mg/L	0.01	0.0025 B	PNA	0.0011 U	PNA	0.0038 U	PNA	0.01 U	PNA	0.0100 U	PNA		
Silver as Ag	mg/L	0.05	0.0002 U	PNA	0.00043 U	PNA	0.0022 U	PNA	0.01 U	PNA	0.0100 U	PNA		
Sodium as Na	mg/L	20	7.87	16.9	11.2	14.7	20.4	17.4	10.7	15.2	8.470	13.400		
Thallium as Tl	mg/L	0.0005 #	0.0019 U	PNA	0.0013 U	PNA	0.0038 U	PNA	0.01 U	PNA	0.0100 U	PNA		
Vanadium	mg/L	NA	0.0003 U	PNA	0.00039 U	PNA	0.0009 B	PNA	0.05 U	PNA	0.0500 U	PNA		
Zinc as Zn	mg/L	2 #	0.0084 B	PNA	0.0162 B	PNA	0.0121 B	PNA	0.02 U	PNA	0.0200 U	PNA		
Alkalinity tot CaCo3	mg/L	NA	31	125 D	27.1	119 D	60.4	131 H	34.6	115	23.2	132		
Chloride as Cl	mg/L	250.0	13.1	27.7	21.5	27.4	46.9 D	30.6	21.9	25	14.0	22.6		
Sulfate as SO4	mg/L	250.0	25.7	123 D	41.3	119 D	139 D	193 D	35.4	100	8.9	85.8		
Bromide	mg/L	2 #	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.50 U	0.50 U		
BOD5	mg/L	NA	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1.0 U	2.0 U		
COD	mg/L	NA	10 U	10 U	18.4	10 U	17.4	10 U	10 U	10 U	10.0 U	10.0 U		
Color	units	NA	5 U	PNA	5 U	PNA	10	PNA	5 U	PNA	20.0	PNA		
Chromium hex as Cr	mg/L	0.05	0.02 U	PNA	0.02 U	PNA	0.02 U	PNA	0.02 U	PNA	0.020 U	PNA		
Hardness as CaCO3	mg/L	NA	62	350 D	76 D	270 D	500 D	260 D	76	212	40.0	200.0		
Ammonia as N	mg/L	2.0	0.1 U	0.1 U	0.11	0.1 U	0.18 U	0.1	0.33	0.1 U	0.040 U	0.100 U		
Nitrite as N	mg/L	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.050 U	0.050 U		
Nitrate as N	mg/L	10	2.09 D	6.65 D	3.09 D	6.15 D	6.95 D	8.33 U	2.82 D	6.9	1.3	6.4		
Phenols as Phenol	mg/L	0.001	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.0062	0.0127	0.005 U	0.0564	0.005 U		
Tot Dissolved Solids	mg/L	NA	98	427	107	369	377	457	125	328	73.0 J	305.0		
Tot. Kjeldahl Nitrogen	mg/L	NA	0.1 U	0.11	0.23	0.1 U	0.94	0.1 U	0.1 U	0.1 U	0.16	0.38		
Tot Organic Carbon	mg/L	NA	9.4	6.2	1.7	32.8	5.3	5.21	1.6	3.40	0.82 J	3.7 B		
Turbidity	NTU	NA	0	8.9	0	0	0	1.04	10.9	30	0.0	2.8		
Temperature	deg.C	NA	12.57	13.35	11.08	12.57	11.58	12.51	11.79	16.07	12.00	12.26		
pH	units	6.5-8.5	7.4	6.21	5.77	6.14	6.08	6.24	5.93	6.16	5.90	6.09		
Spec. Cond	umho/cm	NA	212	615	253	735	655	741	231	554	138	568		

NOTES:

* = NYSDDEC, Class GA Groundwater Standards

= NYCRR Part 703

= Guidance value, no standard exists.

NA = Not available.

PNA = parameter not analyzed for.

B - This flag is used when the analyte is found in the associated blank as in the sample.

D - Dilution

E - This flag identified compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis.

F - This flag indicates the results of a filtered metal analysis.

H - Received / analyzed outside of analytical holding time

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

UI - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are unreliable/unusable. The presence or absence of the analyte cannot be verified.

1.0 = Compound exceeded standard.

1.0 = Compound at standard.

NM = Not Monitored

TOWN OF SOUTHAMPTON
NORTH SEA LANDFILL
TABLE 1
INORGANIC GROUNDWATER QUALITY RESULTS
OCTOBER 2017

ANALYTICAL PARAMETERS	UNITS	GW STND*	MW-1B									
			April 2013	Oct. 2013	April 2014	Oct. 2014	April 2015	Oct. 2015	April 2016	Oct. 2016	April 2017	October 2017
Aluminum as Al	mg/L	NA	0.0438 B	PNA	0.0283 B	PNA	0.0059 U	PNA	0.0906 J	PNA	0.200 U	PNA
Antimony as Sb	mg/L	0.003 #	0.0012 U	PNA	0.0019 U	PNA	0.003 U	PNA	0.06 U	PNA	0.0600 U	PNA
Arsenic as As	mg/L	0.025	0.0028 U	PNA	0.0011 U	PNA	0.0033 U	PNA	0.01 U	PNA	0.0100 U	PNA
Barium	mg/L	1	0.0098 B	PNA	0.0103 B	PNA	0.0102 B	PNA	0.2 U	PNA	0.0097 J	PNA
Beryllium as Be	mg/L	0.003	0.0001 U	PNA	0.00014 U	PNA	0.0001 U	PNA	0.0002 U	PNA	0.0050 U	PNA
Boron as B	mg/L	1.0	0.0129 B	PNA	0.0072 B	PNA	0.0081 B	PNA	0.0089 J	PNA	0.010 J	PNA
Cadmium as Cd	mg/L	0.005	0.0001 U	0.00015 U	0.00011 U	0.0003 U	0.0002 U	0.0001 U	0.0002 J	0.0025 U	0.0025 U	0.0025 U
Calcium as Ca	mg/L	NA	4.31 B	4.66 B	4.07 B	4.37 B	3.77 B	4.45 B	3.93	4.62	3.970	4.460
Chromium as Cr	mg/L	0.05	0.0131	PNA	0.0053 B	PNA	0.0038 B	PNA	0.0078 J	PNA	0.0029 J	PNA
Cobalt	mg/L	NA	0.0004 U	PNA	0.00019 U	PNA	0.0006 U	PNA	0.05 U	PNA	0.0500 U	PNA
Copper as Cu	mg/L	0.2	0.0053 B	PNA	0.001 B	PNA	0.0012 B	PNA	0.0035 J	PNA	0.0026 J	PNA
Cyanide as CN	mg/L	0.20	0.01 U	PNA	0.01 U	PNA	0.01 U	PNA	0.01 U	PNA	0.0100 U	PNA
Iron as Fe	mg/L	0.3	0.177	0.0751 B	0.0261 B	0.0658 B	0.0223 E	0.0268 U	0.0488 J	0.1 U	0.100 U	0.020 U
Lead as Pb	mg/L	0.025	0.0052	0.0071	0.0051	0.0018 B	0.0022 U	0.0034	0.0023 J	0.005 U	0.0050 U	0.0050 U
Magnesium	mg/L	35 #	1.95 B	2.06 B	1.74 B	1.83 B	1.6 B	1.99 B	1.68	2.04	1.830	1.940
Manganese as Mn	mg/L	0.3	0.0041 B	0.0049 B	0.0049 B	0.0029 B	0.0024 B	0.0016 BE	0.015 U	0.01 U	0.0013 J	0.01 U
Mercury as Hg	mg/L	0.0007	0.0001 U	PNA	0.0001 U	PNA	0.0001 U	PNA	0.0002 U	PNA	0.00020 U	PNA
Nickel as Ni	mg/L	0.1	0.0095 B	PNA	0.0117 B	PNA	0.0102 B	PNA	0.0147 J	PNA	0.010 J	PNA
Potassium	mg/L	NA	0.613 B	1.64 B	0.954 B	2.19 B	1.89 B	0.898 B	0.615 J	5 U	5.000 U	5.000 U
Selenium as Se	mg/L	0.01	0.0023 U	PNA	0.0011 U	PNA	0.0038 U	PNA	0.01 U	PNA	0.0100 U	PNA
Silver as Ag	mg/L	0.05	0.0002 U	PNA	0.00043 U	PNA	0.0022 U	PNA	0.01 U	PNA	0.0100 U	PNA
Sodium as Na	mg/L	20	6.28	8.31	7.5	7.71	8.54	9.32	7.78	8.53	7.860	8.440
Thallium as Tl	mg/L	0.0005 #	0.0019 U	PNA	0.0013 U	PNA	0.0038 U	PNA	0.01 U	PNA	0.0100 U	PNA
Vanadium	mg/L	NA	0.0003 B	PNA	0.00039 U	PNA	0.0007 U	PNA	0.05 U	PNA	0.0500 U	PNA
Zinc as Zn	mg/L	2 #	0.013 B	PNA	0.0232	PNA	0.0047 B	PNA	0.02 U	PNA	0.0200 U	PNA
Alkalinity tot CaCO3	mg/L	NA	11	12.2	10.4	12.1	971 D	12.5 H	10.4	12.5	10.6	10.8
Chloride as Cl	mg/L	250.0	8.72	10.6	9.99	10.5	11.4	9.54	9.68	12.8	8.8	11.2
Sulfate as SO4	mg/L	250.0	7.62	8.67	7.21	7.53	8.03	8.2	7.25	6.9	7.5	6.3
Bromide	mg/L	2 #	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.50 U	0.50 U
BOD5	mg/L	NA	2 UJ	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1.0 J	2.0 U
COD	mg/L	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10.0 U	10.0 U
Color	units	NA	5 U	PNA	5 U	PNA	10	PNA	5 U	PNA	5.0	PNA
Chromium hex as Cr	mg/L	0.05	0.02 U	PNA	0.02 U	PNA	0.02 U	PNA	0.02 U	PNA	0.020 U	PNA
Hardness as CaCO3	mg/L	NA	16	20	18	20 D	20 D	22 D	19	17	18.0	18.7
Ammonia as N	mg/L	2.0	0.1 U	0.1 U	0.12 U	0.1 U	0.1 U	0.1 U	0.17	0.2	0.088 J	0.1 U
Nitrite as N	mg/L	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.050 U	0.500 U
Nitrate as N	mg/L	10	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.05 U	0.024 J	0.05 U
Phenols as Phenol	mg/L	0.001	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.0079	0.005 U	0.0094	0.0783	0.005 U
Tot Dissolved Solids	mg/L	NA	41	62	48	39	54	52	38	67	42.0	38.0
Tot. Kjeldahl Nitrogen	mg/L	NA	0.1 U	0.27	0.37	0.1 U	0.18	0.1 U	0.1 U	0.36	0.10 U	0.10 U
Tot Organic Carbon	mg/L	NA	3.4	1.7	1 U	3.8	1 U	0.5 U	1 U	1.00 U	0.18 J	1.00 U
Turbidity	NTU	NA	1.24	5	1.1	0	0	0.32	3.22	0.0	0.0	0.7
Temperature	deg.C	NA	12.39	12.42	11.21	11.59	10.69	11.51	11.27	12.89	12.50	11.38
pH	units	6.5-8.5	8.12	6.63	6.46	6.26	6.05	5.95	6.56	6.43	6.18	6.54
Spec. Cond	umho/cm	NA	1	92	70	92	70	86	80	91	80	96

NOTES:

* = NYSDDEC, Class GA Groundwater Standards

6 NYCRR Part 703

= Guidance value, no standard exists.

NA = Not available.

PNA = parameter not analyzed for.

B - This flag is used when the analyte is found in the associated blank as in the sample.

D - Dilution

E - This flag identified compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis.

F - This flag indicates the results of a filtered metal analysis.

H - Received / analyzed outside of analytical holding time

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are unreliable/unusable. The presence or absence of the analyte cannot be verified.

3.0 = Compound exceeded standard.

1.0 = Compound at standard.

NM = Not Monitored

TOWN OF SOUTHAMPTON
NORTH SEA LANDFILL
TABLE 1
INORGANIC GROUNDWATER QUALITY RESULTS
OCTOBER 2017

ANALYTICAL PARAMETERS	UNITS	GW STND*	MW-1C											
			April 2013	Oct. 2013	April 2014	Oct. 2014	April 2015	Oct. 2015	April 2016	Oct. 2016	April 2017	October 2017		
Aluminum as Al	mg/L	NA	0.0173 B	PNA	0.0358 B	PNA	0.0059 U	PNA	0.2 U	PNA	0.200 U	PNA		
Antimony as Sb	mg/L	0.003 #	0.0012 U	PNA	0.0019 U	PNA	0.003 U	PNA	0.06 U	PNA	0.0600 U	PNA		
Arsenic as As	mg/L	0.025	0.0028 U	PNA	0.0011 U	PNA	0.0033 U	PNA	0.01 U	PNA	0.0100 U	PNA		
Barium	mg/L	1	0.009 B	PNA	0.01 B	PNA	0.0112 B	PNA	0.2 U	PNA	0.0092 J	PNA		
Beryllium as Be	mg/L	0.003	0.0001 U	PNA	0.00014 U	PNA	0.0001 U	PNA	0.005 U	PNA	0.0050 U	PNA		
Boron as B	mg/L	1.0	0.0128 B	PNA	0.0072 B	PNA	0.0081 B	PNA	0.0097 J	PNA	0.0115 J	PNA		
Cadmium as Cd	mg/L	0.005	0.0001 U	0.00015 U	0.00011 U	0.0003 U	0.0002 U	0.0001 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U		
Calcium as Ca	mg/L	NA	4.49 B	4.46 B	4.61 B	5.15	4.87 B	4.7 B	4.45	4.62	4.440	4.140		
Chromium as Cr	mg/L	0.05	0.0037 B	PNA	0.0049 B	PNA	0.0012 B	PNA	0.01 U	PNA	0.0041 J	PNA		
Cobalt	mg/L	NA	0.0004 U	PNA	0.00019 U	PNA	0.0006 U	PNA	0.05 U	PNA	0.0500 U	PNA		
Copper as Cu	mg/L	0.2	0.0013 B	PNA	0.0008 B	PNA	0.0005 B	PNA	0.0022 J	PNA	0.0250 U	PNA		
Cyanide as CN	mg/L	0.20	0.01 U	PNA	0.01 U	PNA	0.01 U	PNA	0.01 U	PNA	0.0100 U	PNA		
Iron as Fe	mg/L	0.3	0.0684 B	0.0619 U	0.0492 B	0.998	0.0086 UE	0.0268 U	0.1 U	0.1 U	0.100 U	0.020 U		
Lead as Pb	mg/L	0.025	0.0052	0.0055 J	0.0042 B	0.0021 B	0.0037	0.0028 J	0.005 U	0.0050 U	0.0050 U	0.0050 U		
Magnesium	mg/L	35 #	2.23 B	2.22 BJ	2.28 B	2.58 B	2.43 B	2.32 B	2.21	2.39	2.380	2.170		
Manganese as Mn	mg/L	0.3	0.0026 B	0.0024 B	0.0033 B	0.0263	0.0005 B	0.0008 BE	0.015 U	0.01 U	0.00079 J	0.01 U		
Mercury as Hg	mg/L	0.0007	0.0001 U	PNA	0.0001 U	PNA	0.0001 U	PNA	0.0002 U	PNA	0.00020 U	PNA		
Nickel as Ni	mg/L	0.1	0.009 B	PNA	0.0107 B	PNA	0.0048 B	PNA	0.0153 J	PNA	0.0248 J	PNA		
Potassium	mg/L	NA	0.702 B	1.38 B	0.978 B	2.14 B	0.472 U	0.828 B	5 U	5 U	5.000 U	5.000 U		
Selenium as Se	mg/L	0.01	0.0023 U	PNA	0.0013 B	PNA	0.0038 U	PNA	0.01 U	PNA	0.0100 U	PNA		
Silver as Ag	mg/L	0.05	0.0002 U	PNA	0.00043 U	PNA	0.0022 U	PNA	0.01 U	PNA	0.0100 U	PNA		
Sodium as Na	mg/L	20	7.77	9.02	8.24	8.31	8.34	8.78	7.99	7.27	7.770	7.480		
Thallium as Tl	mg/L	0.0005 #	0.0019 U	PNA	0.0013 U	PNA	0.0038 U	PNA	0.01 U	PNA	0.0100 U	PNA		
Vanadium	mg/L	NA	0.0004 B	PNA	0.00039 U	PNA	0.0007 U	PNA	0.05 U	PNA	0.0500 U	PNA		
Zinc as Zn	mg/L	2 #	0.0092 B	PNA	0.0256	PNA	0.0038 B	PNA	0.02 U	PNA	0.0200 U	PNA		
Alkalinity tot CaCo3	mg/L	NA	12.6	12.9	12.5	13.7	12.9	12.9 H	12.7	12	10.8	12		
Chloride as Cl	mg/L	250.0	9.47	11.2	214 D	11.6	12.3	9.42	10	11	9.0	8.1		
Sulfate as SO4	mg/L	250.0	7.61	8.86	152 D	8.62	10.5	8.35	8.34	8.4	8.2	8.1		
Bromide	mg/L	2 #	0.5 U	0.5 U	10 UD	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.50 U	0.50 U		
BOD5	mg/L	NA	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2.6	1.0 J	2.0 U		
COD	mg/L	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	33.8	10.0 U	10.0 U		
Color	units	NA	5 U	PNA	5 U	PNA	10 U	PNA	5 U	PNA	5.0	PNA		
Chromium hex as Cr	mg/L	0.05	0.02 U	PNA	0.02 U	PNA	0.02 U	PNA	0.02 U	PNA	0.020 U	PNA		
Hardness as CaCO3	mg/L	NA	18	20	18	48 D	44 D	24 D	25	19	22.0	17.3		
Ammonia as N	mg/L	2.0	0.1 U	0.1 U	0.1 U	0.1 U	0.11	0.1 U	0.14	22.9	0.046 J	0.13		
Nitrite as N	mg/L	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.050 U	0.050 U		
Nitrate as N	mg/L	10	0.29	0.3	0.35	0.43	0.42	0.33	0.24	0.22	0.19	0.17		
Phenols as Phenol	mg/L	0.001	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.013	0.0162	0.0396	0.005 U		
Tot Dissolved Solids	mg/L	NA	56	64	31	36	53	49	45	63	50.0	48.0		
Tot. Kjeldahl Nitrogen	mg/L	NA	0.1 U	0.15	0.26	0.1 U	0.2	0.1 U	0.1 U	18.7	0.10 U	0.11		
Tot Organic Carbon	mg/L	NA	3.8	1.1	1 U	3.8	1 U	0.5 U	1 U	1.00 U	0.16 J	1.00 U		
Turbidity	NTU	NA	0.6	0.50	0.30	18.60	0.00	0.57	6.37	0	0.0	1.0		
Temperature	deg.C	NA	12.56	12.18	10.12	11.59	10.45	11.35	11.24	11.65	12.24	11.23		
pH	units	6.5-8.5	7.24	6.97	6.15	6.14	5.97	6.52	6.26	6.26	6.07	6.02		
Spec. Cond	umho/cm	NA	79	98	89	106	98	91	90	91	86	90		

NOTES:

* = NYSDDEC, Class GA Groundwater Standards

6 NYCRR Part 703

= Guidance value, no standard exists.

NA = Not available.

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B = This flag is used when the analyte is found in the associated blank as in the sample.

D = Dilution

E = This flag identified compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis.

F = This flag indicates the results of a filtered metal analysis.

H = Received / analyzed outside of analytical holding time

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

U = The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

UI = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R = The sample results are unreliable/unusable. The presence or absence of the analyte cannot be verified.

3.0 = Compound exceeded standard.

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NM = Not Monitored

TOWN OF SOUTHAMPTON
NORTH SEA LANDFILL
TABLE 1
INORGANIC GROUNDWATER QUALITY RESULTS
OCTOBER 2017

ANALYTICAL PARAMETERS	UNITS	GW STND*	MW-3A																												
			April 2013		Oct. 2013		April 2014		Oct. 2014		April 2015		Oct. 2015		Apr-16		Oct-16		Apr-17		Oct-17										
			Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered											
Aluminum as Al	mg/L	NA	0.108	B	PNA	0.0391	U	PNA	0.0059	U	PNA	0.2	U	0.2	U	PNA	PNA	0.0220	J	0.200	U	PNA	PNA								
Antimony as Sb	mg/L	0.003 #	0.0012	U	PNA	0.0019	U	PNA	0.0077	B	PNA	0.06	U	0.06	U	PNA	PNA	0.0600	U	0.0600	U	PNA	PNA								
Arsenic as As	mg/L	0.025	0.0028	U	PNA	0.0011	U	PNA	0.0033	U	PNA	0.0038	J	0.01	U	PNA	PNA	0.0100	U	0.0100	U	PNA	PNA								
Barium	mg/L	1	0.0382	B	PNA	0.055	B	PNA	0.0509	B	PNA	0.048	J	0.0377	J	PNA	PNA	0.0744	J	0.0579	J	PNA	PNA								
Beryllium as Be	mg/L	0.003	0.0001	U	PNA	0.00014	U	PNA	0.0001	U	PNA	0.005	U	0.005	U	PNA	PNA	0.0050	U	0.0050	U	PNA	PNA								
Boron as B	mg/L	1.0	0.0257	B	PNA	0.0291	B	PNA	0.0202	B	PNA	0.0366	J	0.0348	J	PNA	PNA	0.0211	J	0.0253	J	PNA	PNA								
Cadmium as Cd	mg/L	0.005	0.0001	U	0.00015	U	0.00011	U	0.0003	U	0.0002	U	0.0002	U	0.005	U	0.0025	U	0.00027	J	0.00096	J	0.0025	U	0.0025	U					
Calcium as Ca	mg/L	NA	18			13.2			19.1		18			22.9		13.8		12.9		22		19.1		20.800		18.000		15.600		14.400	
Chromium as Cr	mg/L	0.05	0.104			0.595			PNA	0.786		PNA	0.825		0.0063	J	PNA	PNA	1.660		0.0141		PNA	PNA							
Cobalt	mg/L	NA	0.0013	B	PNA	0.0024	B	PNA	0.0029	B	PNA	0.0015	J	0.05	U	PNA	PNA	0.0049	J	0.0500	U	PNA	PNA								
Copper as Cu	mg/L	0.2	0.0059	B	PNA	0.0164	B	PNA	0.0196	B	PNA	0.0225	J	0.0322		PNA	PNA	0.0240	J	0.0078	J	PNA	PNA								
Cyanide as CN	mg/L	0.20	0.01	U	PNA	0.01	U	PNA	0.01	U	PNA	0.01	U	0.1	U	PNA	PNA	0.0100	U	PNA		PNA	PNA								
Iron as Fe	mg/L	0.3	0.441		0.412	2.28		3.78	2.95	E	2.27	2.92		0.1	U	4.66		0.1	U	6.520		0.100	U	2.460		0.100	U				
Lead as Pb	mg/L	0.025	0.0033		0.0048	0.0053		0.0013	U	0.0022	U	0.0024	B	0.001	J	0.002	J	0.005	U	0.005	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U		
Magnesium	mg/L	35 #	4.1	B	3.55	B	4.74	B	4.57	B	5.06	6.42		3.68		3.44		5.53		5.510		5.010		4.880		4.360					
Manganese as Mn	mg/L	0.3	0.0866		0.0273	0.255		0.2	0.231		0.113	E	0.144		0.0585		0.286		0.0611		0.359		0.0518		0.113		0.0419				
Mercury as Hg	mg/L	0.0007	0.0001	U	PNA	0.0001	U	PNA	0.0001	U	PNA	0.0002	U	0.0002	U	PNA	PNA	0.00020	U	0.00020	U	PNA	PNA	0.002	U						
Nickel as Ni	mg/L	0.1	0.0408		PNA	0.0735		PNA	0.0962		PNA	0.114		0.08		PNA	PNA	0.132		0.0893		PNA	PNA								
Potassium	mg/L	NA	2.72	B	4.47	B	6.58	J	6.99		4.4	B	6.67		5.21		4.5	J	6.46		5.830		4.880	J	5.000	U	5.000	U			
Selenium as Se	mg/L	0.01	0.0023	U	PNA	0.0016	B	PNA	0.0038	U	PNA	0.01	U	0.01	U	PNA	PNA	0.0100	U	0.0100	U	PNA	PNA								
Silver as Ag	mg/L	0.05	0.0002	U	PNA	0.00043	U	PNA	0.0022	U	PNA	0.01	U	0.01	U	PNA	PNA	0.0100	U	0.0100	U	PNA	PNA								
Sodium as Na	mg/L	20	16.9		18.8	33.6		18.9	37.6		43.8	22.5		21		25		21		82.900		70.200		43.100		40.300					
Thallium as Tl	mg/L	0.0005 #	0.0019	U	PNA	0.0013	U	PNA	0.0038	U	PNA	0.01	U	0.01	U	PNA	PNA	0.0100	U	0.0100	U	PNA	PNA								
Vanadium	mg/L	NA	0.0003	U	PNA	0.0019	B	PNA	0.0007	U	PNA	0.05	U	0.05	U	PNA	PNA	0.0023	J	0.0500	U	PNA	PNA								
Zinc as Zn	mg/L	2 #	0.008	B	PNA	0.0267		PNA	0.0154	B	PNA	0.02	U	0.02	U	PNA	PNA	0.0200	U	0.0107	J	PNA	PNA								
Alkalinity tot CaCO3	mg/L	NA	28.3		46.4	D	41		61.3		38.5		52		PNA		75.6		PNA		34.2		PNA		69.6						
Chloride as Cl	mg/L	250.0	49.1		31.5		72.6	D	30.1		84.2	D	70.9		24		PNA		40.8		PNA		154		PNA		58		PNA		
Sulfate as SO4	mg/L	250.0	5.84		5	U	5.58		10.7		5		73.7		7.5		PNA		12.6		PNA		8.7		PNA		5	U	PNA		
Bromide	mg/L	2 #	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.02	J	PNA		0.5	U	PNA		0.50	U	PNA		0.50	U	PNA		
BOD5	mg/L	NA	2	U	2	U	2	U	2	U	2	U	2	U	2	U	PNA		2	U	PNA		1.0	J	PNA		2.0	U	PNA		
COD	mg/L	NA	10	U	10	U	12.7		12.7		10	U	10	U	10	U	PNA		23.4		PNA		13.0		PNA		11.9		PNA		
Color	units	NA	5		PNA	30		PNA	25		PNA	10		PNA		PNA		PNA		5.0		PNA		PNA		PNA		PNA			
Chromium hex as Cr	mg/L	0.05	0.02	U	PNA	0.02	U	PNA	0.02	U	PNA	0.02	U	PNA		PNA		PNA		0.0098	J	PNA		PNA		PNA		PNA			
Hardness as CaCO3	mg/L	NA	62	D	60	D	68	D	100	D	75	D	75		48		PNA		80		PNA		80.0		PNA		70.0		PNA		
Ammonia as N	mg/L	2.0	0.28		0.1	U	0.22		0.1	U	0.31		0.1	U	0.29		PNA		0.24		PNA		0.10		PNA		0.10	UB	PNA		
Nitrite as N	mg/L	NA	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	PNA		0.1	U	PNA		0.050	U	PNA		0.050	U	PNA		
Nitrate as N	mg/L	10	0.54		0.2		1.05		0.21		0.29		0.25		1.45		PNA		0.26		PNA		1.8		PNA		0.22		PNA		
Phenols as Phenol	mg/L	0.001	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.0087		0.005	U	PNA		0.0088		PNA		0.0026	J	PNA		0.005	U	PNA		
Tot Dissolved Solids	mg/L	NA	145		114		158		100		174		195		106		PNA		152		PNA		317		PNA		165		PNA		
Tot. Kjeldahl Nitrogen	mg/L	NA	0.32		0.39		0.67		0.1	U	0.54		0.13		0.5		PNA		0.26		PNA		0.34		PNA		0.37		PNA		
Tot Organic Carbon	mg/L	NA	10.3		3.3		2.7		12.7		2.4		2.5		2.9		PNA		3.29		PNA		2.6	J	PNA		3.9		PNA		
Turbidity	NTU	NA	1.6		2.4		11.5		26.8		11.5		38.5		24		PNA		117		PNA		105		PNA		104		PNA		
Temperature	deg.C	NA	13.18		10.82		12.62		11.23		11.06		8.18		12.07		PNA		10.25		PNA		12.57		PNA		10.93		PNA		
pH	units	6.5-8.5	7.1		6.39		6.28		6.49		6.16		6.09		6.44		PNA		6.27		PNA		6.09		PNA		6.41		PNA		
Spec. Cond	umho/cm	NA	211		349		269		390		401		209		PNA		PNA		304		PNA		700		PNA		423		PNA		

TOWN OF SOUTHAMPTON
NORTH SEA LANDFILL
TABLE 1
INORGANIC GROUNDWATER QUALITY RESULTS
OCTOBER 2017

ANALYTICAL PARAMETERS	UNITS	GW STND*	MW-3B									
			April 2013	Oct. 2013	April 2014	Oct. 2014	April 2015	Oct. 2015	April 2016	Oct. 2016	April 2017	October 2017
Aluminum as Al	mg/L	NA	0.0123 B	PNA	0.0294 B	PNA	0.0059 U	PNA	0.2 U	PNA	0.200 U	PNA
Antimony as Sb	mg/L	0.003 #	0.0012 U	PNA	0.0019 U	PNA	0.003 U	PNA	0.06 U	PNA	0.0600 U	PNA
Arsenic as As	mg/L	0.025	0.0125	PNA	0.0058 B	PNA	0.0106	PNA	0.0082 J	PNA	0.0100 U	PNA
Barium	mg/L	1	0.291 B	PNA	0.039 B	PNA	0.043 B	PNA	0.0507 J	PNA	0.0347 J	PNA
Beryllium as Be	mg/L	0.003	0.0001 U	PNA	0.00014 U	PNA	0.0001 U	PNA	0.005 U	PNA	0.0050 U	PNA
Boron as B	mg/L	1.0	0.0402 B	PNA	0.042 B	PNA	0.0409 B	PNA	0.0587 J	PNA	0.0409 J	PNA
Cadmium as Cd	mg/L	0.005	0.0001 U	0.00015 U	0.00011 U	0.0008 B	0.0002 U	0.0001 U	0.0007 J	0.0025 U	0.00029 J	0.0025 U
Calcium as Ca	mg/L	NA	9.03	10.4	11.8	9.43	12.3	15	14.4	12.6	12.900	11.700
Chromium as Cr	mg/L	0.05	0.0035 B	PNA	0.0025 B	PNA	0.0055 B	PNA	0.01 U	PNA	0.0100 U	PNA
Cobalt	mg/L	NA	0.0047 B	PNA	0.0056 B	PNA	0.0084 B	PNA	0.0076 J	PNA	0.0055 J	PNA
Copper as Cu	mg/L	0.2	0.0011 B	PNA	0.003 B	PNA	0.0086 B	PNA	0.0029 J	PNA	0.0250 U	PNA
Cyanide as CN	mg/L	0.20	0.01 U	PNA	0.01 U	PNA	0.01 U	PNA	0.01 U	PNA	0.0100 U	PNA
Iron as Fe	mg/L	0.3	12.1	14	14.3	16.2	18.1 E	18.8	16.9	11.8	12.100	9.970
Lead as Pb	mg/L	0.025	0.0029 B	0.00072 U	0.0023 B	0.013 U	0.0022 U	0.004	0.00091 J	0.005 U	0.0050 U	0.0050 U
Magnesium	mg/L	35 #	2.96 B	3.54 B	4.1 B	3.33 B	4.32 B	5.78	5.25	4.34	4.310	3.980
Manganese as Mn	mg/L	0.3	3.4	3.59	4.15	4.89	4.56	5.01 E	3.41	3	3.790	2.950
Mercury as Hg	mg/L	0.0007	0.0001 U	PNA	0.0001 U	PNA	0.0001 U	PNA	0.0002 U	PNA	0.00020 U	PNA
Nickel as Ni	mg/L	0.1	0.0022 B	PNA	0.003 B	PNA	0.003 B	PNA	0.0031 J	PNA	0.0031 J	PNA
Potassium	mg/L	NA	3.72 B	4.93 B	4.23 B	4.81 B	3.02 B	3.45 B	5.28	5 U	4.200 J	5.000 U
Selenium as Se	mg/L	0.01	0.0023 U	PNA	0.0011 U	PNA	0.0038 U	PNA	0.01 U	PNA	0.0100 U	PNA
Silver as Ag	mg/L	0.05	0.0002 U	PNA	0.00043 U	PNA	0.0027 B	PNA	0.01 U	PNA	0.0100 U	PNA
Sodium as Na	mg/L	20	9.98	10.6	13	11.7	13.9	19.6	15.3	17.3	16.900	12.000
Thallium as Tl	mg/L	0.0005 #	0.0019 U	PNA	0.0013 U	PNA	0.0038 U	PNA	0.0039 J	PNA	0.0100 U	PNA
Vanadium	mg/L	NA	0.0003 U	PNA	0.00039 U	PNA	0.0007 U	PNA	0.05 U	PNA	0.0500 U	PNA
Zinc as Zn	mg/L	2 #	0.0115 B	PNA	0.0087 B	PNA	0.0047 B	PNA	0.02 U	PNA	0.0023 J	PNA
Alkalinity tot CaCO3	mg/L	NA	46.3 D	57.1 D	55.5	61.2	55	74.8	76.5	55.6	44.4	47
Chloride as Cl	mg/L	250.0	13.5	17.8	17.1	19	22.5	27.8	19.9	26.9	14.7	14.7
Sulfate as SO4	mg/L	250.0	11.2	10.9	9.82	7.96	15.9	10.1	11.5	10.8	13.8	11
Bromide	mg/L	2 #	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.13 J	0.5 U	0.067 J	0.5 U
BOD5	mg/L	NA	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1.0 J	2.0 U
COD	mg/L	NA	10 U	10 U	12.1	10.2	10 U	11.6	10 U	25.5	10.9	10 U
Color	units	NA	125 D	PNA	55	PNA	100 D	PNA	45	PNA	5.0	PNA
Chromium hex as Cr	mg/L	0.05	0.0001 UD	PNA	0.02 U	PNA	0.02 U	PNA	0.02 U	PNA	0.020 U	PNA
Hardness as CaCO3	mg/L	NA	84 D	68 D	72 D	76 D	100 D	92	68	50	40.0	60.0
Ammonia as N	mg/L	2.0	2.82 D	3.22 D	2.54 D	5.98 D	2.54	1.7	2.78	2.8	0.65	1
Nitrite as N	mg/L	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.031 J	0.050 U
Nitrate as N	mg/L	10	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.05 U	0.050 U	0.250
Phenols as Phenol	mg/L	0.001	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.0051	0.005 U	0.005 U	0.0021 J	0.005 U
Tot Dissolved Solids	mg/L	NA	75	102	76	83	110	114	105	106	102	89
Tot. Kjeldahl Nitrogen	mg/L	NA	3.05	3.62	3.11	6.2 D	2.52	1.73	2.01	2.4	1.4	1.2
Tot Organic Carbon	mg/L	NA	14.2	2.6	2	14.3	1.8	3.39	1.9	2.33	1.8 J	1.4 B
Turbidity	NTU	NA	0	4.1	0	0	0	1.53	0	1.7	0.0	4.9
Temperature	deg C	NA	12.58	10.56	11.36	10.92	11.44	9.54	11.46	11.23	12.85	11.52
pH	units	6.5-8.5	6.44	6.00	6.39	6.56	6.14	6.05	6.58	6.31	5.96	6.12
Spec. Cond	umho/cm	NA	231	256	244	308	262	277	276	261	220	220

NOTES:

* = NYSDDEC Class GA Groundwater Standards

6 NYCRR Part 703

= Guidance value, no standard exists.

NA = Not available.

PNA = parameter not analyzed for.

B = This flag is used when the analyte is found in the associated blank as in the sample.

D = Dilution

E = This flag identified compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis.

F = This flag indicates the results of a filtered metal analysis.

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

U = The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

UI = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R = The sample results are unreliable/unusable. The presence or absence of the analyte cannot be verified.

1.0 = Compound exceeded standard.

1.0 = Compound at standard.

NM = Not Monitored

TOWN OF SOUTHAMPTON
NORTH SEA LANDFILL
TABLE 1
INORGANIC GROUNDWATER QUALITY RESULTS
OCTOBER 2017

ANALYTICAL PARAMETERS	UNITS	GW STND*	MW-3C									
			April 2013	Oct. 2013	Oct. 2014	April 2015	Oct. 2015	April 2016	Oct. 2016	April 2017	October 2017	
Aluminum as Al	mg/L	NA	0.0095 U	PNA	PNA	0.0059 U	PNA	0.2 U	PNA	0.200 U	PNA	
Antimony as Sb	mg/L	0.003 #	0.0036 B	PNA	PNA	0.003 U	PNA	0.06 U	PNA	0.0600 U	PNA	
Arsenic as As	mg/L	0.025	0.0028 U	PNA	PNA	0.0033 U	PNA	0.01 U	PNA	0.0100 U	PNA	
Barium	mg/L	1	0.0248 B	PNA	PNA	0.0228 B	PNA	0.0201 J	PNA	0.0183 J	PNA	
Beryllium as Be	mg/L	0.003	0.0001 U	PNA	PNA	0.0001 U	PNA	0.005 U	PNA	0.0050 U	PNA	
Boron as B	mg/L	1.0	0.0175 B	PNA	PNA	0.0104 B	PNA	0.0128 J	PNA	0.0055 J	PNA	
Cadmium as Cd	mg/L	0.005	0.0001 U	0.00015 U	0.0003 U	0.0002 U	0.0001 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	
Calcium as Ca	mg/L	NA	12	11	10.1	10.2	9.36	9.11	8.31	8.630	7.350	
Chromium as Cr	mg/L	0.05	0.0029 B	PNA	PNA	0.0031 B	PNA	0.0058 J	PNA	0.0048 J	PNA	
Cobalt	mg/L	NA	0.0004 U	PNA	PNA	0.0006 U	PNA	0.05 U	PNA	0.0500 U	PNA	
Copper as Cu	mg/L	0.2	0.0004 U	PNA	PNA	0.0007 B	PNA	0.0021 J	PNA	0.0250 U	PNA	
Cyanide as CN	mg/L	0.20	0.01 U	PNA	PNA	0.01 U	PNA	0.01 U	PNA	0.0100 U	PNA	
Iron as Fe	mg/L	0.3	0.0185 B	0.0619 U	0.0978 B	0.0295 BE	0.0268 U	0.1 U	0.1 U	0.0385 J	0.02 U	
Lead as Pb	mg/L	0.025	0.0084	0.0167	0.0014 B	0.0022 U	0.0055	0.004 J	0.005 U	0.0050 U	0.0050 U	
Magnesium	mg/L	35 #	5.66	5.08	4.63 B	4.6 B	4.38 B	4.14	3.88	3.740	3.520	
Manganese as Mn	mg/L	0.3	0.0406	0.0488	0.0153	0.01 B	0.0067 BE	0.0034 J	0.01 U	0.0039 J	0.01 U	
Mercury as Hg	mg/L	0.0007	0.0001 U	PNA	PNA	0.0001 U	PNA	0.0002 U	PNA	0.00020 U	PNA	
Nickel as Ni	mg/L	0.1	0.0044 B	PNA	PNA	0.0027 B	PNA	0.04 U	PNA	0.0068 J	PNA	
Potassium	mg/L	NA	1.03 B	1.56 B	1.32 B	0.472 U	0.937 B	0.786 J	5 U	0.874 J	5 U	
Selenium as Se	mg/L	0.01	0.0023 U	PNA	PNA	0.0038 U	PNA	0.01 U	PNA	0.0100 U	PNA	
Silver as Ag	mg/L	0.05	0.0002 U	PNA	PNA	0.0022 U	PNA	0.01 U	PNA	0.0100 U	PNA	
Sodium as Na	mg/L	20	13.2	12.4	13.5	12.2	14.2	13.2	11.7	13.900	10.100	
Thallium as Tl	mg/L	0.0005 #	0.0019 U	PNA	PNA	0.0038 U	PNA	0.01 U	PNA	0.0100 U	PNA	
Vanadium	mg/L	NA	0.0004 B	PNA	PNA	0.0007 U	PNA	0.05 U	PNA	0.0500 U	PNA	
Zinc as Zn	mg/L	2 #	0.0076 B	PNA	PNA	0.0048 B	PNA	0.02 U	PNA	0.0200 U	PNA	
Alkalinity tot CaCo3	mg/L	NA	56.1	54.2 D	49.8	45.1	44	40	41.8	38.0	41.6	
Chloride as Cl	mg/L	250.0	13.2	13.7	13.8	15.4	13.4	11.9	12.7	10.6	9.5	
Sulfate as SO4	mg/L	250.0	5 U	5 U	5 U	5 U	5 U	3.24 J	5 U	3.0 J	5.0 U	
Bromide	mg/L	2 #	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.05 J	0.5 U	0.062 J	0.5 U	
BOD5	mg/L	NA	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1.0 J	2.0 U	
COD	mg/L	NA	10 U	10 U	10 U	10 U	10 U	10 U	19.2	6.8 J	10 U	
Color	units	NA	5 U	PNA	PNA	5	PNA	5 U	PNA	5.0 U	PNA	
Chromium hex as Cr	mg/L	0.05	0.02 U	PNA	PNA	0.02 U	PNA	0.02 U	PNA	0.020 U	PNA	
Hardness as CaCO3	mg/L	NA	53	60 D	100 D	40 D	38	35	35.0	33.0		
Ammonia as N	mg/L	2.0	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.16	0.1 UB	
Nitrite as N	mg/L	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.050 U	0.050 U	
Nitrate as N	mg/L	10	0.1	0.12	0.1 U	0.16	0.18	0.17	0.17	0.20	0.16	
Phenols as Phenol	mg/L	0.001	0.005 U	0.005 U	0.005 U	0.005 U	0.0058	0.005 U	0.0428	0.0050 U	0.0050 U	
Tot Dissolved Solids	mg/L	NA	97	97	75	71	81	61	135	63.0	41.0	
Tot. Kjeldahl Nitrogen	mg/L	NA	0.1 U	0.21	0.1 U	0.2	1 U	0.1 U	0.12	0.046 J	0.1 U	
Tot Organic Carbon	mg/L	NA	15.9	1 U	11.6	1 U	0.509	1 U	1.10	0.36 J	1.00 UB	
Turbidity	NTU	NA	0	2.2	0.0	0.0	0.8	2.2	0.1	0.0	3.8	
Temperature	deg.C	NA	12.57	11.87	12.04	11.35	11.4	11.77	11.98	12.75	11.76	
pH	units	6.5-8.5	7.15	6.62	6.66	6.32	6.37	6.82	6.36	6.75	6.61	
Spec. Cond	umho/cm	NA	191	181	176	137	133	130	133	130	131	

NOTES:

* = NYSDEC, Class GA Groundwater Standards

6 NYCRR Part 703

= Guidance value, no standard exists.

NA = Not available.

PNA = parameter not analyzed for.

B = This flag is used when the analyte is found in the associated blank as in the sample.

D = Dilution

E = This flag identified compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis.

F = This flag indicates the results of a filtered metal analysis.

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

U = The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

UI = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R = The sample results are unreliable/unusable. The presence or absence of the analyte cannot be verified.

1.0 = Compound exceeded standard.

1.0 = Compound at standard.

NM = Not Monitored

TOWN OF SOUTHAMPTON
NORTH SEA LANDFILL
TABLE 1
INORGANIC GROUNDWATER QUALITY RESULTS
OCTOBER 2017

ANALYTICAL PARAMETERS	UNITS	GW STND*	MW-4A													
			April 2013	Oct. 2013	April 2014	Oct. 2014		April 2015		Oct. 2015		April 2016	Oct. 2016	Apr-17	Oct-17	
						Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered					
Aluminum as Al	mg/L	NA	0.243	PNA	0.253	PNA	PNA	0.271	0.211	PNA	PNA	0.219	PNA	0.242	PNA	
Antimony as Sb	mg/L	0.003 #	0.0012 U	PNA	0.0019 U	PNA	PNA	0.003 U	0.003 U	PNA	PNA	0.06 U	PNA	0.0600 U	PNA	
Arsenic as As	mg/L	0.025	0.0028 U	PNA	0.0011 U	PNA	PNA	0.0033 U	0.0033 U	PNA	PNA	0.01 U	PNA	0.0100 U	PNA	
Barium	mg/L	1	0.206	PNA	0.183 B	PNA	PNA	0.158 B	0.144 B	PNA	PNA	0.17 J	PNA	0.128 J	PNA	
Beryllium as Be	mg/L	0.003	0.0002 B	PNA	0.0006 B	PNA	PNA	0.0003 B	0.0004 B	PNA	PNA	0.0004 J	PNA	0.0050 U	PNA	
Boron as B	mg/L	1.0	0.0212 B	PNA	0.0271 B	PNA	PNA	0.0273 B	0.0268 B	PNA	PNA	0.0315 J	PNA	0.0402 J	PNA	
Cadmium as Cd	mg/L	0.005	0.0003 B	0.00015 U	0.0002 B	0.0003 U	0.0003 U	0.0002 U	0.0002 U	0.0002 B	0.0005 B	0.0004 J	0.0025 U	0.00036 J	0.0025 U	
Calcium as Ca	mg/L	NA	13.9	10.3	11.3	11.6	12.2	10.6	10.7 J	14.3	13.3	11.7	12.5	10.100	10.900	
Chromium as Cr	mg/L	0.05	0.0046 B	PNA	0.0042 B	PNA	PNA	0.0218	0.001 U	PNA	PNA	0.01 U	PNA	0.0067 J	PNA	
Cobalt	mg/L	NA	0.0004 U	PNA	0.00019 U	PNA	PNA	0.0006 U	0.0006 U	PNA	PNA	0.05 U	PNA	0.0500 U	PNA	
Copper as Cu	mg/L	0.2	0.0004 U	PNA	0.00076 U	PNA	PNA	0.0022 B	0.0014 B	PNA	PNA	0.0023 J	PNA	0.0250 U	PNA	
Cyanide as CN	mg/L	0.20	0.01 U	PNA	0.01 U	PNA	PNA	0.01 U	PNA	PNA	PNA	0.01 U	PNA	0.0100 U	PNA	
Iron as Fe	mg/L	0.3	0.0631 B	0.124	0.0796 B	0.127	0.0714 B	0.257 E	0.018 J	0.0268 U	0.0268 U	0.1 U	0.112	0.129	1.69	
Lead as Pb	mg/L	0.025	0.0063	0.0105	0.0038 B	0.002 B	0.0016 B	0.0022 U	0.0022 U	0.0044 N	0.0044 N	0.0028 J	0.005 U	0.0050 U	0.0050 U	
Magnesium	mg/L	35 #	4.57 B	3.34 B	3.87 B	3.76 B	3.81 B	3.61 B	3.66 J	4.58 B	4.34 BE	3.85	4.46	3.600	4.240	
Manganese as Mn	mg/L	0.3	0.133	0.0853	0.113	0.086	0.0846	0.122	0.104 J	0.119 E	0.101	0.142	0.105	0.128	0.219	
Mercury as Hg	mg/L	0.0007	0.0001 U	PNA	0.0001 U	PNA	PNA	0.0001 U	0.0001 U	PNA	PNA	0.0002 U	PNA	0.00020 U	PNA	
Nickel as Ni	mg/L	0.1	0.0056 B	PNA	0.0051 B	PNA	PNA	0.0044 B	0.0035 B	PNA	PNA	0.005 J	PNA	0.0040 J	PNA	
Potassium	mg/L	NA	4.36 B	4.11 B	3.87 B	4.44 B	4.75 B	3.04 B	2.66 B	3.89 B	2.75 B	4.01 J	5 U	3.340 J	5.000 U	
Selenium as Se	mg/L	0.01	0.0023 U	PNA	0.0011 U	PNA	PNA	0.0038 U	0.0038 U	PNA	PNA	0.01 U	PNA	0.0100 U	PNA	
Silver as Ag	mg/L	0.05	0.0002 U	PNA	0.00043 U	PNA	PNA	0.0022 U	0.0022 U	PNA	PNA	0.01 U	PNA	0.0100 U	PNA	
Sodium as Na	mg/L	20	18.3	15.2	23	19.3	20.7	25.4	26.3 J	23.7	22.8	27	22.1	31.600	25.900	
Thallium as Tl	mg/L	0.0005 #	0.0019 U	PNA	0.0013 U	PNA	PNA	0.0038 U	0.0038 U	PNA	PNA	0.01 U	PNA	0.0100 U	PNA	
Vanadium	mg/L	NA	0.0003 U	PNA	0.00039 U	PNA	PNA	0.0007 U	0.0007 U	PNA	PNA	0.05 U	PNA	0.0500 U	PNA	
Zinc as Zn	mg/L	2 #	0.0125 B	PNA	0.017 B	PNA	PNA	0.0118 B	0.0132 U	PNA	PNA	0.0069 J	PNA	0.0052 J	PNA	
Alkalinity tot CaCO3	mg/L	NA	2.2	4.85	6.5	18.4	PNA	6.4	PNA	8.55	PNA	3.5	4.9	4.0	50.4	
Chloride as Cl	mg/L	250.0	31.5	29.8	41.5	33	PNA	49.1	PNA	44.5	PNA	46.5	41.3	47.0	46.6	
Sulfate as SO4	mg/L	250.0	12	14.9	11.1	14.7	PNA	17.8	PNA	10.5	PNA	13.7	12.2	16.6	11.4	
Bromide	mg/L	2 #	0.5 U	0.5 U	0.5 U	0.5 U	PNA	0.5 U	PNA	0.5 U	PNA	0.02 J	0.5 U	0.030 J	0.500 U	
BOD5	mg/L	NA	2 U	2 U	2 U	2 U	PNA	2 U	PNA	2 U	PNA	2 U	2 U	1.0 J	2.0 U	
COD	mg/L	NA	10 U	10 U	10 U	10 U	PNA	10 U	PNA	10 U	PNA	10 U	10 U	10.0 U	10.0 U	
Color	units	NA	5 U	PNA	5 U	PNA	PNA	5 U	PNA	PNA	PNA	5 U	PNA	5.0	PNA	
Chromium hex as Cr	mg/L	0.05	0.02 U	PNA	0.02 U	PNA	PNA	0.02 U	PNA	PNA	PNA	0.02 U	PNA	0.020 U	PNA	
Hardness as CaCO3	mg/L	NA	52 D	48 D	40 D	64 D	PNA	40 D	PNA	56	PNA	42	45	40.0	88.0	
Ammonia as N	mg/L	2.0	0.1 U	0.1 U	0.1 U	0.1 U	PNA	0.1 U	PNA	0.1 U	PNA	0.2	0.1 U	0.099 J	0.1 U	
Nitrite as N	mg/L	NA	0.1 U	0.1 U	0.1 U	0.1 U	PNA	0.1 U	PNA	0.1 U	PNA	0.1 U	0.05 U	0.050 U	0.050 U	
Nitrate as N	mg/L	10	12.2 D	5.57 D	8.25 D	4.72 D	PNA	4.6 D	PNA	9.05	PNA	7.53 D	8.9	5.6	0.29	
Phenols as Phenol	mg/L	0.001	0.005 U	0.005 U	0.005 U	0.005 U	PNA	0.005 U	PNA	0.008	PNA	0.005 U	0.0068	0.0050 U	0.0050 U	
Tot Dissolved Solids	mg/L	NA	175	124	142	121	PNA	115	PNA	146	PNA	128	127	137	120	
Tot. Kjeldahl Nitrogen	mg/L	NA	0.1 U	0.14	0.18	0.1 U	PNA	0.1 U	PNA	1 U	PNA	0.1 U	0.1 U	0.10 U	0.41	
Tot Organic Carbon	mg/L	NA	1.9	1.6	1 U	5.3	PNA	0.1 U	PNA	0.958	PNA	1 U	1.00 U	0.84 J	1.00 U	
Turbidity	NTU	NA	0.1	3.8	1.1	0	PNA	0	PNA	0.29	PNA	2.14	0.2	0.0	22.9	
Temperature	deg.C	NA	11.17	13.66	10.41	12.88	PNA	10.57	PNA	12.97	PNA	12.34	13.46	11.63	13.31	
pH	units	6.5-8.5	6.04	5.35	5.61	5.54	PNA	5.07	PNA	5.32	PNA	4.86	5.16	4.93	5.22	
Spec. Cond	umho/cm	NA	268	205	244	255	PNA	221	PNA	230	PNA	257	251	270	272	

NOTES:

* = NYSEEC, Class GA Groundwater Standards

6 NYCRR Part 703

= Guidance value, no standard exists.

NA = Not available.

PNA = parameter not analyzed for.

B = This flag is used when the analyte is found in the associated blank as in the sample.

D = Dilution

E = This flag identified compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis.

F = This flag indicates the results of a filtered metal analysis.

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

N = Matrix spike sample recovery not within control limits.

U = The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R = The sample results are unreliable/unusable. The presence or absence of the analyte cannot be verified.

1.0 = Compound exceeded standard.

1.0 = Compound at standard.

NM = Not Monitored

TOWN OF SOUTHAMPTON
NORTH SEA LANDFILL
TABLE 1
INORGANIC GROUNDWATER QUALITY RESULTS
OCTOBER 2017

ANALYTICAL PARAMETERS	UNITS	GW STND*	MW-4B													
			April 2013	Oct. 2013	April 2014	Oct. 2014		April 2015		Oct. 2015		April 2016	Oct. 2016	Apr-17	Oct-17	
						Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered					
Aluminum as Al	mg/L	NA	0.0095 U	PNA	0.0511 B	PNA	PNA	0.0059 U	0.024 B	PNA	PNA	0.2 U	PNA	0.200 U	PNA	
Antimony as Sb	mg/L	0.003 #	0.0012 U	PNA	0.0019 U	PNA	PNA	0.003 U	0.003 U	PNA	PNA	0.06 U	PNA	0.0600 U	PNA	
Arsenic as As	mg/L	0.025	0.0028 U	PNA	0.0024 B	PNA	PNA	0.0049 B	0.0034 B	PNA	PNA	0.01 U	PNA	0.0100 U	PNA	
Barium	mg/L	1	0.0662 B	PNA	0.0921 B	PNA	PNA	0.0728 B	0.0595 B	PNA	PNA	0.0578 J	PNA	0.0403 J	PNA	
Beryllium as Be	mg/L	0.003	0.0001 U	PNA	0.00014 U	PNA	PNA	0.001 U	0.0002 B	PNA	PNA	0.005 U	PNA	0.0050 U	PNA	
Boron as B	mg/L	1.0	0.0761 B	PNA	0.0779 B	PNA	PNA	0.0714 B	0.0634 B	PNA	PNA	0.0703 J	PNA	0.0582	PNA	
Cadmium as Cd	mg/L	0.005	0.0001 U	0.00015 U	0.0002 B	0.0003 U	0.0003 U	0.0002 U	0.0002 U	0.0001 U	0.0001 U	0.0004 J	0.0025 U	0.00013 J	0.0025 U	
Calcium as Ca	mg/L	NA	21.4	21.4	19.8	20.7	22	20.9	18.8	21.7	19.8	20.8	19.6	18.700	16.900	
Chromium as Cr	mg/L	0.05	0.003 B	PNA	0.0254	PNA	PNA	0.0021 B	0.0011 U	PNA	PNA	0.01 UJ	PNA	0.0100 U	PNA	
Cobalt	mg/L	NA	0.0029 B	PNA	0.0041 B	PNA	PNA	0.0037 B	0.0034 B	PNA	PNA	0.0041 J	J	PNA	0.0024 J	
Copper as Cu	mg/L	0.2	0.0004 U	PNA	0.0037 B	PNA	PNA	0.0046 B	0.016 B	PNA	PNA	0.0021 U	PNA	0.0250 U	PNA	
Cyanide as CN	mg/L	0.20	0.01 U	PNA	0.01 U	PNA	PNA	0.01 U	PNA	PNA	PNA	0.01 U	PNA	0.0100 U	PNA	
Iron as Fe	mg/L	0.3	4.1	0.854	11.5	0.133	0.0432 B	8.06	1.29	8.37	1.05	7.67	7.66	1.280	3.890	
Lead as Pb	mg/L	0.025	0.007	0.0131	0.0028 B	0.0014 B	0.0021 B	0.0022 U	0.0022 U	0.0055	0.0042 N	0.0029 J	0.005 U	0.0050 U	0.0050 U	
Magnesium	mg/L	35 #	11.2	11.3	9.62	10.7	11	10.3	9.49	11.2	10.3 E	10.3	9.83	9.470	8.310	
Manganese as Mn	mg/L	0.3	0.815	0.212	1.64	0.215	0.204	1.45	1.22	1.62	1.34	1.14	1.19	0.343	0.633	
Mercury as Hg	mg/L	0.0007	0.0001 U	PNA	0.0001 U	PNA	PNA	0.0001 U	0.0001 U	PNA	PNA	0.0002 U	PNA	0.00020 U	PNA	
Nickel as Ni	mg/L	0.1	0.0057 B	PNA	0.0052 B	PNA	PNA	0.0037 B	0.0035 B	PNA	PNA	0.0033 J	PNA	0.0041 J	PNA	
Potassium	mg/L	NA	4.83 B	2.78 B	5.97	1.88 B	1.73 B	3.91 B	3.19 B	3.98 B	2.69 B	3.25 J	5 U	2.040 J	5.000 U	
Selenium as Se	mg/L	0.01	0.0031 B	PNA	0.0011 U	PNA	PNA	0.0038 U	0.0038 U	PNA	PNA	0.01 U	PNA	0.0100 U	PNA	
Silver as Ag	mg/L	0.05	0.0002 U	PNA	0.00043 U	PNA	PNA	0.0022 U	0.0022 U	PNA	PNA	0.01 U	PNA	0.0100 U	PNA	
Sodium as Na	mg/L	20	21.3	18.7	21.6	19.5	21.5	20.4	18.9	21.9	21.7	19.8 J	18.3	18.100	16.600	
Thallium as Tl	mg/L	0.0005 #	0.0019 U	PNA	0.0014 B	PNA	PNA	0.0038 U	0.0038 U	PNA	PNA	0.01 U	PNA	0.0100 U	PNA	
Vanadium	mg/L	NA	0.0003 U	PNA	0.0017 B	PNA	PNA	0.0007 U	0.0007 U	PNA	PNA	0.05 U	PNA	0.0500 U	PNA	
Zinc as Zn	mg/L	2 #	0.0073 B	PNA	0.0174 B	PNA	PNA	0.006 B	0.123 B	PNA	PNA	0.02 U	PNA	0.0200 U	PNA	
Alkalinity tot CaCO3	mg/L	NA	110 D	111 D	107	106 D	PNA	93.6 D	PNA	92.6	PNA	101	93	72.4	91.4	
Chloride as Cl	mg/L	250.0	26.2	22	23	20.7	PNA	28.3	PNA	35.5	PNA	21.1	27.3	15.2	22.4	
Sulfate as SO4	mg/L	250.0	8.34	7.45	11.3	6.76	PNA	12.7	PNA	10.4	PNA	11.1 J	10.7	9.9	10.3	
Bromide	mg/L	2 #	0.5 U	0.5 U	0.5 U	0.5 U	PNA	0.5 U	PNA	0.5 U	PNA	0.1 J	0.5 U	0.077 J	0.5 U	
BOD5	mg/L	NA	2 U	2 U	2 U	2 U	PNA	2 U	PNA	2 U	PNA	2 U	2 U	1.0 J	2.0 U	
COD	mg/L	NA	10 U	10 U	11.4	10 U	PNA	10 U	PNA	10 U	PNA	10 U	10.9	8.8 J	10 U	
Color	units	NA	70 D	PNA	100 D	PNA	PNA	75	PNA	PNA	PNA	15	PNA	25.0	PNA	
Chromium hex as Cr	mg/L	0.05	0.02 U	PNA	0.02 U	PNA	PNA	0.02 U	PNA	PNA	PNA	0.02 UJ	PNA	0.020 U	PNA	
Hardness as CaCO3	mg/L	NA	112 D	130 D	92 D	100 D	PNA	140 D	PNA	120	PNA	86 D	86	85.0	74.0	
Ammonia as N	mg/L	2.0	3.95 D	0.1 U	5.32 D	0.1 U	PNA	2.98	PNA	1.92	PNA	1.7	2.1	0.34	2.3	
Nitrite as N	mg/L	NA	0.1 U	0.10 U	0.10 U	0.1 U	PNA	0.1 U	PNA	0.1 U	PNA	0.1 U	0.05 U	0.050 U	0.050 U	
Nitrate as N	mg/L	10	0.14	0.49	0.11	0.22	PNA	0.1 U	PNA	0.1 U	PNA	0.1 U	0.052	0.11	0.069	
Phenols as Phenol	mg/L	0.001	0.005 U	0.005 U	0.005 U	0.005 U	PNA	0.005 U	PNA	0.0059	PNA	0.005 U	0.0115	0.0050 U	0.0050 U	
Tot Dissolved Solids	mg/L	NA	159	156	154	133	PNA	140	PNA	144	PNA	144	152	133	137	
Tot. Kjeldahl Nitrogen	mg/L	NA	5.94 D	0.32	5.95 D	0.1 U	PNA	3.05	PNA	1.64	PNA	1.27 J	1.7	0.83	2.5	
Tot Organic Carbon	mg/L	NA	31.1	2.4	3	25.7	PNA	2.1	PNA	2.01	PNA	1.8	1.87	1.3	1.5	
Turbidity	NTU	NA	0	1.8	0	0	PNA	0	PNA	0.37	PNA	8.37	0	0.0	2.7	
Temperature	deg.C	NA	13.19	13.41	11.86	12.95	PNA	12.14	PNA	12.91	PNA	14.34	13.02	12.75	12.73	
pH	units	6.5-8.5	7.36	6.37	6.6	6.55	PNA	6.19	PNA	6.66	PNA	6.32	6.6	6.51	6.41	
Spec. Cond	umho/cm	NA	362	314	359	314	PNA	292	PNA	310	PNA	290	314	250	283	

NOTES:

* = NYSEEC, Class GA Groundwater Standards

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= Guidance value, no standard exists.

NA = Not available.

PNA = parameter not analyzed for.

B = This flag is used when the analyte is found in the associated blank as in the sample.

D = Dilution

E = This flag identified compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis.

F = This flag indicates the results of a filtered metal analysis.

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

N = Matrix spike sample recovery not within control limits.

U = The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R = The sample results are unreliable/unusable. The presence or absence of the analyte cannot be verified.

1.0 = Compound exceeded standard.

1.0 = Compound at standard.

NM = Not Monitored

TOWN OF SOUTHAMPTON
NORTH SEA LANDFILL
TABLE 1
INORGANIC GROUNDWATER QUALITY RESULTS
OCTOBER 2017

ANALYTICAL PARAMETERS	UNITS	GW STND*	MW-4C													
			April 2013	Oct. 2013	April 2014	Oct. 2014		April 2015		Oct. 2015		April 2016	Oct. 2016	Apr-17	Oct-17	
						Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered					
Aluminum as Al	mg/L	NA	0.0126 B	PNA	0.0354 B	PNA	PNA	0.0059 U	0.132	PNA	PNA	0.2 U	PNA	0.200 U	PNA	
Antimony as Sb	mg/L	0.003 #	0.0012 U	PNA	0.0019 U	PNA	PNA	0.0069 B	0.003 U	PNA	PNA	0.06 U	PNA	0.0600 U	PNA	
Arsenic as As	mg/L	0.025	0.0028 U	PNA	0.0046 B	PNA	PNA	0.0033 U	0.0033 U	PNA	PNA	0.01 U	PNA	0.0100 U	PNA	
Barium	mg/L	1	0.0391 B	PNA	0.0504 B	PNA	PNA	0.0468 B	0.0424 B	PNA	PNA	0.0519 J	PNA	0.0532 J	PNA	
Beryllium as Be	mg/L	0.003	0.0001 U	PNA	0.00014 U	PNA	PNA	0.0001 U	0.0001 U	PNA	PNA	0.005 U	PNA	0.0050 U	PNA	
Boron as B	mg/L	1.0	0.0108 B	PNA	0.0083 B	PNA	PNA	0.0069 B	0.0077 B	PNA	PNA	0.0116 J	PNA	0.0500 U	PNA	
Cadmium as Cd	mg/L	0.005	0.0001 U	0.00015 U	0.00011 U	0.0003 U	0.0003 U	0.0002 U	0.0002 U	0.0001 U	0.0001 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	
Calcium as Ca	mg/L	NA	23.2	22.5	26.2	30.1	31.9 J	27	25	29.1	27.8	29.7	30.4	28.000	30.400	
Chromium as Cr	mg/L	0.05	0.187		1.31	PNA	PNA	0.184	0.0018 B	PNA	PNA	0.396	PNA	0.300	PNA	
Cobalt	mg/L	NA	0.005 B	PNA	0.0228 B	PNA	PNA	0.0049 B	0.0016 B	PNA	PNA	0.0077 J	PNA	0.0122 J	PNA	
Copper as Cu	mg/L	0.2	0.0043 B	PNA	0.0225 B	PNA	PNA	0.0027 B	0.0004 U	PNA	PNA	0.0053 J	PNA	0.0250 U	PNA	
Cyanide as CN	mg/L	0.20	0.01 U	PNA	0.01 U	PNA	PNA	0.01 U	PNA	PNA	PNA	0.01 U	PNA	0.0100 U	PNA	
Iron as Fe	mg/L	0.3	0.77	0.184	3.97	0.873	0.0853 BJ	0.715	0.0423 B	1.5	0.0268 U	1.68	0.734	1.500	1.410	
Lead as Pb	mg/L	0.025	0.008	0.0129	0.0097	0.0016 BJ	0.0024 B	0.0022 U	0.0022 B	0.0054	0.0049 N	0.0036 J	0.005 U	0.0050 U	0.0050 U	
Magnesium	mg/L	35 #	10.6	10.6	11.9	13.4	14.1 J	11.9	11.5	13.3	12.8 E	13.8	13.8	12.500	13.900	
Manganese as Mn	mg/L	0.3	0.0381	0.0048 B	0.154	0.0436	0.0362 J	0.0407	0.0336	0.0662 E	0.0307	0.0561	0.0368	0.0789	0.0479	
Mercury as Hg	mg/L	0.0007	0.0001 U	PNA	0.0001 U	PNA	PNA	0.0001 U	0.0001 U	PNA	PNA	0.0002 U	PNA	0.00020 U	PNA	
Nickel as Ni	mg/L	0.1	0.344	PNA	0.359	PNA	PNA	0.273	0.233	PNA	PNA	0.349	PNA	0.426	PNA	
Potassium	mg/L	NA	1.33 B	1.92 B	1.6 B	1.95 B	1.96 B	1.09 B	0.691 B	1.5 B	0.562 B	1.4 J	5 U	1.750 J	5.000 U	
Selenium as Se	mg/L	0.01	0.0023 U	PNA	0.0011 U	PNA	PNA	0.0038 U	0.0038 U	PNA	PNA	0.01 U	PNA	0.0100 U	PNA	
Silver as Ag	mg/L	0.05	0.0002 U	PNA	0.00043 U	PNA	PNA	0.0022 U	0.0022 U	PNA	PNA	0.01 U	PNA	0.0100 U	PNA	
Sodium as Na	mg/L	20	24.9	23.7	28.7	36.1	37.3 J	28.8	27.3	32.7	32.9	34.2	39.3	39.300	44.600	
Thallium as Tl	mg/L	0.0005 #	0.0019 U	PNA	0.0013 U	PNA	PNA	0.0038 U	0.0038 U	PNA	PNA	0.01 U	PNA	0.0100 U	PNA	
Vanadium	mg/L	NA	0.0003 U	PNA	0.0033 B	PNA	PNA	0.0007 U	0.0007 U	PNA	PNA	0.05 U	PNA	0.00083 J	PNA	
Zinc as Zn	mg/L	2 #	0.0129 B	PNA	0.0178 B	PNA	PNA	0.0057 B	0.0139 B	PNA	PNA	0.02 U	PNA	0.0200 U	PNA	
Alkalinity tot CaCO3	mg/L	NA	33.2	36.9	33.9	38	PNA	38.5	PNA	45	PNA	41.9	44	34.2	47.4	
Chloride as Cl	mg/L	250.0	82.6 D	85.7 D	100 D	135 D	PNA	107 D	PNA	113	PNA	99 D	140	106	125	
Sulfate as SO4	mg/L	250.0	5 U	5 U	5 U	5 U	PNA	5 U	PNA	67.6	PNA	3.67 J	5 U	4.2 J	5 U	
Bromide	mg/L	2 #	0.5 U	0.5 U	0.5 U	0.5 U	PNA	0.5 U	PNA	0.5 U	PNA	0.08 J	0.5 U	0.075 J	0.5 U	
BOD5	mg/L	NA	2 U	2 U	2 U	2 U	PNA	2 U	PNA	2 U	PNA	2 U	2 U	1.0 J	2.0 U	
COD	mg/L	NA	10 U	10 U	10 U	10 U	PNA	10 U	PNA	10 U	PNA	10 U	19.2	21.3	10 U	
Color	units	NA	15	PNA	5 U	PNA	PNA	15	PNA	PNA	PNA	5	PNA	25.0	PNA	
Chromium hex as Cr	mg/L	0.05	0.02 U	PNA	0.02 U	PNA	PNA	0.02 U	PNA	PNA	PNA	0.02 U	PNA	0.0200 U	PNA	
Hardness as CaCO3	mg/L	NA	116 D	130 D	108 D	160 D	PNA	120	PNA	120 D	PNA	114 D	120	170	120	
Ammonia as N	mg/L	2.0	0.1 U	0.1 U	0.15	0.1 U	PNA	0.1 U	PNA	0.1 U	PNA	0.12	0.1	0.13	0.1 U	
Nitrite as N	mg/L	NA	0.1 U	0.1 U	0.1 U	0.1 U	PNA	0.1 U	PNA	0.1 U	PNA	0.1 U	0.05 U	0.0500 U	0.0500 U	
Nitrate as N	mg/L	10	0.1 U	0.1 U	0.1 U	0.1 U	PNA	0.1 U	PNA	0.1 U	PNA	0.1 U	0.05 U	0.044 J	0.05 U	
Phenols as Phenol	mg/L	0.001	0.005 U	0.005 U	0.005 U	0.005 U	PNA	0.005 U	PNA	0.005 U	PNA	0.005 U	0.0088	0.0010 J	0.0050 U	
Tot Dissolved Solids	mg/L	NA	250	234	298	337	PNA	258	PNA	227	PNA	239	305	309	230	
Tot. Kjeldahl Nitrogen	mg/L	NA	0.1 U	0.2	0.29	0.1 U	PNA	0.18	PNA	0.1 U	PNA	0.1 U	0.1 U	0.13	0.17	
Tot Organic Carbon	mg/L	NA	9.9	1 U	1 U	9.6	PNA	1 U	PNA	0.5 U	PNA	1	1	1.00 U	1.00 U	
Turbidity	NTU	NA	1.4	1.3	1.5	0	PNA	0	PNA	10.1	PNA	13.6	0.8	0.0	8.3	
Temperature	deg.C	NA	12.85	13.27	11.54	12.73	PNA	11.88	PNA	12.68	PNA	14.7	12.97	13.61	12.67	
pH	units	6.5-8.5	8.08	6.7	7.95	6.97	PNA	6.57	PNA	6.59	PNA	7.01	6.94	6.84	6.85	
Spec. Cond	umho/cm	NA	391	381	311	1	PNA	383	PNA	430	PNA	408	546	479	566	

NOTES:

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= Guidance value, no standard exists.

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1.0 = Compound at standard.

NM = Not Monitored

TOWN OF SOUTHAMPTON
NORTH SEA LANDFILL
TABLE 1
INORGANIC GROUNDWATER QUALITY RESULTS
OCTOBER 2017

ANALYTICAL PARAMETERS	UNITS	GW STND*	MW-6AR					MW-6B				
			Oct. 2013	Oct. 2014	Oct. 2015	Oct. 2016	Oct. 2017	Oct. 2013	Oct. 2014	Oct. 2015	Oct. 2016	Oct. 2017
Aluminum as Al	mg/L	NA	0.0767 B	0.0543 B	0.0166 B	0.200 U	0.200 U	0.0049 U	0.0921 B	0.0076 B	0.200 U	0.200 U
Antimony as Sb	mg/L	0.003 #	0.002 U	0.0044 B	0.0006 U	0.0600 U	0.0600 U	0.002 U	0.004 B	0.0006 U	0.0600 U	0.0600 U
Arsenic as As	mg/L	0.025	0.001 U	0.0009 U	0.0022 U	0.0100 U	0.0100 U	0.001 U	0.0009 U	0.0022 U	0.0100 U	0.0100 U
Barium	mg/L	1	0.0508 B	0.056 B	0.058 B	0.200 U	0.200 U	0.0098 B	0.0124 B	0.0127 B	0.200 U	0.200 U
Beryllium as Be	mg/L	0.003	0.00022 U	0.0002 U	0.0002 U	0.0050 U	0.0050 U	0.00022 U	0.0002 U	0.0002 U	0.0050 U	0.0050 U
Boron as B	mg/L	1.0	0.0087 B	0.0182 B	0.0171 B	0.0500 U	0.0500 U	0.0054 B	0.0105 B	0.0089 B	0.0500 U	0.0500 U
Cadmium as Cd	mg/L	0.005	0.00015 U	0.0003 U	0.0001 U	0.0025 U	0.0025 U	0.00015 U	0.0003 U	0.0001 U	0.0025 U	0.0025 U
Calcium as Ca	mg/L	NA	17.7	19.3	20.5	24.100	7.930	3.45 B	3.47 B	3.87 B	3.920	3.980
Chromium as Cr	mg/L	0.05	0.0014 B	0.0017 B	0.002 B	0.0100 U	0.0100 U	0.0066 B	0.0254	0.0046 B	0.0100 U	0.0100 U
Cobalt	mg/L	NA	0.00035 U	0.0002 U	0.0003 B	0.0500 U	0.0500 U	0.00035 U	0.0002 U	0.0004 B	0.0500 U	0.0500 U
Copper as Cu	mg/L	0.2	0.0007 U	0.0011 B	0.0007 B	0.0250 U	0.0250 U	0.001 B	0.001 B	0.0005 U	0.0250 U	0.0250 U
Cyanide as CN	mg/L	0.20	PNA	PNA	PNA	PNA	PNA	PNA	PNA	PNA	PNA	PNA
Iron as Fe	mg/L	0.3	0.188	0.128	0.0297 B	0.237	0.0201	0.101	0.282	0.0412 B	0.100 U	0.025
Lead as Pb	mg/L	0.025	0.0118	0.0013 U	0.0046	0.005 U	0.0005 U	0.0109	0.0013 U	0.0036	0.0050 U	0.0050 U
Magnesium	mg/L	35 #	7.98	7.54	8.12	9.870	3.380	1.98 B	1.9 B	2.24 B	2.270	2.320
Manganese as Mn	mg/L	0.3	0.0369	0.0136 B	0.0072 B	0.0287	0.01 U	0.0136 B	0.0093 B	0.0053 B	0.0100 U	0.0100 U
Mercury as Hg	mg/L	0.0007	0.0001 U	0.0001 U	0.0001 U	0.0002 U	0.0002 U	0.0001 U	0.0001 U	0.0001 U	0.00020 U	0.00020 U
Nickel as Ni	mg/L	0.1	0.0023 B	0.0008 B	0.003 B	0.0400 U	0.0400 U	0.0355 B	0.0272 B	0.0278 B	0.0400 U	0.0400 U
Potassium	mg/L	NA	1.93 B	2.86 B	1.46 B	5.000 U	5.000 U	0.892 B	2.12 B	0.745 B	5.000 U	5.000 U
Selenium as Se	mg/L	0.01	0.0018 U	0.0014 U	0.0022 U	0.0100 U	0.0100 U	0.0018 U	0.0014 U	0.0022 U	0.0100 U	0.0100 U
Silver as Ag	mg/L	0.05	0.00043 U	0.0007 U	0.0024 B	0.0100 U	0.0100 U	0.00043 U	0.0007 U	0.0013 B	0.0100 U	0.0100 U
Sodium as Na	mg/L	20	9.41	9.16	11.3	10.700 J	6.520	6.82	7.5	8.97	11.700	8.210
Thallium as Tl	mg/L	0.0005 #	0.0019 U	0.001 U	0.0019 U	0.0100 U	0.0100 U	0.0019 U	0.001 U	0.0019 U	0.0100 U	0.0100 U
Vanadium	mg/L	NA	0.0005 B	0.0007 U	0.0028 U	0.0500 U	0.0500 U	0.00028 U	0.0007 U	0.0028 U	0.0500 U	0.0500 U
Zinc as Zn	mg/L	2 #	0.0506	0.0086 B	0.0051 B	0.0200 U	0.0200 U	0.0302	0.0062 B	0.0041 B	0.0200 U	0.0200 U
Alkalinity tot CaCO3	mg/L	NA	56.1	66.8 D	63.2	78.4	23.6	9.9	10.7	12.8	12.6	11
Chloride as Cl	mg/L	250.0	14	12	13.2	14.5	10.3	10.9	10.9	11.1	11.5	9.8
Sulfate as SO4	mg/L	250.0	12.5	10.9	11.3	12	6.4	8.27	7.53	7.08	7.2	6.9
Bromide	mg/L	2 #	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
BOD5	mg/L	NA	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
COD	mg/L	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Color	units	NA	PNA	PNA	PNA	PNA	PNA	PNA	PNA	PNA	PNA	PNA
Chromium hex as Cr	mg/L	0.05	PNA	PNA	PNA	PNA	PNA	PNA	PNA	PNA	PNA	PNA
Hardness as CaCO3	mg/L	NA	60 D	120 D	80 D	84	PNA	18	48 D	24 D	18	PNA
Ammonia as N	mg/L	2.0	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.14	0.1
Nitrite as N	mg/L	NA	0.1 U	0.1 U	0.1 U	0.05 U	0.05 U	0.1 U	0.1 U	0.1 U	0.05 U	0.05 U
Nitrate as N	mg/L	10	0.82	1.74 D	2.25	1.6 J	0.091	0.1 U	0.1 U	0.14	1.4	0.36
Phenols as Phenol	mg/L	0.001	0.005 U	0.005 U	0.0101	0.0052	0.0005 U	0.005 U	0.005 U	0.005 U	0.0104	0.005 U
Tot Dissolved Solids	mg/L	NA	123	107	92	147 J	52	57	39	23	63	43
Tot. Kjeldahl Nitrogen	mg/L	NA	0.3	0.1 U	1 UD	0.1 U	0.2	0.23	0.1 U	0.1 UD	0.1 U	0.3
Tot Organic Carbon	mg/L	NA	2.5	16.4	0.672	1 U	1 U	1.6	2.8	0.596	1 U	1 U
Turbidity	NTU	NA	44.7	1.6	12.3	105	9	0	3.9	0.71	0	3.5
Temperature	deg C	NA	13.09	12.18	12.11	12.4	12.02	11.94	11.36	11.4	11.96	11.41
pH	units	6.5-8.5	5.82	5.86	5.73	5.70	5.83	5.82	6.29	6.27	5.81	5.94
Spec. Cond	umho/cm	NA	210	230	201	253	114	90	87	76	89	94

NOTES:

* = NYSDDEC Class GA Groundwater Standards

= NYCRR Part 703

= Guidance value, no standard exists.

NA = Not available.

PNA = parameter not analyzed for.

B = This flag is used when the analyte is found in the associated blank as in the sample.

D = Dilution

E = This flag identified compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis.

F = This flag indicates the results of a filtered metal analysis.

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

U = The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

UI = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R = The sample results are unreliable/unusable. The presence or absence of the analyte cannot be verified.

1.0 = Compound exceeded standard.

1.0 = Compound at standard.

NM = Not Monitored

TOWN OF SOUTHAMPTON
NORTH SEA LANDFILL
TABLE 1
INORGANIC GROUNDWATER QUALITY RESULTS
OCTOBER 2017

ANALYTICAL PARAMETERS	UNITS	GW STND*	MW-8					
			Oct. 2013		Oct. 2014	Oct. 2015	Oct. 2016	October 2017
			Unfiltered	Filtered				
Aluminum as Al	mg/L	NA	PNA	PNA	PNA	PNA	PNA	PNA
Antimony as Sb	mg/L	0.003 #	PNA	PNA	PNA	PNA	PNA	PNA
Arsenic as As	mg/L	0.025	PNA	PNA	PNA	PNA	PNA	PNA
Barium	mg/L	1	PNA	PNA	PNA	PNA	PNA	PNA
Beryllium as Be	mg/L	0.003	PNA	PNA	PNA	PNA	PNA	PNA
Boron as B	mg/L	1.0	PNA	PNA	PNA	PNA	PNA	PNA
Cadmium as Cd	mg/L	0.005	0.00015 U	0.00015 U	0.0003 U	0.0009 B	0.0025 U	0.0025 U
Calcium as Ca	mg/L	NA	12.7	12	8.57	10.7	13.9	10.5
Chromium as Cr	mg/L	0.05	PNA	PNA	PNA	PNA	PNA	PNA
Cobalt	mg/L	NA	PNA	PNA	PNA	PNA	PNA	PNA
Copper as Cu	mg/L	0.2	PNA	PNA	PNA	PNA	PNA	PNA
Cyanide as CN	mg/L	0.20	PNA	PNA	PNA	PNA	PNA	PNA
Iron as Fe	mg/L	0.3	11.4	0.0619 U	2.15	0.516	0.702	0.421
Lead as Pb	mg/L	0.025	0.0088	0.0063	0.0013 U	0.005	0.005 U	0.005 U
Magnesium	mg/L	35 #	4.52 B	4.19 B	3.43 B	4.53 B	6.11	4.47
Manganese as Mn	mg/L	0.3	0.649	0.115	0.0771	0.0361 E	0.0288	0.014
Mercury as Hg	mg/L	0.0007	PNA	PNA	PNA	PNA	PNA	PNA
Nickel as Ni	mg/L	0.1	PNA	PNA	PNA	PNA	PNA	PNA
Potassium	mg/L	NA	2.35 B	1.74 B	2.47 B	1.03 B	5 U	5 U
Selenium as Se	mg/L	0.01	PNA	PNA	PNA	PNA	PNA	PNA
Silver as Ag	mg/L	0.05	PNA	PNA	PNA	PNA	PNA	PNA
Sodium as Na	mg/L	20	8.15	9.19	7.44	9.01	9.79	8.44
Thallium as Tl	mg/L	0.0005 #	PNA	PNA	PNA	PNA	PNA	PNA
Vanadium	mg/L	NA	PNA	PNA	PNA	PNA	PNA	PNA
Zinc as Zn	mg/L	2 #	PNA	PNA	PNA	PNA	PNA	PNA
Alkalinity tot CaCO ₃	mg/L	NA	40.9	PNA	24.9	30.9 H	47.7	37
Chloride as Cl	mg/L	250.0	10.5	PNA	10.6	10.6	13.8	11.4
Sulfate as SO ₄	mg/L	250.0	11.4	PNA	8.68	7.85	8.2	7.7
Bromide	mg/L	2 #	0.5 U	PNA	0.5 U	0.5 U	0.5 U	0.5 U
BOD ₅	mg/L	NA	2 U	PNA	2 U	2 U	2 U	2 U
COD	mg/L	NA	10 U	PNA	10 U	10 U	10 U	11.9
Color	units	NA	PNA	PNA	PNA	PNA	PNA	PNA
Chromium hex as Cr	mg/L	0.05	PNA	PNA	PNA	PNA	PNA	PNA
Hardness as CaCO ₃	mg/L	NA	68 D	PNA	48 D	52 D	56	50
Ammonia as N	mg/L	2.0	0.1 U	PNA	0.1 U	0.1 U	0.1 U	0.1 U
Nitrite as N	mg/L	NA	0.1 U	PNA	0.1 U	0.1 U	0.05 U	0.05 U
Nitrate as N	mg/L	10	1.45 D	PNA	0.78	1.25	0.2	1.2
Phenols as Phenol	mg/L	0.001	0.005 U	PNA	0.005 U	0.005 U	0.0057	0.005 U
Tot Dissolved Solids	mg/L	NA	101	PNA	39	83	100	79
Tot. Kjeldahl Nitrogen	mg/L	NA	0.53	PNA	0.1	0.2 D	0.1 U	0.14
Tot Organic Carbon	mg/L	NA	1.1	PNA	6.7	0.581	1 U	1 UB
Turbidity	NTU	NA	530.0	PNA	75.0	31.2	13.1	25.1
Temperature	deg.C	NA	13.65	PNA	11.68	11.94	11.85	11.85
pH	units	6.5-8.5	7.73	PNA	6.06	5.53	5.61	5.55
Spec. Cond	umho/cm	NA	170	PNA	123	139	179	151

NOTES:

* = NYSDEC, Class GA Groundwater Standards

= NYCRR Part 703

= Guidance value, no standard exists.

NA = Not available.

PNA = parameter not analyzed for.

B = This flag is used when the analyte is found in the associated blank as in the sample.

D = Dilution

E - This flag identified compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis.

F - This flag indicates the results of a filtered metal analysis.

H - Received / analyzed outside of analytical holding time

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

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TOWN OF SOUTHAMPTON
NORTH SEA LANDFILL
TABLE 1
INORGANIC GROUNDWATER QUALITY RESULTS
OCTOBER 2017

ANALYTICAL PARAMETERS	UNITS	GW STND*	MW-9				
			Oct. 2013	Oct. 2014	Oct. 2015	Oct. 2016	October 2017
Aluminum as Al	mg/L	NA	PNA	PNA	PNA	PNA	PNA
Antimony as Sb	mg/L	0.003 #	PNA	PNA	PNA	PNA	PNA
Arsenic as As	mg/L	0.025	PNA	PNA	PNA	PNA	PNA
Barium	mg/L	1	PNA	PNA	PNA	PNA	PNA
Beryllium as Be	mg/L	0.003	PNA	PNA	PNA	PNA	PNA
Boron as B	mg/L	1.0	PNA	PNA	PNA	PNA	PNA
Cadmium as Cd	mg/L	0.005	0.00015 U	0.0003 U	0.0001 U	0.0025 U	0.0025 U
Calcium as Ca	mg/L	NA	5.27	7.5	4.63 B	5.96	5.24
Chromium as Cr	mg/L	0.05	PNA	PNA	PNA	PNA	PNA
Cobalt	mg/L	NA	PNA	PNA	PNA	PNA	PNA
Copper as Cu	mg/L	0.2	PNA	PNA	PNA	PNA	PNA
Cyanide as CN	mg/L	0.20	PNA	PNA	PNA	PNA	PNA
Iron as Fe	mg/L	0.3	0.995	1.37	0.394	1.31	0.188
Lead as Pb	mg/L	0.025	0.0114	0.0013 U	0.0046	0.005 U	0.005 U
Magnesium	mg/L	35 #	2.84 B	3.72 B	2.4 B	3.13	2.74
Manganese as Mn	mg/L	0.3	0.0506	0.0269	0.0163 E	0.0359	0.011
Mercury as Hg	mg/L	0.0007	PNA	PNA	PNA	PNA	PNA
Nickel as Ni	mg/L	0.1	PNA	PNA	PNA	PNA	PNA
Potassium	mg/L	NA	1.69 B	2.65 B	0.96 B	5 U	5 U
Selenium as Se	mg/L	0.01	PNA	PNA	PNA	PNA	PNA
Silver as Ag	mg/L	0.05	PNA	PNA	PNA	PNA	PNA
Sodium as Na	mg/L	20	6.56	8.72	8.67	13.4	10.2
Thallium as Tl	mg/L	0.0005 #	PNA	PNA	PNA	PNA	PNA
Vanadium	mg/L	NA	PNA	PNA	PNA	PNA	PNA
Zinc as Zn	mg/L	2 #	PNA	PNA	PNA	PNA	PNA
Alkalinity tot CaCO3	mg/L	NA	16	25.8	11.9 H	16.6	19
Chloride as Cl	mg/L	250.0	12	12.5	10.7	19.8	17.9
Sulfate as SO4	mg/L	250.0	7.38	8.89	6.82	7.4	5.8
Bromide	mg/L	2 #	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
BOD5	mg/L	NA	2 U	2 U	2 U	2 U	2 U
COD	mg/L	NA	10 U	10 U	10 U	21.3	10 U
Color	units	NA	PNA	PNA	PNA	PNA	PNA
Chromium hex as Cr	mg/L	0.05	PNA	PNA	PNA	PNA	PNA
Hardness as CaCO3	mg/L	NA	48 D	76 D	44 D	27	22
Ammonia as N	mg/L	2.0	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Nitrite as N	mg/L	NA	0.1 U	0.1 U	0.1 U	0.05 U	0.05 U
Nitrate as N	mg/L	10	0.46	0.43	0.23	0.12	0.18
Phenols as Phenol	mg/L	0.001	0.005 U	0.005 U	0.005 U	0.0068	0.005 U
Tot Dissolved Solids	mg/L	NA	64	50	55	65	61
Tot. Kjeldahl Nitrogen	mg/L	NA	0.22	0.1 U	0.1 U	0.1 U	0.14
Tot Organic Carbon	mg/L	NA	1 U	4.2	0.5 U	1 U	1 UB
Turbidity	NTU	NA	44.0	11.6	8.18	35.20	5.50
Temperature	deg.C	NA	14.52	12.74	13.03	13.02	12.73
pH	units	6.5-8.5	6.67	5.37	5.58	5.51	5.21
Spec. Cond	umho/cm	NA	110	133	90	123	122

NOTES:

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6 NYCRR Part 703

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TOWN OF SOUTHAMPTON
NORTH SEA LANDFILL
TABLE 1
INORGANIC GROUNDWATER QUALITY RESULTS
OCTOBER 2017

ANALYTICAL PARAMETERS	UNITS	GW STN#*	MW-11A																	
			April 2013		Oct. 2013		April 2014		Oct. 2014		April 2015		Oct. 2015		April 2016		Oct. 2016		April 2017	
			Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered
Aluminum as Al	mg/L	NA	0.0179	B	0.0308	B	0.0049	U	0.0049	U	0.0329	B	0.0224	U	0.153	B	0.0276	B	0.0059	U
Antimony as Sb	mg/L	0.003 #	0.0016	B	0.0013	BJ	0.002	U	0.0020	U	0.0019	U	0.0019	U	0.001	U	0.0010	U	0.003	U
Arsenic as As	mg/L	0.025	0.0044	B	0.0028	U	0.0038	B	0.0010	U	0.0021	B	0.0011	U	0.0568		0.0009	U	0.0079	B
Barium	mg/L	1	0.164	B	0.1410	B	0.16	B	0.0784	B	0.089	B	0.0714	B	1.77		0.0767	B	0.267	
Beryllium as Be	mg/L	0.003	0.0001	U	0.00090	B	0.00022	U	0.00022	U	0.00014	U	0.00014	U	0.0002	U	0.00020	U	0.0001	U
Boron as B	mg/L	1.0	0.0419	BR	0.0508	BR	0.0041	U	0.0041	U	0.0304	B	0.0360	B	0.0495	B	0.0404	B	0.0323	B
Cadmium as Cd	mg/L	0.005	0.0001	U	0.00080	B	0.00015	U	0.00015	U	0.0004	B	0.00020	B	0.113		0.00030	U	0.0025	B
Calcium as Ca	mg/L	NA	42.6		41.2		28.8		26.1		25.6		24.4		66.1		57.4		37.5	
Chromium as Cr	mg/L	0.05	0.0046	B	0.0033	B	0.0056	B	0.0006	B	0.002	B	0.0011	U	0.103		0.0027	B	0.0411	
Cobalt	mg/L	NA	0.0107	B	0.0113	B	0.025	B	0.0151	B	0.0384	B	0.0338	B	0.0312	B	0.0011	B	0.0234	B
Copper as Cu	mg/L	0.2	0.0004	U	0.0016	B	0.0007	U	0.0007	U	0.0052	B	0.0014	B	0.069		0.0039	B	0.0562	
Cyanide as CN	mg/L	0.20	0.01	U	PNA		PNA		PNA		0.01	U	PNA		PNA		PNA		0.01	U
Iron as Fe	mg/L	0.3	22.4		4.54		38.1		0.0619	U	13.4		0.1460		1.020		2.4		117	E
Lead as Pb	mg/L	0.025	0.0049		0.0064		0.0072	U	0.0024	BJ	0.0041	B	0.0149		0.13	U	0.0013	U	0.0022	U
Magnesium	mg/L	35 #	15.8		15.00		10.5		9.70		9.44		9.03		14.5		15.20		10.5	
Manganese as Mn	mg/L	0.3	2.02		1.83		1.85		0.974		1.08		0.871		70.9		1.13		5.14	
Mercury as Hg	mg/L	0.0007	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U
Nickel as Ni	mg/L	0.1	0.0045	B	0.0056	B	0.0181	B	0.0150	B	0.0198	B	0.0215	B	0.0138	B	0.0038	B	0.0038	B
Potassium	mg/L	NA	5.05	J	5.10	J	4.83	B	4.29	B	3.67	B	3.85	B	5.5		4.88	B	4.12	B
Selenium as Se	mg/L	0.01	0.0023	U	0.0023	U	0.0034	B	0.0018	U	0.0011	U	0.0026	B	0.32	B	0.0014	B	0.0038	U
Silver as Ag	mg/L	0.05	0.0002	U	0.00045	B	0.0023	B	0.00043	U	0.00043	U	0.00043	U	0.0151		0.00070	U	0.0137	
Sodium as Na	mg/L	20	13.9		12.9		7.79		8.26		8.54		8.34		9.16		9.25		10.8	
Thallium as Tl	mg/L	0.0005 #	0.0019	U	0.0019	U	0.0047	B	0.0042	BJ	0.0013	U	0.0013	U	0.0252		0.0010	U	0.0038	U
Vanadium	mg/L	NA	0.0003	U	0.00030	U	0.00028	U	0.00028	U	0.00039	U	0.00039	U	0.0007	U	0.0007	U	0.0007	U
Zinc as Zn	mg/L	2 #	0.0103	B	0.0129	B	0.0299		0.0188	BJ	0.0217		0.0117	B	0.178		0.0498		0.0463	
Alkalinity tot CaCO3	mg/L	NA	174	D	PNA		104	D	PNA		96.8		PNA		234	D	PNA		120	D
Chloride as Cl	mg/L	250.0	14.8		PNA		11.8		PNA		12.4		PNA		13.5		PNA		14.5	
Sulfate as SO4	mg/L	250.0	23.1		PNA		18		PNA		7.03		PNA		27.2		PNA		10.3	
Bromide	mg/L	2 #	0.5	U	PNA		0.5	U	PNA		0.5	U	PNA		0.5	U	PNA		0.5	U
BOD5	mg/L	NA	2	U	PNA		2	U	PNA		8	S	PNA		13		PNA		2	U
COD	mg/L	NA	10	U	PNA		10	U	PNA		10	U	PNA		24.2		PNA		10	U
Color	units	NA	50	D	PNA		PNA		PNA		10		PNA		PNA		PNA		45	
Chromium hex as Cr	mg/L	0.05	0.02	U	PNA		PNA		PNA		0.02	U	PNA		PNA		PNA		0.02	U
Hardness as CaCO3	mg/L	NA	190	D	PNA		132	D	PNA		164	D	PNA		500	D	PNA		150	D
Ammonia as N	mg/L	2.0	0.32		PNA		0.15		PNA		0.23		PNA		0.53		PNA		0.25	
Nitrite as N	mg/L	NA	0.1	U	PNA		0.1	U	PNA		0.1	U	PNA		0.1	U	PNA		0.1	U
Nitrate as N	mg/L	10	0.1	U	PNA		0.18		PNA		0.11		PNA		0.19		PNA		0.24	
Phenols as Phenol	mg/L	0.001	0.005	U	PNA		0.005	U	PNA		0.005	U	PNA		0.005	U	PNA		0.005	U
Tot Dissolved Solids	mg/L	NA	232		PNA		166		PNA		137		PNA		170		PNA		167	
Tot. Kjeldahl Nitrogen	mg/L	NA	0.44		PNA		0.7		PNA		0.63		PNA		1.18		PNA		0.62	
Tot Organic Carbon	mg/L	NA	45.4		PNA		2.5		PNA		1.4		PNA		39.8		PNA		3.8	
Turbidity	NTU	NA	79.9		PNA		292		PNA		23.6		PNA		>1,000		PNA		541	
Temperature	deg.C	NA	13.86		PNA		14.24		PNA		12.39		PNA		13.55		PNA		12.66	
pH	units	6.5-8.5	6.7		PNA		6.19		PNA		5.94		PNA		6.04		PNA		6.27	
Spec. Cond	umho/cm	NA	469		PNA		316		PNA		279		PNA		398		PNA		329	

NOTES:

* = NYSDKC Class GA Groundwater Standards

= NYGR Part 703

= Guidance value, no standard exists.

NA = Not available.

PNA = parameter not analyzed for.

* - Duplicate analysis is not within control limits

B = This flag is used when the analyte is found in the associated blank as in the sample.

D - Dilution

E - This flag identified compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis.

F - This flag indicates the results of a filtered metal analysis.

H - Received / analyzed outside of analytical holding time

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

N - Matrix spike sample recovery not within control limits

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are unreliable/unusable. The presence or absence of the analyte cannot be verified.

S - Recovery exceeded control limits for this analyte.

3.8 = Compound exceeded standard.

1.0 = Compound at standard.

NM = Not Monitored

TOWN OF SOUTHAMPTON
NORTH SEA LANDFILL
TABLE 1
INORGANIC GROUNDWATER QUALITY RESULTS
OCTOBER 2017

ANALYTICAL PARAMETERS	UNITS	GW STND*	MW-118															
			April 2013		Oct. 2013		April 2014		October 2014		April 2015		October 2015		April 2016		October 2016	
			Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered
Aluminum as Al	mg/L	NA	2.15	0.0095 U	0.797	0.0049 U	0.0339		1.11		0.425		0.466	0.0057 U	0.253		0.575	0.902
Antimony as Sb	mg/L	0.003 #	0.0012 U	0.0109 B	0.002 U	0.002 U	0.0019 U		0.0033 B	0.003 U	0.0006 U	0.002 B	0.06 U	0.0600 U	0.0600 U	0.0600 U	0.0600 U	0.0600 U
Arsenic as As	mg/L	0.025	0.0052 B	0.0028 B	0.001 U	0.0015 B	0.0011 U	0.0009 U	0.0033 U	0.0022 U	0.0022 U	0.01 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U
Barium	mg/L	1	0.0293 B	0.0096 B	0.0302 B	0.0137 B	0.026 B	0.019 B	0.0157 B	0.0183 B	0.0125 B	0.0169 J	0.200 U	0.0260 J	0.0078 J	0.2000 U	0.2 U	0.2 U
Beryllium as Be	mg/L	0.003	0.0001 U	0.0001 U	0.00022 U	0.00022 U	0.00014 U	0.0002 U	0.0001 U	0.0002 U	0.0002 U	0.0005 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Boron as B	mg/L	1.0	0.0151 B	0.0192 B	0.0048 B	0.0041 U	0.0101 B	0.0128 B	0.0117 B	0.0137 B	0.012 B	0.0125 J	0.0500 U	0.0186 J	0.0198 J	0.05 U	0.05 U	0.05 U
Cadmium as Cd	mg/L	0.005	0.0001 U	0.0002 B	0.00015 U	0.00011 U	0.0003 U	0.0002 U	0.0001 U	0.0001 U	0.0001 U	0.0002 J	0.0025 U	0.000099 J	0.000081 J	0.0025 U	0.0025 U	0.0025 U
Calcium as Ca	mg/L	NA	14.9	14.2	10.1	10.4	11.1	7.87	8.61	10.1	9.27	7.23	16.800	13.600	10.000	7.430	6.950	6.950
Chromium as Cr	mg/L	0.05	0.0313	0.0023 B	0.0108	0.002 B	0.0069 B	0.0134	0.0076 B	0.0092 B	0.0006 B	0.0046 J	0.0160	0.0170 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U
Cobalt	mg/L	NA	0.0014 B	0.0004 U	0.0009 B	0.0007 B	0.0002 B	0.0004 B	0.0006 U	0.0004 B	0.0003 B	0.0004 J	0.0500 U	0.00088 J	0.0500 U	0.05 U	0.0500 U	0.0500 U
Copper as Cu	mg/L	0.2	0.009 B	0.0004 U	0.007 B	0.0007 U	0.0045 B	0.0052 B	0.0055 B	0.0052 B	0.026 *	0.0051 J	0.0250 U	0.0073 J	0.0040 J	0.025 U	0.0250 U	0.0250 U
Cyanide as CN	mg/L	0.20	0.01 U	PNA	PNA	PNA	0.01 U	PNA	0.01 U	PNA	PNA	0.01 U	PNA	0.0100 U	PNA	PNA	PNA	PNA
Iron as Fe	mg/L	0.3	12.7	0.0487 B	6.54	0.0619 U	3.65	5.53	3.97 E	3.98	0.0268 U	1.96	10.200	9.950	0.100 U	14.600	0.100 U	0.100 U
Lead as Pb	mg/L	0.025	0.0254	0.0031	0.018	0.0064	0.0072	0.0034	0.005	0.0091	0.0032 NJ	0.0048 J	0.0050 U	0.0063	0.0050 U	0.0065	0.0050 U	0.0050 U
Magnesium	mg/L	35 #	4.49 B	3.8 B	3.75 B	3.58 B	4.46 B	3.22 B	3.08 B	4.04 B	3.58 EJ	3.02	5.230	4.640	2.900	2.470	2.470	2.470
Manganese as Mn	mg/L	0.3	0.273	0.0276	0.281	0.0211	0.156	0.167	0.131	0.125 EJ	0.0275 J	0.0414	0.271	0.345	0.0076 J	0.603	0.01 U	0.01 U
Mercury as Hg	mg/L	0.0007	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 UNJ	0.0002 U	0.00020 U	0.00020 U	0.00020 U	0.00020 UB	0.00020 UB	0.00020 UB
Nickel as Ni	mg/L	0.1	0.0081 B	0.0046 B	0.0078 B	0.0042 B	0.0034 B	0.005 B	0.0031 B	0.0049 B	0.0076 B	0.04 U	0.0400 U	0.0099 J	0.0019 J	0.04 U	0.04 U	0.04 U
Potassium	mg/L	NA	2.12 B	2.05 B	2.53 B	2.34 B	1.71 B	2.37 B	0.874 B	1.57 B	0.417 B	1.09 J	5.000 U	1.650 J	1.240 J	5.000 U	5.000 U	5.000 U
Selenium as Se	mg/L	0.01	0.0023 U	0.0153	0.0018 U	0.0018 U	0.0011 U	0.0014 U	0.0038 U	0.0022 U	0.0022 UNJ	0.01 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U
Silver as Ag	mg/L	0.05	0.0002 U	0.0002 U	0.0054 B	0.00043 U	0.00043 U	0.0007 U	0.0022 U	0.0033 B	0.0011 BNJ	0.01 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U
Sodium as Na	mg/L	20	7.07	7.42	7.57	9.44	11.5	8.78	7.89	10.2	9.04	8.74	12.300	8.300	7.630	8.210	7.040	7.040
Thallium as Tl	mg/L	0.0005 #	0.0019 U	0.0019 U	0.0019 U	0.0045 B	0.0013 U	0.001 U	0.0038 U	0.0019 U	0.0019 U	0.01 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U
Vanadium	mg/L	NA	0.006 B	0.0009 B	0.0019 B	0.00028 U	0.0017 B	0.0027 B	0.0012 B	0.0028 U	0.0028 U	0.05 U	0.0500 U	0.0023 J	0.0500 U	0.05 U	0.0500 U	0.0500 U
Zinc as Zn	mg/L	2 #	0.0293	0.0091 B	0.0444	0.0947	0.0218	0.0177 B	0.0102 B	0.0111 B	0.0107 B*	0.005 J	0.0200 U	0.0089 J	0.0200 U	0.02 U	0.0200 U	0.0200 U
Alkalinity tot CaCO3	mg/L	NA	47 D	PNA	35		30.8	22.3	23.2	31.4 HJ	PNA	18.2	60.9	43.6	PNA	26.8	PNA	PNA
Chloride as Cl	mg/L	250.0	10.5	PNA	11.7	PNA	12.8	11.3	12.2	9.87	PNA	11	10.9	9.3	PNA	8.8	PNA	PNA
Sulfate as SO4	mg/L	250.0	6.66	PNA	13.4	PNA	14.9	12.7	9.39	9.44	PNA	9.27	6.5	7.1	PNA	7.2	PNA	PNA
Bromide	mg/L	2 #	0.5 U	PNA	0.5 U	PNA	0.5 U	0.5 U	0.5 U	0.5 U	PNA	0.03 J	0.5 U	0.029 J	PNA	0.5 U	PNA	PNA
BOD5	mg/L	NA	2 U	PNA	2 U	PNA	2 U	2 U	2 U	2 U	PNA	2 U	2 U	4.0 U	PNA	4.0 U	PNA	PNA
COD	mg/L	NA	10 U	PNA	10 U	PNA	10 U	10 U	10 U	10 U	PNA	10 U	10 U	8.8 J	PNA	18.2	PNA	PNA
Color	units	NA	75 D	PNA	PNA	PNA	10	PNA	35	PNA	PNA	5	PNA	50.0	PNA	PNA	PNA	PNA
Chromium hex as Cr	mg/L	0.05	0.02 U	PNA	PNA	PNA	0.02 U	PNA	0.02 U	PNA	PNA	0.02 U	PNA	0.020 U	PNA	PNA	PNA	PNA
Hardness as CaCO3	mg/L	NA	68 D	PNA	88 D	PNA	48 D	84 D	48 D	48 D	PNA	31	64	58.0	PNA	32.0	PNA	PNA
Ammonia as N	mg/L	2.0	0.1 U	PNA	0.1 U	PNA	0.13	0.1 U	0.1 U	0.1 U	PNA	0.1 U	0.1 U	0.14	PNA	0.1 UB	PNA	PNA
Nitrite as N	mg/L	NA	0.1 U	PNA	0.1 U	PNA	0.1 U	0.1 U	0.1 U	0.1 UJ	PNA	0.1 U	0.05 U	0.050 U	PNA	0.050 U	PNA	PNA
Nitrate as N	mg/L	10	0.51	PNA	0.44	PNA	0.43	0.25	0.25	0.44	PNA	0.19	0.82	0.41	PNA	0.29	PNA	PNA
Phenols as Phenol	mg/L	0.001	0.005 U	PNA	0.005 U	PNA	0.005 U	0.005 U	0.005 U	0.005 U	PNA	0.005 U	0.0099	0.0135	PNA	0.005 U	PNA	PNA
Tot Dissolved Solids	mg/L	NA	89	PNA	94	PNA	86	30	73	81	PNA	47	108	75.0	PNA	57.0	PNA	PNA
Tot. Kjeldahl Nitrogen	mg/L	NA	0.65	PNA	0.67	PNA	0.57	0.23	0.26	0.1 UJ	PNA	0.1 U	0.32	0.41	PNA	0.43	PNA	PNA
Tot Organic Carbon	mg/L	NA	14.4	PNA	1.3	PNA	1	U	5.9	0.1 U	0.927	PNA	1	U	1.7 J	PNA	1.7 B	PNA
Turbidity	NTU	NA	126	PNA	122	PNA	19.5	34.3	11.1	42.8	PNA	40.6	41.3	136	PNA	115	PNA	PNA
Temperature	deg.C	NA	13.35	PNA	13.58	PNA	11.5	12.7	11.85	12.94	PNA	13.22	13.1	13.42	PNA	12.7	PNA	PNA
pH	units	6.5-8.5	7.52	PNA	6.25	PNA	6.28	6.24	6.25	6.25	PNA	6.19	6.24	6.20	PNA	6.40	PNA	PNA
Spec. Cond	umho/cm	NA	167	PNA	176	PNA	191	128	123	140	PNA	101	220	160	PNA	129	PNA	PNA

NOTES:

* = NYSDEC, Class GA Groundwater Standards

6 NYCRR Part 703

= Guidance value, no standard exists.

NA = Not available.

PNA = parameter not analyzed for.

* = Duplicate analysis is not within control limits

B - This flag is used when the analyte is found in the associated blank as in the sample.

D - Dilution

E - This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis.

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J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

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U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

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R - The sample results are unreliable/unusable. The presence or absence of the analyte cannot be verified.

1.0 = Compound exceeded standard.

1.0 = Compound at standard.

NM - Not Monitored

TOWN OF SOUTHAMPTON
NORTH SEA LANDFILL
TABLE 1
INORGANIC GROUNDWATER QUALITY RESULTS
OCTOBER 2017

ANALYTICAL PARAMETERS	UNITS	GW STND*	MW-12A											
			April 2013		Oct. 2013	April 2014	Oct. 2014	April 2015	Oct. 2015	April 2016	Oct. 2016	April 2017		October 2017
			Unfiltered	Filtered								Unfiltered	Filtered	
Aluminum as Al	mg/L	NA	0.09 B	0.0214 B	PNA	0.0616 B	PNA	0.369	PNA	0.022 J	PNA	0.0449 J	0.200 U	PNA
Antimony as Sb	mg/L	0.003 #	0.0012 U	0.0012 U	PNA	0.0019 U	PNA	0.003 U	PNA	0.06 U	PNA	0.0600 U	0.0600 U	PNA
Arsenic as As	mg/L	0.025	0.0064 B	0.0028 U	PNA	0.0011 U	PNA	0.0097 B	PNA	0.01 U	PNA	0.0100 U	0.0100 U	PNA
Barium	mg/L	1	0.0465 B	0.0421 B	PNA	0.0432 B	PNA	0.0514 B	PNA	0.0522 J	PNA	0.0290 J	0.0238 J	PNA
Beryllium as Be	mg/L	0.003	0.0001 U	0.0001 U	PNA	0.00014 U	PNA	0.0001 U	PNA	0.005 U	PNA	0.0050 U	0.0050 U	PNA
Boron as B	mg/L	1.0	0.0479 B	0.0491 B	PNA	0.0539 B	PNA	0.0488 B	PNA	0.0776 J	PNA	0.0407 J	0.0389 J	PNA
Cadmium as Cd	mg/L	0.005	0.0001 U	0.0001 U	0.00015 U	0.0002 B	0.0004 B	0.0003 B	0.0002 B	0.0002 J	0.0025 U	0.0025 U	0.00064 J	0.0025 U
Calcium as Ca	mg/L	NA	25.1	25.1	30.5	24.4	15.5	21.1	32	30.4	13	15.100	13.800	22.200
Chromium as Cr	mg/L	0.05	0.0063 B	0.0018 B	PNA	0.0047 B	PNA	0.0092 B	PNA	0.01 U	PNA	0.0021 J	0.0100 U	PNA
Cobalt	mg/L	NA	0.0043 B	0.0036 B	PNA	0.0064 B	PNA	0.0062 B	PNA	0.0046 J	PNA	0.0046 J	0.0025 J	PNA
Copper as Cu	mg/L	0.2	0.0025 B	0.0025 B	PNA	0.0026 B	PNA	0.0098 B	PNA	0.0035 J	PNA	0.0027 J	0.0078 J	PNA
Cyanide as CN	mg/L	0.20	0.01 U	PNA	PNA	0.01 U	PNA	0.01 U	PNA	0.01 U	PNA	0.0100 U	PNA	PNA
Iron as Fe	mg/L	0.3	6.78	0.236	5.28	3.26	9.63	8.95 E	3.06	0.769	5.83	1.560	0.100 U	18.700
Lead as Pb	mg/L	0.025	0.0042	0.0056	0.0057	0.0024 B	0.0013 U	0.0022 U	0.0038	0.0024 J	0.005 U	0.0050 U	0.0050 U	0.0050 U
Magnesium	mg/L	35 #	6.79	6.73	8.5	6.18	4.18 B	5.69	9	8.45	3.4	4.240	3.680	6.150
Manganese as Mn	mg/L	0.3	3.72	3.61	3.78	4.16	1.22	2.69	3.06 E	3.51	1.76	2.690	2.230	3.370
Mercury as Hg	mg/L	0.0007	0.0001 U	0.0001 U	PNA	0.0001 U	PNA	0.0001 U	PNA	0.0002 U	PNA	0.00020 U	0.00020 U	PNA
Nickel as Ni	mg/L	0.1	0.0105 B	0.0066 B	PNA	0.0104 B	PNA	0.0139 B	PNA	0.0065 J	PNA	0.0055 J	0.0071 J	PNA
Potassium	mg/L	NA	6.34	6.28	7.27	5.8	5.39	5.25	7.56	7.44	5 U	3.980 J	3.800 J	6.460
Selenium as Se	mg/L	0.01	0.0023 U	0.0023 U	PNA	0.0011 U	PNA	0.0038 U	PNA	0.01 U	PNA	0.0100 U	0.0100 U	PNA
Silver as Ag	mg/L	0.05	0.00022 B	0.00045 B	PNA	0.00043 U	PNA	0.0022 U	PNA	0.01 U	PNA	0.0100 U	0.0100 U	PNA
Sodium as Na	mg/L	20	9.97	9.7	11.9	11.3	8.43	9.47	15.3	12.4	8.2	8.650	8.250	9.020
Thallium as Tl	mg/L	0.0005 #	0.0019 B	0.0019 U	PNA	0.0014 B	PNA	0.0038 U	PNA	0.0048 J	PNA	0.0041 J	0.0100 U	PNA
Vanadium	mg/L	NA	0.0033 B	0.0003 B	PNA	0.0029 B	PNA	0.0092 B	PNA	0.05 U	PNA	0.0013 J	0.0500 U	PNA
Zinc as Zn	mg/L	2 #	0.0172 B	0.0104 B	PNA	0.0329	PNA	0.0107 B	PNA	0.0038 J	PNA	0.0012 J	0.0083 J	PNA
Alkalinity tot CaCO3	mg/L	NA	85.4 D	PNA	101 D	76	45.8	60.7	106 H	104	44.5	47.0	PNA	80.0
Chloride as Cl	mg/L	250.0	11.9	PNA	16.4	13.9	12	14.1	15.1	15.1	11.2	11.0	PNA	11.5
Sulfate as SO4	mg/L	250.0	19.4	PNA	27.4	20.7	14.5	22.4	23.3	22.2	11.2	14.5	PNA	16
Bromide	mg/L	2 #	0.5 U	PNA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.057 J	PNA	0.5 U
BOD5	mg/L	NA	2 U	PNA	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1.0 J	PNA	11.3
COD	mg/L	NA	10 U	PNA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	8.8 J	PNA	14
Color	units	NA	75 D	PNA	PNA	10	PNA	65	PNA	10	PNA	125	PNA	PNA
Chromium hex as Cr	mg/L	0.05	0.02 U	PNA	PNA	0.02 U	PNA	0.02 U	PNA	0.02 U	PNA	0.020 U	PNA	PNA
Hardness as CaCO3	mg/L	NA	116 D	PNA	132 D	100 D	130 D	110 D	180 D	108 D	54	66.0	PNA	88.0
Ammonia as N	mg/L	2.0	1.56	PNA	1.31	1.24	1.63	2.73	3.43	4.18	1.7	0.31	PNA	2.9
Nitrite as N	mg/L	NA	0.1 U	PNA	0.1 U	0.1 U	0.1 U	0.1	0.1 U	0.1 U	0.1 U	0.050 U	PNA	0.050 U
Nitrate as N	mg/L	10	0.34	PNA	1	0.72	1.93 D	0.5	0.97	0.81	0.6	0.52	PNA	0.23
Phenols as Phenol	mg/L	0.001	0.005 U	PNA	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.0111	0.0057	0.0135	PNA	0.005 U
Tot Dissolved Solids	mg/L	NA	140	PNA	176	141	105	132	168	157	95	93.0	PNA	107.0
Tot. Kjeldahl Nitrogen	mg/L	NA	1.89	PNA	1.82	1.84	2.45	2.73	3.41	3.4	1.4	0.93	PNA	3.3
Tot Organic Carbon	mg/L	NA	22.3	PNA	2.7	1.7	10.5	1.9	2	2.4	1.16	1.2 J	PNA	1.9
Turbidity	NTU	NA	81.5	PNA	29.6	16.9	40.3	47.2	44.3	5.12	38.9	571	PNA	106
Temperature	deg.C	NA	12.86	PNA	13.23	11.17	12.7	11.83	12.5	12.12	12.7	9.48	PNA	12.55
pH	units	6.5-8.5	7.53	PNA	6.11	6.03	6.04	6.13	5.81	6.3	6.17	5.55	PNA	6.36
Spec. Cond	umho/cm	NA	286	PNA	328	263	201	268	342	329	170	200	PNA	261

NOTES:

* = NYSDEC, Class GA Groundwater Standards

6 NYCRR Part 703

= Guidance value, no standard exists.

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TOWN OF SOUTHAMPTON
NORTH SEA LANDFILL
TABLE 1
INORGANIC GROUNDWATER QUALITY RESULTS
OCTOBER 2017

ANALYTICAL PARAMETERS	UNITS	GW STND*	MW-12B											
			April 2013	Oct. 2013	April 2014	Oct. 2014	April 2015	Oct. 2015	April 2016	Oct. 2016	Apr-17	October 2017		
Aluminum as Al	mg/L	NA	0.0161 B	PNA	0.0402 B	PNA	0.0059 U	PNA	0.2 U	PNA	0.0136 J	PNA		
Antimony as Sb	mg/L	0.003 #	0.0018 B	PNA	0.0019 U	PNA	0.003 U	PNA	0.06 U	PNA	0.0600 U	PNA		
Arsenic as As	mg/L	0.025	0.0028 U	PNA	0.0011 U	PNA	0.0033 U	PNA	0.01 U	PNA	0.0100 U	PNA		
Barium	mg/L	1	0.0977 B	PNA	0.0694 B	PNA	0.0482 B	PNA	0.0582 J	PNA	0.0170 J	PNA		
Beryllium as Be	mg/L	0.003	0.0001 U	PNA	0.00014 U	PNA	0.0001 U	PNA	0.005 U	PNA	0.0050 U	PNA		
Boron as B	mg/L	1.0	0.0743 B	PNA	0.0689 B	PNA	0.0725 B	PNA	0.0863 J	PNA	0.0328 J	PNA		
Cadmium as Cd	mg/L	0.005	0.0001 U	0.00015 U	0.00011 U	0.0003 U	0.0002 U	0.0001 U	0.0002 J	0.0025 U	0.0025 U	0.0025 U		
Calcium as Ca	mg/L	NA	25.2	30.6	28.5	30.6	20.2	22.4	34.9	27.4	11.300	19.500		
Chromium as Cr	mg/L	0.05	0.0014 B	PNA	0.0017 B	PNA	0.0011 U	PNA	0.01 U	PNA	0.0100 U	PNA		
Cobalt	mg/L	NA	0.0004 U	PNA	0.0006 B	PNA	0.0006 U	PNA	0.05 U	PNA	0.0500 U	PNA		
Copper as Cu	mg/L	0.2	0.0016 B	PNA	0.0021 B	PNA	0.0026 B	PNA	0.0027 J	PNA	0.0250 U	PNA		
Cyanide as CN	mg/L	0.20	0.01 U	PNA	0.01 U	PNA	0.01 U	PNA	0.01 U	PNA	0.0100 U	PNA		
Iron as Fe	mg/L	0.3	0.0274 B	0.0776 B	0.0922 B	0.177	0.0856 BE	0.0268 U	0.1 U	0.1 U	0.0393 J	0.02 U		
Lead as Pb	mg/L	0.025	0.0055	0.0094	0.0036 B	0.0013 U	0.0022 U	0.0041	0.0033 J	0.005 U	0.0050 U	0.0050 U		
Magnesium	mg/L	35 #	7.03	8.71	8.86	8.38	5.85	6.32	10.6	8.06	3.920	5.890		
Manganese as Mn	mg/L	0.3	0.124	0.4	0.981	1.68	0.934	0.872 E	0.235	0.675	0.0937	0.01 U		
Mercury as Hg	mg/L	0.0007	0.0001 U	PNA	0.0001 U	PNA	0.0001 U	PNA	0.0002 U	PNA	0.00020 U	PNA		
Nickel as Ni	mg/L	0.1	0.0085 B	PNA	0.0146 B	PNA	0.0105 B	PNA	0.0099 J	PNA	0.0026 J	PNA		
Potassium	mg/L	NA	10 U	12.9	6.37	10.3	4.7 B	9.54	4.93 J	8.27	2.620 J	5.140		
Selenium as Se	mg/L	0.01	0.0023 U	PNA	0.0011 U	PNA	0.0038 U	PNA	0.01 U	PNA	0.0100 U	PNA		
Silver as Ag	mg/L	0.05	0.00023 B	PNA	0.00043 U	PNA	0.0022 U	PNA	0.01 U	PNA	0.0100 U	PNA		
Sodium as Na	mg/L	20	11 U	15.1	13.5	12.9	11.1	14.3	18.1	15	8.930	12.100		
Thallium as Tl	mg/L	0.0005 #	0.0019 U	PNA	0.0001 U	PNA	0.0038 U	PNA	0.01 U	PNA	0.0100 U	PNA		
Vanadium	mg/L	NA	0.0012 B	PNA	0.0013 B	PNA	0.0007 U	PNA	0.05 U	PNA	0.0500 U	PNA		
Zinc as Zn	mg/L	2 #	0.0073 B	PNA	0.0176 B	PNA	0.0083 B	PNA	0.02 U	PNA	0.0200 U	PNA		
Alkalinity tot CaCO3	mg/L	NA	82.6 D	107 D	78.9	103 D	50.7	65.4 H	92.6	88.2	24.6	56.6		
Chloride as Cl	mg/L	250.0	14.7	20	17.5	16.8	16.5	15.3	22	20.5	11.3	15.8		
Sulfate as SO4	mg/L	250.0	29.3	45.5	36	32.5	29	28.5	44.5	39.2	14.0	26.5		
Bromide	mg/L	2 #	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.050 J	0.500 U		
BOD5	mg/L	NA	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1.0 J	2.0 U		
COD	mg/L	NA	10 U	10 U	10.8	10 U	10 U	10 U	10 U	10 U	8.8 J	10 U		
Color	units	NA	5 U	PNA	5 U	PNA	10	PNA	5 U	PNA	10.0	PNA		
Chromium hex as Cr	mg/L	0.05	0.02 U	PNA	0.02 U	PNA	0.02 U	PNA	0.02 U	PNA	0.020 U	PNA		
Hardness as CaCO3	mg/L	NA	94 D	116 D	100 D	200 D	110 D	85	121	92	45.0	60.0		
Ammonia as N	mg/L	2.0	2.44	1.08	1	3.16	1.47	2.19	0.3	4.8	0.063 J	1.1		
Nitrite as N	mg/L	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.050 U	0.050 U		
Nitrate as N	mg/L	10	1.17	0.1 U	0.89	0.8	2.09 D	1.0	0.27	0.06	1.2			
Phenols as Phenol	mg/L	0.001	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.0067	0.0099	0.0375	0.006		
Tot Dissolved Solids	mg/L	NA	164	192	173	161	142	142	189	157	86.0	150.0		
Tot. Kjeldahl Nitrogen	mg/L	NA	3.99	6 D	1.46	3.24	2.32	2.1	0.26	2.1	0.10 U	1.50		
Tot Organic Carbon	mg/L	NA	20.6	3.3	1.7	26.8	1.3	1.48	2.8	2.04	0.54 J	1.4		
Turbidity	NTU	NA	1.32	0.2	0.4	1.4	0	0.13	0	0	0.0	13.8		
Temperature	deg.C	NA	13.85	13.02	10.9	12.16	11.54	12.17	12	12.4	12.87	12.05		
pH	units	6.5-8.5	7.67	6.17	6.24	6.2	6.27	5.64	6.24	6.04	5.76	5.81		
Spec. Cond	umho/cm	NA	2	386	312	381	264	280	370	332	129	261		

NOTES:

* = NYSDEC, Class GA Groundwater Standards

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= Guidance value, no standard exists.

NA = Not available.

PNA = parameter not analyzed for.

B = This flag is used when the analyte is found in the associated blank as in the sample.

D = Dilution

E = This flag identified compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis.

F = This flag indicates the results of a filtered metal analysis.

H = Received / analyzed outside of analytical holding time

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

U = The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R = The sample results are unreliable/unusable. The presence or absence of the analyte cannot be verified.

1.0 = Compound exceeded standard.

1.0 = Compound at standard.

NM = Not Monitored

TOWN OF SOUTHAMPTON
NORTH SEA LANDFILL
TABLE 2
ORGANIC GROUNDWATER QUALITY RESULTS
APRIL 2017

Parameters	Units	GW Standard*	MW-1A	MW-1B	MW-1C	MW-3A	MW-3B	MW-3C	MW-4A	MW-4B	MW-4C	MW-11A	MW-11B	MW 12A	MW 12B	
1,1,1,2-Tetrachloroethane	mg/L	0.005	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
1,1,1-Trichloroethane	mg/L	0.005	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
1,1,2,2-Tetrachloroethane	mg/L	0.005	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
1,1,2-Trichloroethane	mg/L	0.001	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
1,1-Dichloroethane	mg/L	0.005	0.0050	UJ	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
1,1-Dichloroethene	mg/L	0.005	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
1,2-Dibromo-3-chloropropane	mg/L	0.0004	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
1,2-Dibromoethane	mg/L	NA	0.0050	UJ	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
1,2-Dichlorobenzene	mg/L	0.003	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
1,2-Dichloroethane	mg/L	0.005	0.0050	UJ	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
1,2-Dichloropropane	mg/L	0.001	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
1,4-Dichlorobenzene	mg/L	0.003	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0012	J	0.0050	U	0.0050	U
2-Butanone	mg/L	0.005	0.0050	UJ	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
2-Hexanone	mg/L	NA	0.0050	UJ	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
4-Methyl-2-pentanone	mg/L	0.005	0.0050	UJ	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
Acetone	mg/L	NA	0.0021	UJ	0.0034	J	0.0045	J	0.0038	J	0.0022	J	0.0024	J	0.0046	J
Acrylonitrile	mg/L	0.005	0.0050	UJ	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
Benzene	mg/L	0.001	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
Bromochloromethane	mg/L	0.005	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
Bromodichloromethane	mg/L	NA	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
Bromoform	mg/L	NA	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
Bromomethane	mg/L	0.005	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
Carbon disulfide	mg/L	NA	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
Carbon tetrachloride	mg/L	0.005	0.0050	UJ	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
Chlorobenzene	mg/L	0.005	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
Chloroethane	mg/L	0.005	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
Chloroform	mg/L	0.007	0.0050	U	0.0027	J	0.0023	J	0.0050	U	0.0050	U	0.0050	U	0.0020	J
Chloromethane	mg/L	NA	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
cis-1,2-Dichloroethene	mg/L	0.005	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
cis-1,3-Dichloropropene	mg/L	0.0004	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
Dibromochloromethane	mg/L	0.005	0.0050	UJ	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
Dibromomethane	mg/L	0.005	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
Ethylbenzene	mg/L	0.005	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
Iodomethane	mg/L	NA	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
Methylene chloride	mg/L	0.005	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
Styrene	mg/L	0.005	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
Tetrachloroethene	mg/L	0.005	0.0050	UJ	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
Toluene	mg/L	0.005	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
trans-1,2-Dichloroethene	mg/L	0.005	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
trans-1,3-Dichloropropene	mg/L	0.0004	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
trans-1,4-Dichloro-2-butene	mg/L	0.005	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
Trichloroethene	mg/L	0.005	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
Trichlorofluoromethane	mg/L	0.005	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
Vinyl acetate	mg/L	0.005	0.0050	UJ	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
Vinyl chloride	mg/L	0.002	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U
Xylene (total)	mg/L	0.005	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U	0.0050	U

NOTES:

@ = A compound is presented if it has been detected in one or more locations.

* = New York State Department of Environmental Conservation, Class GA Groundwater Standards, 6 NYCRR Part 703

^ Standard was taken for total phenols

U - the analyte was analyzed for, but was not detected above the reported sample quantitation limit.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

Indicates compound is at the standard

Indicates compound exceeds the standard

= Guidance Value, no standard exists

NM = Not Monitored

TOWN OF SOUTHAMPTON
NORTH SEA LANDFILL
TABLE 3
ORGANIC GROUNDWATER QUALITY RESULTS
OCTOBER 2017

Parameters	Units	GW Standard*	MW-11A	MW-11B
1,1,1,2-Tetrachloroethane	mg/L	0.005	0.0050 U	0.0050 U
1,1,1-Trichloroethane	mg/L	0.005	0.0050 U	0.0050 U
1,1,2,2-Tetrachloroethane	mg/L	0.005	0.0050 U	0.0050 U
1,1,2-Trichloroethane	mg/L	0.001	0.0050 U	0.0050 U
1,1-Dichloroethane	mg/L	0.005	0.0050 U	0.0050 U
1,1-Dichloroethene	mg/L	0.005	0.0050 U	0.0050 U
1,2-Dibromo-3-chloropropane	mg/L	0.0004	0.0050 UJ	0.0050 U
1,2-Dibromoethane	mg/L	NA	0.0050 U	0.0050 U
1,2-Dichlorobenzene	mg/L	0.003	0.0050 U	0.0050 U
1,2-Dichloroethane	mg/L	0.005	0.0050 U	0.0050 U
1,2-Dichloropropane	mg/L	0.001	0.0050 U	0.0050 U
1,4-Dichlorobenzene	mg/L	0.003	0.0050 U	0.0050 U
2-Butanone	mg/L	0.005	0.0050 U	0.0050 U
2-Hexanone	mg/L	NA	0.0050 U	0.0050 U
4-Methyl-2-pentanone	mg/L	0.005	0.0050 U	0.0050 U
Acetone	mg/L	NA	0.0050 U	0.0050 U
Acrylonitrile	mg/L	0.005	0.0050 U	0.0050 U
Benzene	mg/L	0.001	0.0050 U	0.0050 U
Bromochloromethane	mg/L	0.005	0.0050 U	0.0050 U
Bromodichloromethane	mg/L	NA	0.0050 U	0.0050 U
Bromoform	mg/L	NA	0.0050 U	0.0050 U
Bromomethane	mg/L	0.005	0.0050 UJ	0.0050 U
Carbon disulfide	mg/L	NA	0.0050 U	0.0050 U
Carbon tetrachloride	mg/L	0.005	0.0050 U	0.0050 U
Chlorobenzene	mg/L	0.005	0.0050 U	0.0050 U
Chloroethane	mg/L	0.005	0.0050 U	0.0050 U
Chloroform	mg/L	0.007	0.0050 U	0.0050 U
Chloromethane	mg/L	NA	0.0050 U	0.0050 U
cis-1,2-Dichloroethene	mg/L	0.005	0.0050 U	0.0050 U
cis-1,3-Dichloropropene	mg/L	0.0004	0.0050 U	0.0050 U
Dibromochloromethane	mg/L	0.005	0.0050 U	0.0050 U
Dibromomethane	mg/L	0.005	0.0050 U	0.0050 U
Ethylbenzene	mg/L	0.005	0.0050 U	0.0050 U
Iodomethane	mg/L	NA	0.0050 U	0.0050 U
Methylene chloride	mg/L	0.005	0.0050 U	0.0050 U
Styrene	mg/L	0.005	0.0050 U	0.0050 U
Tetrachloroethene	mg/L	0.005	0.0050 U	0.0050 U
Toluene	mg/L	0.005	0.0050 U	0.0050 U
trans-1,2-Dichloroethene	mg/L	0.005	0.0050 U	0.0050 U
trans-1,3-Dichloropropene	mg/L	0.0004	0.0050 U	0.0050 U
trans-1,4-Dichloro-2-butene	mg/L	0.005	0.0050 U	0.0050 U
Trichloroethene	mg/L	0.005	0.0050 U	0.0050 U
Trichlorofluoromethane	mg/L	0.005	0.0050 UJ	0.0050 U
Vinyl acetate	mg/L	0.005	0.0050 U	0.0050 U
Vinyl chloride	mg/L	0.002	0.0050 U	0.0050 U
Xylene (total)	mg/L	0.005	0.0050 U	0.0050 U

NOTES:

@ = A compound is presented if it has been detected in one or more locations.

* = New York State Department of Environmental Conservation, Class GA Groundwater Standards, 6 NYCRR Part 703

^ Standard was taken for total phenols

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